

SHORTAGE OF POWER IS BEING IMMINENT

Oregon's Demands Declared to Be Taxing Supply.

GENERATION SURVEY MADE

Report by Committee of Water Power Development Is Filed With National Association.

In the report of the committee on water power development of which Franklin T. Griffith, president of the Portland Railway, Light & Power company was chairman, submitted to the National Electric Light association at Pasadena, Calif., last week, it is made clear that an actual shortage of electric power to meet demands is felt in some localities and that such a situation is impending in Oregon and elsewhere. The report is comprehensive, comprising 30 printed pages with accompanying maps and is illustrated with diagrams and cuts portraying some of the big developments in hydro-electric plants. The perusal of the committee that served under Chairman Griffith was as follows: W. A. Braekkenridge, John A. Erickson, H. T. Edgar, G. C. Ebert, Mortimer Fletschhacker, H. J. Harriman, D. L. Huntington, H. F. Jackson, Frank M. Kerr, A. W. Leonard, J. D. McKee, G. W. Talbot, A. B. West and A. G. Wislon.

The convention was in session May 15-22, inclusive. After its adjournment the delegates visited some of the large plants of California and included a tour of the Pacific coast in their trip. A brief synopsis of the report follows:

11 States in West Surveyed. Taking the 11 far western states, we find by careful survey an unusual situation. Due to delay of the construction program in power developments while the nation was at war, this section of the country finds itself today far behind the rest of the nation, ranging from an actual shortage of power to meet demands, as in California, to an impending shortage to meet growing demands, as in Oregon and Washington. With increasing possibilities of coal shortage, the continual rise of the price of fuel and the economic desirability for early electrification of steam railroads, the urge for increased water power development in the far west becomes imperative. Not only are industries already existing dependent upon electrical developments, but it is believed that industrial growth on the Pacific coast and electrical development are interdependent.

This is true in agriculture as well as in industry. Vast areas of arid and semi-arid western lands have been converted into fertile districts under electrical pumping of water that would be impossible without use of Federal legislation governing the use of public lands and reservations is of primary importance to the western states in which the newly opened public lands and in which approximately 70 per cent of the undeveloped water power of the country is located. Existing Federal laws relating to power developments on public lands have unquestionably operated to hamper and restrict, if not almost wholly to prevent, such enterprises. A policy no doubt intended to work for conservation actually resulted in waste and irretrievable loss to the extent of a consumption of coal and oil which might have been avoided by the development of water power.

Co-operation Is Advocated. The utmost co-operation between the Federal power commission to be established under the present water power bill before congress and the electric power industry should be inaugurated and encouraged particularly along the lines of formulation and application of the rules and regulations and on their interpretation and enforcement, will depend to a large extent on the ultimate success or failure of the purpose of the act, i. e., the development of the country's water power resources.

It is essential that the electrical industry act as a unit in co-operation with the power commission and as a means to that end it is here proposed and recommended to the National Electric Light association that a permanent committee be appointed to represent the industry in its relation as a whole with the Federal power commission.

The report discusses present and potential water power resources of the States from a statistical standpoint. The latest authentic estimate shows that there are approximately 59,350,000 potential undeveloped water power in the United States and only 3,823,560 horse power of developed water power.

Of the potential maximum horse power of the United States, 68.6 per cent lies in the western states, viz., California, Oregon, Washington, Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah and Wyoming.

Of the total maximum potential water power of the United States 74.3 per cent is in the western states, viz., horse power coming under Federal jurisdiction, i. e., lying on Federal reserve lands in the western states, wherein Federal permits are required.

Federal Action Held Needed. In the western states 94 per cent of the maximum potential water power is in this class. In other words, practically all of the future development of water power in the western states (covering approximately 70 per cent of the total potential water power of the country) will be dependent upon Federal action in the matter of issuance of workable permits for development of these projects.

Only 16.6 per cent of the maximum potential water power has been developed up to the present time. For the western states only this proportion is only 6.5 per cent.

It has been roughly estimated from the limited data available that something like 200,000,000 horse power would represent the possible maximum potential horse power with maximum storage facilities developed and utilized.

While compared with the potential possibilities, the development in the western states has been comparatively small, attention is directed to the present development of water power in these western states. For instance, California is shown well in the lead with a present developed water power of 1,000,000 horse power, which is 10 per cent of the entire developed water horse power of the United States. It is, however, only 10 per cent of the maximum potential water power possibilities of that state. Washington shows the largest maximum potential water horse power of any state in the union, but it ranks among the western states below both California and Montana in the amount of developed water horse power, showing a development of but 2.8 per cent of its potential maximum potential

SUPERLATIVES OF WATER POWER ARE IN THE WEST.

Hydro-electric generation includes: The largest single-discharge turbine in the world, 42,000-horse-power, Wise power plant, near Auburn, Cal., Pacific Gas & Electric company.

