from year to year seem to be due to the price of copper and the market conditions, rather than the ability to produce the metal.

27. The size of the ore reserves at Butte are not known, or at least they are not made public. For this reason no definite estimates of the life of the camp can be made. Ore has been found on the lowest levels yet attained. It is true that some of the ore bodies have been bottomed on the upper levels but, as other ore bodies have been encountered that had not reached the surface, there would seem to be as much ore in the deeper workings of the mine as in the upper levels.

28. The depth to which these mines can be worked will depend on how soon the increasing cost of pumping, hoisting, and cooling will prohibit further economical operations. Cheap power will make it possible to mine at great depths, thus adding to the life of the mines. The Montana Power Co. is producing power economically at the hydroelectric plant at Great Falls, Mont. Within the last few years the company has installed a number of hoists capable of hoisting from a depth of 5,000 feet indicating an intention of operating to that depth. The conclusions, drawn from the above, are that the Butte district will continue for years to be an important producer of copper.

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APPENDIX 2

WATER-SUPPLY AND STORAGE ANALYSES

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CONTENTS

	Page
General outline of procedure	1114
Set no. 1	1116
Set no. 2	1118
Set no. 3	1120
Set no. 4	1123
Set no. 5	1126
Set no. 6	1129
Set no. 7	1131
Flathead Lake—Intermediate plan of development	1134
Study data:	
Set no. 1, Set no. 2, Set no. 3, Set no. 4, Set no. 5, Set no. 6, Set no. 7	facing page 1134
Flathead Lake—Intermediate plan of development	1135
Tables of modified flows and lake elevation:	
Explanation	1138
Tables	1139
Set no. 1: Hungry Horse Reservoir, regulated elevation	1139
Set no. 2:	
Kootenai Reservoir, regulated elevation	1139
Columbia River at Kettle Falls, modified discharge	1140

Tables of modified flows and lake elevation—Continued.

Tables—Continued.

Set no. 3:

	Page
Columbia River at Grand Coulee and Foster Creek power sites, modified discharge	1140
Columbia River at Chelan power site, modified discharge	1141
Chelan Reservoir, regulated elevation	1141
Columbia River at Rocky Reach power site, modified discharge	1142
Chiwawa Reservoir, regulated elevation	1142
Wenatchee Reservoir, regulated elevation	1143
Columbia River at Rock Island Rapids and Vantage power sites, modified discharge	1143
Columbia River at Priest Rapids power site, modified discharge	1144
Columbia River at mouth of Snake River, effect of upstream regulation and future irrigation	1145

Set no. 4:

Coeur d'Alene Reservoir, regulated elevation	1145
Spokane River at Post Falls power site, modified discharge	1146
Spokane River at Spokane, modified discharge	1146
Pend Oreille Reservoir, regulated elevation	1147
Clark Fork at Albany Falls, modified discharge	1148
Clark Fork at Metaline Falls, modified discharge	1148
Columbia River at Kettle Falls, modified discharge	1149
Columbia River at Grand Coulee and Foster Creek power sites, modified discharge	1149
Columbia River at Chelan power site, modified discharge	1150
Columbia River at Rocky Reach power site, modified discharge	1150
Columbia River at Rock Island Rapids and Vantage power sites, modified discharge	1151
Columbia River at Priest Rapids power site, modified discharge	1151
Columbia River at mouth of Snake River, effect of upstream regulation and future irrigation	1152

Set no. 5:

Pumping plan	1152
Columbia River Reservoir, regulated elevation	1152
Grand Coulee Reservoir, regulated elevation	1153
Columbia River at Grand Coulee and Foster Creek power sites, modified discharge	1153
Columbia River at Chelan power site, modified discharge	1154
Columbia River at Rocky Reach power site, modified discharge	1154
Columbia River at Rock Island Rapids and Vantage power sites, modified discharge	1155
Columbia River at Priest Rapids power site, modified discharge	1156
Columbia River at mouth of Snake River, effect of upstream regulation and future irrigation	1156
Gravity plan	1157
Columbia River Reservoir, regulated elevation	1157
Columbia River at Grand Coulee and Foster Creek power sites, modified discharge	1158
Columbia River at Chelan power site, modified discharge	1158
Columbia River at Rocky Reach power site, modified discharge	1159
Columbia River at Rock Island Rapids and Vantage power sites, modified discharge	1160
Columbia River at Priest Rapids power site, modified discharge	1160
Columbia River at mouth of Snake River, effect of upstream regulation and future irrigation	1161

Tables of modified flows and lake elevation—Continued.

Tables—Continued.

	Page
Set no. 6:	
Pend Oreille Reservoir, regulated elevation	1162
Clark Fork at Albany Falls, modified discharge	1162
Clark Fork at Metaline Falls, modified discharge	1163
Columbia River at Kettle Falls, modified discharge	1163
Coeur d'Alene Reservoir, regulated elevation	1164
Spokane River at Post Falls, modified discharge	1164
Columbia River Reservoir, regulated elevation	1165
Columbia River at Grand Coulee and Foster Creek power sites, modified discharge	1166
Columbia River at Chelan power site, modified discharge	1166
Columbia River at Rocky Reach power site, modified discharge	1167
Wenatchee Reservoir, regulated elevation	1168
Wenatchee Reservoir, combined irrigation and power diversion	1168
Wenatchee River at Dryden power site, modified discharge	1169
Columbia River at Rock Island Rapids and Vantage power sites, modified discharge	1170
Columbia River at Priest Rapids power site, modified discharge	1170
Columbia River at mouth of Snake River, effect of upstream regulation and future irrigation	1171
Set no. 7:	
Pumping plan, Grand Coulee Reservoir, regulated elevation	1172
Gravity plan:	
Columbia River Reservoir, regulated elevation	1172
Columbia River at Grand Coulee and Foster Creek power sites, modified discharge	1173
Columbia River at Chelan power site, modified discharge	1173
Columbia River at Rocky Reach power site, modified discharge	1174
Columbia River at Rock Island Rapids and Vantage power sites, modified discharge	1175
Columbia River at Priest Rapids power site, modified discharge	1175
Columbia River at mouth of Snake River, effect of upstream regulation and future irrigation	1176
Intermediate plan of development of Flathead Reservoir:	
Flathead Reservoir, regulated elevation	1177
Flathead River below Flathead Reservoir, modified discharge	1177

1. A general outline of the procedure followed in the water-supply and storage analyses is discussed in paragraphs 229 to 264, inclusive, of the main report on upper Columbia River. Part of the results, relating to development according to the preferred plan, are summarized in tables following paragraphs 273 and 274. The steps taken in determining those results, and also the results relating to other plans of development, are shown in the set-up presented herein.

2. The set-up is in tabular form with each column numbered in order to permit indicating the method of carrying forward effects due to storage and future irrigation. For the purpose of explaining procedure the columns have been divided into seven groups or sets. A more detailed discussion of the analyses follows.

3. Set no. 1 (columns 1 to 44) deals with South Fork of Flathead River, Flathead River, Priest River, and Clark Fork, down to Newport. It shows regulation in Hungry Horse, Flathead, and Priest Reservoirs together with modified discharges at power sites. The last column (44) indicates the inflow available for storage regulation

in Pend Oreille Reservoir after being modified by upstream regulation and assumed future irrigation depletion. The modification shown in this set is common to all plans considered herein for developing the Columbia Basin irrigation project.

4. Set no. 2 (columns 45 to 92) begins the analyses for plan no. 4, which assumes irrigating 1,199,430 acres in the Columbia Basin irrigation project by pumping from behind the so-called "low dam" across Columbia River at Grand Coulee. In this set no regulation is assumed in the Columbia River Reservoir. The set deals with the flow of Clark Fork below Priest River, Kootenai River, Spokane River, and Columbia River between the international boundary and Grand Coulee. It shows the proposed regulation in Pend Oreille, Kootenai, and Coeur d'Alene Reservoirs together with modified discharge at power sites.

5. Set no. 3 (columns 93 to 141) continues the analyses for plan no. 4, low Grand Coulee Dam, without storage in Columbia River Reservoir. All the data in this set apply also to the high Grand Coulee Dam, without storage in Columbia River Reservoir, except columns 96, 97, and 98, which apply only to the low dam. Data for the high dam (without storage) similar to those shown in columns 96, 97, and 98 do not appear in this appendix. This set deals with the flow of Chelan River, Chiwawa River, Wenatchee River, Yakima River, and Columbia River between Grand Coulee and the mouth of Snake River. Regulation in Chelan, Chiwawa, Wenatchee, and Yakima River Reservoirs is shown together with modified discharges at power sites.

6. Set no. 4 (columns 142 to 171) contains the analyses of plan no. 2-A, which assumes irrigating 1,519,890 acres in the Columbia Basin irrigation project by gravity diversion from Clark Fork and Spokane River and shows the resulting discharge at power sites. The effect of regulation in Kootenai, Chelan, Chiwawa, and Wenatchee Reservoirs is the same as derived in sets nos. 2 and 3 and is carried forward from those sets. The assumed regulation of Pend Oreille and Coeur d'Alene Reservoirs, however, was adjusted to both irrigation and power needs. These analyses assume no regulation in Columbia River Reservoir.

7. Set no. 5 (columns 172 to 204) deals with the Columbia River between Grand Coulee and the mouth of Snake River and takes into account regulation in Columbia River Reservoir behind the low Grand Coulee Dam. This set is divided into two parts: Columns 172 to 188 apply to plan no. 4 (pumping) and columns 189 to 204 apply to plan no. 2-A (gravity). Each part indicates the proposed regulation in Columbia River Reservoir. The discharges at power sites between Grand Coulee and the mouth of Snake River, as modified by the proposed regulation, are shown together with total effect of upstream regulation and future irrigation on the yield of Columbia River at the mouth of Snake River.

8. Set no. 6 (columns 205 to 236) contains the analyses for plan no. 6-A, which assumes irrigating 1,449,690 acres in the Columbia Basin irrigation project by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. The effect of regulation in Kootenai, Chelan, and Chiwawa Reservoirs is the same as derived in sets nos. 2 and 3 and is carried forward from these sets. The assumed regulation in Pend Oreille, Coeur d'Alene, and Wenatchee Reservoirs differs from other sets, however, on account of the necessary adjustments to

irrigation and power needs. The resulting flow of Columbia River at Grand Coulee varies from that shown in set no. 5. Hence a different regulation of the Columbia River Reservoir (behind Grand Coulee Low Dam) was required.

9. Set no. 7 (columns 237 to 270) deals with the Columbia River between Grand Coulee and the mouth of the Snake River with regulation in Columbia River Reservoir behind the high Grand Coulee Dam. This set is divided into two parts: The first part, shown in columns 237 to 255, refers to the preferred plan of development (plan no. 4, pumping); the second part, shown in columns 256 to 270, refers to the comparable gravity plan of development (plan no. 2-A, gravity). Each part shows regulation in Columbia River Reservoir, modified discharges at power sites between Grand Coulee and the mouth of Snake River, and total effect of upstream regulation and future irrigation on the yield of Columbia River at the mouth of Snake River.

10. The following table correlates the water-supply and storage analyses with the power analyses that appear in the text of the report on upper Columbia River:

Case	Plan of irrigation, Columbia Basin irrigation project	Effect of regulation of storage		Grand Coulee Dam	Water-supply analyses set no.
		Tributaries	Columbia River storage at Grand Coulee		
1	None	Natural	Natural	None	
2	Plan no. 2-A (gravity)	Included	Excluded	Low or high	4
3	do	do	Included	Low	[1] 5
4	do	do	do	High	[1] 7
5	Plan no. 6-A (gravity)	do	do	Low	6
6	Plan no. 4 (pumping)	do	Excluded	Low or high	3
7	do	do	Included	Low	
8	do	do	do	High	
9	do [2]	do	do	Low	[3] 5
10	Pumping	Natural [4]	Natural [4]	do	
11	Plan no. 4 (pumping) [2]	Included	Included	High	[3] 7
12	Pumping	Natural [4]	Natural [4]	do	

[1] Part 2.
[2] Pumping load partially supplied by downstream plants.
[3] Part 1.
[4] Natural flow has been reduced by the amount diverted for irrigation.

11. In most cases the column headings indicate the method followed in making the analyses. In other cases, however, more explanation than can be given in the space available in the heading is desirable. It also seems best to interrelate the set-up with the tables included in the main text of the report and in appendix 2. Tables in the main text are referred to without a prefix—that is table no. 3—whereas the prefix 2 is placed before the appendix table number; that is, table no. 2–3.

Set No. 1

South Fork of Flathead River to Newport, exclusive of regulation in Pend Oreille Reservoir

12. *Column 1.*—Natural discharge of the south fork of the Flathead River. For most of the period discharge records are not available and the discharge has been estimated by comparison with adjacent streams. Table no. 28 shows the estimated discharges in italics.

13. *Column 3.*—Regulated yield of south fork of Flathead River is shown in table no. 54. Hungry Horse Reservoir was assumed to be regulated to maintain as nearly constant flow as possible in the south fork of Flathead River. A storage diagram (unpublished) was used to facilitate the study of regulation. The reservoir was emptied every year and filled in every year except 1915.

14. *Column 5.*—Regulated elevation of Hungry Horse Reservation on the last day of each month is shown in table no. 2–1. These elevations were determined from the storage diagram referred to in preceding paragraph, by means of a special scale.

15. *Column 7.*—Assumed effect of future irrigation above Flathead Lake. Table no. 15 shows assumed irrigable acreages in all parts of the river system.

16. *Column 8.*—Natural elevation of Flathead Lake on the last day of each month. A few of the elevations were estimated as shown by italics in table no. 43.

17. *Column 9.*—Natural contents of Flathead Lake on the last day of each month, based on elevations in column 8 and the capacity curve shown on plate no. 13.[2]

18. *Column 11.*—Regulated elevation of Flathead Lake on the last day of each month is shown in table no. 66. Reservoir contents were derived by taking into account the proposed storage regulation shown in column 16 and used to determine elevation by means of the capacity curve shown on plate no. 13.[2]

19. *Column 12.*—Natural yield of Flathead River at Polson, Mont. A few of the discharges were estimated, as shown by italics in table no. 29.

20. *Column 16.*—Regulation in Flathead Lake to maintain as nearly uniform flow as possible in Flathead River. The reservoir is assumed to have been filled and emptied each year. The upper limit of regulation (elevation 2,893.0 feet, U.S. Geological Survey datum) is the limit set by the Federal Power Commission in its license (no. 5) to the Rocky Mountain Power Co. (see par. 190 of report). The lower limit of regulation is fixed by assumed capacity of the outlet channel after being lowered sufficiently to pass 7,050 second-feet at a lake elevation of 2,880.0 feet.

21. *Column 18.*—Regulated yield below Flathead Lake is shown in table no. 55.

22. *Column 21.*—Assumed effect of future irrigation between Flathead Lake and Montana-Idaho boundry. (See table no. 15.)

