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EKLUTNA PROJECT, ALASKA

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HEARING
BEFORE THE
SUBCOMMITTEE ON
WATER AND POWER RESOURCES
OF THE
COMMITTEE ON
INTERIOR AND INSULAR AFFAIRS
UNITED STATES SENATE
NINETIETH CONGRESS

SECOND SESSION
ON

S. 224

A BILL TO PROVIDE FOR THE REHABILITATION OF THE
EKLUTNA PROJECT ALASKA, AND FOR OTHER PURPOSES

APRIL 26, 1968



Printed for the use of the
Committee on Interior and Insular Affairs

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EKLUTNA PROJECT, ALASKA

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HEARING

BEFORE THE

SUBCOMMITTEE ON

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

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EKLUTNA PROJECT, ALASKA

FRIDAY, APRIL 26, 1968

U.S. SENATE,
SUBCOMMITTEE ON WATER AND POWER RESOURCES OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10:05 a.m., in room 3110, New Senate Office Building, Senator Clinton P. Anderson (chairman of the subcommittee) presiding.

Present: Senators Anderson and Allott.

Also present: Jerry T. Verkler, staff director; Stewart French, chief counsel; Daniel Dreyfus, professional staff member; and E. Lewis Reid, minority counsel.

Senator ANDERSON. The committee will come to order.

The purpose of this hearing before the Water and Power Resources Subcommittee this morning is to take testimony on S. 224—introduced by Senator Bartlett for himself and Senator Gruening—to provide for the rehabilitation of the Eklutna project, Alaska, and for other purposes.

The Eklutna project is a Federal hydroelectric power project located near Anchorage, Alaska. The project suffered substantial damage from the disastrous Alaska earthquake of 1964. The purpose of this bill is to make the costs of rehabilitating the project after the earthquake nonreimbursable.

I will direct that a copy of the bill and the departmental reports be printed at this point.

(The data referred to follow:)

[S. 224, 90th Cong., first sess.]

A BILL To provide for the rehabilitation of the Eklutna project, Alaska, and for other purposes

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the total sums expended by the Secretary of the Interior in rehabilitation of the Eklutna project, Alaska, from damage caused by the earthquake of March 27, 1964, less the difference between the actual cost of the new dam and the estimated cost of rehabilitating the old dam, shall be nonreimbursable and nonreturnable, and not subject to the provisions of the second sentence of section 1 of the Act of July 31, 1950, as amended.

EXECUTIVE OFFICE OF THE PRESIDENT,
BUREAU OF THE BUDGET,
Washington, D.C., April 10, 1968.

Hon. HENRY M. JACKSON,
Chairman, Committee on Interior and Insular Affairs, U.S. Senate, New Senate Office Building, Washington, D.C.

DEAR MR. CHAIRMAN: This is in reply to your letter of September 6, 1967, requesting the views of the Bureau of the Budget on S. 224, a bill "To provide for the rehabilitation of the Eklutna project, Alaska, and for other purposes."

This bill would render a portion of the costs of reconstructing the Eklutna power project in Alaska nonreimbursable and not subject to repayment from project power revenues. The reconstruction was required because of damages to the project from the Alaska earthquake in 1964.

S. 224 is the same as draft language suggested by the Department of the Interior in a report to your committee on S. 104, 89th Congress. The Eklutna project and the effect of the bill are discussed in detail in a report on S. 224 which the Department is sending to your committee separately.

The Bureau of the Budget would have no objection to the enactment of this legislation.

Sincerely yours,

WILFRED H. ROMMEL,
Assistant Director for Legislative Reference.

U.S. DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., April 12, 1968.

Hon. HENRY M. JACKSON,
*Chairman, Committee on Interior and Insular Affairs,
U.S. Senate, Washington, D.C.*

DEAR MR. CHAIRMAN: This responds to your request for the views of this Department on S. 224, a bill "To provide for the rehabilitation of the Eklutna project, Alaska, and for other purposes."

We recommend that the bill be enacted.

The Eklutna project is a single-purpose Federal power project, serving the Anchorage-Palmer area of Alaska. The project was authorized by the Act of July 31, 1950 (64 Stat. 382), and August 13, 1953 (67 Stat. 574).

On March 27, 1964, the disastrous Alaska earthquake caused serious damage to the project, chiefly to the spillway structure of the dam and the intake works and tunnel through which water is delivered to the powerhouse. Since that time the project has been rehabilitated. No new legislation was required to authorize the Secretary to rehabilitate the federally owned project. Under the laws governing the project, however, particularly the second sentence of section 1 of the Act of July 31, 1950, all expenditures for emergency repairs and permanent rehabilitation of the project were reimbursable to the United States from project revenues. By the terms of S. 224, however, the costs of rehabilitating the Eklutna project, except for the differential between the cost of the new dam and the estimate for reconstructing the old dam, are made nonreimbursable, nonrefundable, and not subject to repayment from project revenues.

Following the earthquake, studies were made to determine the costs of reestablishing the project. The original proposal was to reestablish the old dam at the original site by constructing a similar structure. The old dam, originally built by private interests, was acquired by the Government from the City of Anchorage in 1952. A rough estimate made at the time of the cost of this construction was \$1,340,000. Following this estimate, however, it was determined that a slippery clay substratum beneath the old damsite had been a significant factor in the failure of the dam and that extensive and expensive work would be required to stabilize the site.

After a review of the several alternatives available, it was determined that another dam could be constructed in a location close to the old site but not subject to the same ground instability. It was further determined that the costs of constructing the new dam would not be significantly greater than the costs of repairing the old dam, even without considering the extensive foundation work required at the old site. Work on the new dam, intake works, and tunnel, initiated shortly thereafter, has been completed. Actual cost of the new dam was \$1,419,978, about \$79,978 greater than the original estimate for reconstruction of the old dam.

The project reconstruction involved no change in the basic project plan. The lip of the new spillway was set at 871 feet, the same elevation as the top of the flashboards of the old spillway. The crest of the new dam is higher than that of the old dam solely in order to provide the freeboard required for the safety of the dam.

Total costs associated with rehabilitation of the project were as follows:

Intake structure and tunnel	\$788,409
Dam and spillway	1,419,978
Emergency rehabilitation	668,914
Other costs (miscellaneous equipment, including water level gage) ..	8,114
Total	2,885,415

The effect of this bill will be to afford to the Eklutna ratepayers the same measure of earthquake rehabilitation that has been received elsewhere in Alaska. The alternative would be to impose upon the Eklutna ratepayers through the repayment obligation the burden of paying for earthquake rehabilitation. Current 50-year rate and repayment studies indicate that burden will be an additional mill per kilowatt hour.

This rate differential, in addition to penalizing the ultimate consumers, will add to the problem created by current competitive natural gas prices in future contract negotiations for Eklutna power. Under the comparability test, the present wholesale rate schedules, which contemplate full repayment for emergency repair costs and rehabilitation costs from project revenues, would not be competitive with the alternative of natural gas generation. Passage of the bill will make Eklutna power more competitive with natural gas generation, and will further the purposes of the project through aiding Alaskan economic development and assuring a stable and reliable power supply.

We propose that the cost of rehabilitating the Eklutna project, less \$79,978 difference between the cost of rebuilding the old dam and constructing a new dam, a total of \$2,805,437, be treated as nonreimbursable. The \$79,978 difference attributed to making the structure less susceptible to earthquake damage will be treated as reimbursable from project revenues. The effect of this distinction is to establish a policy of replacing like structures at no increased cost to project beneficiaries, and of charging any incremental costs attributable to improvement of the original structure to those same beneficiaries.

The Bureau of the Budget has advised that there is no objection to the presentation of this report from the standpoint of the Administration's program.

Sincerely yours,

KENNETH HOLUM,
Assistant Secretary of the Interior.

Senator ANDERSON. Senator Gruening has a statement at this point.

STATEMENT OF HON. ERNEST GRUENING, A U.S. SENATOR FROM THE STATE OF ALASKA

Senator GRUENING. The State of Alaska contains within its boundaries more than 200 sites potentially productive of low-cost hydroelectric power which could, in the aggregate, supply an estimated 19 million kilowatts of power. Despite this enormous resource of electric power, the people of Alaska pay the highest rates for electricity of any State in the Union and many—entirely too many—of our outlying communities are without any electricity at all.

Since the beginning of my service in the Senate I have constantly urged attention to the development of Alaska's hydroelectric power resources, and we are slowly seeing more hopeful results. The Alaska Power Administration, established last year by Secretary of the Interior Udall, has provided a base for planning an orderly development of our resources, and we are very optimistic that the impetus given by this new Agency in Alaska will stimulate the progress we have long been seeking in this field.

The Eklutna project, authorized during the Truman administration, is the only Federal hydroelectric power project ever constructed in Alaska. Its 30,000 kilowatts of electric power have been essential to

the provision of electric power for the Anchorage area during the last years of increasing growth and development. Without Eklutna it is difficult to imagine where sufficient power could have been obtained to supply the needs of a rapidly expanding area. Until the recent development of natural gas resources in the Kenai Peninsula, and the use of gas for generation of electricity, Eklutna power has been the lowest cost power in Alaska, although at approximately 10 mills per kilowatt-hour, this is not inexpensive by comparison with other electric system in the United States.

The enactment of S. 224, which would relieve electric power consumers in the Anchorage and Matanuska Valley areas of the additional cost of repairs to the Eklutna project, necessitated by damage suffered during the 1964 earthquake in Alaska, is necessary to avoid an increase in rates now in effect—an action that would not only be unnecessarily burdensome to the consumers of the power, but would be damaging to the interests of the Government as owner of the project. As has been pointed out by the Alaska Power Administration, Eklutna power is, even now, not competitive with power generated from natural gas reserves in the area. Existing power sales contracts are due to expire in 1973, 1974, and 1978, at which time renewal and sale of Eklutna power may well depend on a price which will be economic for the purchasers. Thus, the legislation is essential for the Federal Government to recover its investment in the project as required by the Eklutna authorizing legislation.

S. 224 would require the assumption by the Government of the cost of the difference between rehabilitation of the facility existing before the earthquake and the construction of the new facility which is now completed. The Interior Department estimates this at \$2,805,437. This may be regarded as the last remaining business the Federal Government must complete to relieve the devastating effects to the Alaska economy suffered as a result of the Good Friday earthquake of 1964. The chairman of this subcommittee, Senator Anderson, made a magnificent and deeply appreciated contribution to the State of Alaska with his service in coordinating and implementing relief efforts of the Federal Government applied to rescue Alaskans from the tragedy of the earthquake. At that time many measures were passed by Congress and action was taken swiftly by the executive branch to bring much needed relief to a stricken area. Due to the nature of the damage and the problems involved in discovering it, the injury to the Eklutna project was not wholly apparent until some time after other rehabilitative efforts had been undertaken or completed. Thus, the particular result of the earthquake which is the subject of this legislation was not dealt with at the time other relief measures were passed.

The time has long since passed that the fiscal damage to Eklutna should be remedied by enactment of the pending legislation even as the structural damage has been repaired by the engineers long since.

I urge speedy and favorable action on S. 224.

Senator ANDERSON. Senator Bartlett.

**STATEMENT OF HON. E. L. (BOB) BARTLETT, A U.S. SENATOR FROM
THE STATE OF ALASKA**

Senator BARTLETT. Thank you, Mr. Chairman. This is the second time in 2 years that I have appeared before this committee on this

project, in connection with the rehabilitation of the Eklutna hydroelectric dam, which serves Anchorage and Palmer in the Matanuska Valley in Alaska, principally.

This has been a most successful project, Mr. Chairman. It furnished, at a time of great need, power for Anchorage, which was then and even now is growing so rapidly. It was and is the only sizable hydro project in Alaska, although in comparison with some of the projects elsewhere it is mighty small. One other is under construction at Snettisham in southeastern Alaska, but it will be some years before it is completed.

Now, Mr. Chairman, I have a statement covering the whole subject which I shall not read. There are several other witnesses to follow. I ask your permission to place this in the record.

Senator ANDERSON. That will be done.

Senator BARTLETT. Likewise, Mr. Chairman, I should like to submit a statement dated April 19 of this year in favor of the bill, S. 224, from the Matanuska Electric Association, Inc.; likewise, Resolution No. 24-R-68 from the city of Anchorage, and a statement by the city of Anchorage.

Senator ANDERSON. Without objection, they will be received and follow your prepared statement.

Senator BARTLETT. This dam was built at a cost of about \$30 million, as I recall, roughly \$2.5 million less than had been estimated. Everything was going along swimmingly until the great earthquake on Good Friday, March 27, I believe, 1964. I do not have to explain anything at all to you about the damage caused by that earthquake and the tidal waves which followed, because Alaska greatly remembers you as the architect and achiever of our recovery. Without the work you undertook, the appropriations you secured, I judge that we should not have been back in full operation for 25 or perhaps 50 years.

I want to record here and now and forever the debt of gratitude the people of Alaska owe to you.

It was some time, Mr. Chairman, following the earthquake before it was discovered that irreparable damage had been done to the Eklutna Dam. Careful studies were made and the determination by the engineers was, first, because the foundations were built under the circumstances and conditions, in places far less stable, it would have cost a very considerable amount of money to repair the old dam. And there would be no guarantee thereafter that this dam would remain in operating condition if there were another earthquake, even a much lighter one than had occurred on Good Friday. So the experts of the Bureau of Reclamation came to the conclusion and so recommended to the Secretary of the Interior, who approved, that a new dam be built elsewhere to serve this project. It was. The cost was \$2,885,415. My recollection is that this was only \$70,000 or \$80,000 more than repairs would have been to the existing dam.

And, of course, the project was vastly improved at a very slight additional cost by having a new dam in place where it is not likely that an earthquake, if unhappily it should come, would disturb it.

I am told, Mr. Chairman, that the Eklutna project sells its power at cost and the cost is rather high. We are talking about Alaska; I do not have to explain that to you. It is 10 to 11 mills per kilowatt-hour.

That is the price at which Eklutna sold the power before the earthquake. The cost would go down, as previously projected, if there were no reimbursement for the cost of the new dam. This is a competitive situation now, whereas at the time it was built—Eklutna, that is—there was no competition. We are told that natural gas located on the Kenai Peninsula, after Eklutna was in operation, is now available to produce power at 5.5 mills per kilowatt-hour.

As my statement shows, it is a matter of record that, had the project not been damaged in the 1964 earthquake and the cost of repairing that damage not made reimbursable from project revenues, the Federal Government's investment would have been paid off in 41 years instead of the authorized period of 50 years.

Mr. Chairman, I really hope that this bill may be approved and may become law. We, as I have said without hesitation, gladly and gratefully acknowledge the vast assistance that was given to Alaska after this dreadful catastrophe. This is the only remaining Federal project insofar as my knowledge runs that has not had the type of assistance from the Federal Government that went to all other public structures and public undertakings that suffered earthquake damage or flood damage.

