# OFFICE OF THE EMSTRICT ENGINEER WALLA WALLA DISTRICT WALLA WALLA, WASHINGTON HIGH WATER SLOWS

#### COLUMBIA BARGE TRAFFIC

High water in the Columbia and extreme turbulent conditions at the entrance of the Celilo Locks has prevented through barge traffic on the river since April 23, the Walla Walla District Office of the Corps of Engineers stated today. This accounted for the drop in tonnage for the month of April to 22,699 tons moving upriver and 9,759 tons moving downriver, the Engineers stated.

In April, 11,210,879 gallons of gasoline, diesel and stove oil moved upstream, with 2,864,712 gallons of aviation gasoline moving from the pipeline, tank farm heads along the Snake River, headed downstream. Moving upstream as miscellaneous cargo was 5,452 tons of asphalt, steel and cement.

A total of 51 tugboats and 63 commercial barges, along with 4 other vessels, moved upstream during the month, and 49 tugboats and 63 commercial barges, and 4 other vessels, moved downstream. This as compared with March when 69 commercial tugboats and 76 barges, with 15 other vessels moved upstream and 72 commercial tugboats, 77 commercial barges and 15 other vessels moved downstream. Comparative tonnage for March was 14,816,322 gallons of gasoline, diesel and stove oil moving upstream and 2,730,111 gallons moving downstream.

At the Big Eddy entrance to the Celilo Canal and Lock extreme high water creates a turbulence that makes use of the lock impossible. Completion of The Dalles Dam late this year will eliminate this hazard to navigation when Celilo Falls and the Celilo lock are inundated as the reservoir is created.

CORPS OF ENGINEERS U.S. ARMY OF SNAKE RIVER DAMS OFFICE OF THE DISTRICT ENGINEER WALLA WALLA DISTRICT WALLE THEEL, MACHINEYON

NAVIGATION BENEFITS SHOW BRIGHT FUTURE

The potential increase in Snake River shipping tonnage that may result from the tapping of the limestone deposits near the mouth of the Grande Ronde River through the building of two dams above Lewiston and Clarkston, highlighted during the Corps of Engineers public hearing held at Lewiston last week is still earning comments in the effected area. Not only is the development of a new chemical industry area along the Snake and Columbia Rivers being forecast, but the possible navigation benefit increases to existing and proposed dams downstream is being pictured as well.

According to Mr. Wylie Hemphill, part owner of limestone claims in the vicinity of Lime Point on the Snake River and a member of the Lewiston Limestone Company of Lewiston, the potential demand for limestone taken from the Snake River area could reach more than a million tons annually. With low barge shipping rates from these limestone deposits to the sea, the development of numerous chemical and industrial plants using limestone in their products was a certainty, Mr. Hemphill claims.

Mr. Paul W. Light, general manager of the Inland Navigation Company of Vancouver, Washington, detailed at the hearing, how, since 1940, traffic on the upper Columbia River, as determined from tonnage records, had increased 225 percent, attributable to physical improvements made in the existing waterways. Various river navigation companies' representatives presenting statements at the hearing were all in accord in emphasizing the importance of constructing all navigation locks to a standard width and length, as those now in operation at McNary and being constructed at The Dalles.

A study is already under way by the Corps of Engineers as to the feasibility of constructing new locks at Bonneville that will conform in plan size with The Dalles and McNary Locks. The navigation companies have urged the Corps of Engineers to specify the design of the Ice Harbor Lock and the locks on the three other approved dams on the Snake, Lower Monumental, Little Goose, and Lower Granite, to conform in size with the McNary and The Dalles locks.

Based on experiences of wheat producers in the Columbia River area utilizing water transportation, Mr. Light stated the saving in freight rates which would accrue to the farmers in the area tributary to Lewiston, would be from 5 to 8 cents per bushel. The 10-year average from 1941 to 1951, shows the area tributary to Lewiston produces in excess of 24 million bushels of grain annually. Mr. Light further stated the saving of petroleum products consumed in the Lewiston area would be 1 cent per gallon.

Statements presented at the hearing pointed out that the coming of low barge transportation rates to Lewiston would also enhance the development of large deposits of phosphate and other mineral deposits adjacent to the waterway, as well as bring about a transportation saving to lumber and forest products.