23. *Column 22.*—Estimated natural yield of Clark Fork at Montana-Idaho boundary. The text accompanying table no. 30 gives basis for estimate.

24. *Column 23.*—Modified yield of Clark Fork at Montana-Idaho boundary is shown in table no. 56, to 3 significant figures only.

25. *Column 24.*—Natural elevation of Priest Lake on the last day of each month was estimated for most of period as indicated in text accompanying table no. 44.

26. *Column 25.*—Natural contents of Priest Lake on the last day of each month is based on the elevation shown in column 24 and the capacity curve shown on plate no. 14.[2]

27. *Column 27.*—Regulated elevation of Priest Lake on the last day of each month is shown in table no. 67. Reservoir contents were de-

[2] Not printed.

rived by taking into account the proposed storage regulation shown in column 32 and used to determine elevation by means of the capacity curve shown on plate no. 14.[2]

28. *Column 28.*—Assumed effect of future irrigation at the outlet of Priest Lake. (See table no. 15.) The irrigable area was assumed to be within the Priest River Valley.

29. *Column 29.*—Natural yield of Priest River below Priest Lake was estimated for a few of the months, as shown by italics in table no. 33.

30. *Column 32.*—Regulation in Priest Lake to maintain as nearly uniform flow as possible within the limits of regulation. (See par. 192 of report.) A storage diagram (unpublished) was used to facilitate the study of regulation.

31. *Column 34.*—Regulated yield of Priest River below Priest Lake is shown in table no. 59.

32. *Column 36.*—Natural elevation of Pend Oreille Lake on the last day of each month. A few of these elevations were estimated, as shown in italics in table no. 45.

33. *Column 37.*—Natural contents of Pend Oreille Lake on the last day of each month were based on the elevation shown in column 36 and the capacity curve shown on plate no. 15.[2]

34. *Column 39.*—Regulated elevations of Pend Oreille Lake on the last day of each month for both pumping and gravity plans of developing the Columbia Basin irrigation project were copied from columns 46 and 156 in order that the effect on Pend Oreille Lake levels of the two plans of development could be compared more readily with natural elevations.

35. *Column 40.*—Assumed effect of future irrigation between Flathead and Pend Oreille Lakes, exclusive of irrigation in Priest Valley as shown in column 28. (See table no. 15.)

36. *Column 41.*—Natural yield of Clark Fork at Newport is shown in table no. 31.

SET NO. 2

PLAN NO. 4 (PUMPING) PEND OREILLE RESERVOIR TO GRAND COULEE

37. *Column 44.*—Input to Pend Oreille Reservoir, modified by the assumed upstream regulation and by future irrigation, was copied from column 44 of set no. 1.

38. *Column 45.*—Assumed regulation in Pend Oreille Reservoir below elevation 2,066.8 feet, to maintain as nearly uniform yield as possible below Albany Falls (Newport).

39. *Column 46.*—Regulated elevation of Pend Oreille Reservoir on the last day of each month is shown in table no. 68. Reservoir contents were derived by taking into account the proposed storage regulation shown in column 45 and used to determine elevation by means of the capacity curve shown on plate no. 15.[2]

40. *Column 48.*—Regulated yield of Clark Fork below Pend Oreille Reservoir is shown in table no. 57.

41. *Column 49.*—Natural yield of Clark Fork at Newport was copied from column 41 to the nearest hundred second-feet only, to avoid an unwarranted refinement in determination of downstream effect.

[2] Not printed.

42. *Column 52.*—Natural yield of Clark Fork at Metaline Falls is shown in table no. 32.

43. *Column 53.*—Modified yield of Clark Fork at Metaline Falls is shown in table no. 58.

44. *Column 54.*—Natural elevations of Kootenai Lake on the last day of each month were furnished by the Dominion Water Power and Hydrometric Bureau of Canada. Some of the elevations were estimated, as shown by italics in table no. 42.

45. *Column 55.*—Natural contents of Kootenai Lake on the last day of each month were based on the elevations shown in column 54 and the capacity curves shown on plate no. 17.[2] Since 1920 several areas in the Kootenai Valley above Kootenai Lake have been reclaimed by diking. Each area brought under dikes has reduced the high-water area and capacity of the lake; therefore several capacity curves, corresponding to the several stages of diking development, were prepared and used to determine the contents of the lake during the period for which each curve was applicable. Plate no. 17 [2] shows only two of these capacity curves, one for the natural conditions and one for the ultimate condition when all present and proposed projects are completed. The curves for the intermediate stages of diking lie between the two.

46. *Column 57.*—Regulated elevation of Kootenai Lake on the last day of each month is shown in table no. 2-2. The lake was assumed to be regulated below elevation 1,746 feet (U.S. Coast and Geodetic Survey datum). At this elevation the capacity of the lake is not affected by the diking improvements mentioned in the preceding paragraph; see paragraph 206 of main report for basis of regulation. It was assumed that during periods when the lake elevation was above 1,746 feet the elevations would be the same as under natural conditions.

47. *Column 58.*—Natural yield of Kootenai River below Kootenai Lake is shown in table no. 27 to three significant figures only, to conform to the practice of the United States Geological Survey.

48. *Column 61.*—Assumed regulation in Kootenai Lake below elevation 1,746 feet to maintain as nearly uniform yield as possible in Kootenai River.

49. *Column 63.*—Regulated yield of Kootenai River below Kootenai Lake is shown in table no. 53 to three significant figures.

50. *Column 66.*—Assumed effect of future irrigation between Pend Oreille Lake and Little Dalles. Table no. 15 shows 140,000 acres assumed to be irrigable between Newport and Kettle Falls. Of this area 125,000 acres were assumed to be irrigable between Newport and Little Dalles.

51. *Column 67.*—Estimated natural yield of Columbia River at Little Dalles was obtained by deducting the flow of Kettle River from the flow of Columbia River at Kettle Falls.

52. *Column 69.*—Assumed effect of future irrigation between Pend Oreille Lake and Kettle Falls. (See table no. 15.)

53. *Column 70.*—Natural yield of Columbia River at Kettle Falls was estimated for part of the period as shown by italics in table no. 22.

54. *Column 71.*—Modified yield of Columbia River at Kettle Falls is shown in table no. 2–3 to three significant figures only.

[2] Not printed.

55. *Column 72.*—Natural elevation of Coeur d'Alene Lake on the last day of each month is shown in table no. 46.

56. *Column 73.*—Natural contents of Coeur d'Alene Lake on the last day of each month was based on natural elevations and the capacity curve shown on plate no. 16.[2]

57. *Column 75.*—Regulated elevation of Coeur d'Alene Lake on the last day of each month is shown in table no. 69. See paragraph 203 of report for discussion referring to economic limits of regulation. These elevations are based on the assumed storage regulation shown in column 80 and the capacity curve.

58. *Column 76.*—Assumed effect of irrigating part (20,000 acres) of the Rathdrum Prairie project. Diversion (A) for this area would be above Post Falls and return flow (B) would reach the river between Post Falls and Spokane. Hence the diversion only is considered in determining the regulated yield at Post Falls (column 81), and the sum (A plus B) of diversion and return flow in determining the modified yield at Spokane (column 87).

59. *Column 77.*—Natural yield of Spokane River at Post Falls, Idaho, is shown in table no. 34. These discharges are exclusive of the flow through the Spokane Valley Farms Co. canal, which diverts just above Post Falls. It was assumed that the diversion through that canal in the future would be the same as during the period under investigation; hence the downstream effect of the Spokane Valley Farms Co. diversion, which has been reflected in the measured yields at Post Falls and Spokane, would not be augmented in the future.

60. *Column 80.*—Regulation in Coeur d'Alene Lake below elevation 2,129.1 feet to maintain as nearly uniform flow as possible at Spokane.

61. *Column 82.*—Regulated yield of Spokane River below Coeur d'Alene Lake is shown in table no. 60.

62. *Column 85.*—Natural yield of Spokane River at Spokane is shown in table no. 35.

63. *Column 88.*—Modified yield of Spokane River at Spokane is shown in table no. 61.

64. *Column 89.*—Assumed effect of future irrigation between Pend Oreille Lake and Grand Coulee. (See table no. 15.) This effect does not include the allowance made for irrigating part of the Rathdrum Prairie project by diversion from Spokane River as shown in column 76.

65. *Column 90.*—Natural yield of Columbia River at Grand Coulee was estimated for most of period as shown by italics in table no. 23.

SET NO. 3

PLAN NO. 4 (PUMPING)—LOW GRAND COULEE DAM: GRAND COULEE TO MOUTH OF SNAKE RIVER, WITHOUT REGULATION BEHIND GRAND COULEE DAM

CASE 6

66. *Column 93.*—Modified yield at Grand Coulee, corrected for effect of upstream regulation and future irrigation, was converted to second-feet from yield in units of 1,000 acre-feet shown in column 92, set no. 2.

[2] Not printed.

67. *Column 94.*—Amount assumed to be pumped into Grand Coulee Reservoir for use of the Columbia Basin irrigation project. An allowance of 1,000 second-feet was made for evaporation and seepage losses from Grand Coulee Reservoir. (See par. 218 of report.) During periods of low-power output a part of the irrigation demand was assumed to be met by drawing storage from the Grand Coulee Reservoir. Except for one of the 216 months under consideration, Grand Coulee Reservoir was assumed to be regulated so that the commercial power output of the Grand Coulee power plant would not fall below 500,000 kilowatts. A maximum of 325,800 acre-feet of storage in Grand Coulee Reservoir was needed. Table no. 2–27 shows the regulated elevations of Grand Coulee Reservoir on the last day of each month. They are not shown in the set-up.

68. *Column 95.*—Modified yield of Columbia River below Columbia River Reservoir is shown in table no. 2–4 to three significant figures only.

69. *Column 96.*—Total potential power at Grand Coulee power site. The static head (not shown) was determined from an unpublished rating curve and by assuming the forebay elevation to be held at elevation 1,157.6 feet (U.S. Geological Survey datum). The power in megawatts at 80-percent efficiency was determined by the formula: 0.000,068 QH; where Q is the discharge in second-feet (column 95) and H is the head in feet (not shown).

70. *Column 97.*—Power needed for pumping irrigation supply to Grand Coulee Reservoir was based on an over-all efficiency of pumps and motors of 70 percent and a pumping lift of 415 feet.

71. *Column 98.*—Power at Grand Coulee after pumping represents the potential commercial power available at the site irrespective of plant capacity.

72. *Column 99.*—Effect of assumed regulation and future irrigation on yield of Columbia River at Grand Coulee is the algebraic difference between the modified yield at Grand Coulee (after upstream regulation and future irrigation) and the natural yield. This effect has been applied to the natural yield at power sites farther down the river to obtain the modified flow at those sites. Inasmuch as natural yield at those sites is recorded only to three significant figures, the downstream effect was computed only to the nearest hundred second-feet in order to preserve a consistent degree of accuracy.

73. *Column 100.*—Assumed future irrigation between Grand Coulee and Chelan River. Table no. 15 shows assumed irrigable acreages.

74. *Column 101.*—Estimated natural yield of Columbia River above Chelan River is shown in table no. 24. These discharges are the average of A and B as follows: A, the sum of natural yields of Columbia River at Grand Coulee, and of Okanogan and Methow Rivers; and B, the difference between natural yield of Columbia River at Vernita and natural yield of Wenatchee, Entiat, and Chelan Rivers.

75. *Column 102.*—Modified yield of Columbia River above Chelan River corrected for effect of upstream regulation and future irrigation. Table no. 2-5 shows these discharges to three significant figures only.

76. *Column 103.*—Assumed future irrigation at the outlet of Lake Chelan. Table no. 15 shows assumed irrigable acreages.

77. *Column 106.*—Yield of Chelan River corrected for storage in Lake Chelan is shown in table no. 38. Water Supply Paper No. 482,

pages 119 and 120, gives these discharges for the years 1913 to 1918; for subsequent years they are published in successive water-supply papers.

78. *Column 108.*—Regulation in Lake Chelan was based on the use of 665,000 acre-feet of storage (see par. 221 of report). The regulation was determined by use of a storage diagram (unpublished) and was designed to give as nearly uniform flow as possible. Table no. 2-6 shows the regulated elevation of Lake Chelan on the last day of each month as determined from the storage diagram by means of a special scale. They are not shown in the set-up.

79. *Column 110.*—Regulated yield of Chelan River below Lake Chelan is shown in table no. 62.

80. *Column 112.*—Assumed effect of future irrigation between Grand Coulee and Wenatchee River. See table no. 15. This is exclusive of the effect in Chelan Valley, which is included in column 103.

81. *Column 113.*—Estimated natural yield of Columbia River above Wenatchee River is shown in table no. 25. These discharges are the average of A and B as follows: A, sum of discharge, Columbia River above Chelan River, Chelan and Entiat Rivers; and B, difference between discharge of Columbia River at Vernita and Wenatchee River.

82. *Column 115.*—Modified yield of Columbia River above Wenatchee River is shown in table no. 2-7. This yield is the same as shown in column 114, except that it is given to three significant figures only.

83. *Column 116.*—Estimated natural yield of Chiwawa River at dam site was determined by method described in text accompanying table no. 41.

84. *Column 119.*—Regulated yield of Chiwawa River is shown in table no. 65. A storage diagram (unpublished) was used to facilitate the study of regulation. When the study was started records were available only to March 1930, and the regulation was designed to maintain a uniform flow during the 17 years ending with that date. A maximum storage of 482,000 acre-feet was required. When the records for the period April 1930 to March 1931 became available the study was continued. The regulated yield for this last period is much less than the uniform yield for the 17-year period, due to the abnormally low yield of the river and the fact that storage in the reservoir had been exhausted at the end of March 1930. The regulated elevations of Chiwawa Reservoir, shown in table no. 2-8, were determined from the storage diagram by use of a special scale. They do not appear in the set-up.

85. *Column 121.*—Natural yield of Wenatchee River at gaging station just above dam site was estimated for part of period as shown by italics in table no. 39.

86. *Column 124.*—Regulation in Wenatchee Reservoir to maintain as nearly uniform flow as possible with storage of 1,000,000 acre-feet. A storage diagram (unpublished) was used to facilitate study of regulation. The regulated elevations of Wenatchee Reservoir, shown in table no. 2-9, were determined from the storage diagram by use of a special scale. They do not appear in the set-up.

87. *Column 126.*—Regulated yields of Wenatchee River at dam site is shown in table no. 63. The modified yield of Wenatchee River at Dryden, shown in table no. 64, and not shown in the set, was obtained by applying to the natural yield at Dryden or Peshastin the downstream effect shown in column 128.

88. *Column 129.*—Cumulative effect of upstream regulation on yield of Columbia River below Wenatchee River was determined by summarizing the effect of all regulation and future irrigation above Grand Coulee (column 99), the effect of regulation and future irrigation in Chelan River (column 111), and the effect of regulation in Wenatchee River (column 128).