Thank you, Mr. Chairman.

Senator ANDERSON. How big an expenditure was the rehabilitation of the project?

Senator BARTLETT. \$2,885,000.

Senator ANDERSON. That has already been spent?

Senator BARTLETT. That is spent. As I said before, the cost of repairs to the old dam would have been less by about \$80,000. So you have a brandnew dam on a stable foundation for practically the same amount that repairs would have cost.

Senator ANDERSON. You are merely asking that the amount of money spent there be nonreimbursable?

Senator BARTLETT. Yes.

Senator ANDERSON. Is there sale of natural gas in Anchorage?

Senator BARTLETT. The use of natural gas is increasing quite rapidly there. Only this year, the Congress approved the conversion of the installations at Fort Richardson and Elmendorf from coal to natural gas. Down on the Kenai Peninsula itself, electricity is generated from gas. Mr. Schultz, of the Chugach REA is here to testify today. He will be able to tell you what Chugach, the very considerable-size electric cooperative, is doing with natural gas.

Senator ANDERSON. If natural gas comes into this area, it will form quite a competition, will it not, with this power?

Senator BARTLETT. There is going to be fierce competition. There is going to be tremendous competition.

Senator ANDERSON. If you have a 6-mill rate, that is a pretty good rate right now. You are paying what now?

Senator BARTLETT. If this rate that I cited to you, 5.5 mills, is a correct one, within the next 10 years this will be by far the lowest power cost we have ever had in Alaska. And Eklutna, in my judgment, will pay out because the need for power will be increasingly great in this rapidly growing area.

Senator ANDERSON. You say it will pay out?

Senator BARTLETT. I have no doubt that it will pay out.

Senator ANDERSON. Well, if this cost is nonreimbursable, why would it not pay out? Is it a \$30 million debt—

Senator BARTLETT. Well, of course, the problem with paying out will be somewhat greater if the cost of the new dam has to come from new revenue.

Senator ANDERSON. Is that all they want, the cost of the new dam? They do not want to go back to the \$30 million already spent?

Senator BARTLETT. No.

Senator ANDERSON. Does that complete your statement?

Senator BARTLETT. That does, Mr. Chairman.

Senator ANDERSON. Thank you very much.

(The statements referred to follow :)

STATEMENT OF E. L. (BOB) BARTLETT, A U.S. SENATOR FROM THE STATE OF ALASKA

Mr. Chairman, I want to thank you for calling hearings on my bill, S. 224, to provide for the rehabilitation of the 30,000 kilowatt Eklutna hydroelectric project in Alaska damaged during the earthquake of 1964.

The case for the bill rests on three principal contentions.

(1) Enactment of S. 224 would be consistent with Federal assistance given other public utilities following the 1964 earthquake.

(2) Enactment of S. 224 would strengthen the competitive position of the project, thus affording some protection for the Government's original investment in the project.

(3) Enactment of S. 224 would be consistent with the public interest recognized by Congress when it authorized the project.

Before discussing these points in more detail, let me briefly outline the history of the project and the events which created the need for S. 224.

The Eklutna project was authorized by P.L. 81-628, as amended by P.L. 83-260, because of a dire need for electrical power in the vicinity of Anchorage. Congress felt that the lack of adequate power in the area was hampering both economic development and the self sufficiency of national defense installations.

The project cost \$30,521,183, about \$2.5 million less than the amount finally authorized. Each unit of the project was to be amortized over a period not to exceed 50 years from the date each unit was put in service. Service from the project's first 15,000-kilowatt unit began in January 1955.

The financial record of the project supports the judgment of Congress that there was a dire need for additional power in the Anchorage area. Revenues from the project have exceeded expectations. It is a matter of record that had not the project been damaged in the 1964 earthquake and the cost of repairing that damage made reimbursable from project revenues, studies indicated that the federal government's investment would have been off in 41 years rather than in 50 years. It had been contemplated that the payout should be lengthened to 47 years with a corresponding decrease in rates, a move which I believe to be in keeping with the intent of Congress expressed in the bill authorizing the project—namely to encourage and promote economic development of Alaska. Obviously, anything that can be done to decrease operating costs aids economic development.

Unfortunately, the project was damaged by the 1964 earthquake. A rough estimate set the cost of repairing the existing dam at \$1,340,000. Subsequently, it was discovered that a slippery clay substratum beneath the dam was partially responsible for the failure of the dam to withstand the earthquake. It became clear that it would be quite expensive to stabilize the site of the dam and that it made little sense to repair the dam without doing something to strengthen the dam in the event of future earthquakes. Consequently, when it was determined that to build a new dam nearby but on a more stable site would not be significantly costlier than repairing the old one, it was decided to construct a new dam. The actual cost of the new dam was \$1,419,978, or about \$79,978 more than the estimate of repairing the old dam, not counting the cost of stabilizing the old site. The Department of the Interior reports that the total cost of rehabilitating the project was \$2,885,415. The breakdown of that total shows: \$788,409 for intake structure and tunnel; \$1,419,978 for dam and spillway; \$668,914 for emergency rehabilitation; \$8,114 for other costs (miscellaneous equipment, including water level gauge).

Under a provision of Section 1 of P.L. 81-628, all expenditures for emergency repairs and permanent rehabilitation of the project are reimbursable from project revenues.

As you know, Mr. Chairman, for you were instrumental in the effort, the federal government was most generous and effective in helping Alaska get back on its feet following the disastrous earthquake of 1964. For that, the people of Alaska are most grateful.

However, because assistance to federal power projects was not included in legislation authorizing federal earthquake relief, the provision of Section 1 stands and the cost of rehabilitating the project must be reimbursed from project revenues.

That requirement means that customers will have to pay an extra one mill per kilowatt hour for the remainder of the full 50-year payout period.

If S. 224 becomes law, the cost of rehabilitating the Eklutna project, less the difference between the cost of the new dam and the estimated cost of rehabilitating the old dam, will be declared non-reimbursable. In other words, the federal government will absorb \$2,805,487 in rehabilitation costs.

Now let me return to the points I listed at the beginning of my testimony supporting passage of S. 224.

(1) The Eklutna project is the only federal power project now operating in Alaska. Other public utilities damaged in the earthquake received federal disaster assistance. Enactment of S. 224 would extend that same relief to the customers of the Eklutna project as customers of other utilities received.

(2) The federal government has an original investment of about \$30 million in the project, which, thanks to the rehabilitation work, will be operative long after the 50-year repayment period ends. However, despite that fact, the project must have customers if it is to earn the revenues to amortize that investment. In recent years, a natural gas industry has developed which can offer electric power to the Anchorage area at lower rates than the present Eklutna project rate.

Enactment of S. 224 would mean a one-mill reduction in the Eklutna rate, strengthening the project's competitive position when new sales contracts are negotiated in 1973, 1974 and 1978. Therefore, by making the Eklutna project competitive, the federal government might well recoup far more money than if it insists on being reimbursed for those costs.

(3) In light of the original intent of Congress stated in the act authorizing the project, it is still important that power be made available at as low rates as possible. In addition, even though other sources may be able to offer power at lower rates, the importance of keeping the Eklutna project operating because of its peaking capacity, spinning reserves and adaptability to pooling power, comes within the scope of the public interest as stated in P.L. 81-628.

It is for these reasons that I urge approval of S. 224. In short, it seems unfair not to give the same assistance to customers of the Eklutna project as given customers of other public utilities damaged by the earthquake and unwise to gamble on losing revenues to pay back the original investment in order to perhaps recoup the much smaller amount paid for rehabilitation of the contract.

STATEMENT OF WILLARD H. JOHNSON, ACTING GENERAL MANAGER,
MATANUSKA ELECTRIC ASSOCIATION, INC.

Matanuska Electric Association, Inc., receives substantially all of its power and energy through the facilities of the Eklutna Project, now operated by the Alaska Power Administration. The rates and charges made by APA will have a profound effect on the operating success of Matanuska Electric Association, Inc.

Prior to the great earthquake of March 27, 1964, investigations had established that at the end of 1963, the Eklutna Project had been so successful financially that there was every reason to believe that the Project would pay back to the Treasury with interest all Project costs well before the end of the 50-year repayment period. In late 1963, the Bureau of Reclamation had initiated a study to determine whether a rate reduction could be made. If this had been accomplished, the beneficial effects in the Anchorage-Matanuska Valley area would have been substantial. However, the earthquake damage repair costs, if applied in the manner prescribed in the project authorization act of July 31, 1950, which requires

that all costs with interest be repaid to the Treasury, would deny us any hope of an improved rate structure.

Federal funds were used to restore other projects damaged by the earthquake. In like manner, if Eklutna had not been a Federal project, Federal funds would have been used to restore it to its pre-earthquake condition and sound financial position. The proposal as contained in Senate Bill 224 to relieve the Eklutna Project, which means to free the people of the Matanuska Valley and Greater Anchorage Area of the burden of repaying the repair costs, seems the only fair and equitable solution to the problem of high power costs.

Another very important factor that Matanuska Electric Association must evaluate is the ever increasing use of fossil fuels in generating plants in the Cook Inlet area, which are producing electric energy at prices that compete more and more with the Eklutna Project. We believe that the provisions of Senate Bill 224 will greatly enhance the Projects ability to remain competitive and in a good financial position.

Many agencies, including the SBA, OEO, EDA and others, are working to find ways to assist the area, including the Matanuska Valley, to develop a strong and independent economy. MEA feels that the existence of low cost power is one of the more vital factors in that effort.

Therefore, passage of Senate Bill 224 is strongly urged, in the interest of the consumers, as well as the Project's own financial integrity.

STATEMENT OF CARROLL A. OLIVER, MUNICIPAL LIGHT & POWER DEPARTMENT,
CITY OF ANCHORAGE, ALASKA

Mr. Chairman, the City of Anchorage and its Municipal Light & Power Department would like to thank your committee for the opportunity to submit this statement in support of S. 224, the Eklutna earthquake bill, and for your consideration concerning this bill which is important to all electric power consumers in the Anchorage area. The City of Anchorage and its Municipal Light & Power Department strongly endorses the principle of S. 224 and would urge immediate passage of this bill.

As is well known, an earthquake of enormous magnitude occurred on March 27, 1964, in Alaska which caused considerable damage in the Anchorage area. The Eklutna electric power project authorized by 48 U.S.C. §§ 312-312d was considerably damaged in the disaster and required repairs and restoration amounting to what the City understands was some \$2,800,000. The Municipal Light & Power plant and facilities of the City were also damaged and some \$1,700,000 was required to repair and restore its facilities. In addition, the other electric utility serving the area, Chugach Electric Association, a rural electrification cooperative, also suffered damage to its facilities in an amount in excess of \$3,000,000. These figures indicate that the electric generating, transmission and distribution facilities to serve the City of Anchorage and the surrounding area, a service area of approximately 100,000 persons, were severely damaged at a great loss to the consuming public which must bear the burden of repairs and restoration not only of the Eklutna project, but also of all other nonreimbursable costs of earthquake rehabilitation.

At the present time the Alaska Power Administration has no choice other than to add the some \$2,800,000 of repair and restoration costs to the capital investment of the Eklutna project. The effect of adding these costs to the Eklutna plant is to prohibit any rate reductions and to make Eklutna power and energy more costly in the Anchorage area because these additional costs must be amortized and recovered from the operating revenues of the Eklutna project. It should be emphasized that these additional expenses are added to the original project costs which were almost prohibitive when the project was constructed during the early 1950's. The original estimates for the project contemplated a project cost of \$20,365,400, but subsequent engineering and construction difficulties increased the project costs to \$30,264,496. The feasibility of the project was considerably stretched upon completion, and the additional earthquake damage expenses will cause a further strain to the feasibility of the project.

The purposes of the Eklutna project was to provide a sufficient power source in the Anchorage area and electric power and energy, as aptly stated in 48 U.S.C. § 312d, to "be disposed of in such a manner as to encourage the most widespread use thereof at the lowest possible rates to consumers consistent with sound busi-

ness principles and the maintenance of adequate electric service * * *. A paraphrase of these purposes would be that the Eklutna project was to provide a source of public power at the lowest possible rates to the Anchorage vicinity consumers who pay some of the highest electric power rates in the country.

The problem with Eklutna power and energy, as has become a problem with some other hydroelectric projects in the country, is that Eklutna power and energy is for the time being no longer competitive in the Anchorage area. The development of a nearby natural gas field has created a source of power for generating equipment unknown when the Eklutna project was considered and constructed. The Eklutna project must charge approximately 11.8 mills per KWH in order to amortize its capital investment and to recover its operating expenses. The City's Municipal Light & Power Department, for example, can generate its own electric power at a rate of approximately 5.6 mills per KWH by the use of natural gas to run its generators. The other local utility, Chugach Electric Association, also has a cheaper production cost per KWH and with the construction of its Beluga power project anticipates even lower generation costs.

The noncompetitive rates of the Eklutna project have caused the local electric utilities to find other means and reason to avoid using Eklutna power and energy in order to afford the lowest possible rates to its consumers. The statutory purposes of the Eklutna power project cannot be fulfilled if the project constitutes a more costly source of electric power and energy in the Anchorage area. The local electric utilities are being required to pay for Eklutna power and energy on a noncontractual "take or pay" basis, a requirement that they believe is unlawful and certainly not beneficial to the utility consumers. If the local electric utilities must take and pay for Eklutna power and energy, electric power and energy should be furnished at the lowest possible competitive rates.

The enactment of S. 224 could reduce Eklutna rates approximately 10% because the City understands that the Alaska Power Administration would probably file a revised rate schedule with a new pay-out requirement reflecting this 10% reduction. The reduction would make the Eklutna power rates more reasonable and enable Eklutna power and energy to be more competitive with other means of generating electric power and energy in the Anchorage area. The 10% reduction could save the Municipal Light & Power Department about \$90,000 a year.

The enormous repair and restoration costs to the Eklutna project caused by the natural disaster should not be included as a capital investment item, but should be considered as a part of the overall rehabilitation and restoration costs in the disaster area. The inclusion of the repair and restoration costs as capital investment definitely would preclude any lower electric rates or greater use of Eklutna power and energy as contemplated when the Eklutna project was planned, constructed and authorized by Congress.

The City of Anchorage and its Municipal Light & Power Department trusts that the foregoing information will be of some assistance to your committee in its considerations of S. 224 and hopes that the statement does show the need for enactment of S. 224. The City and its Municipal Light & Power Department should be glad to furnish any other information which the committee may desire.

