SB
294

SUSITNA STATUS

Historical Background: The tremendous energy potential of the Susitna River has been known for many years. The Bureau of Reclamation and the Corps of Engineers, along with private institutions have conducted numerous studies of Susitna's potential. Both of the Federal agencies conducted reconnaissance level studies in the late 1940's and each published their findings in the early 1950's. The more specific and detailed early studies were performed by the Bureau of Reclamation. In fact, in a 1960 feasibility report, the Bureau of Reclamation outlined a plan of development in the Upper Susitna River Basin consisting of four high-head dams with a combined firm annual energy capability of roughly 6.3 billion kilowatt hours. The Bureau studies were backed up by limited foundation explorations for three of the four damsites (Devil Canyon, Vee and Denali were drilled, Watana was not drilled). However, with the discovery of Cook Inlet natural gas, the economic attractiveness of the Susitna project plummeted. With the formation of the international oil cartel and the dramatic rise in fuel costs during the 1970's, Congress requested that the Corps of Engineers re-evaluate the Bureau of Reclamation proposal for developing the Upper Susitna River and to report its recommendations and findings to Congress. Because of questionable foundation conditions at the upper two damsites (Vee and Denali), and the attendant environmental impact associated with those two projects, the Corps modified the proposed development by raising the height of the second upstream dam, Watana, and deleting the Vee and Denali dams. The two-dam Devil Canyon-Watana scheme of development would provide 6.1 billion kilowatt hours firm annual energy but at a lesser cost and environmental impact than the four dam scheme. The Corps evaluated a number of enery alternatives and concluded that coal fired generation and Susitna hydroelectric are the most feasible long range options for the railbelt energy demand. Of the two options, the economic attractivness of the Susitna project appears to be significantly greater than coal fired steam generation. In October 1977 dollars, the estimated construction cost of the two dam scheme and attendant transmission facilities is $2.1 billion. The average annual fuel rates from Susitna should be at least 30 percent less than that of its coal counterpart.

Project Description: The Upper Susitna River Basin is a 5810 square mile area bordered on the North and West by the Alaskan mountain range, and on the South by the Talkeetna Mountains. Primary wildlife within the basin consists of moose, bear, dall sheep, caribou, wolf, raptors, and resident fish. Anadromous fish do not migrate into the Upper Susitna, but they do spawn in the streams and sloughs downstream from the basin outlet. The river is glacially fed and averages 7.1 million acre feet of runoff annually. The plan of development includes an 810 foot high earthfill dam at the Watana site, a 635 foot high thin-arch dam at Devil Canyon and 365 miles of transmission line. The Watana project would inundate 43,000 acres of land and 54 miles of natural

river, and Devil Canyon would flood 7500 acres of land and 28 miles of river. In tandum, the projects would produce a total of 6.1 billion kilowatt hours of firm annual energy and an average of 0.8 billion kilowatt hours of annual secondary energy. It is estimated that Watana could be on line by 1990 and as demand dictates, presumably five years later, Devil Canyon would be brought on line. Based on the preliminary design, the two projects would be capable of withstanding the effects of an 8.5 magnitud earthquake with an epicenter of 40 miles from the project.

Present Status: The Corps of Engineers submitted their Susitna feasibility report to Congress in 1976. Pending the Chief of Engineers final report to Congress, the project was given conditional authorization to proceed to Phase I Advanced Engineering and Design as a federal project. (Section 160, Water Resources Development Act of 1976). Contained in the same Bill is Section 203 known as the Alaska Hydropower Development Fund. This section provides for a joint venture in developing hydropower projects in Alaska in which, for previously authorized hydropower projects, the Corps of Engineers would design and construct the project using state financing and the state would own and operate the project. Bradley Lake and Snettisham are the only authorized projects in the state which qualify for development under this program. Because the Office of Management and Budget (OMB) felt that there was insufficient field exploration to substantiate the project cost estimate contained in the Corps 1976 feasibility report, the Chief of Engineers did not make his final report to Congress. Thus, Susitna remains an unauthorized project, disqualifying it for particiapation under Section 203. However, in order to provide the necessary explorations the Corps has made $3.0 available for a 12 month foundation exploration program which should lead to final authorization of tne project. That 12 month effort began on January 1, 1978.

1978 Water Resources Development Act: Since Section 203, as it presently reads, makes it difficult for the State to provide the necessary financing for Phase I Studies, the Act will be amended under the 1978 Water Resources Development Act. State and federal personnel, along with their bond counsel and financial and legal advisors, have agreed upon the proper language which should be contained in Section 203. Also included in the pending bill will be direct authorization of the Susitna project thus making it eligible for Section 203 participation exclusive of the OMB desire for the $3.0 million twelve month exploration program. The bill should reach the Senate Water Resources Subcommittee in mid April. The House version of the bill will probably not contain the amending language for Section 203 nor direct authorization for Susitna. Thus, these items will have to be added in conference committee. Considering the other national issues, it is estimated that the bill will not be authorized before July, 1978. Thus the Phase I Studies could begin by the latter part of the 1978 field season.

Alaska Power Authority Action: It is the intention of the Alaska Power Authority to participate under Section 203 for the Phase I studies. Financing for the studies would come from the sale of municipal bonds; thus, the State would not be subjected to debt encumbrance. Should the $25,000,000 plus Phase I studies indicate that the project is not feasible, the Federal Government would repay the cost and interest of the bonds. At the conclusion of the Phase I studies, the State would have the option to proceed into construction with the Corps of Engineers or to use the services of a private engineering firm. Many of the studies to be conducted under Phase I would be managed by the Power Authority rather than the Corps of Engineers.

Plan of Study: The Alaska Power Authority made $100,000 available to the Alaska District Corps of Engineers in July, 1977 for the purpose of developing the Phase I Study program. The Corps submitted their first draft to the State in September, 1977. Based on the State's review comments, the Corps is now finalizing the Susitna Plan of Study.

Land Status: The Susitna project would flood roughly 50,000 acres of land of which 24,000 acres have been classified as power withdrawal lands. This land, along with most of the remainder needed for the two proposed dams and reservoirs, has been claimed by the Cook Inlet Native Corporation and four native villages. Until the land can be transferred to the Natives, the Bureau of Land Management retains custody for the Federal government. Prior to entry for Phase I studies, access permission would be necessary from either BLM or the Native Associations depending on the owners at that time. The Cook Inlet Region is presently negotiating with the four villages to trade them out of the Susitna land. Presumably, the region would then negotiate the Susitna land for possible excess military land on Fort Richardson. The State could then claim the Susitna land under the terms of the Statehood Act, if it so desired.

D-2 Classification: Although the Susitna River was included as one of twenty rivers that should be studied by the BLM for possible classification as a Wild and Scenic River in 1872, Susitna was dropped from the list during the early screening. It was suggested in the study, however, that Susitna should be studied further. The House Interior Subcommittee has drafted their version of the D-2 Land Classification Bill and has included Susitna as a river that should be studied for possible classification as a Wild and Scenic River. Despite this classification, provisions have been made to allow for Phase I studies by the Corps of Engineers. Construction, however, would not be permitted until completion of the Wild and Scenic River study. Furthermore, as long as the land belongs to the federal government, it is questionable whether Phase I studies could be conducted exclusive of the Corps of Engineers.

Funding: $5.45 million has been included in the federal appropriation for input to the Alaska Hydropower Revolving Loan Fund.

This is the estimated cost of financing the first year of the four year Phase I Study. However, since the total estimated cost is in excess of $25.0 million, it would be desirable that the entire amount be placed in the Fund. As a show of good faith, upon enactment of the 1978 Water Resources Development Act, the State, through the sale of revenue bonds, would make available the full study cost amount. This would be held in escrow and could only be used to finance the Phase I studies to the extent that matching funds are paid into the Federal Fund. This show of good faith should provide the leverage for the federal government to put up the remainder of matching funds needed for Phase I.

Agreement: A mutual agreement between the Alaska Power Authority and the Corps of Engineers would be developed and signed pursuant to passage of the 1978 Water Resources Omnibus Bill.

Official Business

Alaska State Legislature

Senate

Committee on Resources

Pouch V
State Capitol
Juneau, Alaska 99811

February 1, 1980

To: Resources Committee Members

From: Jens Zehbe, Staff Member

Regarding: Senate Bill 294

Senate Bill 294 relates to the Susitna Hydroelectric Project by providing a description and purpose of the project. It directs the Alaska Power Authority to prepare a preliminary and annual report about the project for the Governor and Legislature.

It amends the Alaska Power Authority Statutes by the addition of the following:

44.56.300 PROJECT DESCRIPTION- To generate, transmit and distribute electric power to Homer, Seward and Fairbanks which will:

1) minimize area electrical costs
2) minimize adverse environmental and social impacts
3) safeguard life and property

44.56.320 PRELIMINARY REPORT- The Authority shall prepare a report for the Governor and Legislature no later than 1/30/81. The report will list:

1) The proposed phases of construction with respective costs and completion dates of each phase.
2) Federal and state permits required before construction can begin. Expected dates they can be obtained.
3) Any other information the Authority deems necessary to inform the Governor and Legislature of the project's current status.

44.56.330 CONSTRUCTION, MAINTENANCE AND OPERATION- The Authority shall enter into a contract for construction consistent with the purpose of the project upon approval of the preliminary report.

44.56.340 ANNUAL REPORT- Commencing in 1982, the Authority shall prepare an annual report which explains in detail:

1) Status of construction
2) Completion dates of any phase in construction
3) Cost of each construction phase
4) The dates on which federal and state permits necessary for construction were obtained.

5) Federal and state permit requirements for continued construction of the project and expected dates they can be obtained.
6) Actual dates the permits described in (5) are obtained.
7) Any other information the Authority deems necessay to inform the Governor and Legislature about the current status of the project. This annual report shall be submitted no later than January 30 of each year.
8) In reference to the Annual Report sections 2-7, any deviation between the actual date and expected dates must be explained in the report.

44.56.350 PROJECT FINANCING- Shall be financed by appropriations from the general fund.

There is no fiscal impact. The report requirements can be accomplished by the existing staff of the Power Authority under present funding.

I. REQUEST

Bill/Resolution No. Senate Bill No. 294

Title An Act Relating to the Susitna River Hydroelectric Project; and providing for an effective date.

Requested by Senator Kerttula

Date 1/14/80

II. FISCAL DETAIL

Agency Affected Alaska Power Authority, Department of Commerce & Economic Development

Program Category Affected Economic Development

BRU, Program, or Subprogram(s) Affected Alaska Power Authority

(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85
100 PERSONAL SERVICES	--	--				
200 TRAVEL	--	--				
300 CONTRACTUAL	--	--				
400 COMMODITIES	--	--				
500 EQUIPMENT	--	--				
600 LAND & STRUCTURES	--	--				
700 GRANTS, CLAIMS, ETC.	--	--				
TOTAL						

FUNDING (Thousands of Dollars)

GENERAL FUND	--	--				
FEDERAL FUNDS	--	--				
OTHER (Specify Fund Source)	--	--				

POSITIONS

FULL TIME	--	--				
PART TIME	--	--				
TEMPORARY	--	--				

III. ANALYSIS (See Fiscal Note Preparation Instructions, Section III)

The report requirements of SB 294 can be accomplished by the existing staff of the Power Authority under present funding. The Susitna study program was funded in FY 80. The companion legislation, SB 295, would have a fiscal impact if it were possible to obtain construction authorization at a time for earlier than presently expected.

IV. DATE January 18, 1980 PREPARED BY Terry J. McGuire

AGENCY Alaska Power Authority

PHONE 277-7641

Original: Legislative Finance

cc: Budget and Management

Prime Sponsor (First Legislator Named)

33-001 (Rev. 12/79)

ELEVENTH LEGISLATURE

FISCAL NOTE

I. REQUEST

Bill/Resolution No. Senate Bill No. 294

Title An Act Relating to the Susitna River Hydroelectric Project; and providing for an effective date.

Requested by Senator Kerttula

Date 1/14/80

II. FISCAL DETAIL

Agency Affected Alaska Power Authority, Department of Commerce & Economic Development

Program Category Affected Economic Development

BRU, Program, or Subprogram(s) Affected Alaska Power Authority

(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85
100 PERSONAL SERVICES	--	--				
200 TRAVEL	--	--				
300 CONTRACTUAL	--	--				
400 COMMODITIES	--	--				
500 EQUIPMENT	--	--				
600 LAND & STRUCTURES	--	--				
700 GRANTS, CLAIMS, ETC.	--	--				
TOTAL						

FUNDING (Thousands of Dollars)

GENERAL FUND	--	--				
FEDERAL FUNDS	--	--				
OTHER (Specify Fund Source)	--	--				

POSITIONS

FULL TIME	--	--				
PART TIME	--	--				
TEMPORARY	--	--				

III. ANALYSIS (See Fiscal Note Preparation Instructions, Section III)

The report requirements of SB 294 can be accomplished by the existing staff of the Power Authority under present funding. The Susitna study program was funded in FY 80. The companion legislation, SB 295, would have a fisca impact if it were possible to obtain construction authorization at a time for earlier than presently expected.

IV. DATE January 18, 1980 PREPARED BY Terry J. McGuire

AGENCY Alaska Power Authority

PHONE 277-7641

Original: Legislative Finance

cc: Budget and Management

Prime Sponsor (First Legislator Named)

33-001 (Rev. 12/79)

THE LEGISLATURE OF THE STATE OF ALASKA
ELEVENTH LEGISLATURE

FISCAL NOTE

I. REQUEST

Bill/Resolution No. Senate Bill No. 295 Title: An Act making special appropriations to the Alaska Power Authority for construction of the Susitna River hydroelectric project; and providing for an effective date. Date 1/14/80

Requested by Senator Kerttula

II. FISCAL DETAIL

Agency Affected Alaska Power Authority, Department of Commerce & Economic Development

Program Category Affected Economic Development

BRU, Program, or Subprogram(s) Affected Alaska Power Authority

(Note: If more than one budget component is affected, separate line-item amounts and funding for each component in the analysis section.)

EXPENDITURES (Thousands of Dollars)

	FY 80	FY 81	FY 82	FY 83	FY 84	FY 85
100 PERSONAL SERVICES		300	300	200	200	300
200 TRAVEL						
300 CONTRACTUAL		12,700	8,700	3,800	3,800	10,700
400 COMMODITIES						
500 EQUIPMENT						
600 LAND & STRUCTURES						
700 GRANTS, CLAIMS, ETC.						
TOTAL		13,000	9,000	4,000	4,000	11,000

FUNDING (Thousands of Dollars)

GENERAL FUND		13,000	9,000	4,000	4,000	11,000
FEDERAL FUNDS						
OTHER (Specify Fund Source)						

POSITIONS

FULL TIME		7	7	4	4	7
PART TIME						
TEMPORARY						

III. ANALYSIS (See Fiscal Note Preparation Instructions, Section III)

Amounts appropriated by SB 295 do not correspond exactly with anticipated funding needs for the present program of studies underway. Construction of the Project could not begin until a Federal Energy Regulatory Commission license and other state and federal permits are approved. However, elements of the Project could be initiated in advance of the FERC license. These elements could include transmission line interconnection of Anchorage and Fairbanks, acquisition of land in the Upper Susitna, and access road construction. Otherwise impacts on the Alaska Power Authority of SB 295 would be no greater than exist today under the existing study program. Major impacts after 1985, when construction could commence, would be experienced by the Power Authority. If the Project is feasible for construction, state participation in financing would be a secure state investment, however, the Project appears capable of being financed in the revenue bond market. This may change, of course, depending on market conditions which prevail at the time of revenue bond sales.

IV. DATE 1/18/80 PREPARED BY Terry J. McGuire

AGENCY Alaska Power Authority

PHONE 277-7641

Original: Legislative Finance

cc: Budget and Management

Prime Sponsor (First Legislator Named)

33-001 (Rev. 12/79)

Official Business

Alaska State Legislature

Senate

Committee on Resources

Agenda

Pouch V
State Capitol
Juneau, Alaska 99811

March 7, 1980
1:30 p.m.
Butrovich Room

SB 294- Susitna Hydoelectric Project

Persons Testifying

Governor Egan
Lee Wareham- Susitna Power Now, Inc.
Liz Gilbert- Susitna Power Now, Inc.
Dorothy Jones- Matanuska-Susitna Borough Assembly
Chuck Smith- Matanuska-Susitna Borough Assembly
Jim Ekstedt- MEA
Thomas Stahr- Anchorage Municipal Light and Power
Joe Geldhof- Alaska Conservation Society and Alaska Center for the Environment
Terry McGuire- form Energy and Power Development (Will be in the audience to answer any questions, does not necessarily want to testify)

Please Sign In — 3/7/80
SB-294

Name	Representing
Terry McGuire	Alaska Power Authority
EVE DISCHNER	SUSITNA POWER NOW!
[illegible] Waldrop	IBEW - SUSITNA POWER NOW
Harry [illegible]	Fbx Borough assembly
BEN HARDING (NOT TESTIFYING)	Fbx NORTH STAR Borough
Jim [illegible]	MatSu Boro
Dorothy A. Jones	MAT-SU Boro - SUSITNA PWR NOW
Chuck Smith	Box 1385 - Wasilla
Charmaine Smith (not testifying)	Box 1385, Wasilla
Russ [illegible]	326 4th Juneau
RUFUS C. HINCHEE	NECA ~~[illegible]~~
Al Larson	Chickaloon Village
L A Kornfeind	N.E.C.A. 1830 2nd Ave Fbk AK
Tom Cashen	IBEW LOCAL 1547
[illegible] Shelley	Mobil Oil Corp.
[illegible] King	King & Assoc.
Clark King	" "
Joseph [illegible]	
Bill Egan	ALASKA CONSERVATION SOCIETY
Mike [illegible]	2130 Arlington Anch 99503
	FBKS./NORTH STAR BOR. ASSEMBLY

SUSITNA HYDROELECTRIC PROJECT

S.B. 294- Senator Kertula

Bill amends A.S. 44.56 of the Alaska Power Authority be adding Article 6 Section 44.56.300-350

44.56.300 PROJECT DESCRIPTION- Susitna Hydroelectric Project consisting of two dams and related reservoirs, transmission lines and facilities and load centers as described in the June 1978 U.S. Army Corp of Engineers report.

44.56.310 PURPOSE OF PROJECT- To generate, transmit and distribute electric power to Homer, Seward and Fairbanks which will:

1) minimize area electrical costs
2) minimize adverse environmental and social impacts
3) safeguard life and property

44.56.320 PRELIMINARY REPORT- The Authority shall prepare a report for the governor and legislature no later than 1/30/81. The report will list:

1) The proposed phases of construction with respective costs and completion dates of each phase.
2) Federal and state permits required before construction can begin. Expected dates they can be obtained.
3) Any other information the Authority deems necessary to inform the governor and legislature of the project's current status.

44.56.330 CONSTRUCTION, MAINTENANCE AND OPERATION- The Authority shall enter into a contract for construction consistent with A.S. 44.56.310 upon approval of the preliminary report.

44.56.340 ANNUAL REPORT- Commencing in 1982 the Authority shall prepare an annual report which explains in detail:

1) Status of construction
2) Completion dates of any phase in construction
3) Cost of each construction phase
4) The dates on which federal and state permits necessary for construction were obtained.
5) Federal and state permit requirements for continued construction of the project and expected dates they can be obtained.
6) Actual dates the permits described in (5) are obtained.
7) Any other information the authority deems necessary to inform the governor and legislature about the current status of the project.

A) This annual report shall be submitted no later than January 30 of each year.

8) In reference to the Annual Report sections 2-7, any deviation between the actual date and expected dates must be explained in the report.

44.56.350 PROJECT FINANCING- Shall be financed by appropriations from the general fund.

THIS ACT TAKES EFFECT IMMEDIATELY

Fairbanks Environmental Center

218 DRIVEWAY
FAIRBANKS, ALASKA 99701
(907) 452-5021

February 15, 1980

TO: Honorable Committee Members

FROM: Jeff Weltzin

RE: S.B. 294,295, & 385

Recent debate on the energy future of Alaska's railbelt area has mainly focussed on the proposed Devil Canyon Upper Susitna Hydro-electric Project. The proponents of this project voice it's many advantages which when veiwed in retrospect seem to be the attributes of all hydro developments in general and not just the Susitna Hydro Project.

The benefit of the Susitna Hydro Project have been well publicized, but it's many impacts on downstream fisheries, wildlife habitat, the Alaskan Lifestyle, and the States economy have recieved little study or public exposure.

The railbelt area of Alaska is energy rich. There are numerous potential hydro sites within it. Many coal deposits with the most noticeable being the Healy fields and the Beluga fields just south west of Anchorage. Geothermal, wind, natural gas, solar, tidal, and conservation energy round out a most amazing variety of energy resources available to the railbelt area.

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(907) 452-5021

The most evident conclusion is that we have great flexibility in choosing energy resources to be developed. This flexibility could allow us to evaluate the berefits and costs and choose energy devlop-ments that minimize social and environmental effects while still meeting our needs for electrical energy.

Which then brings us to the Fairbanks Environmental Centers main objection to S.B. 294,295 & 385. These bills make a mockery of any rational decision-making process to choose the best energy sources for the railbelt area. Instead, this proposed legislation totally usurp the feasibility study process and reduces this whole process to the traditional methods used for most hydro in the lower 48. It's called "pork barrel" or sometimes 'whole hog".

We at F.E C. cannot understand why these bills were introduced at this time when it quite evident that the feasibility study process which has just begun, has been designed to take the shortest amount of time possible. If the intention of these bills is to force negligence of this projects potential problems, then we would have no choice but to oppose in any way possible progress of this project until all the potential impacts have been adequately addressed.

A review of this projects potential impact show that the Susitna river is the highest producing river contributing to the Cook Inlet salmon fisheries

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FAIRBANKS, ALASKA 99701
(907) 452-5021

In the winter the Susitna river runs clear allowing juvenile salmon to leave the dewatered tributaries and rear in the main channels. Fish and Game has stated that the proposed dams would ensure year-round siltations of the main channels producing potential dramatic adverse effects on salmon production.

The Susitna basin bordered by the Parks, Denali, and Richardson highways is one of the last major hunting area's where a hunter does not need to charter a plane to hunt. In 1979 5600 hunters applied to hunt caribou in this area. Twenty three percent of last years statewide moose take occured from from this same area. The proposed permanent access from both the Parks and Denali highways plus the transmission line corridor could have large impacts on this, the State's most heavily hunted region.

Recently, there has been a nationwide reduction of energy growth rates which also has occurred in Alaska. The need for Susitna Hydro's large block of electrical energy still has to be justified. Alternative hydro sites still have not been properly looked at.

The active Susitna fault goes right through the middle of the proposed Susitna hydro project. Five moderate earthquakes and many smaller ones occurred along this fault in the last six years. Many more earthquakes have been registered along the major Denali fault, which lies within 40 miles of the dam sites. Compounding this problem is the filling

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(907) 452-5021

of reservoirs often induce earthquakes, sometimes of large magnitude. With the proposed Susitna reservoirs lying on either side of the active fault, the situation here could be particularly dangerous.

These potential adverse impacts plus the project's enormous price tag mandate a much more careful look then allowed by S.B. 294 & 295.

There is no need for the Anchorage/Fairbanks Intertie in the next ten years. The theoretical advantages of this intertie that would occur before the start-up of the Susitna project are very marginal. If the advantages of reserve-capacity sharing and the replacement of cheaper natural gas generation for more expensive production where very substantial, the utilities would have proposed this action years ago. Clearly, the intent of S.B. 385 is to take a back-door approach to getting the Susitna project started before the study phase is finished.

Communities along the corridor will not be able to hook-up to this express transmission line because of the .5 to .75 million dollar per substation cost, the only benefit of this proposal would be to Fairbanks. Fairbanks could replace 34 MW of peak oil-generated capacity with cheaper Anchorage capacity. No studies have been done to show that Anchorage utilities will indeed have the excess capacity on a regular basis to even ensure that this benefit will occur.

A much more reliable alternative to replacing Fairbanks expensive oil generation would be to take the proposed money for the intertie and

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FAIRBANKS, ALASKA 99701
(907) 452-5021

fund GVEA's proposed waste heat generation plans at Alyeska pump stations 7,8,9,&10. If all four stations were built, they would provide 28 MW of inflation proof capacity to Fairbanks.

The question of an intertie is premature. In light of the proposed extensive studies to be conducted by Acres American on this subject, it seems truely unwise to rush the intertie before we really know what is needed.

In conclusion, if the intent of this committee is to get Alaska on a renewable energy path and to avoid major social and environmental problems. We then suggest the following actions:

I. Postpone action on S.B. 294, 295, & 385 until the feasibility studies to be conducted by Acres American are finished.

2. Fund or help GVEA fund thier proposed waste-heat utilization project at pump stations 7,8,9, & 10.

3. Fund and direct the A.P.A. to begin preliminary feasibility studies of the Chakachatna river 60 miles S.W. of Anchorage. This potential hydro site could have a firm capacity of 300 to 400 MW and avoid the major environmental problems the Susitna project might have.

4. Fund and direct the A.P.A. to begin preliminary feasibility studies of hydro sites in the Interior region such as the Totatlanika river.

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FAIRBANKS, ALASKA 99701
(907) 452-5021

Honorable committee members, please do not eliminate the great flexibility we have in developing our energy resources. The environmental community strongly support a renewable energy futurefor Alaska. We would support your efforts wholeheartedly if ybu choose other hydro sites for study along with the Susitna project. We have the time and tools to develop a model renewable power generation system for Alaska. But by reducing the decision making process to a simplistic one, where Susitna hydro is the only answer to Alaska's energy needs. you will destroy this opportunity and produce polarization of Alaska's citizenship.

Eve Dischner

how well she tha

professional manner

Please sign In.

Name - Address

Lee Wareham 205 Gaffney FBK

Liz Gilbert P.O. Box 4-2825, Anchorage 99509

Tom Cashen Box 63 Douglas 99824

Rufus C Hinchee 3707 Arctic Blvd Anch 99503

Tom Stahr 6967 Laser Dr Anchorage 99504

Dorothy A. Jones Box 109, Talkeetna, Ak 99676

Owen Meekins Jr. 326 4th St Juneau

J A Kornfeind 1830 2nd Ave FbKs AK 99701

Bill Egan 2704 Arlington Drive Anch 99503

Chuck Smith Box 1385 - Wasilla 99687

Arthur Ward 106 Charles St. Fbks. AK 99701

Jean Kline A.H.C. Juneau

Jim Elkins Mat So Boro. Palmer Ak.

Ike Waldrop Jr IBEW, Anchorage

Terry McGuire A.P. Authority 333 W. 4th, Suite 31 Anch

Robert Martin Tlingit Haida RED Juneau Ak

Erve Dischner 1332 Hillcrest Dr. Anch

file C
SB 294
stuff

DURING SESSION:
POUCH V
JUNEAU ALASKA 99811
(907) 465-3701

OUT OF SESSION:
1016 WEST 6TH AVENUE
SUITE 18
ANCHORAGE ALASKA 99501
(907) 272-4841

BILL SUMNER

Alaska State Senator

DISTRICT 7-E

COMMITTEES:
RESOURCES
CHAIRMAN
FINANCE
RULES
COMMITTEE ON COMMITTEES
JOINT INTERIM COMMITTEE
ON GAS PIPELINE FINANCING

April 22, 1980

Roy M. Huhndorf, President
Cook Inlet Region, Incorporated
Post Office Drawer 4-N
Anchorage, Alaska 99509

Dear Mr. Huhndorf:

I appreciate your sharing with me your comments on the Susitna Hydroelectric project. I was especially pleased to read of the cooperation you are having with the Alaska Power Authority during its feasability studies on Cook Inlet Region and Village lands.

The suggested amendment to Senate Bill 294 has merit and unfortunately the bill has already passed out of Senate Resources and is now pending in the Senate Finance Committee. I have, however, taken the liberty of forwarding your suggestion to Senator Sackett for consideration in amending the bill in his committee. I encourage you to again let him know of your interest in the amendment as well.

Again, thanks for the comments. I appreciate the well-thought input.

Sincerely,

Bill Sumner

BILL SUMNER
Senator

BS/cf

CIRI COOK INLET REGION INC.

March 31, 1980

Senator Bill Sumner
Alaska State Senate
Pouch V
Juneau, AK 99811

Re: Senate Bill 294

Dear Senator Sumner:

Thank you for affording me the oppo tunity to comment on Senate Bill No. 294, "An Act relating to the Susitna River Hydroelectric project; and providing for an effective date." As you may be aware, Cook Inlet Region, Inc. and certain Cook Inlet Region Village Corporations are participating in the feasibility analysis for the Susitna Hydropower project and have executed an agreement with the Alaska Power Authority authorizing the Authority to enter upon Cook Inlet Region and Village lands to perform activities necessary for the study.

Included in our agreement with the Alaska Power Authority is a clause requiring the Authority and its agents to employ Alaska Natives enrolled in Cook Inlet Region, Inc. or the Cook Inlet Village Corporations and to afford them a preference on award of contracts, commitments or other activities where authorized by law in accordance with the Alaska Plan to Provide Equal Employment Opportunity in the Construction Industry, approved by the U. S. Department of Labor on March 31, 1972. (See attachment.) I recommend that Senate Bill No. 294 be revised to include a section providing that:

> It is the policy of the State of Alaska to implement meaningful training and employment opportunities for minorities, and in particular, Alaska Natives, during the construction and operation of the Susitna River Hydroelectric Project, as authorized by law. Accordingly, the Alaska Power Authority

CIRI BUILDING 2525 "C" STREET P.O. DRAWER 4-N ANCHORAGE ALASKA 99509 PHONE 274-8638 TELECOPIER 907-279-8836

> shall afford minorities, including, in particular, Alaska Natives, and Alaska Native business entities, a preference in the award of contracts and subcontracts in connection with the administration of those activities authorized herein.

I would appreciate your continuing to keep me posted on the status of Senate Bill No. 294. Thank you for your attention to this matter.

Sincerely yours,

COOK INLET REGION, INC.

Roy M. Huhndorf
President

RMH:JEB:cae
Attachment

To Senate Resources Committee,

As Resident and citizen of Alaska & America I strongly urge you as Elected or Appointed Public Representatives to consider strongly the great Benefits of the Susitina Hydro Project. With our Economy soaring downwards greatly influenced by our Dependence on foreign Resources.

What greater safer and more Renewable Resources the water & sun of which right here in our Backyard lies a vast Abundance.

I urge you to Approve for All peoples Benefits a project of such great importance. in times where energy is in such Demand and will continue to be. I hope when election time arrives I can vote again with Confidence that my leaders are Representing the majority Rather than the minority of Businessman or Conservationists looking for a cause or profit.

Sincerely

Dana Fridtun

FIDC

DR. WILLIAM R. WOOD
EXECUTIVE VICE PRESIDENT

FAIRBANKS INDUSTRIAL DEVELOPMENT CORPORATION
Phone 907 452-5400 619 Eleventh Avenue Fairbanks, Alaska 99701

March 5, 1980

Senator Bill Sumner
Alaska State Senate
Pouch V
Anchorage, Alaska

Dear Senator Sumner:

I am William R. Wood, Mayor of Fairbanks, and Executive Vice President of the Fairbanks Industrial Development Corporation. I am pleased to testify once more in behalf of Senate Bill 294 relating to the Susitna River hydroelectric project.

It has been my privilege to study the bill with considerable care and I am in strong support of the procedures outlined therein for accomplishing a preliminary report that will give the Legislature basic information it must have in hand regarding the proposed phases for the construction of the Susitna River hydroelectric project, as well as the costs related thereto, and the necessary Federal and State permits that must be obtained. The bill is well designed to expedite the project which is essential to the wellbeing of all residents of South-Central and Interior Alaska, with secondary benefits to all the rest of the state.

Of a thousand or more pieces of legislation that will come to the attention of the Senate and House this session, I would rank Senate Bill 294 among the top half dozen of vital concern to the State of Alaska. The City Council of Fairbanks has already endorsed the project, as well as the membership of the Fairbanks Industrial Development Corporation, a non-profit, public service group of business and professional leaders who employ more than 10,000 persons on a year around basis within Alaska on non-government jobs.

We are also deeply interested in Senate Bill 385 that would provide for the immediate construction of an intertie system joining the Anchorage area to the Fairbanks area. This bill merits your most serious consideration as well as Senate Bill 294.

Sincerely yours,

Bill Wood

William R. Wood
Executive Vice President, and
Mayor, City of Fairbanks

WRW/kb

CITY OF FAIRBANKS ALASKA

The Golden Heart City

OFFICE OF THE MAYOR

March 5, 1980

Senator Bill Sumner
Alaska State Senate
Pouch V
Anchorage, Alaska

Dear Senator Sumner:

I am Ruth Burnett, member of the Fairbanks City Council. I am pleased to testify once more in behalf of the Susitna River hydroelectric project.

I have had an opportunity to study Senate Bill 294 with some care and am in strong support of the objectives and goals contained therein. I join my colleagues on the Council, who have unanimously endorsed the Susitna project, in urging all possible support for this legislation.

I am also in very strong support of Senate Bill 385 that would provide for immediate construction of an intertie system between the Anchorage area and the Fairbanks area.

I urge your strong support of Senate Bill 385, as well as of Senate Bill 294.

Sincerely yours,

Ruth Burnett

Ruth Burnett
Member, City Council

410 CUSHMAN, FAIRBANKS, ALASKA 99701

3/7/85

4

Testimony of Thomas Stahr
Before the ALASKA STATE SENATE
RESOURCES COMMITTEE

testifying in favor of SB 254 25S 38S

Not too long ago any consideration of Susitna would center around the question of whether or not we would actually need the electrical energy it would produce. Now the situation is radically changed. The proper concern now is how will we continue to supply present energy demands if we do not build Susitna.

Conservation is again a serious issue, not as an alternative because serious examination shows this is not a realistic concept, but that Susitna will in it's self be a massive contribution toward conservation of oil and gas, and serious conservation will be necessary to ~~[illegible]~~ keep demands from exceeding what Susitna can produce.

In 1995 the utilities in the area which could be supplied by Susitna generated 2.5 Billion kwh. Military central station generation of over 385 million kwh brings the total to over 2.8 Billion kwh. Watana dam, the first stage of the Susitna project will only produce 3.1 Billion kwh.

Therefore the load for this stage of the project already exists without considering the other existing energy demands where renewable hydro power could be beneficially substituted for oil.

To produce the 2.5 billion kwh the area utilities consumed 35.4 trillion BTU's of fossil fuels. This is the energy equivalent of 6.2 million barrels of oil. Therefore even the first stage of susitna will achieve massive conservation of oil and gas.

If alaskans had to pay for this fuel at current world market prices the bill would be over 186 million dollars per year, which is approximately twice the total paid for electricity now. In term of electric rates world market fuel prices mean rates would, on the average, triple. It is inconceivable that by the 1990's when susitna is possible, that alaskan fuel prices will not be in excess of current world prices.

In regard to the complete susitna project the total output is slightly in excess of twice current electrical use. Since we are looking at 12 to 16 years for final completion even a small annual growth will close the gap. In fact a annual ~~growth~~ growth above the 4-7% range will result in demands in excess of capacity.

Since Alaskan historical growth rates are in the order of 13% it is clear that a great deal of conservation effort will be required to keep demand within the range of what Susitna can supply. Realistically this is the maximum we could possibly expect from serious conservation.

This brings what is perhaps the most critical issue. We must have some firm energy plans and goals and here I want to make it crystal clear I am not talking about the verbal hogwash that usually goes by the name of energy plans and policies.

The simple truth is that the world is running out of convenient and inexpensive oil and gas. Conservation alone is no answer, it can only buy us a little time. The only prudent approach is to make firm commitments to provide for our future energy needs by developing Susitna. We can then rationally use effective conservation measures as a bridge to that goal. A perfect example of this is the proposed Anchorage - Fairbanks tie line which complements the long term plan, conserves energy and more effectively utilizing existing power resources.

For the past Susitna you will find that the feasibility of most alternative energy schemes will be greatly by having Susitna as an energy

storage for the days when the sun does not shine and the wind does not blow. In the long run you will find a large hydropower project like sustina absolutely necessary to make significant use of ~~the~~ alternate energy sources

SENATE RESOURCES COMMITTEE
CHAIRMAN: BILL SUMNER
JUNEAU, AK.

MARCH 7, 1980

MR. CHAIRMAN AND COMMITTEE MEMBERS, I AM AUSTIN WARD OF FAIRBANKS, CURRENTLY PRESIDENT OF ALASKA ENERGY FOR AMERICA INC., AND MEMBER OF SUSITNA POWER NOW.

OVER 20 YEARS HAS PASSED SINCE MY INTEREST IN HYDRO POWER FIRST RECEIVED MY ATTENTION WITH THE RAMPART DAM PROJECT. SINCE THOSE EARLY YEARS, AND TO THIS DAY I HAVE WORKED FOR A RENEWABLE ENERGY SOURCE.

I WISH TO OPEN WITH A QUOTE, " RICH SEIFERT OF THE U.OF A. FBKS, INSTITUTE OF WATER RESOURCES" "SAYS IT NOW COSTS ABOUT $7.00 PER PEAK WATT TO GENERATE POWER FROM SOLAR CELLS(VOLTAIC PHOTO), BUT RECENT GOVERNMENT PROJECTIONS SAY IT WILL DROP TO .70¢ PER PEAK WATT BY THE MED-1980s.
BY COMPARISON, SEIFERT SAID THE COST PER PEAK WATT FROM THE 2 BILLION SUSITNA PROJECT WILL BE ABOUT 90¢ PER PEAK WATT.
BUT AS WITH THE TRANSISTOR AND PENCILLIN, SOLAR CELLS WILL ONLY BECOME FEASIBLE IF THE FEDERAL GOVERNMENT PUTS ITS WEIGHT INTO MAKING THE SC." WHAT MR. SEIFERT FAILED TO MENTION IS THE HIGH INFLATION RATE COULD RAISE THE PEAK PRICE OF SOLAR ENERGY FROM THE 70¢ LEVEL TO A HIGH THAT IS ANYONES GUESS. AND THATS ASSUMING THE GOVERNMENTS PROJECTIONS CAN BE MET.

