

CORPS OF ENGINEERS, U. S. ARMY

OFFICE OF THE DISTRICT ENGINEER

SEATTLE DISTRICT

4735 E Marginal Way

Seattle 4, Washington

REFER TO FILE NO 800.5(Skagit Riv & Tribs)51 NPSGP

8 February 1950

SUBJECT: Standard Project Flood, Skagit River Basin, Washington

TO: Division Engineer
North Pacific Division
Corps of Engineers
500 Pittock Block
Portland 5, Oregon

1. Submitted herewith for approval, in accordance with paragraph 4208.11, Orders and Regulations, dated 1 September 1947, is the standard project flood to be used in determining the design flood of flood-control structures for Skagit River near Sedro Woolley, Washington, and in determining requirements of flood-control storage in Ross Reservoir.

2. The standard project flood is calculated to be 440,000 cfs. As work on the plan of improvement is suspended pending receipt of an approved standard project flood, teletype approval is requested.

3. The hydrograph of inflow into Ross Reservoir during the standard project flood at Sedro Woolley is also submitted for approval at this time. This hydrograph will be used in determining flood-control storage requirements in Ross Reservoir, which are the subject of separate correspondence between the Federal Power Commission and Office, Chief of Engineers.



E. C. ITSCHNER
Colonel, Corps of Engineers
District Engineer

- 2 Incls (in trip)
1. Deriv. of Standard Proj Flood, Skagit River, Wn
 2. Deriv. of Inflow Hydrograph, Ross Reservoir

Subject: Standard Proj. Flood, Skagit
River Basin, Washington
(Basic: 8 Feb 50, NPS to NPD)

NPDWG
NPD 824.02(Skagit Riv.)
Seattle Dist. - 5C

1st Ind.

Office, Division Engineer, North Pacific Division, Corps of Engineers,
500 Pittock Block, Portland 5, Oregon, 23 February 1950.

TO: The Chief of Engineers, Corps of Engineers, Department of the Army,
WASHINGTON 25, D. C.

1. Forwarded, concurring in the request for approval of the standard project flood for Skagit River near Sedro Woolley, Washington contained in the 1st ~~inclosure~~ ^{inclosure}. The rainfall used in obtaining this flood is one-half the maximum possible, and the snow cover equal to or greater than the amount that would be melted in 5 days with the optimum temperature sequence of record. Losses assumed were conservative, and the peak of the unit hydrograph used had been increased to 150 percent of that derived from floods of record. For these reasons the standard project flood would be one of rare occurrence.

2. The standard project flood inflow to Ross Reservoir has a volume somewhat less than the volume for the entire basin above Sedro Woolley. The following tabulation compares the average annual run-off from the drainage area above Ross Reservoir and other parts of the basin, which are shown on Plate 1:

<u>Station</u>	<u>Drainage Area square miles</u>	<u>Average Annual Runoff, inches</u>
Skagit at Hope B.C.	370	34.9
Skagit at Newhalem (down stream fm Ross Res.)	1,160	53.3
Cascade near Marblemount	180	75.1
Sauk near Sauk	714	88.5
Baker at Concrete	270	134.0
Skagit at Concrete	2,700	75.8
Skagit at Sedro Woolley		73.8(1908- 1923)

From the above and from the flood run-off data shown in Inclosure 2 to the basic letter, it will be seen that both average annual and storm run-off are proportionately smaller from the basin above Ross Reservoir than from the entire basin above Sedro Woolley. The selection of a standard project flood inflow to Ross Reservoir with peak discharge of 97,000 cfs and a total run-off volume of 7.65 inches (399,000 acre-feet), as shown on Plate 4, is therefore logical and approval thereof is requested.

23 February 1950

Subject: Standard Proj. Flood, Skagit River Basin, Washington
(Basic: 8 Feb 50, NFS to NPD)


1st Ind. (Cont'd)

54930

3. As stated in paragraph 41 of Inclosure 1, an operation schedule for Ross Reservoir will be presented in the current Skagit River Report. From the hydrograph on Plate 4 and considering 200,000 acre-feet available in Ross Reservoir for reduction of floods, it is calculated that the peak inflow of 97,000 second-feet could be reduced to a constant outflow of about 25,000 second-feet. The Skagit River Report may present data to indicate that a reduction to zero outflow for a short period may be better for flood control, but in any case it is evident that the Ross Reservoir will be able to accomplish a substantial reduction of flood flows.

4. Teletype advice of the action taken by your office is requested.

FOR THE DIVISION ENGINEER:


JOHN P. BUEHLER
Lt. Col., Corps of Engineers
Executive Officer

✓ 2 Incls. n/c
w/d 1 cpy ea.

ENGINE

2d Ind


Office of the Chief of Engineers, Washington 25, D. C. 8 March 1950

TO: The Division Engineer, North Pacific Division, Corps of Engineers,
PORTLAND, OREGON

The standard project floods of 440,000 cfs at Sedro Woolley and 97,000 cfs at Ross Reservoir are approved as recommended by the District and Division Engineers. Teletype ENGINE 2873 is confirmed.

BY ORDER OF THE CHIEF OF ENGINEERS:

Incls w/d


H. C. GEE
Lt. Col., Corps of Engineers
Deputy Chief of Civil Works
for Flood Control

NPS 803.5 (Skagit River & Tribs.) 51

NPD 824.02 (District Engineer, American District)