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HEARINGS

BEFORE THE

COMMITTEE ON RIVERS AND HARBORS
HOUSE OF REPRESENTATIVES

SEVENTY-NINTH CONGRESS

SECOND SESSION

ON

THE IMPROVEMENT OF THE COLUMBIA RIVER (FOSTER CREEK DAM), WASH.

APRIL 29, 1946

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COLUMBIA RIVER, FOSTER CREEK DAM, WASH.

MONDAY, APRIL 29, 1945

House of Representatives,
Committee on Rivers and Harbors,
Washington, D. C.

The committee met at 10 a. m., Hon. Hugh Peterson presiding.

Mr. Peterson of Georgia. The committee will come to order.

The committee has set for hearing today the Foster Creek project. This project is located in the district of our very able colleague, Congressman Jackson, and I wonder, Congressman Jackson, if you would like to make an opening statement.

Mr. Jackson. Mr. Chairman, this project is out of my district, but it is in Congressman Horan's district. Our districts adjoin.

Mr. Pittenger. Would you yield for a question? I would like to observe, Mr. Chairman, if I understand correctly, proceedings are going on in the Senate in which the St. Lawrence seaway and power project is being considered.

There has been a subcommittee having hearings on that. For some reason it appears that action has been delayed. The sands of time are slipping away, and I wonder if the chairman could tell me what the administration's plans are for consideration of the St. Lawrence seaway and power project in the Rivers and Harbors Committee of the House of Representatives at this time. Does the chairman have any information?

Mr. Peterson of Georgia. I do not have any information. As you know, the chairman of our committee is out of town and I am serving temporarily during his absence. I have had no word from the chairman as to any contemplated action on the St. Lawrence seaway project.

Mr. Pittenger. I see that our witness this morning is Colonel Feringa. Are you the witness on this project?

Colonel Feringa. Yes.

Mr. Pittenger. Representing the War Department engineers?

Colonel Feringa. Yes.

Mr. Pittenger. Do the War Department engineers have any information as to the administration plans in connection with the St. Lawrence seaway and power project?

Colonel Feringa. We have none, Mr. Pittenger. Both the Chief of Engineers and I appeared as witnesses before the Senate committee. I know only that the record of the hearings has now been printed. A copy came to me a couple of days ago. I have no information as to what is contemplated.

Mr. Peterson of Georgia. I might state that the clerk of the committee has just advised me that he understands that the chairman's

idea was to wait until the Senate had acted on it, since they had initiated action on the project in the first instance. Also, if they consider it is a treaty matter then it would not come before this committee at all.

Mr. DONDERO. That project has been heard thoroughly before this committee some time ago. We are waiting to see what action the Senate does take with regard to the matter. If it goes in the form of a treaty, we will have no jurisdiction. I am very anxious that it should be brought to the attention of the Congress and disposed of.

Mr. PITTENGER. Is it the thought that the House of Representatives is to lay down and die because another body in the Government of the United States does not take any action, or is following a course of inaction? Is that the idea that I am to get?

It seems to me, for the record, that this committee has a certain responsibility and the House of Representatives has a certain responsibility.

I am familiar with the suggestion that it would be well to let the Senate pass this bill first, but I do not intend to wait until the year 2060 to find out what the Senate is going to do about this matter. I want the record this morning to show that. I am sorry that I have taken up so much of the time of the committee. I will yield the balance of my time to Congressman Jackson.

Mr. RANKIN. I ask unanimous consent that this report I have in my hand be inserted in the record at the beginning of the testimony.

Mr. PETERSON of Georgia. Without objection, the report will be inserted.

Mr. PITTINGER. Report on what?

Mr. RANKIN. The report of the Army engineers on this Foster Creek project. I think that procedure should be followed every time to show what it is that we are considering.

Mr. PETERSON of Georgia. Mr. Jackson, I understand that you and Mr. Horan, both of whom are here, have a number of your citizens present who are interested in this project. We shall be happy to have you, Mr. Jackson, as a member of this committee, proceed in your own way in presenting statements and having witnesses appear.

Mr. RANKIN. With all deference, I believe, if this would be agreeable to you gentlemen, the best way to make the record is to let the Army engineers testify first as to what the project is.

Mr. PITTINGER. These men have other engagements and we have agreed to hear them right now.

Mr. RANKIN. I would like to have a picture of the project right at the beginning in order that we may know where it is.

Mr. JACKSON. If it is all right, I will make a short statement. Then Mr. Horan will follow and describe the area.

Mr. PETERSON of Georgia. We will now hear from our colleague, Congressman Henry M. Jackson of the State of Washington.