89. *Column 130.*—Assumed effect of future irrigation between Grand Coulee and Rock Island Rapids (see table no. 15), excludes allowance for irrigation in Chelan Valley (column 129).

90. *Column 131.*—Natural yield of Columbia River at sites between Wenatchee and Priest Rapids is shown in table no. 26. No tributaries of importance enter Columbia River between Wenatchee and Yakima Rivers.

91. *Column 133.*—Modified yield of Columbia River at Rock Island Rapids, shown in table no. 2-10, is the same as shown in column 132 except that it is given to three significant figures only.

92. *Column 134.*—Assumed effect of future irrigation between Grand Coulee and Priest Rapids, excluding allowance for irrigation in Chelan Valley (column 129). This effect takes into account the irrigation of 105,000 acres in Columbia Valley (see table no. 15) and includes two thirds of the estimated return flow from the Columbia Basin irrigation project, which was assumed to reach the main river through Crab Creek.

93. *Column 136.*—Modified yield of Columbia River at Priest Rapids, shown in table no. 2-11, is the same as shown in column 135 except that it is given to three significant figures only.

94. *Column 137.*—Effect of storage and irrigation in Yakima Valley. (See pars. 261 and 262 of report.)

95. *Column 138.*—Assumed return flow from Columbia Basin irrigation project. (See table no. 17.)

96. *Column 139.*—Assumed effect of future irrigation along Columbia River between Grand Coulee and Snake River. (See table no. 15.)

97. *Column 141.*—Downstream effect of assumed regulation and future irrigation on yield of Columbia River at mouth of Snake River, shown in table no. 2-12, has been recorded to the nearest hundred second-feet only in order to avoid unwarranted refinement.

SET NO. 4

PLAN NO. 2-A (GRAVITY) WITHOUT REGULATION BEHIND GRAND COULEE DAM

CASE 2

98. *General.*—Plan no. 2-A for developing the Columbia Basin irrigation project assumes serving the project by gravity diversion from Clark Fork and Spokane River below Post Falls. An auxiliary (unpublished) analysis was necessary to derive some of the base data used in this study. The auxiliary analysis provides that—first, the diversion of water from Spokane River to the Columbia Basin irrigation project shall be so regulated that the conduit from Albany Falls to the Spokane River crossing shall operate at ultimate capacity during the months of high irrigation demand, May, June, July, and August. In other words, that conduit will carry a uniform flow during those months and the remaining irrigation demand will be met

by diversion from Spokane River. Second, the combined hydroelectric possibilities on Spokane River from Post Falls to Little Falls during the diversion period shall not in any year be less than the firm power possible under the present limits of regulation. (See par. 203.) Third, following the end of the diversion period, that is, after August 31, the storage remaining in Coeur d'Alene Lake shall be regulated to maintain a uniform flow at Post Falls and enough water shall be diverted from the Clark Fork conduit at Spokane River crossing to make the total power possibilities on Spokane River between Post Falls and Little Falls equal to the firm power available under present limits of regulation.

99. The lowest run-off of Spokane River during the diversion period was found to occur in 1926. It was deemed advisable, however, to base the diversion from Spokane River on the supply available in the next most critical year, 1924, and to allow the Columbia Basin irrigation project to suffer a slight deficiency in 1926. The computations show that in 1924 Spokane River could supply water for the Columbia Basin irrigation project as follows:

	Acre-feet	Second-feet
May	111,000	1,810
June	87,000	1,460
July	154,000	2,500
August	115,000	1,870

100. The remainder of the demand for the Columbia Basin irrigation project during these months will be met by diverting a uniform flow of 11,740 second-feet from Clark Fork.

101. During the period June to August, in 1926, the regulated yield at Spokane would be 1,950 second-feet under the plan chosen, and the Columbia Basin irrigation project would sustain a shortage of 60,000 acre-feet in August, which would represent 7.2 percent of the normal demand for the month, or 1.3 percent of the demand for the whole irrigation season.

102. *Column 79.*—Yield available for regulation in Coeur d'Alene Lake was copied from column 79, set no. 2.

103. *Column 142.*—Regulation in Coeur d'Alene Lake for joint benefit of Columbia Basin irrigation project and power at Spokane River sites, as outlined in the foregoing.

104. *Column 143.*—Regulated elevation of Coeur d'Alene Lake on the last day of each month is shown in table no. 2-13. Reservoir contents were derived from the storage operations as shown in column 142, and used to determine elevation by means of the capacity curve shown on plate no. 16.[2]

105. *Column 145.*—Regulated yield of Spokane River at Post Falls is shown in table no. 2-14.

106. Columns 86 and 74 are copied from set no. 2.

107. *Column 76.*—Assumed effect of future irrigation between Coeur d'Alene Lake and Spokane is the algebraic sum of the diversion (A) and return flow (B) shown in column 76, set no. 2.

108. *Column 146.*—Diversion from Spokane River to Columbia Basin irrigation project at a point between Post Falls and Spokane. (See par. 1423 of report.)

[2] Not printed.

109. *Column 148.*—Yield of Spokane River at Spokane, as modified by assumed regulation and future irrigation, was determined by applying to the natural yield at Spokane the effect of natural and artificial storage in Coeur d'Alene Lake; of irrigation of Rathdrum Prairie; of diversion to Columbia Basin irrigation project, and of diversion from Clark Fork to Spokane River.

110. *Column 149.*—Modified discharge at Spokane is shown in table no. 2-15.

111. *Column 44.*—Modified input to Pend Oreille Reservoir was copied from column 44, set no. 1.

112. *Column 152.*—Diversion from Pend Oreille Reservoir to Spokane River. (See general discussion of set no. 4, par. 98, of this appendix.)

113. *Column 153.*—Diversion from Pend Oreille Reservoir to Columbia Basin irrigation project. (See table no. 16.)

114. *Column 155.*—Regulation in Pend Oreille Reservoir for joint benefit of Columbia Basin irrigation project and power sites on lower Clark Fork. During the diversion period the limit of drawdown is fixed by the elevation of the diversion tunnel, thereafter by the capacity of the outlet channel.

115. *Column 156.*—Regulated elevation of Pend Oreille Reservoir on the last day of each month is shown in table no. 2-16. Reservoir contents were derived from the storage operations shown in column 155 and used to determine elevation by means of the capacity curve shown on plate no. 15.[2]

116. *Column 158.*—Regulated yield of Clark Fork at Albany Falls is shown in table no. 2-17.

117. *Column 160.*—Modified yield of Clark Fork at Metaline Falls is shown in table no. 2-18.

118. *Column 65.*—Downstream effect of regulation in Kootenai Lake is copied from column 65, set no. 2.

119. *Column 162.*—Modified yield of Columbia River at Kettle Falls is shown in table no. 2-19.

120. *Column 163.*—Assumed effect of future irrigation between Pend Oreille Lake and Grand Coulee (see table no. 15), is exclusive of the allowance made for irrigating part of the Rathdrum Prairie project by diversion from Spokane River (column 76).

121. *Column 164.*—Modified yield of Columbia River at Grand Coulee is shown in table no. 2-20 to three significant figures only.

122. *Column 95.*—Modified yield of Columbia River at Grand Coulee under the pumping plan of development, without regulation in Columbia River Reservoir, was copied from column 95, set no. 3.

123. *Column 165.*—Difference in yield at Grand Coulee between the gravity and pumping plans of development. All assumed regulation and future irrigation below Grand Coulee is alike under each plan of development. Hence the difference between the two plans at Grand Coulee is the difference at all downstream sites. This difference was applied to the modified yield at downstream sites, as derived for the pumping plan, to obtain the modified yield for the gravity plan.

124. *Column 166.*—Difference in yield between the gravity and pumping plans of development as used is the same as given in column

[2] Not printed.

165 except for rounding off to the extent necesssary to derive the modified yield at downstream sites to three significant figures only.

125. *Column 102.*—Modified yield of Columbia River above Chelan River, pumping plan, was copied from column 102, set no. 3, to three significant figures only.

126. *Column 167.*—Modified yield of Columbia River above Chelan River, gravity plan, is shown in table no. 2-21.

127. *Column 115.*—Modified yield of Columbia River above Wenatchee River, pumping plan, was copied from column 115, set no. 3.

128. *Column 168.*—Modified yield of Columbia River above Wenatchee River, gravity plan, is shown in table no. 2-22, to three significant figures only.

129. *Column 133.*—Modified yield of Columbia River at Rock Island Rapids, pumping plan, was copied from column 133, set no. 3.

130. *Column 169.*—Modified yield of Columbia River at Rock Island Rapids, gravity plan, is shown in table no. 2-23 to three significant figures only.

131. *Column 136.*—Modified yield of Columbia River at Priest Rapids, pumping plan, was copied from column 136, set no. 3.

132. *Column 170.*—Modified yield of Columbia River at Priest Rapids, gravity plan, is shown in table no. 2-24 to three significant figures only.

133. *Column 141.*—Effect of regulation and future irrigation on yield of Columbia River at mouth of Snake River, pumping plan, was copied from column 141, set no. 3.

134. *Column 171.*—Effect of upstream regulation and future irrigation on yield of Columbia River at mouth of Snake River, gravity plan, is shown in table no. 2-25.

SET NO. 5

REGULATION BEHIND LOW GRAND COULEE DAM, IN TWO PARTS—PLAN NO. 4 (PUMPING), CASE 9, COLUMNS 172–188, PLAN NO. 2-A (GRAVITY), CASE 3, COLUMNS 189–204

PUMPING PLAN—CASE 9

135. *Column 94.*—Amount pumped to Grand Coulee Reservoir for Columbia Basin irrigation project was copied from column 94, set no. 3.

136. *Column 95.*—Yield available for regulation in Columbia River Reservoir was copied from column 95, set no. 3.

137. *Column 173.*—Regulation in Columbia River Reservoir, behind low dam, for joint benefit of Grand Coulee, Foster Creek, Chelan, Rocky Reach, Rock Island Rapids, Vantage, and Priest Rapids power sites. (See par. 212 of report.) For the storage years 1916–17, 1919–20, 1922–23, 1923–24, 1925–26, 1928–29, 1929–30, and 1930–31, assumed regulation was based on maintaining maximum aggregate power at all Columbia River power plants between Grand Coulee and Priest Rapids. For the other years regulation was based on maintaining as nearly uniform flow as possible at Grand Coulee.

138. *Column 175.*—Regulated elevation of Columbia River Reservoir on the last day of each month, as shown in table no. 2-26, is

derived from the contents shown in column 174 and the capacity curve shown on plate no. 18. Table no. 2-27 shows regulated elevation of Grand Coulee Reservoir on the last day of each month, not shown in set-up.

139. *Column 176.*—Draw-down in Columbia River Reservoir represents the average vertical distance between elevation 1,157.6 feet (U. S. Geological Survey datum) and water surface in the reservoir for each month. It was based on elevations at the end of each month as shown in column 175.

140. *Column 178.*—Regulated yield of Columbia River at Grand Coulee is shown in table no. 2-28.

141. *Column 179.*—Downstream effect of regulation in Columbia River Reservoir is the difference between the yield at Grand Coulee with and without regulation in Columbia River Reservoir (column 178 minus column 95 of set no. 3). This effect is shown only to the degree of accuracy necessary to derive modified yield at downstream sites to three significant figures.

142. *Column 180.*—Static head at Grand Coulee power site was based on an unpublished rating curve and the elevations shown in column 175.

143. *Column 181.*—Total potential power at Grand Coulee power site, in megawatts, at an efficiency of 80 per cent, was derived by the formula: 0.000,068QH, where Q is the discharge in second-feet (column 178) and H is the static head in feet (column 180).

144. *Column 182.*—Power required for pumping to Grand Coulee Reservoir was based on an over-all efficiency of pumps and motors of 70 per cent and lifting the water to elevation 1,572.6 feet (U. S. Geological Survey datum). Inasmuch as regulation in Columbia River Reservoir with a greater draw-down than about 20 feet (see par. 212 of main report) increases power at sites between Grand Coulee and Snake River at the expense of power at the Grand Coulee site, it was assumed that during periods of low power yield the benefiting plants would share the pumping load with the Grand Coulee plant. Hence the pumping load was distributed between the Columbia River power plants in proportion to their respective heads. The values marked "*a*" in this column represent the apportionment of load carried by the Grand Coulee plant during the periods when the load was so distributed. During the remaining periods all of the pumping load was assumed to be carried by the Grand Coulee power plant.

145. *Column 183.*—Commercial power at Grand Coulee is the difference between total potential power and pumping demand, irrespective of plant capacity.

146. Columns 102, 115, 133, and 136 were copied from set no. 3 to three significant figures only.

147. *Column 184.*—Modified yield of Columbia River above Chelan River is shown in table no. 2-29.

148. *Column 185.*—Modified yield of Columbia River above Wenatchee River is shown in table no. 2-30.

149. *Column 186.*—Modified yield of Columbia River at Rock Island Rapids is shown in table no. 2-31.

150. *Column 187.*—Modified yield of Columbia River at Priest Rapids is shown in table no. 2-32.

151. *Column 188.*—Effect of upstream regulation and future irrigation on yield of Columbia River at mouth of Snake River is shown in table no. 2-33.

GRAVITY PLAN—CASE 3

152. *Column 164.*—Modified input to Columbia River Reservoir, gravity plan, was copied from column 164, set no. 4, to three significant figures only.

153. *Column 190.*—Regulation in Columbia River Reservoir, behind low dam, for joint benefit of Grand Coulee, Foster Creek, Chelan, Rocky Reach, Rock Island Rapids, Vantage, and Priest Rapids power sites. (See par. 212 of report.) For the low years 1919–20, 1922–23, 1923–24, 1925–26, 1928–29, 1929–30, 1930–31, the reservoir was assumed to be regulated to secure maximum aggregate power at all Columbia River power plants between Grand Coulee and Priest Rapids; for the other years to maintain as nearly uniform flow as possible at Grand Coulee.

154. *Column 191.*—Contents of Columbia River Reservoir on the last day of each month, based on the capacity curve, shown on plate no. 18,[2] and the assumed storage regulation, shown in column 190.

155. *Column 192.*—Regulated elevation of Columbia River Reservoir on the last day of each month, as shown in table no. 2-34, is derived from the data in column 191 and the capacity curve shown on plate no. 18.[2]

156. *Column 194.*—Regulated yield of Columbia River at Grand Coulee is shown in table no. 2-35.

157. *Column 195.*—Forebay elevation, Grand Coulee power site, represents mean stage in the reservoir during each month as determined by averaging elevation shown in column 192.

158. *Column 196.*—Tailrace elevation at Grand Coulee power site is derived from the discharge shown in column 194 and an unpublished rating curve.

159. *Column 198.*—Potential power at Grand Coulee site, in megawatts, at 80 percent efficiency, was derived by the formula $0.000068\ QH$, where Q is the discharge in second-feet (column 194) and H is the static head in feet (column 197).