ALASKA ENERGY FOR AMERICA INC., AND ITS MEMBERS SUSITNA POWER NOW AND ITS MEMBERS STRONGLY FAVOR THE CONSTRUCTION OF THE SUSITNA POWER PROJECT AS SOON AS PRACTICAL. SUPPORT FOR THE PROJECT DERIVES FOR THE KNOWLEDGE THAT ALASKA IS IN A POSITION TO ANSWER IT'S POWER NEEDS WITHOUT EXTENSIVE USE OF FOSSIL FUELS. THE SUSITNA PROJECT IS LOCATED SO THAT CLEAN, HYDROELECTRIC POWER CAN BE MADE AVAILABLE TO THE TWO LARGEST USER'S IN THE STATE, NAMELY FAIRBANKS AND ANCHORAGE. THE ADVANTAGE IS TWO FOLD: LESS WASTE OF FOSSIL FUELS, CLEANER AIR, THAT WILL DRAMATICALLY REDUCE WINTER ICE FOG IN FAIRBANKS, AND GIVE BOTH CITIES A CHANCE FOR CLEANER AIR.
OF SECONDARY INTEREST IN THE CONSTRUCTION OF SUSITNA POWER IS THE RESULTING RECREATION BENIFITS. AND THOSE BENIFITS WOULD BE AVAILABLE TO MANY DUE TO THE UNIQUE LOCATION OF SUSITNA, HALF WAY BETWEEN TWO POPULATION CENTERS, AND CLOSE TO HOME FOR MANY.

SENATE RESOURCES HEARING:
SENATOR SUMNER, CHRM.

(AUSTIN WARD)

IT MAKES MORE SENSE NOW THAN EVER BEFORE IN MANS HISTORY TO HARNESS THE FREE FLOWING ENERGY OF OUR RIVERS THROUGH THE USE OF MODERN CONSTRUCTION METHODS. WHEN WE ARE FACED WITH INFLATION, FACED WITH THE DWINDLING INVENTORY OF FOSSIL FUELS, IT SEEMS ALMOST INCONCEIVEABLE THAT WE SHOULD SIT BY, PAY THE HIGH PRICES FOR NONRENEWABLE FUELS WHEN ALL WE HAVE TO DO IS BUILD THE SUSITNA PROJECT THAT WILL STAND FOR GENERATION AFTER GENERATION PRODUCING PROWER AT LITTLE INCREASE IN COST FOR THE LIFE TIME OF THE DAMS.

IF SCIENCE COULD HARNESS THE ENERGY OF THE ENVIORMENTALISTS AND NAY SAYERS, WE WOULD'NT HAVE TO BUILD SUSITNA.

SINCERELY,

Austin D. Ward

AUSTIN G. WARD
FAIRBANKS, AK. 99701
106 CHARLES.

Senate Resource Committee

Subject: Susitna Hydro-Power Project & Railbelt Inter-Tye.

Gentlemen;

My name is Stephen A. Kerner and I am writing you in relation to the proposed Susitna Hydro electric project and the railbelt inter-Tye, I have lived in Alaska for 30 yrs. and, presently, enrolled in the third & fourth year Apprentice Wireman school (I.B.E.W.) here in Anchorage. I am for the building of the Hydro project even though I live in Fairbanks. The opportunities for employment, industry, recreation, and the eventual Low cost of electricity are to obvious to pass up. The President and all his men preach about conserving our resources (non renewable), and here is something with potential to please everyone from environmentalists to Industry.

I don't know what you people discuss in your committees, but I urge you to find a way to get this Project moving in accordance to the wishes of the people of Alaska.

Thank you for reading this,

Stephen A. Kerrces

March 4th, 1980

Senate Resource Committee
Susitna Hydro Power Project
Railbelt - Inter Tie

Dear Sir!

My name is Stanley Aarsund. I have been an Alaskan resident for more than eight years, since April 18th, 1971. I live at 1200 W. Dimond Blvd, Space 301, Anchorage, which is in Precinct 180, District 11.

There are several projects I've wanted the State to move on for years and one of them is the dams on the Susitna River. With all the coverage lately in the news about energy, or the shortage of it, people are probably aware that hydro power is the way to go, except the rivers in the lower 48 are getting tapped out. Here in Alaska we've hardly tapped our hydro potential. This Susitna dam Project has so many pluses going for it I don't see why we haven't started construction before.

It's a renewable resource, non-polluting, very cheap power once the dam is paid for; it will provide badly needed jobs. The Mat-Su borough has 20-25% unemployment. It will be a large recreational area and enhance wildlife. If we can sell cheap electrical power that reason will help bring in Industry and provide additional, long term, jobs for Alaskans.

Along with the Susitna project the Railbelt Inter-Tie should be built. Fairbanks has extreamly high electrical power rates due to the use of oil in electricity generation. This project should help bring down those costs as well as for the folks between Anchorage and Fairbanks. There's also the power line project between Valdez and Glenallen which should be completed.

So lets build these projects as soon as possible. Lets save all the natural gas

and oil that is now being used to produce electricity and make fertilizer and petroleum products from them here in Alaska or we could export the raw product. Hydro is clean energy, lets build the Susitna Hydroelectric project now.

Sincerely,

Stanley Hansmd

International Union of Operating Engineers

AFFILIATED WITH AFL-CIO

LOCAL 302 AND BRANCHES A, B, C AND D

FRANK T. POLSAK, *Business Manager*

JACK J. WILSON, *President*

ROD J. FRASER, *Financial Secretary*

Branch Offices:
WENATCHEE, WASHINGTON
YAKIMA, WASHINGTON
ANCHORAGE, ALASKA
FAIRBANKS, ALASKA
JUNEAU, ALASKA

WESTERN AVE. AND CLAY ST.
SEATTLE, WASHINGTON 98121
TELEPHONE: 622-6180

February 29, 1980

Senator Sumner
Capitol Building Rm. 12[illegible]
Pouch V
Juneau, Alaska 99811

RE: Susitna Power Project
SB 294

Sir:

The International Union of Operating Engineers, Local 302 (Alaska), which presently is composed of over 4000 members, has determined that the Susitna Power Project would be in the best interests of all of the people within our State. We would like the Legislature to not only know that we support the project but we also wish all practical speed in efforts to get it under construction.

Sincerely,

Roderick J Fraser

Roderick J. Fraser
Financial Secretary
I.U.O.E., Local 302

RJF/jch
cc: Susitna Power Now, Inc.

P.O. BOX 5109
NORTH POLE, ALASKA
99705

TOP OF THE WORLD
PHONE: 488-2281
AT YOUR SERVICE

2/4/80

Senator Bill Sumner
Senate Resources Committee
Pouch V
Juneau, Alaska 99811

Dear Senator Sumner;

The City Council of North Pole voted unanimously at the March 3, 1980 Council meeting to fully support the Susitna Project.

The City Council of North Pole believes that the Susitna Project will aid greatly in alleviating the tremendous energy costs experienced by the economically depressed Interior.

It is my hope that this will reach you in time for the hearing on Senate Bill 294.

Sincerely,

Carleta Lewis, Mayor
North Pole, Alaska

CAL/pe

United States Senate

COMMITTEE ON FINANCE

WASHINGTON, D.C. 20510

March 7, 1980

Hon. Bill Sumner
Chairman
Senate Resources Committee
Alaska State Senate

Dear Mr. Chairman:

I congratulate you and your committee for your continued interest in the economic welfare of Alaska and the future of energy supplies in our state. I regret that I am not able to join you for today's hearing, but hope that this letter will serve to state my position on this issue. As you know I have long been concerned over the growing power demands in Alaska and have sought ways in which to assure adequate supplies of reasonably priced power for our future.

My support for hydroelectric power, including the Susitna project, is well known. Because of my efforts the Susitna project feasibility studies were undertaken by the Army Corps of Engineers and the project was authorized for Phase I work by the federal government. However, the development of major hydroelectric projects by the federal government has all but stopped as a result of financial and environmental constraints in recent years. For that reason I am pleased to see the state of Alaska moving ahead with this important project.

Since early on I have felt that the state should own the Susitna project. If the state owns the project it can set the power rates and the benefits of Susitna can be spread among all the citizens of Alaska. In pursuit of this goal, as Chairman of the Senate Public Works Subcommittee, I authored an amendment to the 1976 Public Works Act which combined federal support for planning and construction with state ownership. While the Alaska Power Authority has opted to begin design and engineering work through a private contractor the federal option remains.

As a member of the Senate Finance Committee I offered a Committee amendment to the Windfall Profits Tax Bill (H.R.3919) which allowed the use of tax exempt bonds for financing of hydroelectric projects such as Susitna. This is a very controversial provision, but I prevailed in the Committee and the amendment was included in the Finance

Committee bill and the Senate version of Windfall Profits. Unfortunately, in the face of strong opposition from the Treasury Department and the House Conferees this provision was deleted from the Conference Committee version of the Windfall Profits Tax Bill. However, we will not be in a position to finance construction on the Susitna project before 1983 and I intend to raise the issue of tax exempt financing for large scale hydroelectric projects again before that date. I am confident that, at the appropriate time, we can prevail and that tax exempt financing will be available to finance the Susitna project, significantly reducing the cost of power from the dam.

Finally, I would like to encourage you in your efforts to move ahead on this project. I have said many times that the project should be constructed in the most expeditious manner and I have directed my efforts here in Washington toward that goal. If state financing is the quickest way to get the project built I am in full support of these efforts. The Susitna dam represents the best alternative for the future power demands of the railbelt. Let's move ahead.

With best regards,

Sincerely yours,

Mike

Mike Gravel

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, CORPS OF ENGINEERS
P.O. BOX 7002
ANCHORAGE, ALASKA 99510

REPLY TO
ATTENTION OF:

NPAEN-LS

NOV 1978

Mr. Eric Yould
Executive Director
Alaska Power Authority
333 West 4 Avenue
Suite 31
Anchorage, Alaska 99501

Dear Mr. Yould:

Attached are budget figures required for the first twelfth effort of feasibility studies as outlined in the Susitna HydroPlan of Study. Figures are presented on a quarterly obligationule and as such, run higher than the expenditure schedule outli the Plan of Study.

This budget is based on the assumptions that:

1. Authorization for funding will be given by the State Legislature not later than 15 February 1979.

2. Funds will be provided to the Alaska District, of Engineers not later than 15 March 1979.

Sincerely,

JAY K. SOPER
Chief, Engineering

1 Incl
as

SUSITNA HYDROELECTRIC PROJECT

BUDGET FOR CALENDAR YEAR 1979

ACTIVITY CATEGORY	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	TOTAL
SURVEY	$35,000	$460,000	$490,000	$73,000	$1,058,000
HYDROLOGY	73,000	150,000	196,000	130,000	549,000
EENVIRONMENTAL	20,000	22,000	2,000	2,000	46,000
RECREATION	2,000	19,000	2,000	2,000	25,000
PLAN FORMULATION	16,000	30,000	13,000	*******	59,000
POWER STUDIES	10,000	30,000	******	*******	40,000
FOUNDATIONS & MATERIALS	200,000	921,000	1,390,000	320,000	2,831,000
DESIGN	65,000	223,000	116,000	179,000	583,000
REAL ESTATE	5,000	14,000	4,000	*******	23,000
CCULTURAL	5,000	82,000	2,000	2,000	91,000
FIELD CAMP	750,000	500,000	125,000	125,000	1,500,000
REPORTS, REVIEWS PUBLIC PARTICIPATION	5,000	14,000	4,000	******	23,000
BIOLOGICAL	10,000	262,000	649,000	223,000	1,144,000
POWER MARKET STUDIES	5,000	162,000	11,000	28,000	206,000
TOTALS	$1,201,000	$2,889,000	$3,004,000	$1,084,000	$8,178,000

8

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2140 Sorbus Way
Anchorage, AK
March 5, 1980

Senator Bill Sumner
Chairman
Resources Committee
Pouch X
Juneau, AK.

Dear Senator Sumner,

It is my understanding the Resources Committee is reviewing two bills relating to the Susitna Power Project. I support the Susitna Power Project under the State of Alaska auspices and any action taken to expedite this p.oject to ensure it's timely completion would be beneficial to all Alaskans.

Sincerely,

Rebecca Ann Gottschalk

CITY OF KENAI

"Oil Capital of Alaska"

P. O. BOX 580 KENAI, ALASKA 99611
TELEPHONE 283 - 7535

March 18, 1980

Honorable John Sackett
Alaska State Senate
Pouch V
Juneau, AK 99811

Dear Senator Sackett:

In regard to SB 294, the Susitna Project, please accept this letter as evidence of strongest support. We need a future supply of power to meet major industrial plant siting in this area, a need accepted and endorsed by our citizens.

We ask for your quickest and hopefully most favorable consideration.

Sincerely,

Vincent O'Reilly
Mayor

VOR: jw

cc: Senator Bill Sumner

55

BUMPER STICKER PROCLAIMS SUSITNA DAM SUPPORT

Bob Penney, Anchorage co-chairman of Susitna Power Now, a new group promoting the Susitna hydroelectric power project, gets a chuckle with his group's bumper sticker. At the head table are, from left, Fairbanks co-chairman Lee Wareham; Alaska Power Authority official Eric Yould; state Sen. Bill Sumner, R-Anchorage; state Sen. Jay Kerttula, D-Palmer; Anchorage Mayor George M. Sullivan; state Rep. Bill Miles, D-Anchorge, and Penney.

Alaska Power Authority Executive Foresees Susitna Electricity By 1990

By SUSAN ANDREWS
Times Staff Writer

Electricity could be produced from the proposed Susitna River hydroelectric power project by 1990, Alaska Power Authority executive director Eric Yould said here Friday.

The Army Corps of Engineers says power couldn't be on line before 1995 but Yould told a meeting here of Susitna Power Now Inc. he thinks it is "entirely possible" that the project could be constructed within 10 years.

Susitna Power Now is a group of Alaskans from Fairbanks to Homer who are urging construction of two proposed dams on the upper Susitna River. The group includes mayors and utility managers and was organized at the urging of Anchorage Mayor George Sullivan and John Spencer, chief administrative officer for Anchorage municipal utilities.

An estimated 80 boosters, including state legislators Sen. Jay Kerttula of Palmer and Sens. Bill Sumner and Brad Bradley and Reps. Bill Miles and Chat Chatterton of Anchorage, attended an organizational meeting here Friday at the Anchorage Westward-Hilton.

They elected Bob Penney of Anchorage and Lee Wareham of Fairbanks as co-chairmen. The two had been acting chairmen.

Sumner and Miles, who are chairmen of the Senate and House resources committees respectively, stated their support for funding for the Susitna project.

Sumner said this will be a fast-paced legislative session that will adjourn in late May or early June and the Susitna project "will need some fast up-front support."

Sullivan urged that a 2½-year feasibility study of the Susitna project by Acres American Engineering Co. be shortened.

"Two years is a long time to study a project that has already been studied," Sullivan said. The Susitna

Yould supported a proposal by Bob Hufman, manager of Golden Valley Electric Association at Fairbanks, that the state go ahead with surveys and right-of-way purchases for the transmission line which will link Anchorage with Fairbanks.

Sullivan pointed out that the tie-in would save money now by eliminating the need for additional back-up generation in Anchorage or Fairbanks. Excess power in either city could be made available to one another.

One hundred miles separates the end of the Fairbanks power line at Healy and the beginning of the Matanuska Electric line, Hufman pointed out. He urged that the citizens' group put pressure on the Legislature to finance construction of the 100 miles of transmission line and build it to Susitna project specifications.

He estimated construction costs at $100 million. It would cost 30 percent less to build the line to carry current electricity loads, Hufman said, but he favors building a bigger line so that if the Susitna project goes, it will be in place.

The "go or no go" decision on the Susitna project will be made a year from now, Yould said. Then another 18 months of field work will be needed to complete work on the Ferc license application.

U.S. Sen. Mike Gravel, who is pushing legislation to make Susitna project revenue bonds tax exempt, sent a message to the meeting Fri-

DEPARTMENT OF THE ARMY
ALASKA DISTRICT, CORPS OF ENGINEERS
P.O. BOX 7002
ANCHORAGE, ALASKA 99510

REPLY TO
ATTENTION OF:

NPAEN-US

28 June 1978

Mr. Eric Yould
Executive Director
Alaska Power Authority
333 West 4th - Suite 31
Anchorage, Alaska 99501

Dear Mr. Yould:

I am pleased to submit in response to your 19 January letter the final Susitna Plan of Study prepared by the Alaska District, Corps of Engineers, for the State of Alaska, under provisions of Title 3, the Intergovernmental Cooperation Act of 1968.

The report incorporates the comments developed by other State agencies, which you provided, in particular those prepared by the Department of Fish and Game. As a result, the intensity of some of the biological studies has been expanded to help identify the magnitude of the resources that will be affected by the Susitna project. The total increase is $1,886,000 for biological activities.

To offset some of this increase, activities under the categories of survey and foundation and materials have been decreased as the result of the exercise presently under way at the Watana damsite in obtaining information as requested by the President's Office of Management and Budget (OMB). To respond to OMB's review comments on the 1976 Feasibility Report, test borings and geological data are being compiled which reduced the content of several activities outlined in the September 1977 POS draft. This reduction amounted to $1,150,000 which helped hold the overall cost increase to $736,000. The total study cost is now $24.1 million. The price level index was held at September 1977.

The Plan of Study retained the 46-month period to conduct the project feasibility studies based on a 1 May start. Several months of advanced preparation will be required before initiating the activities to allow

28 June 1978

early mobilization of a camp facility and commence other contract activity actions to assure implementation at the beginning of the summer field season.

The studies will insure optimal basin and system generation planning along with a reasonably accurate cost estimate for the first phase of basin development. These studies represent approximately 25 percent of the total engineering and design effort envisioned for a two-dam complex.

The activities defined in this document have been developed to adequately address determination of project feasibility. The project feasibility analysis program does include suggestions and comments received from various agencies, both Federal and State, and I feel that the program will provide the information necessary for the State to determine desirability of proceeding into construction of a hydroelectric facility in the upper Susitna River basin.

Sincerely yours,

George R. Robertson

GEORGE R. ROBERTSON
Colonel, Corps of Engineers
District Engineer

Friends of Susitna
Hydro-electric project.

JAN 12 1980

(1) Susitna 1-b

MEETING TO CONSIDER THE ORGANIZATION

OF A

CITIZENS COMMITTEE FOR SUSITNA

Please send copy to me in June.
Kettle

PLEASE PRINT:

Name: Roger Thiel Organization: Local 190 Roofers
Address: 407 Denali St Anchorage Alaska 99503

Name: Vernon D. Christiansen Organization: City of Houston
Address: SR Box 2142A Wasilla AK 99687

Name: Jack McLean Organization: Commercial fisherman
Address: 3542 North Point DR Anchorage Alaska 99502

Name: Josephine McLean Organization: Commercial [illegible]
Address: 3542 North Point Dr, Anchorage AK [illegible]

Name: A.C. Swalling Organization: —
Address: P.O. Box 1039 Anchorage 99510

Name: J.M. Kettle Organization:
Address: Box Z, Palmer Alaska

Name: Joe J. Thomas Organization: Laborers Local 942
Address: 315 Barnett St. Fairbanks, Alaska 99701

Name: Geo W Easley Organization: [illegible]
Address: 1577 C St / Anchorage Ak 99501

Name: George M Sullivan Organization: Mayor of Anchorage
Address: Pouch 6-650 Anchorage

Name: Robert C. Johnson Organization: [illegible] Elec. Assoc.
Address: P.O. Box 456 Eagle River, 99577

Name: Frank W. Murkowski Organization: [illegible] Bank of [illegible]
Address: Fairbanks Alaska 99701

Name: Organization:
Address

Name: Organization:
Address:

Name: Organization:
Address:

Name: Organization:
Address:

PLEASE SIGN IN

MEETING TO CONSIDER THE ORGANIZATION

OF A

CITIZENS COMMITTEE FOR SUSITNA

PLEASE PRINT:

Name: [illegible] Organization: [illegible]
Address:

Name: [illegible] Freeman Organization: [illegible]
Address:

Name: [illegible] Organization: IBEW
Address: 2702 [illegible] Anchorage AK

Name: L M. Sway Organization: IBEW/NECA
Address: 5141 E 22ND ANCH 99504

Name: [illegible] Organization: [illegible] 23
Address: [illegible] Anch AK [illegible]

Name: Allen Pike Organization: Cement Masons #367
Address: 625 [illegible] 2nd Ave

Name: Ken Vaccaro Organization: Legislative Affairs Agency
Address: Pouch Y - State Capitol, Juneau 99801

Name: LEE METCALF Organization: [illegible] 367
Address: 616 W 54th Anch AK 99502

Name: [illegible] Organization: [illegible]
Address: [illegible]

Name: Malcolm Cheek Organization: MEA
Address: Palmer

Name: Tyler Jones Organization: [illegible] Chamber
Address: Box 1761 [illegible] Anchorage

Name: [illegible] Organization: [illegible]
Address: 1?? C St Washington 20510

Name: Tom Donnelly Organization:
Address: Same as above

Name: [illegible] Organization: City of Anch
Address: Pouch 6-650 - Anch 99502

Name: Geo M Sullivan Organization: Mayor[illegible] Anch
Address: 6-650 Anch AK

Ron [illegible] Mat-Su
Palmer, Alaska 99645

Harry Dougherty — Kaiser Cement - Anchorage

Bob Penney — Penco Inc — "

Wes Kennedy — for Big Chain Young

Joe J. Thomas — Laborers Local 942, FBKS, AK.

PLEASE SIGN IN

MEETING TO CONSIDER THE ORGANIZATION

OF A

CITIZENS COMMITTEE FOR SUSITNA

PLEASE PRINT:

Name: Dorothy A. Jones Organization: Mat-Su Borough Assembly
Address: Box 109, Talkeetna, AK. 99676

Name: Jess Nicholas Organization: Alaska Rural Elect Coop
Address: P.O. Box 177 Kenai

Name: C.E. Johnny Johnson Organization: City of Seward
Address: Box 337 Seward, Alaska 99664

Name: Willard H. Johnson Organization:
Address: P.O. Bx 84 Palmer AK 99645

Name: Dale D. Briggs Organization: MEA
Address: Star Rt Box 65, Eagle River AK 99577

Name: Jim Thompson Organization: HEA
Address: Bx 222 Homer 99603

Name: Phil O'Neill Organization: M.E.A.
Address: Box 6 Sutton Alaska 99674

Name: John P. Liston Organization: Building Alaska Magazine
Address: P.O. Box 1971: Anchorage, AK 99510

Name: [illegible] R. Wood Organization: ~~Fairbanks Industrial Development Corp.~~ City of Fairbanks as Mayor
Address: 619 Eleventh Avenue, Fairbanks, Alaska 99701

Name: R.L. Hufman Organization: GVEA
Address: 758 Illinois Box 1249 FBKS

Name: Lee Wareham Organization: FBKS North Star Bor
Address: SR Box 20653 Fairbanks, AK

Name: [illegible] Ward Organization: Alaska Energy Commission
Address: 106 [illegible] St., FBKS AK 99701

Name: Harold Gillam Organization: FMUS
Address: 645 5th Ave Fairbanks

Name: Roy Huhndorf Organization: Cook Inlet Region Inc
Address: 2525 'C' St. Anch AK

Name: Loren Lounsbury Organization: L.V. Lounsbury & Assoc.
Address: 723 W 6th Ave. Anchorage 99501

MEETING TO CONSIDER THE ORGANIZATION

OF A

CITIZENS COMMITTEE FOR SUSITNA

PLEASE PRINT:

Name: JACK FLINT Organization: Matanuska [illegible]
Address: 814 [illegible] BLVD Anch 99503

Name: Russ Larson Organization: Matanuska-Susitna
Address: Box 13 Palmer, Alaska 99645

Name: Charlie Parker Organization: self employed land surveyor
Address: Box 349 Soldotna, AK.

Name: Ron Birch Organization: Birch, Horton, et al
Address: 1127 W. Seventh Anchorage

Name: Elaine Wurster Organization:
Address: 640 L #407

Name: Edward JANZEN Organization: Sheet Metal #23
Address: 825 E 8th Ave Anchorage Alaska 99501

Name: [illegible] Organization: IUOE 302
Address: 2510 Arctic

Name: Roderick J Fraser Organization: IUOE Local 302
Address: 2510 Artic Blvd. Anchorage AK 99503

Name: E. W. CASPER Organization: Green Construction Co
Address: 125 W. 5th Ave Anch 99501

Name: Lawrence Sum Organization: IBEW/NECA
Address: 6223 Geronimo Circle Anch 99504

Name: I.M. WALDROP (Retired) Organization: IBEW
Address: 2702 DENALI, ANCHORAGE, AK

Name: LEE METCALF Organization: U.A. LOCAL 367 PLASTERERS
Address: 610 W. 54TH ANCH., AK. 99502

Name: Joe L. Hayes Organization: State Legis.
Address: 625 W-5th Ave – Anchorage 99501

Name: Joe Armstrong Organization: NECA.
Address: 712-W 36th Ave Anch - 99503

Name: Allan Pilto Organization: PLASTERERS & CEMENT MASONS 867
Address: 825 E 8th Ave ANCH AK 99501

MEETING TO CONSIDER THE ORGANIZATION

OF A

CITIZENS COMMITTEE FOR SUSITNA

PLEASE PRINT:

Name: Thomas Donnelly Organization: U.S. Senate Water Resources Committee (Sen. Gravel)
Address: 4204 Dirksen Senate Office Bldg Wash, D.C. 20510

Name: Tyler Jones Organization: Sen. Mike Gravel Office
Address: 701 C St Box 1 Anc. AK 99513

Name: BOB PENNEY Organization: V.P. ANCH. CH. of COMMERCE
Address: 600 E. BENSON. ANCH. 99503

Name: Wes Gregg Organization: Rep. Don Young
Address: 701 C ST Box 3 99513

Name: LEE A. WYATT Organization: MAT-SU BOROUGH
Address: BOX B PALMER ALASKA 99645

Name: Sue Tubbs Organization: Sen Kertula
Address: Box 61 PALMER 99645

Name: Kathryn Schoenall Organization: MAT-SU-BORO
Address: Box 595 WASILLA 99687

Name: Norm Levesque Organization: MAT-SU BOR.
Address: Box B PALMER 99645

Name: Donald Shira Organization: Alaska Power Admin. - DOE
Address: Box 50, Juneau, AK 99802

Name: Jim Ekstedt Organization: Mat-Sue Bor
Address: Box 105 Palmer 99645

Name: Thomas A Stobe Organization: MLCP
Address: 6967 Laser Dr Anchorage AK 99504

Name: Larry Madley Organization: Chugach Electric
Address: Box 3518 Anchorage Alaska 99501

Name: Andrew Brown [illegible] Organization: [illegible] Local 341
Address: 1634 Garfield St. Anch. AK. 99501

Name: PAUL A. DUNHAM Organization: Machinist Local 601
Address: 825 E. 8th ANCHORAGE AK 99501

Name: Kathi Bidenbaugh Organization: Senator Ted Stevens DC Office
Address: 2100 Russell Senate Office Bldg
WASH DC 20510

Jul-Susitna

STATE OF ALASKA

JAY S. HAMMOND, GOVERNOR

DEPARTMENT OF FISH AND GAME

OFFICE OF THE COMMISSIONER / SUBPORT BUILDING
JUNEAU 99801

Rcvd 4/17

April 2, 1979

The Honorable Jalmar Kerttula
Alaska State Legislature
Pouch V, State Capitol
Juneau, Alaska 99811

Dear Senator Kerttula:

Please find enclosed per your request a synopsis of available information on the Susitna River fisheries.

The Susitna River basin is an important habitat for a wide variety of fish species, both resident and anadromous. Five species of salmon (chinook, coho, chum, pink, and sockeye) utilize the Susitna River drainage for spawning and rearing. The majority of the chinook, coho, chum, and pink salmon in the Cook Inlet area are produced in this drainage. Grayling, rainbow trout, Dolly Varden, burbot, lake trout, whitefish, and sculpins are the more common resident fish species.

Although total salmon escapement estimates have not been derived for the Susitna River, it is probably the second or third largest sockeye salmon production area within Cook Inlet. Economically, the estimated average annual commercial value of the sockeye, king, pink chum, and coho Susitna salmon stocks was $8,721,780 in 1975. This average value does not include the 1975 estimated value of $3,701,745 for the additional salmon in the Susitna River Basin necessary for producing this estimated potential catch (Friese, 1975). Although figures for subsequent years are unavailable at this time, with improved stock condition, etc., it can be assumed the value of the fishery has greatly increased.

Economic values related to recreation are unavailable but are assumed to be high due to high concentration of the population adjacent to the Susitna River. Non-consumptive economic values are also unavailable.

Baseline environmental fisheries studies have been conducted by ADF&G intermittently since 1974. The projects were financed with Federal funding averaging $29,000 per year in 1974, 1975 and 1976, with an allocation of

$100,000 in 1977. The National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) first contracted with ADF&G to conduct a one-year assessment of salmon populations utilizing the Susitna River in the vicinity of the proposed Devils Canyon dam site during 1974. The objectives of these studies were to determine the adult salmon distribution, relative abundance, and migrational timing and to identify juvenile rearing areas (Barrett, 1974). Funding was received in 1975, 1976, and 1977 from USFWS to continue and expand these studies and to monitor the physical and chemical parameters associated with the mainstem Susitna (USFWS, 1976, and Riis, 1977). Additional baseline studies were not initiated during 1978 due to lack of funding.

The construction and subsequent operation of the Devils Canyon and Watana dams will result in long-term ecological changes. The two dams will inundate an estimated 50,550 acres of aquatic and terrestrial habitat of the Susitna River Basin upstream of Devils Canyon. Regulation of the mainstem river will substantially alter the natural downstream flow regimes and temperature gradients. Secondary impacts such as improved road, water, and floatplane access may create some additional problems in regulating hunter and fishermen harvest.

Our preliminary studies have concluded that the effects of impoundment and construction activities will include alteration of the natural flow regimes, water temperatures, water chemistry, and transport of materials. Habitat requirements of the critical life history phases for passage, spawning, egg incubation, and juvenile rearing of the Susitna salmon species studied are quite specific. The USFWS Cooperative Instream Flow Service Group has developed criteria which demonstrate the narrow tolerances of certain salmonid and resident species to the hydraulic parameters of velocity, depth, substrate, and temperature (Bovee, 1978). The seasonally wide fluctuations of water velocity, depth, temperature, substrate and sediment of the free flowing mainstem Susitna, its sloughs and tributaries, determine the availability and accessability of salmon habitat. Thus, any alterations to the existing Susitna aquatic ecosystem which would restrict or reduce the availability of required habitat, will also reduce fish production in the Susitna Basin and Cook Inlet estuary.

For example, it is important to note that although the Susitna River is glacial and turbid more than half of the year, the river clears during the winter months and becomes the major winter rearing area for salmonids, assuming this function from its clearwater tributaries and sloughs which freeze and dewater. Chinook and coho salmon, which are of high interest to both commercial harvesters and sport anglers in the Cook Inlet area, are dependent on these freshwater rearing areas of the Susitna for a period of one to two years before migrating to saltwater. Should construction of the dam complex take place, these important rearing areas will be lost downstream of the dams because the river will be turbid year-round and have a higher water velocity due to a reversal of the natural seasonal flow and stage conditions after construction.

I hope these comments are useful to you. I appreciate the opportunity to express the Department's views on this matter.

Sincerely,

Ronald O. Skoog
Commissioner

ALASKA POWER AUTHORITY

FEB 8 RECD

333 WEST4th - SUITE 31 - ANCHORAGE ALASKA 99501

February 6, 1979

Senator Bill Sumner
Chairman
Resources C mittee
Alaska Stat egislature

FEB 8 RECD

FEB 8 RECD

Dear Senator Sumner:

The attached letter from the Corps of Engineers, Alaska District, details the quarterly obligation schedule for Program Activities for the Susitna Project Feasibility Analysis. The Program Activities are described beginning on page 45 of the Susitna Hydropower Plan of Study. Figure 8 on page 44 reflects $6.7 million in the accumulated expenditure schedule for the first 12 months of the study. The study will be ongoing for 46 months. Since the Corps of Engineers is required to have funds available on an obligation basis before work can be contracted, the budget submitted in the attached letter and requested in the appropriation bill are for the 12 month obligation amount of $8.128 million.

Passage of SJR #6 and SB #63 by the Legislature is requested by February 15 due to the extremely tight time schedule necessary to initiate the study. The Corps of Engineers has equipment remaining in field from the 1978 study activities performed to answer questions raised by the federal Office of Management and Budget on the 1975 Interim Feasibility Report. Equipment and materials can only be moved into the Watana damsite economically by winter cat-train overland movement. This is a requirement of BLM to protect against surface impacts to land under BLM management that is considered for potential wilderness classification. If the study is not funded, the Corps of Engineers must remove all equipment and materials presently on site this winter. If the study is funded, the Power Authrity must enter into agreements with the Corps of Engineers, and complete a bond sale to finance the cost of the entire study as authorized by SJR #6. The Corps of Engineers must mobilize 2 to 3 times the present amount of equipment on site, enter into contracts for support and operations, and enter the study area by winter cat-train access while sufficient snow cover and freeze conditions still exist.

If you have any additional questions relative to the costs of the study or the necessity for swift action by the Legislature, please contact this office at 277-7641. The Power Authority will be represented at the hearings scheduled by the Resource Committee at 1:30 pm on Friday, February 9, 1979

Sincerely,

Eric P. Yould

Eric P. Yould
Executive Director

FEB 8 REVD

BUDGET FOR CALENDAR YEAR 1979

ACTIVITY CATEGORY	JAN-MAR	APR-JUN	JUL-SEP	OCT-DEC	TOTAL
SURVEY	$35,000	$460,000	$490,000	$73,000	$1,058,000
HYDROLOGY	73,000	150,000	196,000	130,000	549,000
ENVIRONMENTAL	20,000	22,000	2,000	2,000	46,000
RECREATION	2,000	19,000	2,000	2,000	25,000
PLAN FORMULATION	16,000	30,000	13,000	*******	59,000
POWER STUDIES	10,000	30,000	********	*******	40,000
FOUNDATIONS & MATERIALS	200,000	921,000	1,390,000	32[illegible],000	2,831,000
DESIGN	65,000	223,000	116,000	179,000	583,000
REAL ESTATE	5,000	14,000	4,000	*******	23,000
CULTURAL	5,000	82,000	2,000	2,000	91,000
FIELD CAMP	750,000	500,000	125,000	125,000	1,500,000
REPORTS, REVIEWS PUBLIC PARTICIPATION	5,000	14,000	4,000	*******	23,000
BIOLOGICAL	10,000	262,000	649,000	223,000	1,144,000
POWER MARKET STUDIES	5,000	162,000	11,000	28,000	206,000
TOTAL:	$1,201,000	$2,889,000	$3,004,000	$1,084,000	$8,178,000

ALASKA POWER AUTHORITY

333 WEST4th · SUITE 31 · ANCHORAGE ALASKA 99501

April 6, 1978

The Honorable John Rader
Senate President
Alaska State Legislature
Pouch V
Juneau, Alaska 99811

Dear Senator Rader:

The attached resolution is submitted to the Legislature at this time in order to urge Congress to make amendments to the Federal Hydroelectric Power Development Act with respect to the proposed Susitna Hydroelectric Project and to approve the issuance of revenue bond or note indebtedness by the Alaska Power Authority for Phase I Design and Feasibility Studies pursuant to AS 44.56.180.

As recited in the proposed joint resolution, amendments to P.L. 94-587 have been drafted by Authority representatives and representatives of Senator Gravel which would permit the financing by the Authority of the costs of the feasibility studies (known as Phase I Advanced Engineering and Design) required before the construction of the dams can go forward. Under the amendments, as drafted, an agreement would be entered into providing that the United States would reimburse the Authority for any bond or note proceeds spent to prepare the Phase I report for the project if the report is either not favorable or the Authority, within three years of the completion of the report, is unable to borrow money to pay the cost of constructing the project including the cost of preparation of the report based on the security of the project or its revenues. It is further anticipated that funds would be expended by the Authority for costs of the Phase I studies only to the extent federal dollars are paid into the Fund to guarantee reimbursement and retirement of the indebtedness if either of the two events occur.

In addition to urging Congressional passage of the above amendments, the resolution constitutes the consent of the Legislature which may be required pursuant to AS 44.56.180. That section requires "a statement outlining the general design, demonstration of financial feasibility, and maximum amount of bonds estimated to be necessary for each new project (be submitted) to the Legislature and the Commissioner of Commerce and Economic Development," together with a statement as to the means of design, acquisition and construction of the project which the

Authority intends to pursue. Under this section, the Legislature is to adopt "a joint resolution approving the general design and maximum amount of bonds."

It is not clear whether AS 44.56.180 has application to the present situation where Authority financing is to be used solely to pay Phase I design and feasibility costs, rather than construction costs of the project. Inasmuch, however, as public financing will be necessary under the proposed plan anticipated to be authorized by Congress, there must be no substantial question as to whether the legal prerequisites for such financing have been fulfilled. Therefore, bond counsel and the Authority's financial advisor have recommended specific legislative approval of the issuance of indebtedness by the Authority for the purpose of the Phase I design and feasibility costs as provided for in the attached joint resolution.

In compliance with AS 44.56.180 there is attached hereto the proposed joint resolution, with its attached Susitna Status Report, and the draft Susitna Hydropower Plan of Study which, with this letter, constitutes the requisite submission to the Legislature required by AS 44.56.180

This resolution is being forwarded pursuant to unanimous approval by the five members of the Board of Directors of the Alaska Power Authority on March 17, 1978.

Sincerely,

Eric P. Yould
Executive Director

EPY/mgf
Attachments:
as mentioned

Identical letters to
Rep. Hugh Malone
Comm. Hubbard

1. Who is against the bill- Environmental Groups
   a. They say conservation will take care of the power need. Essentially a no-growth stand.
   b. Wse our oil rather than selling it to the Outside. Gallaugher says Alaska should utilize our marketable resources to the hilt.

3. Project Status-
   a. Initial $8,000,000 appropriated for core drillings to determine dam strength. This appropriation will take the study through the fall of 80. This is the first in a total 25,000,000 necessary to complete the first stage evaluations.
   b. 1984 is the anticipated completion date of these first stage evaluations.
   c. 1990 is the expected completion date for the entire roject.

4.Contacts to make- Susitna Power Now Inc.
   a. Bob Penney-Penney Mobile Home Sales of Anchorage-277-2522
   b. Lee Wareham-Alascom in Fairbanks (H)452-8505 (o)452-1756

Not a complete Copy - Some Pages are Missing

EXECUTIVE SUMMARY

This plan of study (POS) prepared by the Alaska District Corps of Engineers for the State of Alaska presents a program of activities for project feasibility analysis of hydropower development in the Upper Susitna River Basin. It provides a description of each activity along with a cost estimate for its completion. The POS fulfills a Federal planning requirement while also providing the State of Alaska an overview of the planning activities associated with a large scale water resource project. The authority for proceeding with this joint State-Federal planning program is contained in Section 203 of the Water Resources Development Act of 1976 enacted by the 94th Congress. Funding for preparation of the POS was provided by the State of Alaska on 30 June 1977.