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CORPS OF ENGINEERS U. S. ARMY OFFICE OF THE DISTRICT ENGINEER WALLA WALLA DISTRICT WALLA WALLA WASHINGTON ICE HARBOR DAM
LOCK DIMENSIONS
TO BE INCREASED

Ice Harbor Dam navigation lock will be increased from its present planned dimensions of 86 feet by 540 feet to 86 feet by 675 feet to conform with the dimensions of the navigation locks at McNary and The Dalles Dams, Colonel Myron E. Page, Jr., Walla Walla District Engineer of the Corps of Engineers stated today. In May of this year, after a thorough study of the Columbia River navigation trends, the Walla Walla District Office of the Corps of Engineers submitted a report to Office of the Chief of Engineers in Washington, D. C., recommending a change in the design dimensions of Ice those Harbor navigation lock to conform with / of navigation locks on the main stream of the Columbia, Colonel Page explained. Notification of approval from Washington was received today.

Recent navigation and economic studies by the Corps of Engineers and related traffic studies show that the Snake River portion of the navigating facilities should be considered, not as a branch but as an integral part of the main waterway's through-bound traffic. It followed that navigation methods would develop in a manner to necessitate a standard lock dimension at all dams upstream from tidewater in order to have an economic and efficient system.

Standardization of the lock dimensions means that future locks on the Snake River, at such time as Lower Monumental, Little Goose, and Lower Granite Dams are constructed, will conform in size with those locks at The Dalles and McNary as will the lock at John Day Dam, now in the planning stage.

Upon completion of John Day and the 4 Lower Snake projects slackwater navigation will be possible on the Columbia and Snake Rivers from tidewater to Lewiston, Idaho.

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# McNARY RESERVOIR SHORELINE TO GET CONSIDERABLE REPAIR

Time, weather, flood waters, settling, and other inroads of the elements have, in the  $2\frac{1}{2}$  years since the raising of the McNary Dam Reservoir to its designed 340-foot level, taken toll of a considerable yardage of earth and rock. An advance notice, just released by the Walla Walla District Office of the Corps of Engineers, inviting bids for repair of stone revetments along the shore of the McNary Dam reservoir on the Columbia River, details the vast quantity of rock that must be replaced.

The work is to be done at 13 repair locations and calls for moving of 61,554 yards of earth and rock in the preparation of foundations; 16,300 yards of random rock, along with 157,210 yards of dumped riprap. Also required will be 500 yards of selected gravel surfacing for roadways and 2,400 yards of random excavation.

Sites where repair work will be done are: (1) General shoreline at McNary Dam; (2) Cold Springs Access Road; (3) Oregon State Highway; (4) and (5) Union Pacific Railroad; (6) Madame Dorion Bridge; (7) Union Pacific Bridge Approach; (8) Pasco Levee 12-1; (9) Pasco Levee 12-2; (10), (11), (12), and (13) SP&S Railway right-of-way.

All of the repair work is work that was anticipated at time of construction and for which funds were provided, the Army Engineers stated.

CORPS OF ENGINEERS. U. S. ARMY
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WALLA WALLA, WASHINGTON

ICE HARBOR DAM

NOT EFFECTED BY

THE STEEL STRIKE

No delay in the construction schedule for Ice Harbor Dam due to the steel strike is anticipated at present, although some changes in construction plans may be necessary, Colonel Myron E. Page, Jr., Walla Walla District Engineer of the Corps of Engineers stated today.

Approximately 100 tons of the total 2,900 tons necessary for the first step cofferdam at Ice Harbor have been received. The remaining tonnage is being held up by the strike. In view of the fact that three months' delay in the cofferdam construction is all that can be allowed, without losing a full year of construction work, some planning changes may be necessary.

To prevent a time loss and to keep the work on schedule, it has been decided to use second-hand sheet piling as far as possible in the first step cofferdam work.

A field survey for second-hand sheet piling that may be substituted is now under way. It has been determined that considerable used piling will be available from The Dalles Dam.

The strike will have no effect on the generator installation contract at McNary, although it may effect the work of the repair of the Mill Creek stabilizers but to what extent is not yet appraisable.