RESOLUTION OF THE CITY OF ANCHORAGE, ALASKA

Whereas on March 27, 1964, the facilities of the Eklutna power project, authorized by 48 USC § 312-312(d), were severely damaged and the repairs and restoration to the project costs approximately \$2,800,000, and

Whereas S. 224 would provide that the expenses of the repairs and restoration to the damaged facilities of the Eklutna project would be nonreimbursable and these expenses would not be recovered from the project revenues, and

Whereas the passage of S. 224 could result in the reduction of approximately 10% in the Eklutna rates for electric power and energy to be delivered to the City's Municipal Light & Power Department, which reduction could furnish the basis for a reduction of the rates of the Municipal Light & Power Department. Now, therefore, be it

Resolved by the city of Anchorage:

1. That the City hereby endorses and urges the enactment of S. 224 in the United States Senate because passage of such bill is in the public interest and would be of great benefit to the electric consumers of the City of Anchorage, Alaska.

2. That the City of Anchorage hereby submits its statement concerning S. 224 and authorizes its use as a statement of policy by the City concerning said S. 224, and

3. That a copy of this resolution, together with the attached statement be sent to the Honorable Henry M. Jackson, Chairman, Senate Committee on Interior and Insular Affairs; Senator Bob Bartlett, Senator Ernest A. Gruening; and to the Honorable Gus Norwood, Administrator, Alaska Power Administration.

Passed and approved by the City Council of the City of Anchorage, Alaska, this 23d day of April, 1968.

GEORGE M. SULLIVAN, *Mayor*.

Attest:

(S) B. W. BOCKE, *City Clerk*.

Senator ANDERSON. Mr. Pollock. We are glad to have you with us today.

STATEMENT OF HON. HOWARD W. POLLOCK, A U.S. REPRESENTATIVE AT LARGE FROM THE STATE OF ALASKA

Mr. POLLOCK. Good morning, Mr. Chairman. It is very nice to be here.

I appreciate the opportunity to appear before you today on behalf of S. 224, a bill to eliminate the costs of repairing the Eklutna power project in Alaska from the requirement that these costs be recovered from income.

As Senator Bartlett stated a moment ago, Eklutna is the only power project now operating in the State of Alaska and has served the most populous area in the State for over a decade. It continued operating after the 1964 earthquake despite the damage that necessitated nearly \$3 million in repairs. It was actually about \$2.9 million.

Under present law these repair costs must be recovered by revenues. If this requirement cannot be eliminated, the role for Eklutna's power may become substantially less than desirable from both the Federal and State point of view.

The reason for this is the discovery of large low-cost gas reserves in the Cook Inlet Basin. As the Alaska Power Administrator, Mr. Gus Norwood, will point out, this presents a major challenge to the Eklutna project. If Eklutna rates are required to be kept at the present high rates to recover earthquake costs, it is difficult to see how the project can remain competitive with the new power sources. Recovery of the Federal investment for the entire project as well as other costs would be in jeopardy. Thus, S. 224 is good business for the Federal Government. Its passage should actually bring a greater financial return from Eklutna by helping it remain competitive.

In 1964 Congress generously provided millions of dollars in Federal aid to assist Alaska in recovering from the disastrous earthquake of that year. In no case was repayment expected from public authorities. Thus the passage of S. 224 would be entirely consistent with past Federal action in connection with this disaster.

I introduced a similar bill last year in the House, H.R. 7804. Its provisions are substantially the same as S. 224. I might add that both bills have been endorsed by the American Public Power Association. I also understand that the departmental reports are favorable.

Mr. Chairman, I would be happy to answer any questions that are within my capability, but I do endorse S. 224 and urge its approval by the committee.

Senator ANDERSON. Let me see if I have it. The original dam and project was about \$30 million?

Mr. POLLOCK. Yes, sir.

Senator ANDERSON. You are not asking that that be wiped out, are you?

Mr. POLLOCK. No, sir. As I understand it, we still owe about \$25 million of the total original cost. We will have some experts who can cover this if I am wrong.

Senator ANDERSON. Well, we will not worry about a few dollars. Just on the question, do you want to waive any of this \$30 million cost?

Mr. POLLOCK. No, sir; what we are trying to do is get relief from the rehabilitation costs we have incurred. There is a difference in our two bills, but it is a minimal thing. I think the Senate bill asked for the relief of everything except the \$80,000 for the new dam, and mine asked for relief from repayment on the total rehabilitation.

Senator ANDERSON. I just want to be sure we understand each other.

Mr. POLLOCK. Yes, sir; we fully intend to pay all the original cost.

Senator ANDERSON. About \$25 million?

Mr. POLLOCK. And it is within our capacity to do so. But this additional burden of the rehabilitation cost for the damage we sustained from the earthquake, this additional amount would make our costs for the power too high to be competitive, and this is our very grave concern.

Senator ANDERSON. Well, do you want to make nonreimbursible the \$2,800,000?

Mr. POLLOCK. Yes, sir.

Senator ANDERSON. It has been expended, has it not?

Mr. POLLOCK. Excuse me?

Senator ANDERSON. I am only trying to get an understanding of what this bill provides.

Mr. POLLOCK. We will be reimbursing the Federal Government ultimately on the \$25 million, not on the \$2.8 million. This is our proposal. This is what is covered by both the bills.

Senator ANDERSON. Let me start again. There are three figures that I am worried about. One is \$30 million, which was the original cost of the approved project. Some has been paid out, \$25 million has not. You are not asking that that be changed a particle, are you?

Mr. POLLOCK. No, sir.

Senator ANDERSON. The next figure is \$2,800,000. There is an overrun of about \$80,000?

Mr. POLLOCK. There was a new dam built which was in the nature of a road addition. This is about what it looks like. It is a very small thing, but is very necessary. That was \$80,000. Senator Bartlett's bill does not ask for relief from that. Not the \$80,000, but the \$2.8 million.

Senator ANDERSON. That is to be reimbursed; that is what you are asking to be reimbursed?

Mr. POLLOCK. The \$2.8 million would not be reimbursed. The \$80,000, which is an addition under the Senate bill, would not be included there.

It would be reimbursed.

Senator ANDERSON. You can understand some of the questioning. If it is \$25 million, we could spend a long time arguing it, probably,

under the present arrangements. If it is only \$2,800,000, that ought to be fairly simple. Is that all you want, \$2,800,000 nonreimbursable?

Mr. POLLOCK. Yes, Senator; we want the relief on the \$2.8 million.

Senator ANDERSON. Senator Allott?

Senator ALLOTT. I think I have this straight. I have been reading the reports here, Congressman. To follow up the questions of the Senator from New Mexico, the chairman, the original cost of the project, which is repayable, reimbursable to the Federal Government with interest—

Mr. POLLOCK. Yes, sir; I think that was about \$30 million and it is down to \$25 million now.

Senator ALLOTT. And it is not to be affected in any way by this bill?

Mr. POLLOCK. That is correct.

Senator ALLOTT. There is no relief from any aspects of that obligation. At the time of the earthquake, the report says that there was certain damage done to the dam, and these are described in the report of the Department as follows:

To the intake structure and tunnel, \$788,409;

To the dam and spillway, \$1,419,978;

To emergency rehabilitation, \$668,914; and

Other costs, miscellaneous equipment, including the water-level gage, \$8,114; which totals \$2,885,415.

It is this expense which was directly attributable to the earthquake that you are asking to be made nonreimbursable?

Mr. POLLOCK. That is correct.

Senator ALLOTT. Then there is an \$80,000 item which is not included in this bill, construction of a road or something like that?

Mr. POLLOCK. No; it was construction of the dam, but I think you will notice, when Mr. Norwood testifies, his exhibit 15 has a picture of that which I think will adequately explain it. It is a gravel fill in the nature of a dam, because the other one was destroyed. So, in effect, it is an addition. In my view, this is all part of the rehabilitation. Senator Bartlett did not include it in his bill.

Senator ALLOTT. So you are going to repay the \$80,000.

Mr. POLLOCK. That is correct, under the Senate bill.

Senator ALLOTT. So we are considering here only the four items I mentioned, which total a little in excess of \$2,800,000.

Mr. POLLOCK. \$2.8 million; yes, sir.

Senator ALLOTT. That is all I have.

Senator ANDERSON. Did you have a road project up there that touched the dam?

Mr. POLLOCK. There is a dirt road going up there. I am not sure of the nature of your question, Mr. Chairman.

Senator ANDERSON. Was that not charged in the highway program where you did not have to reimburse it at all?

Mr. POLLOCK. That is not included here, if that is your question.

Senator ANDERSON. I am merely asking for the record, was not the road money spent for the new dam, the reasonable costs? Did you not use highway funds for that road?

Mr. POLLOCK. I do not think so. I am not aware of it, sir.

Senator ALLOTT. I want to make one other point, too. I think we probably ought to get this from the Administrator. But in the recon-

struction of this, the capacity was not increased or anything of that sort?

Mr. POLLOCK. No, sir; this was in the nature of emergency repairs for the dam that was damaged because of the earthquake.

Senator ALLOTT. I think that is a significant point in your bill.

Thank you very much.

Senator ANDERSON. Thank you very much, Mr. Congressman.

Mr. Norwood?

STATEMENT OF GUS NORWOOD, ADMINISTRATOR, ALASKA POWER ADMINISTRATION

Mr. NORWOOD. I want to express appreciation also for the tremendous interest which the committee has taken in Alaska in general and in the earthquake recovery particularly, and especially the work that you did in providing the leadership to get the earthquake damage repaired quickly.

Secondly, I want to express appreciation for your holding this hearing, which is very necessary to, we hope, clean up the last item of business in connection with the earthquake.

This is the first hearing before the Senate Interior Committee for the Alaska Power Administration, and it is my first official appearance here, so I have provided four exhibits, including the order which establishes the Alaska Power Administration, as exhibit 1; a news release, which is exhibit 2; a biography on myself as exhibits 3 and 4. This is in connection with the establishment of the Alaska Power Administration, which has had transferred to it all of the functions and property and staff which were previously the Bureau of Reclamation in Alaska.

The Bureau of Reclamation has now left Alaska and the Alaska Power Administration is the residual agency which is now operating the Eklutna project near Anchorage. That is covered in exhibits 1 through 4.

Senator ANDERSON. You are now operating Eklutna?

Mr. NORWOOD. We are now operating the Eklutna power project.

Senator ANDERSON. As the Alaska Power Administration?

Mr. NORWOOD. Yes; and we will operate the future hydroelectric projects in Alaska, one of which is being built by the Corps of Engineers today: the Snettisham project near Juneau.

Senator ANDERSON. What is the one in the valley, the Rampart? This is not part of the Rampart project, is it?

Mr. NORWOOD. The Rampart project is still being studied by the Corps of Engineers. They will finish their project report, we think, at the end of fiscal year 1969. So the Rampart project is not yet before the Congress, because the project report is still being completed.

Now, Mr. Chairman, the Eklutna project is physically in the best shape it has ever been in. The only problem we have left is in connection with the finances and our two main problems here: The first is the equity with respect to the \$2.8 million which is covered in the Department's report. Senator Allott referred to the Department report, and I would like to emphasize there that the top of page 2 of the Department's report explains the cost figures which you were just discussing—it is the top of page 3.

Senator ANDERSON. Is it page 2 or 3?

Mr. NORWOOD. It is page 3.

The total earthquake repair was about \$2,885,000. We took away from that the \$79,978 of improvements. We plan to repay that.

So that reduces the bill to \$2,805,437, which is the recommendation of the Secretary of the Interior to be written off as the amount of earthquake rehabilitation cost.

Senator ANDERSON. The Interior Department report says the Bureau of the Budget has advised that there are no objections to this report from the standpoint of the administration's program.

Mr. NORWOOD. Yes, sir.

Senator ANDERSON. What does that mean?

Mr. NORWOOD. It means that the Bureau of the Budget, I think, considers that, in the light of the disaster legislation which has been uniform in all respects except on Federal hydroelectric projects, considers that this bill is consistent with the disaster legislation. It so happens that, under the disaster laws, Federal power projects were left out.

Senator ANDERSON. It is an odd bit of language, I think.

Mr. NORWOOD. Yes.

Senator ANDERSON. It can be considered either way, can it not? Yes or no?

Mr. NORWOOD. The answer was that this bill would treat the earthquake cost for the Eklutna project in the same way that the general statutes under the disaster legislation has treated all other public disaster costs. We were not able to write off the Eklutna earthquake cost under the existing disaster legislation. That is why the special bill is needed. This happens to be true in other Federal hydroelectric projects as well, and another legislative route would have been to amend the disaster legislation so that Federal hydroelectric projects could be included as other public works are. This is the legal situation.

Senator ANDERSON. Have you ever seen this language before?

Mr. NORWOOD. Yes; it is standard language.

Senator ANDERSON. I accept your word for it, but I do not think so. Go ahead.

Mr. NORWOOD. Now, Mr. Chairman, the other aspect Senator Bartlett referred to is that the contracts which we have for the sale of power from the Eklutna project expire in 1973, 1974, and 1978. As we go into contract negotiations, we face a very difficult, competitive situation, where gas-fired generation becomes available at approximately one-half of the selling price of Eklutna power. We have excellent relationships with the customers. They have cooperated with the project, but they are fully cognizant that the over-10-mill power rate from the Eklutna project is much higher than their natural gas alternative.

So this bill, I think, will help to create a favorable climate to enable us to negotiate these contracts and, hopefully, complete the payout schedule for the project. So this is an additional aspect, in addition to the equity which we think exists for the writeoff of the \$2.8 million.

I would like to submit my statement for the record, with all of its exhibits.

Senator ANDERSON. Without objection, that will be printed at the end of your remarks.

Mr. NORWOOD. Thank you very much, sir.

Senator ANDERSON. This is all you are going to ask for now; \$2.8 million?

Mr. NORWOOD. This is all we are going to ask for. The Department is recommending that the \$2.8 million be written off and that we can then proceed with a new payout schedule which, in effect, would enable us to go down in the power rate about 1 mill and that we will then be able to negotiate for the new contracts for selling of power on the new basis.

Senator ANDERSON. Does the Alaska Power group have any control over natural gas?

Mr. NORWOOD. No, sir. We are not planning to build any steamplants in Alaska. We think the local utilities will be able to build the thermal generation in Alaska.

Senator ANDERSON. Senator Allott?

Senator ALLOTT. When was the Eklutna project constructed?

Mr. NORWOOD. The Eklutna project authorization act was 1950. The work was completed and the power was on the line in 1955.

Senator ALLOTT. When was the gas development?

Senator ANDERSON. 1960, was it not?

Mr. NORWOOD. The project was finished in 1955. We have operated Eklutna project for about 13 years or one-fourth of the payout schedule.

Senator ALLOTT. When did the gas development occur?

Mr. NORWOOD. The second question, on the natural gas, there was none produced 10 years ago. It has been coming on the line in the last 10 years, has been coming on very rapidly, and has been rising very steeply.

Senator ALLOTT. I am not unsympathetic to your request, but I cannot agree with your premise that the differential in price is an equitable consideration for your bill here. You are hanging your hat on the wrong peg, as far as I am concerned.