Existing electrical generation within the study area is produced almost exclusively by fossil fuel thermal resources. However, as these resources become more scarce, and perhaps very expensive, and as the energy demand increases to a projected 15 billion kilowatt hours by the year 2000, the advantage of non-cost-inflating, renewable energy, such as hydropower, becomes apparent. A feasibility report completed by the Corps of Engineers in 1976 outlined a number of alternative plans for developing the hydropower potential of the Upper Susitna Basin and identified the most economical plan, consisting of a system of two dams--a 635-foot-high concrete thin arch dam at Devil Canyon and an 810-foot-high earthfill dam at Watana, with 365 miles of transmission line. This system is capable of developing 6.1 billion kilowatt hours of firm annual energy, roughly triple the energy consumed in Anchorage and Fairbanks in 1974. While the 1976 feasibility report provided sufficient data to support the need and economic feasibility of a plan to develop the hydroelectric potential of the Upper Susitna Basin, it was recognized that additional field data and more detailed studies would be required. The POS outlines the additional studies required to determine the most cost-effective plan, and its environmental impacts.

The activities outlined in the POS have a total estimated cost of $24.1 million over a time frame of 46 months. The schedule is based on early notification of program initiation and timely receipt of study funds to allow mobilization for field explorations prior to

the summer season and arrangements for access to the sites. A critical path method network (CPM) shows the interrelationship of some 202 activities and indicates those activities and timing most critical for completion of the project feasibility analysis. Early acquisition of field data about foundation conditions, stream flows, and topographic surveys during the short summer months is very important.

Study management of physical and fiscal progress must be rigorously maintained throughout the 46-month period. Periodic progress reports and a report of expenditures would be provided the State of Alaska for their information and review. The project feasibility analysis activities have been programmed through three progressive steps: (1) preliminary screening, (2) detailed feasibility studies, and (3) detailed design studies for Watana, access road, and transmission system.

1) Preliminary Screening: In step 1 of the study, a number of potential damsites and combinations of different dams and heights would be evaluated to identify the most economical and environmentally acceptable plan based on a preliminary calculation of benefits and costs. During this study phase, the best plan identified in the 1976 feasibility report, Watana constructed initially followed by construction of Devil Canyon, would be reexamined. This first step is estimated to cost $4.3 million and be completed in 7 months. In order to meet the overall study schedule of 46 months, field work needed in later phases of the study has been scheduled concurrently with the preliminary study phase and these costs are included in the subtotal of $4.3 million. Results of the preliminary phase will provide the first important decision point as to whether the study should continue into the second step of detailed feasibility studies.

2) Detailed Feasibility Studies: Detailed studies would be concentrated on the best plan identified in the preliminary screening. Costs and benefits would be refined using more accurate data obtained from ongoing field work. This second step is estimated to cost $16.7 million and be completed in 25 months after completion of the initial step. As indicated above, additional field work would continue during this phase of the study and these costs have been included in the subtotal of $16.7 million. Also included are concurrent activities required for detailed design studies. Completion of the detailed feasibility report will provide a firm basis for recommending for or against construction of the project, whether Federally funded, State supported under Section 203, or totally financed by the State of Alaska.

Detailed Design Studies: Assuming a favorable showing of feasibility in step 2, the last step would be detailed design of any dams, powerhouses, access roads, and some 365 miles of double circuit transmission lines and substations to deliver power to the Anchorage and Fairbanks

load centers. A detailed and accurate cost estimate for construction of the initial element in a dam system will be provided to enable a decision on funding and initiation of construction. The third step is estimated to cost $3.1 million and be completed in an additional time frame of 14 months after completion of step 2.

The above estimates of cost and time for completion of the three steps are based on the findings and recommendations contained in the 1976 feasibility report, and envision a continuation of that planning study leading to the ultimate construction of the project.

At the end of any of the three program steps, Susitna hydroelectric development could be determined to lack economic or environmental justification. Such a conclusion would result in the termination of the planning program and in Federal assumption of responsibility for expended funds. Otherwise, the study costs would be borne by the State of Alaska. Assuming a favorable recommendation, detailed plans and specifications for the first construction contract could be undertaken immediately thereafter.

PURPOSE

The function of the plan of study is to delineate the engineering, economic, social, and environmental studies associated with planning for the Upper Susitna River Basin hydroelectric project, as a prelude to State participation under Section 203 of the 1976 Water Resources Development Act. The study will provide a description of activities to be performed, an estimate of cost and time for accomplishment of these activities, an indication of the activity interdependence, and a schedule of program activities that can serve as a management tool during the study effort. Should the State of Alaska desire to work toward development of the Upper Susitna Basin outside the provisions of the 1976 Water Resource Development Act, the plan of study will serve as a guide in assessing other proposals for analyzing the economic feasibility and environmental impact of the project.

AUTHORITY

The Corps of Engineers is participating in accordance with a Memorandum of Understanding, dated 30 June 1977, between the United States of America and the State of Alaska for preparation of a "Study Outline, Susitna Project." The memorandum directs that,

> "The Secretary of the Army, acting through the District Engineer, Alaska, shall prepare a study outline for the Susitna Project for the purpose of detailing the Scope of Work required to provide engineering, environmental, economical, and social information relating to the subject project under the provisions of Title 3, Public Law 90-577, 16 October 1968, the Intergovernmental Cooperation Act of 1968."

Studies considered in the Plan of Study were authorized by Public Law 94-587, entitled "Water Resources Development Act of 1976" enacted by the 94th Congress on 22 October 1976.

The authorizing legislation provided for two options for the conduct of Phase I studies. Section 160 states that,

> "The Secretary of the Army, acting through the Chief of Engineers, is authorized to undertake the Phase I design memorandum stage of advanced engineering and design of the project for hydroelectric power on the Susitna River, Alaska, in accordance with the recommendations of the Board of Engineers for Rivers and Harbors in its report dated June 24, 1976, at an estimated cost $25,000,000. This shall take effect upon submittal to the Secretary of the Army by the Chief of Engineers and notification to Congress of the approval of the Chief of Engineers."

The possibility for State of Alaska funding of Phase I studies is provided for by Section 203(e) which states,

> "The Secretary is authorized to make expenditures from the [Alaska Hydroelectric Development Fund] for the Phase I design memorandum stage of advanced engineering

and design for any project in Alaska that meets the requirements of Subsection (a)(2) of this Section, if appropriate non-Federal public authorities, approved by the Secretary, agree with the Secretary, in writing, to repay the Secretary for all the separable and joint costs of preparing such design memorandum, if such report is favorable. Following the completion of the Phase I design memorandum stage of advanced engineering and design under this subsection, the Secretary shall not transmit any favorable report to Congress prior to being repaid in full by the appropriate non-Federal public authorities for the costs incurred during such Phase I. The Secretary is also authorized to make expenditures from non-Federal funds deposited in the fund as an advance against construction costs."

Funds were provided for preparation of the Plan of Study by the State of Alaska on 30 June 1977.

PROBLEMS & NEEDS

Most of the present commercial electrical power in the Southcentral Railbelt area is derived from fossil fuel thermal and turbine generation. The Anchorage-Cook Inlet area had a total installed capacity of 504.8 megawatts (MW) in 1976. Natural gas fired turbines were the predominant energy source with 434.9 MW of installed capacity. Hydroelectric capacity of 45 MW was available from the Eklutna and Cooper Lakes projects. Steam turbines comprised 14.5 MW of capacity, and diesel generation, mostly in standby service, accounted for the remaining 10 4 MW.

The Fairbanks-Tanana Valley area commercial utilities had a total installed capacity of 222.2 MW in 1976. Oil-fired gas turbine generation provided the largest block of power with a capacity of 136.6 MW. Steam turbines provided 53.5 MW of power and diesel generators contributed 32.1 MW.

Recent electrical power growth rates have been in the neighborhood of 14 percent annually, and although these rates are projected to decline to 7 percent beyond 1980, the year 2000 Railbelt power requirements are estimated to be 15 million megawatt-hours energy and 3,170 megawatts peaking capacity.

Estimated Railbelt Area Power Requirements

	1976	1980	1990	2000
Capacity (MW)	569	870	1,670	3,170
Energy (GWH)	2,550	3,980	7,620	15,000

While increased power capability is the need which precipitated the 1972 U.S. Senate Committee on Public Works resolution which authorized the Corps of Engineers feasibility study, other problems and needs have also been identified. These include the need to preserve natural areas, to conserve or enhance fish and wildlife resources, to respond to problems of flood damage and air pollution, to expand recreation opportunities, and to conserve fossil fuels.

It would be presumptuous to assume that any single water resources plan could satisfy all the water-related needs of a region. Even if the plan could respond to the full range of water-related problems, there are often economic, social, and ot[illegible] that must be recognized. It is therefore necessary to sele[illegible] limited set of compatible needs to which the water resources p[illegible] espond. In other words, the extent to which desirable func[illegible] of a multipurpose project could be developed is highly dependent upon which various purposes are compatible.

Needs which the project development could help satisfy, but which may be contrary to the objective of power development, include the improvement of small boat and deep draft navigation conditions, augmentation of municipal water supplies, and development of an extensive irrigation system. The plans for power development are also relatively unresponsive to the desire for preservation of what could be termed the "Alaskan way of life," including prevention of further population growth, prevention of additional industrialization, and curtailment of urban expansion.

PROJECT DESCRIPTION

The plan of development recommended by the Corps of Engineers in 1976 consists of two dams and related reservoirs and powerplants to be constructed on the Upper Susitna River with transmission facilities to provide power to the Anchorage and Fairbanks load centers.

Watana and Devil Canyon were the two projects recommended in 1976. These two projects could produce 6.1 billion kilowatt hours (kWh) firm annual energy, 800 million kWh average annual secondary energy, and 1,392,000 kilowatts of dependable capacity based on a 50 percent system load factor. Watana, the first project to be built under this plan of development, would consist of an 810-foot-high earthfill structure located at river mile 165. The reservoir would extend 54 miles upstream and have a surface area of 43,000 acres. The total storage capacity would be 9,624,000 acre-feet after 50 years of sediment inflow. The useable storage capacity would be 6,100,000 acre-feet. Devil Canyon, 32 miles downstream of Watana, would be a concrete thin-arch dam with a maximum structural height of 635 feet. Construction of the Devil Canyon project after completion of Watana would be phased to meet the projected electrical energy demands of the Railbelt area. The Devil Canyon reservoir would inundate 7,550 acres and 28 miles of natural river, and would provide 1,050,000 acre-feet of storage capacity. Intake structures would be situated to allow a maximum power pool drawdown of 175 feet, but when operated in conjunction with the upstream Watana reservoir, Devil Canyon annual drawdown would normally be less than 5 feet.

The transmission line would be approximately 365 miles in length consisting of double towers, each carrying a single conductor three-phase circuit. About 25 percent of the energy would be provided to the Fairbanks load centers, with 75 percent being utilized in the Anchorage area. A basin map shows the location of the two dams (Figures 1 and 2). Detailed layouts of Devil Canyon and Watana are shown on Figures 3 and 4.

FIGURE 1. ERTS satellite photograph of the Upper Susitna River with the general location of the Devil Canyon and Watana Projects shown in the circles. Devil Canyon project, on the left, is roughly 65 miles upstream from Talkeetna, and Watana is 32 miles above Devil Canyon. Shown in the upper right corner of the photo are the glaciers of the Alaska Range, which provide much of the flow for Susitna River.

ENVIRONMENTAL SETTING

TOPOGRAPHY

The Upper Susitna River Basin contains several topographic features which provide a conglomerate stream flow heavily influenced by specific meteorological events. The basin was shaped by volcanism, diastrophism, glacial erosion, and marine deposition. The basin, as shown in Figure 1, is a fan-shaped area comprising about 6,160 square miles and is bordered by the Alaska Range to the north, the Talkeetna Mountains to the southeast, and flat, low-relief areas to the southwest.

Most of the basin has a well-defined branching stream pattern with a main channel emanating from glacial headwaters in the extreme northern segment of the divide. Below the glaciers, the braided stream traverses a high plateau composed of aggraded alluvial sediment, and then meanders several miles south to the confluence with the Oshetna River. It then takes a sharp turn to the west and flows through a steeply cut, degrading channel until it exits the basin at Gold Creek. The contributing glacial area comprises only 4 percent of the entire basin, but summer glacial melt provides a considerable portion of the total streamflow. By contrast, the flat, glacially carved Lake Louise area in the southeastern portion of the basin provides comparatively little flow from its 700-square-mile area.

The mountains within the basin reflect the influence of the Pleistocene Ice Age, during which glacial advancement over the topography planed the mountains and gave the basin surface a rounded and smoothed appearance. The highest elevation within the basin is 13,326 feet, and the lowest elevation is 740 feet. The basin relief implies a steep channel slope; however, variability of the slope compared to other mountain streams is somewhat reversed. The aggraded channel in the upper reaches of the basin has channel slopes in the range of only 4 to 7 feet per mile, while the lower basin channel drops as much as 37 feet per mile.

Main tributaries to the Susitna River have an even higher range of channel slopes. The deeply incised river channel below the Tyone River contrasts with the many traditional Alaskan U-shaped valleys, remnants

of glacial advances. The absence of broad flood plains in the lower basin results in high stages during high runoff due to confined flow areas. The Susitna River alluvium has developed into a continuous effluent aquifer. Most of the tributary aquifers do not sustain winter flow.

CLIMATE

The climate of the Upper Susitna Basin is characterized by cold dry winters and warm but moderately moist summers. The yearly precipitation distribution shows that 64 percent of precipitation occurs from June through October. Within the Railbelt area, the climate falls into three categories: (1) a zone dominated almost entirely by maritime influences, (2) a zone of transition from maritime to continental climatic influences, and (3) a zone dominated by continental climatic conditions. The Upper Susitna Basin falls within the transitional zone. The contrast between the maritime-influenced areas of the southern Kenai Peninsula and the continental conditions at Fairbanks is marked. Within the confines of the Upper Susitna Basin, away from the moderating influence of maritime air, there are greater temperature extremes than on the coast of the Gulf of Alaska. Extreme winter temperatures are caused by polar air masses which flow in from the north.

Mean annual precipitation in lower elevations of the basin would be expected to range between 18 and 22 inches, while precipitation in higher elevations, because of orographic effects, would be expected to reach 80 inches per year. Mean annual snowfall would range from 60 inches in the lowlands to as much as 400 inches in the high mountains. Freezeup in the highest reaches of the Susitna River starts in early October, and by the end of November the lower regions of the river are icebound. The river breakup begins in early May, and within two weeks of breakup the river tributaries are free of surface ice.

BASIN STREAMFLOW

The annual streamflow patterns of the Upper Susitna River and most of its tributary streams are best described as providing perennial flow. The main tributaries of the Susitna River consist of the East and West Fork Susitna Rivers which originate in the northern section of the drainage basin, the Maclaren River which originates in the northeastern portion of the basin, and the Tyone River which emanates from the southern reaches of the basin.

The flow regime of the Susitna River is seasonal, with more than half of the yearly streamflow occurring from May through September Summer streamflow consists mainly of snow and glacial melt combined with surface runoff from rainfall. Winter flows are restricted almost entirely to groundwater inflow. Primary water sources for the Maclaren and East and West Fork Susitna Rivers are the numerous glaciers which rim the northern basin divide in the Alaska Range.

The Tyone River contribution is mostly reservoir outflow from the multitude of lakes located within its subbasin. Winter flows begin in early November and are composed of baseflow from subsurface storage. When breakup nears in March and April, subsurface storage is depleted to the extent that many small tributaries cease flowing, and the Susitna River flow shrinks to its seasonal minimum. Following breakup, flows increase rapidly with the onset of spring snowmelt. As summer temperatures increase, glacial flow accentuated by rainfall runoff becomes the predominant river source. The cycle repeats itself with winter freezeup.

The variability of streamflow within the basin is extreme. The following table represents average annual streamflow conditions for portions of the basin above the Gold Creek gaging station.

Flow Variations in Upper Susitna River Basin

Gaging Station	Drainage Area (Sq Mi)	Percent of Gold Creek Drainage Area	Percent of Gold Creek Streamflow
Maclaren River near Paxson	280	4.5	10.0
Susitna River near Denali	950	15.4	27.6
Susitna River near Cantwell	4,140	67.2	64.8
Susitna River at Gold Creek	6,160	100.0	100.0

Nearly 38 percent of the Gold Creek streamflow originates from 20 percent of the area. This large percentage of streamflow is contributed by glaciers in the upper portion of the basin and by high precipitation runoff rates which result from impervious glaciers. In addition, it is suspected that the mountains form a geographic constraint, which causes excessive precipitation in this area in relation to the remainder of the basin.

By contrast, the Cantwell gaging station shows a r off rate not consistent with that which could be expected below the glaciers, indicating that below the Paxson and Denali stations a large area contributes little annual streamflow. This large, low contributing area is believed to be the flat, 700-square-mile Lake Louise area. Below the Cantwell station, flow percentages increase slightly to a more nearly normal area-discharge relationship for the basin.

GEOLOGY

The geology of the Upper Susitna River Region reflects the complex processes which make up its geologic history. It has undergone subsidence, marine deposition, volcanic intrusion, mountain building, glacial planing, and erosion. In the upper reaches of the river, the valley floor is composed of reworked glacial moraine and lakebed deposits, which are thought to be approximately 200 feet thick. Materials range in size from silt to boulders. Adjacent mountains are composed of metavolcanics and metasediments (lava flows and sediments which have been changed by heat and pressure), and the bedrock beneath the valley floor is also assumed to be a complex of rocks altered from preexisting rock by pressure, heat, and changes in the chemical environment. In the midsection of the Upper Susitna, massive intrusions of granitic rock have warped and uplifted the region. Subsequent vigorous earth movement resulted in the building of the Talkeetna Mountains. Throughout this area the metavolcanics and metasediments are warped and twisted; medium-grained granite intrusives are exposed intermittently along the valley walls. At the lower end of the drainage, glacial action is evidenced by the absence of overburden materials at higher elevations and the scouring and planing of the underlying bedrock.

REGIONAL TECTONICS

Tectonics deals with rock structures and external forms resulting from large movements or deformation of the earth's crust. Two major earth tectonic features bracket the Upper Susitna Region. The Denali Fault, active during Holocene (Recent) time, is one of the earth's major fractures. It lies approximately 43 miles north of the proposed Devil Canyon damsite. A second arcuate fracture, the Castle Mountain Fault, lies some 75 miles to the south of the river basin. Bisecting the region in a northeast-southwest direction and truncated by the Denali

Fault, the Susitna Fault lies approximately 2.5 miles west of the proposed Watana Dam. Large, prominent lineaments pass through the region trending northeast-southwest, and the river valley is controlled by many of these features.

SEISMOLOGY

Since it is located in an area of major faults, it is to be expected that the Upper Susitna Basin would lie in a zone of major seismic activity. During the period of record, through the end of 1970, 262 earthquakes had been recorded within a radius of 150 miles of the proposed Devil Canyon site (Kachadoorian 1974). Of these, 229 had a magnitude on the Richter scale of less than 5.3, while 20 were between 5.3 and 7.0, eleven were between 7.0 and 7.75, and two were greater than 7.75. An evaluation of the potential exposure of the Upper Susitna damsites to seismic activity was made by the Bureau of Reclamation. In view of the recent advances in seismic technology, faults capable of influencing major design features will be reevaluated for their potential Maximum Credible Earthquake.

VEGETATION

Most of the Upper Susitna River Basin is classified as moist or alpine tundra although the area adjacent to the main river channel below the Maclaren River is classified as either upland or lowland spruce-hardwood forest. Major timber species of the canyon slopes and surrounding benchlands are birch, balsam poplar, black cottonwood, white spruce, and black spruce. Overall, timber is of poor quality, varying widely in size, but mostly small and of little or no commercial value. Two distinctly different plant communities occupy portions of the alternate transmission corridors. Bottomland spruce-poplar is confined to the broad flood plains, river terraces, and warm slopes of major rivers. Throughout the lowlands, another distinct vegetation type is low brush-bog/muskeg. Common plants include tamarack, black spruce, alder, willow, and various berries.

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FISH AND WILDLIFE

Both resident and anadromous fish inhabit the Susitna Basin. Salmon are known to spawn in many of the sloughs and tributaries of the Susitna River below Devil Canyon; however, surveys indicate that salmon may be unable to ascend the turbulent Devil Canyon and thus may be prevented from migrating into the Upper Susitna River Basin. Grayling, rainbow trout, lake trout, Dolly Varden, whitefish, and burbot comprise the principal resident fish populations.

Mammals and birds found in the Upper Susitna Basin are representative of wildlife species common to interior Alaska. Important game species consist of moose, caribou, and Dall sheep. Wolves, wolverine, bear, and smaller fur bearers inhabit the basin. Birds are predominantly seasonal, and include waterfowl, raptors, and passerine species. The peregrine falcon is the only rare or endangered species presently known to frequent or inhabit the basin.

PUBLIC INVOLVEMENT AND COORDINATION

The objective of public participation is to further involve the public in the project feasibility study, in order to insure that the study responds to public views and preferences to the maximum extent possible. As used here. the term "public" includes other Federal, State, and local government entities and officials; public and private organizations; and individuals interested or potentially interested in the Susitna project.

SUMMARY OF PREVIOUS PUBLIC INVOLVEMENT

In conjunction with the 1976 Corps of Engineers feasibility study, numerous comments were received at public meetings and from written statements on the report findings and reccommendations. Over 65 agencies, organizations, and individuals have provided written comments or oral testimony. In general, comments focused on the need for additional studies before a final decision on construction of a project of such magnitude. The Chief of Engineers has responded to all comments received during review of his draft report and companion Environmental Impact Statement and agreed that additional studies are required before a recommendation can be made for construction. The activities outlined in this plan of study reflect public comments and concerns expressed on the 1976 feasibility report.

Comments of Governor Jay Hammond expressed in his letter of November 17, 1976, to the Chief of Engineers are quoted as follows:

> "I concur in the recommendation by the Board of Engineers report that further study effort is needed for a project of this magnitude. I agree that additional detailed studies, including those addressed by my task force, will be required to determine the significant impacts associated with the magnitude and complexity of the project. Our task force recommendations will be supplied to the District Engineer.

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"The information obtained from the District Engineer concerning studies proposed in the next stage coincides well with the environmental, socio-economic and technical studies identified by the State Task Force during review of the Draft Environmental Impact Statement. As these detailed studies are addressed, coordination should be maintained with the State's designee to assure that assessments are answering those points raised in the task force report and to insure that the information developed will be adequate on which to base future State recommendations."

INTERAGENCY COORDINATION

Coordination will be carried out on a continuing basis with Federal, State, and local agencies having interest in the study. Should the planning for Susitna hydropower proceed in the joint State-Federal mode, an extremely close working relationship is envisioned between the Corps of Engineers and the State of Alaska. To ease the coordination problems inherent in a planning program of this magnitude, a single point of contact would be established for the State and a single point for the Corps of Engineers. These would be the Alaska Power Authority on the one hand, and the Alaska District on the other. This State agency would coordinate State reviews of study progress, and formulate feedback into a consolidated State position. The Alaska District would be responsible for and would coordinate all study activities, thus serving as the point of interface between the State and those engaged in accomplishing the project feasibility analysis. Included in this group would be various Corps of Engineers elements, other Federal agencies, private consultants, and State agencies, such as the Department of Fish and Game, that will provide special technical services.

In addition to the ongoing coordination with agencies at all levels of government, there will be an opportunity for formal review and comment after distribution of the draft Project Feasibility Analysis Report and accompanying draft supplemental Environmental Impact Statement. The substance of all comments received will be incorporated in the final report and impact statement supplement.

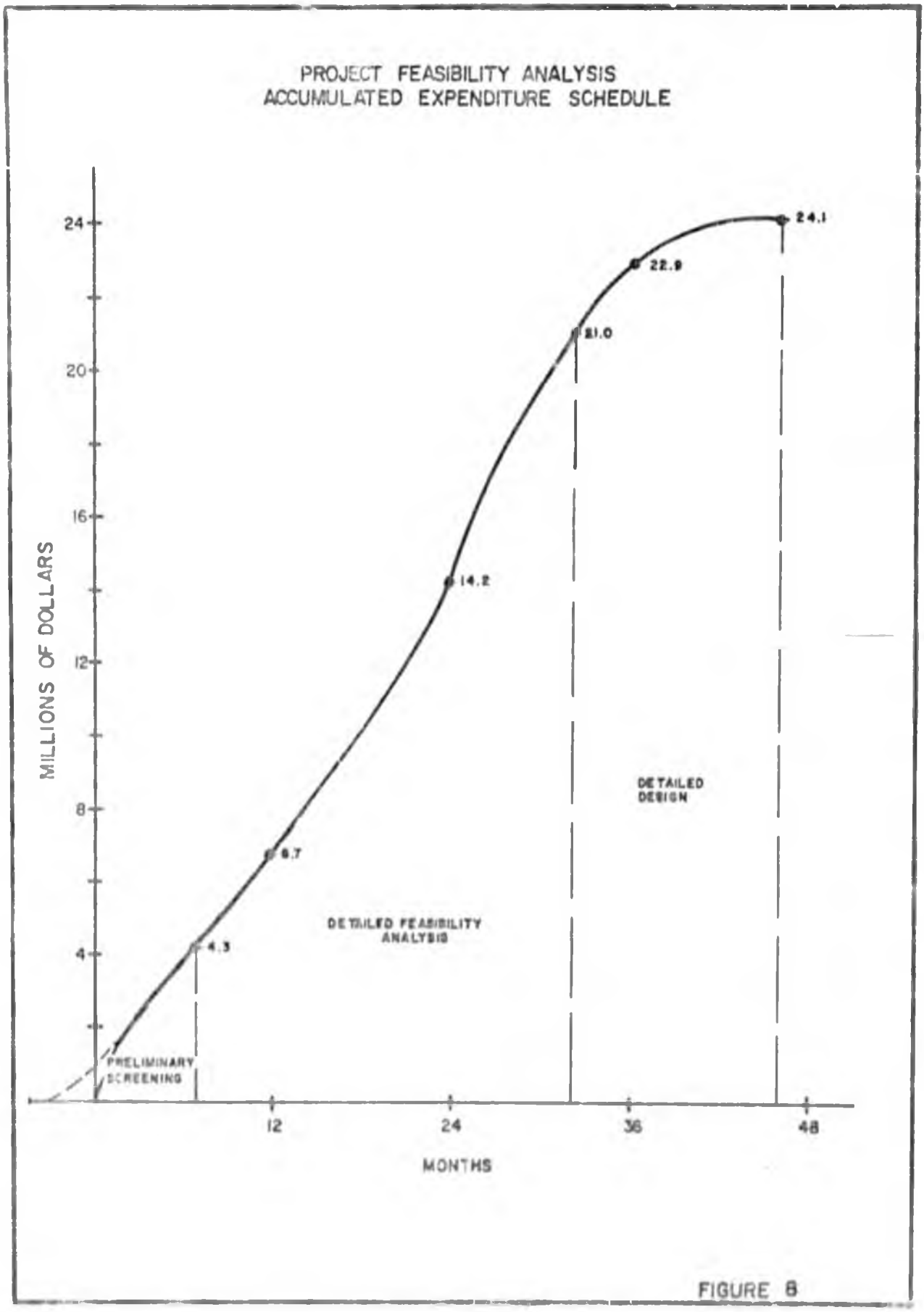

PROJECT FEASIBILITY ANALYSIS
ACCUMULATED EXPENDITURE SCHEDULE
MILLIONS OF DOLLARS
24
20
16
12
8
4
24.1
22.9
21.0
14.2
6.7
4.3
PRELIMINARY SCREENING
DETAILED FEASIBILITY ANALYSIS
DETAILED DESIGN
12
24
36
48
MONTHS

FIGURE 8

DESCRIPTION OF PROGRAM ACTIVITIES

This section contains descriptive summaries and cost estimates for each of some 201 separate activities grouped into 14 major categories. These activities and costs include all items required for the preliminary screening, for the detailed feasibility studies, and for the detailed design activities associated with the initial dam and powerhouse along with transmission lines and access road. A listing of the major categories and cost subtotals follows:

CATEGORY	ACTIVITIES	ESTIMATED COST (in $1000)
Survey	SY-1 thru SY-7	$ 1,130
Hydrology	HY-1 thru HY-27	1,295
Environmental Water Quality	EN-1 thru EN-4	330
Economic Studies	EC-1 thru EC-7	84
Recreation	R-1 thru R-4	56
Plan Formulation	PF-1 thru PF-15	124
Power Studies	PS-1 thru PS-4	198
Power Market Studies	PM-1 thru PM-13	547
Foundations and Materials	FM-1 thru FM-26	9,770
Design	D-1 thru D-39	4,001
Real Estate	RE-1 thru RE-5	59
Cultural Resources	C-1 thru C-2	110
Field Camp	FC-1 thru FC-2	1,625
Biological Studies	B-1 thru B-21	4,263
Reports, Reviews, and Public Participation	RRP-1 thru RRP-26	450
TOTAL COST		$24,092

Per Cheryl 2/24/80 From Anchorage Hearings

SB 294 suggestions:

William Wood, Mayor, City of Fairbanks

add to purpose of project that it include other communities as well as the "entire railbelt area"

Vince O'Reilly, Mayor City of Kenai

other financing options should be added such as it shall be financed by any other appropriate source either private or government

Dave Hutchens

page 2, section (5) ~~OR~~ add to the information that the legislature should provide should include the interim recommendation of the Akers-American feasability study

MIKE GRAVEL
ALASKA

United States Senate

WASHINGTON, D.C. 20510

May 25, 1977

Honorable Jalmar M. Kerttula
Alaska Senate
Pouch V
Juneau, Alaska 99811

Dear Jay,

Most of Alaska's electric power is generated by fossil fuels. As a result of the growing scarcity of our non-renewable energy sources the cost of electricity in Alaska will continue to increase. If we hope to sustain economic growth while maintaining our environment we must look to renewable sources for the generation of electricity.

I have enclosed for your information an update on the hydroelectric development of the Susitna River. This project is capable of supplying a significant portion of our electric needs at low rates. I feel that this project is very important for the future of Alaska and hope that we can all work together to bring low cost electricity to our state.

If you have any questions about the project or would like to comment on any aspect of the development please feel free to contact me.

Sincerely,

Mike

Mike Gravel

United States Senate

COMMITTEE ON FINANCE
WASHINGTON, D.C. 20510

May 27, 1977

I believe you have already received a letter intended to accompany my recent update on the Susitna Power Project.

The Report itself was inadvertantly omitted, and it is enclosed here. Please accept my apologies.

Sincerely,

Mike Gravel

THE SUSITNA POWER PROJECT

A Report to Alaskans

by

Senator Mike Gravel

Chairman, Water Resources Subcommittee
Committee on Environment and Public Works

May 23, 1977

INTRODUCTION

The Susitna Power Project holds the promise of plenty even in the midst of plenty for the state of Alaska.

Even as the state reaps the revenues of its North Slope oil, citizens of Alaska can be enjoying an energy supply which, unlike petroleum, will be environmentally clean, increasingly cheap as the years go by, and virtually inexhaustible. While we export oil to the Lower 48, we can ourselves take advantage of one of Alaska's great renewable resources: water power.

The project, which involves the construction of two large dams on the Susitna River, about halfway between Anchorage and Fairbanks, can supply more than 60 per cent of the power needs projected for the railbelt area by 1990. As proposed, it will involve a new method of financing which can bring about construction in record time -- a feat which saves money in interest costs -- while having more financial, engineering and environmental safeguards than other dam projects.

The dams can belong to the state rather than the federal government. And through price equalization, they can help bring what will be some of the hemisphere's lowest-cost electricity not only to the railbelt area (now with 75 per cent of the state's population), but throughout all of Alaska.

BACKGROUND

Alaska's water resource is truly vast. One third of the freshwater runoff of the entire nation is found in Alaska. The Yukon River is North America's third largest. More than half the hydropower potential remaining in America is in our state.

Studies have been conducted over the last 25 years to identify viable hydropower sites in the state, especially in the relatively populous railbelt area, which encompasses the communities on the Fairbanks-Anchorage-Seward rail line.

The Bureau of Reclamation first brought attention to the possibilities of the Susitna in a 1953 report. Another Bureau study was released in 1961, recommending the construction of a dam on the Susitna at Devil Canyon. This recommendation was not pursued, and two events intervened to delay further consideration of a Susitna hydroelectric project.

The first was the abortive Rampart Dam proposal. Sen. Ernest Gruening, who held the same position I now hold on the Public Works Committee, proposed, with the Army Corps of Engineers,

a huge dam at the Yukon's Rampart Canyon 100 miles northwest of Fairbanks. A heated national debate arose over the environmental liabilities of the Rampart proposal, and a subsequent cost/benefit analysis showed the project to be economically undesirable.

The Rampart proposal was dismissed just as a second water crisis arose: the 1967 flood at Fairbanks. For the next several years, the need for flood control drew attention away from the question of hydroelectric development in the state.

In 1972, however, the Senate Public Works Committee ordered the Corps of Engineers to renew the study of power options, including hydroelectric potential, for the railbelt. By the time I became chairman of the Water Resources Subcommittee in 1973, the Corps was reporting that preliminary data pointed to the Susitna at the Devil Canyon site. Its location, its high power potential, the stabilizing effect it could have on the energy systems of the railbelt area and the fact that it would reduce the need for new fossil fuel plants in Alaska: all these factors were in its favor. I acquired accelerated funding for the study, and last year the Corps finalized its recommendation.

The Corps suggested to the Congress a $1.5 billion project composed of a 635-foot concrete dam at Devil Canyon, 14.5 miles east of the Alaska Railroad at Gold Creek, with four 194-megawatt generating units; and an 810-foot earthfill dam at the Watana site, 31 miles upstream from Devil Canyon, with three 264-megawatt units.

The Watana Dam would be built first. Together the dams would generate an average 6.91 billion kilowatt hours per year. According to the Corps, demand for electricity in the railbelt area, presently about 2 billion kilowatt hours annually, will reach 5.5 billion by 1980 and 15 billion by 2000.

Watana would be on line in 1986, Devil Canyon in 1990. They would comprise the largest project in Corps history -- in fact, the largest hydroelectric development in North America.

FINANCING -- THE OLD WAY

At first glance, the prospects for a dam project on the Susitna would seem very bright.

The site is particularly well-suited to hydroelectric development. Environmentalists had cited it during the Rampart

controversy as a preferable alternative because it would do relatively little harm to fish and wildlife habitat. And as chairman of the Senate subcommittee, I was in a position to support the project.

But in my committee work, I had learned that the prospects were in fact not bright for any hydroelectric project, no matter how promising the project might be. Furthermore, the prospects were declining year by year.

The traditional method of financing a federal hydroelectric project is through Congress's dual procedure of authorization (basically, permission to act) and appropriation (making money available for the action). These two distinct functions must be completed for each step in the making of the dam.

The initial surveys, a plan of study for Phase I, Phase I itself (involving advanced engineering and design, a final environmental impact statement and cost/benefit economic analysis), and the actual construction: all of these, must be separately authorized, and money than appropriated. Furthermore, although authorization is needed only once for each phase of the project, the money is appropriated only as needed on a yearly basis. This means that, during the long planning and conceptual phase, Phase I, and during the construction phase, appropriations must be made again and again, year after year, for a single project.

All of this is time-consuming in itself. But more than that, the appropriations process is a political, and hence a relatively capricious, one. It is subject to all the winds of the American political process, including the popularity or unpopularity of dams and federal projects in general. These funds must compete with all other appropriations.

Engineers may know the right amount of money to request year by year in order to complete a project on an optimun schedule. But members of Congress like to think of themselves as hard-nosed on the subject of federal spending, and members of appropriations committees are often likely to trim the requests that come before them.

The result of this process is predictable. In the case of federal water projects they are never finished on schedule. They drag on, sometimes for several decades, and costs go up.

A few examples are instructive:

The Harry S. Truman Dam and Reservoir in Missouri is a multi-purpose project which was authorized in 1954. Construction money was first appropriated in 1965. Total project cost at that time was estimated to be $129.5 million, and completion was scheduled for 1971. Now, in fiscal year 1977, the cost estimate has climbed 219 per cent to $413 million. The project is 51 per cent done, and is scheduled for completion in December 1980, 26 years from original authorization.

The Tennessee-Tombigbee waterway in Alabama and Mississippi will provide a connecting waterway system considered to be national in scope. It was authorized in 1946 at an estimated $120 million. Construction funds were first appropriated in 1971. The estimated total cost at that time was $361.3 million. The 1977 cost estimate for this project is $1.5 billion. It is 6 per cent complete and the estimated completion date is March 1986, 40 years from original authorization.

The Lower Granite Lock and Dam in Washington, part of the Lower Snake River Multiple Purpose Project, was authorized in 1945 at an estimated cost of $82 million. Construction was initiated in 1965. The project is now 9% per cent complete and the total estimated cost is $310 million. Date of completion is now scheduled for September 1979, 34 years from original authorization.

It has taken an average of 18 years from the time of authorization to first construction monies. Construction when initiated has been prolonged an average of five years, or a third longer than engineering schedules would require.

It should be pointed out that the Corps of Engineers suffers the criticism for cost overruns when in fact most overruns are a product of erratic cash flows necessitated by federal budget constraints.

It is also worth pointing out that the named above projects lie within the home states of some of the Senate's most powerful members: John McClellan, James Eastland, John Stennis, Warren Magnuson and Scoop Jackson. If these men have not succeeded better in advancing projects essential to their states, I can't be very sanguine about the chances for the Susitna project under the Congressional appropriation process.

The fact is that federal funding for water projects has been declining for years, even though the nation's hydroelectric capacity could be doubled. It could provide non-polluting, renewable energy and, in effect, help conserve petroleum. I myself would favor an aggressive national hydroelectric policy.

But the conclusion is inescapable that in the competition for federal dollars, the priority given to water projects is slipping lower each year. The total Corps of Engineers program is currently being funded at a rate less than half that of ten years ago. The current budget includes no new construction starts and very few new survey starts.

Ten years ago, nearly 75 per cent of the Corps' appropriation was for construction; 14 per cent was for operation and maintenance. Today construction accounts for only 58 per cent of the Corps' budget; operations and maintenance account for 27 per cent.

Funding was terminated this year for 21 ongoing Corps projects. And my prediction to the legislature last year that a change in Administrations would not mean a change in this policy has been borne out: one of President Carter's first actions was to threaten water projects underway in all parts of the country.