Other large units. The Southern California Edison company is installing two 23,500-horsepower, 800-head, Francis reaction type turbines in its Kern river No. 2 plant, while the Great Western Power company will install impulse wheels under 1000 head at its Caribou plant on the Feather river with capacity of 36,000-horsepower.

The highest head plant in America. The San Joaquin Light & Power corporation plans two units under 2800-foot heads in connection with its Kings river project, already begun, and a similar head is contemplated by the Southern California Edison company in the Big creek development.

Typical also of western construction is the 17-foot tunnel being driven by the San Joaquin Light & Power corporation to serve its Kings river project, already begun, and a similar head is contemplated by the Southern California Edison company in the Big creek development.

Transmission is shown in the following: First long-distance transmission, 20 miles, at 150,000 volts, from San Antonio to San Bernardino, Cal.

Longest high-voltage transmission, 87,000 volts and 58,000 volts, 223 miles, from More county, California, to Yuma, Ariz., Southern Sierras Power company.

Highest voltage transmission. Present record, 150,000 volts, 240 miles, Big creek to Los Angeles, Southern California Edison company. The Great Western Power company is now installing a 145,000-volt line from its Caribou plant to San Francisco. The Pacific Gas & Electric company has in contemplation the building of a 220,000-volt line from its Pitt river plant in San Francisco while other western companies are planning 230,000-volt lines for the near future. Long-span aerial crossings: Carquinez Straits, Pacific Gas & Electric company, 2,100 feet, for a long time the longest in the world, now second longest.

Longest high-voltage submarine cable, 3 1/2 miles, 11,000 volts, Oakland to San Francisco, Great Western Power company.

Dam construction is summarized as follows: Other records have been attained in the construction of dams in electric and related water development projects, a few of which may be mentioned here.

Highest dam in the world, Arrowrock, Idaho, 246 1/2 feet. Greatest storage of water in America, second in world, Elephant Butte, New Mexico, 2,838,000 acre feet.

Second greatest storage of water, Roosevelt, Ariz., 1,267,300 acre feet. Highest rock-fill dam, Morens, near San Diego, Cal., 247 feet.

abilities, and only 3.7 per cent of the total developed water horse power of the country.

Oregon also shows wonderful potential water possibilities, but up to the present time only a very low percentage is developed, 3.5 per cent of the maximum possibilities of the state. These figures clearly show that although the west has already developed some remarkable water-power projects and is well up in the lead of the development of large inter-connecting networks of transmission systems, the water-power development in this section is, however, but begun.

Washington Is Put First. In potential water power, the state of Washington stands first with 5,500,000 horse power, or 18 per cent of the total potential horse power of the United States. California is a close second with 9,250,000 horse power, or 15.6 per cent of the total United States. Oregon ranks third with 4,100,000 potential horse power. The coast states together represent 43.6 per cent of the total potential maximum horse power of the United States, including the states of Idaho and Montana, these five typically western states represent 61 per cent of the total potential maximum water horse power of the United States with a total of 36,210,000 horse power.

Data obtained from 62 power companies of the far-western states, showing their loads during the past ten years and also their estimated loads up to and including 1928, has been obtained and compiled and presented in the report in connection with graphic charts. They show that during the next ten years the expected development of power in the west will rise to the vast total of 1,776,260 kilowatts, which at present-day prices for material and labor will involve an investment of over \$100,000,000.

Discussion of inter-connected trunk systems already developed in the western states. In California during the year 1918-1919 there were two sets of inter-connected networks in the state—one in the northern, the other in the southern portion. The control of each system was under the management of a power supervisor. As a result of this arrangement there was effected a saving of 399,000 barrels of oil in 1919, representing \$450,000. Reference also made to inter-connection between power companies in the state of Washington and the state of Oregon.

The conclusion of the report summarizes the general features of the report and urges the utmost co-operation between federal and state administrative commissions and the central state power companies, and also the public itself.

Classical ministerial course—Joseph David Boyd, Clinton Clyde Thurston, Henry A. VanWinkle.

Classical Biblical course—Dickson Pain Barriman, Florence Kirk, Lena Baber Newton, Frank L. Purnell, Ramona Adelphi Stever, Carroll Curtis Roberts, William Robb Baird, Guy L. Drill, Edna Corneilus Harriman.

Normal Bible course—Etta Althea Prall, School of oratory—Martha Watson Baird, William Robb Baird, Guy L. Drill.

School of music—Mary Elbet Ashurst, Ethel Fay Dana, Dickson Pain Harriman, Ruth Ellen Williams, Charles Polley Mitchell, Charles Harold Richards, Lucille Elizabeth Khefor.

Instructor Coming to Portland. BAKER, Or., May 22.—(Special.)—Announcement was made yesterday by Vere Windigale, well-known track and field player, who has been instructor of mathematics and athletic coach at Baker high school during the past semester, that he had accepted a position for next year at Washington high school in Portland. His duties will be similar to those which he had here. Accompanied by his wife, he plans to leave for Prosser, Wash., where they will make a short visit before proceeding to Portland.