160. *Column 199.*—Downstream effect of regulation in Columbia River Reservoir is the difference between the yield of Columbia River at Grand Coulee with and without regulation in Columbia River Reservoir (column 194 minus column 164 of set no. 4).

161. Columns 167, 168, 169, 170, and 171 were copied from the same columns in set no. 4, to three significant figures only.

162. *Column 200.*—Modified yield of Columbia River above Chelan River is shown in table no. 2-36.

163. *Column 201.*—Modified yield of Columbia River above Wenatchee River is shown in table no. 2-37.

164. *Column 202.*—Modified yield of Columbia River at Rock Island Rapids is shown in table no. 2-38.

165. *Column 203.*—Modified yield of Columbia River at Priest Rapids is shown in table no. 2-39.

[2] Not printed.

166. *Column 204.*—Effect of upstream regulation and future irrigation on yield of Columbia River at mouth of Snake River is shown in table no. 2-40.

SET NO. 6

PLAN NO. 6-A (GRAVITY) WITH REGULATION BEHIND LOW GRAND COULEE DAM

CASE 5

167. *General.*—Plan no. 6-A for developing the Columbia Basin irrigation project assumes serving the project by gravity diversion from Clark Fork, Spokane River and Wenatchee River. The regulated yield of Spokane River at Spokane and diversion from Clark Fork to the Spokane River were assumed to be the same as under plan no. 2-A. The total yearly diversion from Spokane River to the Columbia Basin irrigation project was also assumed to be the same as under plan no. 2-A, but the distribution by months would differ slightly, in order that the diversion from Clark Fork to the Columbia Basin irrigation project could be held at a constant rate during May, June, July, and August. This difference in monthly distribution resulted in elevation of Coeur d'Alene Lake, and yield at Post Falls, differing from those derived in plan no. 2-A. The necessary monthly adjustment was made in an auxiliary (unpublished) study.

168. *Column 44.*—Modified input to Pend Oreille Reservoir was copied from column 44, set no. 1.

169. *Column 205.* Regulation in Pend Oreille Reservoir for joint benefit of Columbia Basin irrigation project and power sites on Clark Fork. The lower limit of regulation during the irrigation season was fixed by the elevation of the diversion tunnel intake; at other times by the capacity of the outlet channel.

170. *Column 206.*—Regulated elevation of Pend Oreille Reservoir on the last day of each month is shown in table no. 2-41. Reservoir contents were derived from the proposed regulation shown in column 205 and used to determine elevation by means of the capacity curve shown on plate no. 15.

171. *Column 152.*—Diversion from Pend Oreille Reservoir to Spokane River was copied from column 152, set no. 4. (See pars. 98 and 112, appendix 2.)

172. *Column 208.*—Diverted from Pend Oreille Reservoir to Columbia Basin irrigation project. For the months of May, June, July, and August this diversion is at the rate of 8,100 second-feet, the Spokane River supplying the remainder of the irrigation demand at Hillcrest.

173. *Column 210.*—Regulated yield of Clark Fork at Albany Falls is shown in table no. 2-42.

174. *Column 49.*—Natural yield of Clark Fork at Albany Falls was copied from column 49, set no. 2.

175. *Column 52.*—Natural yield of Clark Fork at Metaline Falls was copied from column 52, set no. 2.

176. *Column 212.*—Modified yield of Clark Fork at Metaline Falls is shown in table no. 2-43.

177. Columns 65, 69, and 70 were copied from set no. 2.

178. *Column 213.*—Modified yield of Columbia River at Kettle Falls is shown in table no. 2-44 to three significant figures only.

179. *Column 151.*—Downstream effect of regulation in Coeur d'Alene Lake is copied from column 151, set no. 4. See paragraph 167 of appendix 2. Table no. 2-45 shows regulated elevation of Coeur d'Alene Lake on the last day of each month under this plan of development. Table no. 2-46 shows regulated yield at Post Falls. Table no. 2-15 shows modified yield at Spokane.

180. *Column 163.*—Assumed effect of future irrigation between Pend Oreille Lake and Grand Coulee was copied from column 163, set no. 4.

181. *Column 90.*—Natural yield of Columbia River at Grand Coulee was copied from column 90, set no. 2.

182. *Column 216.*—Regulation in Columbia River Reservoir for joint benefit of Grand Coulee, Foster Creek, Chelan, Rocky Reach, Rock Island Rapids, Vantage, and Priest Rapids power sites. For the low years 1919–20, 1922–23, 1923–24, 1925–26, 1928–29, 1929–30, 1930–31 the reservoir was regulated to secure maximum aggregate power at all Columbia River sites between Grand Coulee and Priest Rapids; for the other years to maintain as nearly uniform flow as possible at Grand Coulee.

183. *Column 217.*—Regulated elevation of Columbia River Reservoir on the last day of each month is shown in table no. 2-47. Reservoir contents were derived from the assumed storage regulation shown in column 216 and used to determine elevation by means of the capacity curve shown on plate no. 18.

184. *Column 219.*—Regulated yield of Columbia River at Grand Coulee is shown in table no. 2-48.

185. *Column 194.*—Regulated yield of Columbia River at Grand Coulee, plan no. 2-A, with regulation behind low Grand Coulee Dam, was copied from column 194, set. no. 5.

186. *Column 221.*—Modified yield of Columbia River above Chelan River is shown in table no. 2-49.

187. *Column 222.*—Modified yield of Columbia River above Wenatchee River is shown in table no. 2-50.

188. *Column 123.*—Input to Wenatchee Reservoir, modified by regulation in Chiwawa Reservoir, was copied from column 123, set no. 3.

189. *Column 223.*—Regulation in Wenatchee Reservoir. The entire input to Wenatchee Reservoir was assumed to be regulated for the joint benefit of the Quincy unit of the Columbia Basin irrigation project, the greater Wenatchee irrigation project, and a power site at Dryden on the Wenatchee River. The conduit leading from the dam would carry the entire discharge from the reservoir. At a point near the town of Dryden part of the water (723 second-feet prior to June 1925 and 636 second-feet thereafter) could be dropped through a head of about 575 feet to a power plant on the Wenatchee River.

190. *Column 224.*—Contents of Wenatchee Reservoir on the last day of each month was derived from the assumed regulation shown in column 223 and the capacity curve shown on plate no. 21.[2]

191. *Column 225.*—Regulated elevation of Wenatchee Reservoir on the last day of each month, shown in table no. 2-51, was derived

[2] Not printed.

from the data in column 224 and the capacity curve shown on plate no. 21.[2]

192. *Column 226.*—Diversion from Wenatchee Reservoir, in units of 1,000 acre-feet has been converted into second-feet and shown in table no. 2-52.

193. *Column 230.*—Effect of regulation on yield of Wenatchee River below Dryden power site is the difference between the flow assumed to be released near Dryden from the proposed conduit (see discussion, column 223) and the natural discharge below Wenatchee Reservoir. Table no. 2-53 shows the yield of Wenatchee River above the Dryden power site as modified by the assumed regulation. It is not shown in the set-up.

194. *Column 126.*—Regulated yield of Wenatchee River below Wenatchee Reservoir (plan no. 2-A) was copied from column 126, set no. 4.

195. *Column 231.*—Difference in flow of Wenatchee River at mouth due to regulation of Wenatchee Reservoir according to plan no. 6-A (together with proposed diversion for irrigation) and according to plan no. 2-A.

196. *Column 233.*—Total difference in flow of Columbia River below Wenatchee River between plan no. 6-A and plan no. 2-A "as used" is the same as given in column 232, except that the flows were rounded off to the extent necessary to derive modified yield at downstream sites to three significant figures only.

197. Columns 202, 203, and 204 were copied from the same columns in set no. 5.

198. *Column 234.*—Modified yield of Columbia River at Rock Island Rapids is shown in table no. 2-54 to three significant figures only.

199. *Column 235.*—Modified yield of Columbia River at Priest Rapids is shown in table no. 2-55 to three significant figures only.

200. *Column 236.*—Effect of upstream regulation and future irrigation on yield of Columbia River at mouth of Snake River is shown in table no. 2-56.

SET NO. 7

REGULATION BEHIND HIGH GRAND COULEE DAM—IN TWO PARTS: PLAN NO. 4 (PUMPING) CASE 11, COLUMNS 237–255, PLAN NO. 2-A (GRAVITY), CASE 4, COLUMNS 256–270

PUMPING PLAN—CASE 11

201. *Column 237.*—The amount pumped from Columbia River to Grand Coulee Reservoir for Columbia Basin irrigation project includes allowance of 1,000 second-feet for evaporation and seepage losses from Grand Coulee Reservoir. During infrequent intervals when the flow was low a portion of the irrigation demand was assumed to be met by drawing storage from Grand Coulee Reservoir. The maximum assumed storage draft was 328,900 acre-feet. Table no. 2-57, derived from an auxiliary study, shows regulated elevation of Grand Coulee Reservoir on the last day of each month.

202. *Column 238.*—Yield available for regulation in Columbia River Reservoir is the difference between the modified input (column 93, set no. 3) and the amount assumed to be pumped up to Grand Coulee Reservoir (column 237).

[2] Not printed.

203. *Column 240.*—Regulation in Columbia River Reservoir for joint benefit of Grand Coulee, Foster Creek, Chelan, Rocky Reach, Rock Island Rapids, Vantage, and Priest Rapids power sites. (See par. 211 of report.) For the low years, 1916–17, 1919–20, 1921–22, 1922–23, 1923–24, 1925–26, 1928–29, 1929–30, 1930–31, storage was regulated to maintain maximum aggregate power at all Columbia River plants between Grand Coulee and Priest Rapids; for the remaining years to maintain as nearly uniform flow as possible at Grand Coulee.

204. *Column 241.*—Contents of Columbia River Reservoir on the last day of each month was derived from the assumed regulation shown in column 240, and from capacity curve shown on plate no. 18.[2]

205. *Column 242.*—Regulated elevation of Columbia River Reservoir on the last day of each month, shown in table no. 70, was derived from the data in column 241 and the capacity curve shown on plate no. 18.[2]

206. *Column 243.*—Drawdown in Columbia River Reservoir represents the average vertical distance between elevation 1,287.6 feet (U.S. Geological Survey datum) and water surface in the reservoir for each month. It was based on elevations at the end of each month, as shown in column 242.

207. *Column 245.*—Regulated yield of Columbia River at Grand Coulee is shown in table no. 47.

208. *Column 178.*—Regulated yield of Columbia River at Grand Coulee, according to plan no. 4, with regulation behind low dam, was copied from column 178, set no. 5.

209. *Column 246.*—Difference in flow of Columbia River at Grand Coulee between the assumed regulation behind the high dam and behind the low dam. The flow previously obtained at downstream power sites as a result of the assumed regulation behind the low dam (set no. 5, pumping) formed the basis of determining what the flow would be with the assumed regulation behind the high dam, because the only difference was that due to the two plans of utilizing Columbia River Reservoir.

210. *Column 247.*—Static head at Grand Coulee power site was based on an unpublished tailwater rating curve and the elevations shown in column 242.

211. *Column 248.*—Total potential power at Grand Coulee power site, in megawatts, at 80 percent efficiency, was derived by the formula $0.000068\ Q.H.$, where Q is discharge in second-feet (column 245) and H is head in feet (column 247).

212. *Column 249.*—Power required for pumping to Grand Coulee Reservoir was based on an over-all efficiency of pumps and motors of 70 percent and lifting the water to elevation 1,572.6. Inasmuch as regulation in Columbia River Reservoir, below a drawdown of about 60 feet (see par. 211, main report), increases power at sites between Grand Coulee and Snake River at the expense of power at the Grand Coulee site, it was assumed that during periods of low power yield the benefiting plants would share the pumping load with the Grand Coulee plant. Hence the pumping load was distributed between the Columbia River plants in proportion to their respective heads. The values marked "a" in this column represent the apportionment of load carried by the Grand Coulee plant during the periods when the

[2] Not printed.

load was so distributed. During the remaining periods all of the pumping load was assumed to be carried by the Grand Coulee power plant.

213. *Column 250.*—Commercial power at Grand Coulee represents potential power, irrespective of plant capacity.

214. Columns 184, 185, 186, 187, and 188 were copied from the same columns in set no. 5.

215. *Column 251.*—Modified yield of Columbia River above Chelan River is shown in table no. 48.

216. *Column 252.*—Modified yield of Columbia River above Wenatchee River is shown in table no. 49.

217. *Column 253.*—Modified yield of Columbia River at Rock Island Rapids is shown in table no. 50.

218. *Column 254.*—Modified yield of Columbia River at Priest Rapids is shown in table no. 51.

219. *Column 255.*—Effect of upstream regulation and future irrigation on yield of Columbia River at mouth of Snake River is shown in table no. 52.

GRAVITY PLAN—CASE 4

220. *Column 189.*—Modified input to Columbia River Reservoir, gravity plan, was copied from column 189, set no. 5.

221. *Column 256.*—Regulation in Columbia River Reservoir for joint benefit of Grand Coulee, Foster Creek, Chelan, Rocky Reach, Rock Island Rapids, Vantage, and Priest Rapids power sites. (See par. 211 of report.) For the low years 1919–20, 1922–23, 1923–24, 1925–26, 1928–29, 1929–30, and 1930–31 storage was regulated to maintain maximum aggregate power at all Columbia River plants between Grand Coulee and Priest Rapids; for the other years to maintain as nearly uniform flow as possible at Grand Coulee.

222. *Column 257.*—Regulated contents of Columbia River Reservoir on the last day of each month was based on the capacity curve shown on plate no. 18 and the assumed storage regulation shown in column 256.

223. *Column 258.*—Regulated elevation of Columbia River Reservoir on the last day of each month, shown in table no. 2-58, was derived from the data in column 257 and the capacity curve shown on plate no. 18.[2]

224. *Column 260.*—Regulated yield of Columbia River at Grand Coulee is shown in table no. 2-59.

225. *Column 261.*—Forebay elevation, Grand Coulee power site, represents mean stage in the reservoir during each month as determined by averaging elevations shown in column 258.

226. *Column 262.*—Tailrace elevation, Grand Coulee power site, is derived from the discharge shown in column 260 and an unpublished rating curve.

227. *Column 264.*—Potential power at Grand Coulee site, in megawatts, at 80 percent efficiency, was derived by the formula 0.000,068 QH, where Q is discharge in second-feet (column 260) and H is head in feet (column 263).

228. *Column 194.*—Modified yield of Columbia River at Grand Coulee according to plan no. 2-A, with regulation behind low dam, was copied from column 194, set no. 5.

[2] Not printed.

229. *Column 265.*—Difference in flow of Columbia River at Grand Coulee between the assumed regulation behind the high dam and behind the low dam. The flow previously obtained at downstream power sites as a result of the assumed regulation behind the low dam (set no. 5, gravity) formed the basis for determining what the flow would be with the assumed regulation behind the high dam, because the only difference was that due to the two plans of utilizing Columbia River Reservoir.