Already, then, it seems an inopportune time to propose a new project, the largest ever, for the Corps of Engineers. But there is yet another strike against the Susitna proposal, one which makes adequate funding for the project appear virtually impossible.

THE IMAGE OF ALASKA

Alaska's energy wealth, in particular its pipeline wealth, is no secret in Washington. In fact, stories of pipeline salaries seem to make a more vivid impression on national legislators than do the much more widespread instances of high costs for basic materials and services.

Alaska experienced a boom while most of the country underwent a recession. No matter that the blessings of a boom are very mixed. A Congressman who hears of a single 17-year-old Alaskan making a $50,000 salary as a surveyor becomes suddenly unsympathetic to the true, pervasive problems of our state.

Throughout its history as a state, Alaskans approached the Congress with the explanation that "things are different here" and "things are harder, and they cost more." This is all true, and Congress has responded: as recently as 1974, Alaska received more than twice as much in federal dollars as we paid in taxes. In highway construction and in federal land revenues, we enjoy a higher share of U. S. money than any other state.

In 1974, in fact, the government spent more per capita in Alaska than in any other state. Only in Washington, D. C. was more federal money spent per person.

In recent years, it has become apparent that our welcome is wearing thin. Alaska is to become the wealthiest state in the union. Why, a congressman asks himself, can't we pay our own way?

This situation is especially applicable to the Susitna proposal. The Corps estimates ten years for construction under optimum funding. At an estimated cost of $1.5 billion, this averages out to $150 million per year. That is 12 per cent of the total Corps construction budget for the entire country in 1977.

If that budgetary level were to remain constant over the next decade, we would have one project using, for ten years running, some 12 per cent of the total construction funds for all 50 states. And this would be for the benefit of little more than one-tenth of one per cent of our nation's population.

One thing was clear: it wasn't going to happen that way.

FINANCING -- A NEW APPROACH

How, then, could the Susitna project be b ought about? How could we even fund the $20 million Phase I w.rk, without which we could not be positive of the feasibility and the desirability of the project?

At lunch one day with Maj. Gen. Ernest Graves, chief of the Corps' Civil Works division, I found myself asking a familiar question: "Why not pay for it ourselves!"

The state could sell revenue bonds to pay the Corps to study and eventually to build the project. We would still have the advantage of federal guarantees during construction. But when the dam was finished, it would be the property of the state of Alaska, not the federal government.

Perhaps most important, if the state sold revenue bonds to pay for construction, we could be sure that the money would be available when it was needed. That would mean optimum scheduling, which would lower the cost of the dam and get power on line quickly.

I came to Alaska in February to discuss this plan with state officials, utility executives and all interested parties. The concept was well-received.

I then presented the plan to the legislature. In its refined form, it looked like this:

Through Congressional legislation, a $25 million revolving fund would be established. The money in the fund would be used to guarantee state bonds issued to pay for Phase I work on hydroelectric projects. If it was determined in Phase I that the dam should not be built, the federal government would pay off the state's bonds. The state in other words loses nothing if the project proves to be ill-advised, either because of reasons of engineering, environme t or economics.

If it was decided to go ahead with the project, the state would issue new bonds which would, 1) pay off the Phase I bonds, thus reimbursing the government for the Corps' work; and 2) pay for the construction of the dam, either by the Corps or by other private contractor. The bonds would be repaid through the sale of electricity from the project.

An Alaska Power Authority would also have to be created to handle the bond issues and run the project. State Reps. Jim Duncan and Red Swanson had already introduced legislation creating such an authority before I addressed the legislature, and this was approved a short time later.

I introduced the Hydroelectric Power Development Act in 1976 to create the revolving fund, and it was reported by the Public Works Committee in September as part of the Water Resources Act.

(In an ironic twist, the House-Senate conference committee refused to believe that the $25 million bond guarantee fund was simply that. They altered the title and the authorization so the bill became the Alaska Hydroelectric Power Development Act, making Alaska the only state eligible for the benefits of the revolving fund.)

After the bill was passed and signed into law last fall, I organized meetings between the Corps, bond attorneys and state officials. Two more needs were identified: 1) the Corps needed $100,000 to complete a Plan of Study for the Phase I work; and 2) clean-up language was needed in the authorizing bill to make clear the liability for litiginous cost overruns.

The state agreed to put up the $100,000. To have that money authorized and appropriated by the Congress would have delayed the project a year.

The clean-up language is part of this year's omnibus water bill, now reported to the Senate by the Environment and Public Works Committee.

In a word, the detailed Phase I study, meant to enable the Corps to give a firm recommendation for or against the Susitna project, is on its way. What remains to be done is to secure the passage of the clean-up language; finish the Plan of Study and pay for it; appropriate the first $6 million of the $25 million revolving fund, needed to guarantee the state's bonds; secure a resolution from the state legislature authorizing the sale of the bonds, and sell the bonds. The Corps says that if it begins next spring, Phase I recommendations can be completed by 1980.

One other facet remains. My original legislation provided for thorough independent critique of each of the segments of the Corps' Phase I report: engineering and design, environmental impact statement, and cost/benefit analysis. This provision was inadvertantly omitted by the House-Senate conferees, and I was unable to have it reinstated in this year's omnibus bill. It is my hope that the state power authority would provide for such an independent critique of the Corps' work.

ADVANTAGES

The Hydroelectric Power Development Act was originally conceived out of necessity: we simply needed an alternative to the traditional financing method, because it was clear the Susitna project could not be financed that way. As it was developed and refined, however, we recognized a number of unexpected advantages that come from the alternative financing method.

A great hydroelectric project could be completed in ten years, not 30 or 40. Not only did this mean power on line more quickly, but it meant lower construction costs. Even the higher cost of Wall Street bonds, as opposed to federal money, would be more than counterbalanced by the savings effected by an optimum construction schedule.

At the end of construction, the dam would be owned by the state. This would give the state great flexibility to provide low-cost power throughout Alaska. This is because when the construction bonds are paid, the huge power output from the project would be extremely low-cost, the operating and maintenance costs of hydro projects being very small and there being no fuel costs. The state, through its power authority, could equalize electricity rates throughout Alaska so that all residents would share in the benefit of state ownership.

Even in spite of its eventual ownership, however, the state's risk in minimized. The experience of the Corps in dam building is unassailable. The thorough Phase I study assures a reliable go or no-go decision -- and if the decision is no-go, the state does not pay the Phase I costs.

Finally, the procedure offers more discipline for safety. A traditional project undergoes the scrutiny of the Corps and the Congress. Projects under the Hydroelectric Development Act would undergo not only this scrutiny, but also that of the state power authority, the state legislature, the national bond market -- and hopefully a qualified independent source to critique the Corps' work.

ALASKA POWER AUTHORITY

333 WEST 4th AVENUE - SUITE 31 - ANCHORAGE, ALASKA 99501

Phone: (907) 277-7641
(907) 276-2715

April 30, 1980

Honorable Bill Sumner
Alaska State Senate
Pouch V
Juneau, Alaska 99811

Dear Senator Sumner:

It has been brought to my attention that there is misunderstanding concerning funding needs for the Susitna Hydropower studies. FY '81 requirements remain unchanged from those submitted by the Governor: $7.5 million in the supplemental budget request, and $3.3 million in the normal capital budget request for a total of $10.8 million. This level of funding is the minimum needed to allow the Power Authority to remain on its "critical path" of 30 months. The program additions recommended by Arlon Tussing (costing an additional $1.4 million) could be incorporated into this 30 month program if the Legislature desired.

There has been an exhaustive effort made to initiate this very complex program. Thus, in the event the project is found to be feasible in roughly the February 1981 time frame, should prior actions have been taken by this Legislature that would preclude or restrict funds that would normally have been expended in parallel with next year's legislative decisions on FY '82 Susitna appropriations, the entire program would be in serious jeopardy of grinding to a halt.

The termination of logistics, geotechnical and biological data collection contracts, as well as prime contractor, sub-contractor, Power Authority staff, and Native agreements would occur as a result of nonavailability of program funds. Should this occur, it would be virtually impossible to reinitiate this level of support in a time frame to salvage our existing program even in the event the Legislature did concur to proceed with the remainder of the study program. In all probability, the FY '82 summer field season and program continuity would be lost.

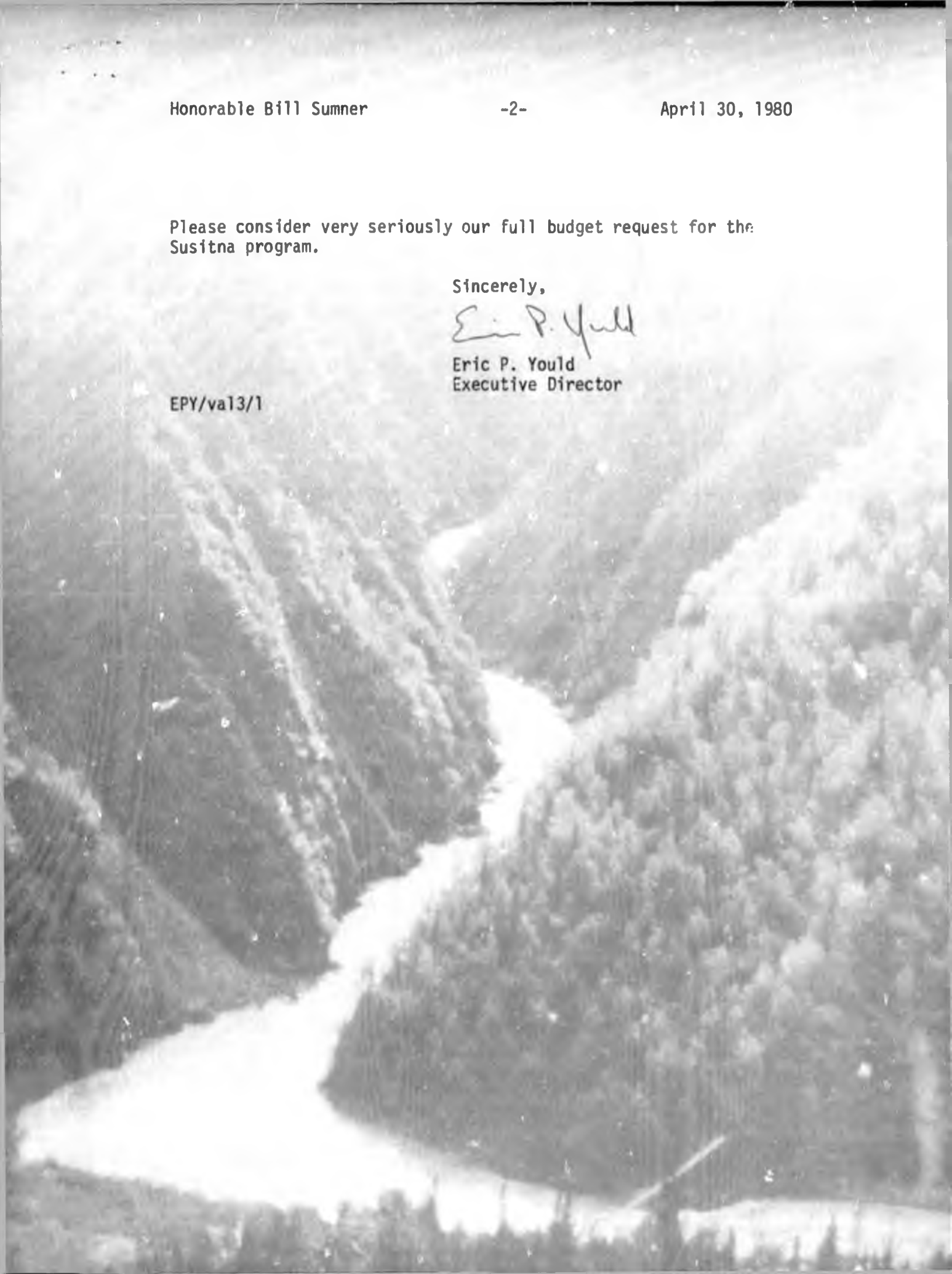
Please consider very seriously our full budget request for the Susitna program.

Sincerely,

Eric P. Yould

Eric P. Yould
Executive Director

EPY/val3/1



ALASKA POWER AUTHORITY

333 WEST 4th AVENUE - SUITE 31 - ANCHORAGE, ALASKA 99501

Phone: (907) 277-7641
(907) 276-2715

March 12, 1980

The Honorable Bill Sumner
Chairman, Senate Resources Committee
Alaska State Legislature
2216 Culver Place
Anchorage, Alaska 99503

Dear Senator Sumner:

In February, Eric Yould, Executive Director of the Alaska Power Authority, sent you a copy of the plan of study for the Susitna Hydroelectric Project and invited you to attend community meetings at which you will receive more information and have the opportunity to influence the manner in which the work within the plan of study is to be accomplished.

The first round of community meetings will be held April 14, 15, 16, and 17, a few weeks later than originally scheduled. Hopefully, the change in schedule will give you more time to review the plan of study and prepare your questions and comments. The meetings will be held:

April 14:	Fairbanks	7:00 p.m.	Traveler's Inn Gold Room
April 15:	Talkeetna	7:00 p.m.	Talkeetna Elementary School
April 16:	Wasilla	7:00 p.m.	Wasilla Junior High School
April 17:	Anchorage	7:00 p.m.	Bartlett High School Yellow Cafeteria (near visitor parking lot) North Muldoon Road (enter Muldoon and Glenn Highway intercha[illegible])

We expect this first series of meetings to be informative and dynamic. ACRES, the consultant conducting the plan of study, will present a slide show outlining various apects of the feasibility study. Information summarizing current knowledge of alternatives to the Susitna Hydroelectric Project will also be presented. We will explain the Public Participation Program and the "Action Lists", the primary method for receiving public comment throughout the 30 month period of the plan of study.

After you have been given information, you will have time to ask questions and make comments. Some discussion will take place in small groups where there will be opportunity to share ideas. A written record of the comments of each group will be considered as part of the official record of the meeting. Since the format of this meeting does not allow time for testimony, those wishing to testify may present their comments in writing or tape record their remarks on recorders provided at the end of the meeting. Action List forms will be provided at the meeting; comments

filled out on Action List forms will be reviewed by ACRES and responded to in writing.

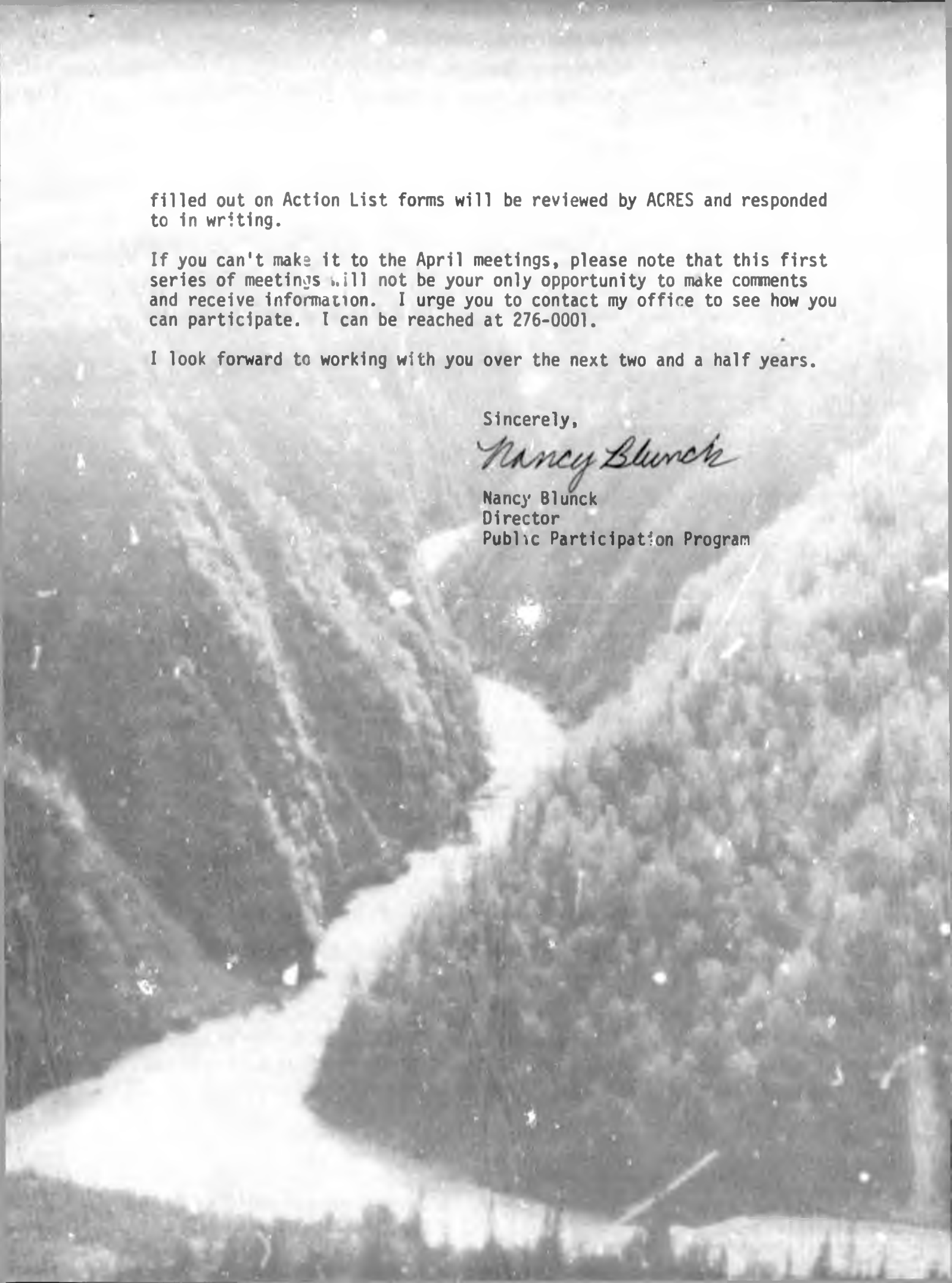
If you can't make it to the April meetings, please note that this first series of meetings will not be your only opportunity to make comments and receive information. I urge you to contact my office to see how you can participate. I can be reached at 276-0001.

I look forward to working with you over the next two and a half years.

Sincerely,

Nancy Blunck

Nancy Blunck
Director
Public Participation Program



ALASKA POWER AUTHORITY

SUSITNA HYDROELECTRIC PROJECT

AGENDA Community Meetings April 14, 15, 16 and 17, 1980

WELCOME	-	5 Minutes	Power Authority
DESCRIBE PLAN OF STUDY	-	25 Minutes	Acres
DESCRIBE ENERGY SOURCES FOR THE RAILBELT	-	15 Minutes	Power Authority
QUESTIONS AND ANSWERS	-	20 Minutes	Power Authority and Acres
TABLE TOP DISCUSSION BY CITIZENS	-	20 Minutes	Power Authority
DESCRIBE PUBLIC PARTICIPATION PROGRAM	-	15 Minutes	Power Authority
DESCRIBE ACTION LISTS	-	10 Minutes	Power Authority
SHORT REPORT ON TABLE TOP DISCUSSION RESULTS	-	20 Minutes	Power Authority and Acres
PERMITS	-	5 Minutes	Acres and CIRI/H&N
CLOSING	-	5 Minutes	Power Authority

After the meeting officially ends, persons are invited to:

1. Submit written testimony.
2. Record verbal testimony.
3. Fill out action forms and turn in that night.
4. Ask questions of Power Authority staff, Acres, or their sub-contractors.

COMMUNITY MEETING -- DATES, TIMES, AND PLACES

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ALASKA POWER AUTHORITY

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Jns - file in Susitna file

DURING SESSION:
POUCH V
JUNEAU, ALASKA 99811
(907) 465-3701

OUT OF SESSION:
1018 WEST 6TH AVENUE
SUITE 418
ANCHORAGE, ALASKA 99501
(907) 272-4841

BILL SUMNER

Alaska State Senator

DISTRICT 7-E

COMMITTEES:
RESOURCES
CHAIRMAN
FINANCE
RULES
COMMITTEE ON COMMITTEES
JOINT INTERIM COMMITTEE
ON GAS PIPELINE FINANCING

April 16, 1980

Eve Dischner
Susitna Power Now
Post Office Box 981
Anchorage, Alaska 99510

Dear Ms. Dischner:

First, I want to thank you for all the great work you did on making the Senate Resources Committee hearing on the Susitna project such a success. Your efforts contributed immensely to the valuable testimony heard that day and again, thank you.

Now, for the even better news -- included in the supplemental capital budget is a $7 million appropriation for Susitna. I'm confident the monies will survive the scrutiny of the free conference committee and the project will make another move toward becoming a reality.

I hope you'll continue to keep in touch -- and keep up the good work!

Sincerely,

BILL SUMNER, Chairman
Senate Resources Committee

BS/cf

Abstract of
SENATE RESOURCES COMMITTEE
HEARING
on

SENATE BILL 294
"An Act relating to the Susitna River hydroelectric project"

Friday, February 16, 1980

Court House
303 K Street, Room 422
10 a.m.

The hearing was called to order by Senator Jay Kerttula. Also present on the panel were Senators Pat Rodey, Mike Colletta and Ed Dankworth.

The following individuals offered testimony on Senate Bill 294:

EARL MILLER

Benefits of the Susitna project are conducive to attracting industry and an abundance of energy will be a good economic base. Believes it is an excellent project and supports it 100%, along with SB 385 (special appropriation to the Alaska Power Authority for a transmission line).

DR. WILLIAM WOOD, Mayor, City of Fairbanks

Urges prompt action on SB 294. Also believes that the intertie established by SB 385 is one of the top pieces of legislation that will bring the greatest benefit to Alaskans. SUGGESTION: also include in the purpose of the project, other communities as well as the "entire railbelt area"; would like the passage of this piece of legislation to be a binding commitment that when the legislature adopts the Phase 1 construction plan, it mandates issuance of all permits on a timely basis.

CHUCK SMITH, Matanuska-Susitn. Borough

Urged action now on the project and requested prompt funding by the state.

VINCE O'REILLY, Mayor, City of Kenai

Urged prompt, full bringing-on-stream of the project and that the state take advantage of inflation by working out a financing plan. SUGGESTION: page 3, lines 22 - 24 states that financing shall be by appropriations from the general fund. He suggests that "or by any other appropriate source, either private or governmental" be added. (Written comments also included in record).

DOROTHY JONES, Assembly Member, Matanuska-Susitna Borough

Urged prompt passage of both SB 294 and SB 385.

LEE WAREHAM, Co-Chairman, Susitna Power Now

Urged that both projects be undertaken as quickly as possible. It is important to note that these projects may not decrease energy costs, but they will stabilize energy costs into the next century. Potential of hydroelectic power is the replacement of 15,200,000 barrels per year.

STEVE LEVI, Resource Development Council

Urged that action be taken on the two bills now.

MIKE GRAVEL, United States Senator

It is critical that the legislature go ahead with the initial funding of the project because if it doesn't, nothing will happen. Such action will be indicative of the state's firm, long-term committment to the project. At the federal level, it looks like efforts will be successful in getting tax exempt bond status for hydroelectric projects which will mean approximately $400 million the first 10 years. SUGGESTION: establishment of a state revolving fund that the Alaska Power Authority could borrow from for hydroelectric projects.

JOHN CARLSON, Mayor, North Star Borough

Urged prompt action not only because of the inflation free benefits for future energy, but also because of the employment opportunities the project will create at a time when jobs are so badly needed. (Written comments also submitted).

ART KENNEDY

Encouraged action on the Susitna project as well as exploration and development of other hydroelectic projects in the state.

IKE WALDROP, Business Manager, I.B.E.W.

Urged Susitna as a replacement for the state's reliance on fossil fuels.

MALCOLM CHEEK, General Manager, Matanuska Electric Association

Stressed that it is important that efforts are made to acquire competitive financing with a sensitivity to front-end costs so that the cost to consumers doesn't

skyrocket.

WILLARD JOHNSON, Mayor Pro-Tempore, City of Palmer

Presented a resolution by the Palmer City Council urging prompt implementation of the project. (Written comments were also submitted).

ERIC YOULD, Director, Alaska Power Authority

Previously the state had considered Susitna a federal project and four months ago the state decided that it would be a private sector project by the state. Project studies are now underway which are necessary in order to be licensed by FERC. An engineering firm has been contracted with for the field studies. That firm has sub-contracted with Alaskan firms and as a result, Alaskans are already benefiting by being put to work on the project's studies.

JEFF WELTSON, Fairbanks Environmental Center

Commented that there are other sources of energy to develop other than hydroelectric that would minimize impact on life-styles. Concerned that passage of the bill gives a go-ahead on the project, even though the feasability studies have not been completed. Does not believe there is any need for the intertie in the next 10 years and that it is a back door approach to getting the Susitna project underway. Urged, instead, funding of Golden Valley Electric Association's use of waste heat from pump stations as well as studying other possible hydroelectric sites.

RON LARSEN, Mayor, Matanuska-Susitna Borough

Urged prompt action in getting the project underway.

BUD DYE, Resource Development Council

Susitna is supported by over 80% of the Resource Development Council's membership and should be a top priority for action. Also urged support of the Bradley Lake Project. The safest investment the state can make is to take the money made from oil and put it into a project such as hyrd-oelectric power.

MIKE MIKKEL, Council Member, City of Fairbanks

Believes the project can be completed without harm to the environment -- just as we are seeing with the Trans Alaska Pipeline

GEORGE SULLIVAN, Mayor, Municipality of Anchorage

Urged prompt action on both the project and its funding. Because the Fuel Use Act of 1978 disallows the burning of gas in future facilities, Anchorage's low cost electricity will not be forever and asks that Anchorage be added to those cities benefiting from the project.

TOM STAHR, General Manager, Anchorage Municipal Light and Power

An early decision on the project's go-ahead is essential -- because the Fuel Use Act of 1978 disallows burning gas, a utility can get permission from the federal government to use gas on a termporary basis -- if they can PLAN on Susitna.

DAVID MC DONALD, Business-Manager, Laborers Union

The state must recognize that large amounts of money which our fossil fuels are bringing should be diverted to developing hydroelectric power. An excess of power will result in an economic attractiveness for new businesses, resulting in jobs. While the project may not now have any economic savings to the state, it is important for the legislature to address its other responsiblities.

DAVE HUTCHENS, Alaska Rural Village Electric Cooperatives

The Alaska Rural Village Electric Cooperative has 35,000 consumers in its area that would be affected by Susitna. Urges prompt action on both SB 294 and the intertie. Commented that while there may be other sources of energy, Susitna is probably the best and there is no reason the state should settle for any other than the best. SUGGESTION: page 2, lines 7 - 9 should include the interim recommendations of the feasability study underway. On financing, urged flexibility for options be written into the bill.

RODERICK MC DONNEL, Alaska Support Industry Alliance

The membership of the Alaska Support Industry Alliance endorses the Susitna project as a reflection of responsible development.

WRITTEN COMMENTS

The following individuals submitted written comments:

-- James F. Palin, Copper Valley Electric Association

-- Leon T. Brown, Jr., Vice President, Brown's Electric Supply Company

-- Robert Martin, Jr., P.E., General Manager, Tlingit and Haida Regional Electrical Authority

-- Roger Connolly

-- Austin G. Ward

-- Edward A. Merdes, Attorney-at-Law

-- R. L. Hufman, General Manager, Golden Valley Electric Association

-- H. Glenzer, Jr., Manager, Associated General Contractors

-- Dick Norman, General Manager, Pictures, Inc.

-- Ted Smith, Alaska Fuel Service

THOSE ATTENDING HEARING

Mr. Tom Alexander
3136 Tamworth Circle
Anchorage, Alaska 99504

Mr. Kevin Armstrong
4225 Spenard Road #99
Anchorage, Alaska 99503

Mr. Chuck Becker
Economic Development Office
Municipality of Anchorage
Pouch 6-650
Anchorage, Alaska 99502

Ms. Peggy Brewer
SR Box 675
Chugiak, Alaska 99567

Mr. Thomas Brown
I.B.E.W.
Box 31X
Anchorage, Alaska 99507

Mr. and Mrs. Richard Burg
4429 San Roberto
Anchorage, Alaska 99504

Ms. Ruth Burnett
1901 Crosson
Fairbanks, Alaska 99701

Mr. Bob Capps
Post Office Box 2415
Anchorage, Alaska 99510

Mr. John A. Carlson
520 Fifth Avenue
Fairbanks, Alaska 99701

Mr. Malcolm Cheek
MEA
Post Office Box 1148
Palmer, Alaska 99645

THOSE ATTENDING HEARING

Mr. James Clay
Post Office Box 1661
Palmer, Alaska 99645

Mr. Roger Connolly
2803 McRae Road
Anchorage, Alaska 99503

Mr. Paul A. Dunham
Machinists, Local 601
825 East 8th
Anchorage, Alaska 99501

Mr. Bud Dye
2301 Loussac
Anchorage, Alaska 99503

Mr. George F. Fuhry
I.B.E.W., Local 1547
3200 Greenland
Anchorage, Alaska 99503

Ms. Liz Gilbert
Box 4-2825
Anchorage, Alaska 99509

Mr. Willard Johnson
Post Office Box 84
Palmer, Alaska 99645

Ms. Dorothy A. Jones
Post Office Box 109
Talkeetna, Alaska 99676

Mr. Dick Kleop
IUOE, Local 302
2510 Arctic Boulevard
Anchorage, Alaska 99503

Mr. Ron Larson, Mayor
Matanuska-Susitna Borough
Box B
Palmer, Alaska 99645

THOSE ATTENDING HEARING

Mr. Allan G. Laudert
I.B.E.W., Local 1547
5205 East 26th #5
Anchorage, Alaska 99503

Mr. Steve Levi
Resource Development Council
Post Office Box 516
Anchorage, Alaska 99510

Mr. Eugene E. Lundstrom
4316 Conifer Lane
Juneau, Alaska 99803

Mr. Scott Matthews
SR 60818
Fairbanks, Alaska 99707

Mr. David A. McDonald
Post Office Box 899
Anchorage, Alaska 99510

Mr. Jack McLean
3542 North Point Drive
Anchorage, Alaska 99502

Mr. Mike Mikell
Post Office Box 813
Fairbanks, Alaska 99707

Mr. and Mrs. Pat Miller
3115 Tanworth Court
Anchorage, Alaska 99504

Mr. Earl M. Miller
3500 Hiland Drive
Anchorage, Alaska 99504

Mr. George S. Oliver
8411 East 12th Court
Anchorage, Alaska 99504

THOSE ATTENDING HEARING

Mr. Phil O'Neill
Box 6
Sutton, Alaska 99647

Mr. Vincent O'Reilly
Post Office Box 580
Kenai, Alaska 99611

Mr. Ken Peavyhouse
FAA-AAL-4C
Box 84
Anchorage, Alaska 99513

Mr. Bob Piazza
I.B.E.W., Local 1547
2702 Denali
Anchorage, Alaska 99503

Mr. Chuck Smith
Post Office Box 1385
Wasilla, Alaska 99645

Mr. Patrick J. Smutz
HRDI
213 West 6th
Anchorage, Alaska 99501

Mr. John Spencer
Municipality of Anchorage
Pouch 6-650
Anchorage, Alaska 99502

Mr. and Mrs. T. R. Stahr
6967 Laser Drive
Anchorage, Alaska 99504

Mr. Philip J. Stutzer
1576 Karluk Street
Anchorage, Alaska 99501

Mayor George M. Sullivan
Municipality of Anchorage
1345 West 12th
Anchorage, Alaska 99501

THOSE ATTENDING HEARING

Ms. Ann Thompson
23[illegible]2 Lincoln
Anchorage, Alaska 99503

Mr. Richard Tweet
2009 Belair Drive
Anchorage, Alaska 995[illegible]3

Mr [illegible] Waldrop, Jr.
I.b.E.W., Local 1547
2702 Denali
Anchorage, Alaska 99503

Mr. Bob Walker
SR 2859
Wasilla, Alaska 99645

Mr. Dave Walsh
510 L Street
Anchorage, Alaska 99501

Mr. A. G. Ward
106 Charles Steet
Fairbanks, Alaska 99701

Mr. Lee Wareham
200 Gaffney Road
Fairbanks, Alaska 99701

Mr. James R. Webb
4318 Checkmate Drive
Anchorage, Alaska 99504

Mr. Jeff Weltzin
218 Driveway
Fairbanks, Alaska 99701

Dr. William R. Wood, Mayor
City of Fairbanks
619 Eleventh Avenue
Fairbanks, Alaska 99701

THOSE ATTENDING HEARING

Mr. Ernie Worthington
SRA Box 2050
Anchorage, Alaska 99507

349-6069
6212 Old Seward Hwy.
Anchorage, AK. 99502

BROWN'S
ELECTRICAL SUPPLY CO.

279-2450
3001 Mt. View Dr.
Anchorage, AK. 99504

February 14, 1980

Bill Sumner
Alaska State Senator
Pouch V
Juneau, AK. 98111

Dear Mr. Sumner,

I appreciate you keeping me informed on the happenings of Alaska's future, but as I won't be able to attend meeting I would like to say concerning SB 294. The only thing I can say is that it is about time we looked into using Hydro Power, a source of energy that will replenish itself.

Sincerely,

Leon T. Brown Jr. V.P.
Brown's Electric Supply Co.,Inc.

DURING SESSION:
POUCH V
JUNEAU, ALASKA 99811
(907) 465-3701

OUT OF SESSION:
1016 WEST 6TH AVENUE
SUITE 418
ANCHORAGE, ALASKA 99501
(907) 272-4541

BILL SUMNER

Alaska State Senator

DISTRICT 7-E

COMMITTEES:
RESOURCES
CHAIRMAN
FINANCE
RULES
COMMITTEE ON COMMITTEES
JOINT INTERIM COMMITTEE
ON GAS PIPELINE FINANCING

February 8, 1980

James F. Palin
Copper Valley Electric
Association, Inc.
Post Office Box 45
Glennallen, Alaska 99588

Dear Mr. Palin:

The Senate Resources Committee will be focusing on two issues vital to the growth of Alaska's economy at hearings next week in Anchorage.

On Friday, February 15th, the committee invites public testimony of SCR 41 which establishes guidelines for a state policy of economic development. On Saturday, the 16th, comments will be taken on SB 294, directing the Alaska Power Authority to begin work on the Susitna hydroelectric project.

Both hearings will begin at 10 a.m. in the Court Building, 303 K Street, room 422 and your input will be most welcome. If you're unable to join us and want to comment, written testimony will be included in each hearing's record.

I hope to see you then.

Sincerely,

Bill

BILL SUMNER
Chairman

BS/cf

SENATOR —
I'M UNABLE TO ATTEND — BUT LET'S GET GOING WITH THE SUSITNA PROJECT.
THANK YOU

RECEIVED FEB 11 1980

2/11/80

THE ALASKA CHAPTER
ASSOCIATED GENERAL CONTRACTORS
OF AMERICA, INC.

SKILL
RESPONSIBILITY
INTEGRITY

BOX 4-2500 • ANCHORAGE, ALASKA 99509
TELEPHONE (907) 276-5354

3201 SPENARD ROAD
ANCHORAGE
H. GLENZER, JR.
MANAGER

TO: Senate Resources Committee

The A.G.C. urges that construction begin on the Susitna hydroelectric project as soon as possible. Existing energy demands, the proposed Anchorage - Fairbanks power transmission interconnect project, and the Alaska economy mandate the immediate commencement of construction.

The A.G.C. also encourages utilization of the Alaska labor force and construction industry to the greatest extent possible

H. Glenzer, Jr.

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

February 14, 1980

State Senate Resource Committee
ATTN: Senator Bill Sumner, Chairman
Pouch V
Juneau, AK 99811

Gentlemen:

Expeditious development of our vast hydroelectric resources is vital to Alaska's energy future. Construction of the Upper Susitna project would be a major step in securing a viable future for three-quarters of the State's population. The long term benefits to be derived from this project will far outweigh those realized from the Alyeska Pipeline and the yet to come Gasline in combination. Continued reliance on non-renewable resource fuels is a blueprint to disaster.

S.B. 294 is worthy of support from all Alaskans. The author, Senator Kertulla, is to be commended.

Sincerely,

Bob Hufman

R. L. Hufman
General Manager

FAIRBANKS OFFICE
Edward A. Merdes
Grace Berg Schaible
Howard Staley
Dennis E. Cook
Barbara L. Schuhmann
Robert B. Groseclose
Charles D. Silvey, Jr.
Michael C. Geraghty

LAW OFFICES OF
MERDES, SCHAIBLE, STALEY & DeLISIO, Inc.
A PROFESSIONAL CORPORATION
300 Barnette Street — Post Office Box 810
FAIRBANKS, ALASKA 99707
Tel. (907) 452-1855/Cable Address—MERFAIR

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Joseph M. Moran
Patricia L. Zobel
Walter J. Szrudlo

February 13, 1980

The Honorable William Sumner
Senator, State of Alaska
Pouch V
Juneau, Alaska 99811

The Honorable Jalmar M. Kerttula
Senator, State of Alaska
Pouch V
Juneau, Alaska 99811

Re: Support of Senate Bill 294
Susitna Dam Project

Dear Senators Sumner and Kerttula:

The undersigned along with a broad cross section of other like-minded Alaskans over the past 20 or so years has vigorously supported hydro projects such as Taiya, Rampart, Woodchopper and Bradley Lake, and now vigorously support the Susitna project.

The Susitna project with its de minimus environmental harm would provide a source of inflation proof low cost power and is desperately needed in the railbelt area. From both an Alaskan family and business viewpoint it is imperative the project be undertaken as soon as the necessary environmental and engineering studies are completed. Frankly, I see the project as one of the few positive economic benefits to the largest group of Alaskan citizens for the longest period of time. Since it would be funded by the State, construction could commence many years earlier than if federally financed and built by the Corp. With the incredibly rapidly accelerating cost of fossil fuels and highest unemployment in the nation, it appears to be not only prudent but compelling that construction commence at the earliest possible time.