STATEMENT OF HON. HENRY M. JACKSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

Mr. JACKSON. Four years ago the Rivers and Harbors Committee took action asking the United States Army engineers to complete the investigations which had been started earlier, and today we have their

report. They have found the project feasible and have recommended it as the next necessary step in the comprehensive development of the resources of the great Columbia River Valley.

After completing their core-drilling and getting plans and specifications drawn for actual construction of this dam the United States engineers held a public hearing last July 2 at Brewster, Wash. There was wide interest. Organizations of businessmen, farmers, laborers, fishermen, sportsmen, miners, and power people were present with scores of resolutions, papers, and statements. Without a single exception they were favorable.

Col. Conrad P. Hardy, district United States engineer, said he had never seen such a hearing—such a unanimity of opinion. The project offers no fish problem, no navigation problem, and no valuable lands or improvements of any kind will be inundated. Even the Indians are for it, and one of their representatives said so.

Another hearing was held in Seattle later last summer by a subcommittee of this Rivers and Harbors Committee and all of the witnesses and testimony at that time were favorable.

This spring Governor Wallgren's Washington State Advisory Commission, which is made up of business leaders, farmers, labor, and the public at large, carried on the investigation and concluded by unanimously endorsing Foster Creek Dam and urging its immediate construction.

The Bonneville Power Administration and Bureau of Reclamation studies have shown it desirable as their testimony before this committee, I am certain, will show.

Statements from power and water users by the hundreds could be obtained if it were deemed necessary to insure favorable action. Following is a statement from one user of power. A. L. Darland, superintendent of city light at Tacoma, in a telegram regarding Foster Creek Dam says:

> Believe the resumption of light metal manufacture in the Northwest on a large scale and the resulting utilization of existing surplus generating capacity at Bonneville and Coulee Dams warrants best argument for undertaking the development of Foster Creek. Tacoma forecast contemplates no loss of load from that obtained in 1945 for 2-year period followed by an increase at rate of 8 percent compounded annually. Tacoma presently lacks adequate electric generating capacity to supply its own load and must either build additional hydroelectric plant or purchase energy from other utilities.

Our State of Washington has no natural gas and no oil for lights, for cooking or for industry, such as many other States have. Our major natural resources in this line is the great power sites such as Foster Creek on the Columbia River.

Even while this Columbia power is running to waste we and others over the Nation are burning great quantities of coal, oil, and natural gas to make electricity. Federal Power Commission reports show that each month 6,000,000 tons of coal, a million barrels of oil, and 30,000,000,000 cubic feet of natural gas are burned to manufacture electricity. To us, with the Columbia running past our door, this seems a needless waste of natural wealth.

From the standpoint of national defense alone Foster Creek Dam should be started at the earliest possible moment.

Thanks to the fighting spirit and the foresight of a few Members of Congress and a little band of Columbia Valley leaders, several of

whom are here today, we had Grand Coulee Dam before this last war came, and as a result we were able to make plutonium for the atomic bomb. Grand Coulee and Bonneville Dams also made 40 percent of the aluminum for all of America's war planes.

Though this dam will cost no more than one battleship, its power will annually produce the materials for many battleships, bombs, planes, and whatever is needed. I cannot overemphasize its importance to national defense.

I would like to point out here that a commission which recently went into Germany came to the conclusion that the best way of neutralizing the Nazi's war-making ability was to control and limit her source and supply of electric power.

President Truman said recently that the development of three rivers, one of them the Columbia, shortened the war "by many years, and saved countless American lives."

As a measure of preparedness, if there were no other consideration, I would urge this dam. If we ever get into another national emergency we may not have the time to build dams in advance, and during a war they are worth their weight in gold. Foster Creek Dam would be the most valuable asset we could have, but dams cannot be built overnight. This dam should be authorized and launched immediately so it can start producing the essentials for peace and security.

Washington State has 8,000 people drawing unemployment compensation which means that if construction were started there would be no resultant dislocation of manpower. Our unemployed should be on pay rolls rather than on pensions.

We are entering a supersonic and an atomic age to which nothing is more important than electric power, and when it comes to the production of electric power there is no place anywhere that excells Foster Creek Dam site on the Columbia River, 51 miles downstream from Grand Coulee Dam in the State of Washington.

Here we have a great resource which is needed by the American people.

Mr. PETERSON of Georgia. Our colleague, Mr. Horan, of Washington, wishes to present a statement.

STATEMENT OF HON. WALTER F. HORAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WASHINGTON

Mr. HORAN. Mr. Chairman, members of the House Rivers and Harbors Committee, I appear before you today to urge the authorization of the Foster Creek project in the pending omnibus rivers and harbors bill.

Nearly a century and a half ago Thomas Jefferson had the vision "of a great empire on the Columbia River." Accordingly, he sent his secretary, Capt. Merriwether Lewis, and Capt. William Clark, to claim and survey the Columbia country. The actions of this committee in the last 21 years have made the vision of Thomas Jefferson a reality.