230. Columns 200, 201, 202, 203, and 204 were copied from set no. 5.

231. *Column 266.*—Modified yield of Columbia River above Chelan River is shown in table no. 2-60.

232. *Column 267.*—Modified yield of Columbia River above Wenatchee River is shown in table no. 2-61.

233. *Column 263.*—Modified yield of Columbia River at Rock Island Rapids is shown in table no. 2-62.

234. *Column 269.*—Modified yield of Columbia River at Priest Rapids is shown in table no. 2-63.

235. *Column 270.*—Effect of upstream regulation and future irrigation on yield of Columbia River at mouth of Snake River is shown in table no. 2-64.

STORAGE ANALYSIS—FLATHEAD LAKE INTERMEDIATE PLAN OF DEVELOPMENT

236. A license granted by the Federal Power Commission to the Rocky Mountain Power Co. (project no. 5, May 1930) permits regulation of Flathead Lake by the use of 1,100,000 acre-feet of storage below elevation 2,893 feet (U. S. Geological Survey datum). This analysis was made to show the effect of such regulation on the elevation of Flathead Lake and the yield of Flathead River below the lake. The assumed irrigation diversion is the same as that assumed in set no. 1. No upstream regulation was assumed, but allowance was made for future irrigation above Flathead Lake of 160,000 acre-feet per year, distributed as follows:

	Acre-feet		*Acre-feet*
April	5,000	November	5,000
May	13,000	December	5,000
June	31,000	January	5,000
July	50,000	February	5,000
August	25,000	March	5,000
September	6,000		
October	5,000	Total	160,000

237. *Column 1.*—Yield of Flathead River below Flathead Lake corrected for natural storage was copied from column 14, set no. 1.

238. *Column 4.*—Regulation in Flathead Lake to maintain as nearly uniform flow as possible in Flathead River below the lake.

239. *Column 5.*—Regulated contents of Flathead Lake on the last day of each month were derived from the assumed regulation shown in column 4.

240. *Column 6.*—Regulated elevation of Flathead Lake on the last day of each month, shown in table no. 2-65, was derived from the data in column 5 and the capacity curve shown on plate no. 13.

241. *Column 8.*—Regulated yield of Flathead River below Flathead Lake is shown in table no. 2-66.

Flathead Lake, regulated by use of 1,100,000 acre-feet of storage between elevations 2,884.03 and 2,893.00 feet U.S. Geological Survey datum. No upstream regulation

[160,000 acre-feet per year deducted for future irrigation]

Month	Run-off corrected for natural storage in Flathead Lake 1,000 acre-feet	Future irrigation 1,000 acre-feet	Modified input 1,000 acre-feet (1–2)	Flathead Lake regulation			Regulated yield below lake	
				Stored + released − 1,000 acre-feet	Contents end of month 1,000 acre-feet	Elevation end of month U.S. Geological Survey datum	1,000 acre-feet (3–4)	Second-feet
	1	2	3	4	5	6	7	8
1913								
April	800	−5	795	0	591	2,885.31	795	13,400
May	2,328	−13	2,315	+667	1,258	2,890.74	1,648	26,800
June	3,729	−31	3,698	+425	1,683	2,894.11	3,273	55,000
July	1,069	−50	1,019	−141	1,542	2,893.00	1,160	18,900
August	429	−25	404	0	1,542	2,893.00	404	6,570
September	216	−6	210	−139	1,403	2,891.90	349	5,860
October	211	−5	206	−154	1,249	2,890.67	360	5,860
November	275	−5	270	−79	1,170	2,890.04	349	5,860
December	171	−5	166	−194	976	2,888.47	360	5,860
1914								
January	181	−5	176	−184	792	2,886.98	360	5,860
February	145	−5	140	−185	607	2,885.44	325	5,860
March	200	−5	195	−165	442	2,884.03	360	5,860
April	802	−5	797	+154	596	2,885.35	643	10,800
May	2,105	−13	2,092	+727	1,323	2,891.26	1,365	22,200
June	1,568	−31	1,537	+219	1,542	2,893.00	1,318	22,200
July	562	−50	512	0	1,542	2,893.00	512	8,330
August	261	−25	236	−166	1,376	2,891.69	402	6,540
September	206	−6	200	−189	1,187	2,890.17	389	6,540
October	418	−5	413	+11	1,198	2,890.26	402	6,540
November	567	−5	562	+173	1,371	2,891.65	389	6,540
December	210	−5	205	−197	1,174	2,890.07	402	6,540
1915								
January	167	−5	162	−241	933	2,888.12	403	6,550
February	122	−5	117	−247	686	2,886.10	364	6,550
March	164	−5	159	−244	442	2,884.03	403	6,550
April	767	−5	762	+137	579	2,885.21	625	10,500
May	1,228	−13	1,215	+502	1,081	2,889.32	713	11,600
June	1,092	−31	1,061	+365	1,446	2,892.24	696	11,700
July	864	−50	814	+96	1,542	2,893.00	718	11,700
August	377	−25	352	−60	1,482	2,892.53	412	6,700
September	256	−6	250	−149	1,333	2,891.34	399	6,700
October	285	−5	280	−132	1,201	2,890.29	412	6,700
November	283	−5	278	−121	1,080	2,889.31	399	6,700
December	242	−5	237	−176	904	2,887.89	413	6,710
1916								
January	172	−5	167	−246	658	2,885.87	413	6,710
February	175	−5	170	−216	442	2,884.03	386	6,710
March	531	−5	526	+16	458	2,884.17	510	8,300
April	934	−5	929	+203	661	2,885.90	726	12,200
May	1,823	−13	1,810	+365	1,026	2,888.88	1,445	23,500
June	3,781	−31	3,750	+739	1,765	2,894.75	3,011	50,600
July	2,561	−50	2,511	−223	1,542	2,893.00	2,734	44,500
August	641	−25	616	0	1,542	2,893.00	616	10,000
September	590	−6	584	0	1,542	2,893.00	584	9,810
October	333	−5	328	−28	1,514	2,892.78	356	5,790
November	183	−5	178	−167	1,347	2,891.45	345	5,790
December	178	−5	173	−183	1,164	2,889.99	356	5,790
1917								
January	120	−5	115	−241	923	2,888.04	356	5,790
February	126	−5	121	−201	722	2,886.40	322	5,790
March	127	−5	122	−234	488	2,884.43	356	5,790
April	304	−5	299	−46	442	2,884.03	345	5,790
May	2,417	−13	2,404	+879	1,321	2,891.25	1,525	24,800
June	3,194	−31	3,163	+221	1,542	2,893.00	2,942	49,400
July	1,422	−50	1,372	0	1,542	2,893.00	1,372	22,300
August	388	−25	363	−35	1,507	2,892.73	398	6,470
September	153	−6	147	−238	1,269	2,890.83	385	6,470
October	139	−5	134	−264	1,005	2,888.71	398	6,470
November	133	−5	128	−257	748	2,886.62	385	6,470
December	242	−5	237	−161	587	2,885.27	398	6,470

Flathead Lake, regulated by use of 1,100,000 acre-feet of storage between elevations 2,884.03 and 2,893.00 feet U.S. Geological Survey datum. No upstream regulation—Continued

Month	Run-off corrected for natural storage in Flathead Lake 1,000 acre-feet	Future irrigation 1,000 acre-feet	Modified input 1,000 acre-feet (1–2)	Flathead Lake regulation			Regulated yield below lake	
				Stored + released − 1,000 acre-feet	Contents end of month 1,000 acre-feet	Elevation end of month U.S. Geological Survey datum	1,000 acre-feet (3–4)	Second-feet
	1	2	3	4	5	6	7	8
1918								
January	667	−5	662	+264	851	2,887.46	398	6,470
February	115	−5	110	−250	601	2,885.39	360	6,480
March	244	−5	239	−159	442	2,884.03	398	6,470
April	993	−5	988	+250	692	2,886.15	738	12,400
May	2,063	−13	2,050	+433	1,125	2,889.67	1,617	26,300
June	2,990	−31	2,959	+417	1,542	2,893.00	2,542	42,700
July	685	−50	635	0	1,542	2,893.00	635	10,300
August	332	−25	307	−7	1,535	2,892.95	314	5,100
September	177	−6	171	−132	1,403	2,891.90	303	5,100
October	185	−5	180	−134	1,269	2,890.83	314	5,100
November	170	−5	165	−138	1,131	2,889.72	303	5,100
December	151	−5	146	−168	963	2,888.37	314	5,100
1919								
January	138	−5	133	−181	782	2,886.90	314	5,100
February	122	−5	117	−165	617	2,885.53	282	5,080
March	144	−5	139	−175	442	2,884.03	314	5,100
April	708	−5	703	+108	550	2,884.96	595	10,000
May	2,282	−13	2,269	+812	1,362	2,891.57	1,457	23,700
June	1,620	−31	1,589	+180	1,542	2,893.00	1,409	23,700
July	424	−50	374	0	1,542	2,893.00	374	6,080
August	219	−25	194	−56	1,486	2,892.56	250	4,060
September	85	−6	79	−163	1,323	2,891.26	242	4,060
October	97	−5	92	−158	1,165	2,890.00	250	4,060
November	143	−5	138	−104	1,061	2,889.16	242	4,060
December	92	−5	87	−163	898	2,887.84	250	4,060
1920								
January	96	−5	91	−159	739	2,886.54	250	4,060
February	103	−5	98	−136	603	2,885.41	234	4,060
March	93	−5	88	−161	442	2,884.03	249	4,050
April	369	−5	364	0	442	2,884.03	364	6,120
May	1,696	−13	1,683	+558	1,000	2,888.67	1,125	18,300
June	2,386	−31	2,355	+542	1,542	2,893.00	1,813	30,500
July	1,105	−50	1,055	0	1,542	2,893.00	1,055	17,200
August	329	−25	304	−104	1,438	2,892.18	408	6,640
September	250	−6	244	−151	1,287	2,890.97	395	6,640
October	349	−5	344	−64	1,223	2,890.46	408	6,640
November	211	−5	206	−189	1,034	2,888.94	395	6,640
December	203	−5	198	−210	824	2,887.24	408	6,640
1921								
January	203	−5	198	−210	614	2,885.50	408	6,640
February	202	−5	197	−172	442	2,884.03	369	6,640
March	448	−5	443	0	442	2,884.03	443	7,200
April	995	−5	990	+252	694	2,886.17	738	12,400
May	2,912	−13	2,899	+778	1,472	2,892.45	2,121	34,500
June	2,909	−31	2,878	+70	1,542	2,893.00	2,808	47,200
July	1,001	−50	951	0	1,542	2,893.00	951	15,500
August	350	−25	325	−28	1,514	2,892.78	353	5,740
September	185	−6	179	−163	1,351	2,891.49	342	5,740
October	205	−5	200	−153	1,198	2,890.26	353	5,740
November	204	−5	199	−143	1,055	2,889.11	342	5,740
December	267	−5	262	−91	964	2,888.38	353	5,740
1922								
January	217	−5	212	−141	823	2,887.23	353	5,740
February	129	−5	124	−194	629	2,885.63	318	5,730
March	170	−5	165	−187	442	2,884.03	352	5,730
April	356	−5	351	0	442	2,884.03	351	5,900
May	2,279	−13	2,266	+827	1,269	2,890.83	1,439	23,400
June	2,803	−31	2,772	+273	1,542	2,893.00	2,499	42,000
July	722	−50	672	0	1,542	2,893.00	672	10,900
August	321	−25	296	−23	1,519	2,892.82	319	5,180
September	190	−6	184	−124	1,395	2,891.84	308	5,180
October	165	−5	160	−159	1,236	2,890.57	319	5,180
November	160	−5	155	−153	1,083	2,889.34	308	5,180
December	130	−5	125	−194	889	2,887.77	319	5,180

Flathead Lake, regulated by use of 1,100,000 acre-feet of storage between elevations 2,884.03 and 2,893.00 feet U.S. Geological Survey datum. No upstream regulation—Continued

Month	Run-off corrected for natural storage in Flathead Lake 1,000 acre-feet	Future irrigation 1,000 acre-feet	Modified input 1,000 acre-feet (1–2)	Flathead Lake regulation			Regulated yield below lake	
				Stored + released — 1,000 acre-feet	Contents end of month 1,000 acre-feet	Elevation end of month U.S. Geological Survey datum	1,000 acre-feet (3–4)	Second-feet
	1	2	3	4	5	6	7	8
1923								
January	212	−5	207	−112	777	2,886.86	319	5,180
February	120	−5	115	−173	604	2,885.42	288	5,180
March	162	−5	157	−162	442	2,884.03	319	5,180
April	631	−5	626	+70	512	2,884.64	556	9,350
May	2,547	−13	2,534	+849	1,361	2,891.57	1,685	27,400
June	2,740	−31	2,709	+181	1,542	2,893.00	2,528	42,500
July	1,062	−50	1,012	0	1,542	2,893.00	1,012	16,500
August	391	−25	366	0	1,542	2,893.00	366	5,950
September	287	−6	281	−36	1,506	2,892.72	317	5,330
October	39	−5	34	−294	1,212	2,890.37	328	5,330
November	158	−5	153	−164	1,048	2,889.05	317	5,330
December	129	−5	124	−204	844	2,887.40	328	5,330
1924								
January	178	−5	173	−155	689	2,886.13	328	5,330
February	189	−5	184	−123	566	2,885.10	307	5,330
March	209	−5	204	−124	442	2,884.03	328	5,330
April	413	−5	408	0	442	2,884.03	408	6,860
May	2,740	−13	2,727	+1,100	1,542	2,893.00	1,627	26,500
June	1,898	−31	1,867	0	1,542	2,893.00	1,867	31,400
July	729	−50	679	0	1,542	2,893.00	679	11,000
August	288	−25	263	−102	1,440	2,892.19	365	5,940
September	166	−6	160	−193	1,247	2,890.65	353	5,940
October	174	−5	169	−196	1,051	2,889.08	365	5,940
November	190	−5	185	−168	883	2,887.72	353	5,940
December	329	−5	324	−41	842	2,887.38	365	5,940
1925								
January	128	−5	123	−242	600	2,885.38	365	5,940
February	247	−5	242	−87	513	2,884.64	329	5,940
March	209	−5	204	−71	442	2,884.03	365	5,940
April	1,858	−5	1,853	+657	1,099	2,889.46	1,196	20,100
May	3,581	−13	3,568	+543	1,642	2,893.79	3,025	49,200
June	2,594	−31	2,563	−100	1,542	2,893.00	2,663	44,800
July	1,068	−50	1,018	0	1,542	2,893.00	1,018	16,600
August	440	−25	415	0	1,542	2,893.00	415	6,750
September	325	−6	319	−31	1,511	2,892.76	350	5,880
October	196	−5	191	−171	1,340	2,891.40	362	5,880
November	170	−5	165	−185	1,155	2,889.91	350	5,880
December	184	−5	179	−183	972	2,888.44	362	5,880
1926								
January	130	−5	125	−237	735	2,886.51	362	5,880
February	152	−5	147	−180	555	2,885.00	327	5,880
March	255	−5	250	−113	442	2,884.03	363	5,900
April	1,076	−5	1,071	+309	751	2,886.64	762	12,800
May	1,598	−13	1,585	+791	1,542	2,893.00	794	12,900
June	789	−31	758	0	1,542	2,893.00	758	12,700
July	345	−50	295	−171	1,371	2,891.65	466	7,580
August	148	−25	123	−343	1,028	2,888.89	466	7,580
September	347	−6	341	−110	918	2,888.00	451	7,580
October	633	−5	628	+162	1,080	2,889.31	466	7,580
November	423	−5	418	−33	1,047	2,889.05	451	7,580
December	506	−5	501	+35	1,082	2,889.33	466	7,580
1927								
January	266	−5	261	−205	877	2,887.67	466	7,580
February	229	−5	224	−197	680	2,886.05	421	7,580
March	233	−5	228	−238	442	2,884.03	466	7,580
April	640	−5	635	+76	518	2,884.69	559	9,400
May	2,696	−13	2,683	+906	1,424	2,892.07	1,777	28,900
June	4,166	−31	4,135	+380	1,804	2,895.05	3,755	63,100
July	1,691	−50	1,641	−262	1,542	2,893.00	1,903	30,900
August	557	−25	532	−69	1,473	2,892.46	601	9,780
September	564	−6	558	−24	1,449	2,892.27	582	9,780
October	699	−5	694	+93	1,542	2,893.00	601	9,780
November	411	−5	406	−166	1,376	2,891.69	572	9,620
December	433	−5	428	−164	1,212	2,890.37	592	9,620