Mr. NORWOOD. Senator, I agree with you. I meant those to be two separate questions. The equity is with respect to the consistent treatment of the earthquake damage.

The other problem is mine in trying to negotiate power contracts for the future. I am trying to get the full payback from the project outside of the \$2.8 million. We still have to recover \$25 million on this project.

Senator ALLOTT. All right. What you are requesting here is, in effect, \$2.9 million; it is not \$2.8. It is \$2.885 million, so that is almost \$2.9. On that basis, the amount you are requesting is 11.8 percent of the present indebtedness and it is 9.7 percent of your original cost; of your original indebtedness.

Mr. NORWOOD. That is approximately correct, Senator Allott. The \$80,000, however, will be taken off—the \$80,000 will be taken off of the \$2,885 million and will net that down to \$2,805,000. That is in the departmental report.

Senator ALLOTT. Then these percentages would be off by a fraction of a percent, and that is all.

Mr. NORWOOD. Yes, sir.

Senator ALLOTT. I do not have anything else, Mr. Chairman.

Senator ANDERSON. What other purpose is the Eklutna project used for now? Irrigation?

Mr. NORWOOD. The project?

Senator ANDERSON. Yes.

Mr. NORWOOD. It is purely a power project. The power is being sold to the three customers in the Greater Anchorage area. There is no irrigation in connection with it.

Senator ANDERSON. And your rate now is 11 mills for the sale?

Mr. NORWOOD. Yes. We have now collected about \$20 million of revenue for the project in the first one-fourth of the payout schedule. We just passed \$20 million this last spring. That is about 13 years of operation so far.

Senator ANDERSON. What did the earthquake do to the Eklutna Dam? What was the damage to it?

Mr. NORWOOD. The main damage was at the intake of the 4.5-mile-long tunnel, which carries the lake water to the other side of the mountain and drops it down the penstock into the powerhouse. This intake structure was repaired.

Then the second main damage was to the dam or control works at the outlet of the lake. This is a very small dam. It is really a control works, to control the lake. This replacement cost was about \$1.4 million, or about one-half of this bill.

The remaining incidental damages were at the powerhouse, where many insulators were broken; transformers were moved around; the roads were cracked.

Senator ANDERSON. The what?

Mr. NORWOOD. The roads. I can give you an example of the road thing here.

Exhibit 10 of my statement shows a crack in the road that is over 2 feet wide.

Senator ANDERSON. Was that caused by the earthquake?

Mr. NORWOOD. This was caused by the earthquake. This is the kind of damage around the powerhouse, and it caused small damage around the powerhouse. Now, the powerhouse itself was excellently built, on steel piling, and it withstood the earthquake very well.

In summary, 90 percent of the project was undamaged by the earthquake. It was 10 percent of the project that had to be rehabilitated. The main items were the intake structure and the control works or dam at the mouth of the lake.

Senator ANDERSON. When was this damage discovered?

Mr. NORWOOD. On March 27, 1964, we had 2 feet of ice on the lake and it was covered with snow. The lake was low; therefore, we did not discover any damage at the dam until the water rose, the ground thawed, and on July 13, almost 3 months later, the dam was condemned and we were not allowed to operate the dam any more and we had to keep the water low.

Later that summer, the decision was made by the Bureau of Reclamation engineers that the dam was not worth repairing, that it would be cheaper and better to build downstream. They subsequently revised their figures, that the new dam would cost about \$80,000 more, and that \$80,000 will be reimbursed under this bill.

Senator ANDERSON. Senator Allott?

Senator ALLOTT. I have no questions.

Senator ANDERSON. I have no further questions.

Mr. NORWOOD. Thank you very much, sir.

(The statement referred to follows:)

STATEMENT OF GUS NORWOOD, ADMINISTRATOR, ALASKA POWER ADMINISTRATION

Mr. Chairman and gentlemen of the committee, I am Gus Norwood, Administrator of the Alaska Power Administration. One of our responsibilities is the operation of the Eklutna Project and marketing of power. We are most grateful to the Committee for holding this hearing.

Since this is the first representation of the Alaska Power Administration before your Committee, as well as my first official appearance, I am providing four exhibits consisting of (1) the order establishing the Alaska Power Administration, (2) the news release thereon, (3) the news release on my appointment, and (4) further biographical data. Aside from these exhibits for possible inclusion in the record, I am also furnishing for the files of the Committee some background information on the program of the Alaska Power Administration.

The purpose of our testimony is to endorse S. 224, as introduced by Senators Bartlett and Gruening.

Our testimony suggests that enactment of S. 224 will serve the national interest and the public interest in Alaska, (2) conforms to sound public policy set forth in the Federal laws relating to disasters, (3) is consistent with and represents equity in terms of the generous policy of the Congress in insuring reconstruction after the disastrous Good Friday earthquake of March 27, 1964, and (4) will facilitate administration of the Eklutna Project in accordance with sound business principles.

The extreme severity of the 1964 Alaska earthquake resulted in many important and valuable lessons. The cost to the United States Treasury is by no means a dead loss. This experience resulted in better building codes and code enforcement, improved design of structures and engineering works, suggested better standards of site selection, soil testing and foundation conditions. It provided important lessons for locating future townsites.

The Eklutna Project came through the 1964 earthquake at least 90 percent undamaged. The project managed to operate after the earthquake on a curtailed basis for several critical months when power was urgently needed in the period when other utilities were repairing their damaged generating plants. The earthquake confirmed the sound engineering of the project in general.

Nonetheless, the damage which did occur, and it should be recalled that Eklutna was close to the center of the earthquake, provided a legacy of many new lessons, representing a significant expansion of knowledge for building future projects to be earthquake proof.

The rehabilitation of the Eklutna Project provided at least three improvements in project safety, reliability and assured long life: (1) the project is earthquakeproof against a similar earthquake, (2) the project dam can now resist a design flood, and (3) the rebuilt intake and the new dam can be regarded as 100 years or longer in terms of service life. Much of this information has been documented for future reference.

These improvements provide the nation with a better long-term investment. It will be a national asset long after completion of the 50-year repayment schedule.

Physically, the Eklutna Project is in good shape—better shape than before 1964.

Financially, the Eklutna Project has done very well, and in fact, has exceeded most expectations. However, the discovery of natural gas in the Anchorage area has enabled local electric utilities to install gas turbines to produce base load power at less than our present Eklutna rates. In the future we expect natural gas to be used in large new steamplants for production of electricity at about one-half the present Eklutna power rates. This provides us with a major management challenge. We intend to do everything possible to meet this challenge and to recover the Federal investment in the project as well as the costs of interest, operation, maintenance, replacements and administration. Eklutna began commercial operation in 1955. As of June 30, 1967, revenues reached \$19,099,386, and at the present time accumulated revenues are over the \$20 million mark.

Eklutna has operated almost 13 years or one-fourth of the payout schedule. Present power sales contracts expire in 1973, 1974 and 1978. Future financial success of the project depends on renewal of these contracts. We believe that enactment of S. 224, coupled with good management and future improvements, will create a favorable climate for negotiation and renewal of these contracts in the public interest.

JUSTIFICATION

On the basis of the whole record, the Secretary of the Interior in his letter of comments recommends that the sum of \$2,805,437 for earthquake damage rehabilitation be released from the requirement for reimbursement. It should be clearly understood that this figure does not include the \$79,978 for betterments, nor does it include over \$500,000 of estimated loss of revenue during the 20-month rehabilitation period.

On the surface, the enactment of S. 224 would amount to a difference in the power rate of about one mill per kilowatt-hour. To that extent the enactment of S. 224 will facilitate the efforts of the Alaska Power Administration to negotiate for a renewal of present power sales contracts which expire in 1973, 1974 and 1978.

The renewal of these contracts, we think, would be in the best public interest despite the available alternative of lower cost power from steamplants using natural gas. The peaking capacity of Eklutna should continue to be very useful in conjunction with base load generation based on natural gas. Hydro and steam generation are complementary. Additionally, Eklutna represents desirable spinning reserves with considerable, short period overload capacity. Eklutna also fits in well for power pooling purposes. Eklutna's 186,000 acre-feet reservoir serves as a storage battery for the Greater Anchorage-Matanuska Valley power supply systems.

The general public would benefit, of course, from enactment of S. 224 as wholesale rate benefits are reflected in retail rates.

Another policy question is whether enactment of S. 224 is equitable. The Federal policy in handling Alaska earthquake damage cost has been uniform and consistent in permitting replacement of public facilities, except in the case of Eklutna. Eklutna was left out because of an omission in Federal disaster legislation for Federal power projects. It is apparent that if Eklutna had been owned by the city of Anchorage, the cost of rehabilitation would have been forgiven. Thus in equity we feel S. 224 should be enacted.

We think enactment of S. 224 will facilitate placing Eklutna on a sound business basis and we will make every effort to work toward the achievement of project payout.

INCIDENTAL QUESTIONS

The correspondence and the record indicates that some concern has been felt regarding the decision to replace the old, damaged dam with a new dam 1,000 feet downstream.

This was a sound engineering decision, carefully considered.

The initial inspection after the March 27, 1964 earthquake found the Eklutna Lake covered with thick ice and this in turn was covered with snow. The surface was badly broken up at the intake. Also the reservoir level was low so no water was pressing against the dam. Therefore, the initial report was that the dam was not damaged.

By June the ice had melted, the ground was thawed, and the reservoir level was going up. Large openings or caves appeared under the dam spillway apron. By July 13, a Bureau of Reclamation engineer declared the dam unsafe and advised that the spillway gates be left in the open position.

During the summer the problem was studied in detail and the engineering decision was made on the basis of extensive drill hole core samples to install a new dam on safe ground 1,000 feet downstream from the old dam.

The contract for the new dam was let on March 26, 1965, a full year less one day after the earthquake. Construction was completed November 22, 1965.

NEW DAM AUTHORIZED

Another question which had previously been raised was in regard to authority to build a replacement dam 1,000 feet downstream from the old dam.

The Department's letter explaining the necessity of going ahead with a new dam went to the Chairmen of the Appropriations Committees on December 17, 1964. Informal clearance from the Appropriations Committees was transmitted to the Chief Engineer of the Bureau of Reclamation on December 22, 1964. These two letters constitute the informal clearance.

The formal record was then made in the appropriations hearings for fiscal year 1966, in each case specifically referring to the new dam being built downstream from the old dam and on a better foundation free of the earthquake-prone blue

clay. The House hearing record of April 14, 1965 is Part 2, pages 159-162. The Senate record is May 13, 1965, Part 3, pages 204-207.

The outlet of Eklutna Lake consists of a stream which crosses an extensive natural dam of glacial moraine to the point where the valley narrows and begins a V-shaped gorge.

The so-called Eklutna dam is a control works and spillway plus two earthfill wing dikes resting on the natural dam. The Eklutna dam cost about \$1.4 million and represents about 4½ percent of the cost of the Eklutna Project.

The new dam represents a common sense solution for many reasons. It had no blue clay problem. Reconstruction of the old dam would have required deep excavation to remove the blue clay stratum or provide other special treatment. Such deep excavation would have required diking and careful scheduling while the lake level was at its low point. In contrast, the new dam was built in the open area downstream from the old dam so that the old dam served as a cofferdam and insured project operation and revenues while the new dam area was excavated and the construction completed.

The new dam represents a sure thing on which dependence can be placed. From every engineering point of view and as a matter of logic, the new dam is the correct answer to the situation.

PUBLISHED RECORD

The entire program of Eklutna rehabilitation has been carefully recorded with extensive photographs, drill hole core samples, inspections and cost records.

The technical record was completed with the publication of a report on the rehabilitation as recently as June 1967.

May I add that the Secretary of the Interior gave recognition to the "Excellence of Service" rendered by Eklutna Project personnel during the earthquake and the subsequent recovery period by presenting them with the U.S. Department of the Interior's Unit Award.

We have furnished the Committee with several publications which help to round out the picture. Our office, of course, has many file drawers of more detailed backup materials, drawings, photographs and accounting records.

I cannot make this report without expressing my appreciation and give tribute to the three electric systems which purchase Eklutna power. They have been cooperative and they have shown much forbearance under difficult circumstances. I believe they will continue to express appreciation for the important role which the Eklutna Project historically has played in the economy of the Anchorage area.

It would be interesting to review the full impact of this project on the local economy. Although electric rates in the Anchorage area are still high compared to many public power areas, it should be noted that these electric rates are less than half those of 20 years ago. More importantly than rates, the Eklutna Project provided reliability of service in contrast to the previous extensive brownouts and blackouts. The project provided stability of power supply and created public confidence when this was urgently needed.

We respectfully urge enactment of S. 224. We very much appreciate the opportunity to present this testimony.

Thank you.

EXHIBIT 1

TEXT OF ORDER CREATING ALASKA POWER ADMINISTRATION

OFFICE OF THE SECRETARY, ORDER NO. 2900, ALASKA POWER ADMINISTRATION—
ESTABLISHMENT

SECTION 1. Purpose. This order, issued pursuant to the authority of the Secretary of the Interior under Reorganization Plan No. 3 of 1950. 5 U.S.C. 133z-15 (note), establishes the Alaska Power Administration as a Bureau of the Department of the Interior, defines its organization and functions, and provides for the related delegation of authority of the Secretary of the Interior under various acts of Congress.

SEC. 2. Organization. The head of the Alaska Power Administration shall be the Administrator, who shall administer the functions of the Administration subject to the supervision and direction of the Assistant Secretary—Water and Power Development.

SEC. 3. Functions. The functions of the Alaska Power Administration are as follows:

(a) Promote the development and utilization of the water, power, and related resources of Alaska;

(b) Operate and maintain the Eklutna project and the Crater-Long Lakes division of the Snettisham project;

(c) Dispose of Federal power and energy not needed for project or agency purposes in such manner as to encourage the most widespread use thereof at the lowest possible rates to consumers consistent with sound business principles;

(d) Cooperate with all agencies of government in Alaska; including the Federal Field Committee for Development Planning in Alaska, established by Executive Order 11182 (Oct. 2, 1964);

(e) Investigate, plan, and submit to the Secretary recommendations for Federal projects and programs;

(f) Represent the Secretary of the Interior in Alaska on power matters.

SEC. 4. *Delegation of Authority.* The Administrator, Alaska Power Administration, is authorized, except as provided in 200 DM 1.4 and 1.5 and in section 5 of this order to exercise the authority of the Secretary of the Interior pursuant to the following, insofar as they relate to activities within the State of Alaska:

(a) The Eklutna Project Act of July 31, 1950, 64 Stat. 382, as amended;

(b) Section 204 of the Flood Control Act of 1962 (Crater-Long Lakes division, Snettisham project), 76 Stat. 1193;

(c) Sections 5 and 8 of the Flood Control Act of 1944, 58 Stat. 890, 16 U.S.C. 825s, 58 Stat. 891, 43 U.S.C. 390;

(d) The Act of August 9, 1955, 69 Stat. 618 (Alaska water resources investigations);

(e) Appropriation acts or other statutory provisions respecting investigations relating to projects for the development and utilization of water, power, and related resources in Alaska;

(f) Land and Water Conservation Act of 1965 (78 Stat. 897) and Executive Order 11200 (30 F.R. 2645). The authorities of the Administrator under this Act and Executive order shall be restricted to the following:

(1) The authority to designate areas under his jurisdiction at which recreation fees will be charged as specified by sections 1, 2, and 3 of Executive Order 11200.