CORPS OF ENGINEERS, U. S. ARMY
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## U S ARMY ENGINEER DISTRICT, WALLA WALLA Corps of Engineers Bldg. 602, City-County Airport Walla Walla, Washington

FOR IMMEDIATE RELEASE

8 March 1957

CONSULTANT BOARD
FAVORS JOHN DAY
RECOMMENDED PLAN

The recommended plan of the John Day Dam on the Columbia River at
River Mile 215.6 as prepared by the U.S. Army Engineer District, Walla
Walla, was favorably considered by the five-man Advisory Board of Consulting
Engineers at the closing session of the Board meeting yesterday.

The John Day Dam recommended plan calls for an approximate 5,700-foot multi-purpose structure containing a north shore abutment with adjoining navigation lock, 20-bay spillway, powerhouse, and south shore abutment.

Fish passage facilities are provided for on both the north and south shores.

The powerhouse structure would be approximately 250 feet in width and 2,079 feet in over-all length, which will provide an ultimate power capacity of approximately two million kilowatts.

Design of the recommended plan calls for operation at various pool levels between elevation 257 and 268. 500,000 acre feet of flood control storage space is provided for in the reservoir with required drawdown for power operation being 3 feet.

The potential energy and power availability at John Day under initial and ultimate system operating conditions were presented to the Board in a general study report. The study allowed for upstream irrigation depletion as far into the future as 2010 and assumed the potential available power

resulting from upstream storage ranging from 21,600,000 acre feet in 1975 to 35,200,000 acre feet in 1985.

The construction schedule for the recommended plan calls for maintaining the Columbia River navigable to barge traffic throughout all construction stages. Contingent upon an appropriation of construction funds being made available, actual work on the John Day Project could be started during the fiscal year 1958, the Board was informed. 1965 was the earliest reasonable date named for completion of initial power installations.

The Board showed exceptional interest in the high development of the Columbia River power potentialities provided by the recommended plan.

Considerable discussion was carried on relative to the merits of a coordinated flow control between John Day and the two downstream dams,

The Dalles and Bonneville.

The John Day Advisory Board of Consultants was composed of Mr. A. L. Alin, Private Consulting Engineer of Omaha, Nebraska; Mr. Hibbert Hill, Chief Engineer of the Northern States Power Company, Minneapolis, Minnesota; Mr. Ralph L. Bloor, Chief of the Structural Branch of the Office of the Chief of Engineers in Washington, D. C.; Mr. Julian Hinds, Private Consulting Engineer of Santa Paula, California, formerly with the Bureau of Reclamation; and Mr. C. E. Blee, recently retired Chief Engineer of the Tennessee Valley Authority at Knoxville, Tennessee.

Sitting in on the Advisory Board of Consultants were Mr. H. K. Armstrong of the Construction and Maintenance Branch, Mr. E. B. Burwell, Chief of Soil and Geological Branch, and Mr. I. B. Slichter, Chief of the Engineering Division of Civil Works, representing the Office of the Chief of Engineers from Washington, D. C.

#### U S ARMY ENGINEER DISTRICT, WALLA WALLA Corps of Engineers Bldg 602, City-County Airport Walla Walla, Washington

#### FOR IMMEDIATE RELEASE

3 April 1957

ICE HARBOR DAM EXCAVATION WORK KEEPS SCHEDULE

With a battery of five 3-cubic yard capacity power shovels and a fleet of forty of the latest type 20-yard dump trucks, the Ice Harbor Dam first step construction contractors, Montag-Halverson-Austin and Associates are maintaining the foundation excavation and drilling portion of their contract well on schedule, the April 1 progress reports to the U S Army Engineer District Office at Walla Walla revealed today.

Excavation for the foundation of the Ice Harbor Dam calls for the removal of approximately 900,000 cubic yards of overburden and 750,000 cubic yards of rock. Of this, 700,000 cubic yards of common excavation work has been completed and 200,000 cubic yards of rock excavated. The overburden excavation identifies the earth and rock formation to solid bedrock, the overburden varying in depth from 10 feet to 20 feet. The bedrock excavation will vary from 20 feet to 100 feet in some sections, such as that part of the powerhouse where the draft tube installations of the powerhouse will be located.

The headwaters of the McNary Dam pool back up the Snake River to the Ice Harbor site. The river surface elevation here is 340 feet above sea level and bedrock excavation for the powerhouse draft tube will go down to a depth of 245 feet, a depth of 95 feet below river surface.