I have had occasion to review the previous authorizations and enactments which came from this committee during this period applying to the Columbia River. Consequently, I can fully appreciate this committee's great vision and contribution.

I find that the first direction we have, came with the Rivers and Harbors Act of 1925, which was then known as Public Law No. 585, Sixty-eighth Congress, approved March 3, 1925. This act directed the Secretary of War and the Chief of Engineers of the United States Army to prepare and submit to the Congress an estimate covering the cost of surveys and investigations of navigable streams and their tributaries where power development appeared to be feasible. The purpose of this enactment was to outline general plans for the multipurpose improvement of such streams including navigation, flood control, irrigation, and the economic development of water power.

Following this authorization the Secretary of War on April 12, 1926, submitted his report to the Congress. This report was printed as House Document No. 308, first session, Sixty-ninth Congress. This report outlined and described those navigable streams where power development appeared to be both practicable and feasible. Naturally, the Columbia River and its principal tributaries were included. Following the 308 report, the Rivers and Harbors Act of 1927 directed the Secretary of War, through the Chief of Engineers, to make the necessary investigations and surveys in line with the recommendations of the 308 report.

Under this further authorization and as a part of it, the Chief of Engineers proceeded with the necessary surveys, examinations, and investigations that would formulate a general plan for the most effective multi-purpose improvement of the Columbia River. This final report covering all the purposes of the previous legislation was submitted to the Congress on March 29, 1932, and was published as House Document No. 103, first session, Seventy-third Congress.

I have studied the 103 report in considerable detail and therefore feel that I am capable of stating that this is perhaps the most comprehensive and practicable document that has yet appeared on over-all river development. This report forcibly brought out that the Columbia River and its tributaries had potentialities of being developed into the greatest and lowest cost hydroelectric power system on this continent. This report was so thorough that it could be taken for the foundation of the Bonneville and Coulee projects, when allotments were made by the President in 1933, pursuant to the NRA Act of that year.

The 103 report laid the foundation for the full development of the Columbia River and cited benefits that could be derived in the "step by step" development of the river. The ultimate plan outlined in the 103 report consisted of a series of 10 dams covering the stretch of the river from the Canadian border to tidewater. The projects recommended in the 103 report included, first, Grand Coulee; second, Foster Creek; third, Chelan; fourth, Rocky Reach; fifth, Rock Island; sixth, Priest Rapids; seventh, Umatilla Rapids; eighth, John Day; ninth, The Dalles; and tenth, Bonneville. Of these 10 projects two have been virtually completed, namely, Bonneville and Grand Coulee.

One of the projects in the 1933 public works list of allotments authorized by the President included Parker Dam on the Colorado River. The Parker Dam project led to a controversy between the State of California and the State of Arizona. This controversy went to the United States Supreme Court as the court of original jurisdiction. In

the Parker Dam decision the Court held that constitutionally the President could not make such allotments. Consequently, constitutional dams must be covered by congressional authorization. As a result, this committee authorized both the Grand Coulee and the Bonneville projects in the omnibus rivers and harbors bill of 1935.

Such a recitation would not be complete without mentioning the Bonneville Act of August 20, 1937, which also originated in this committee. The wise provisions of the 1937 act have resulted in great industrial and economic developments in the Pacific Northwest, and the outstanding war contribution. The remarkable contribution made in the 1937 act was the principle of providing for actual and potential markets. This policy directed heavy industry to the Columbia Basin, which was capable of absorbing large quantities of pay-roll-producing hydroelectric energy. Without this provision what we now see in the Pacific Northwest would not have been possible.

The vision embraced in the enactments which came from this committee produced the tools of victory in the recent war. At the outset of the war in Europe it became increasingly evident that this country was ill prepared to fight a modern war because of the lack of electrochemical and electrometallurgical plant capacity. Such plant capacity required abundant power and this power was early provided by the outstanding vision of this committee. The Columbia River power worked around the clock 365 days a year in the war effort. It produced a little more than one-third of the light metal that went into our national air program. During the last 12-month period of the war the Columbia River hydro plants produced over 503,000,000 pounds of aluminum, which was the equivalent of 10,000 B–29s or 145,000 fighter planes.

The availability of the Bonneville-Grand Coulee power also made the Hanford atomic bomb plant possible. In addition, this power was used to weld together a substantial part of our maritime and Navy construction. During the fiscal year 1945 this power produced 181 ships in the northwestern shipyards. This included 54 cargo ships, 62 troop ships, 63 tankers, and 2 aircraft carriers. In addition the power from these two plants supplied 7 Army establishments and furnished 45,000,000 kilowatt-hours to naval establishments. The war industries served directly by these two plants during the fiscal year 1945 consumed over 5½ billion kilowatt-hours of energy. This amount of electric power is more than was used in Greater New York, and is over 50 percent of the greatest output of the largest private power system in the country.