(2) The authority to post such designated areas as specified by section 4 of Executive Order 11200.

(3) The authority to select from the fees established by 43 CFR Part 13 (30 F.R. 3265) the specific fees to be charged at the designated areas in accordance with section 5 (a) of Executive Order 11200.

(g) Section 7(c) of the Federal Water Project Recreation Act of July 9, 1965 (79 Stat. 213).

SEC. 5. *Limitations.* Excepted from the foregoing delegation is the authority to:

(a) Act for the Secretary of the Interior in approving and adopting project feasibility reports as the Secretary's proposed reports or as his reports to the President and to the Congress;

(b) Promulgate rate schedules or fix rates for the sale of electric power and energy;

(c) Make finding and reports to the Congress respecting minerals, as provided in section 1 of the Eklutna Project Act, *supra*, as amended;

(d) Make the report to the Congress upon the feasibility and desirability of transferring the Eklutna Project to public ownership and control in Alaska, as provided in section 4 of the Eklutna Project Act, *Supra*.

SEC. 6. *Contracts.* The Administrator may, without Secretarial approval, consummate contracts for the sale, interchange, purchase, or wheeling of power and energy, if such contracts are composed entirely of standard provisions which have previously received Secretarial approval. If such a contract is not composed entirely of standard provisions, the Administrator may only execute the contract subject to Secretarial approval.

SEC. 7. *Revocation.* Delegations of authority previously made to the Commissioner of Reclamation are revoked to the extent they are inconsistent with the delegations herein.

SEC. 3. *Transfer.* Effective at the close of business on the day of the signing of this order, all personnel, property, funds, and equipment formerly employed by the Bureau of Reclamation in the State of Alaska are transferred to Alaska Power Administration.

STEWART L. UDALL,
Secretary of the Interior.

EXHIBIT 2

DEPARTMENT ISSUES REPORT ON RAMPART PROJECT, ESTABLISHES ALASKA POWER ADMINISTRATION

Secretary Stewart L. Udall today said the Department of the Interior cannot recommend construction of the proposed Rampart Canyon Project in Alaska at this time, but announced establishment of an Alaska Power Administration and other measures to help spur economic development in the State.

Secretary Udall said he was transmitting a report to the Secretary of the Army which concluded, on the basis of five years of intensive study, that the Department cannot now recommend construction of the proposed Army Corps of Engineers Project.

Under the law, the Department of the Interior had the responsibility of investigating the marketability of the project's 5-million kilowatt hydropower potential and its effect on natural resources of the area.

"We are firmly convinced an available supply of abundant low-cost power is essential to the future development of Alaska," Secretary Udall said, "and this is the basis for our creation of an Alaska Power Administration by Secretarial Order."

"Insofar as Rampart is concerned," Secretary Udall continued, "we had to face the fact of a limited market for the enormous power potential of the project, the non-competitive position of Rampart power for primary aluminum production in Alaska and the tremendous investment required. Considering these points along with the serious adverse effects to fish and wildlife, we concluded the Rampart Canyon Project is not the most desirable means of accomplishing the development of Alaska's resources at this time.

"However, our studies have revealed alternative measures of accomplishing our objectives, shaped to Alaska's needs. We believe these alternatives are soundly based and would provide a quick and positive stimulus to the Alaskan economy."

Included among the alternatives are hydropower developments on the Susitna River, Bradley Lake, Lake Grace, and Takatz Creek, in addition to thermal power developments—using fossile fuels and nuclear power—near Alaskan load centers with adequate transmission facilities to serve the Railbelt area.

Alternative development measures being developed by the Department, in addition to establishment of the Alaska Power Administration are:

A \$50 million, five-year program of accelerated Federal mineral survey and research, including establishment of a permanent Institute of Arctic Mineral Resources at the University of Alaska.

Early surveys and planning by the Department of Transportation to determine how the Alaska Railroad should be extended to provide economical all-season bulk surface transportation to presently remote Alaskan areas of great economic promise.

A \$26 million, 15-year accelerated Federal fishery research program involving the establishment of an Alaska Institute for Fisheries Development.

"It is my view that these measures would be in the national interest," Secretary Udall stated. "We believe they would assist Alaska in attracting the private capital investments which are required to develop the vast and rich potential of that great State."

George N. Pierce, District Manager of the Bureau of Reclamation in Alaska, has been designated Acting Administrator of the Alaska Power Administration.

EXHIBIT 3

UDALL NAMES GUS NORWOOD TO HEAD ALASKA POWER ADMINISTRATION

Gus A. Norwood, for more than 19 years the executive secretary of the Northwest Public Power Association, Vancouver, Washington, today was named Administrator for the newly-established Alaska Power Administration by Secretary of the Interior Stewart L. Udall.

Norwood, whose NWPPA service spanned the Association's growth from a membership of 32 systems in 1947 to 126 systems in 1967, will administer the Federal power activities in an area whose hydropower potential exceeds that of any other state.

The Alaska Power Administration, created June 16, 1967, by Secretarial Order, is the fourth such body to become part of the Department of the Interior. The

other three are the Bonneville, Southeastern, and Southwestern Power Administrations.

"The Alaska Power Administration is charged with developing soundly based methods of providing the power to stimulate the vast, rich potential of the great State of Alaska," Secretary Udall said. "We believe we have found the best man for the job."

Norwood was selected first executive secretary of the Northwest Public Power Association on November 1, 1947, when the membership consisted of 32 public and cooperative electric systems. Today, the 126 member systems serve 4½ million people with low cost electricity in Montana, Idaho, Oregon, Washington, Alaska and British Columbia and operate some \$3 billion worth of electric facilities.

A 1939 graduate of the United States Naval Academy, Norwood served as naval officer on five combat ships during World War II—the USS Houston, USS Lexington, USS Hornet, USS Thatcher, and USS Alaska. He was chief engineer of the battle cruiser Alaska, which was christened in 1942 by Mrs. Ernest Gruening, wife of one of Alaska's Senators, then Territorial Governor, and was in charge of deactivating the vessel after the war.

In 1946, Norwood resigned his commission as lieutenant commander to enter the field of public administration. He holds a master of public administration degree from Harvard's Littauer Graduate School of Public Administration.

Norwood is married to the former Jean Eileen Neander, and they have five children: Douglas, 22; Emily, 20; Valerie, 16; Eric, 14; and Barbara Jean, 5. He replaces George N. Pierce, district manager of the Bureau of Reclamation in Alaska, who has been acting administrator of the Alaska Power Administration in Juneau since its establishment.

EXHIBIT 4

BIOGRAPHICAL NOTES

Gus Norwood was born in Chicago, Illinois, January 3, 1916, and raised on a small, unelectrified 8-acre farm 20 miles west of Chicago, graduated from Bensonville High School in 1933, attended Elmhurst College, Elmhurst, Illinois, on a scholarship and campus jobs 1933-35, and attended the U.S. Naval Academy 1935-39 as a result of a competitive examination, served in the U.S. Navy 1939-46 on five combatant vessels, usually in the Southwest Pacific war zones, chiefly in engineering capacities including Chief Engineer of the battle cruiser USS Alaska in the latter part of World War II.

Resigning his Lieutenant Commander commission August 1946 he attended Harvard's Littauer Graduate School of Public Administration and received the Masters Degree in Public Administration June 1947. On November 1, 1947 he became the first employee and Executive Secretary of the Northwest Public Power Association at Vancouver, Washington, a position he resigned September 7, 1967 to accept appointment as Administrator, Alaska Power Administration.

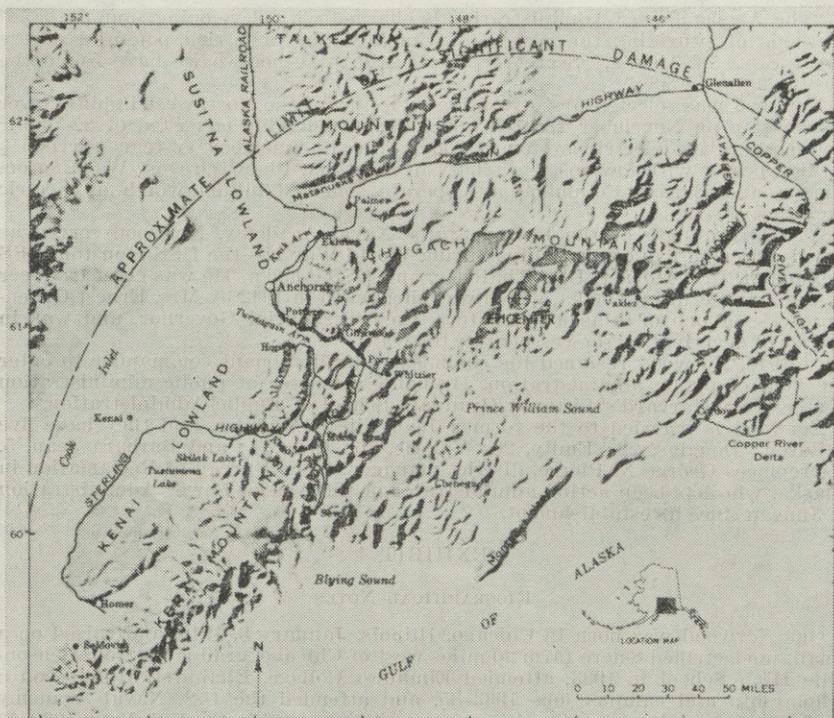
During his 20 years as Executive Secretary, the Association expanded from 32 to 131 public and cooperative electric systems, and investment in electric facilities expanded from \$400 million to \$3 billion, not counting the Federal power program which expanded more than \$2 billion in the Pacific Northwest in that period.

The Association developed annual training workshops in electric utility accounting and finance, engineering and operations, and promotion of power use. Technical committees involved wholesale rates, retail rates, power supply and personnel administration.

The Association's publication program included an annual wage survey, annual directory, a monthly 16-page bulletin, rate surveys and numerous research reports.

Norwood served on numerous national and regional committees and boards, wrote and spoke extensively in the power and resources fields and frequently testified on legislative matters. He is the recipient of various awards and is listed in Who's Who in the West and Who's Who in Commerce and Industry.

EXHIBIT 5



Area of Major Damage Resulting from the 1964 Earthquake.
Eklutna is only 70 miles West/Northwest of the Epicenter.

EXHIBIT 6

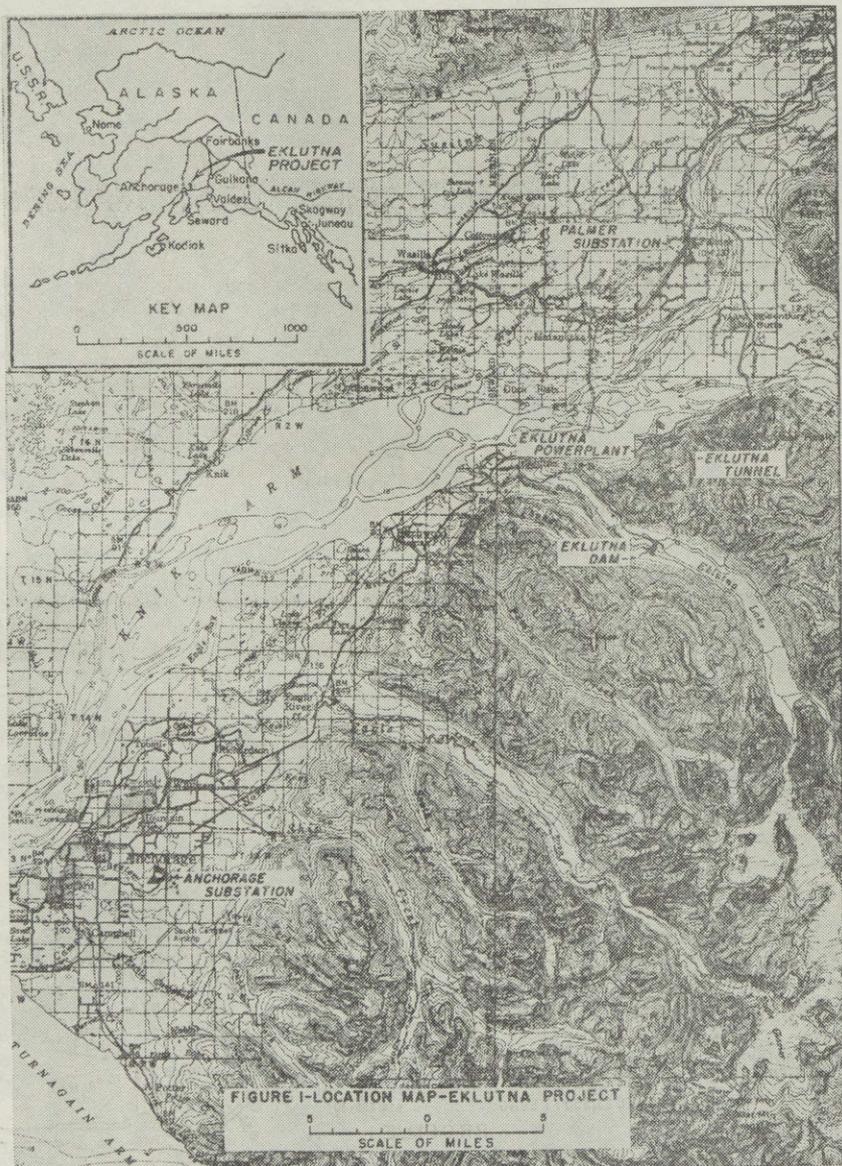
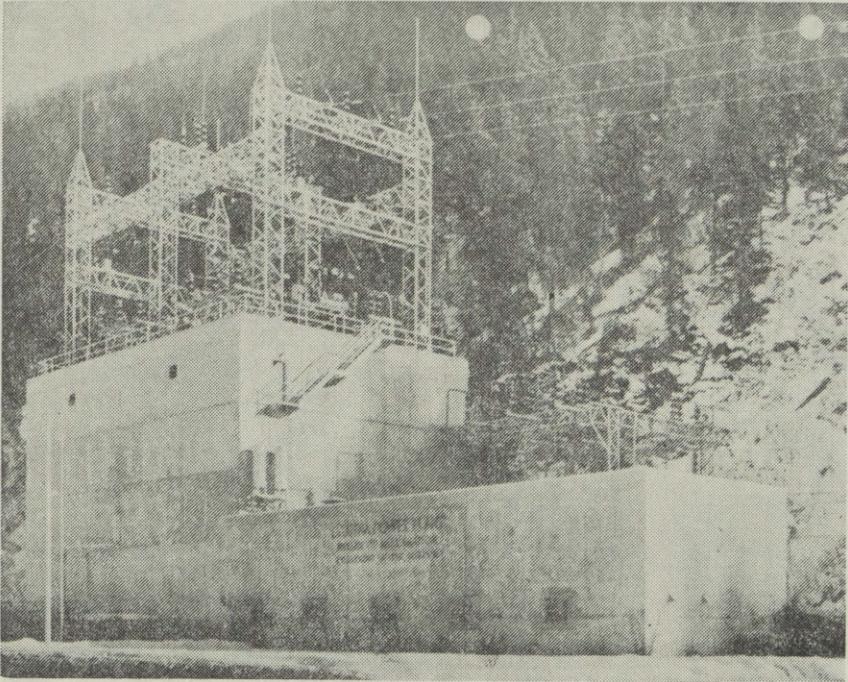