In addition to the bedrock foundation at Ice Harbor, the stilling basin for the dam at the foot of the spillway will be anchored into bedrock with some 2,500 lineal feet of grouted steel reinforced excavation holes. These holes are core drilled to various depths along the footing of the dam.

Schedule of the foundation and excavation work is that all overburden excavation will be completed by May 1 and the rock excavation 95 percent complete by July 1. Work on the huge aggregate plant on the bluff adjacent to the south shore axis stake is progressing rapidly and although the first concrete is not scheduled for pouring until approximately June 1, the contractors intend having the plant completed before that date.

#### U S ARMY ENGINEER DISTRICT, WALLA WALLA Corps of Engineers Bldg 602, City-County Airport Walla Walla, Washington

FOR IMMEDIATE RELEASE

6 May 1957

### SHUTDOWN AT ICE HARBOR CAUSED BY LACK OF FUNDS

First step construction work of the Ice Harbor Dam on the Snake River will be shut down as of Friday, 10 May 1957, the contractors, Montag, Halverson, Austin and Associates, officially notified Walla Walla District Engineer, Colonel Myron E. Page, Jr., today.

The U S Army Engineer District, Walla Walla, officially notified the contractors late in April that under provisions of the contract, \$2,800,000 only was available for payment of contractors' work estimates for the Fiscal Year ending 30 June 1957. At that time it was apparent from the rate of progress at Ice Harbor, as submitted in the progress schedule of the contractors, that the contractors' work would be in excess of that amount by approximately 15 May. The contractors were advised in this connection that any work in excess of \$2,800,000 must necessarily be financed by them until additional funds are made available.

Monday, 6 May, the contractors officially notified Colonel Page by letter that they were taking action as allowed them in their contract and were suspending work at the project as of Friday the 10th.

According to Colonel Page, the District has made application through official channels for additional moneys to keep the project operating until the new Fiscal Year 1958 funds are available on 1 July 1957, however, no information as to whether or not these funds will be made available has been forthcoming to date.

### ICE HARBOR AND ITS SAGA OF FUR-TRADING, GOLD-RUSH DAYS

OFFICE OF THE DISTRICT ENGINE
WALLA WALLA DISTRICT
WALLA WALLA, WASHINGTON

If guests and spectators at the Ice Harbor Dam site first concrete pouring ceremony Saturday, 1 June 1957, can avail themselves of a reminiscent mood, they may appreciate the fact that they are standing on a site where a century ago history, both tragic and comic, was being made.

Back in those historical fur-trading, gold-rush days of 1850 to 1870 spring was the season of the year that peaked the activities of every frontier community along the Columbia and Snake Rivers and controlled as well the success or failure of most of the year's planned adventures or exploits. Spring brought high water which made navigable, by sternwheelers and flatboats, streams that months later could not be traveled even by canoes. It was in spring that the river wharves and portage points from Astoria, Oregon to Lewiston, Idaho, lay banked high with tons of cargo waiting for shipment up or down river as soon as the ice flows cleared the upstream waters and the spring runoff commenced.

While the old time rivermen of these long past days have disappeared with the toll of years, the rivers' hazards and the tricks of their trade still are a matter of record.

No spot along the river retains as picturesque a reminder of the river hazards of those days as does the tiny cove that once dented the south shore of the Snake River at the site of the latest U. S. Army Engineer dams, located nine miles upstream from the Snake River confluence with the Columbia.

Back in the gold-rush and fur-trading days, the town of Lewiston, Idaho, was the hub of the gold-rush prospector and the jump-off point of the rembling fur trader. Spring of each year saw every type of craft from steam driven sternwheelers to hand-poled flatboat hoved-to in the les of available sheltering spots along the Big Bend of the Columbia from old Fort Wallula to the mouth of

the Snake, waiting for high water that would make possible their 140-mile push upriver to the gold-rush center at Lewiston.

Some of the most venturesome boat pilots, anxious to realize the potential profits that awaited the first freighter to land his wares in Lewiston and satisfy the demands of those who had wintered out the season there, pushed up the Snake to the little bottle-like cove on the south shore. There they await the breakup of the ice flows that preluded the annual spring runoff. These ice flows sweeping down from the upper Snake with the first thaws, jammed up along the slackwater stretches near its confluence with the Columbia, creating a hazardous and impassable barrier. Ice Harbor was the natural haven to these flows. The tiny historical sheltered spot, were it able to speak, could count off many a tale of wit and brawn as the boatsmen of those days struggled to take advantage of any break that might get them up the watery trail to the Lewiston wharves ahead of a competitor.