S. & H. green stamps for cash Holman Fuel Co. Main 352, 560-21.—Adv.



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It repeats the playing of the pianist with exactness. So perfect is it that the instrument seems vibrant with the personality of the pianist.

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QUINAUT PARK IS URGED

CONGRESS ASKED TO SET ASIDE RESERVE OF 1322 ACRES.

Aberdeen Rotary Club Inaugurates Movement to Secure State-Wide Indorsements.

ABERDEEN, Wash., May 22.—(Special.)—A park of 1322 acres on the shores of Lake Quinault may be set aside by congress as a national or state of Washington park if action taken Wednesday by the Aberdeen Rotary club is indorsed by the state legislature in a memorial to congress.

The acreage shown in maps which were prepared by an engineer for Mr. Bowers following his first visit to the lake and which were shown Wednesday to the club, has about two miles of lake front, and is crossed by two picturesque streams, Willaby and Falls creek. Some of the finest spruce and fir timber in the county is located here, and unless the region is marked, it is feared this soon will be cut.

At the time of Mr. Bowers' first visit he went before public bodies, secured their indorsement, and induced the state legislature to memorialize congress for the creation of the park. As there were no roads to the lake at that time the movement was dropped at this stage.

The local Rotarians will now ask other Rotary clubs of the state to take up the movement and push it to fulfillment.

Halfway Graduates Three.

HALFWAY, Or., May 22.—(Special.)—Commencement exercises were held on the campus of the high school last evening. Three students, Aida Lamont, Robert Leep and Ruth Leederick, received diplomas. Professor Colmish gave the address to the class. Professor Hirsch, principal of the high school, has accepted an offer to teach in China next year, at the Tung Wen institute at Amoy. He plans to spend three years there. Baccalaureate services were held Sunday evening, Rev. R. F. Jameson preaching the sermon.

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Boys' Basket-Ball Shoes

Made with red trimmings and ankle patch.

Sizes 11 to 2, underpriced at \$2.25. Now less 20% \$1.80

Sizes 2 1/2 to 6, underpriced at \$2.50. Now less 20% \$2.00

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An event pregnant with economies, bringing to all the people unexpected possibilities for trenchant reductions in living costs! Regiment upon regiment of shoes, stripped of every vestige of profit, to be offered in a mighty sacrifice! A sale conceived by us as a solemn duty to the public whom we serve! A sale that holds a warning to those who would profit unduly!

Beginning on Tomorrow Morning, May 24th, Every Pair of Shoes In our Store Goes on Sale at a Discount of Twenty Per Cent

Even at our regular prices we undersell on shoes! Think, then, what a saving is yours at the discounted prices! This great stock is at your service, from which to pick and choose. If you've a family to buy for, the greater will be your savings! We urge you to buy freely, not through expectation of financial gain for ourselves, but as your duty to yourself, to your family, to society—as a protest against the encroaching tide of high prices! Come early! We shall try to serve everyone. Our force will be greatly augmented in order to handle the throngs!

Here are the Shoes—Here the Prices! Buy as You Never Bought Before

Women's White Canvas High Shoes Underpriced at \$2.98. Now less 20% \$2.38

Women's White Duck High Shoes Underpriced at \$3.49. Now less 20% \$2.79

Women's White Kid High Shoes Underpriced at \$6.98. Now less 20% \$5.58

Women's White Duck Oxfords Underpriced at \$3.49. Now less 20% \$2.79

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APPLE GROWERS ADVISED

Now Said to Be Time for Closely Observing for Spraying.

HOOD RIVER, Or., May 22.—(Special.)—According to LeRoy Childs, superintendent of the Hood River experiment station, Oregon growers should now observe closely their apple trees and apply the only spray at the proper time for control of codling moth.

"This application," says Mr. Childs, "can be effectively applied for a few days only, following the dropping of petals and for this reason cannot be delayed. The early end of the apple season is about a week after petals fall, and sprays applied after this are not effective.

"Trees that are to produce but a few apples should be thoroughly sprayed in order to prevent the development of the second brood of worms which will mean trouble late in the season and for years to come if neglected at this time. Where trees are found to be in a weakened condition, lime-sulphur may be omitted. Where conditions are about normal use lime-sulphur at the rate of one gallon to 50 gallons of water with arsenate of lead, two pounds to the hundred gallons of water."

Paving Near Carlton Begun. CARLTON, Or., May 22.—(Special.)—The Northwest Construction company, of Portland, which has the contract for the grading and hard surfacing the "West Side" Pacific highway between Yamhill and McMinnville started its paving plant the first of the week and has completed a quarter mile.

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Children's Mary Jane Tennis Pumps

Sizes 8 to 10 1/2, underpriced at \$1.05. Now 84c

Sizes 12 to 2, underpriced at \$1.15. Now 92c

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