

QUICK REFERENCE NOTES

BRUCES EDDY PROJECT

Twenty-five years ago, in 1935, the four Northwest states--Washington, Oregon, Montana and Idaho--had only 1,800,000 kw of installed capacity; in 1955 they had 7 million kw of installed capacity--a 300 percent increase. Now - about 400 percent increase.

In the 20 years--1930 to 1950--population jumped from 3.5 million to 5.1 million, a 45 percent gain.

In 1955 we had about 7 million kw of capacity in the Northwest, of which about 95 percent was hydro. Some $3\frac{1}{4}$ million kilowatts are owned and marketed by the Federal Government and the remainder by private and publicly-owned utilities.

The consumption of electricity in the four Northwest states multiplied eight times between 1935 and 1954--from 4 billion kwh to 32 billion kwh--compared with a fivefold increase in the United States as a whole. So fast is the consumption of electricity growing in the region that loads are expected to triple in the next 13 years--by 1974. The region will then be consuming 90 billion kwh, not allowing for any new electroprocess industries.

In the first 10 years following the end of World War II, we added 3.5 million kw in the region, but the demand has consistently outgrown the supply. At times there has been an actual shortage of power to meet the loads. When waterflow in the rivers dropped to low levels, as in the winter of 1952-1953, we have had to curtail the use of electricity by industry. Another result of the power pinch has been to hamper the expansion of electroprocess plants and to discourage new industries from locating in the region.

In the last 5 years, nearly 3 million kw have come on the line from plants under construction--the equivalent of one Bonneville dam annually. Yet we face a serious power shortage in the Northwest unless new dams are started soon. By the early 60's loads, which are rising at a rate of 7 percent annually compounded, will exceed the availability of power from all the generating plants, existing and under construction.

We estimate that the Northwest will need at least 9 million additional kw over the next 20 years--or one Bonneville dam a year--to meet the growing power loads of residential, commercial and small industrial consumers. If we are to have an expansion of electroprocess industries, we will need over 12 million kw--almost twice as much as is now installed in the region.

The people of the Northwest are well aware of this situation and are making plans to meet it. Fortunately, we have ample water resources awaiting development. In fact, scarcely one-fourth of the energy that resides in the Columbia River and its tributaries has been tapped so far, although nearly all the lower cost sites have been, or are, under development.

PERTINENT PROJECT DATA

ITEM	UNIT	BRUGES EDDY
1. <u>GENERAL</u>		
a. River		North Fork Clearwater 2,440
d. Drainage area	Sq. Mi.	
e. Average annual precipitation	Inches	51.0
g. Floods:		
Maximum probable	c.f.s.	240,000
Standard project	c.f.s.	120,000
Maximum of record	c.f.s.	100,000
h. Normal water surface elevation	m.s.l.	970
2. <u>RESERVOIR</u>		
b. Usable storage flood control	Ac. Ft.	2,000,000
c. Usable storage power, normal	Ac. Ft.	2,000,000
d. Usable storage, Power maximum	Ac. Ft.	2,000,000
f. Normal and maximum pool elevation	m.s.l.	1,600
g. Minimum pool Elevation	m.s.l.	1,450
h. Length at normal pool	Miles	55
i. Area at normal pool	Acres	15,000
3. <u>DAM</u>		
a. Type		Concrete Gravity Arch
b. Crest length	Feet	2,400
c. Top of dam elevation	m.s.l.	1,600
d. Effective height	Feet	630
e. Maximum structural height	Feet	640
7. <u>POWER AND ENERGY</u>		
a. Head, maximum	Ft.	630
c. Installation No. and size of units	kw	500,000
d. Dependable capacity at site	kw	500,000
e. Cost of dependable capacity at site	\$/kw	14.77
8. <u>COSTS</u>		
a. Project cost W/O recreation	\$	\$ 188,000,000
10. <u>BENEFIT-TO-COST RATIO</u>		
Without recreation facilities		2.14 to 1

BRUCES EDDY REPORT

Some of the benefits are as follows:

1. Regulate stream flow, control floods, and improve and extend navigation.
2. Generate millions of kilowatts for prime power.
3. Assure adequate supplies of water for domestic and industrial uses.
4. Reduce stream pollution, protecting water purity and benefiting fish life, and provide for recreational use of the water areas.
5. The region's agriculture, industry, trade and services will be stimulated and extended by the economic stability assured by the plan.
6. Agricultural, mining and industrial expansion will be reflected in the metropolitan areas by increased business and the ability to support larger populations.
7. Smaller communities will grow as new farms, homes, factories, offices and stores materialize out of the broad pattern of economic expansion induced by coordinated development.
8. High land transportation cost will have a competitive system of low cost water transportation to aid and develop agriculture, mining, forestry and industry.

The following notes are taken from the Army Corps of Engineers:

1. Flood damages in the Clearwater Valley, estimated on a long term basis, will average over \$3,000,000 per year.
2. A reoccurrence of the 1948 flood in the Clearwater Valley, based on present conditions of development and cost, would cause estimated damages of \$3,000,000.
3. A flood of standard project magnitude, which is possible of occurrence, would be unusually disastrous and would cause estimated damages of \$24,000,000.

Local flood damages in Clearwater Basin would be reduced by approximately \$600,000 annually by Bruces Eddy project alone.

Bruces Eddy project will cause only minor relocation of places of habitation, schools, industry, highways and no agricultural land will be flooded.

The 1949 winter big game survey of the U. S. Forest Service and State of Idaho Game Department indicates that the Bruces Eddy project will not adversely affect wildlife winter habitat.

SUPPLEMENTAL INFORMATION ON REVIEW REPORT RELEASED BY DISTRICT ENGINEER

CORPS OF ENGINEERS, U. S. ARMY

WALLA WALLA DISTRICT

The report was authorized by resolution of the committee on public works of the United States Senate adopted October 5, 1951, which provided that the Board of Engineers for Rivers and Harbors review the report printed and house document No. 531 - 81st Congress - Second Session and other reports of the Columbia River and tributaries with a view of determining whether any modification of the recommendations contained therein be advisable at this time.

From this brief of data on review report, the following excerpts are taken:

"Flood problems of importance exists on main Clearwater River and at some locations on its tributaries. These problems and the major flood problems on the Lower Columbia River would be importantly benefited by upstream storage in the Clearwater River Basin. The potentiality for commercial and industrial development in the Clearwater Basin cannot be realized until substantial regulation of the flows of the Clearwater River for the prevention of flood damage is effected."

"Consideration of the factors influencing water resources planning shows that of the streams of the middle Snake River, Clearwater River is the greatest contributor to flood damages. The present favorable opportunities for storage to the interest of at site and downstream power production, use of its flows as now proposed would involve no commitment of water that would be used for irrigation or other consumptive use and blockage of the streams at the feasible dam sites would cause negligible damage to fish runs."

"Bruce's Eddy project would provide important navigation benefits, particularly all of which would come from the advantage provided transportation of logs to mills."

TO DATE, 1-1-61, approximately \$2,000,000 has been allowed by Congress to complete studies.

Planning is complete. The project is ready for authorization and construction.

The project with detail work accomplished is ready for construction immediately and the project would bolster our economy in a region which is in need of development.

The people of the Northwest are well aware of this situation and are making plans to meet it. Fortunately, we have ample water resources awaiting development. In fact, scarcely one-fourth of the energy that resides in the Columbia River and its tributaries has been tapped so far, although nearly all the lower cost sites have been, or are, under development.