FIGURE I-LOCATION MAP-EKLUTNA PROJECT

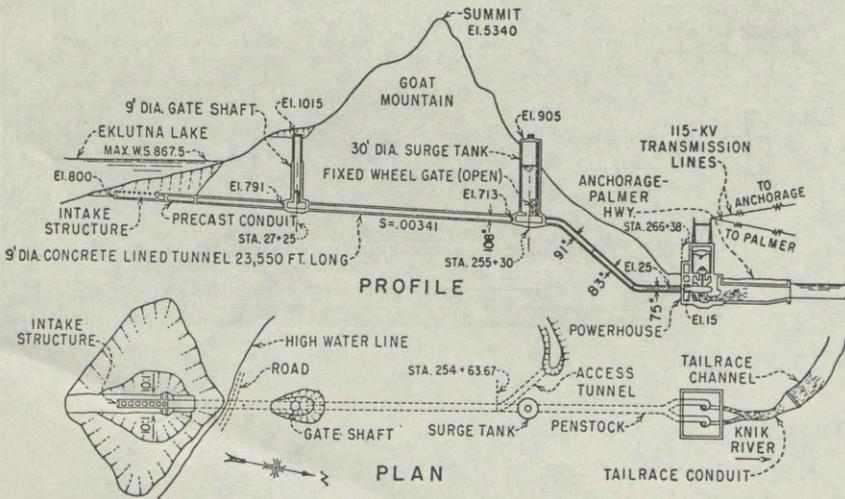
SCALE OF MILES

EXHIBIT 7



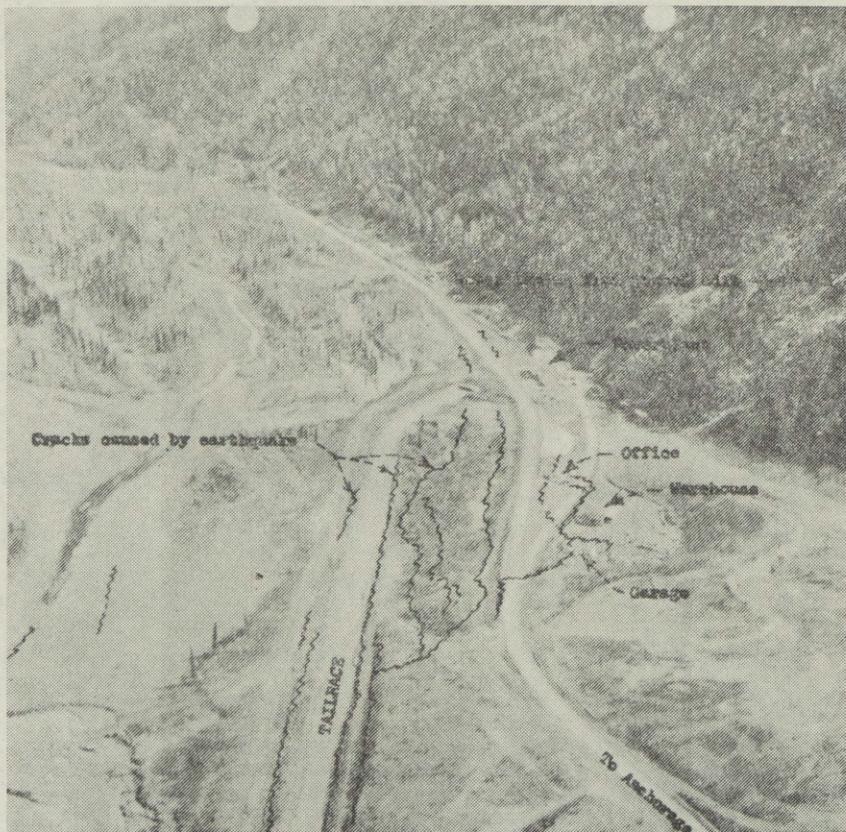
Eklutna Powerplant. General view taken following completion of earthquake damage repair. Damage was confined primarily to the 115 KV air circuit breakers on the roof.

EXHIBIT 8



Schematic plan and profile of Eklutna project features.

EXHIBIT 9



Eklutna Powerplant
EARTHQUAKE DAMAGE

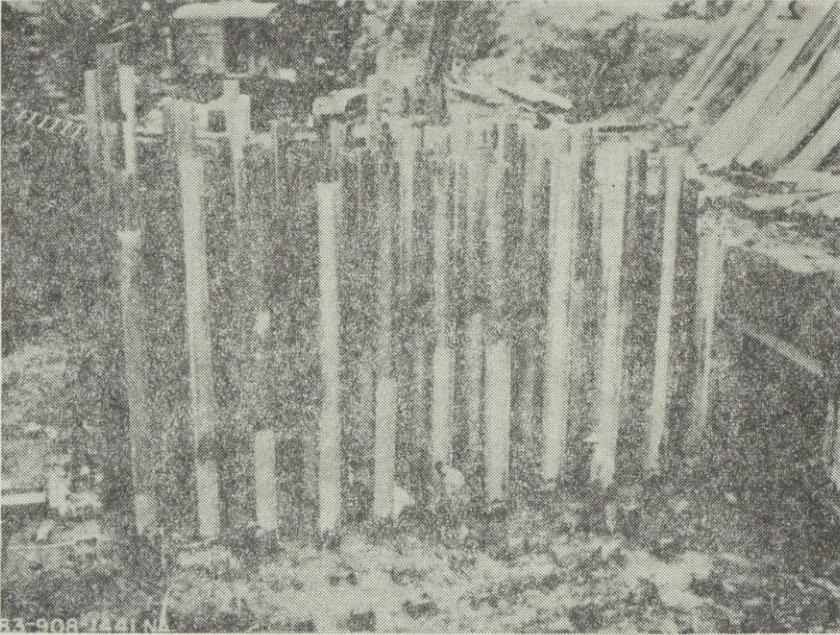
Air photo showing the pattern of cracks that developed from the earthquake in the vicinity of Eklutna Powerplant.

EXHIBIT 10



Crack in highway adjacent to the Eklutna powerplant resulting from the March 27 earthquake.

EXHIBIT 11

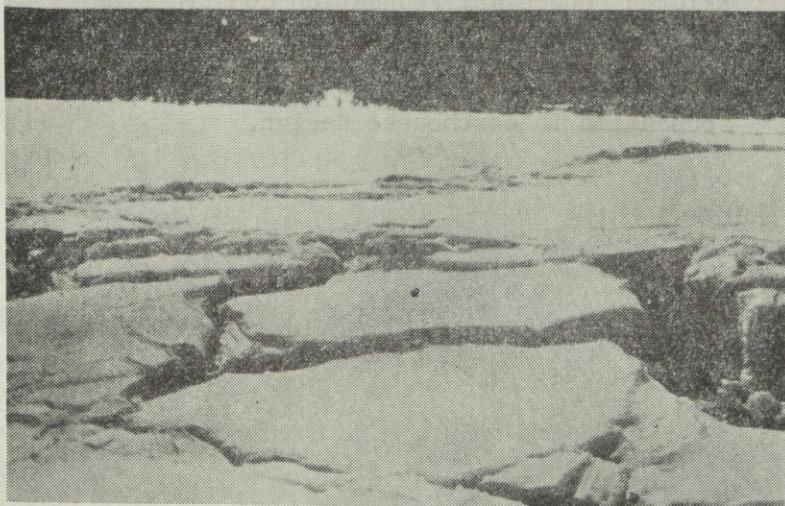
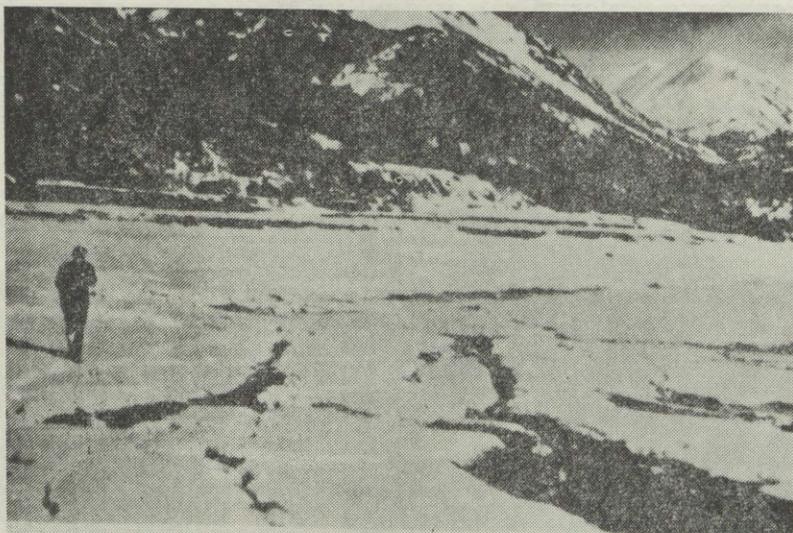


Eklutna Powerplant Foundation Construction

View showing a portion of the vertical and battered H-beam piles used to stabilize foundation in earthquake design.

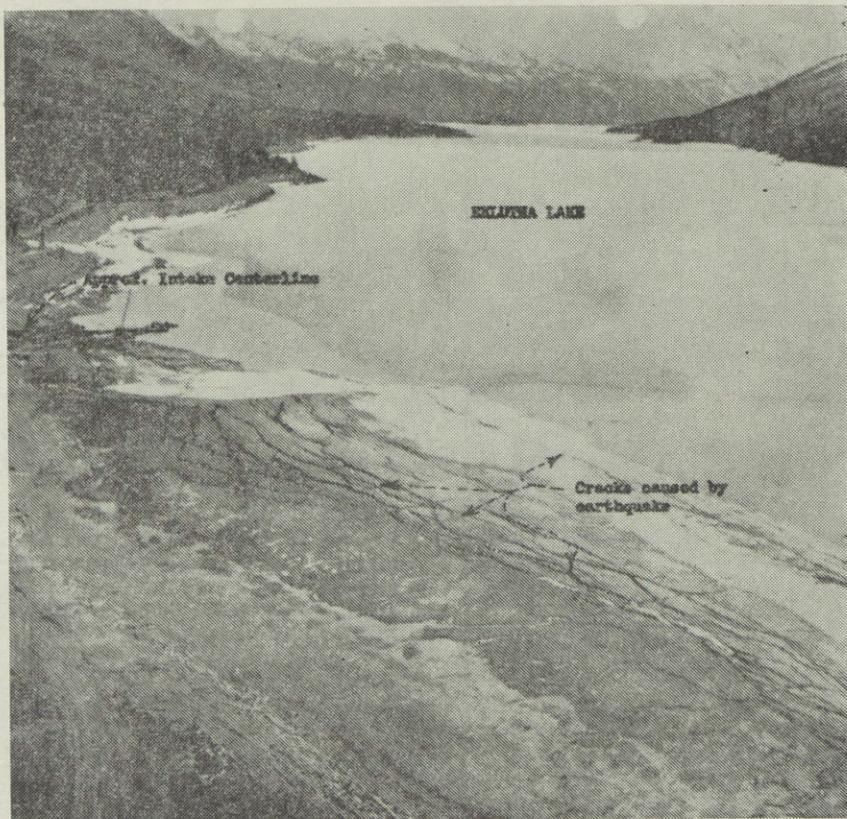
Eklutna Lake. View showing the heavy broken
by the March 27 earthquake. The ice is
approximately sixteen inches thick. Photo
taken April 2, 1964 near the power tunnel
intake.

EXHIBIT 12



Eklutna Lake. Views showing ice cover broken by the March 27 earthquake. The ice is approximately eighteen inches thick. Photo taken April 2, 1964 near the power tunnel intake.

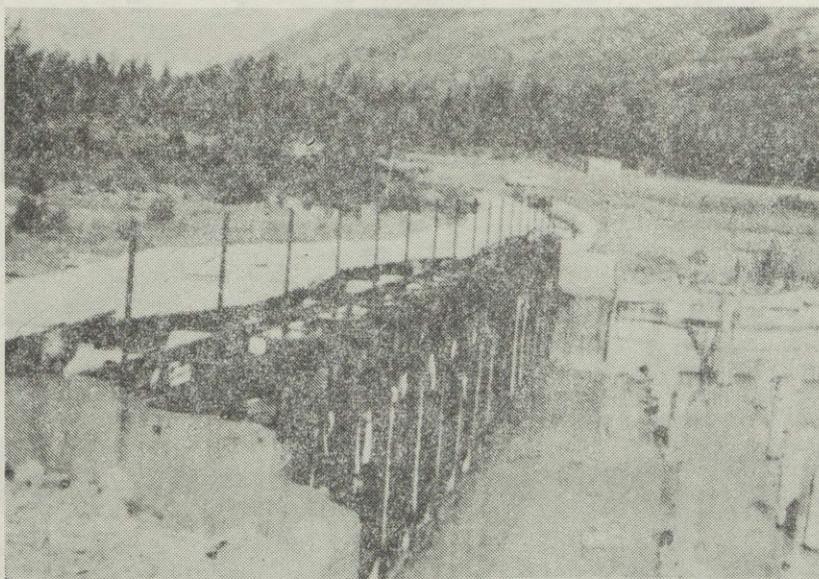
EXHIBIT 13



Eklutna Intake
EARTHQUAKE DAMAGE

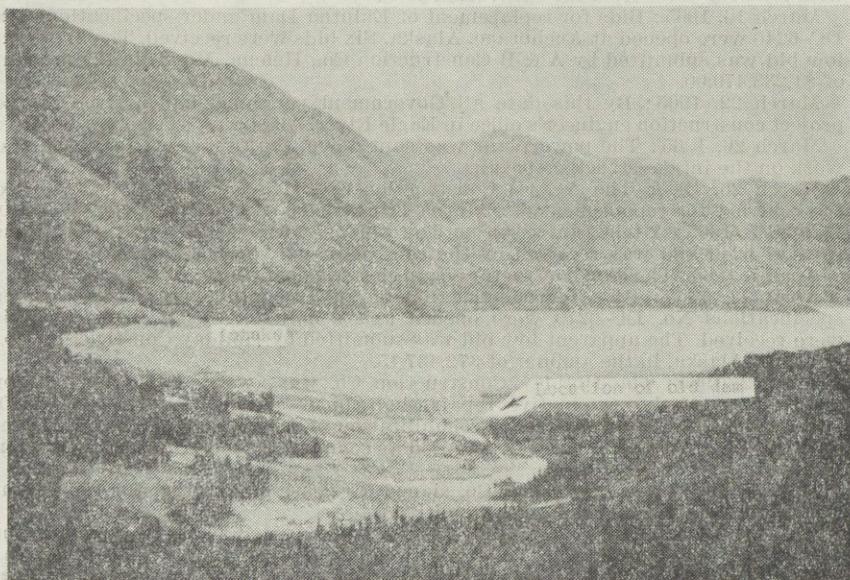
Photo of intake area
showing the intricate
network of cracks caused
by the earthquakes.