Flathead Lake, regulated by use of 1,100,000 acre-feet of storage between elevations 2,884.03 and 2,893.00 feet U.S. Geological Survey datum. No upstream regulation—Continued

Month	Run-off corrected for natural storage in Flathead Lake 1,000 acre-feet	Future irrigation 1,000 acre-feet	Modified input 1,000 acre-feet (1–2)	Flathead Lake regulation			Regulated yield below lake	
				Stored + released − 1,000 acre-feet	Contents end of month 1,000 acre-feet	Elevation end of month U.S. Geological Survey datum	1,000 acre-feet (3–4)	Second-feet
	1	2	3	4	5	6	7	8
1928								
January	322	−5	317	−275	937	2,888.16	592	9,620
February	297	−5	292	−261	676	2,886.02	553	9,620
March	408	−5	403	−189	487	2,884.42	592	9,620
April	724	−5	719	+70	557	2,885.02	649	10,900
May	4,278	−13	4,265	+1,504	2,061	2,896.99	2,761	44,900
June	2,468	−31	2,437	−519	1,542	2,893.00	2,956	49,700
July	1,473	−50	1,423	0	1,542	2,893.00	1,423	23,100
August	458	−25	433	0	1,542	2,893.00	433	7,040
September	241	−6	235	−124	1,418	2,892.02	359	6,030
October	314	−5	309	−62	1,356	2,891.53	371	6,030
November	246	−5	241	−118	1,238	2,890.58	359	6,030
December	173	−5	168	−203	1,035	2,888.95	371	6,030
1929								
January	160	−5	155	−215	820	2,887.21	370	6,020
February	131	−5	126	−208	612	2,885.48	334	6,020
March	205	−5	200	−170	442	2,884.03	370	6,020
April	372	−5	367	0	442	2,884.03	367	6,170
May	2,020	−13	2,007	+697	1,139	2,889.79	1,310	21,300
June	2,166	−31	2,135	+403	1,542	2,893.00	1,752	29,100
July	567	−50	517	0	1,542	2,893.00	517	8,410
August	218	−25	193	−85	1,457	2,892.33	278	4,520
September	130	−6	124	−145	1,312	2,891.17	269	4,520
October	129	−5	124	−154	1,158	2,889.94	278	4,520
November	101	−5	96	−173	985	2,888.54	269	4,520
December	158	−5	153	−125	860	2,887.53	278	4,520
1930								
January	89	−5	84	−194	666	2,885.94	278	4,520
February	145	−5	140	−111	555	2,885.00	251	4,520
March	171	−5	166	−113	442	2,884.03	279	4,540
April	1,259	−5	1,254	+373	815	2,887.17	881	14,800
May	1,662	−13	1,649	+456	1,271	2,890.85	1,193	19,400
June	1,462	−31	1,431	+271	1,542	2,893.00	1,160	19,500
July	481	−50	431	0	1,542	2,893.00	431	7,010
August	198	−25	173	−144	1,398	2,891.86	317	5,160
September	164	−6	158	−149	1,249	2,890.67	307	5,160
October	196	−5	191	−126	1,123	2,889.66	317	5,160
November	208	−5	203	−104	1,019	2,888.82	307	5,160
December	147	−5	142	−175	844	2,887.40	317	5,160
1931								
January	145	−5	140	−177	667	2,885.95	317	5,160
February	161	−5	156	−131	536	2,884.84	287	5,160
March	228	−5	223	−94	442	2,884.03	317	5,160

242. Tables nos. 47 to 70 in the text of the main report indicate modified flow available at each power site, and elevations on the last day of each month for some of the more critical reservoir sites, as derived in accordance with plan no. 4, when developed with Grand Coulee high dam. The additional information, regarding modified flow at power sites and elevations of reservoirs on the last day of each month, that was derived during the investigation, is included in the following tables nos. 2-1 to 2-66. Each table is preceded by a brief statement setting forth amount of storage involved and the allowance made for future irrigation.

HUNGRY HORSE RESERVOIR

No upstream regulation. Regulation of Hungry Horse Reservoir between elevation 3,312 feet and 3,435 feet, United States Geological Survey datum, providing 1,100,000 acre-feet of storage. Regulated elevation 50 percent of time about 3,389 feet.

TABLE NO. 2-1.—*Regulated elevation of Hungry Horse Reservoir on the last day of each month*

[U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	3,312	3,360	3,435	3,435	3,427	3,417	3,407	3,393	3,376	3,358	3,336	3,312
1914-15	3,335	3,393	3,435	3,435	3,425	3,414	3,404	3,395	3,376	3,358	3,339	3,312
1915-16	3,347	3,383	3,410	3,425	3,417	3,406	3,396	3,384	3,368	3,350	3,328	3,312
1916-17	3,312	3,350	3,435	3,435	3,429	3,425	3,415	3,406	3,391	3,374	3,355	3,329
1917-18	3,312	3,376	3,435	3,435	3,428	3,416	3,400	3,382	3,363	3,356	3,335	3,312
1918-19	3,312	3,375	3,435	3,435	3,428	3,417	3,405	3,392	3,375	3,356	3,335	3,312
1919-20	3,349	3,409	3,435	3,433	3,425	3,415	3,403	3,392	3,376	3,360	3,343	3,321
1920-21	3,312	3,383	3,435	3,435	3,426	3,416	3,409	3,395	3,380	3,359	3,335	3,312
1921-22	3,312	3,377	3,435	3,435	3,429	3,418	3,407	3,393	3,384	3,370	3,355	3,334
1922-23	3,312	3,389	3,435	3,434	3,425	3,414	3,400	3,386	3,370	3,354	3,335	3,312
1923-24	3,312	3,388	3,435	3,435	3,426	3,416	3,405	3,390	3,374	3,356	3,336	3,315
1924-25	3,312	3,408	3,435	3,432	3,422	3,410	3,394	3,382	3,366	3,350	3,333	3,312
1925-26	3,331	3,416	3,435	3,435	3,426	3,416	3,403	3,389	3,375	3,355	3,335	3,312
1926-27	3,349	3,414	3,435	3,427	3,414	3,400	3,389	3,376	3,365	3,363	3,335	3,312
1927-28	3,312	3,377	3,435	3,435	3,421	3,408	3,403	3,398	3,381	3,363	3,338	3,312
1928-29	3,312	3,417	3,435	3,435	3,427	3,416	3,406	3,394	3,378	3,360	3,340	3,320
1929-30	3,312	3,388	3,435	3,434	3,425	3,413	3,401	3,387	3,371	3,352	3,335	3,312
1930-31	3,367	3,412	3,435	3,430	3,418	3,406	3,393	3,381	3,366	3,348	3,330	3,312
Average	3,323	3,390	3,434	3,433	3,424	3,414	3,402	3,390	3,374	3,357	3,338	3,315

KOOTENAI RESERVOIR

No upstream regulation. Regulation in Kootenai Reservoir between elevations 1,740.20 feet and 1,746 feet, United States Coast and Geodetic Survey datum, providing 715,000 acre-feet of storage. Modified elevation 50 percent of time about 1,746 feet.

TABLE NO. 2-2.—*Modified stage of Kootenai Reservoir on the last day of each month*

[Add 1,700 to determine elevation in feet, U.S. Coast and Geodetic Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	45.92	54.00	56.52	48.50	46.00	46.00	46.00	45.40	44.09	44.03	41.83	41.65
1914-15	46.74	53.64	54.44	49.54	46.00	46.00	46.00	46.00	46.00	44.03	41.89	41.38
1915-16	46.70	49.50	49.40	48.50	46.20	46.00	46.00	46.00	45.70	43.04	41.27	43.84
1916-17	46.60	50.84	63.24	54.20	48.20	46.00	46.00	46.00	43.84	43.41	42.09	40.62
1917-18	42.19	53.49	57.14	50.79	46.00	46.00	45.63	43.85	43.00	43.60	41.66	41.66
1918-19	46.09	49.59	56.69	48.59	46.00	46.00	46.00	45.55	44.03	44.26	43.22	41.76
1919-20	47.29	57.19	56.29	48.29	46.00	46.00	45.83	45.35	44.14	42.75	41.24	40.40
1920-21	42.19	48.84	54.64	51.69	46.00	46.00	46.00	45.76	44.20	42.27	41.94	42.39
1921-22	45.54	56.79	57.24	48.99	46.00	46.00	46.00	46.00	46.00	44.58	42.64	40.79
1922-23	42.15	52.30	54.30	46.50	46.00	46.00	46.00	45.35	43.94	43.91	42.07	40.53
1923-24	45.20	53.19	56.89	48.99	46.00	46.00	46.00	44.88	43.55	41.17	41.60	40.60
1924-25	41.69	52.40	48.00	46.00	46.00	46.00	45.17	44.35	43.55	41.84	43.06	42.71
1925-26	48.39	58.79	56.04	47.74	46.00	46.00	46.00	45.21	44.30	42.56	41.21	40.22
1926-27	46.20	46.79	46.29	46.00	46.00	46.00	46.00	46.00	45.95	44.82	42.99	41.43
1927-28	44.99	51.44	58.54	50.34	45.44	46.64	46.37	46.00	46.00	44.68	42.27	42.36
1928-29	45.09	60.99	54.19	49.19	46.00	46.00	46.00	46.00	44.78	43.15	41.08	40.51
1929-30	41.89	51.39	51.79	46.09	46.00	46.00	45.91	44.34	43.37	41.31	40.74	40.20
1930-31	47.34	49.39	51.49	47.17	46.00	46.00	45.14	44.50	43.04	41.87	40.85	40.43
Average	45.12	52.81	54.62	48.73	46.10	46.04	45.89	45.36	44.42	43.18	41.87	41.30

COLUMBIA RIVER AT KETTLE FALLS POWER SITE

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 575,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in five reservoirs aggregating 5,535,000 acre-feet of storage.

TABLE NO. 2-3.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Kettle Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	41.7	144	391	240	144	100	64.2	54.4	45.8	42.2	42.1	43.9
1914–15	76.7	180	250	232	128	81.2	68.0	63.8	49.2	41.1	40.2	42.4
1915–16	71.3	146	157	163	149	88.6	54.7	54.1	44.7	39.3	37.5	46.5
1916–17	85.6	168	282	369	166	101	57.0	49.7	40.1	37.1	36.1	35.2
1917–18	41.0	137	320	266	137	81.8	68.4	54.4	50.6	48.9	47.9	46.7
1918–19	72.5	185	263	223	129	91.0	71.1	53.2	45.3	41.8	41.9	42.3
1919–20	61.0	160	248	206	135	79.4	49.8	36.9	32.6	31.8	31.5	31.9
1920–21	33.1	109	197	283	173	95.5	89.9	66.4	50.8	47.5	44.9	46.2
1921–22	69.8	184	338	219	130	69.1	56.4	58.9	45.4	38.8	36.5	35.2
1922–23	41.3	121	304	189	119	88.5	59.7	45.4	36.4	35.8	34.1	33.9
1923–24	52.2	152	294	222	123	87.3	51.1	40.2	36.7	35.3	35.7	36.4
1924–25	38.1	149	185	147	114	84.0	56.3	53.5	46.8	45.6	43.5	46.8
1925–26	105	254	291	215	127	74.5	49.0	39.8	37.0	35.4	34.9	32.3
1926–27	53.0	127	115	135	92.8	76.8	68.1	55.6	46.5	39.0	39.2	38.4
1927–28	54.1	132	348	253	155	131	109	90.4	66.3	57.9	56.4	58.7
1928–29	64.2	260	305	226	122	71.1	53.7	40.6	36.8	35.1	33.3	33.6
1929–30	34.5	92.1	222	144	100	68.1	43.9	36.0	32.1	29.2	29.9	30.5
1930–31	56.0	126	189	178	117	77.7	47.2	37.5	33.3	31.1	30.8	31.9
Highest	105	250	391	369	173	131	109	90.4	66.3	57.9	56.4	58.7
Average	58.4	157	261	217	131	85.9	62.1	51.7	43.1	39.6	38.7	39.6
Lowest	33.1	92.1	115	135	92.8	68.1	43.9	36.0	32.1	29.2	29.9	30.5