Respectfully submitted,

Edward A. Merdes

EAM/gj

FEBRUARY 16, 1980

The Honorable WILLIAM SUMNER
SENATOR, STATE OF ALASKA

THE HONORABLE JALMAR M. KERTTULA
SENATOR, STATE OF ALASKA

RE: SENATE BILL #294 4385

SENATOR SUMNER AND SENATOR KERTTULA, I THANK YOU FOR THIS OPPORTUNITYTO TESTIFY IN FAVOR OF THE SUSITNA POWER PROJECT. I AM AUSTIN G. WARD, A 28 YEAR RESIDENT OF THE STATE OF ALASKA, ALSO THE PRESIDENT OF ALASKA ENERGY FOR AMERICA, INC, AND A MEMBER OF THE EXECUTIVE BOARD OF THE SUSITNA POWER NOW GROUP. BOTH OF THESE ORGANIZATIONS ARE BROAD BASED IN MEMBERSHIP SCOPE, BOTH WANT TO FURTHER VIABLE ENERGY PROJECTS, AND THE MEMBERSHIP INCLUDES WORKING MEN AND WOMEN, LABOR LEADERS, BUSINESS AND PROFFESSIONAL PERSONS, AND IN FACT INCLUDE ALL FACETS OF THE ALASKAN COMMUNITY. TO THINK THAT SUSITNA DAM WOULD NOT BE BUILT IS AND WOULD BE CONSIDERED GROSS NEGLIGENCE ON THE PART OF THE STATE OF ALASKA. IF THERE EVER HAS BEEN A NEED FOR A RENEWABLE ENERGY SOURCE, THAT TIME IS NOW. OUR NATION, OUR STATE, AND OUR CITIES ARE PAYING FAR TO MUCH IN DOLLARS FOR A NON RENEWABLE ENERGY SOURCE THAT IN THE NEAR FUTURE WILL DRY UP. THIS USE OF FOSSIL FUELS, WHEN YOU HAVE AT HAND RENEWABLE ENERGY SEEMS CRIMINAL. FOSSIL FUELS SHOULD BE PUT TO USE ONLY WHERE THERE IS NO ALTERNATIVE. SUSITNA POWER PROJECT IS A PLUS IN THAT ONCE COMPLETED IT WOULD BE VIRTUALLY INFLATION PROOF. ALSO, ENVIRORMENTALLY SOUND, WITH LITTLE DAMAGE TO THE AREA, BUT GREAT POTENTIAL IN THE RETURNS TO THE PEOPLE OF ALASKA IN THE SAVINGS OF FOSSIL FUELS. IT WOULD ALSO SAVE THE RAILBELT AREA MILLIONS IN NON EQUIPMENT PURCHASES FOR ENERGY, SINCE WITH THE SUSITNA POWER, THERE WOULD BE NO NEED TO PURCHASE ENERGY EQUIPMENT TO TAKE CARE OF THE GROWTH IN POPULATION. AS A FAMILY MAN, AS PRESIDENT OF ALASKA ENERGY FOR AMERICA, AND AS A MEMBER OF SUSITNA POWER NOW, WE ALL OFFER OUR FULL SUPPORT TO THE SUSITNA POWER PROJECT. THANK YOU.

RESPECTFULLY SUBMITTED,/

Austin G. Ward

AUSTIN G. WARD, 106 CHARLES ST., FAIRBANKS, ALASKA, 99701

tlingit & haida regional electrical authority

811 West 12th Street • Juneau, Alaska • (907) 586-6966

February 13, 1980

The Honorable Bill Sumner
Chairman, Senate Resources Committee
The State Senate
Pouch V
Juneau, Alaska 99811

Dear Senator Sumner:

Thank you for your invitation to testify on SB 294. I regret I cannot be present for the hearing but I would like a few comments to be entered in the record.

First, while I feel very strongly that the Susitna Project is desirable and necessary project for the State of Alaska, I do not feel that SB 294, and the appropriation bill SB 295, are necessarily the right and proper means to accomplish that project.

It is my understanding that preliminary studies are presently underway and that one of the items to be considered are various options for financing the project with advantages and disadvantages of the various options. I feel it will be premature to commit such a large amount of general funds when there may be better options available.

If the studies indicate that general funds are the best means to finance the project, and adequate general funds are available in the future, I would be happy to lend my full support. Until then I must express my opposition to passage of SB 294 and 295.

Sincerely,

Robert Martin, Jr., P.E.
General Manager

RM:cmg

Pictures Inc.
Alaska 16mm. Distributor of Hollywood's Finest Films
811 W. 8th Avenue
Anchorage,
Alaska 99501
Phone: 279-1515

February 11, 1980

Senator Bill Sumner
Chairman
Senate Resource Committee
Alaska State Legislature
Pouch "V"
State Capitol
Juneau, Alaska 99811

Dear Senator Sumner:

Thank you very much for your letter of February 7th. Unfortunately, I am unable to testify on either February 15th or 16th. Therefore, I would like to have this letter submitted on SB 294 to begin work on the Susitna hydroelectric project.

I feel that the Susitna hydroelectric project is one which is overdue for the State of Alaska. Having been raised in the Northwest where the production of power was one of the prime interests of our state and federal government, it was possible to have electricity at a very low cost which attracted not only industry, but also individuals to live in the Northwest. With Alaskan costs as high as they are, I think one of the prime things we can do to help keep people in Alaska is to reduce the cost of electricity by using hydroelectric power. Since inflation is continuing to rise, I think the importance of this project and the need to have it done immediately, cannot be over stressed.

Sincerely,

Dick Norman
General Manager

DN:md

2/19/80

Senator Sumner,

I just recieved your invitation to testify before the Committees governing both SCR 41 & SB 294. I'm sorry the invitation did not arrive in time for me to at least give written testimony in those areas. I guess it just shows our Postal Service & or Airways are not very predictable during at least winter months.

I certainly hope there was response to both areas since both are vital to Alaskans development in a manner that is orderly & advantageous to Alaskans.

I would have to bow to the knowledge of the Senate & House of this state on the best movement for economic development since my views would be very limited in scope.

On SB 294, as in our past discussions on Hydroelectric power - I am a dedicated proponant of this type of electrical proponant & encourage you & all legislators to do the utmost to see that Hydro power is the basis for electricity throughout the state.

If I can be of any help to you in this capacity please do not hesitate to get in touch with me.

Sincerely

Ted Smith

Theodore H. Smith

AK Fuel Service

TESTIMONY PRESENTED BY
MAYOR JOHN A. CARLSON
FAIRBANKS NORTH STAR BOROUGH
FOR SENATE BILL 294
(SUSITNA PROJECT BASIC AUTHORIZATION)
FEBRUARY 16, 1980

MR. CHAIRMAN:

MY NAME IS JOHN A. CARLSON AND I AM MAYOR OF THE FAIRBANKS NORTH STAR BOROUGH.

I APPRECIATE THE OPPORTUNITY TO TESTIFY BEFORE YOU ON SENATE BILL 294, SINCE THE AVAILABILITY AND COST OF ELECTRIC POWER TO RESIDENTS OF INTERIOR ALASKA HAVE BECOME A CRITICAL, IF NOT LIMITING, FACTOR IN THE AREA'S SOCIAL WELL-BEING AND ECONOMIC DEVELOPMENT.

THE COST OF ELECTRIC POWER HAS TRADITIONALLY BEEN HIGH, BOTH IN THE INTERIOR AND IN ALASKA AS A WHOLE. HOWEVER, ELECTRIC POWER RATES IN FAIRBANKS RUN TWO TO THREE TIMES HIGHER THAN IN ANCHORAGE AND AS MUCH AS TEN TIMES HIGHER THAN IN SEATTLE. AS I MENTIONED EARLIER, THE COST OF ELECTRIC POWER TO INTERIOR ALASKA RESIDENTS HAS NOW BECOME PROBABLY THE SINGLE MOST CRITICAL FACTOR LIMITING THEIR ABILITY TO DEVELOP A HIGHER STANDARD OF LIVING AND CREATING A MORE DIVERSIFIED ECONOMY FOR THEMSELVES.

I THINK WHAT THE FEDERAL GOVERNMENT WAS ABLE TO ACCOMPLISH IN THE PACIFIC NORTHWEST FOR HYDROELECTRIC DEVELOPMENT DURING THE 1930'S AND 1940'S SHOULD BE AN EXAMPLE TO ALASKA.

AS A RESULT OF EXTENSIVE DAM CONSTRUCTION FOR THE GENERATION OF HYDOELECTRIC POWER ALONG THE COLUMBIA RIVER, A MAJOR REGION OF THE UNITED STATES NOW ENJOYS INEXPENSIVE AND ABUNDANT ELECTRIC POWER.

I WILL GIVE YOU ONE BRIEF EXAMPLE OF THIS. BETWEEN 1973 AND 1979, ELECTRIC POWER RATES IN THE FAIRBANKS MUNICIPAL UTILITIES SYSTEM INCREASED 67%. IN THE SAME PERIOD GOLDEN VALLEY ELECTRIC ASSOCIATION RATES INCREASED 72%, WHEREAS THE RATE .NCREASES FOR URBAN AND SUBURBAN A..CHORAGE WERE 40% AND 49% RESPECTIVELY. IN A PERIOD OF RAPIDLY INCREASED COSTS FOR FOSSIL FUELS, WE UNDERSTAND THE REASON AND PAINFUL NECESSITY FOR THESE RATE INCREASES. HOWEVER, IN THE SAME SIX-YEAR PERIOD, USING WATER-GENERATED POWER, SEATTLE CITY LIGHT ELECTRIC RATES INCREASED ONLY 1%.

GE..TLEMEN, I THINK THIS EXAMPLE SPEAKS FOR ITSELF. ONCE THE INITIAL, AND ADMITTEDLY THE VERY MAJOR CAPITAL COSTS ASSOCIATED WITH HYDROELECTRIC DAM CONSTRUCTION HAVE BEEN MADE, HYDROELECTRIC POWER IS BASICALLY AN INFLATION FREE SOURCE OF ENERGY IN AN ERA OF DOUBLE DIGIT INFLATION AND DIMINISHING FOSSIL FUEL SUPPLIES.

IN ADDITION TO SUSITNA SUPPLYING A MAJOR PORTION OF INTERIOR AND SOUTHCENTRAL ALASKA'S ENERGY REQUIREMENTS, THE CONSTRUCTION OF THIS PROJECT WOULD PROVIDE A MAJOR ECONOMIC BOOST TO ALASKA'S RESIDENTS AT A TIME IN WHICH UNEMPLOYMENT IS HIGH AND THE ECONOMY IS STAGNATING.

Up until now, one of the major drawbacks facing Alaska's desire to develop its vast hydroelectric resources has been the lack of capital to make the initial large scale investment in dam construction and site development. Now that Alaska is benefiting from skyrocketing oil revenues, we presently have the money on hand to create our own hydroelectric power system, independent of federal government control. The lead time is so great and our own power needs are so urgent that we must move now, and we must move as quickly as possible. I strongly urge that the Legislature support Senate Bill 294 as the basic vehicle necessary to develop our hydroelectric potential. It cannot come a moment too soon, and it will provide a benefit beyond our lifetimes to generations of new Alaskans.

CITY OF PALMER, ALASKA

RESOLUTION NO. 434

A RESOLUTION SUPPORTING SUSITNA POWER NOW.

The City of Palmer Resolves:

The City of Palmer supports the program of Susitna Power Now and Senate Bill 294, and Councilmen Willard Johnson and James Ekstedt are authorized to represent the City's position hereon.

Passed and Approved by the City of Palmer, Alaska this 12th day of February, 1980.

Jack E. Mazz

JACK E. MAZZ, MAYOR

William E. Curtis

WILLIAM E. CURTIS, CITY CLERK

CITY OF KENAI

"Oil Capital of Alaska"

P. O. BOX 580 KENAI, ALASKA 99611
TELEPHONE 283 - 7535

February 5, 1980

Honorable Jay Hammond
Governor, State of Alaska
Pouch A
Juneau, AK 99811

Dear Governor:

First how enjoyable the dinner Thursday at which we all relaxed. In view of the heavy burdens you carry, it was encouraging to see the fortitude, wisdom and confidence you are bringing to bear on matters.

Please do keep in your budget considerations, the 10% of income tax provision for the municipal assistance fund under Sec. 43.20.016. The 10% flow through, State to municipalities, has an equal validity with the relationship of the petroleum industry and the State tax structure. The funds flowing in full would offer real property tax relief, would fill many municipal needs and would meet many of the criteria you are trying to establish for fair distribution of tax revenues.

If I may, Governor, may I offer some thoughts for your consideration concernin the money situation facing the State.

We should perhaps set this in proper perspective. What we are talking about is economics and finance, not civil rights, education goals, abortion, public safety, etc.

Within the perspective of economics and finance, for the moneys flowing to the State above operating expenses, we should set as an objective the preservation for present and future inhabitants of the potency and flexibility of capitol. With this objective, we can select a path to get there. Most of the Western world nations are caught in an inflation cycle, certainly the United States economy is so caught. This leads to a course of action somewhat brutal in its implementation but necessary if we are to preserve potency and flexibility of capitol over a ten to fifteen year period.

We should expend the moneys, above expenses, only when they can be invested in an equity position. Investments should be made in hydroelectric projects, capital improvement projects, and direct return to citizens such as energy credits.

TO: Honorable Jay Hammond February 5, 1980

If we have to be involved in loans programs, we should borrow money to provide such funds. The inflation caused dollars depreciation makes issued debt an advantage to us, as the future dollars we use for repayment will be cheaper as they come from an inflation influenced economy.

Hopefully the above gives us the following criteria for determining how revenues available above operating expenses should be allocated.

1. Invest this equity money in equity positions, i.e.: hydropower situations, natural gas line, capital improvement programs, energy credits, etc.

2. Do not loan it as we then subject it to inflation erosion open payback. If we have to loan it, borrow from external sources to reloan.

3. Income tax sources, to some degree, should stay in effect as this gives us a foothold to tax the inflation dollar stream.

Governor, excuse the length but I do wish and know you share the wish that we act in accordance with prudent criteria and a plan of wisdom.

Sincerely,

Vince

Vincent O'Reilly
Mayor

CITY OF KENAI
VOR:jw

Saturday, Feb. 16

TESTIMONY, Senate Bill 294, Susitna River Hydroelectric

Willard H. Johnson
P.O. Box 84
Palmer, Alaska 99645

Registered Professional Engineer
Retired, General Manager of Matanuska Electric Association(20 years Service
Representing, as Mayor Pro Tem, the City of Palmer

First, I want to present the City of Palmer Resolution No. 434, which was adopted by the Palmer City Council on Feb. 12, 1980. It expresses support for the Upper Susitna Hydroelectric Development and Senate Bill 294.

Palmer believes that the Upper Susitna Project should be developed with all deliberate speed. Palmer also believes that the State of Alaska should, through the Alaska Power Authority, finance and direct the project's construction. For the long range benefit of Alaskans, we can think of no better way to invest Royalty Oil Income. Money from a non-renewable resource invested in a renewable resource such as hydroelectric energy, that will provide so many benefits continuing long after many of Alaska's oil deposits are depleted, makes awfully good sense.

An area may have developable land, water, a transportation system, investment capital and other resources, but it is not going to thrive and prosper without an adequate and reliable supply of electric power. Alaska has this potential and in the Railbelt area we are blessed with the Upper Susitna.

I doubt if many of us fully realize the kind and magnitude of the benefits that will flow to the railbelt people when Susitna power goes on the line. Spinoff benefits will go to all of Alaska's people and to the Lower 48.

I remember as a boy in Eastern Washington State, the vast stretches of sagebrush, blowing sand and the desolate land. There were little villages with dirt streets, unpainted houses and little work for men to do. Later, as a young engineer, after the great Columbia River projects came on the line, I remember the vast productive fields of corn, sugar beets and alfalfa where before there was only desert. Attractive and comfortable homes replaced the old shacks, and towns were modernized. Commercial activities thrived. People had jobs.

Most of the early Columbia River Hydro projects were federally planned, financed and constructed. It took 20 years and a lot of effort by western people to move Congress to approve the great Coulee Dam. We think the State of Alaska deserves something better than that. So we urge that SB 294 be passed, and that the Susitna project be completed and operated by the State.

THANK YOU

Willard H. Johnson

Steam Generation has switched from coal To Natural Gas and now is supposed to switch back To coal at Great cost ——→ Lets use hydro once and for all Time

Other industry has been adversely affected by high power costs — at one time we had a small lumber operation in the Mad Sew area — This utilized birch that now has gone by its prim as useable lumber — This was due to Too high cost of power —

I am in favor of both Bills S.B. #294, #385 and any other bills that will get This projed on the way To completion. Tax relief in the form of cheaper Electricty Roger Connolly

International Union of Operating Engineers

AFFILIATED WITH AFL-CIO

LOCAL 302 AND BRANCHES A, B, C AND D

FRANK T. POLSAK, *Business Manager*

JACK J. WILSON, *President*

ROD J. FRASER, *Financial Secretary*

Branch Offices:
WENATCHEE, WASHINGTON
YAKIMA, WASHINGTON
ANCHORAGE, ALASKA
FAIRBANKS, ALASKA
JUNEAU, ALASKA

WESTERN AVE. AND CLAY ST.
SEATTLE, WASHINGTON 98121
TELEPHONE: 622-6180

February 29, 1980

Senator Sumner
Capitol Building Rm. 125
Pouch V
Juneau, Alaska 99811

RE: Susitna Power Project
SB 294

Sir:

The International Union of Operating Engineers, Local 302 (Alaska), which presently is composed of over 4000 members, has determined that the Susitna Power Project would be in the best interests of all of the people within our State. We would like the Legislature to not only know that we support the project tut we also wish all practical speed in efforts to get it under construction.

Sincerely,

Roderick J Fraser

Roderick J. Fraser
Financial Secretary
I.U.O.E., Local 302

RJF/jch
cc: Susitna Power Now, Inc.

12927 NL FAIRBANKS ALASKA 58 03-04 1037A AST

PMS SENATOR BILL SUMNER 465-4791

SENATE RESOURCES COMMITTEE

264

JUN

MAYOR AND CITY COUNCIL OF THE CITY OF FAIRBANKS SUPPORT AND RECCOMMEND PASSAGE OF SENATE BILL 294. DEVELOPMENT OF SUSITNA POWER PROJECT WILL BE OF GREAT BENEFIT TO INTERIOR ALASKA

C DROZ CITY MANAGER

TELEGRAM

ALASCOM, INC.
PHONE: 586-6442
JUNEAU, AK 99802

1990 MAR 4 PM 7 09

12026 FAIRBANKS ALASKA 134 03-04 410P AST

PMS SENATOR BILL SUMNER

CHAIRMAN SENATE RESOURCES COMMITTEE

291

JUN

I WOULD LIKE TO REEMPHASIZE MY SUPPORT FOR SENATE BILL 294. AS I TESTIFIED IN ANCHORAGE LAST MONTH, THE COST OF ELECTRIC POWER TO INTERIOR ALASKA RESIDENTS HAS NOW BECOME THE SINGLE MOST CRITICAL FACTOR LIMITING THEIR EFFORTS FOR A HIGHER STANDARD OF LIVING AND MORE DIVERSIFIED ECONOMY. THE DEVELOPMENT OF HYDROELECTRIC POWER DURING THE 1930S AND 40S IN THE PACIFIC NORTHWEST HAS NOW RESULTED IN STABLE, AND VIRTUALLY INFLATION FREE, ENERGY SUPPLIES TO RESIDENTS OF THAT REGION. WE HAVE THE OPPORTUNITY TO CREATE SIMILAR BENEFITS FOR RESIDENTS OF INTERIOR AND SOUTHCENTRAL ALASKA IN THE NEXT TWO DECADES.

ADDITIONALLY ALASKA NOW HAS AVAILABLE THE SURPLUS CAPITAL NECESSARY TO DEVELOP THE SUSITNA HYDROELECTRIC PROJECT OURSELVES. I RESPECTFULLY URGE THE SENATE NATURAL RESOURCES COMMITTEE TO GIVE FAVORABLE AND EXPEDITIOUS CONSIDERATION TO THIS AND SUPPORTING LEGISLATION.

JOHN CARLSON BOROUGH MAYOR

TELEGRAM

ALASCOM, INC.
PHONE: 586-6442
[illegible], AK 99802

1980 MAR 4 PM 7 56

02247 POM TDA PALMER ALASKA 15 03-04 0415P AST

PMS SEN BILL SUMNER

JUNEAU

MATANUSKA VALLEY LIONS CLUB WHOLEHEARTEDLY SUPPORT SB294 AND

ARE HOPING IT PASSES SOON.

GEORGE BEACOM PRESIDENT

KAISER ENGINEERS

KAISER ENGINEERS INC.
KAISER CENTER - 300 LAKE HILL DRIVE
OAKLAND, CALIFORNIA 94611

June 14, 1977

Alaska Power Authority
c/o Department of Commerce and
Economic Development
Office of the Commissioner
McKay Building
Anchorage, Alaska

Dear Commissioner Hubbard:

Further to our presentation of June 3, 1977, to the Alaska Power Authority, we would like to clarify some of the points in our plan for implementation of Susitna River development, in order to get the project under way expeditiously.

Three years have elapsed since Kaiser Engineers presented its conceptual plan for development of the Upper Susitna River and outlined the project best suited for initial development. In the intervening period considerable effort has been made by the Corps of Engineers to explore other ways of developing the river. These other ways included concepts and elements of projects which had been developed before and which were rearranged and presented as alternatives. They did nothing to bring nearer the date of initial power generation, but in fact, set it back further. No doubt, it would be possible to develop more schemes and more alternatives on the basis of what has gone before; however, we believe that nothing is to be gained, but much is to be lost in time and money by more study of alternatives. We believe that our development plan is the right plan and that it can and should be implemented now.

There is much work to be done - by the Alaska Power Authority, by Kaiser Engineers and by the financial consultants, Stone and Youngberg. There are legal and financial matters to be resolved, project optimization to be defined, and environmental impacts to be evaluated and accounted for in project design.

Environmental impact is the issue which presents the major time constraint in implementation of the project. It is estimated that the preparation of an effective environmental report will require about one year because it is preferable to make field studies and gather information applicable to all four seasons of the year. Current experience of the Federal Power Commission shows that approval of hydroelectric projects on environmental grounds requires about two years after report submittal.

We believe that the best interests of the project will be served by engaging independent specialists to undertake environmental studies under our overall management. These studies would be carried out in close cooperation with federal and state agencies which have already gathered considerable information or which have responsibility in natural resource management; among these would be the State Department of Fish and Game which confirms that the study can be completed over four seasons providing the department is authorized and given the budget to hire additional staffs or otherwise be reimbursed for expediting the services which at the present time are scheduled and budgeted for a two to three year period. We propose to engage the services of Environmental Services Limited of Anchorage, and EDAW to perform base line studies, and of local experts such as Mr. W. Workman, archeologist at the University of Alaska, and Dr. R. Forbes, seismology consultant, and others who are familiar with the environment and ecology of Alaska

In regard to environmental impact, it is to be noted that the upper end of the Susitna I reservoir would inundate a much smaller area of the Caribou habitat between Watana and Kosina Creeks than any project built at Watana.

The major engineering task to be undertaken in the first phase of Kaiser Engineers' implementation plan is optimization and outline design. Optimization means that we will seek that degree and timing of development which will meet projected power demands in the Railbelt area at the least overall cost. Cost includes monetary, financial and social. Optimization does not necessarily mean that every last kilowatt of power will be squeezed out of the Upper Susitna River regardless of the consequences. Optimization cannot and will not be limited to the first project to be developed, but requires firming up the locations and conceptual designs of future projects.

Outline design will be based upon more accurate mapping and more detailed geologic information. On the ground observations of the Susitna I damsite have convinced us of the suitability of the rock for foundations and for construction of a rockfill dam. At this stage of development, tangible evidence must be provided. We propose to employ local firms such as R. and M. Consultants of Anchorage or Shannon and Wilson of Fairbanks to carry out subsurface exploration programs. These would include geoseismic surveys and core drilling to provide the degree of information required for this phase of project development. This work will be concentrated at the Susitna I site; however, a certain amount of investigation is necessary before the suitability of sites for future projects can be confirmed, before a selection can reasonably be made of the types of dams best suited for safety and economy at those sites, and before the overall development concept can be optimized.

When the final definition of the initial project is achieved by optimization, the engineering task will narrow down to staging. A determination will be made as to the rate at which power available from this

project can be economically absorbed into the existing power systems. This will include not only load growth, but also consideration of retirement of older generating equipment and the conservation of fossil fuels for other use. If power from existing generating plants can be economically replaced by Susitna I, the complete project will be recommended for construction at one time; otherwise, an economic staged development will be proposed. Almost any design of project can be built in several stages; it is common practice in basic powerhouse design to provide for the later addition of generating units. There is no special trick involved in building most dams in two stages, if desirable, to minimize first cost. This can readily be done at Susitna I with the proposed rockfill dam, on the basis of existing technology.

The work to be undertaken by Kaiser Engineers in the first phase of the implementation plan will be in the detail and to the degree required to:

1. Demonstrate the economic viability of development
2. Provide the basis of project financing
3. File application for project licensing by the Federal Power Commission.

It is not strictly necessary to apply to the Federal Power Commission for a Preliminary Permit; it may be desirable to do so, however, as a very simple means of protecting the State's interest pending filing of license application.

We have discussed the timing of our implementation plan with representatives of the State of Alaska Department of Fish and Game, environmental specialists and staff of the Federal Power Commission, and others. We have been reassured that the schedule for completion of the environmental report in one year and the issue of the F.P.C. license two years later is feasible and practical.

We suggest that the remaining months of this year be used effectively to get the project off the ground. Provided work is commenced before the beginning of August, a good start can be made on environmental studies; mapping and geoseismic exploration can be completed before the weather closes in, in October. Engineering and further environmental study can be carried out during winter and spring; in May and June, environmental studies can be completed, site drilling to confirm seismic exploration can be completed and the application for project licensing can be submitted to the Federal Power Commission at the end of July 1978. First power can be delivered in late 1984 or early 1985.

If the Alaska Power Authority engages the services of Kaiser Engineers to carry out the first phase of the proposed implementation plan, our first task would be to gather and review all of the data gathered, used or prepared by the U.S.B.R., the Corps of Engineers and other state or Federal agencies or departments in connection with the Upper Susitna River. After review and evaluation of this data, we will be able to

determine what information can be used directly in further work, what information must be augmented and what further information must still be gathered. On this basis we shall be able to prepare realistic estimates of the cost of Kaiser Engineers' services, services of environmental experts and consultants, and services of contractors required for mapping, geoseismic surveys and other subsurface exploration, all as applicable to the first phase implementation plan. Kaiser Engineers' bills reimbursable expenses at cost; the services of all consultants and subcontractors are considered as reimbursable expenses.

If you have any questions concerning implementation of the project, please let us know.

For your further information, we are enclosing three brief memoranda. The first is in connection with the selection of dam type in areas of potentially severe earthquake activity; the second describes Environmental Management services performed by Kaiser Engineers; and the third is a general description of Project Management and Control Systems utilized by Kaiser Engineers.

Very truly yours,

A. J. Chan
Manager
Hydroelectric Department

AJC:ars

Enclosures

SELECTION OF DAM TYPE IN AREAS OF POTENTIALLY SEVERE EARTHQUAKE ACTIVITY

Kaiser Engineers and members of its present staff have designed or built dams in many parts of the world, including the specially seismically active areas in California and the Pacific Northwest. Wherever we design for, we account for the seismicity potential of the area in the selection of the type of dam and in its design.

Experience records of a wide range of seismic occurrences show that serious adverse effects of earthquakes have been severe cracking in concrete gravity dams, abutment damage in concrete arch dams and liquefaction of fines in fill dams. The Pacoima arch dam in southern California presents a good example of earthquake effect on abutments. The February 1971 San Fernando earthquake caused abutment damage to the degree that after careful studies, the dam was breached and abandoned. While the record may show that even concrete arch dams have been designed for an 8.5 Richter scale earthquake in reasonable proximity to such dams, we have no record that such an earthquake has, in fact, occurred near such designed arch dams.

A critical design which has not been tested by full scale prototype cannot be claimed as fully effective before the full scale test condition occurs. It is one thing to apply static test loads to a model structure, but it is something else to apply complex dynamic loads not only to the model structure, but also to the foundation. Whereas the quality of the dam and its constituent materials is subject to a high degree of control, by analysis, design and construction, no such control can be achieved over the foundation, and in arch dams, it is generally the abutment which fails first. Abutment failure in an arch dam inevitably means dam failure and experience shows that such failure is very fast and very complete. The whole question of arch dam construction in seismically active zones is under especially close scrutiny today, particularly where the ratio of crest length to height is high.

The dam proposed for construction at Susitna I is a rockfill with a concrete face. Rockfill dams by their very nature are most resistant of all dams to damage by earthquake forces. The dam does not crack because it is not one solid piece; it is free to adjust, either to movement of the abutments or of its own. It can deflect safely to a degree which would mean dramatic failure to an arch dam of the same height range. Of all rockfill types, the concrete face type is most resistant to damage because the dam itself is built primarily of rock materials which are not subject to liquefaction since the embankment is dry. The concrete face can crack, but leakage is controlled by the immediate underlying zone of selected low permeability dense filter, and by designed high permeability of the rock mass under the downstream half of the base of the dam and in the downstream toe. In fact, a design criterion in the rock zoning of the concrete face dam is that it will safely withstand the leakage that would occur even without the concrete face. Such a dam may require repair of the concrete

face after a very high intensity earthquake, but failure due to the most severe seismic event is not considered credible.

Arch dams can be economical and efficient, and with their abutments can resist seismic forces to some unknown degree, but the overall safety and economy of dam construction must be based on the concept of the right dam at the right place. Where there are clear economic and safe alternatives there is nothing to justify the risk of adopting an arch design in an area of potentially high seismicity.

The above views are those of Kaiser Engineers in collaboration with their general dam consultant, J. Barry Cooke. Similar views on inherent seismic resistance of rockfill dams are held by such authorities as Dr. H. Bolton Seed, Dr. James L. Sherrard, and Dr. Don U. Deere.

ENVIRONMENTAL MANAGEMENT

Environmental matters are an integral and vital economic element in all our engineering projects. In the past few years we have been developing working relationships with some of our major industrial clients supplying a service which we call Environmental Management. This memorandum discusses the concept, the product, and its implications to both KE and its clients.

It is important to understand what KE means by the term Environmental Management. It is the service which addresses, identifies and handles the environmental issues related to a project. It includes project work functions, conceptual engineering, permit processing and resolving regulatory agency requirements. Today, it is an essential part of a successful engineering business.

Environmental Management involves planning, organizing and performing environmental project activities within a defined scope of work, schedule and budget. It requires close contact with the client, working with the engineering project staff, and liaison in cooperation with government agencies which have regulatory influence or authority on the project.

Planning Stage

In most instances, even before preliminary engineering is initiated, planning for the requisite environmental activities is often required and always desirable. Our larger clients, Anaconda, ANG, SCE, etc., usually have an environmental staff within their organizations and may do this phase of the work themselves. In other instances, especially where a client is entering a new field, they are not as well staffed and we can supply needed services.

It is during the initial planning stage that we can work effectively with a client to help plan their environmental program, review available data and identify the environmental requirements for a project. If appropriate, scientists or environmental consultants can be recruited to perform baseline studies.

Baseline Studies

Baseline studies are usually initiated shortly before or with the start of project feasibility studies. In the main, baseline studies involve field investigations concerning preliminary site evaluations, hydrology, meteorology, vegetation, wildlife, archaeology and demographic data accumulation. In the past few years, a large body of information has become available in published environmental reports.

Baseline studies are usually made by the client or by outside consultants. Our Environmental Management role includes monitoring, evaluating and, in some instances, directing the preparation of the baseline studies. Performance controls are prepared to measure rates of progress, quality and cost of the baseline studies against planned goals. Initial contact with regulatory agencies occurs at this stage as does the preliminary engineering feasibility studies of the project itself.

Environmental Assessment

Major environmental activity occurs during the preliminary engineering phase of a project after baseline studies have been made. At this time, environmental assessment and trade-off studies are prepared which, to a large extent, can influence the timing and cost of a project. Also, during this time, site selection studies are completed, regulatory and reclamation requirements are defined and environmental assessments are made based on the field studies and the preliminary project engineering. Potential impacts as a result of the project are identified and are evaluated to identify possible alternative courses of action. Contact with regulatory agencies and the project engineering staff is necessarily frequent both to acquaint the agencies with the nature and possible impacts of the project and to convey the requirements of the regulatory agencies to the engineering staff.

Agency Reviews

Regular reviews are required because of continuing changes in federal and state regulations including the Clean Air Act, the Clean Water Act, the Toxic Substances Act, OSHA, and new energy utilization requirements.

Detail Design

Environmental Management functions continue through detail design including:

- o preparation and/or review of environmental impact reports
- o selection of basis for design for environmental controls
- o review of environmental controls
- o participation in public presentations of the project in connection with its environmental significance
- o meeting with regulatory agencies
- o processing and obtaining of permits for construction and operation.

The attached flow sheet, Environmental Management, identifies activities addressed through Environmental Management. The functions of Environmental Management are:

A. Planning and scoping the environmental activities of a project.

B. Data assimilation including base studies, preliminary engineering, liaison and contact with regulatory agencies.

C. Preparation of environmental assessments including identification of the environmental control concepts, identification of regulatory requirements, identification of impacts, site selection, and development of reclamation plans.

D. Development of design bases for environmental control requirements, processing of permits, definition of regulatory requirements and the selection of process control methods.

E. Preparation of functional and bid specifications, bid evaluations and equipment selections.

F. Start-up assistance and preparation of manuals.

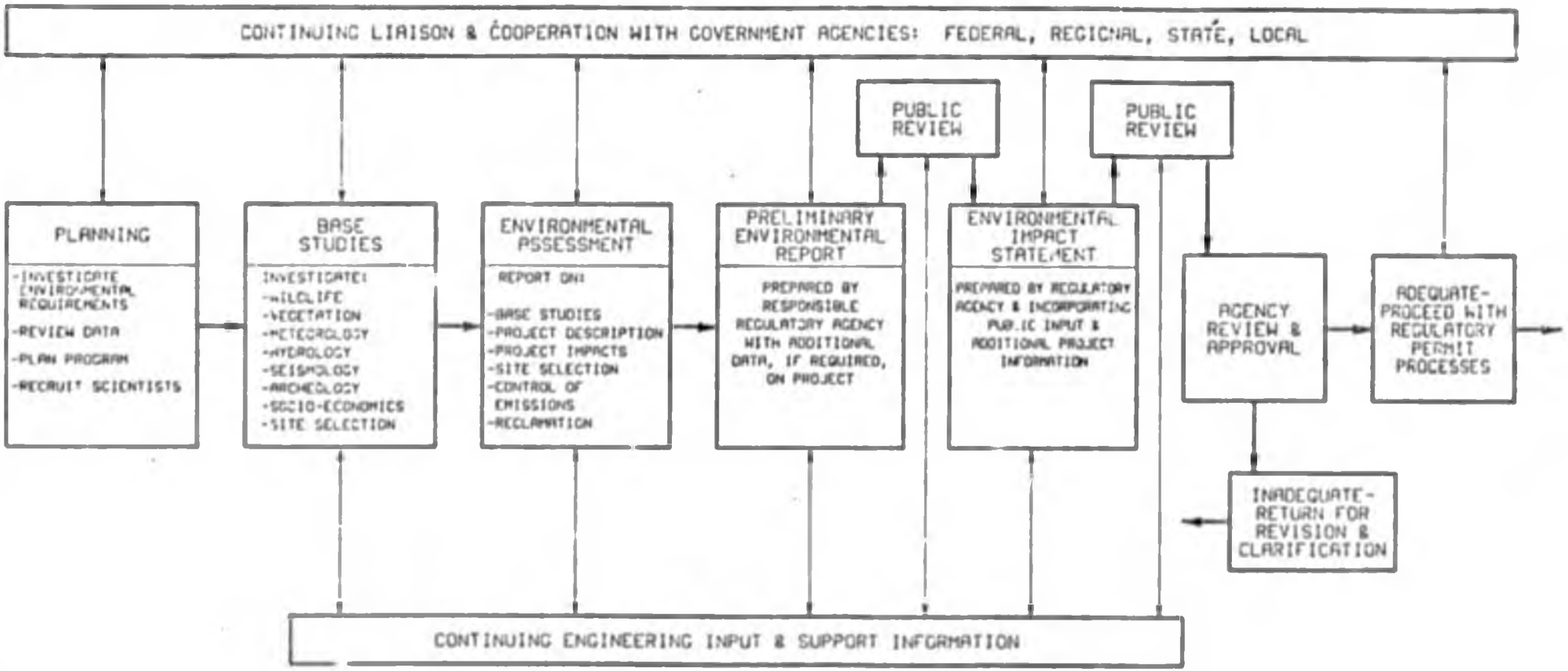
Advantage to Client

A major advantage to using the Environmental Management approach for a client is in the early identification and resolution of environmental issues which might otherwise delay the project or lead to unacceptably high costs. The implementation of the Environmental Management concept to major projects at an early date can result in substantial savings in time and cost and may make the difference between a feasible or non-feasible project.

Presenting the Environmental Management Concept

As each project may involve a different client relationship, the Environmental Management concept should be presented in a similar vein. Participation in planning with the client before the baseline studies have been initiated is highly desirable, particularly when a client is entering a new type of activity or business. A good example where we have been successful is with American Natural Gas coal gasification project. We participated in the planning phase, identified environmental baseline requirements, evaluated proposed consultants to make the baseline studies and monitored their performance as to its technical competence. One recommended step (not adopted by the client to his regret) was to establish a performance goal for the consultant to measure progress against cost of work. The client chose to do this himself and it was not done. A better approach would have been to have NE assume responsibility for the baseline studies to include cost control as well as technical performance.

ENVIRONMENTAL MANAGEMENT



PROJECT MANAGEMENT AND CONTROL SYSTEMS

Kaiser Engineers recognizes that an effective management and control system is an important function in the effective integration of all project activities leading to the successful execution of a project.

As a result of the extensive and diversified experience in the field of engineering and construction, Kaiser Engineers has developed the necessary organization, techniques and procedures to successfully plan, monitor, control and manage a project.

Over the past 20 years Kaiser Engineers has developed and operated a computerized system of Project Control that truly characterizes our basic approach to management of a project.

The control system using a central file includes programs for:

a. planning and scheduling all elements of the project

b. measurement of progress and performance

c. monitoring and tracking procurement activities

d. estimating, recording and forecasting cost, manhours, and quantity

Based on experience we find there are three phases that are common to all construction projects, Preliminary Design, Detail Design phase and Construction phase.

We believe that through careful and realistic planning in the initial phases and continuing monitoring, analyzing and managing in the later phases we can effectively control cost and schedule to meet the targets established. We are confident that our management procedures and techniques do meet these requirements.

Kaiser Engineers is also organized to provide direct lines of responsibility for corporate and project management to ensure a quick and comprehensive response to the individual needs of the project.

The management control and reporting systems we offer provide a systematic and practical approach to the management of this project. It is effective primarily, because of the experience and talents of the people that are involved as a team, knowing and understanding how to utilize these tools in a practical manner.