I have analyzed the 103 reports on the basis of the 10 projects listed. I find that in this competitive analysis the Foster Creek project from the standpoint of feasibility, cost, market, and returns was the best of the 10 listed projects. The Foster Creek project closely approaches the Bonneville project in all characteristics. The river flow at Bonneville is greater than at Foster Creek but the difference in flow is made up by increased head at Foster Creek which makes a cubic foot of water produce over twice the amount of power than is possible at the lower head at Bonneville. What has been consummated at Bonneville can be used as an index of the development and potentialities at Foster Creek. The success of the Bonneville plant bespeaks the success of Foster Creek project because of this cited similarity, and other advantages and reasons which I will hereafter cover.

I realize that the 103 report was based on 1929 costs, and was a preliminary report. Nevertheless modernizing these 103 estimates will have proportionately the same effect on each of the projects. Therefore, comparatively, the 103 report analysis would indicate the feasibility and economic priority of the Foster Creek project.

The flow and fall characteristics of the Columbia River should be thoroughly understood as the potentialities of this stream are in a class by themselves. What happens in the flow cycle of other American streams cannot be used as an index to the possibilities of the Columbia.

The Columbia has two outstanding tributaries in addition to the main channel which originates in the Selkirk Mountains in Canada. The south fork joins the main river at Pasco, Wash. On the early original maps the south fork was known as the Lewis River, but on later maps the name used by the Indians was adopted, namely, the Snake River. The course of the Snake River turns south after its confluence with the Columbia. It then turns east and north to catch all the drainage from the Rocky Mountains south of Yellowstone Park into Utah.

The north fork of the Columbia, known as Clark's Fork, covers the mountain ranges north of the Yellowstone to the international border, while the main channel of the river catches the run-off north of the international boundary. The moisture-laden winds from the Pacific Ocean and the Japan currents deposit their moisture in the form of snow on all of these mountains west of the transcontinental divide. Consequently, this snow coverage forms a large regulating reservoir which is comparable to the storage reservoirs of the Great Lakes. As the sun moves northward in its annual course the snow melts progressively over this catchment basin. Consequently, the flow of the Columbia is steady and nearly uniform. This situation makes the Columbia comparable to the uniform flow outlet rivers of the Great Lakes. The highest annual flows of the Columbia occur during the growing season. On other American streams the growing season, from May to October, is the period of extremely low flows, and just the opposite to the Columbia. The season of highest evaporation is therefore the season of highest flows.

The Columbia is second only to the Mississippi based on the volume of water dropped into the ocean. No other stream on this continent has waterfalls comparable with the Columbia, as the drop in water surface from the international boundary to the tail-water elevation at Bonneville is close to 15,000 feet or some seven times the drop at Niagara. This steady flow together with the large volumes and great falls make the Columbia the largest power-producing stream on the American continent. Over 40 percent of the high-class potential power of the American streams is found in the Columbia Basin.

This committee has heard testimony on the St. Lawrence development and the costs involved. On a power basis Grand Coulee Dam alone will produce nearly double the output capacity of the St. Lawrence available to the American side. As a power project alone without considering irrigation and navigation features, the power costs at Grand Coulee will be approximately one-half the power cost of the St. Lawrence. I do not minimize what the St. Lawrence can accomplish for a vast section of this country, but I am purposely citing these facts so that the Columbia will be understood in its true light. Also

I hope that this river will not suffer by comparison with the average American stream.

During the war there were six large aluminum plants in the Pacific Northwest producing metal from the low-cost Columbia River power. From the reports prepared by the Reconstruction Finance Corporation it has been shown that the light metal produced from Columbia River power was the lowest cost metal available to the Government. The effect of the low-cost Columbia power during the war resulted in savings to the Federal Government far in excess of the entire project cost at Grand Coulee and Bonneville project. Of these six plants four are owned by the Federal Government and two are privately owned. The two private plants are owned by the Aluminum Co. of America and the Reynolds Metal Co. These two private plants are in the Bonneville plant area and take approximately one-half of the Bonneville plant capacity. Both of these private plants are covered by existing long-term power-sale contracts.

The War Assets Corporation has recently turned over the two Spokane plants to the Kaiser interests. The Spokane plants include the Meade ingot aluminum plant, which is the largest in the Northwest and the Spokane Rolling Mill. The Reynolds Co. has recently contracted with the War Assets Corporation to take over and fully operate the Troutdale, Oreg., Ingot plant. These two transactions will provide for full operation and will absorb the major part of the war load cut-backs. The Aluminum Co. of America is planning a bauxite development in the Pacific Northwest to reduce local aluminum bearing clays to alumina. The prospects are clear as to continuing and expanding aluminum production in the Northwest.