COLUMBIA RIVER AT GRAND COULEE AND FOSTER CREEK POWER SITES

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 625,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 5,950,000 acre-feet of storage. Without reregulation in Columbia River Reservoir. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE NO. 2-4.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Grand Coulee and Foster Creek power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	58.3	164	398	235	136	96.2	64.6	58.1	49.4	47.3	48.2	55.0
1914–15	87.4	185	246	224	120	76.9	68.0	66.1	51.1	43.6	43.3	48.8
1915–16	73.6	145	153	155	141	83.9	54.5	57.2	47.7	42.3	43.4	64.1
1916–17	104	180	291	373	158	96.3	57.1	52.8	43.2	40.1	39.2	39.5
1917–18	53.5	160	339	260	129	77.6	68.6	58.0	60.0	67.9	59.3	58.6
1918–19	81.2	191	262	213	122	86.2	70.6	55.9	48.5	47.7	48.7	50.6
1919–20	79.2	168	245	198	126	74.9	49.4	39.8	35.9	35.2	35.0	37.8
1920–21	43.1	110	193	277	166	89.3	90.3	70.4	55.4	55.9	57.5	63.2
1921–22	85.3	197	337	212	122	64.6	56.3	61.9	48.8	42.1	40.0	40.3
1922–23	51.2	131	305	180	112	83.8	59.2	48.0	39.2	41.4	38.8	40.3
1923–24	63.2	162	300	220	118	86.1	52.1	43.7	39.7	38.7	45.3	45.9
1924–25	45.7	148	177	138	106	79.5	56.1	56.6	51.3	51.2	57.4	62.7
1925–26	120	267	287	208	118	69.8	48.7	42.6	39.8	38.2	41.5	40.6
1926–27	56.7	124	109	127	85.0	72.4	68.1	59.8	55.2	46.7	48.6	50.1
1927–28	64.7	146	355	246	148	128	111	105	78.6	69.9	68.3	75.3
1928–29	77.1	273	304	222	119	70.2	56.1	46.6	41.7	39.0	36.5	38.2
1929–30	41.5	83.8	216	135	93.0	65.9	45.8	39.6	35.4	32.9	34.8	36.8
1930–31	55.5	115	181	172	111	75.4	47.5	40.6	36.6	34.9	34.8	38.4
Highest	120	273	398	373	166	128	111	105	78.6	69.9	68.3	75.3
Average	69.0	164	261	211	124	82.1	62.4	55.7	47.6	45.3	45.6	49.2
Lowest	41.5	83.8	109	127	85.0	64.6	45.8	39.6	35.4	32.9	34.8	36.8

COLUMBIA RIVER AT CHELAN POWER SITE

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 685,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 5,950,000 acre-feet of storage. Without reregulation in Columbia River Reservoir. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE No. 2-5.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Chelan power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	60.8	172	417	254	144	104	68.7	62.2	53.4	49.6	50.6	57.2
1914–15	91.5	198	264	237	127	82.0	71.5	68.0	54.8	45.1	45.3	50.6
1915–16	77.1	152	161	161	149	90.3	57.2	60.0	50.8	44.2	45.6	66.2
1916–17	112	200	311	389	170	104	60.7	54.0	45.7	41.7	41.3	40.9
1917–18	52.3	162	359	278	137	84.4	74.0	60.8	62.0	72.4	63.1	60.4
1918–19	84.7	202	275	226	129	90.1	74.2	58.6	50.8	49.6	51.8	51.9
1919–20	81.7	175	265	212	133	80.0	51.0	42.5	37.8	36.4	37.2	38.4
1920–21	42.1	112	202	286	173	92.5	94.4	70.7	58.4	58.0	59.2	65.2
1921–22	87.5	207	360	226	128	69.9	58.2	65.2	52.0	44.1	41.2	42.3
1922–23	50.8	133	322	192	115	87.9	62.4	51.0	41.8	43.8	40.8	41.9
1923–24	62.9	170	315	232	123	89.4	55.0	46.4	41.9	40.1	47.1	47.8
1924–25	45.7	154	187	140	107	82.3	58.1	58.7	53.7	53.1	60.3	64.7
1925–26	119	278	303	217	122	73.2	52.2	45.2	42.2	40.5	43.1	42.1
1926–27	56.9	127	110	129	87.4	75.2	69.4	63.1	58.3	49.9	51.1	53.1
1927–28	64.5	148	368	260	154	132	117	111	85.2	76.0	74.2	78.4
1928–29	80.3	282	324	233	125	73.2	58.7	49.3	43.6	40.4	37.4	39.0
1929–30	41.2	85.4	227	141	94.7	67.5	48.0	41.5	36.5	34.5	36.0	37.9
1930–31	57.7	123	191	177	113	77.5	49.0	42.3	37.7	35.7	35.8	38.7
Highest	119	282	417	389	173	132	117	111	85.2	76.0	74.2	78.4
Average	70.5	171	276	222	130	86.4	65.5	58.4	50.4	47.5	47.8	50.9
Lowest	41.2	85.4	110	129	87.4	67.5	48.0	41.5	36.5	34.5	35.8	37.9

CHELAN RESERVOIR

No upstream regulation. Regulation in Chelan Reservoir between elevation 1,079 feet and 1,100 feet, United States Geological Survey datum, providing 665,000 acre-feet of storage. Regulated elevation 50 percent of time about 1,090 feet.

TABLE No. 2-6.—*Regulated elevation of Chelan Reservoir on the last day of each month*

[U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	1,079	1,085	1,096	1,100	1,099	1,098	1,096	1,092	1,089	1,087	1,083	1,081
1914–15	1,083	1,090	1,097	1,100	1,099	1,098	1,096	1,095	1,093	1,090	1,088	1,087
1915–16	1,090	1,093	1,094	1,094	1,093	1,091	1,089	1,087	1,084	1,082	1,080	1,079
1916–17	1,079	1,084	1,094	1,100	1,100	1,098	1,096	1,093	1,090	1,087	1,084	1,081
1917–18	1,079	1,085	1,094	1,100	1,099	1,097	1,093	1,090	1,089	1,089	1,086	1,083
1918–19	1,083	1,089	1,097	1,100	1,099	1,097	1,094	1,091	1,089	1,086	1,083	1,079
1919–20	1,080	1,087	1,095	1,100	1,100	1,098	1,095	1,093	1,090	1,088	1,086	1,083
1920–21	1,081	1,083	1,088	1,092	1,092	1,090	1,090	1,088	1,085	1,083	1,082	1,080
1921–22	1,079	1,087	1,097	1,100	1,100	1,097	1,097	1,095	1,095	1,092	1,089	1,086
1922–23	1,084	1,089	1,098	1,100	1,099	1,097	1,094	1,091	1,088	1,085	1,082	1,079
1923–24	1,080	1,087	1,096	1,100	1,100	1,097	1,095	1,091	1,089	1,085	1,084	1,082
1924–25	1,081	1,091	1,094	1,095	1,093	1,091	1,089	1,086	1,086	1,084	1,081	1,079
1925–26	1,081	1,092	1,098	1,100	1,100	1,098	1,095	1,093	1,091	1,089	1,087	1,086
1926–27	1,089	1,092	1,094	1,094	1,092	1,090	1,089	1,088	1,086	1,083	1,082	1,079
1927–28	1,079	1,083	1,094	1,095	1,094	1,092	1,091	1,090	1,089	1,088	1,085	1,084
1928–29	1,083	1,093	1,098	1,100	1,099	1,097	1,096	1,094	1,092	1,090	1,088	1,086
1929–30	1,084	1,088	1,094	1,095	1,093	1,092	1,090	1,087	1,085	1,083	1,081	1,079
1930–31	1,082	1,085	1,090	1,091	1,091	1,090	1,088	1,086	1,084	1,082	1,080	1,079
Average	1,082	1,088	1,095	1,098	1,097	1,095	1,093	1,091	1,089	1,086	1,084	1,082

COLUMBIA RIVER AT ROCKY REACH POWER SITE

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 712,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in seven reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 6,615,000 acre-fect of storage. Without reregulation in Columbia River Reservoir. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE No. 2-7.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rocky Reach power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	62.9	174	422	262	149	109	72.0	65.5	56.9	52.0	53.3	59.9
1914–15	92.8	201	271	243	131	85.6	74.2	69.9	57.9	47.0	47.3	52.7
1915–16	78.5	154	163	163	153	94.6	59.6	62.4	53.5	46.3	47.8	68.2
1916–17	118	206	315	396	179	110	63.7	55.9	48.4	44.0	43.7	43.0
1917–18	53.1	162	364	290	143	89.5	78.4	63.9	64.9	76.1	66.8	63.0
1918–19	87.4	205	277	233	135	93.8	77.8	61.7	53.9	52.4	55.3	54.5
1919–20	83.4	175	270	219	138	83.9	53.3	45.2	40.4	38.4	39.6	40.3
1920–21	43.2	112	203	290	177	95.4	97.2	72.0	61.4	60.5	61.4	67.5
1921–22	89.4	210	365	235	132	74.1	60.4	67.9	54.7	46.2	42.9	44.6
1922–23	51.7	133	326	198	119	91.4	65.4	53.9	44.6	46.5	43.2	44.1
1923–24	63.2	170	319	238	126	92.2	57.7	49.0	44.4	42.2	49.2	50.0
1924–25	46.8	155	192	143	109	85.4	60.6	61.2	56.2	55.2	62.8	67.0
1925–26	118	279	308	223	125	76.1	55.2	47.8	44.6	42.7	44.9	43.7
1926–27	56.6	129	114	132	90.3	78.0	71.2	65.9	61.1	52.8	53.4	55.6
1927–28	65.5	148	372	267	159	135	121	114	88.8	79.1	77.6	80.4
1928–29	82.1	280	332	238	128	75.4	60.7	51.5	45.6	42.2	39.1	40.8
1929–30	42.7	86.7	232	145	97.1	69.5	50.2	43.7	38.5	36.6	37.8	39.6
1930–31	58.3	125	194	179	115	79.6	51.1	44.5	39.3	37.2	37.1	39.8
Highest	118	280	422	396	179	135	121	114	88.8	79.1	77.6	80.4
Average	71.9	172	280	227	134	89.9	68.3	60.9	53.1	49.9	50.2	53.0
Lowest	42.7	86.7	114	132	90.3	69.5	50.2	43.7	38.5	36.6	37.1	39.6

CHIWAWA RESERVOIR

No upstream regulation. Regulation in Chiwawa Reservoir between elevations 2,409 feet and 2,550 feet, United States Geological Survey datum, providing 482,000 acre-feet of storage. Regulated elevation 50 percent of time about 2,515 feet.

TABLE No. 2-8.—*Regulated elevation of Chiwawa Reservoir the last day of each month*

[U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	2,486	2,501	2,529	2,537	2,536	2,533	2,529	2,526	2,522	2,518	2,512	2,509
1914–15	2,518	2,531	2,539	2,542	2,538	2,534	2,530	2,528	2,523	2,518	2,511	2,506
1915–16	2,514	2,515	2,513	2,508	2,502	2,495	2,489	2,483	2,475	2,466	2,459	2,454
1916–17	2,461	2,482	2,511	2,525	2,526	2,522	2,516	2,510	2,504	2,497	2,490	2,483
1917–18	2,478	2,492	2,514	2,526	2,524	2,520	2,514	2,508	2,511	2,514	2,510	2,505
1918–19	2,509	2,519	2,533	2,535	2,531	2,527	2,523	2,518	2,516	2,511	2,507	2,500
1919–20	2,505	2,519	2,533	2,541	2,539	2,536	2,530	2,526	2,522	2,519	2,515	2,510
1920–21	2,507	2,512	2,519	2,523	2,519	2,516	2,517	2,513	2,508	2,504	2,502	2,500
1921–22	2,503	2,523	2,544	2,550	2,548	2,544	2,542	2,539	2,542	2,538	2,533	2,528
1922–23	2,526	2,536	2,550	2,549	2,546	2,542	2,536	2,531	2,526	2,522	2,517	2,511
1923–24	2,519	2,533	2,545	2,549	2,548	2,543	2,538	2,533	2,528	2,523	2,524	2,520
1924–25	2,520	2,536	2,542	2,540	2,536	2,531	2,526	2,522	2,520	2,515	2,512	2,508
1925–26	2,515	2,534	2,544	2,546	2,542	2,538	2,532	2,527	2,523	2,517	2,513	2,511
1926–27	2,518	2,523	2,523	2,519	2,513	2,506	2,504	2,498	2,493	2,487	2,480	2,471
1927–28	2,470	2,484	2,509	2,513	2,510	2,505	2,503	2,502	2,500	2,498	2,494	2,489
1928–29	2,491	2,515	2,525	2,526	2,522	2,516	2,511	2,505	2,499	2,491	2,484	2,476
1929–30	2,471	2,483	2,493	2,492	2,486	2,478	2,469	2,459	2,448	2,435	2,423	2,409
1930–31	2,431	2,446	2,456	2,458	2,455	2,449	2,442	2,437	2,431	2,422	2,418	2,409
Average	2,497	2,510	2,523	2,527	2,523	2,519	2,514	2,509	2,505	2,500	2,495	2,489

WENATCHEE RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING; PLAN NO. 2A AND COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Plan no. 2-A: Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Plan no. 4: Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Upstream regulation of 482,000 acre-feet in Chiwawa Reservoir. Reregulation in Wanatchee Reservoir between elevations 1,901 feet and 1,980 feet, United States Geological Survey datum, providing 1,000,000 acre-feet of storage. Regulated elevation 50 percent of time about 1,953 feet.

TABLE NO. 2-9.—*Regulated elevation of Wenatchee Reservoir on the last day of each month*

[U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	1,930	1,944	1,966	1,975	1,974	1,971	1,968	1,965	1,961	1,958	1,954	1,952
1914–15	1,954	1,966	1,972	1,974	1,970	1,966	1,962	1,962	1,959	1,954	1,948	1,945
1915–16	1,949	1,950	1,950	1,946	1,941	1,935	1,929	1,925	1,918	1,910	1,903	1,901
1916–17	1,904	1,922	1,947	1,960	1,961	1,957	1,951	1,946	1,939	1,933	1,926	1,919
1917–18	1,913	1,925	1,945	1,958	1,956	1,951	1,946	1,940	1,945	1,952	1,949	1,944
1918–19	1,946	1,954	1,967	1,968	1,964	1,959	1,955	1,951	1,950	1,947	1,943	1,937
1919–20	1,939	1,952	1,964	1,973	1,970	1,965	1,960	1,958	1,954	1,952	1,949	1,944
1920–21	1,940	1,945	1,951	1,954	1,949	1,947	1,948	1,945	1,940	1,936	1,937	1,937
1921–22	1,938	1,954	1,974	1,980	1,978	1,974	1,971	1,969	1,974	1,970	1,966	1,961
1922–23	1,959	1,967	1,980	1,980	1,976	1,971	1,966	1,961	1,957	1,954	1,949	1,945
1923–24	1,950	1,962	1,974	1,978	1,976	1,972	1,967	1,962	1,958	1,953	1,956	1,957
1924–25	1,956	1,970	1,975	1,974	1,970	1,965	1,960	1,956	1,956	1,953	1,950	1,948
1925–26	1,953	1,969	1,979	1,980	1,977	1,973	1,968	1,963	1,961	1,957	1,954	1,954
1926–27	1,959	1,963	1,963	1,959	1,955	1,949	1,947	1,943	1,940	1,935	1,929	1,923
1927–28	1,921	1,932	1,955	1,959	1,956	1,952	1,951	1,953	1,953	1,954	1,951	1,949
1928–29	1,950	1,969	1,977	1,978	1,974	1,970	1,966	1,961	1,957	1,951	1,946	1,940
1929–30	1,937	1,945	1,953	1,952	1,947	1,942	1,935	1,929	1,921	1,913	1,906	1,901
1930–31	1,911	1,921	1,927	1,929	1,925	1,922	1,917	1,914	1,908	1,903	1,903	1,901
Average	1,939	1,951	1,962	1,965	1,962	1,958	1,954	1,950	1,947	1,944	1,940	1,937