National Hydropower Study
Alaska Region

With the need to find and assess alternate sources of energy, Congress directed the Corps of Engineers to conduct a study of potential hydroelectric power development throughout the country. The objectives of the National Hydropower Study are to:

- Assess the demand for electricity and define the need for hydropower.
- Define the physical limits to increasing hydropower production.
- Determine the feasible and acceptable increases in hydropower generation.
- Analyze existing policies affecting hydropower development and use.
- Assess potential environmental and socio-economic impacts
- In the study report to Congress, identify specific potential hydropower projects which warrant detailed study and make recommendations regarding needed policy changes.

SUMMARY OF FINDINGS

Demand for Electricity

According to projections by the Alaska Power Administration, the demand for electrical energy in Alaska will have increased from 3,066 million kilowatt hours in 1979 to 15,000 million kilowatt hours in the year 2000, an increase of nearly five times the present use. The demand is expected to increase in each of the six major subregions of the State. However, the greatest increase is expected in the more heavily populated areas of the State, specifically the Southcentral Railbelt region which includes the Anchorage-Cook Inlet and the Fairbanks areas and the Southeast Subregion.

Present Sources of Electricity

As of 1979, the existing electrical generating capability of power plants in Alaska was about 1,867 megawatts. The majority of electricity generated in the State was produced from energy supplied by fossil fuel. Natural gas was by far the major fuel, accounting for 56 percent of the year's output. Next came oil (18 percent), coal (10 percent), hydropower (10 percent) and others (6 percent).

Most of the electrical energy in Alaska is supplied by combustion turbines (65.2 percent), followed by internal combustion plants (19.2 percent), steam turbines (5.6 percent) and hydropower (10.1 percent). The combustion turbine is the predominant source of power in the more heavily populated Southcentral Subregion, whereas hydropower plants and steam turbines are the predominant sources of power in the Southeast and Yukon Subregions, respectively. The diesel fueled turbine is the primary source of electrical energy for the isolated bush villages of Alaska.

Until recently, the availability of low cost natural gas, particularly in the Anchorage area, accounted for the predominant use of combustion turbines. In addition, the Alaskan climate is conducive to the operation of combustion turbines.

There are more than 40 hydroelectric installations in Alaska. Most of the plants are small (less than 50 MW) and only of local community significance. Only 14 plants are large enough and in such locations to have an impact on the future power supply of the State. Twelve of these plants serve individual cities in the Southeast Subregion. The other two plants are in Southcentral Alaska and are part of the interconnected system serving the Anchorage-Cook Inlet area.

Screening Process

During the National Hydropower Study, the potential for additional hydropower generation was evaluated at 61 existing water resource project sites and 634 undeveloped sites within the State of Alaska. By means of a 4-stage screening process, the number of sites demonstrating potential economic feasibility and environmental acceptability was reduced 59. A summary of the screening process displayed by major subregions of the State and the principal objectives of each screening stage is presented in Table 1.

Evaluation

In keeping with the objectives of the National Hydropower Study, the potential of hydropower in Alaska to meet the future electrical energy needs was determined from a regionalized assessment of economic and environmental factors.

Generally, a project was considered economically feasible if the total average cost of the additional power capable of being produced by the project did not exceed 50 mils (5 cents) per kilowatt hour. In some instances, however, local considerations indicated that a project might be feasible with even higher costs. As shown in Table 1 (third screening) 21 existing projects and 144 undeveloped sites in Alaska are identified as having potential economic feasibility for the development of additional hydropower.

To determine what portion of the economically feasible hydropower projects might be acceptable for development, environmental, social and institutional impacts and marketability constraints were evaluated. Although specific criteria could not always be followed in making this determination, projects which would result in major adverse environmental or social impacts, including elimination of terrestrial and aquatic wildlife habitat and major dislocations of villages and transportation systems, were identified as being unacceptable for development. Also, projects whose development would violate present land use restrictions such as, wild and scenic rivers, national parks and wildlife refuges, or opposed by significant portions of the public were considered to be unacceptable.

Some of the undeveloped sites, although identified as having a substantial potential for producing additional hydropower, were eliminated for marketability reasons, in particular those projects located in the vast undeveloped regions of Alaska.

The results of the hydropower study indicate that 59 projects, including 10 existing sites and 49 undeveloped sites, were acceptable for development and warranted further, more detailed study. Detailed information on each of these sites is presented in Tables 2, 3, and 4. The map attached to Table 2 shows the general location of the sites. If these 59 sites were developed, they could produce as much as 3.56 million kilowatts of power and 15,432 million kilowatt hours of energy.

Table 5 provides a comparison by geographical subregion of the estimated electrical requirements for the year 2000 with the hydropower potential. A further comparison with the marketable hydropower potential, as determined by the Alaska Power Administration, would indicate that the development of these projects could meet the majority of the electrical needs for the Southcentral, Southeast, and Yukon Subregion .

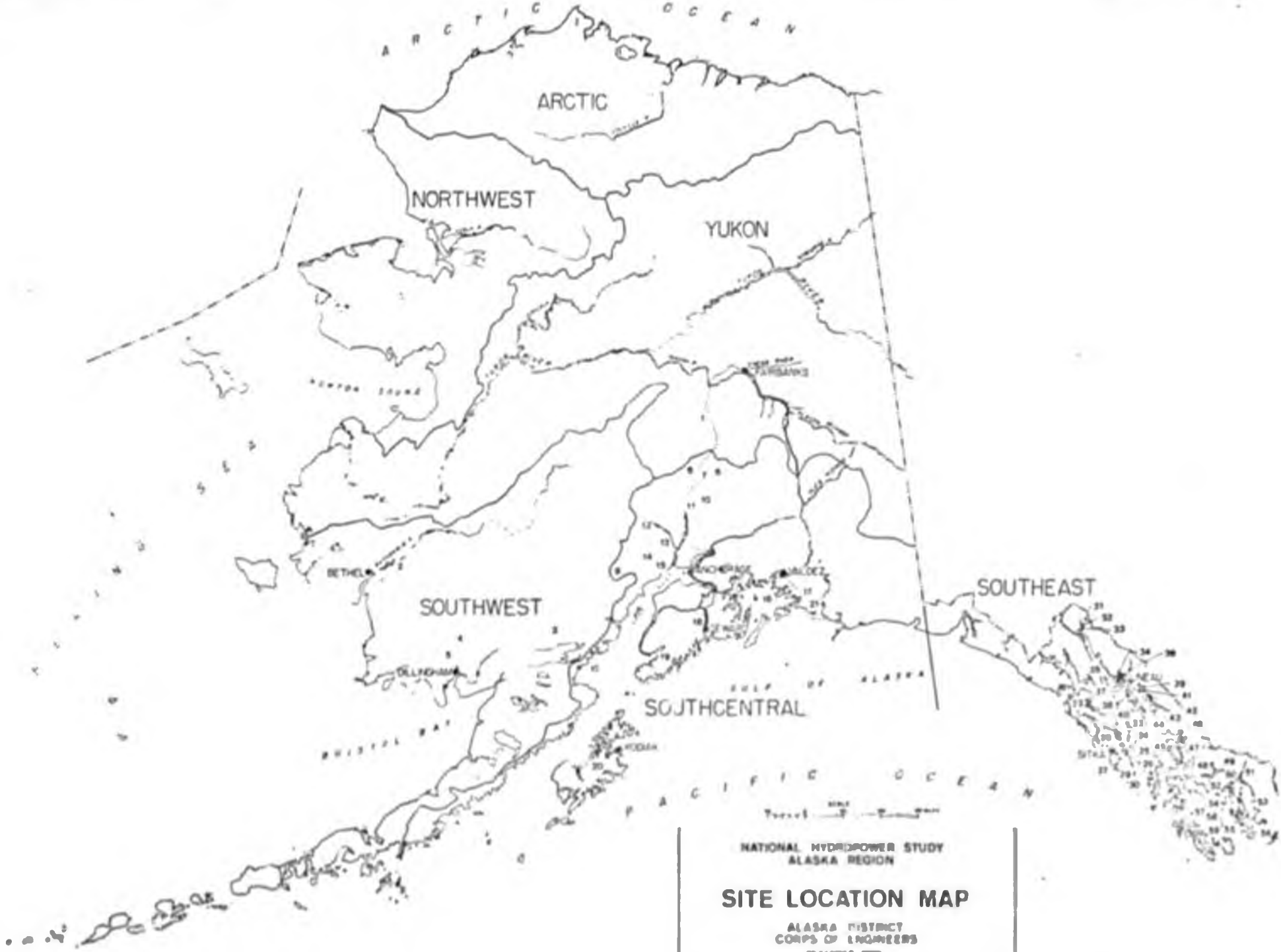

ARCTIC OCEAN
ARCTIC
NORTHWEST
YUKON
SOUTHWEST
SOUTHCENTRAL
SOUTHEAST
PACIFIC OCEAN
NATIONAL HYDROPOWER STUDY
ALASKA REGION
SITE LOCATION MAP
ALASKA DISTRICT
CORPS OF ENGINEERS

Table 1
SUMMARY OF NATIONAL HYDROPOWER STUDY SCREENING RESULTS, ALASKA

OWER AREA / JBREGION	STAGE 1						STAGE 2			STAGE 3					
	Initial Inventory 1/			First Screening 2/			Second Screening 3/			Third Screening 4/			Fourth Screening 5/		
	Existing Projects	Undev. Sites	Total	Existing Projects	Undev. Sites	Total	Existing Projects	Undev. Sites	Total	Existing Projects	Undev. Sites	Total	Existing Projects	Undev. Sites	Tota
RCTIC	0	5	5	0	5	5	0	3	3	0	2	2	0	0	0
ORTHWEST	0	27	27	0	16	16	0	7	7	0	6	6	0	0	0
JKON	3	56	59	3	51	54	0	27	27	0	20	20	0	1	1
OUTHWEST	2	38	40	2	28	30	0	8	8	0	8	8	0	4	4
OUTHCENTRAL	14	196	215	12	138	150	9	43	52	3	40	43	0	16	16
OUTHEAST	42	312	349	40	189	229	30	114	144	14	70	84	10	28	38
LASKA TOTAL	61	634	695	57	427	484	39	202	241	17	146	163	10	49	59

/ Objective: Inventory all existing dams and previously identified undeveloped sites.
/ Objective: Identify total physical hydropower potential.
/ Objective: Identify physical hydropower potential showing possible economic feasibility.
/ Objective: Identify economically feasible hydropower potential.
/ Objective: Assess noneconomic factors (environmental, social, institutional) and identify feasible hydropower projects tha
ere identified for detailed study.

TABLE 2
NATIONAL HYDROPOWER STUDY
POTENTIAL HYDROPOWER SITES IDENTIFIED FOR DETAILED STUDY IN ALASKA

Map Index Number	Project Name	Site Ident Number	Name of Stream	Latitude	Longitude	Owner	Additional Capacity Potential (kW)	Additional Energy Potential (Mwh)	Average Cost of Energy (mills/kWh
	Yukon								
1.	Browne	AK6NPA0427	Nenana River	64 11.0	149 15.0	undeveloped	200,000	566,000	48.99
	Southwest								
2.	Kisaralik	AK6NPA0012	Kisaralik River	60 26.4	160 5.5	undeveloped	30,000	131,000	56.72
3.	Tazimina	AK6NPA0032	Tazimina	59 58.0	154 33.0	undeveloped	51,000	224,000	17.00
4.	Grant Lake	AK7NPA0018	Wood River	59 45.1	158 32.0	undeveloped	2,700	12,700	145.87
5.	Lake Elva	AK7NPA0155	Elva Creek	59 37.9	157 0.0	undeveloped	1,000	8,000	29.58
	Southcentral Railbelt								
6.	Chulitna	AK6NPA0181	Chulitna River	63 4.9	149 45.0	undeveloped	34,000	166,000	45.07
7.	Devil Canyon	AK6NPA0188	Susitna River	62 48.9	149 18.9	undeveloped	766,000	3,410,000	11.53
8.	Watana	AK6NPA0222	Susitna River	62 48.9	148 30.9	undeveloped	792,000	3,480,000	17.97
9.	Chakachamna	AK7NPA0106	Chakachamna	61 13.0	152 22.0	undeveloped	366,000	1,300,000	12.30

TABLE 2
NATIONAL HYDROPOWER STUDY
POTENTIAL HYDROPOWER SITES IDENTIFIED FOR DETAILED STUDY IN ALASKA (cont)

Map Index Number	Project Name	Site Ident Number	Name of Stream	Latitude	Longitude	Owner	Additional Capacity Potential (kW)	Additional Energy Potential (Mwh)	Average Cost of Energy (mills/kwh)
10.	Talkeetna	AK6NPA0216	Talkeetna River	62 28.0	149 22.0	undeveloped	90,000	406,400	23.32
11.	Keetna	AK6NPA0197	Talkeetna River	62 26.5	149 41.6	undeveloped	74,000	324,000	30.38
12.	Skwentna	AK6NPA0211	Skwentna River	61 51.9	152 7.0	undeveloped	98,000	490,000	30.02
13.	Yentna	AK6NPA0224	Yentna River	61 36.9	150 32.0	undeveloped	219,000	960,000	38.47
14.	Beluga Upper	AK6NPA0175	Beluga River	61 15.9	151 15.0	undeveloped	48,000	210,000	53.06
15.	Coffee	AK6NPA0108	Beluga River	61 12.0	151 10.0	undeveloped	37,000	160,000	50.41
16.	Solomon Gulch	AK7NPA0384	Solomon Gulch	61 30.9	146 15.9	undeveloped	12,000	65,000	25.57
17.	Allison Creek	AK7NPA0041	Allison Creek	61 7.1	146 10.2	undeveloped	8,000	180,000	46.50
18.	Snow	AK7NPA0283	Snow River	60 17.9	149 18.0	undeveloped	63,000	278,000	31.24
19.	Bradley Lake	AK7NPA0103	Bradley Creek	59 45.0	150 51.0	undeveloped	94,000	410,000	18.40
20.	Terror Lake	AK7NPA0166	Terror River	57 40.0	153 6.0	undeveloped	20,000	139,000	19.94
21.	Power Creek	AK7NPA0039	Power Creek	60 36.0	145 34.0	undeveloped	7,000	26,000	87.04
	Southeast								
22.	Pelican Creek	AK1NPA0346	Pelican Creek	57 34.7	136 7.8	Pelican Utility Co	1,000	1,700	75.57

TABLE 2
NATIONAL HYDROPOWER STUDY
POTENTIAL HYDROPOWER SITES IDENTIFIED FOR DETAILED STUDY IN ALASKA (cont)

Map Index Number	Project Name	Site Ident Number	Name of Stream	Latitude	Longitude	Owner	Additional Capacity Potential (kW)	Additional Energy Potential (Mwh)	Average Cost of Energy (mills/kwh)
23.	Kasnyku Lake	AK7NPA0335	Kasnyku Falls	57 11.0	134 49.9	undeveloped	7,000	30,000	41.63
24.	Takatz Creek	AK7NPA0311	Takatz Creek	57 6.9	134 51.0	undeveloped	20,000	97,000	34.48
25.	Carbon Lake	AK7NPA0321	unnamed	57 1.9	134 28.1	undeveloped	10,000	49,000	58.16
26.	Milk Lake	AK7NPA0294	Milk Creek	56 58.0	134 47.0	undeveloped	7,000	33,000	39.10
27.	Diana Lake	AK7NPA0325	unnamed	56 53.0	135 3.0	undeveloped	8,000	35,000	35.65
28.	Green Lake	AK7NPA0332	Vodopad River	56 95.3	135 11.6	undeveloped	16,000	64,000	48.47
29.	Maksoutof	AK7NPA0291	Maksoutof	56 30.0	134 57.9	undeveloped	24,000	117,000	23.47
30.	Borodino Lake	AK7NPA0319	B.P. Walter	56 22.3	134 42.9	undeveloped	5,000	24,300	44.51
31.	Goat Lake	AK7NPA0357	Pitch Fork	59 31.3	135 11.0	undeveloped	10,000	46,000	33.80
32.	Dewey Lake	AK1NPA0359	Dewey Creek	59 26.4	135 18.9	Alaska Power & Tele Co	1,000	1,300	83.39
33.	Dayebas Creek	AK4NPA0078	Dayebas Creek	59 17.2	135 2.0	undeveloped	5,000	18,200	65.95
34.	Gold Creek	AKHNPA0099	Gold Creek	58 17.9	134 23.9	Alaska Elec Light & Power Co.	2,000	9,000	34.90

TABLE 2
NATIONAL HYDROPOWER STUDY
POTENTIAL HYDROPOWER SITES IDENTIFIED FOR DETAILED STUDY IN ALASKA (cont)

Map Index Number	Project Name	Site Ident Number	Name of Stream	Latitude	Longitude	Owner	Additional Capacity Potential (kW)	Additional Energy Potential (MWh)	Average Cost of Energy (mills/kWh)
[illegible].	Treadwell Ditch	AKMNPA0086	Treadwell	58 15.5	134 22.3	Alaska Tread-well	2,500	10,000	25.70
36.	Annex	AK[illegible]NPA0098	Annex Creek	58 19.5	134 7.6	A.J. Ind.	1,800	3,000	57.18
37.	Lake Dorothy	AK5NPA0096	Dorothy Creek	58 14.0	134 3.0	undeveloped	34,000	150,000	15.24
38.	Speel Division	AK6NPA0082	Speel River	58 5.9	133 42.9	undeveloped	63,000	275,000	32.84
39.	Snettisham	AKJNPA0102	Long Lake	58 5.9	133 48.0	Alaska Power Administration	27,000	168,500	14.17
40.	Crater Lake	AK7NPA0356	Crater Creek	58 8.0	133 45.7	undeveloped	12,000	41,500	45.65
41.	Tease	AK7NPA0084	Tease Creek	58 5.9	133 40.2	undeveloped	16,000	70,000	29.42
42.	Upper Sweetheart	AK7NPA0143	Sweetheart	57 59.7	133 30.6	undeveloped	7,000	31,000	42.94
43.	Sweetheart	AK7NPA0083	Sweetheart	57 56.6	133 38.[illegible]	undeveloped	29,000	127,000	38.19
44.	Scenery Creek	AK7NPA0401	Scenery Creek	57 4.9	132 41.9	undeveloped	15,000	67,000	34.04
45.	Falls Lake	AK7NPA0417	Cascade Creek	57 1.1	132 45.1	undeveloped	44,000	190,000	18.20
46.	Thomas Bay	AK7NPA0310	Cascade Creek	57 3.3	132 45.2	undeveloped	50,000	217,000	18.47
47.	Ruth Lake	AK7NPA0400	Delt Creek	56 59.0	132 45.0	undeveloped	13,000	63,000	45.61

TABLE 2
NATIONAL HYDROPOWER STUDY
POTENTIAL HYDROPOWER SITES IDENTIFIED FOR DETAILED STUDY IN ALASKA (cont)

Map Index Number	Project Name	Site Ident Number	Name of Stream	Latitude	Longitude	Owner	Additional Capacity Potential (kW)	Additional Energy Potential (MWh)	Average Cost of Energy (mills/kWh)
48.	Anita	AK6NPA0414	Zimovia Straight	56 15.5	132 26.5	undeveloped	3,200	14,000	54.60
49.	Harding River	AK7NPA0301	Harding River	56 16.1	131 38.9	undeveloped	18,000	85,000	60.44
50.	Tyee Creek	AK7NPA0408	Tyee Creek	56 12.0	131 33.0	undeveloped	30,000	133,000	27.66
51.	Swan Lake	AK7NPA0132	Falls Creek	55 35.9	131 21.0	undeveloped	22,000	85,000	58.33
52.	Mahoney Lake	AK7NPA0123	Mahoney Lake	55 25.0	131 31.1	undeveloped	14,400	56,000	30.42
53.	Upper Silvis	AKDNPA0139	Beaver Falls	55 22.8	131 30.9	City of Ketchikan	2,000	49,100	21.71
54.	Lake Connell	AKDNPA0141	Ward Creek	55 26.0	131 40.2	City of Ketchikan	2,000	10,400	56.45
55.	Ketchikan	AKINPA0138	Ketchikan Creek	55 21.5	131 37.0	City of Ketchikan	2,000	15,000	31.10
56.	Chester Lake	AKPNPA0097	Nichols Off	55 7.1	131 31.6	City of Metlakatla	2,500	5,200	48.75
57.	Black Bear	AK7NPA0104	Black Bear	56 32.9	132 0.5	undeveloped	5,000	22,000	44.36
58.	Lake Mary	AK7NPA0395	Old Franks Creek	55 26.0	132 29.0	undeveloped	9,600	42,300	49.80
59.	Mellen Lake	AK7NPA0255	Reynolds Creek	55 12.0	132 36.0	undeveloped	8,000	30,000	41.68

TABLE 3

The following tables provide physical data and environmental and social impacts of the proposed projects. The environmental and social impact codes can be identified through the following matrixes:

Description Matrix for Potential Environmental Concerns Code

Environmental Concern / Column No.	State/Nat'l Parks & Wilderness area	Designated and Potential W&S R.	Resident Fish	Anadromous Fish	Wildlife Habitat	Endangered Species	Wetlands
Impact	1	2	3	4	5	6	7
Unknown	U	U	U	U	U	U	U
No	N	N	N	N	N	N	N
Yes	Y	Y	Y	Y	Y	Y	Y

Description Matrix for Potential Social Concerns Code

Social Concern / Column No	Cultural/Historical Resources	Community Relocation	Transportation Relocation	Farm Land	Local Comment	Environmental Group Comment	Other Group Comment	Utility Interest	State Comment
Impact	1	2	3	4	5	6	7	8	9
Unknown	U	U	U	U	U	U	U	U	U
No	N	N	N	N	N	N	N	N	N
Yes	Y	Y	Y	Y	Y	Y	Y	Y	Y

SURVEY SITES
TABLE 4

SITE ID / DEP ACTV / CODE INV / GEOG. AREA	PROJECT NAME / PRIMARY CO. -NAME OF STREAM / OWNER / MAP REFERENCE	LATITUDE / LONGITUDE / DR.AREA (D M.M) (D M.M) (SQ.MI)	PROJ.PURP. / STATUS / AVE. Q (CFS)	DAM HT / F C STOR. / PWR. HD. (FT) (AC FT) (FT)	EXIST.CAP. / INC. CAP. / TOT. CAP. (KW) (KW) (KW)	EXIST.ENRG / INC.ENERGY / TOT.ENERGY (MWH) (MWH) (MWH)	ANUL. COST / ENERGY COST (1000 $) ($/MWH)	ENVIRONMENTAL IMPACT CODE / SOCIAL IMPACT CODE
AKJUPA0102	SNETTISHAM	58 5.9	H	10.0	97160	168500	1902.8	YNNNUNN
I 2	JUNEAU LUNG LAKE	133 48.0	OP	150000	23300	0	0	
SOUTHEAST	AK POWER ADMIN.	30	447.0	800.0	70460	84250		NNNNYNYYY
	TAKU RIVERA-6							
AK6NPA0042	SPEEL DIVISION	58 6.9	H	325.0	0	0	9032.7	NNUUUUU
I 2	JUNEAU SPEEL RIVER	133 42.9	IS	910000	63000	275000	32.846	
SOUTHEAST	UNDEVELOPED	194	-2314.5	272.7	63000	275000		UNNUUUUUU
	TAKU RIVERA-5.							
AK7NPA0083	SWEETHEARTFALLS	57 56.6	H	150.0	0	0	4850.2	NNUUUUU
I 2	JUNEAU SWEETHEARTCRE	133 38.1	IS	206000	29000	127000	38.199	
SOUTHEAST	UNDEVELOPED	35	328.0	611.5	29000	127000		UNNUYYYYY
	SUMDUM D-5							
AK7NPA0086	TEASE	58 5.9	H	80.0	0	0	2050.9	NNUUUUU
I 2	JUNEAU TEASE CREEK	133 40.2	IS	22000	16000	70000	29.428	
SOUTHEAST	UNDEVELOPED	11	152.0	1032.9	16000	70000		UNNUYYYYY
	TAKU RIVERA-5.							
AKMNPA0086	TREADWELL DITCH	58 15.5	H	5.0	0	0	297. 0	NNUUUUU
I 2	JUNEAU TREADWELL DIT	134 22.3	IS	400	2500	10000	25.700	
SOUTHEAST	AK ELEC LIGHT & POWER	15	75.0	517.4	2500	10000		UNNUUUUYU
	JUNEAU D-2,A-2							
AK7NPA0163	UPPER SWEETHEART	57 59.7	H	35.0	0	0	1316.7	NNUUUUU
I 2	JUNEAU SWEETHEARTCRE	133 30.6	IR	18000	7000	30660	42.945	
SOUTHEAST	UNDEVELOPED	5	45.0	1178.8	7000	30660		UNNUUUUUU
	SUMDUM D-5							
AK7NPA0103	BRADLEY LAKE	59 45.0	H	120.0	0	0	7587.5	NNYYYNY
I 2	KENAI-COOKIN BRADLEY CREEK	150 51.0	PA	363000	94000	410000	18.408	
SO CENTRAL	UNDEVELOPED	86	594.0	1053.9	94000	410000		NNNUYYYYY
	SELDUVIA D-3,C-3.							
AK7NPA0106	CHAKACHAMNA LAKE	61 13.0	H	5.0	0	0	1968A	YNUUUUU
I 2	KENAI-COOKIN CHAKACHAMNA R	152 22.0	IS	4015000	366000	1400000	12.305	
SO CENTRAL	UNDEVELOPED	1120	3646.0	792.2	366000	1400000		UNNUUUUUU
	TYONEK A-7.							
AK6NPA0108	COFFEE	61 12.0	H	120.9	0	0	8068.1	NNYYUUU
I 2	KENAI-COOKIN BELUGA RIVER	151 10.0	IS	0	37000	160000	50.413	
SO CENTRAL	UNDEVELOPED	840	2486.0	108.8	37000	160000		UNNUUUUUU
	TYONEK A-8.							

SURVEY SITES
TABLE 4

SITE ID DEP CODE / ACTV INV GEOG. AREA	PROJECT NAME PRIMARY CO. -NAME OF STREAM OWNER MAP REFERENCE	LATITUDE (D M.M) LONGITUDE (D M.M) DR.AREA (SQ.MI)	PROJ.PURP. STATUS AVE. Q (CFS)	DAM HT (FT) F C STOR. (AC FT) PWR. HD. (FT)	EXIST.CAP. (KW) INC. CAP. (KW) TOT. CAP. (KW)	EXIST.ENRG (MWH) INC.ENERGY (MWH) TOT.ENERGY (MWH)	ANNUL. COST (1000 $) ENERGY COST ($/MWH)	ENVIRONMENTAL IMPACT CODE SOCIAL IMPACT CODE
AK6NPA0012 I 2 SOUTHWEST	KISARALIK RIVER BETHEL — KISARALIK RIV UNDEVELOPED BETHEL B-3.	60 26.4 160 5.5 544	H IO 800.0	315.0 716000 264.7	0 30000 30000	0 131000 131000	7431.4 56.728	YYUUUUU UNNUUUUUU
AK7NPA0018 I 2 SOUTHWEST	GRANT LAKE BRISTOL BAY — WOOD RIVER UNDEVELOPED DILLINGHAM D-7,D-8	59 45.9 158 32.0 37	H IS 96.0	56.0 52500 209.7	0 2700 2700	0 12672 12672	1848.5 145.87	UNUUUUU UNNUUUUUU
AK7NPA0155 I 2 SOUTHWEST	LAKE ELVA BRISTOL BAY — ELVA CREEK UNDEVELOPED GOODNEWS BAY C-1	59 37.9 159 0.0 10	 52.2	137.0 29000 259.7	0 1000 1000	0 8000 8000	2324.6 290.58	[illegible] [illegible]
AK7NPA0032 I 2 SOUTHWEST	TAZIMINA BRISTOL BAY — TAZIMINA RIVE UNDEVELOPED ILIAMNA D-5.	59 58.0 154 33.0 320	H IS 1400.0	45.0 148000 190.0	0 18000 18000	0 224000 224000	4809.8 17. 8	YNYYNNN [illegible]
AK5NPA0039 D 2 SO CENTRAL	POWER CREEK 1 CORDOVA-MCCA — POWER CREEK UNDEVELOPED CORDOVA C-5.	60 35.1 145 32.4 21	H SP 251.0	25.0 0 359.6	0 5000 5000	0 26000 26000	2687.0 103.34	[illegible] [illegible]
AK1NPA0096 I 2 SOUTHEAST	ANNEX JUNEAU — ANNEX CREEK ALASKA ELEC LGT AND PWR JUNEAU B-1	58 19.5 134 7.6 6	H OP -63.4	25.0 23400 755.0	3500 1750 5250	6000 3000 9000	171.52 57.176	[illegible] [illegible]
AK7NPA0356 D 2 SOUTHEAST	CRATER LAKE JUNEAU — CRATER CREEK UNDEVELOPED TAKU A-6.	58 8.0 133 45.7 12	H IS 105.0	55.0 118000 979.0	0 11872 11872	0 41490 41490	1977.4 47.659	[illegible] [illegible]
AKMNPA0099 I 2 SOUTHEAST	GOLD CREEKS JUNEAU — GOLD CREEK ALASKA ELECTRIC LIGHT & POWER JUNEAU B-2	58 17.4 134 23.9 10	H OP -57.7	5.0 0 225.0	1600 2000 3600	6800 8965 15765	312.48 30.879	[illegible] [illegible]
AK5NPA0096 I 2 SOUTHEAST	LAKE DOROTHY JUNEAU — DOROTHY CREEK UNDEVELOPED TAKU RIVER A-6.	58 14.0 134 3.0 11	H IS 112.0	5.0 165000 2347.6	0 38000 38000	0 150000 150000	2286.3 15.242	[illegible] [illegible]

SURVEY SITES
TABLE 4

SITE ID / DEP / CODE / GEOG. AREA	PROJECT NAME / PRIMARY CO. -NAME OF STREAM / OWNER / MAP REFERENCE	LATITUDE / LONGITUDE / OR.AREA (D M. / D M.M / SQ.MI)	PROJ.PURP. / STATUS / AVE. Q (CFS)	DAM HT / F C STOR. / PWR. HD. (FT / AC FT / FT)	EXIST.CAP. / INC. CAP. / TOT. CAP. (KW)	EXIST.ENRG / INC.ENERGY / TOT.ENERGY (MWH)	ANUL. COST / ENERGY COST (1000 $ / $/MWH)	ENVIRONMENTAL IMPACT CODE / SOCIAL IMPACT CODE
AKINPA0138	KETCHIKAN LAKES	55 21.5	SM	33.0	4200	14800	159.52	NNUUUUU
I 2	KETCHIKAN KETCHIKAN CRE	131 37.0	OP	9200	1400	2140	74.545	
SOUTHEAST	CITY OF KETCHIKAN	11	-146.1	265.0	5600	16940		UNNIIUUIIUU
	KETCHIKAN B-5							
AKONPA0141	LAKE CONNELL DAM	55 26.0	SO	85.0	0	0	590.28	NNUUUUU
I 2	KETCHIKAN WARD CREEK	131 40.2	OP	8300	2000	10456	56.450	
SOUTHEAST	KETCHIKAN PULP COMPANY	13	178.0	149.8	2000	10456		UNNUUUUUU
	KETCHIAKANB-5,B-6							
AK7NPA0123	MAHONEY LAKE UPPER	55 25.0	H	25.0	0	0	1691.8	NNYNYNN
I 2	KETCHIKAN MAHONEY LAKE	131 31.1	IS	10200	14000	55590	30.426	
SOUTHEAST	UNDEVELOPED	2	44.0	1825.1	14000	55590		YNNNYNIIYY
	KETCHIKAN B-5							
AK7NPA0132	SWAN LAKE	55 35.9	H	195.0	0	0	4958.7	NNYYNIU
I 2	KETCHIKAN FALLS CR HEVI	131 21.0	IS	179000	22000	85000	54.334	
SOUTHEAST	UNDEVELOPED	36	464.0	274.7	22000	85000		YNNNYUIIYY
	KETCHIKAN C-3.							
AKONPA0139	UPPER SILVIS LAKE	55 22.8	H	60.0	2100	5000	286.20	NNUUUUU
D 2	KETCHIKAN BEAVER FALLS	131 30.9	OP	22000	2000	49111	5.9277	
SOUTHEAST	CITY OF KETCHIKAN	22	-574.9	265.0	4100	58111		UNNUUUUUU
	KETCHIKAN B-5							
AK7NPA0146	TERROR LAKE	57 40.0	H	70.0	0	0	2772.1	YNNYYNN
I 2	KODIAK TERROR RIVER	153 6.0	IS	0	20000	139000	19.943	
SO CENTRAL	UNDEVELOPED	17	99.0	1148.8	20000	139000		YYNYYNUYY
	KODIAK C-4.							
AK6NPA0175	BELUGA UPPER	61 15.9	H	180.0	0	0	11143	NNUYUUU
D 2	MATANUSKA-SU BELUGA RIVER	151 15.0	IS	0	48000	210000	53. 66	
SO CENTRAL	UNDEVELOPED	840	2484.0	141.8	48000	210000		UNNIIUUUUU
	TYONEK B-6.							
AK6NPA0181	CHULITNA HURRICANE	63 4.9	H	230.0	0	0	7882.3	NNUIIIUU
I 2	MATANUSKA-SU CHULITNA RIVE	149 45.0	IS	0	34000	166000	45. 74	
SU CENTRAL	UNDEVELOPED	795	2622.0	206.7	34000	166000		UNYIIUUIUU
	HEALY A-6.							
AK6NPA0186	DEVIL CANYON NPA PROPOSAL	62 48.4	HRC	635.0	0	0	39328	NYNNNIIN
D 2	MATANUSKA-SU SUSITNA RIVER	149 18.9	FP	1050000	776000	3810000	11.532	
SO CENTRAL	UNDEVELOPED	5810	9227.0	574.8	776000	3810000		UNNNYNUYY
	TALKEETNA ATS D-5 D-6.							

SURVEY SITES
TABLE 4

SITE ID / DEP CODE ACTV INV / GEOG. AREA	PROJECT NAME / PRIMARY CO. -NAME OF STREAM / OWNER / MAP REFERENCE	LATITUDE (D M.M) / LONGITUDE (D M.M) / DR.AREA (SQ.MI)	PROJ.PURP. / STATUS / AVE. Q (CFS)	DAM HT (FT) / EFF STOR. (AC FT) / PWR. HD. (FT)	EXIST.CAP. (KW) / INC. CAP. (KW) / TOT. CAP. (KW)	EXIST.ENRG (MWH) / INC.ENERGY (MWH) / TOT.ENERGY (MWH)	ANNL. COST (1000 $) / ENERGY COST ($/MWH)	ENVIRONMENTAL IMPACT CODE / SOCIAL IMPACT CODE
AKANPA0197	KEETNA	62 26.5	H	360.0	0	0	9843.7	NNUUUUU
I 2	MATANUSKA-SU TALKEETNA RIV	149 41.6	IS	910000	74000	324000	30.382	
SU CENTRAL	UNDEVELOPED	1250	2400.0	285.7	74000	324000		UNNUUUUUU
	TALKEETNA MTS B-6							
AKANPA0211	SKWENTNA (HAYES)	61 51.9	H	360.0	0	0	14713	NNUUUUU
D 2	MATANUSKA-SU SKWENTNA RIVE	152 7.0	IS	0	96000	490000	30.027	
SU CENTRAL	UNDEVELOPED	950	2624.0	290.7	96000	490000		UNNUUUUUU
	TYONEK D-6.							
AKANPA0216	TALKEETNA 2	62 28.0	H	375.0	0	0	9487.0	NNUUUNU
I 2	MATANUSKA-SU TALKEETNA RIV	149 22.0	IS	0	90000	406446	23.341	
SU CENTRAL	UNDEVELOPED	850	1650.0	369.6	90000	406446		UNNUUUUUU
	TALKEETNA MTNS B-5.							
AKANPA0222	WATANA HWAPROPOSAL	62 48.9	HRC	810.0	0	0	62568	NYNNNUN
D 2	MATANUSKA-SU SUSITNA RIVER	148 30.9	FP	9624000	792000	3480000	17.979	
SU CENTRAL	UNDEVELOPED	5180	8137.0	659.3	792000	3480000		UNNNYNUYY
	TALKEETNA MTS D-4,3,2 C-2,1.							
AKANPA0228	YENTNA	61 36.9	H	120.0	0	0	36940	UNYYUUY
D 2	MATANUSKA-SU YENTNA RIVER	150 32.0	IS	0	219000	960000	38.479	
SU CENTRAL	UNDEVELOPED	6400	17611.0	81.4	219000	960000		UUNUUUUUU
	TYONEK C-2.							
AKPNPA0097	CHESTER LAKE	55 7.1	H	12.0	0	0	254.55	NNUUUUU
I 2	OUTER KETCHI NICHOLS OFFST	131 31.6	OP	300	2500	5221	48.755	
SOUTHEAST	METLAKATLAPOWER & L IGHT	2	26.0	749.2	2500	5221		UNNUUUUUU
	KETCHIKAN A-5							
AK7NPA0106	BLACK BEARLAKE	56 32.9	H	28.0	0	0	976.4	YNNYYNN
I 2	PRINCE OF WA BLACK BEARCRE	132 0.5	IS	6900	5000	22000	44.367	
SOUTHEAST	UNDEVELOPED	1	13.5	1458.5	5000	22000		UNNNYUUYY
	CRAIG C-3							
AK7NPA0395	LAKE MARY	55 26.0	H	30.0	0	0	2106.9	NNUUUUU
I 2	PRINCE OF WA OLD FRANKSCRE	132 29.0	IS	95000	9600	42300	49.809	
SOUTHEAST	UNDEVELOPED	27	240.0	264.7	9600	42300		UUNUUUUUU
	CRAIG B-2							
AK7NPA0255	MELLEN LAKE	55 12.0	H	35.0	0	0	1250.4	NNUUUUU
I 2	PRINCE OF WA REYNOLDS CREE	132 36.0	IS	0	8000	30000	41.682	
SOUTHEAST	UNDEVELOPED	6	62.0	864.1	8000	30000		UUNUUUUUU
	SITKA D-3.							