EXHIBIT 14



View of the original dam and spillway gate structure after being declared unsafe for impounding water following foundation damage caused by the March 27 earthquake. Photo taken July 20, 1964.

EXHIBIT 15



Eklutna Lake showing the new dam and spillway in the foreground.
The power tunnel intake is located near the left center of the photo.

EXHIBIT 16

CHRONOLOGY OF EVENTS RELATED TO REHABILITATION OF EKLUTNA PROJECT—
FEATURES FOLLOWING EARTHQUAKE OF MARCH 1964

- March 27, 5:36 p.m., 1964: Earthquake shocks began.
- March 28, 1964: First shutdown of Eklutna Powerplant for repairs began.
- April 19, 1964: An underwater inspection by divers was made of damage to intake structure trashrack and intake pipe.
- May 5, 1964: Contract No. 14-06-D-5098 was negotiated with Peter Kiewit Sons' Co. in Anchorage, Alaska, in the amount of \$133,859.17 for a detailed inspection and repair, on a time and material basis, of the precast concrete conduit pipe of the tunnel intake.
- May 9, 1964: Eklutna Powerplant was shut down and preparations began toward unwatering the power tunnel. Divers were sent into the headgate shaft to determine the condition of the gate slot. The removal of rock and sand from the tunnel began under the combined efforts of both the contractor's forces and the Government force-account crews.
- June 21, 1964: Government forces and the contractor's mucking workmen met at station 157+00, thus ending the actual debris cleanout work in the tunnel.
- January 19, 1965: The project construction engineer arrived at the project on a temporary assignment.
- January 21, 1965: Bids for rehabilitation (replacement) of the intake structure under specifications No. DC-6212 were opened at Anchorage, Alaska. Eight bids were received. The apparent low bidder was Manson-Osberg Co., Seattle, Wash., in the amount of \$633,631.00.
- February 1, 1965: Manson-Osberg Co. was awarded the contract for rehabilitation of the intake structure and conduit for the pressure tunnel under specifications No. DC-6212.
- February 12, 1965: Notice to proceed was issued and received by the contractor for work under specifications No. DC-6212.
- February 26, 1965: Manson-Osberg Co. moved in the initial equipment.

March 1, 1965: Actual construction under specifications No. DC-6212 began with removal of ice from the excavation area.

March 16, 1965: Bids for replacement of Eklutna Dam under specifications No. DC-6240 were opened at Anchorage, Alaska. Six bids were received. The apparent low bid was submitted by A & B Construction Co., Helena, Mont., in the amount of \$1,233,470.00.

March 22, 1965: By this date all Government personnel had arrived at the project construction engineer's office in Eagle River, Alaska.

March 26, 1965: The powerplant was shut down, the tunnel was drained, and work on the intake structure began.

March 26, 1965: The A & B Construction Co., Helena, Mont., was awarded the contract for replacement of Eklutna Dam, under specifications No. DC-6240.

April 5, 1965: A telegram given notice to proceed was issued for specifications No. DC-6240 and was received by the contractor on April 6, 1965.

April 7, 1965: The dam contractor began clearing operations.

April 22, 1965: Bids for construction of an automotive repair shop under specifications No. DC-6270 were opened at Anchorage, Alaska. Fourteen bids were received. The apparent low bid was submitted by Holiday Construction Co., Spenard, Alaska, in the amount of \$72,437.15.

May 12, 1965: The Holiday Construction Co. was awarded the contract for construction of the automotive repair shop under specifications No. DC-6270.

May 14, 1965: The contract for rehabilitation of the intake structure and conduit for the pressure tunnel was accepted as complete by the project construction engineer.

May 18, 1965: Manson-Osberg Co. signed a release on contract for rehabilitation of the intake structure and conduit.

May 18, 1965: Notice to proceed issued and received by the contractor for work under specifications No. DC-6270, automotive repair shop.

May 18, 1965: Power generation was resumed by Eklutna Powerplant after a shutdown of 54 days.

June 2, 1965: Excavation work started for the automotive repair shop.

June 7, 1965: The drilling subcontractor started drilling of anchor bar holes for Eklutna Dam.

June 12, 1965: The earthwork subcontractor abandoned earthwork to allow completion of the spillway conduit section.

June 13, 1965: The contractor for replacement of Eklutna Dam began concrete construction in the spillway.

June 30, 1965: The subcontractor completed drilling of anchor bar holes in the spillway.

August 17, 1965: The contractor completed placement of the conduit section of the spillway.

August 25, 1965: The earthwork subcontractor resumed work.

September 4, 1965: The earthwork subcontractor began placement and compaction of zone 1 material in the embankment.

September 30, 1965: The contractor completed all concrete placement for the spillway structure.

October 1, 1965: The contractor started hauling zone 3 and rockfill material from the rock source to the embankment.

October 5, 1965: Heavy rain and snow slowed progress on earthwork for Eklutna Dam.

October 20, 1965: The earthwork subcontractor completed placement of zone 1 material.

October 21, 1965: The contractor started hauling riprap from the Alaska Railroad quarry near the town of Eklutna.

October 26, 1965: The earthwork subcontractor completed placement of zone 2 material.

October 29, 1965: The earthwork subcontractor completed hauling and placement of riprap.

November 10, 1965: The earthwork subcontractor completed hauling and placement of zone 3 material.

November 10, 1965: The automotive repair shop was completed and accepted.

November 15, 1965: All work under the contract for replacement of Eklutna Dam was accepted as complete.

November 18, 1965: All work under specifications Nos. DC-6212 and DC-6240, was transferred from construction status to O&M status.

November 22, 1965: The A & B Construction Co. signed a release on contract for replacement of Eklutna Dam.

November 23, 1965: The Holiday Construction Co. signed a release on contract for the automotive repair shop.

EXHIBIT 17

COST SUMMARY FOR EMERGENCY WORK, REHABILITATION, AND RECONSTRUCTION OF CERTAIN EKLUTNA PROJECT FEATURES OCCASIONED BY ALASKA EARTHQUAKE OF 1964 (DATA SUBMITTED BY DISTRICT OFFICE MARCH 30, 1967)

A. EMERGENCY WORK AND REPLACEMENT OF AUTOMOTIVE REPAIR SHOP

CONSTRUCTION CONTRACTS

Specifications No.	Item, contractor, and contract No.	Total cost to the Government
DC-6112.....	Repair of earthquake damage to Eklutna Tunnel—Peter Kiewit Sons' Co., contract No. 14-06-D-5098.	\$338,623
DC-6270.....	Construction and completion of the automotive repair shop—Holiday Construction Co., Inc., contract No. 14-06-D-5596.	73,634
	Total, construction contracts.....	412,257

SUPPLY CONTRACTS AND PURCHASE ORDERS

Invitation No.	Item, contractor, and contract No.	Total cost to the Government
(D)A-69, 455A....	Turbine shaft sleeves and parts—Newport News Shipbuilding and Dry Dock Co., contract No. 14-06-D-5154.	\$2,820
64-1193.....	Equipment rental (pump, hose, compressor)—Lottsfeldt and Kyzer, contract No. 14-06-0906-22.	1,121
64-1194.....	Equipment rental (pump and hose)—Shaw Tool Rentals, contract No. 14-06-0906-23.	113
64-1195.....	Equipment rental (pump and hose)—McDowell-Woodland Co., Inc., contract No. 14-06-0906-24.	3,082
64-1196.....	Electric pump rental—Equipment, Inc., contract No. 14-06-0906-25.	265
64-1197.....	Equipment rental (pump, gas engine)—Bud's Service, contract No. 14-06-0906-26.	132
64-1113.....	Inspection of intake structure—Associated Divers, Inc., by U.S. Corps of Engineers, contract No. 64-76.	8,737
65-390.....	Diving service to recover diamond drill and associated equipment and inspection of Eklutna Tunnel intake—Associated Divers, Inc., contract No. 14-06-0906-27.	3,448
65-878.....	Replacement (Gering circuit breaker)—Brown Boveri Corp., purchase order No. 703-65-483.	14,688
65-405.....	Equipment rental of compressor hose (gate shaft)—Woodland Equipment Co., Inc., contract No. 14-06-0906-29.	664
65-1406.....	Equipment rental (compressor)—Woodland Equipment Co., Inc., contract No. 14-06-0906-30.	149
DS-6309; 66-657..	Supplemental control and photogrammetric compilation of topographic map of Eklutna Lake—Air Photo Tech. Inc., contract No. 14-06-D-5667.	6,430
	Miscellaneous purchase orders.....	37,733
	Total, supply contracts and purchase orders.....	79,382
	Total, contractual costs.....	491,639
	Noncontractual costs:	
	Purchased power.....	9,177
	Labor by Government forces.....	111,245
	Indirect costs:	
	Designs and specifications (Denver).....	22,513
	Engineering and inspection.....	13,824
	Administrative and general expense.....	20,516
	Total, noncontractual costs.....	177,275
	Total cost of emergency work and replacement of automotive repair shop.....	668,914

B. REPLACEMENT OF INTAKE STRUCTURE AND REPAIRS TO INTAKE CONDUIT
CONSTRUCTION CONTRACT

Specifications No.	Item, contractor, and contract No.	Total cost to the Government
DC-6212-----	Rehabilitation of intake structure and conduit for pressure tunnel—Manson-Osberg Co., contract No. 14-06-D-5444.	\$652,416
	Total, construction contract-----	652,416
	Supply contracts and purchase orders:	
	Miscellaneous purchase orders-----	2,289
	Total, purchase orders-----	2,289
	Total, contractual costs-----	654,705
	Noncontractual costs:	
	Indirect Costs:	
	Designs and specifications (Denver)-----	29,663
	Engineering and inspection-----	23,194
	Administrative and general expense-----	80,847
	Total, noncontractual costs-----	133,704
	Total cost of replacement of intake structure and repairs to intake conduit.	788,409

C. REPLACEMENT OF EKLUTNA DAM AND SPILLWAY
CONSTRUCTION CONTRACT

DC-6240-----	Eklutna Dam and spillway—A & B Construction Co., contract No. 14-06-D-5494-----	\$1,194,638
	Total, construction contract-----	1,194,638
	Supply contracts and purchase orders:	
	Miscellaneous purchase orders-----	6,007
	Total, purchase orders-----	6,007
	Total, contractual costs-----	1,200,645
	Noncontractual costs:	
	Service facilities-----	3,217
	Indirect costs:	
	Designs and specifications-----	39,004
	Engineering and inspection-----	92,973
	Administration and general expense-----	84,129
	Total, noncontractual costs-----	219,333
	Total cost of replacement of Eklutna Dam and Spillway-----	1,419,978
	Recapitulation:	
	Cost of emergency work and replacement of automotive repair shop-----	668,914
	Cost of replacement of intake structure and repairs to intake conduit-----	788,409
	Cost of replacement of Eklutna Dam and Spillway-----	1,419,978
	Total cost of emergency work, rehabilitation, and reconstruction of Eklutna project features.	2,877,301

EKLUTNA PROJECT—REVENUE LOSS RESULTING FROM 1964 EARTHQUAKE

Water spilled due to condemnation of the old dam, in July, August, and September 1964: 42,630 acre-feet at 745 kWh/a-f=31,759,000 kilowatt-hours.

Firm energy at 10.8 mills/kWh average.

Nonfirm energy at 6 mills/kWh.

Ratio of firm energy to average total $\frac{137,000,000}{153,000,000} = 0.895$.

0.895 × 31,759,000 = 28,424,305 at 10.8 mills ----- \$306,982.49
0.105 × 31,759,000 = 3,334,695 at 6 mills ----- 20,008.17

Loss to water spilled ----- 326,990.66

Energy sold as dump to lower reservoir for intake repairs and new dam.

Fiscal year 1965 dump (kilowatt-hours) ----- 52,522,000
Less average nonfirm ----- 16,000,000

Total kilowatt-hours ----- 36,522,000

(Sold as dump which would normally have been sold as firm energy. Loss in revenue = 10.8 - 6.0 = 4.8 × 36,522,000, \$175,305.)

Total revenue loss, \$502,295.

NOTE.—The relationship of Eklutna to the Greater Anchorage-Matanuska Valley areas is shown as follows:

Calendar Year 1963.—Peak Demand 67,288 kilowatts—Eklutna Nameplate Capacity 30,000 kilowatts Area Energy Requirements 303,451,000 kilowatt-hours Eklutna Net Generation 155,892,000 kilowatt-hours.

Calendar Year 1967.—Peak Demand 105,800 kilowatts. Eklutna Nameplate Capacity 30,000 kilowatts. Area Energy Requirements 492,609,000 kilowatt-hours—Eklutna Net Generation 183,473,000 kilowatt-hours.

EKLUTNA PROJECT POWER SALES CONTRACTS

Contract No.	Contractor	Effective date	Terminal date	Purpose
14-06-906(E)-1	City of Anchorage	Nov. 23, 1953	Oct. 12, 1978	16,000-kw. firm power and purchase of the "Old Eklutna" plant.
14-06-906(E)-2	Matanuska Electric	Nov. 29, 1954	Dec. 31, 1973	5,000-kw. firm power.
14-06-906(E)-3	Chugach Electric	Dec. 7, 1954	Dec. 31, 1974	9,000-kw. firm power.
14-06-906(E)-4	Elmendorf AFB	July 15, 1956	30-day notice	Emergency interchange energy.
14-06-906(E)-5	do	Sept. 1, 1956	do	Nonfirm energy.
14-06-906(E)-6	Fort Richardson	May 13, 1957	do	Do.
14-06-906(E)-7	City of Anchorage	May 24, 1957	Oct. 12, 1978	Do.
14-06-906(E)-8	Chugach Electric	May 20, 1957	Dec. 31, 1974	Do.
14-06-906(E)-9	Elmendorf AFB	June 10, 1960	90-day notice	Interchange energy.
14-06-906(E)-10	Fort Richardson	July 8, 1960	do	Do.