Today, with the roar of construction trucks and power shovels, the staccato rattle of workmen's jackhammers and the clanging of steel echoing from the steep sides of the walls of the river bank, the Ice Harbor of old is forgotten. The bottle-like bay has disappeared under a deluge of moved earth, screened off by the huge cells of steel piling that make up the south shore cofferdam. As if in protest to the intrusion of this steel barrier, the river here gathers an angry impetus as it sweeps by the cofferdam wall.

Ice Harbor itself, is no more. The transformation of the River's shore line seems continuous.

But, nothing stays as is. Time and progress must take its toll. However, it is with regret that many an old timer along the river's course sees disappearing forever these historical land marks and stretches that foster not only memories of ancient river tales and river legends, but memories as well of their own youthful adventures along its watery shores.

## U. S. ARMY ENGINEER DISTRICT, WALLA WALLA CORPS OF ENGINEERS Bldg. 602, City-County Airport Walla Walla, Washington

FOR IMMEDIATE RELEASE

31 July 1957

ARMY ENGINEERS ABANDON

JOINT RAIL RELOCATION

FOR ICE HARBOR RESERVOIR

Failure of the three railroads affected by the relocation work necessary along the length of the Ice Harbor Dam reservoir pool to arrive at a mutually satisfactory operating and cost agreement with the Army Engineers has led to the abandonment of the joint operating plan, Colonel Myron E. Page, Jr., District Engineer, Walla Walla Army Engineer District, announced today. Instead, the Corps of Engineers today notified the railroads concerned that the Corps would carry through with its original plan of a separate relocation program for each railroad.

The two plans, separate relocation or joint, have been under discussion since late 1955 when the work on Ice Harbor Dam was started, Colonel Page stated. The concern of the Corps of Engineers was the approval of a plan most advantageous and economical to the Government. Refusal of the three railroads affected to approve the financial reimbursements stipulated by the Corps of Engineers and the failure of the railroads to arrive upon a satisfactory working agreement between themselves, made the joint operating plan impossible.

According to Colonel Page, the three railroads at the meeting on 25 June of this year agreed to submitting a final proposal not later than 1 August. If not acceptable to all parties concerned the Cerps of Engineers would then adopt, as final, the separate relocation plan.

Under this separate relocation plan, the three railroads, the Union Pacific on the south shore and the SP&S and the Northern Pacific on the north shore would each have their present lines relocated or protected by additional construction along their present right-of-way. The joint operational plan, as developed by the Army Engineers, was for the Union Pacific to abandon its south shore right-of-way from a point above Ice Harbor where a bridge would cross the Ice Harbor reservoir, to Hooper where the Union Pacific lines would return to its present right-of-way. Under the joint operation plan, the Union Pacific would have also utilized the Northern Pacific trackage on the north shore from Snake River junction to a tie-in point with the Camas-Prairie railroad at Riparia.

U. S. ARMY ENGINEER DISTRICT, WALLA WALLA CORPS OF ENGINEERS Bldg. 602, City-County Airport Walla Walla, Washington

McNARY CHINOOK
COUNT FOR 1957
SETS NEW RECORD

An all time record for Chinook salmon moving upstream on the Columbia River has been established at McNary Dam with 289,678 Chinook having been tallied at the Washington and Oregon shore fish counting stations for the official count as of 30 September 1957, U. S. Army Engineer District, Walla Walla, Corps of Engineers' Biologists announced today. With 30 days still remaining in the potential year's Chinook run, the 1957 count is already more than double the count of 1956 when 114,342 Chinook were tallied.

The 1957 count also established a new high for a comparison analysis with the Bonneville Dam count. At Bonneville Dam as of 30 September 1957, 402,524 Chinook salmon have been tallied with McNary's tally accounting for an escapement of 72%. The highest previous Chinook count in the last four years at Bonneville was in 1955 when 389,853 Chinook were tallied with McNary accounting for 108,915 Chinook or 28%. In 1954, 320,947 Chinook were counted at Bonneville with McNary accounting for a passage of 126,555 Chinook or 39%. The 1957 72% McNary count; however, reflects the first year in which no allowance was necessary for the Indian dipnet fishing at Celilo Falls or commercial fishing above Bonneville.