SURVEY SITES
TABLE 4

SITE ID / PROJECT NAME / LATITUDE / PROJ.PURP. / DAM HT / EXIST.CAP. / EXIST.ENRG / ANUL. COST / ENVIRONMENTAL IMPACT CODE
PRIMARY CO. -NAME OF STREAM / LONGITUDE / STATUS / F C STOR. / INC. CAP. / INC.ENERGY / ENERGY COST /
DEP ACTV / OWNER / DR.AREA / AVE. Q / PWR. HD. / TOT. CAP. / TOT.ENERGY / /
CODE INV / MAP REFERENCE / (D M.M) / / (FT) / (KW) / (MWH) / (1000 $) /
GEOG. AREA / / (SQ.MI) / (CFS) / (AC FT) / (FT) / (KW) / (MWH) / ($/MWH) / SOCIAL IMPACT CODE
AK7NPA0283 / SNOW / 60 17.9 / H / 310.0 / 0 / 0 / 8685.5 / NNNNNNNU
1 2 / SEWARD SNOW RIVER / 149 18.0 / IS / 0 / 63000 / 278000 / 31.242 /
SO CENTRAL / UNDEVELOPED / 85 / 710.0 / 652.3 / 63000 / 278000 / / UNNUUUUUU
/ SEWARD B-7. / / / / / / /
AK7NPA0319 / HONOUINO LAKE / 56 22.3 / H / 5.0 / 0 / 0 / 1041.7 / NNUUUUU
1 2 / SITKA BIG PORT WALT / 134 42.9 / IS / 28000 / 5000 / 24300 / 44.516 /
SOUTHEAST / UNDEVELOPED / 3 / 66.0 / 479.5 / 5000 / 24300 / / UNNUUUUUU
/ PORT ALEXANDER B-3. / / / / / / /
AK7NPA0321 / CARBON LAKE / 57 1.9 / H / 65.0 / 0 / 0 / 2849.8 / NNUUUU
1 2 / SITKA UNNAMED / 134 28.1 / IS / 56880 / 10000 / 49000 / 58.160 /
SOUTHEAST / UNDEVELOPED / 27 / 483.0 / 259.7 / 10000 / 49000 / / UNNUUUUUU
/ SITKA A-3. / / / / / / /
AK7NPA0325 / DIANA LAKE / 56 53.0 / H / 5.0 / 0 / 0 / 1318.0 / NNUUUUU
2 / SITKA UNNAMED / 135 3.0 / IS / 0 / 8000 / 35000 / 37.658 /
SOUTHEAST / UNDEVELOPED / 4 / 56.0 / 1473.5 / 8000 / 35000 / / UNNUUUUUU
/ PORT ALEXANDER D-4. / / / / / / /
AK7NPA0332 / GREEN LAKE / 56 95.30 / H / 200.0 / 0 / 0 / 3101.9 / NNNNNNN
1 2 / SITKA VODOPAD RIVER / 135 11.60 / UC / 132000 / 16400 / 64000 / 48.467 /
SOUTHEAST / UNDEVELOPED / 28 / 291.0 / 348.6 / 16400 / 64000 / / NNNUYYYYY
/ PORT ALEXANDER D-4 / / / / / / /
AK7NPA0335 / KASNYKU LAKE / 57 11.0 / H / 20.0 / 0 / 0 / 1248.8 / NNUUUUU
1 2 / SITKA KASNYKU FALLS / 134 49.9 / IS / 0 / 7000 / 30000 / 41.626 /
SOUTHEAST / UNDEVELOPED / 5 / 70.0 / 650.3 / 7000 / 30000 / / UNNUUUUUU
/ SITKA A-5. / / / / / / /
AK7NPA0291 / MAKSOUTOF RIVER / 56 30.0 / H / 80.0 / 0 / 0 / 2747.1 / NNUUUUU
1 2 / SITKA MAKSOUTOF RIV / 134 57.9 / IS / 0 / 24000 / 117000 / 23.479 /
SOUTHEAST / UNDEVELOPED / 24 / 375.0 / 569.4 / 24000 / 117000 / / UNNUUUUUU
/ PORT ALEXANDER C-3. / / / / / / /
AK7NPA0294 / MILK LAKE / 56 58.0 / H / 30.0 / 0 / 0 / 1290.3 / NNUUUUU
1 2 / SITKA MILK CREEK / 134 47.0 / IS / 0 / 7000 / 33000 / 39.101 /
SOUTHEAST / UNDEVELOPED / 11 / 230.0 / 645.3 / 7000 / 33000 / / UNNUUUUUU
/ PORT ALEXANDER B-3 / / / / / / /
AK1NPA0346 / PELICAN CREEK / 57 34.7 / H / 22.0 / 500 / 2000 / 128.56 / NNUUUUU
1 2 / SITKA PELICAN CREEK / 136 7.8 / OP / 200 / 1000 / 1700 / 75.507 /
SOUTHEAST / PELICAN UTIL. CO. / 12 / 150.0 / 120.0 / 1500 / 3700 / / UNNUUUUUU
/ SITKA D-7 / / / / / / /

SURVEY SITES
TABLE 4

SITE ID / DEP CODE / ACTV INV / GEOG. AREA	PROJECT NAME / PRIMARY CO. -NAME OF STREAM / OWNER / MAP REFERENCE	LATITUDE / LONGITUDE / DR.AREA (D M.M) (D M.M) (SQ.MI)	PROJ.PURP. / STATUS / AVE. Q (CFS)	DAM HT / F C STOR. (AC FT) / PWR. HD. (FT)	EXIST.CAP. / INC. CAP. / TOT. CAP. (KW) (KW) (KW)	EXIST.ENRG / INC.ENERGY / TOT.ENERGY (MWH) (MWH) (MWH)	ANUL. COST / ENERGY COST (1000 $) ($/MWH)	ENVIRONMENTAL IMPACT CODE / SOCIAL IMPACT CODE
AK7NPA0311	TAKATZ CREEK	57 6.9	H	205.0	0	0	3348.6	YNNNNUU
I 2	SITKA TAKATZ CREEK	134 51.0	IS	145800	20000	97000	34.480	
SOUTHEAST	UNDEVELOPED	10	180.0	990.0	20000	97000		UNNUUUUUU
	SITKA 1-3.							
AK6NPA0078	DAYEBAS CREEK	59 17.2	H	15.0	0	0	1199.6	UNNNYUU
I 2	SKAGWAY-YAKU DAYEBAS CREEK	135 2.0	IS	0	5000	18190	65.951	
SOUTHEAST	UNDEVELOPED	11	85.5	344.6	5000	18190		UNNUUUUYU
	SKAGWAY B-1							
AK1NPA0359	DEWEY LAKES	59 26.8	HS	20.0	375	1000	108.40	NNUUUUU
I 2	SKAGWAY-YAKU DEWEY CREEK	135 18.9	OP	410	1000	1300	83.385	
SOUTHEAST		7	30.0	400.0	1375	2300		UNUUUUUUU
	SKAGWAY B-1							
AK7NPA0357	GOAT LAKE	59 31.3	H	15.0	0	0	1555.2	NNUUUUU
I 2	SKAGWAY-YAKU PITCHFORK CAL	135 11.0	IS	6000	10000	46000	33.408	
SOUTHEAST	UNDEVELOPED	4	29.0	1868.1	10000	46000		UNNUUUUUU
	SKAGWAY C-1.							
AK7NPA0041	ALLISON CREEK	61 7.1	H	1.0	0	0	837.10	NNUYNNN
I 2	VALDEZ-CHIT- ALLISON CREEK	146 10.2	IS	19980	8000	18000	46.505	
SO CENTRAL	UNDEVELOPED	5	49.0	1148.9	8000	18000		UUNNYYYYY
	VALDEZ A-7							
AK7NPA0386	SOLOMON GULCH	61 30.9	H	10.0	0	0	1462.1	NNNNNUU
I 2	VALDEZ-CHII- SOLOMON GULCH	146 15.9	IS	0	12000	65000	25.571	
SO CENTRAL	UNDEVELOPED	18	138.0	607.3	12000	65000		UUNUYUUUY
	VALDEZ A-7							
AK7NPA0310	THOMAS BAY	57 3.3	H	3.0	0	0	4016.8	NNNNNNN
I 2	WRANGELL PET CASCADE CREEK	132 45.2	IS	97500	50000	217417	18.477	
SOUTHEAST	UNDEVELOPED	18	226.0	1443.5	50000	217417		NNNNYYYYY
	SUMDUM A-2A-5							
AK6NPA0414	ANITA	56 15.5	H	48.0	0	0	772.60	NNUUUUU
I 2	WRANGELL-PET ZIMUVIA STRAI	132 26.5	IS	15500	3230	14150	54.607	
SOUTHEAST	UNDEVELOPED	2	27.0	1005.0	3230	14150		UUUUUUUUU
	PETERSBURGH-2.							
AK7NPA0301	HANDING RIVER	56 16.1	H	190.0	0	0	5137.6	NNUUUUU
I 2	WRANGELL-PET HANDING RIVER	131 58.9	IS	200000	18000	85000	60.447	
SOUTHEAST	UNDEVELOPED	61	725.0	254.7	18000	85000		UUUUUUUUU
	BRADFIELD CANAL A-5							

SURVEY SITES
TABLE 4

SITE ID	PROJECT NAME	LATITUDE	PROJ.PURP.	DAM HT	EXIST.CAP.	EXIST.ENRG	ANUL. COST	ENVIRONMENTAL
	PRIMARY CO. -NAME OF STREAM	LONGITUDE	STATUS	F C STOR.	INC. CAP.	INC.ENERGY	ENERGY COST	IMPACT CODE
DEP ACTV	OWNER	DR.AREA	AVE. Q	PWR. HD.	TOT. CAP.	TOT.ENERGY		
CODE INV	MAP REFERENCE	(D M.M)		(FT)	(KW)	(MWH)	(1000 $)	
GEOG. AREA		(D M.M)		(AC FT)	(KW)	(MWH)	($/MWH)	SOCIAL
		(SQ.MI)	(CFS)	(FT)	(KW)	(MWH)		IMPACT CODE
AK??PA0400	MUTH LAKE	56 59.0	H	210.0	0	0	2873.6	NNUUUUU
1 2	ARANGELL-PET DELT CREEK	132 45.0	IS	0	13000	63000	45.613	
SOUTHEAST	UNDEVELOPED	8	81.0	1447.5	13000	63000		UNNUUUUUU
	PETERSBURG-3.							
AK??PA0401	SCENERY CREEK	57 4.9	H	10.0	0	0	2280.7	NNUUUUU
1 2	ARANGELL-PET SCENERY CREEK	132 41.9	IS	60000	15000	67000	54. 41	
SOUTHEAST	UNDEVELOPED	21	202.8	619.3	15000	67000		UNNUUUUUU
	SUMDUM A-2,A-3.							
AK??PA0406	TYEE CREEK	56 12.0	H	100.0	0	0	3678.2	NNUUUUU
1 2	WRANGELL-PET TYEE CREEK	131 33.0	IS	105000	30000	132940	27.668	
SOUTHEAST	UNDEVELOPED	14	163.0	1356.6	30000	132940		UNNUUUUUU
	PRADFIELD CANAL A-5.							
AK??PA 427	NENANA	64 11.0	H	230.0	0	0	27731	NNUUUUU
1 2	YUKON-KOYUKU NENANA RIVER	149 15.0	IS	0	200000	566000	48.995	
YUKON	UNDEVELOPED	2450	4492.0	206.7	200000	566000		UNNUUNNNN
	FAIRBANKS A-5.							

TABLE 5

Regional Requirements versus Hydroelectric Potenti:

REGION	ESTIMATED REQUIREMENT		HYDROELECTRIC POTENTIAL		MARKETABLE HYDROELECTRIC POTENTIAL 1/	
	MW	GWh	MW	GWh	MW	GWh
Southcentral	2,541	10,560	2,728	12,004	2,587	11,184
Yukon	675	2,072	200	566	200	566
Southeast	349	1,131	549	2,486	152	668
Southwest	134	358	85	376	30	131
Remainder of State	301	879	0	0	0	0
	4,000	15,000	3,562	15,432	2,969	12,549

1/ Marketable Projects by Year 2000. Source: Alaska Power Administration

Susitna Power Now, Inc.
P.O. Box 7-4436 Fairbanks Alaska 99701 (907) 452-5272
P.O. Box 981 Anchorage Alaska 99510 (907) 276-7744

SUSITNA HYDROPOWER PROJECT

Pertinent Data

Location	Watana	Devil Canyon
	River Mile 165 (2 mi. upstream from DC pool head)	River Mile 134 (14.5 mi. from Gold Creek)
Type Construction	Earthfill	Concrete, thin-arch
Height, feet	810	635
Crest Length, feet	3,450	2,475
Design Earthquake Richter Scale	8.5	8.5
Water surface area (full pool) acres	43,000	7,550
Average annual estimated drawdown-feet	100	5
Reservoir Length (river miles inundated)	54+	28
Firm Annual Energy BkwHrs	3.1	3.0
Secondary Production for 2-dam system annually BkwHrs	0.44	0.36
Access Road, miles	37	27
Reservoir Storage Loss-Sedimentation, per 100 yrs.(comb.)	4.2 %	6.5 %

TRANSMISSION SYSTEM	to Anchorage	to Fairbanks
Two-single Circuit lines	136 miles 345 KV	198 miles 230 KV

COST

Total Project Costs January 1979 dollars	$2,590,000,000

Susitna Power Now, Inc. Newsletter

Volume 1, No. 1
April 1980

P. O. BOX 981, Anchorage, Alaska 99510 (907) 277-7644

SUSITNA BACKERS SPEAK OUT AT CHAMBER LUNCHEON

At a St. Patrick's Day luncheon of the Anchorage Chamber of Commerce backers of the Susitna Hydroelectric Project warned of massive cutbacks in the use of electricity and higher electrical rates by 1990 without development of the State's hydroelectric potential. In his remarks before the Chamber luncheon, John Spencer, Executive Manager of the Anchorage Municipal Utilities and Treasurer of SUSITNA POWER NOW, INC. urged that State funds be invested in the project. "It's not pleasant to have the lights go out... but if we don't do something that's what will happen", he said.

Eric Yould, Executive Director of the Alaska Power Authority told the luncheon audience that Alaska, with its precipitous terrain and large water run-off has "roughly one-half the un-tapped hydro power in the U.S.

Bob Penny, Co-Chairman of SUSITNA POWER NOW, INC. noted that eighty percent of the State's population would receive low-cost energy from the project. "I can think of no better way to spend the energy surplus than using it on this project", Penny said.

CHAMBER GIVES SUSITNA DAM OK

In a joint action the Anchorage and Fairbanks Chambers of Commerce have come out in support of the Susitna River Hydroelectric Project. The resolution notes that energy use will continue to rise as well as the price of natural gas and oil. The proposed hydroelectric power would help decrease dependence on those fuel sources. The businessmen came out in support of SB 294 and 295, providing for construction of the project by the A.P.A. and appropriating money for studies leading to application for a Federal license to construct the project.

SUSITNA POWER NOW, INC. OPENS ANCHORAGE OFFICE

At the Board of Directors meeting in Juneau, March 7, Co-Chairman Lee Wareham of Fairbanks announced the opening of the Anchorage office. Located at 2702 Denali the office is staffed by Ms. Eve Dischner. Office hours are from 9:00 to 5:00 and the telephone number is 276-7744.

MEMBERSHIP DRIVE

Ike Waldrop, Membership Chairman reported at the Board of Directors meeting in Juneau that the membership drive is just getting off the ground. LET'S ALL PITCH IN AND DO OUR SHARE - ENROLL YOUR FRIENDS AND NEIGHBORS AS MEMBERS. Requests for membership applications may be sent to the Anchorage office. Current membership stands at ~~300~~ 600+

SB 294 RECEIVES UNANIMOUS APPROVAL OF SENATE RESOURCES COMMITTEE

The Senate Resources Committee unanimously gave it's approval to SB 294 which directs the Alaska Power Authority to get the project moving. Bills which appropriate State money to that end are now in the Senate Finance Committee.

SUSITNA POWER NOW, INC. supported the measure with many witnesses as well as written testimony. Among those speaking in favor of the bill were former Governor Bill Egan. Egan, in his testimony said, "the time has come when we must do everything possible to turn public wealth from Prudhoe Bay oil production into an alternative source of power for use in Alaska."

The lone dissenting testimony provided the hearing's most lively moment. Joe Geldhof, a lobbyist for the Alaska Conservation Society and other environmental groups said his organization was not "flatly opposed" to the Susitna Project, but instead supported smaller hydroelectric dams. Senator Bettye Farenkamp (D-Fairbanks) reminded Mr. Geldhof of the testimony of the environmental groups at Ramparts hearings when they recommended Susitna as an alternative to the Ramparts Dam.

Of the Environmentalists testimony at the Ramparts hearings Senator Don Bennett (R-Fairbanks) said environmentalists had said the Ramparts Dam would flood the Yukon wetlands "and drown the ducks". "I didn't buy that", and continued saying that now the environmentalists say the Susitna Project might harm caribou migration. "It's a waste of my time", Bennett said of such testimony.

(Copies of SB 294, 295 and HB 739 & 570 as well as an abstract of the Senate Resources Committee Hearings (February 16 and March 7) are available from the Anchorage office os SUSITNA POWER NOW, INC.)

COMMENTS FROM OUR MEMBERS

"I feel it is a crime to use a non renewable resource to generate power when hydro-generation could be developed"..... Roger Connolly, Director of Training, Alaska Electrical Apprentice Training Trust.

"This project would give Alaska and Alaskans the energy needed now and for our future growth." ..... Bill Mike Baker, Fairbanks.

Readers and members comments and suggestions are solicited. Let us hear from you.

COMING NEXT MONTH

Future issues of this newsletter will feature a column giving the history of the Susitna Hydroelectric project dating back to the 1940's.

H E L P !

Senate Bill 385 appropriates 54 million dollars for a transmission line tie between South Central and Interior Alaska via the rail belt corridor from Willow to Healy. This line will accommodate economy energy transactions, pooling power generation reserves, and emergency power interchanges. If approved this session, the line could be completed by late 1983. This project warrants the highest priority for all Fairbanks-Anchorage residents.

YOU CAN HELP!

Immediately write your area legislators, the Governor and Lt. Governor urging support of SB 385.

GOVERNOR JAY S. HAMMOND
POUCH A
Juneau, Alaska 99811

LT. GOVERNOR TERRY MILLER
POUCH AA
Juneau, Alaska 99811

SEND CORRESPONDENCE TO: Alaska State Senate or Alaska State House, Pouch V
Juneau, Alaska 99811

From the desk of

UNITED STATES SENATOR MIKE GRAVEL

There is one aspect of the Susitna hydropower issue that I would like to address for your membership's information. As you know, I had authored and shepherded through the Senate Finance Committee a provision that would have allowed large hydroelectric projects to be financed by tax-exempt bonds. The Finance Committee passed the large hydro exemption on October 24, 1979. The full Senate passed it December 17, 1979.

This exemption had the potential of saving Railbelt electrical users literally hundreds of millions of dollars. It would have had an equal benefit on large hydro projects in other parts of the country.

Unfortunately, the House conferees from the Ways and Means Committee strongly oppose tax-exempt bonding of any kind, fearing that the bond purchasers derive an inappropriate tax free income from those bonds. Knowing that, I went to the conference committed to fight for the hydro exemption. Sadly, not one of the House conferees--including some whose districts would have benefited from the hydro exemption--supported the hydro exemption when I pushed it to a vote. It would appear that future efforts to procure the Hydro exemption will need more leverage and priority in the minds of the House members.

That should not be perceived as an insurmountable problem. It will be difficult, of course, as long as the House conferees insist that tax-exempt bonding which benefits large populations is somehow corrupt by virtue of the benefit that accrues to the bond purchaser.

Regardless, that is a fight I am committed to fighting when the time and opportunity arise in the future. For the time being I am confident that there will be any number of bills of substantial importance to the House's concerned Ways and Means members and that we will prevail in obtaining the desires exemption prior to 1983 when Susitna financing will be needed.

Correspondence may be addressed to Senator Gravel at:

UNITED STATES SENATOR MIKE GRAVEL
3121 Dirksen
Senate Office Building
Washington, D. C. 20510

JOIN SUSITNA POWER NOW!

Susitna Power Now was formed by a group of citizens for the sole purpose of creating a viable inflation-proof electrical energy future via construction of the Devil Canyon Upper Susitna Hydroelectric Project.

The Project will cost approximately 3 billion 1980 dollars and provide 6.1 billion kilowatt hours of firm electrical energy on an annual basis. This energy will benefit 80% of the State's population residing in Southcentral and Interior Alaska.

We need your help. Join NOW. Complete the membership application and mail to:

SUSITNA POWER NOW!, INC.
P. O. Box 981
Anchorage, Alaska 99510

MEMBERSHIP APPLICATION

NAME _____

TITLE _____

COMPANY _____

MAILING ADDRESS _____

_____

PHONE _____

SIGNATURE _____

DATE _____

Type of Membership:

General ___ $1.00 for three (3) years

Sustaining ___ $100.00 initiation
$10.00 month dues (payable semi-annually)

Institutional ___ $500.00 or more annually

REMARKS _____

_____

_____

_____

INTRODUCTION

In December 1979 the Economic Feasibility Study for a possible Anchorage - Fairbanks Transmission Intertie (Intertie Study) was completed by IECO-RWRA for the Alaska Power Authority. This Intertie Study reviewed alternative intertie designs that considered the railbelt requirements for generation with and without the Susitna hydroelectric project.

The study concluded that a feasible intertie was possible without the Susitna project as well as with it. The optimized designs for the alternatives studied were for the total line length (323 miles) and included the following voltage and conductor configurations:

Alternative Cases	Interconnection Description	Voltage kV-circ	Optimum ACSR kcmil-no.cond	Capability MW
W/o Susitna:				
I A & B	Anchorage - Ester	230 s/c	954 - 1/c	130
I C	Anchorage - Ester	345 s/c	795 - 2/c	380
I D	Anchorage - Ester	230 s/c	954 - 1/c	130
W/ Susitna:				
II A	Anchorage - D. Canyon	345 s/c x2	954 - 2/c	1200
	D. Canyon - Ester	230 s/c x2	1510 - 1/c	370

After study of the report it was suggested by the Anchorage Municipal Light and Power (AMLP) and the Golden Valley Electric Association (GVEA) that it would be useful to analyze an arrangement that would use existing lines (including a pending extension of a Matanuska Electric Association (MEA) line from Willow to Sunshine) with new line constructed for the remaining portion -- such new line to be built according to the design criteria of Susitna (see II A in the above Table).

The Alaska Power Authority (APA) authorized a brief supplementary study to determine the approximate transfer capabilities and construction costs of such an arrangement. The following pages report the results of this study.

Genesis of This Report

The Intertie Study concluded that a 230 kV single-circuit transmission line with a line loading capability of 130 MW is economically feasible in 1984. This line design is smaller in capacity than would be required if the Susitna Project were constructed. A line design compatible with the Susitna Project was not found feasible by 1984 although the larger capacity circuit is deemed technically preferable for the Anchorage - Fairbanks connection. Further studies were recommended toward finding a way to support this larger capacity circuit.

The suggestion of GVEA and AMLP to study an interim arrangement that would maximize the use of existing lines (resulting in the least amount of new construction) was supported by the APA as a potentially practical way to accomplish the intertie at an earlier date and provide that new construction would be compatible with the larger capacity circuits suitable for the Susitna Project.

The purpose of the following pages is to examine the technical character of such an arrangement with a view toward maximizing the power transfer capability at minimum initial construction cost.

Technical Scope of This Report

The depth of technical review of the interim arrangement described above will include only steady-state analysis of several line configurations with an assigned limit of approximately 30 degrees of power angle between the buses at Pt. MacKenzie and Gold Hill. The stability of these configurations is not analyzed. No serious stability problems are anticipated with the power angle limit as stated.

Future Stability Analysis

If it is determined that an interim system configuration as described herein be implemented, it is important to make a complete stability analysis that would consider the characteristics of such intertie, the connected rotating machinery (generators, motors) and the control characteristics (governors, voltage regulators, relaying and switching, etc.) Such a study would provide the guidelines for selection or modification of control equipment, if necessary, and establish guidelines for operating the interconnected system.

Line Configurations Studied

Five general line configurations were studied to provide information regarding line transfer capabilities and related construction costs:

I- Existing Lines to Willow and Healy
New 345 kV s/c line with 2-954 kcm, Willow to Susitna Jct. - 72 miles
New 230 kV s/c line with 1-1510 kcm, Susitna Jct. to Healy - 86.5 miles
Operate lines as follows:

Pt. Mack - Teeland	230 kV
Teeland - Willow	115 kV
Willow - Healy	230 kV (add 32 MVAR Shunt Reactor)
Healy - North Pole	138 kV (add 28 MVAR Shunt Reactor)

Use two winding transformers and no series compensation

II- Same as I above, except:
Use autotransformers and series compensation (20%, Willow to Healy)

II-1 Same as II above, except:
Existing lines to Sunshine and Healy
New 345 kV s/c line with 2-954 kcm, Sunshine to Susitna Jct.-43.5 miles
Operate lines as follows:

Pt. Mack - Teeland	230 kV
Teeland - Sunshine	115 kV
Sunshine - Healy	230 kV (add 32 MVAR Shunt Reactor)
Healy - North Pole	138 kV (add 28 MVAR Shunt Reactor)

III- Same as II-1 above, except:
Operate lines as follows:

Pt. Mack - Teeland	230 kV
Teeland - North Pole	138 kV (add no new Shunt Reactors)

Use autotransformer at Teeland and no series compensation

III-1 Same as III above, except:
Use series compensation (20%, Sunshine to Healy)

Summary and Conclusion

Load Flow studies of 13 Cases with the five configurations previously described were made using the General Electric Company "CIFLO$" program. The line and transformer data, and the worksheets for these cases are attached as Appendix-A.

The following Table-1, "Load Flow Summary Data" contains selected data from the load flow calculations and construction cost estimates for the various configurations. These estimates were developed from the cost data in the original Intertie Study. A sample calculation is shown in Appendix-B attached.

The load flow cases studied clearly show that an interim transmission intertie operated at 138 kV from an assumed supply point at Teeland substation to connect with the GVEA existing 138 kV system at Healy is a technically feasible connection capable of transferring up to 50-plus megawatts of power from Fairbanks to Anchorage and up to 35-plus megawatts from Anchorage to Fairbanks.

It is also shown that by constructing an additional 28.5 miles of new line to Willow an additional 5 megawatts could be transmitted. A more detailed review of the work sheets shows that the "weak" links of such an interim circuit arrangement are the existing 138 kV lines.

Such an interim arrangement is easily capable of transmitting at least 200,000,000 kWh of energy annually and providing reserve capacity as indicated. This could postpone other investments and provide an opportunity for exchange of the lowest cost energy alternatives available along the interconnected system.

If it is assumed that the energy exchanges possible are worth 3 cents per kWh (fuel cost differences now appearing in Anchorage and Fairbanks support this probability) a $6,000,000 per year minimum saving in fuel

cost is possible. The added value of reserve sharing would increase the annual savings attributable to this intertie. Depending on financing costs, it would appear that the $45,000,000 investment is attractive particularly when it is remembered that several million dollars of the cost is for future capacity related to the Susitna Project.

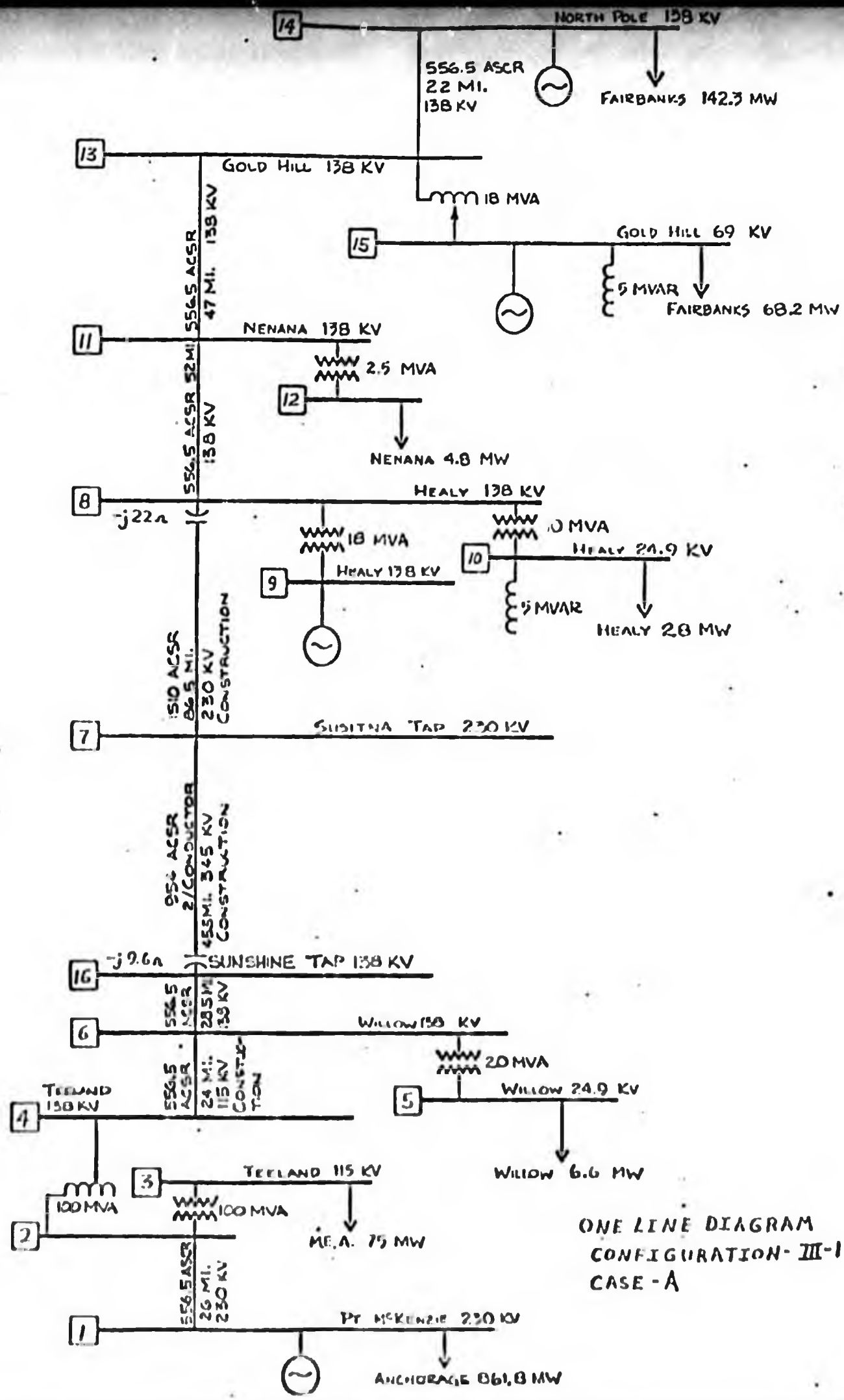
It is recommended that this interim arrangement is worth serious consideration particularly in view of the opportunity to accelerate the completion of an important segment of a renewable energy project. A decision to begin by mid-1980 would allow for construction to start in the winter of 1980-81 and for completion by mid 1983.

Additional specific studies to arrive at the basic details for design support and for negotiations of operating, wheeling and maintenance agreements should be implemented early in the course of action toward accomplishment of such a project.

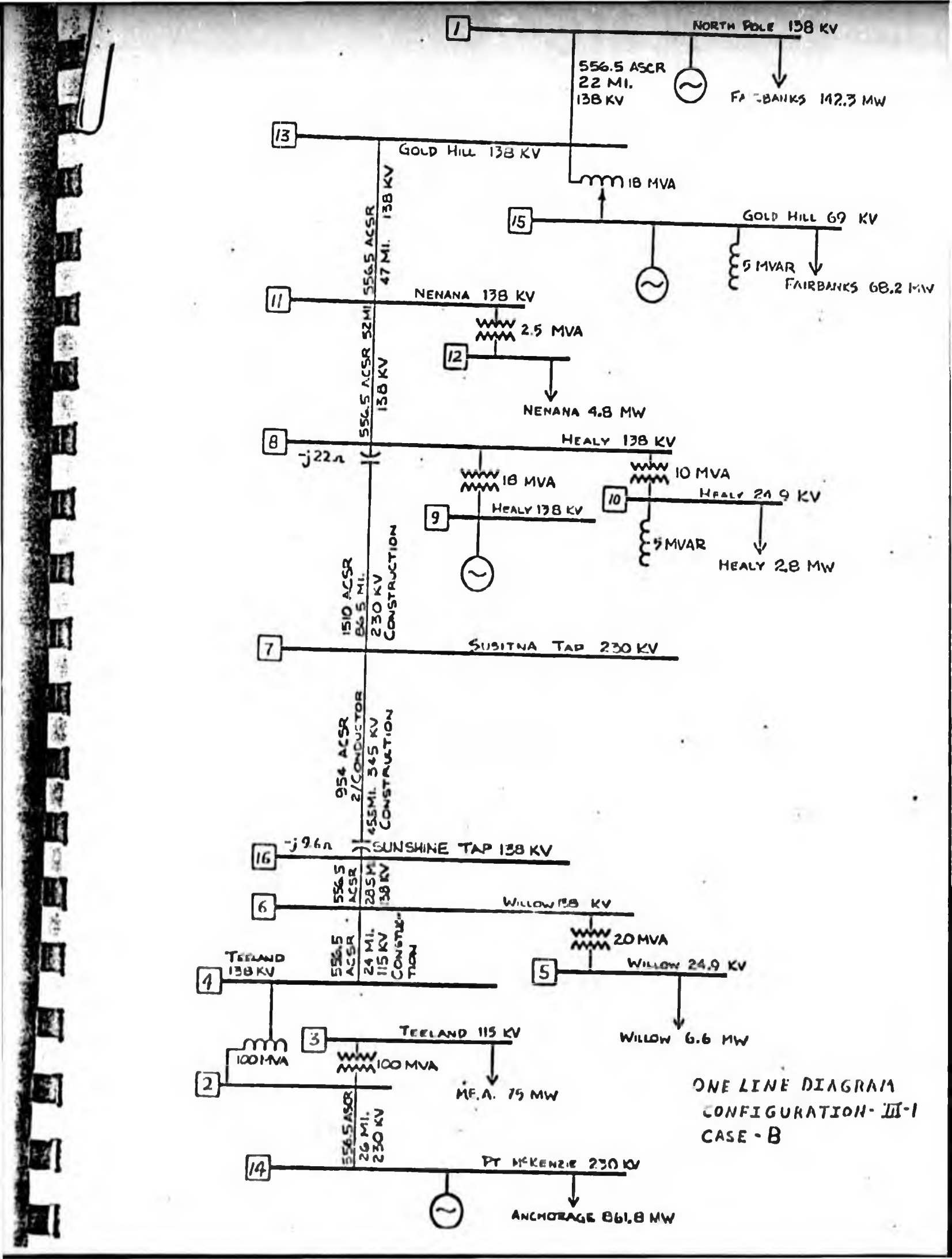
TABLE-1
LOAD FLOW SUMMARY DATA

	CASE	Load Flow Load Year	Line Section Power Transfer - MW	Line Voltage Range - %	Line Loss %/MW*	Power Angle - degrees Pt. Mac - N.Pole	Total Construction Cost**
I	CASE A	Anch-Fbks 1984 Loads	Willow to Healy 35	102 to 112	2.5 / 3.4	33°	$ 63,727,000
	CASE B	Fbks-Anch 1984 Loads	Healy to Willow 50	99 to 108	2.2 / 2.0	27°	$ 63,727,000
	CASE C	Fbks-Anch 1984 Loads	Healy to Willow 16	99 to 105	n.a.	9°	$ 63,727,000
II	CASE A	Anch-Fbks 1984 Loads	Willow to Healy 39	102 to 108	2.9	28°	$ 63,371,000
	CASE B	Anch-Fbks 1990 Loads	Willow to Healy 31	98 to 104	2.5 / 6.5	30°	$ 63,371,000
	CASE C	Fbks-Anch	Healy to Willow 51	97 to 104	1.6 / 3.5	23°	$ 63,371,000
II-1	CASE A	Anch-Fbks 1984 Loads	Sunshine to Healy 36	102 to 107	3.0 / 4.1	31°	$ 52,630,000
III	CASE A	Anch-Fbks 1984 Loads	Sunshine to Healy 34	103 to 106	2.8 / 3.8	30°	$ 44,587,000
	CASE B	Open circ.-Healy 1984 Loads	Sunshine to Healy 0	104 to 112	---	3°	$ 44,587,000
III-1	CASE A	Anch-Fbks 1984 Loads	Sunshine to Healy 35	103 to 106	2.9 / 3.9	28°	$ 45,032,000
	CASE B	Fbks-Anch 1984 Loads	Healy to Sunshine 54	102 to 105	4.5 / 4.2	31°	$ 45,032,000
	CASE C	Anch-Fbks 1990 Loads	Sunshine to Healy 27	100 to 105	3.0 / 7.5	31°	$ 45,032,000
	CASE D	Fbks-Anch 1990 Loads	Healy to Sunshine 53	97 to 104	2.7 / 5.9	30°	$ 45,032,000

* Line Loss is calculated as a % of the total Generation on line for each case. MW are also shown.
** Construction costs estimated using unit costs from Intertie Study (See Appendix B for sample).



ONE LINE DIAGRAM
CONFIGURATION - III-1
CASE - A



ONE LINE DIAGRAM
CONFIGURATION - III-1
CASE - B

Report of
Technical Advisory Committee
on
Economics of Anchorage - Fairbanks
Minimal Transmission Intertie

Anchorage Municipal Light & Power
Golden Valley Electric Association
Fairbanks Municipal Utilities System

January 1980

Robert W. Retherford Associates' Anchorage-Fairbanks transmission intertie supplementary study for maximizing use of existing lines with new lines at Susitna Design capacity, completed January 24, 1980, demonstrated the probable technical feasibility of transmitting economy energy from Anchorage to Fairbanks and reserve generating capacity from Fairbanks to Anchorage over a minimal transmission line. This report examines the economics of such interchanges for Configuration III - 1 Cases A and B of the RWRA study.

ECONOMY ENERGY

From data in the supplementary study it was estimated that annual losses in transmitting 200 million KWH at economy energy from Anchorage to Fairbanks would be about 4% or 8 million KWH. 200 million KWH generated by AMLP would replace 192 million KWH generated by GVEA with simple cycle and regenerative combustion turbines averaging 13,000 BTU per KWH.

AMLP's fuel consumption to generate the economy energy was determined by using the General Electric HPROD production costing program to model generator operation. HPROD was run for AMLP's system load plus economy energy and for AMLP system load alone. The difference between the two amounts of fuel was the fuel burned to generate the economy energy for GVEA. The following table shows the fuel saved.