Note: FPC order dated Nov. 18, 1964, approved rate schedule A-F3 establishing a minimum monthly obligation for power and energy under the auxiliary service clause.

Formal protests and petitions to intervene filed with the FPC by the city of Anchorage and the Chugach Electric on Aug. 24 and Sept. 11, 1967, respectively.

FPC order dated Nov. 3, 1967 extended rate schedule A-F3 to May 4, 1968, and granted the contractors' requests to intervene.

On Apr. 4, 1968, the Alaska Power Administration filed, for approval, new rate schedules involving 1 policy change in that the minimum capacity and energy charges have been changed from a monthly to an annual basis offering the wholesale customers greater flexibility in their use of Eklutna energy.

Senator ANDERSON. Mr. Schultz?

STATEMENT OF L. J. SCHULTZ, GENERAL MANAGER, CHUGACH ELECTRIC ASSOCIATION, INC., ANCHORAGE, ALASKA

Mr. SCHULTZ. Mr. Chairman and gentlemen of the committee, my name is L. J. Schultz, general manager of Chugach Electric Association.

Senator ANDERSON. How long have you been connected with Chugach?

Mr. SCHULTZ. For 7 years, sir. We are an electric cooperative under the Rural Electrification Administration. We have had an opportunity

to listen to the testimony that has been given so far, and it seems that a good history has been given. Not mentioned was the fact that Chugach had a loss of around \$3 million, none of which was forgiven.

Senator ANDERSON. What was that word? "Forgiven"?

Mr. SCHULTZ. There was not any of that debt forgiven by the Rural Electrification Administration. We have had a short moratorium on principal payment by the REA Administrator.

Senator ANDERSON. Was that not of some value?

Mr. SCHULTZ. Yes, but every dollar of the principal and interest is being paid back. It was a short moratorium to provide working capital to recover from the earthquake damage.

The loss, Senator Anderson, as you may recall, was one that I discussed with you in Anchorage immediately after the earthquake, and requested that you arrange for 902 funds to cover the recovery of the Chugach system. That was not possible, because under the laws of Alaska in this great country, we are a private corporation; therefore, Federal funds were not available.

This brings me to a point that I really want to make about this:

First, the Eklutna project is a single-purpose project and the three customers—the organization I represent, Chugach Electric; the city of Anchorage; and the Matanuska Electric Association—have guaranteed the amortization of the project by buying power. There are no other benefits from the project which are compensable.

Senator ANDERSON. Are you still supplying electricity to the city of Seward?

Mr. SCHULTZ. Yes, sir. We supply electricity to 19,000 consumers in the Greater Anchorage and Kanai Peninsula area, and we supply wholesale power to the Homer Electric Association in Homer and the city of Seward. Chugach is the largest electric utility in the State of Alaska.

We have enjoyed excellent relationships with the Eklutna power project and its administrators. We have taken power from Eklutna ever since it first became available in January of 1955.

Senator ANDERSON. When are you going to use the power from natural gas?

Mr. SCHULTZ. We have been using natural gas in generation since 1964, the fall of 1964. We have a gas-turbine powerplant at Anchorage. Our steamplant at Anchorage, which was originally coal fired, was converted last year to gas. We have just completed a large power project, the Beluga project on Beluga gas fields, some 50 miles west of Anchorage across the Cook Inlet. We have two large gas turbines there that are in operation presently and a transmission line of about 138,000 volts from Beluga to Anchorage. We have a rather unique feature we are quite proud of. We cross the Cook Inlet to Anchorage with a submarine cable that is over 4.5 miles long, with 138,000 volts.

Senator ANDERSON. Are you still buying power from the dam?

Mr. SCHULTZ. Oh, yes.

Senator ANDERSON. And you are also using natural gas?

Mr. SCHULTZ. Yes.

Senator ANDERSON. Just out of idle curiosity, why do you pay 11 mills for that power when you can buy it for 5.5?

Mr. SCHULTZ. Well, for two reasons, sir. We have a contract with the Federal Government to buy the power.

Secondly, we feel a moral obligation to see to it that no water spills from the project. We think it highly important that the integrity of the Eklutna project be maintained. We feel very strongly about this. We have a hydro project of our own that is a little better than half the size of Eklutna. Once an investment of that magnitude is made, the incremental cost of the electricity is relatively inexpensive and God given.

I wanted to add that if the Eklutna project had been other than a Federal project—for instance, if it had been municipally financed—every cent of the recovery cost would have been covered under a Federal aid program for earthquake recovery, as was the case with the electric facilities for the slide area for the Municipal Light & Power System of the city of Anchorage.

Senator ALLOTT. I wanted to ask you about that point, too, in your statement, because I think it is partially erroneous and I think you will want to correct it when I point something out to you.

It is true that if it were municipally- or Government-owned, by a governmental agency in Alaska, the damage would have been reimbursable by the Federal Government. But if it were in private ownership, it would not have been reimbursed by the Federal Government. So your statement is too inclusive. I suggest that you read it over again. I think you will want to correct it.

Mr. SCHULTZ. I noted that, Senator Allott. It was not my intention, by the way, in writing the statement, to indicate that a private corporation would receive that kind of benefit. For the record, I stand corrected.

It is true, however, that the recent availability of natural gas is able to produce electrically at half the current cost of the Eklutna power. A much lower thermal power cost naturally raises a very practical concern about lowering Eklutna's rates rather than increasing the costs of the Eklutna operation by making these costs of the dam repair and intake tunnel reimbursable. I think that the statement has been made, and very accurately, that if the \$2.8 million is required to be reimbursed, under the payout schedule, it would make the cost 10 percent higher to us users.

I have made a calculation that deals with the subject; however, not with the payout schedule that the project is currently under. I have looked at it, a little longer payout schedule. But I have calculated the total revenue to the Federal Government to be somewhere in the vicinity of \$72 million for a \$30 million project. That includes a substantial amount, of course, for operations, but it also includes quite clearly in the payout schedule a pretty substantial amount for interest.

I think that, while all of us in the power business, the users of Eklutna want to see the Eklutna project's integrity maintained, we would like the Federal Government to look at it from the standpoint that, with a view of our seeking to provide the lowest-cost power to our consumers in Alaska, that the project, as far as the \$2.8 million rehabilitation is concerned, should be treated exactly the same as it would if it were a municipal project.

When one considers the competitive position of Eklutna today, certainly from a business standpoint, we have to consider whatever ways there are to make it more economical so that it continues in use.

I am suggesting in total effect that the fiscal integrity in continued economic utilization of the Eklutna project requires an investigation of ways to reduce the rates rather than to increase the cost.

If this is done, if the \$2.8 million is nonreimbursable, I feel confident that I speak for all users when I tell you that it will continue to be a vital economic factor in the development of Anchorage.

I have some concerns, not necessarily in terms of total dollars, because \$2.8 million is a small part of the \$74 million we are going to pay for it ultimately, but in terms of the spirit of the thing.

We have carried throughout the entire history of the Eklutna project a spirit of seeing to it that the Federal Government spills not one drop of water from this project, that we make electricity from all of it. And sometimes that has meant that Chugach Electric Association has operated some of its facilities at less than economic conditions just to be sure that this integrity is maintained.

I do not really have anything further, Mr. Chairman.
(The statement referred to follows:)

STATEMENT OF L. J. SCHULTZ, GENERAL MANAGER, CHUGACH ELECTRIC ASSOCIATION, INC.

Mr. Chairman and gentlemen of the committee, my name is L. J. Schultz and I am General Manager of Chugach Electric Association, Inc., Anchorage, Alaska. Chugach Electric Association is a REA sponsored electric cooperative.

I am appreciative of the opportunity to present the position and comments on the bill relating to the costs of rehabilitating the Eklutna Project in behalf of Chugach Electric and of its electric power consumers in the Anchorage and Kenai Peninsula area. Chugach now serves 19,000 retail consumers directly and delivers wholesale power to Homer Electric Association and the City of Seward. Among these are, of course, various Federal agencies and Defense Department facilities.

Assuming that the Committee already has before it the history of the Eklutna Project, I should only say that Chugach has taken power from Eklutna since power was made available in January 1955, and has enjoyed, on the whole, good relations with the administrators of the project.

Likewise, the history and impact of the March 1964 earthquake on Alaska and the Chugach service area people is doubtless familiar to you. I should like to add one item of information about which this Committee may not be advised. Chugach's earthquake bill amounted to some three million dollars in damages and restoration costs. The funds to construct the damaged facilities were REA loan funds. True, the REA granted us a short term moratorium, but not one dollar of REA loans were forgiven or written off. Chugach is proud to say that these loan funds are being, and will be paid back. Because of this, I should like to think our comments in respect to S. 224 have especial merit.

1. The Eklutna Project is a single purpose project with the three customers guaranteeing amortization through purchase of power only.

2. Had the Eklutna Project been other than a Federal project, its earthquake damage costs would have been borne by Federal aid. Because Eklutna is a Federal project, it hardly seems equitable to all concerned to have this specific cost be reimbursable.

3. The recent availability and utilization of natural gas for thermal power generation has made possible a power source that will produce power at about one-half the present cost of Eklutna power.

4. A much lower cost thermal power naturally raises a very practical concern for lowering Eklutna rates to better insure the continued feasibility of the area's use of the project's output. Provided the approximately 2.8 million dollars of earthquake costs must be reimbursed, it is likely the cost of Eklutna power will have to be sold at about a ten percent higher rate than if these costs are made non-reimbursable. Considering the competitive position of Eklutna power in the area, it is urged that you work toward lowering rates rather than increasing the costs. I am suggesting in total effect that the fiscal integrity and continued economic utilization of the Eklutna Project requires investigation into

ways and means of reducing the rate schedules. This would then place the Eklutna Project as a continuing and vital economic factor in the Anchorage development.

Mr. Chairman, let me again thank you for this opportunity to be here today.

Senator ANDERSON. I am trying to make sure that we do not have a request later for further changes in the Eklutna project.

Mr. SCHULTZ. I beg your pardon?

Senator ANDERSON. I am worried that you might ask us to make further changes in the Eklutna project. I hope that will not be.

Have you finished your statement?

Mr. SCHULTZ. Yes; I have.

Senator ANDERSON. That completes the list of witnesses. We will hold the record open for 10 days for further communications, which will be printed at this point.

(The data referred to follows:)

NATIONAL RURAL ELECTRIC COOPERATIVE ASSOCIATION,
Washington, D.C., April 29, 1968.

Senator CLINTON P. ANDERSON,
Chairman, Subcommittee on Water and Power Resources, Committee on Interior and Insular Affairs, New Senate Office Building, Washington, D.C.

DEAR CHAIRMAN ANDERSON: As representative of 981 rural electric systems in the United States, National Rural Electric Cooperative Association, Inc., wishes to register strong support for early enactment of S. 224, which provides for the rehabilitation of the Eklutna hydroelectric project in Alaska, damaged during the 1964 earthquake.

Three of Alaska's eleven rural electric systems depend upon the Eklutna project for part of their wholesale power supply. They are: Chugach Electric Assn., Inc., which is headquartered at Anchorage; Homer Electric Assn., Inc., Homer; and Matanuska Electric Assn., Inc., Palmer.

An adequate supply of reasonably-priced electricity is essential to the economic development of any area. The Congress recognized this fact when it authorized the Eklutna project to remedy a power shortage which was hampering economic development and the self sufficiency of defense installations. Enactment of S. 224 would mean a one-mill reduction in the wholesale power rates to customers of the Eklutna project, which would aid the economic progress of that area.

In addition, other public utilities in Alaska which sustained damage in the earthquake have received Federal disaster assistance. To date, the Eklutna project has not received such disaster relief. Enactment of S. 224 would correct this inequitable situation by providing the same relief to the customers of the Eklutna project that the customers of other Alaskan utilities received.

Thank you for your consideration of our views.

Sincerely,

ROBERT D. PARTRIDGE, *General Manager.*

AMERICAN PUBLIC POWER ASSOCIATION,
Washington, D.C., April 30, 1968.

HON. CLINTON P. ANDERSON,
Chairman, Subcommittee on Water and Power Resources, Committee on Interior and Insular Affairs, U.S. Senate, Washington, D.C.

DEAR SENATOR ANDERSON: The American Public Power Association, representing more than 1,400 local, publicly-owned electric utilities in 47 States, Puerto Rico, and the Virgin Islands, urges enactment of S. 224, to provide for the rehabilitation of the Eklutna project, Alaska.

Eklutna Dam is the only Federal hydroelectric project presently operating in Alaska. Under existing law, rehabilitation of the damages to this project from the 1964 Alaskan earthquake would be reimbursable from project revenues.

Alaska has the highest power rates in the 50 States at the present time. Reimbursement of rehabilitation costs from the Eklutna power revenue would increase the cost of power from Eklutna by one mill per kilowatt hour for the thirty-seven years remaining in the Eklutna payout period.

Maintenance of the Eklutna project is important to provide peaking power and spinning reserves; however, the market for Eklutna power will drop if power costs rise by one mill. Recently discovered natural gas in the Anchorage area has become competitively priced in relationship to power from the Eklutna project. The Federal government may not realize full reimbursement from Eklutna project within the payout period if customers purchase the lower cost natural gas rather than Eklutna power.

The Secretary of the Interior recommends that \$2,805,437 for earthquake damage rehabilitation be provided on a nonreimbursable basis for Eklutna Dam repairs. This would be consistent with other aid given by the Federal government in assisting Alaska to recover from the 1964 earthquake.

The American Public Power Association, at its 1967 Annual Conference in Denver, Colorado, passed the following resolution in support of funds for Eklutna rehabilitation:

"EKLUTNA REHABILITATION

"Whereas, the earthquake damage to the Eklutna Dam in Alaska was not covered by existing law relating to disasters, and

"Whereas, the project is in need of this relief in order to reduce the power rates which are already no longer competitive with other sources of power supply in the area;

"Now, Therefore, Be It Resolved: That the American Public Power Association endorses H.R. 7804 and S. 224 to write off the cost of earthquake damage to Eklutna Dam."

We urge your support of S. 224, and ask that this letter be included in the hearing record on S. 224.

Sincerely,

ALEX RADIN.

Senator ANDERSON. If there are no other witnesses, the committee will adjourn.

(Thereupon, at 11:05 a.m., the hearing in the above-entitled matter was adjourned.)



[Faint, mirrored text from the reverse side of the page, including the name 'ROBERT D. FARRBERG, WASHINGTON, D.C.' and 'AMERICAN PUBLIC POWER ASSOCIATION'.]