Cost of power is the most important component of light metal production costs. One mill per kilowatt-hour increase in the power cost adds 1 cent per pound to the cost of the finished metal. Steam power cannot be used in aluminum production on account of its high cost. The best steam power available would cost approximately two and one-half times the cost of Columbia River power. The cost of steam power is bound to increase during the postwar period which will work further to the advantage of Columbia River power from an over-all economic standpoint.

A large part of the national aluminum production capacity expanded during the war was based on high-cost steam power. Without adequate aluminum capacity this Nation cannot hold its own in air production. I need not repeat the Shipshaw transaction, which led to a full development in Canada, as the record before the Senate committee is full and clear. Nevertheless the point should be stressed that this Nation cannot place a control of its air power in the hands of any external government regardless of how friendly that government may be. Further potentialities require that the defense of this Nation must rest on production capacity within this country.

The 103 report definitely points out what lies ahead for this Nation in connection with its iron ores. Also when anyone reads the pages of history closely he will find out that nations which lost their material base became decadent nations. Therefore, we will have to turn to electrolytic production to hold our own as a nation in the years ahead.

The development of high-speed airplane programs requires light and strong metal. Such can only be produced in the electric furnace or the electric cell. The automobile industry, for example, would not have been possible for a start at Detroit if the Niagara electrolytic metals had not been available.

The old conventional processes of the blast furnace, where the metal is in contact with the fuel, produces a metal which was diluted with other chemical compounds. Such dilution reduces strength and adds weight. Future metal production together with the existence of large bodies of complex ores in the Northwest will in the future require electrolytic and electrothermal reduction.

I realize that in touching upon the subject of atomic energy I am entering the field of experts. I also realize that the possible information at this time on the potentialities of atomic energy is slim indeed. I further realize that any predictions made at this time would be just as rough as the possible predictions covering atomic fission which could have been made 50 years ago when Becquerel first discovered atomic rays from uranium ores.

Nevertheless, certain facts are sufficiently known to warrant mentioning possibilities.

Atomic energy can now be considered a reality in spite of different viewpoints appearing in press and magazine articles. The existence of atomic energy has been sufficiently demonstrated scientifically by the known operations of the Hanford plant, which borders my congressional district. The Hanford plant is now and has been actually producing atomic energy. The elevation of the sensible water temperatures in the Columbia River immediately below the Hanford plant proves this statement scientifically and gives us a rough measuring gage on some future possibilities.

The Hanford plant was located on the Columbia River for two reasons; namely, the availability of large quantities of low-cost dependable continuous hydro power and, secondly, the existence of large quantities of pure and cool water for cooling purposes. Based on these known facts, it can be roughly stated that to produce through atomic fission the equivalent of 1 horsepower of atomic energy requires an input of approximately one-half horsepower of low-cost hydro power. Therefore, the future production base of atomic energy rests with the element uranium and sizable quantities of low-cost hydro power.

Regardless of man-made laws, the natural laws and the laws of economics will always control. Atomic energy will become a real, practical future power source within limitations. The full possibilities are not known but it is apparent that it can possibly be used for ship propulsion, large power plants, large heating plants, and the like. This future fuel, as is well known, can be shipped in capsule containers. It cannot compete with low-cost hydro power from present indications.

Other great uses like medical applications appear possible when screens to protect against ray activity are developed. The reactions from other known elements necessary to achieve atomic energy are theoretically possible, but the full possibilities, the extent, and limitations are not known to the nonexperts.

It is reasonably certain that all forms of energy existing on this planet result from the effects of sun action. All forms of energy come from the sun. It is now considered that this phenomenon is

due to nuclear reactions of the elements hydrogen and helium within the sun's masses.

Members of this committee will no doubt remember that when the Bonneville plant was authorized by this committee in 1935 the then lay-out comprised only 2 of the maximum possible 10 units. The other units were added as the load possibilities increased.

Likewise when the Grand Coulee project was included in the omnibus bill of 1935 the set-up then was the low dam. No generating units were then projected. What has developed at Grand Coulee is the result of advances made within the last 10 years.

The same set-up and sequence is possible for the Foster Creek project. Extensions in generating capacity should only be made sufficiently in advance of the market to insure full pay out and a full return to the Federal Treasury.

As I will hereafter cover it is apparent that the load potentialities presently in sight as well as national security and position warrants the authorization of the Foster Creek project at this time.