FUEL CONSUMPTION, MILLIONS OF BTU

GENERATION BY

YEAR	GVEA	AMLP	FUEL SAVED
1984	2,500,000	2,200,000	300,000
1985	2,500,000	2,330,000	170,000
1986	2,500,000	2,560,000	-60,000

The 300,000 million BTU saved in 1984 is equivalent to about 52,000 barrels of fuel oil. The amount of fuel consumed by AMLP to generate economy energy increases each year; as AMLP system load grows, less efficient generating units must be operated to produce the economy fuel.

Monetary savings from economy energy, of course, depend on the relative costs of fuel in Anchorage and Fairbanks. To give an idea of the amounts of money involved without attemptiong to forecast fuel prices several years hence, fuel was priced at present values of $2.85 per million BTU for GVEA and $0.829 per million BTU for AMLP:

FUEL COSTS

GENERATION BY

YEAR	GVEA	AMLP	SAVING
1984	$7,125,000	$1,824,000	$5,301,000
1985	7,125,000	1,932,000	5,193,000
1986	7,125,000	2,122,000	5,003,000

The supplementary study showed that GVEA could provide 53 MW of reserve generating capacity to AMLP over the transmission line. Without this reserve capacity it would be necessary for AMLP to install a peaking combustion turbine to maintain firm generating capacity. Capital recovery costs of such a peaking turbine were estimated to be $847,000 annually at today's prices. The value of 53 MW of reserve capacity furnished by GVEA to AMLP over the transmission line would thus be $847,000 annually.

SUMMARY

Adding the value of economy energy to that of reserve generating capacity produced the following total value of the transmission line to AMLP and GVEA:

YEAR	ECONOMY ENERGY	RESERVE CAPACITY	TOTAL
1984	$5,301,000	$847,000	$6,148,000
1985	5,193,000	847,000	6,040,000
1986	5,003,000	847,000	5,850,000

COST ESTIMATE (1979 Dollars)

CONFIGURATION III-1

1.	New Transmission Lines		
1.1	Healy - Susitna Tap, 86.5 m. (sc, 230 kV, 1510 kcmil ACSR)	$176,693./mile	15,283,945
1.2	Susitna Tap - Willow 71.5m (sc, 345 kV, 2 x 954 kcmil ACSR)	$253,320./mile	18,112,380
		Transmission Total:	$33,396,325
2.	Substations		
2.1	Healy 138 kV Addition of Series Compensation	150,000	
2.2	Healy 138 kV Circuit breakers & property	243,000	
2.3	Willow 138 kV Addition of Series Compensation	150,000	
2.4	Willow 138 kV Circuit breakers and property 60 MVA Autotransformer 115/138 kV	1,243,000	
		Substations Total:	$ 1,786,000

CONFIGURATION III-1 (Cont.)

TOTAL COSTS (1979)

Transmission Lines	$ 33,396,325
Substations	1,786,000
Control and Communication	3,300,000
Engineering/Design	3,000,000
	$ 41,482,325

DISBURSEMENTS AND ESCALATION

		Escalated @ 8% p.a.
198? (7%)	2,903,760	3,387,000
198 (25%)	10,370,580	13,064,000
1983 (68%)	28,207,985	38,376,000
	41,482,325	54,827,000
		- 41,482,325
	Total Escalation	13,344,675

PROJECT COST SUMMARY

Project Costs	$41,482,325
Escalation	13,344,675
Total	$54,827,000

Susitna Power Now, Inc.
P.O. Box 7-4436 Fairbanks Alaska 99701 (907) 452-5272
P.O. Box 981 Anchorage Alaska 99510 (907) 276-7744

February 14, 1980

The Honorable Bill Sumner
Alaska State Senate
Pouch V
Juneau, Alaska 99811

Dear Senator Sumner:

Legislation providing for funding and construction of the proposed Anchorage/Fairbanks Transmission Line Intertie justifies a position of highest priority early this session. Support documentation is contained in appropriate pages taken from the Anchorage-Fairbanks Intertie Supplementary Study conducted by the International/R.W. Retherford Engineering firm and an economic study performed by Anchorage Municipal Light and Power personnel in cooperation with GVEA and the Fairbanks Municipal Utilities System, copies of which are enclosed.

The figures speak for themselves. However, in the event you are not into engineering studies, we will summarize the results for you.

The following plan is recommended:

1. Build approximately 158 miles of new transmission line and connect to existing facilities at Healy and Willow at an approximate 1983 dollar costs of $54,827 000.

2. The new section is to be built to specifications designed to ultimately transmit energy to both Interior and South Central Alaska supplied from the Upper Susitna Hydroelectric Project.

3. Once completed, the Intertie will be capable of providing for economy energy transactions, a pooling of reserve capacities, and emergency power support between the State's population centers. Further it will be used to supply energy for the Susitna Project once construction is underway.

4. The benefits are substantial. Following is a brief description of the several major ones:

A savings in direct fuel costs in excess of $5,000,000 annually.

A savings in capital investment for reserve generator units of $847,000 annually.

A savings thru displacement by electricity generated from high efficiency natural gas fired units rather than expensive oil fired generation of 425,180 barrels of fuel oil each year.

These are the major ones; there are many more.

5. Financing. We propose the State appropriate $54,827,000 from the general fund early this session and that said funds be administered by the Alaska Power Authority for the purpose of constructing the transmission line project in an expeditious manner. (SB No. 385 sufficiently addresses the funding issue.)

Further, that the utilities using said intertie be assessed appropriate wheeling and/or capacity charges sufficient to cover all operations and maintenance costs incurred by the APA following completion of the facility.

Principal and interest costs associated with the capital investment to be held in abeyance pending completion of the first phase of the Upper Susitna Hydro Project. At that time all capital costs for the line will be co-mingled with those of the prime project and amortized accordingly.

This project will benefit thousands of Alaskans and is therefore most worthy of your support.

Thank you and best wishes.

Lee Wareham, Co-chairman
Susitna Power Now

Bob Penney Co-chairman
Susitna Power Now

R. L. Hufman
Gen. Mgr.
GVEA

Tom Stahr
Gen. Mgr.
Anch. ML&P

Malcolm Cheek
Gen. Mgr.
MEA

Harold Gillam
Gen. Mgr.
Fbks MUS

Enclosures
1. Portions of Engineering Analysis
2. Economic Evaluation

Alaska State Legislature

Senate

Office of the Secretary

Official Business

Pouch V
State Capitol
Juneau, Alaska 99811

April 14, 1980

MEMORANDUM TO: Resources Committee

From: Secretary of the Senate

Subject: Alaska Power Authority Reconnaissance Study

The President referred a letter and report from Eric P. Yould, Executive Director of the Alaska Power Authority concerning a Reconnaissance study of Lake Elva and the Black Bear Lake Projects to your committee.

Encl: Letter w/report

ALASKA POWER AUTHORITY

333 WEST 4th AVENUE - SUITE 31 - ANCHORAGE, ALASKA 99501

Phone: (907) 277-7641
(907) 276-2715

April 3, 1980

The Honorable Clem Tillion
President of the Senate
Alaska State Legislature
Pouch V
Juneau, Alaska 99811

Dear Senator Tillion:

A.S. 44.56.180(b) requires the Power Authority upon completion of the reconnaissance study to submit to the Governor and the Legislature a statement of its recommendations for financing each new project. In addition, if the recommended financing for the project includes a guarantee of indebtedness or an appropriation from the general fund, the Legislature must first give its approval by joint resolution before the Authority may proceed with the engineering or design phase of the project. "Reconnaissance study" is defined in Section 230(7).

A problem exists in that Section 180 does not clearly establish the requirement for legislative approval in relation to the project development process. As defined in the statute, "reconnaissance study" incorporates the first two phases of the development process which are reconnaissance study (a regional assessment of alternative projects to identify one or more projects with the greatest potential for development) and feasibility assessment (an assessment of one or more projects for engineering, economic, and environmental feasibility.

The third stage in the process is detailed field explorations, general design, and preparation of the Federal Energy Regulatory Commission license application. Detailed design commences either upon submission of a license application or receipt of a FERC license to construct. The stage of development involving field studies, general design, and preparation of a FERC license application is not recognized within the statutory requirements. The recommendations of the Power Authority for financing each new project can only be preliminary before completion of a definite project report and a license application. Although it appears that a preliminary recommendation for financing certain projects should be submitted at this time, the recommendations may not be required until further field investigations and general design are completed. Consequently, we have attached statements for the Lake Elva and the Black Bear Lake Projects. Similar statements for Dayebas Creek, Grant Lake, Kisaralik River, Mennonite Creek and Larsen Bay are being prepared and will be submitted as soon as possible.

Sincerely,

Eric P. Yould

Eric P. Yould
Executive Director

Attachments:
as noted

ALASKA POWER AUTHORITY

LAKE ELVA HYDROELECTRIC PROJECT

The Lake Elva Hydroelectric Project near Dillingham will produce 1.5 MW's of power and 7.1 million KWh's of average annual energy. The cost of the Project is estimated to be $13 million in 1979 dollars. The Project includes a rockfill dam across the creek, founded on bedrock, at stream mile 1.5 with an uncontrolled spillway through a saddle approximately 1,000 feet north of the dam with the crest at elevation 350. A 4,100 ft. low pressure 4 ft. diameter pipeline would connect to a 3,200 ft. power penstock to convey the water to the surface powerhouse at elevation 50. The Project would also include 9 miles of surface and 20 miles of submarine transmission line at 25 KV and the upgrade to 25 KV of the existing 22 mile long 7.2 KV line from Dillingham to Aleknagik. The Project appears feasible as a result of a feasibility assessment from the economic, social, engineering and environmental perspectives. Construction could begin on the Project as early as April of 1981.

The Project is eligible to be financed by a combination of state loans, loans from the Rural Electrification Administration, and revenue bonds issued by the Power Authority and guaranteed by the National Rural Electric Utilities Cooperative Finance Corporation. Current high interest rates in the municipal revenue bond market and the present financial condition of the Nushagak Electric Association make revenue bond financing extremely expensive for the utility and ultimately its customers. Nushagak Electric has received 2% loans from the REA in the past, however, the most optimistic estimate of REA financing considered to be available for this Project is 50% financing at 5% interest over 35 years.

The utility has expressed the desire to have the Power Authority design, acquire, and construct the Project. If this takes place REA loan funds may still be available to supplement state loans or revenue bonds issued to finance Project construction. The Project should be financed with REA loan funds to the maximum extent possible, with state loans and revenue bonds issued by the Power Authority and guaranteed by the National Rural Electric Cooperative Finance Corporation (CFC). It would be desirable to achieve 1/3 participation from each financing source for the Project. The Power Authority would work with REA and the Cooperative Finance Corporation to seek participation in funding the Project to the maximum extent possible. Due to present turmoil and high interest rates in the municipal markets, a 1/3 participation of the State in financing the Project appears to be necessary at this time.

Authorization is requested to proceed with the detailed engineering, design and preparation of a Federal Energy Regulatory Commission license application. Authorization to finance the Project will be required before construction can commence in accordance with A.S. 44.56.180. It is anticipated that up to $15 million in revenue bond authorization will be required for the Project to cover construction costs, interest during construction, inflation, and funding of a reserve if up to $5 million in REA or state loan funds are available to assist in the Project financing. This recommendation or statement for financing is preliminary at this time.

ALASKA POWER AUTHORITY

BLACK BEAR HYDROELECTRIC PROJECT

A Reconnaissance Study of the Black Bear Lake Project was funded by the Alaska Power Authority and completed by Harza Engineering Company in October of 1979. The project was determined to be economically feasible to meet the needs of Klawock, Craig and Hydaburg. Klawock is served by the Tlingit and Haida Regional Electric Authority (THREA), a rural electric utility with offices in Juneau. Craig and Hydaburg are served by the Alaska Power and Telephone Company (APT), an investor owned utility company with offices in Port Townsend, Washington. The Power Authority desires to proceed with design and preparation of a Federal Energy Regulatory Commission license application. Construction financing is anticipated to be accomplished by a combination of REA 5% loans, Power Authority revenue bonds secured by power sales contracts and possibly guaranteed by the Cooperative Finance Corporation, and state assistance in the form of subordinate loans.

PROJECT DESCRIPTION

The Black Bear Lake Project is located on the lake of the same name about 8 miles east of Klawock. The Project would have an installed capacity of 5000 kW and at full production level would produce about 22,000 MWh in an average year. Black Bear Lake could be constructed and in operation by 1985. The Project would consist of a dam, spillway, intake, penstock power-station and transmission line. A 20-foot high rock fill dam would be built across Black Bear Creek at the outlet of Black Bear Lake. An uncontrolled spillway with a discharge capacity of 1200 cfs would be built on the left abutment. Water would pass through a 26" steel penstock to a powerstation located near the base of a falls just downstream of the lake outlet. The powerhouse would be a pre-fabricated metal building containing four single-jet Pelton turbines. Each turbine would be directly coupled to a generator rated at 1250 kW. Power from the Project would be transmitted to Klawock over a 14-mile long, 23-kV transmission line. From Klawock power will be transmitted over 23-kV lines, 6 miles long, to Craig and 32 miles to Hydaburg.

EXISTING CAPABILITIES AND PROJECTED DEMAND

All existing generation capacity in the three communities is diesel fueled. The forecast loads for the interconnected system exclusive of the needs of the Alaska Timber Corporation are:

Year	Peak Demand, kW	Energy Generation, MWh/yr
1978 Actual	1810	6,590
1983	2210	8,060
1988	2480	10,150
1993	2830	11,650

ALTERNATIVES CONSIDERED

The most feasible alternative considered is the Alaska Timber Corporation proposal for a conventional wood waste steam generation system. This system could be constructed in a timely manner at a relatively low cost of $2.6 million to produce the short term needs of the Corporation and the communities of Klawock and Craig. The major difficulty with the system is the unreliable long term source of wood waste sufficient to meet community needs. After existing stockpiles are depleted, the wood waste produced by ATC operations will only be sufficient to power ATC operations. The wood generation system should be developed as soon as possible to produce electric power until the Black Bear Lake Project is operational.

Other alternatives for electric power generation were investigated and determined to be too expensive, inappropriate, or not available for use in the area.

ENVIRONMENTAL IMPACTS

The damming of Black Bear Creek at the outlet of Black Bear Lake would not affect the passage of anadromous fish since the falls serve as a natural barrier. The construction and operation of the Project, unless carefully controlled, could cause some disruption to downstream migratory and resident salmonid populations. Discharge rates and water temperature are the most critical parameters and these will have to be studied in depth during feasibility studies.

At the present level of study there do not appear to be any adverse environmental impacts of a magnitude which would prohibit construction of the Project or greatly restrict its operation.

ENGINEERING CONSIDERATIONS

The project is planned to provide sufficient storage to regulate the discharge from the Black Bear Lake and provide practically the entire Craig - Klawock - Hydaburg system capacity and energy requirements over the first 30 years of project life. The power plant and generator/turbine sizes and arrangement are appropriate for the project. Rock composition at the damsite and on valley sides is adequate for proper design of a project to withstand severe shaking from earthquakes that could occur in this high seismic activity area. The very steep slope on which the penstock would be constructed presents difficult construction problems. The selected alignment would eliminate the possibility of damage from snow and debris avalanches. Turbine and generators are appropriately sized for the system.

ALASKA POWER AUTHORITY

PROJECT FINANCING

Black Bear Lake should be developed as a capital project of the State since it is a regional project. The Rural Electric Administration may still participate in construction financing to the extent that the REA utility benefits from the Project. The supplemental financing should be provided by Power Authority revenue bonds either guaranteed by the National Rural Electric Utilities Cooperative Finance Corporation or by power sales contracts with the local utilities. State assistance in the form of subordinate loans may become necessary if present high interest costs for tax exempt revenue bonds persist. Authorization is requested to proceed with the detailed study and preparation of a Federal Energy Regulatory Commission license application for the Black Bear project. Authorization to finance the project will be required before construction can commence in accordance with A.S.44.56.180. It is anticipated that $30 million in revenue bond authorization will be required for the project to cover construction costs with inflation, interest during construction, and funding of a reserve if up to $5 million of REA loan funds are available to assist in the project financing. This recommendation or statement for financing is preliminary at this time due to the considerable amount of work on the project which remains to be accomplished.

Introduced: 1/19/79
Referred: Resources and Finance

IN THE SENATE

BY THE RULES COMMITTEE BY REQUEST OF THE GOVERNOR

SENATE JOINT RESOLUTION NO. 6

IN THE LEGISLATURE OF THE STATE OF ALASKA

ELEVENTH LEGISLATURE - FIRST SESSION

Relating to the Alaska Power Authority, the Phase I environmental, economic, social and engineering studies of the Susitna Hydroelectric Project, and the incurring of indebtedness for Phase I.

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

WHEREAS the Alaska Power Authority under AS 44.56.180 has submitted to the legislature and to the commissioner of commerce and economic development a statement outlining the status of the Susitna Hydroelectric Project and the Plan of Study outlining the necessary feasibility studies of the project which is planned to be designed, and may be acquired or constructed, by the United States under an agreement providing for ownership of the project by the authority; and

WHEREAS the Congress of the United States, on October 22, 1976, enacted P.L. 94-587, the Alaska Hydroelectric Power Development Act, which Act authorized the Secretary of the Army and the U.S. Army Corps of Engineers to participate in the Susitna Hydroelectric Project; and

WHEREAS the Phase 1 activities outlined delineate the environmental, economic, social, and engineering studies requisite to informed decision-making; and

WHEREAS the cost to be incurred during Phase I is now estimated to be $25,000,000, but may exceed that amount; and

WHEREAS it is considered to be in the best interests of the State of Alaska to proceed with Phase I of the project through the use of Alaska Power Authority sponsored financing; and

Biggie

WHEREAS legislative approval of project construction is required if project feasibility and desirability result from the study process conducted under Phase I activities;

BE IT RESOLVED that, based on the plan outlined in the statement of the Alaska Power Authority to the legislature and to the commissioner of commerce and economic development, the legislature agrees to the incurring of indebtedness by the Alaska Power Authority in an amount necessary to finance the cost of the Phase I feasibility studies of the Susitna Hydroelectric Project, including interest; and be it

FURTHER RESOLVED that Phase I studies must provide for substantive public involvement throughout the study process; and be it

FURTHER RESOLVED that the Legislative Affairs Agency shall conduct or contract for an independent review, in consultation with the Alaska Power Authority, based on existing data, of the economic, financial, biological and geophysical implications of the proposed Susitna Hydroelectric Project, and shall report to the legislature by January 15, 1980.

Susitna Power Now, Inc.
P.O. Box 7-4436 Fairbanks Alaska 99701 (907) 452-5272
P.O. Box 981 Anchorage Alaska 99510 (907) 276-7744

February 27, 1980

The Honorable Bill Sumner
Pouch V
Juneau, Alaska 99801

Dear Senator Sumner:

On Friday, March 7th at 1:30 p.m. the Senate Resources Committee will hold a hearing or Senate Bill 294. The hearing will be in the Butrovitch Room on the 2nd Floor of the Capitol Building.

Anyone wishing to sign up in advance to testify may do so by contacting Senator Bill Sumner's office at 465-3791.

We would like to have several hundred individuals represented through oral or written testimony. If you can't attend in person please indicate your support by either sending a public opinion telegram to Senator Sumner (at a cost of 95¢) or contacting your local Legislative Affairs Office who will take written testimony of up to 50 words for transmittal to Juneau.

At 10:00 a.m. on the morning of the hearing we will have our March Executive Board Meeting in Room 121 of the Capitol Building (right across the hall from Senator Kerttula's office).

Meeting Agenda:

1. Call to order
2. Financial and operational status report
3. Membership Committee status report
4. Legislative update by Senator Kerttula on status of SB294, SB295 and SB 385.
5. Discussion and preparation for Senate Resources Committee Hearing
6. Reassessment of near term goals
7. General discussion
8. Setting time and place for next meeting
9. Adjournment

This is a big one. It's very important to the success of the Susitna Project we demonstrate solid, broad based support.

Sincerely,

Lee Wareham
Co-Chairman

ALASKA POWER AUTHORITY

333 WEST4th · SUITE 31 · ANCHORAGE ALASKA 99501

March 17, 1978

The Honorable Jay S. Hammond
Governor
State of Alaska
Pouch A
Juneau, Alaska 9981!

Dear Governor Hammond:

This annual report on the operations of the Alaska Power Authority is submitted in accordance with requirements of Alaska Statute 44.56.200.

The previous twelve month activities of the Power Authority have centered on creating an organization of sufficient quality and expertise to carry out the objective of providing for lower cost ener for Alaskan communities. Concurrently, we have been coordinating the State's efforts on evaluating the potential of developing the Susitna Hydroelectric project. While this latter effort has necessarily occupied much of our time, our recent staffing has allowed us to become cognizant of and responsive to the energy needs of the smaller communities as well. The posture of the Power Authority is moving toward that of an organization with the ability to evaluate the engineering, economic, and financial feasibility of developing our hydroelectric and fossil-fuel fired generation resources, and, if desirable, to ultimately bring them to inception.

The Power Authority retained the services of Peat, Marwick and Mitchell to conduct a search for an Executive Director. This effort culminated with the January 17, 1978 appointment of Mr. Eric Yould, a five year state resident, who was previously with the Corps of Engineers as their project manager for the Susitna project. Mr. Yould holds a Bachelor of Science degree in Civil Engineering, and a Masters degree in Water Resources Engineering, both from the University of Kansas. In addition to his efforts on Susitna, he became quite well acquainted with the engineering and economic merit of the smaller hydropower projects throughout the state. To complement Mr. Yould, the Power Authority has hired the First Southwest Company as its Financial Advisor, and Wohlforth and Flint for its Bond Counsel. With this nucleus, the Power Authority should become quite capable of exercising the policies of the Board of Directors.

During the previous twelve month period, the Susitna project has received much of our attention. While Susitna has been studied for a number of years, there have been insufficient monetary expenditures to precisely determine the economic merit of the project or its environmental impact. Consequently, Congress has conditionally authorized Susitna for what is known as Phase I Advanced Engineering and

Design. Authorization to proceed with Phase I studies is contingent upon a twelve month, $3.0 million seismic analysis and foundation exploration program presently being conducted by the Corps of Engineers. Contained in the same bill that provides for the Phase I studies is a proviso sponsored by Senator Mike Gravel that allows for a federal/state cooperative development of the Susitna project. Under this concept, the federal government would design and construct the project using State funds, and the State would own and operate the project. The salient feature of this Act, commonly known as Section 203 of the 1976 Water Resources Development Act, is the protection afforded the State should it decide to participate. In essence, the federal government would absorb any costs incurred during the Phase I studies if the project proved unfeasible. Since the Phase I studies are estimated to cost in excess of $25.0 million, this guarantee is a tremendous safeguard. Participation under Section 203 does not commit the State to proceed to construction with the federal government. At the conclusion of the four year Phase I studies, the State could choose to proceed with its own efforts for developing Susitna. On the other hand, if the State does decide to construct under Section 203, safeguards from cost overruns could be realized. Obviously the monetary advantage afforded by these safeguards would have to be weighed against a possible loss of revenue which may result from encumbrances in dealing with the federal bureaucracy. The Power Authority plans to participate under Section 203 for the Phase I studies. Financing for the studies would come from the sale of revenue bonds; thus, the State would not be subjected to debt encumbrance. Should the Phase I studies indicate that the project is not feasible, the federal government would repay the cost and interest of the bonds. In order to streamline the Susitna project, Senator Gravel has entered new legislation to Congress that will give direct authorization of Susitna and will clear up some of the procedures of Section 203. Should this bill pass, it is anticipated that the Authority could proceed with the Phase I studies during the latter part of the upcoming summer. There is a possibility that Susitna could become ensnarled under the D-2 land classification as a Wild and Scenic River or that it should at least be studied for such a classification. Either classification could preclude ongoing study or construction efforts. To date, the Power Authority has made $100,000 available to the Corps of Engineers for the development of a Plan of Study for the accomplishment of the Phase I studies. This document is in the process of being finalized. Should the Authority not proceed with the Federal government, the Plan of Study could be utilized by private industry for the Advanced Engineering and Design studies.

Other business of the Power Authority entails the financing of two power studies, and the decision to loan $500,000 to Alaska Electric Light and Power from the Power Project Revolving Loan Fund. One study entailed a reconnaissance grade report on the hydroelectric potential in the Tlingit-Haida communities by Robert W. Retherford Associates, Engineers. The other study was co-funded by the Division of Energy and Power Development. This report entailed a review of the Railbelt area energy alternatives through the year 2000. The report concluded that based on existing cost data, the Susitna project is the most feasible energy option. The loan to AEL&P would be used for the automation of the existing hydropower project on Annex Creek.

During the previous twelve month period, the Power Authority received no project revenue and incurred the following expenses:

Expenditures
3/1/77 - 2/28/78

	3/1/77 6/30/77	7/1/77 2/28/78	Total 3/1/77 - 3/1/78
Personal Services	-0-	5,002	5,002
Travel	5,283	6,122	11,405
Contractual (1 & 2)	193,333	60,137	253,470
Commodities	1,673	15	1,688
Equipment	7,242	870	8,112
TOTAL	207,531	72,146	279,677

Footnote 1 & 2:

(1)
Professional Service Contracts:

Corps of Eng.	100,000	
Peat, Marwick & Mitchell	13,000	
R.W. Retherford	40,000	
Battelle N.W.	35,000	
Wohlforth & Flint		30,000

(2)
Rent paid through 6/30/78 — 27,600

A Look Ahead: In that this is the first full year of the Authority, and consequently, the views and policies of the Authority are not widely known, a summation of what the Authority hopes to accomplish is appropriate. During the upcoming year, the Power Authority will become more and more involved in formulating plans for solving some of the State's energy problems which loom ahead. Although we are presently reviewing power projects on a community basis, we believe that it is imperative that long range regional plans be developed which will address the regional energy needs and the availability of energy alternatives to meet those needs. Much regional information has already been amassed by the Division of Energy and Power Development, and funding for such efforts should continue.

The present practice of electrical energy development within the state has centered around decentralization in which each community is attempting to bring to inception contiguous energy resources. However, the size of the available resources are not always commensurate with the size of the community needs. Furthermore, the small community load demands preclude the opportunity to benefit from "economy of scale". Other communities have virtually no energy options available outside of the traditional diesel fuel generation.

For these reasons it could be desirable to shift the thinking toward transmission interconnection instead of contiguous resources development. Three such regions which could possibly benefit from such an interconnection are Southeast Alaska, the Anchorage/Fairbanks railbelt area, and the AVEC communities. The per capita cost of interconnection, at least in Southeast and in the AVEC region, has historically proven to be quite expensive using conventional means. However there are some unconventional and innovative schemes which are emerging that might provide the beginnings of an effective transmission interconnection. Deserving of analysis for potential use as transmission lines are electrical systems using the earth as one leg of an electrical circuit. There are new ideas being used in submarine cable applications and renewed interest in the potential feasibility of small scale direct current converters. Studies of route locations, engineering assessment of technical problems, survey of cable manufacturers, and preliminary analysis of power requirements for these regions would be beneficial. Studies of this magnitude would cost approximately $500,000. If interconnection could be achieved, a new perspective in power planning could be realized. Communities that have energy alternatives available, perhaps excessive to their needs or ability to develop, could provide to communities that presently rely on expensive imported thermal generation.

It is also suggested that the technical and financial expertise of the Power Authority be utilized in management of the funds which may be available through the permanent fund for power development. The Authority could either act as a technical advisor to the Trustees of the Permanent Fund, or it could assist in managing the funds. The latter method could perhaps best be accomplished through the restructuring of the Power Project Revolving Loan Fund presently administered by the Power Authority. The fund could be expanded to provide for loans to municipalities for the purposes of feasibility studies and

construction financing of approved power projects ultimately to be financed on a long term basis by the Power Authority. It could also be used to provide a reserve fund to secure payment of outstanding long term Authority debt; and finally, it could be used to provide a loan fund to purchase junior lien revenue bonds of municipalities when the Authority can issue only a portion of the debt necessary for permanent financing.

Outside of the permanent fund, it would be desirable that the Power Project Revolving Loan Fund be appropriated an amount sufficient to allow it to operate as envisioned when the Power Authority was established. An assessment of the small community immediate needs reveals that roughly $3,000,000 should be appropriated for hydroelectric planning alone. To this, perhaps another $2,000,000 should be added to provide for the communities which have not made their power needs known. This loan program should be administered on an application and need basis with amounts and terms of financing prescribed by the Board of Directors of the Power Authority rather than by the present practice of having the legislature determining which communities are to receive loans and under what conditions. This latter practice is inefficient and untimely. In short, with its engineering, planning and financial expertise, the Power Authority should be granted the responsibility to administer its loan program as it was originally intended in the Authority's enacting legislation.

The task of providing reasonable cost power to our Alaskan communities is not an easy one. It can only be accomplished by sound planning and shrewd investment practices. Given the necessary resources and responsibility, the Power Authority can help all of Alaska provide for its energy needs.

Robert W. Ward

Robert W. Ward, Chairman
Board of Directors
Alaska Power Authority

SENATE RESOURCES COMMITTEE

TO: SENATOR SUMNER--CHAIRMAN DATE: FEBRUARY 8, 1979

FROM: JERROLD WATTS - STAFF RESEARCHER

Re: Senate Bill #63 and SJR6

SB#63 "An Act making special appropriation to the Alaska Power Authority for the Susitna Hydrolectric Project and proving for an effective date."

Requested is $8,178,000 for the purpose of a gurantee-the sale of the necessary bonds to finance the first year of the Phase I Studies of the Sustina Project.

The appropriation will be on condition, in that;
1. The full amount repaid to the State of Alaska,once the appropriation is no longer needed as a result of other funding sources.

2. Any money earned on the $8,178,000--will be paid to the state.

On June 30,1977- $100,000 from Personnel Services to Contractual Services within the Alaska Power Authority's FY'77 appropriations, was appropriated to fund a Plan of Study to be done by the U.S. CORPS of Engineers.

1978- The Legislature passed HCS for SJR 50 am House, authorizing the Alaska Power Authority to sell bonds to finance the completion of Phase I Studies for the Susitna Project.

Also included in the resolution, a provision which made the sale contingent upon the passage of P.L. 94-587(amended), which would gurantee the bonds and reimburse the state if the project was determined unfeasible.

The 1978 Congress failed to pass the legislation. There are plan to resubmit the propsal this year to Congress.

The project has been estimated to have a final cost of $24.1 million for the Phase I Studies. It is possible the State of Alaska will have to provide complete financing if the Congress fails to pass the P.L. 94-587 amendment.

Additional Requirements To Meet The Phase I Study Time Frame;

1. The corps of Engineers must recieve approval by the Federal Office of management and Budget to enter into an agreement by which the State finances its activities in regard to the project

2. Approval must also be recieved from village corporations which have lands adjacent to the project sites.

3. The internal Revenue Service must sanction the complex financing arrangement which the Alaska Power Authority has proposed.

The project is said to be economical feasible, environmentally acceptable and is desired by the majority of the people that the project will effect, and others.

rec'd 1/22/79 file

George L. Benesch
Attorney at Law

Telephone 907/274-4726

213 West Sixth Avenue, Suite 1
Anchorage, Alaska 99501

January 17, 1979

The Honorable Jay Hammond
Governor, State of Alaska
Pouch "A"
Juneau, Alaska 99811

Dear Governor Hammond:

For your ready reference I have attached to this letter a copy of my letter of February 23, 1977 suggesting that the State itself "fund and construct" the Devil Canyon hydroelectric project. I proposed that the State use the permanent fund for this purpose rather than revenue bonds for the reasons stated in the letter, among others.

My proposal would have the State rather than the Corps of Engineers perform all of the investigations and design of the project as well as construction.

Although the plan was apparently rejected, I believe current circumstances warrant giving it serious review.

It is appalling to me that the State now finds itself in a position of having to fund the Corps of Engineers field work and studies because of the vindictiveness of Congressman Sieberling and/or other congressional HR-39 proponents. It seems to me that we greatly compromise ourselves and our situation in Congress if we appropriate $8.2 millin for use by the Corps, under the assumption that a benevolent Congress will authorize a total of $25 million for the future and/or reimburse us for the $8.2 million.

I seriously question the wisdom of giving Congressman Sieberling, Udahll, et al this additional leverage in the d-2 issues. It appears to me that we are in the process of making the investigations of the Devil Canyon project a pawn in the d-2 legislative process.

Furthermore, I question the impartiality of the Corps of Engineers to make any studies ostensibly for the State. The Corps is an integral part of a current federal administration that has thoroughly and ruthlessly demonstrated a decided anti-Alaskan and anti-development policy toward Alaska. Yet we seem to find ourselves

bent on a course that entrusts to this agency of the Federal Policy the feasibility analyses of a development-oriented project utilizing a river that the federal administration and wilderness oriented congressmen admittedly want to lock up in a wilderness withdrawal.

It is a fact of feasibility evaluation that the same basic data can yield totally differing results depending upon the results the evaluator wants to reach. Surely Alaska's interests are not properly served or represented by turning over this most important function of project development to the federal government.

Even if it is assumed that the Corps will act impartially and in the best interests of the State it will be a federal development on federal terms. Once the State is financially committed to any significant degree I feel we will have little control over what is done and how it is done.

It seems to me that we are already subject to excessive federal control without going out of our way to provide new avenues of federal control of our economy.

I also highly question the wisdom of using the Corps of Engineers for feasibility studies of the Susitna development for a more technical reason. The original Devil Canyon dam found feasible and proposed for construction by the Department of Interior's Bureau of Reclamation in 1960 was a thin arch dam. I may be wrong but it is my belief that the Corps of Engineers has never before proposed, designed or constructed a significant thin arch dam. I doubt that in the final analysis they will build one at Devil Canyon. A gravity dam at Devil Canyon would greatly increase the cost of the project.

It may be that information and data developed in the area since 1960 will pose additional considerations about constructing thin arch structures on the Susitna River. But I question whether the Corps is the appropriate party for making an unbiased, impartial assessment and evaluation of the feasibility of using thin arch structures. I believe the State should engage the services and expertise of a consulting firm which has broad experience in hydroelectric project planning, investigation, design and construction, and determine for itself the design of the project.

The State has an appropriate agency, the Alaska Power Authority, to plan and oversee the feasibility investigations, and ultimate development of the Devil Canyon Project. Surely it can be structured and appropriately funded to do the job in the best interests of Alaska. In my opinion, the State would get a better product, sooner, and at considerably less total cost. If we are going to appropriate $8 million for Devil Canyon studies this year, let's use it to firmly establish

and get in operation our own state agency and our own state investigations. If we do so we will save considerable time, expense, and federal interference in the long run.

I fail to see why we are using a federal agency as our planner, designer, and builder instead of the private sector, -- particularly under the current state of affairs between Alaska and the Federal Administration and Congress.

Sincerely yours,

George L. Benesch

cc: All Legislators
Alaska Power Authority
Commissioner Robert Ward

Telephone 907/274-4726

George L. Benesch
Attorney at Law

213 West Sixth Avenue, Suite 1
Anchorage, Alaska 99501

February 23, 1977

C
O
P
Y

The Honorable Jay Hammond
Governor of Alaska
Juneau, Alaska 99801

Subject: Use of the permanent fund for renewable resource development

Dear Governor Jay:

Now that the idea of a permanent fund is an accomplished fact and the fund will soon be receiving substantial deposits, it essentially becomes a matter of prudent investment. As I understand it the idea of the permanent fund is to preserve for future generations some of the benefits of current development of non-renewable resources; and as a hedge against the time when such non-renewable resources are depleted. It seems to me that one excellent way of accomplishing these objectives would be to invest part of that money in the development of renewable resources such as construction of hydroelectric projects.

A case in point would be the construction of the Devil Canyon Project on the Susitna River. Assuming that it is still an economically viable project, I would suggest that the State fund and construct the entire project using the permanent fund as a source of revenue rather than funding the project with issuance of revenue bonds. This type of funding would provide the State immediate and direct and flexible control over the debt service and the repayment period.

I also believe that serious thought should be given to the State itself controlling and contracting for all project design and construction rather than leave these extremely important functions to the Corps of Engineers or some other federal agency. To begin with I think that significant cost savings could be effected. I believe that you will find that federally constructed projects like this generally cost significantly more than comparable projects constructed by private companies or local governments. Furthermore, I suspect we might find that with state funding of federal design and construction, we may be reimbursing the federal government for grossly excessive overhead and administrative costs which neither

the federal administration nor the Congress would be inclined to reduce.

I also believe that there would still be a need for a very substantial participation and review by the State of all phases of design and construction which would duplicate much of the same functions performed by the Corps.

Thirdly, if the State itself gets into the hydroelectric development effort, funded by the permanent fund, it can plan and schedule its own developmental programs rather than be subservient to the development programs proposed by the federal government to fit its convenience. For example, it may be possible to program such construction to boost the economy of the State in periods of economic slump.

As you are well aware, the cost and availability of electric power is very often a major consideration to industrial development. As a corollary, there is a tremendous lobby effort in Congress by other states seeking to attract industry by means of federal development of low cost energy resources. If Alaska is dependent upon federal hydroelectric developmental programs, even though funded by the State, we are nevertheless competing with other states for resource development by the Corps. We may very well find that the Corps development programs and efforts do not necessarily reflect the best interest of Alaska.

I believe that Alaska hire programs would also be significantly affected. If projects such as Devil Canyon are constructed by the federal government, Alaska may have little to say about employment preferences and hiring practices which meet federal requirements and priorities but not necessarily those of the State.

Lastly, I believe this project development could be accomplished much sooner, if desired, if the State designs and constructs the Devil Canyon Project. This could be a very important factor in the ultimate cost of power. I am certain we can expect all costs of design, construction, etc. to continue to increase annually. The Devil Canyon Project, for example, could probably have been built when first recommended to Congress in 1961 for less than half the current construction cost. This would be an additional advantage to using the permanent fund revenue for project development.

With proper maintenance and replacements of equipment as needed, hydroelectric projects such as Devil Canyon have a useful life well beyond 100 years. However, if the State goes to the bond market for construction funds, it may be necessary to gear the repayment period of the project to the term of the bonds; and of course, the cost of power is inversely related to the payout period -- the shorter the period, the higher the unit cost of power until such time as the project is fully paid for.

In my February 7 letter to you concerning the Alaska Power Authority, I indicated that I was forwarding under separate cover, a number of documents relating primarily to the Devil Canyon and Snettisham hydroelectric projects.

Since they are the only copies I have and would be impossible for me to replace, I must confess that I have not mailed them. I had thought I would be going to Juneau this month on other matters and would carry them with me. However, it now appears that I will not be taking the trip. Therefore, if practical, I would like to deliver the documents to your Anchorage office either for review there or to be hand carried to Juneau by someone from your office on their next trip to Juneau.

Sincerely yours,

George L. Benesch

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