The backwaters of The Dalles Dam have completely inundated the Indian fishing grounds at Celilo Falls and although the Indians still carry on some dipnet fishing at Lone Pine Island below The Dalles Dam spillway and at various shore points downstream from the spillway, the catch is reported to be small.

Commercial fishing above Bonneville was prohibited with completion and filling of The Dalles reservoir.

The year's run of Blueback salmon shows approximately 82,912 tallied at Bonneville as compared with 156,418 in 1956. The 1957 Blueback count at Bonneville; however, is a sample count in which staggered periods of counting are tabulated for an average daily run. The Blueback count at McNary, a 16-hr. count, was slightly over 85,000 as compared with 102,145 in 1956.

The Blueback count at both McNary and Bonneville was the lowest in the 4-year counting period since 1954.

A count of 84,909 Steelhead was made at McNary Dam as of 30 September, with the Bonneville count for the same period being 137,883, this as compared with 131,116 for Bonneville in 1956 and 42,554 at McNary in 1956. In 1957, as with the Chinook salmon, there was no toll of Steelhead from the Indian dipnet fishing at Celilo Falls.

While counting at McNary will continue throughout most of the month of October, the Chinook count is rapidly tapering off although the Steelhead count remains firm. On 1 October 431 Chinook were tallied at McNary with 1,010 Steelhead on the same day. It is anticipated before the official counting is discontinued at McNary on 20 October, another 12,000 Chinook will undoubtedly be tallied along with approximately 25,000 to 30,000 Steelhead. This will establish a record of Steelhead using the McNary Dam fish facilities in 1957 as well as Chinooks.

Biologists assume that the Chinook moving upstream in 1957 are the adult salmon that moved downstream on the Columbia as fingerlings after the 1953 spawning season.

U. S. ARMY ENGINEER DISTRICT, WALLA WALLA
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Walla Walla, Washington

LOWER MONUMENTAL BIDS FOR EXPLORATORY WORK GOES TO HADEN DRILLING COMPANY

Bids for exploratory work in the vicinity of the Lower Monumental Dam site on the Snake River were opened Tuesday afternoon, 5 November 1957, in the Walla Walla District Office of the Corps of Engineers with the bid by the Haden Drilling Company of Pasco, Washington for \$14,125 being apparent low, Colonel Myron E. Page, Jr., District Engineer stated today.

The proposed Lower Monumental Dam site, approximately 44.7 miles upstream from the mouth of the Snake River, will be the second in the series of 4 dams that will ultimately make possible slackwater navigation the length of the Snake River at its confluence with the Columbia River to above Lewiston.

Today's bid calls for overburden drilling 1500 lineal feet, 0-40 feet in depth; 500 lineal feet, 40-70 feet in depth; 250 lineal feet drilling, 70-100 feet depth. The work is scheduled to be completed within 40 calendar days after notice to proceed.

Normal pool elevation for Lower Monumental Dam will be 533 feet mean sea level and the reservoir will extend 35 miles upstream to the Little Goose Dam site at approximate river mile 72.2. Lower Monumental reservoir will contain nearly 5,300 acres and present plans call for an operational drawdown of three feet. The dam will have an effective height of 93 feet and is estimated to cost about 133 million dollars with an initial power installation of three main units totaling

270,000 kilowatt capacity rating. Skeleton provisions for an additional three units to be provided for a potential kilowatt output at the dam of 540,000 kilowatts.

In the 1957-58 budget, \$500,000 was allotted for the exploratory work at

Lower Monumental and this contract will be the first expenditure under that

appropriation.

Nearest competitive bidder was A. M. Jannsen of Aloha, Oregon, with a bid of \$14,400.

Other bidders were the Boyles Bros. Drilling Company of Salt Lake City, Utah; The Wilcox Drilling Company of McMinneville, Oregon; and E. A. Holman & Sons of Spokane, Washington. The government estimate was \$23,612.



WORKMEN INTERLACE THIS TANGLE OF REINFORCED STEEL RODS THAT WILL MAKE UP THE HEAVY CONCRETE BLANKET FORMING THE INTAKE TO THE POWERHOUSE AT THE U. S. ARMY, CORPS OF ENGINEERS ICE HARBOR DAM PROJECT ON THE SNAKE RIVER.