During the war, as a result of the existence of the high-capacity Federal transmission grid and War Production Board action, all power facilities in the Northwest, both public and private, were interconnected and pooled. The load facts and figures gathered from this pool operation can be obtained by this committee. These facts and future developments will give a composite present and future load picture. This pool was dispatched by the Bonneville Power Administration and that agency should be able, if called upon, to give this committee detailed load information. From my own experience in the Northwest country I am, however, in a position to furnish a generalized load and capacity summary. From information I know to be reliable I offer the following summarized facts for consideration:

(1) It is already a matter of record before the House Interior Appropriation Subcommittee that the private power companies in the Pacific Northwest have not constructed any additional generating capacity since the last depression. Consequently, their plant machinery was inadequate for prewar and for also war loads. This equipment naturally is becoming older day by day. Even before the war the private power companies were purchasing Bonneville and Grand Coulee power for redistribution.

(2) Practically all of the power generation in the Pacific Northwest comes from hydro power. There are very few steam plants and existing steam plants depend largely on hog fuel or timber waste. The change in the timber fuel situation and the low efficiency of steam plants exclude them from further consideration.

The private hydro plants in the Northwest were built during or shortly following the last war. Their plants and reservoirs were then prudently sized for existing load conditions, which called for designs based on about a 45-percent load-factor basis. Modern industrial loads demand much higher load factors. Consequently, the private capacity had to be augmented. This fact is substantiated by the last annual report of the Bonneville Power Administration submitted to Congress pursuant to the act of August 20, 1937.

(3) The completed Bonneville plant of 10 units is now fully loaded in this reconversion period. The load on this plant will continue and is protected by long-term contracts.

(4) During the war six permanent units were installed in the left-hand Grand Coulee powerhouse together with two units borrowed from the Shasta development. The Shasta project dam was not able to be completed during the war period, consequently the constructed units were transferred to and installed in the Grand Coulee plant in order to produce for war. These Shasta units are now in the process of being removed for shipment back to the Shasta project.

(5) Congress before Pearl Harbor approved three additional units or nine in all for Grand Coulee. The low bidder for the nine Grand Coulee units was the Newport News Shipbuilding Co. Six of the units were well on their way to completion before Pearl Harbor, but work on the remaining three was suspended by the War Production Board in order to use the full capacity of the shipbuilding company to turn out large aircraft carriers. The contracts on these last three units were in existence before the war and work on these units has been resumed since VJ-day. From inquiry I find that these units should be installed by the spring of 1948.

(6) During the war the rated installed capacity of Grand Coulee was in round numbers 800,000 kilowatts. It was necessary to overload this equipment continuously about 16 percent overload in order to meet power demands. The Grand Coulee and Bonneville plants were operated during the war without any spare capacity and continuously under overloads. Such operation cannot be continued indefinitely if equipment is to hold up. Consequently, future operations should be near the rated capacity and spare units should be provided. The actual outputs of Grand Coulee to operate at total loads was roundly equivalent to about 950,000 kilowatts. If more capacity had been available at Grand Coulee, it could have been used.

(7) Recent contracts between the War Assets Corporation, covering aluminum pot lines in my district and in Oregon, will sustantially reduce all the war-load cut-backs on the two Columbia plants. These ingot and rolling-mill plants will go into full operation shortly. This load and the normal growth in the area will early absorb all the cut-backs.

(8) In 1920 the light metal aluminum was removed from automobile production. These cited recent transactions insure the reestablishment of aluminum in this line of production. This country's high-grade iron reserves have been rapidly depleted. If we are to hold our own as a Nation we must in the future lean on other materials. Aluminum, as has been stated numerous times, is nothing more than frozen kilowatts and these kilowatts must be secured at a low price in order to meet world markets. This situation exists markedly, since this Government financed the Canadian Shipshaw lay-out. This Nation cannot afford to place the base of the future air program in foreign hands regardless of how friendly, as I have stated, these hands may be. The future security of this Nation demands that we have our own power developments. For this reason alone Foster Creek project should be authorized.

(9) Without the wind tunnel load which I will hereafter cover, by 1950 the insight loads will absorb all the feasible capacity at Grand Coulee without considering any increase resulting from developments in the field of atomic energy.

(10) A wind tunnel project is coming into existence. This is more or less a hush-hush project like the Hanford project was from 1942 on. This project will require about 1,000,000 horsepower or 750,000 kilowatts in round numbers. This demand will have to be met by providing additional hydro capacity. McNary Dam alone cannot handle this wind tunnel project load. Additional capacity will be needed. Furthermore, because of physical and other limitations the wind tunnel project cannot be located on the river below Hanford. The very success of the wind tunnel project requires placement above Hanford which would locate it in close proximity to Foster Creek. To save the Federal Government future expensive transmission investment the wind tunnel generation should come largely from Foster Creek.

(11) The facts I have outlined together with the future national security in my judgment warrants the approval of the Foster Creek project. Nowhere in this country can such capacity be secured at such a low cost, and as quickly.

When this committee reported out the Bonneville Project Act of 1937 full provision was made for a complete return to the Federal Treasury. To safeguard this return a wise provision was added requiring rate contract reviews every 5 years to insure such a return.

In addition the act of August 1937 provided for allocation and rate procedures placing the responsibility independently with the Federal Power Commission, after showing had been made by the Bonneville Administrator. Last June pursuant to this authority the Federal Power Commission completed their allocation report. This report went into the matter of rates, costs, returns, and allocations. Although the report is primarily an allocation report sufficient information is contained therein to adequately prove the full pay-out capability of Bonneville project which includes the Bonneville Dam, the Bonneville power plant, Bonneville Dam accessories, and the transmission lines. This independent check by the Federal Power Commission shows that the Bonneville project will make a full return in line with the policy written into law by this committee.

The jurisdiction of pay out on the Columbia Basin project did not rest with this committee. Some confusion crept into a debate last year on the pay-out capability of the Columbia Basin project, which only includes Grand Coulee. Accordingly, I proceeded to clear the record in this respect. On February 12, 1946—page 1275 of the Congressional Record—I outlined the procedure I followed to prove the pay-out capability of the Columbia Basin project. My presentation on that date to the House is complete and it is not necessary to repeat the showing I then made. However, the last annual report of the Bonneville Power Administration, the Pay Out Test and Audit, should be available to this committee. I am, therefore, leaving copies of these documents for your information. You will find on studying these documents that the Columbia Basin project will likewise fully pay out and provide a substantial surplus over the legal repayment period.

If you will turn to page 17 of this pay-out test, you will also find that included in the pay out is some $228,000,000. This amount represents the difference between the cost of the reclamation features at Grand Coulee and what the land owners can repay. This amount is very much in excess of the total cost of the Foster Creek project. The Foster Creek project will not have to work under such a pay-out load, therefore, if Grand Coulee can pay out Foster Creek can do so very much more advantageously. It has no large irrigation or reclamation features. This is another reason why Foster Creek has substantial justification.

A Member of Congress does not have the opportunity, experience, nor the available time to detail out any project with the fineness and exactness of the Army engineers. Based on their work, however, and from general information contacts it is possible for me to make a supervisory examination of all the available records and come to worth-while conclusions. I am gladly presenting these conclusions, which I trust this committee will have checked in the usual manner. These are:

(1) From the standpoint of returns per dollar invested the Foster Creek site is perhaps the best remaining available power site on the most outstanding power stream on the North American Continent.

(2) Since the original designs of Bonneville there have been great increases in the output characteristics of hydroequipment. These changes result in greater output per pound of machinery. A goodly part of these advances have resulted from the Army engineers experience at Bonneville. For example, the first two units at Bonneville turned out 43,000 kilowatts, but the remaining eight units turned out over 54,000 kilowatts per unit. These design advances accrue very materially to the advantage of a project like Foster Creek.

(3) The Foster Creek Dam site was created by nature as a low-cost site. Nature has been kind in shaping the topography, geology, and river course so as to permit a sound but high-class, low-cost development.

(4) The reservoir behind the dam is admirably adapted to low-cost development. There is no site on the river that is freer from resulting reservoir damages.

(5) A study of costs and price-index trends indicates that changes in basic costs and cost elevations will affect the Foster Creek project perhaps less than any other project on the river.

(6) The Foster Creek project is located so that the output from this plant can easily tap existing transmission facilities without large capital investments.

(7) It is nearer to a ready market than any project on the river excepting Bonnville, and Bonneville is now fully loaded and cannot be included in any future plans.

I feel that when this committee has explored the points that I have brought to your attention you will come to the same conclusion that I have, namely, that national interest justifies the conclusion of the Foster Creek project in the pending rivers and harbors bill.

Mr. RANKIN. Just anything that you boys want.

Mr. HORAN. All I want to do is to locate the project. I wonder if Colonel Feringa will point out the location of the Grand Coulee Dam first and the approximate location of Foster Creek so that the committee will know where this project is.

Colonel FERINGA. The Columbia River's source is in Canada—and I am speaking roughly—and after leaving Canada the river goes through the State of Oregon until it meets the boundary of the States

of Oregon and Washington. Then it flows due west until it joins the Pacific Ocean.

The Foster Creek Dam is upstream, considerably upstream, from the confluence of the Snake and the Columbia Rivers. That is the location I am pointnig to on the map [indicating at the map]. Above that site is the Grand Coulee Reservoir.

The Grand Coulee project makes this project somewhat the same type as Mr. Pittenger's project for the St. Lawrence, where there are a large natural series of reservoirs consisting of the Great Lakes. Similarly there is now an artificial body of water which will influence the position of the Foster Creek Dam, influence it favorably because there is a steady output assured at all times.

Have I explained enough for you?

Mr. HORAN. Yes. I wanted the committee to know exactly where the site was.

Mr. PITTENGER. Is the Foster Creek Dam above or below——

Colonel FERINGA. Below Grand Coulee.

Mr. RANKIN. It is on the main stream of the Columbia River?

Colonel FERINGA. Yes.

Mr. RANKIN. Then it should not be called a creek at all.

Mr. HORAN. It is at the point on the Columbia River where Foster Creek enters.

Mr. RANKIN. It is at the mouth, but on the river.

Mr. HORAN. The name is misleading; there is no question about that.

Mr. JACKSON. I have a statement that I will insert after Colonel Feringa's statement.

I believe the colonel will explain in detail the nature of this project. I think that, roughly, we can say that it is about half the size of Grand Coulee. It is set up to generate some 800,000 kilowatts.

Grand Coulee has a maximum of 1,600,000 kilowatts. It is primarily a power project. I think all of us, particularly those of us who live in the Northwest, realize the importance of this project in our peacetime economy and in the event of another great national emergency.

I do not know what America would have done if it had not been for the Grand Coulee Dam. The power generated by Grand Coulee provided the source of energy for all our great aluminum plants, the huge aircraft plants in the Seattle area where the B–29's and the B–17's were constructed, the huge Kaiser operations in Vancouver, Wash., and Portland, Oreg.

Then, of course, everyone is familiar with the atomic bomb by now, and the plutonium base of atomic energy was handled at Hanford which is south and east of the Grand Coulee project.

I believe there will be witnesses who will testify as to the direct need for this project at the present time. I will just say this, in summing up my statement, that it is probably the most valuable asset that this country can have in the event of another emergency.

Mr. PITTENGER. Why do you say that?

Mr. JACKSON. If for no other reason, I believe that it can be fully justified so as to take care of the tremendous block of power that might be demanded in the event of another war. And God help us if we should have another war come to this trouble world. I say that because every bit of energy that Grand Coulee produced was immediately put into war production during this present conflict. In fact, there was not enough power to take care of all the needs. Right now the War Department is considering the construction of a supersonic laboratory which will engage in supersonic air research which will take the entire output of this dam in the course of time.

Mr. PITTENGER. What do you mean by "supersonic"?

Mr. JACKSON. That means faster than sound, work on projectiles that will travel faster than sound, or more than 770 miles per hour.

Mr. PITTENGER. I just wondered what you meant.

Mr. JACKSON. The point I am making is that even if we did not have a need for the power at the present time—and there is no question about the present need for it—I think that we ought to have more dams of this nature on the great Columbia to act as a reserve in the event of a national emergency. We cannot build power dams overnight, and if we had not had Grand Coulee Dam when this terrible war came upon us, I do not know what we would have done in the way of providing energy.

Mr. HORAN. I would just like to make this comment: We feel grateful out there, and the Nation should, to the Congress that Grand Coulee was provided when it was. It came into production in the nick of time and assisted greatly in the repairing of ships that were damaged or wrecked at Pearl Harbor. A great amount of electrical energy was sent to Bremerton where it was of great benefit in the speeding up of the repair of those ships.

I just mention that since my colleague mentioned the fact that it came in at a very favorable time.

Mr. PITTENGER. I am glad to see that both of you gentlemen are talking along those lines. Everything that Congressman Jackson said about what would happen when this new dam was built will be true of the St. Lawrence seaway and power project.

One of the great crimes of the modern age, one of the great atrocities of the present day, is the almost criminal attitude that selfish interests in this country take in standing in the way of the development of the St. Lawrence seaway and power project. There is no other project in the country comparable to it; there is no other project that means as much to the American people in proportion. I would hope that Congress would recognize its value just as we recognize the value of these improvements on the Columbia River.

Mr. DONDERO. Do you mean "atrocities"?

Mr. PITTENGER. I mean atrocities. When a man of superintelligence will stand in the road of a project that is for the benefit of the people he is an obstacle and becomes a menace in proportion.

Mr. PETERSON of Georgia. Let us stick to the subject.

Mr. RANKIN. I have been on the beam all the time on these things. I have been in favor of developing these projects within the United States, and when they undertook to make a low dam out of Grand Coulee I did not fight against it because I realized the power would be needed for the next 100 years. I am ready to hear the Army engineers.

Mr. PETERSON of Georgia. I think that we should proceed.

Mr. JACKSON. I have completed my statement.