COLUMBIA RIVER AT ROCK ISLAND RAPIDS AND VANTAGE POWER SITES

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in 9 reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 8,097,000 acre-feet of storage. Without reregulation in Columbia River Reservoir. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE NO. 2-10.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rock Island Rapids and Vantage power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	66.7	177.0	429	272	154.0	114.0	75.6	69.1	60.5	55.1	56.2	63.1
1914-15	96.4	206.0	278	250	136.0	89.9	77.6	72.5	61.5	49.6	50.1	55.5
1915-16	81.5	156.0	166	167	159.0	99.4	62.6	65.3	56.9	49.2	50.7	71.9
1916-17	125.0	214.0	320	404	186.0	115.0	67.4	58.3	51.6	46.8	46.8	45.7
1917-18	54.7	163.0	370	294	148.0	95.0	83.0	67.0	69.2	81.3	70.8	66.0
1918-19	91.0	210.0	281	240	141.0	97.9	81.7	65.0	57.6	55.6	59.0	57.3
1919-20	86.3	178.0	277	226	142.0	88.4	55.9	48.5	43.5	41.5	42.9	42.9
1920-21	45.0	113.0	206	295	182.0	99.5	101.0	73.8	65.0	64.0	64.9	71.1
1921-22	92.5	213.0	372	242	137.0	79.0	63.4	71.1	59.0	48.9	45.3	47.3
1922-23	53.4	134.0	331	205	122.0	95.4	68.8	57.1	47.8	49.8	46.0	46.8
1923-24	65.2	173.0	324	244	131.0	95.7	60.7	52.0	47.4	44.9	52.8	53.4
1924-25	48.8	156.0	198	146	111.0	89.0	63.5	64.1	59.8	58.2	66.1	70.4
1925-26	119.0	281.0	316	229	128.0	79.8	58.9	50.8	48.0	46.0	47.7	47.0
1926-27	58.4	132.0	116	135	93.5	81.5	74.0	69.4	64.8	56.5	56.4	58.8
1927-28	67.4	150.0	377	276	163.0	138.0	124.0	118.0	93.4	83.4	81.3	83.3
1928-29	84.7	281.0	341	244	131.0	78.4	63.4	54.1	48.2	44.9	41.5	43.2
1929-30	44.7	88.1	238	150	99.4	72.3	52.9	46.3	40.9	39.4	40.3	42.3
1930-31	59.9	127.0	196	181	117.0	81.7	52.5	45.8	41.1	38.7	39.0	41.5
Highest	125.0	281.0	429	404	186.0	138.0	124.0	118.0	93.4	83.4	81.3	83.3
Average	74.5	175.0	285	233	138.0	93.9	71.5	63.8	56.5	53.0	53.2	56.0
Lowest	44.7	88.1	116	135	93.5	72.3	52.5	45.8	40.9	38.7	39.0	41.5

COLUMBIA RIVER AT PRIEST RAPIDS POWER SITE

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in 9 reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 8,097,000 acre-feet of storage.

Without reregulation in Columbia River Reservoir. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement, 325,800 acre-feet.

TABLE NO. 2-11.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Priest Rapids power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	67.1	178.0	430	273	155.0	115.0	76.9	70.5	61.3	55.6	56.6	63.4
1914-15	96.8	207.0	279	251	137.0	91.2	78.8	73.9	62.3	50.1	50.5	55.8
1915-16	81.8	157.0	167	168	160.0	101.0	63.9	66.7	57.7	49.7	51.1	72.2
1916-17	125.0	215.0	321	405	188.0	116.0	68.6	59.6	52.4	47.3	47.2	46.0
1917-18	55.1	164.0	371	295	150.0	96.2	84.3	68.4	70.0	81.8	71.2	66.3
1918-19	91.3	210.0	282	241	142.0	99.2	82.9	66.4	58.4	56.1	59.4	57.6
1919-20	86.6	178.0	278	227	143.0	89.7	57.2	49.8	44.3	42.0	43.3	43.1
1920-21	45.3	114.0	207	296	183.0	101.0	102.0	75.2	65.8	64.5	65.3	71.4
1921-22	92.9	214.0	374	243	138.0	80.3	64.6	72.4	59.7	49.4	45.7	47.6
1922-23	53.8	135.0	332	206	123.0	96.7	70.0	58.4	48.6	50.3	46.4	47.1
1923-24	65.5	174.0	325	246	132.0	97.0	62.0	53.3	48.1	45.4	53.2	53.6
1924-25	49.2	157.0	199	147	113.0	90.3	64.8	65.5	60.5	58.7	66.5	70.6
1925-26	119.0	282.0	317	230	129.0	81.1	60.2	52.2	48.7	46.5	48.1	47.2
1926-27	58.8	133.0	118	136	94.8	82.8	75.3	70.7	65.6	57.0	56.8	59.1
1927-28	67.8	151.0	378	277	165.0	139.0	126.0	119.0	94.1	83.9	81.7	83.5
1928-29	85.0	282.0	342	245	132.0	79.8	64.6	55.5	49.0	45.4	41.9	43.5
1929-30	45.0	88.8	239	151	101.0	73.6	54.2	47.6	41.6	39.9	40.7	42.5
1930-31	60.2	128.0	198	182	118.0	83.0	53.8	47.2	41.8	39.2	39.4	41.7
Highest	125.0	282.0	430	405	188.0	139.0	126.0	119.0	94.1	83.9	81.7	83.5
Average	74.8	176.0	286	234	139.0	95.2	72.8	65.1	57.2	53.5	53.6	56.2
Lowest	45.0	88.8	118	136	94.8	73.6	53.8	47.2	41.6	39.2	39.4	41.7

COLUMBIA RIVER AT MOUTH OF SNAKE RIVER

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 1,027,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in 14 reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 9,072,000 acre-feet of storage. Without reregulation in Columbia River Reservoir. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement, 325,800 acre-feet.

TABLE NO. 2-12.—*Effect of upstream regulation on discharge of Columbia River at mouth of Snake River, in units of 1,000 second-feet*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	−15.7	−40.8	−57.1	−50.0	−15.5	+3.0	+8.1	+11.0	+14.2	+14.1	+16.9	+7.8
1914–15	−20.8	−52.1	−59.5	−31.1	−6.5	+7.5	+10.7	+8.1	+5.3	+14.3	+17.8	+14.0
1915–16	−22.9	−41.9	−41.9	−27.8	−9.1	+.6	+9.6	+12.9	+11.2	+17.3	+14.8	+1.2
1916–17	−16.6	−36.1	−46.7	−54.5	−28.3	−6.9	+2.7	+12.2	+14.7	+17.8	+16.7	+16.5
1917–18	−6.5	−37.2	−45.5	−60.9	−15.3	+4.4	+13.9	+23.4	+18.7	−18.2	+9.7	+15.4
1918–19	−18.2	−32.6	−59.9	−45.2	−8.6	+3.7	+11.5	+13.4	+12.8	+15.3	+8.6	+10.9
1919–20	−16.5	−52.6	−63.7	−34.5	−7.5	+1.4	+9.2	+14.2	+15.7	+14.5	+12.1	+10.5
1920–21	−5.6	−41.9	−52.7	−41.9	−5.9	+5.2	+6.6	+10.3	+12.2	+11.1	+12.5	+1.4
1921–22	−14.7	−42.2	−72.4	−42.8	−11.7	+2.3	+10.3	+11.9	+1.0	+10.7	+15.9	+15.9
1922–23	−7.6	−40.4	−65.4	−39.1	−9.6	+2.7	+10.5	+14.3	+16.5	+6.1	+16.1	+14.6
1923–24	−20.0	−44.3	−56.9	−41.6	−13.0	+1.0	+9.9	+16.3	+14.7	+10.1	+6.0	+7.3
1924–25	−4.9	−61.2	−58.7	−28.4	−3.3	+5.9	+14.8	+15.5	+12.4	+11.8	−3.0	+8.7
1925–26	−32.1	−37.3	−56.1	−39.0	−12.0	+1.6	+8.1	+15.3	+13.7	+15.3	+13.6	+7.1
1926–27	−23.1	−58.4	−38.3	−13.1	+1.6	+9.4	+12.4	+2.5	−2.0	+8.7	+12.1	+9.0
1927–28	−5.7	−57.8	−34.9	−52.2	−4.3	+10.9	+7.3	+.9	−9.3	+11.8	+20.4	+17.3
1928–29	−23.5	−31.2	−61.1	−39.5	−19.6	−2.0	+8.6	+9.2	+11.4	+15.3	+16.5	+14.7
1929–30	−1.8	−43.2	−62.1	−32.5	−13.2	+2.2	+8.7	+13.8	+13.6	+16.5	+15.0	+10.5
1930–31	−22.9	−55.3	−48.4	−23.9	−9.0	+4.0	+6.1	+10.8	+10.5	+13.6	+12.2	+7.5
Average	−15.5	−44.8	−54.5	−38.8	−10.6	+3.2	+9.4	+11.7	+10.4	+12.0	+13.0	+10.6

COEUR D'ALENE RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. No upstream regulation. Regulation in Coeur d'Alene Reservoir for joint benefit of Columbia Basin irrigation project and power sites on Spokane River, between elevations 2,117.70 feet and 2,129.10 feet, United States Coast and Geodetic Survey datum, providing 430,000 acre-feet of storage. Modified elevation 50 percent of time about 2,122.13 feet.

TABLE NO. 2-13.—*Modified stage of Coeur d'Alene Reservoir on the last day of each month*

[Add 2,100 to determine elevation in feet, U.S.Coast and Geodetic Survey datum]

Storage year	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	30.91	30.91	29.10	28.60	25.32	22.31	19.89	20.74	18.85	20.22	20.22	24.22
1914–15	29.10	29.10	29.10	25.60	19.96	18.59	18.07	21.58	20.85	18.89	18.70	22.13
1915–16	28.18	29.10	29.10	25.76	20.70	19.26	18.07	18.07	20.00	18.96	21.51	28.64
1916–17	29.10	29.10	29.10	29.10	26.43	25.28	23.54	22.35	20.33	18.78	19.00	18.67
1917–18	29.54	34.64	29.10	28.24	25.40	23.47	20.92	18.63	26.86	29.10	25.58	23.60
1918–19	29.10	29.10	29.10	25.82	20.96	19.04	18.11	18.29	19.59	21.91	20.70	23.47
1919–20	29.32	29.10	29.10	25.90	21.29	19.70	18.29	18.00	18.00	19.96	19.52	22.09
1920–21	23.76	29.10	29.10	25.64	19.41	18.22	18.85	19.56	19.93	23.21	22.71	26.53
1921–22	26.53	29.10	29.10	26.06	21.14	19.44	18.14	18.07	24.57	22.71	19.56	19.11
1922–23	25.94	29.10	29.10	26.06	21.43	19.78	18.63	17.96	18.22	23.93	19.85	20.22
1923–24	28.77	29.10	29.10	27.03	23.17	20.81	18.96	18.29	19.11	18.29	24.94	20.33
1924–25	23.73	29.10	28.80	24.94	19.11	18.22	17.70	19.78	21.10	19.93	27.44	27.12
1925–26	30.32	29.10	29.10	26.00	21.36	19.81	18.63	18.00	19.26	18.44	22.06	23.41
1926–27	29.10	29.10	27.52	22.50	18.37	17.89	18.78	20.59	24.68	20.81	22.39	22.09
1927–28	26.96	29.10	29.10	26.18	19.63	18.59	20.66	29.04	29.10	28.24	22.96	25.19
1928–29	25.38	29.69	29.10	26.61	22.85	21.32	20.55	20.37	19.74	18.81	18.03	19.70
1929–30	23.24	29.10	29.10	26.08	21.36	19.93	18.92	17.85	18.67	17.92	20.00	20.00
1930–31	29.04	29.10	29.10	25.68	20.55	19.19	18.40	18.37	17.70	18.33	18.96	22.60
Average	27.67	29.54	29.00	26.21	21.58	20.05	19.17	19.75	20.92	21.02	21.34	22.73

SPOKANE RIVER AT POST FALLS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Spokane River below Post Falls, and Clark Fork. Additional allowance made for future irrigation of about 20,000 acres in Idaho. Regulation of 430,000 acre-feet in Coeur d'Alene Reservoir for joint benefit of Columbia Basin irrigation project and power sites on Spokane River. This plan of regulation assumes a diversion of water from the conduit of the Columbia Basin irrigation project to Spokane River after the end of August, to compensate power interests on Spokane River for their equity in that part of Coeur d'Alene Reservoir storage which was used during the period May to August to meet irrigation demand of the Columbia Basin project.

TABLE NO. 2-14.—*Modified discharge, in second-feet, of Spokane River at Post Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	18,200	27,200	15,900	4,460	3,980	2,730	2,730	2,730	2,730	3,760	4,880	8,700
1914-15	14,200	13,200	4,100	4,200	3,640	1,500	1,500	2,910	2,470	2,030	2,050	4,990
1915-16	6,290	6,280	4,120	4,310	3,590	1,420	1,420	1,510	2,230	2,600	4,490	14,300
1916-17	20,800	20,400	17,800	8,100	4,000	2,240	2,260	2,290	2,360	2,380	2,390	2,390
1917-18	13,200	30,300	24,600	4,720	4,070	1,950	1,950	1,950	9,740	16,000	11,100	11,300
1918-19	13,200	13,700	6,970	4,100	3,480	1,460	1,460	1,560	2,780	5,940	5,470	7,990
1919-20	18,500	16,900	5,210	3,900	3,220	1,260	1,260	1,260	1,260	1,550	2,560	4,520
1920-21	9,760	11,600	7,090	4,490	3,940	1,630	2,030	3,260	4,230	7,660	9,940	13,400
1921-22	17,100	20,100	6,890	3,810	3,450	1,360	1,360	1,360	3,150	2,620	2,770	2,990
1922-23	9,190	18,600	8,590	3,640	3,270	1,220	1,220	1,220	1,580	4,150	3,870	4,460
1923-24	13,500	17,600	11,500	3,850	3,530	1,620	1,620	1,620	1,780	1,790	7,750	7,720
1924-25	8,130	9,680	2,540	3,900	3,250	940	940	1,560	4,260	4,330	10,800	10,900
1925-26	22,600	19,300	5,920	3,820	3,380	1,280	1,280	1,280	1,680	2,080	4,570	7,090
1926-27	6,940	5,920	2,790	3,890	2,240	1,140	1,790	4,170	7,090	6,830	7,650	8,570
1927-28	13,500	20,700	14,700	4,670	4,410	2,120	4,070	11,500	10,600	9,710	9,680	12,700
1928-29	14,900	19,800	5,280	3,350	2,890	1,110	1,160	1,160	1,160	1,160	1,160	2,760
1929-30	6,470	7,990	4,690	3,480	3,090	1,080	1,080	1,080	1,120	1,120	2,940	4,410
1930-31	5,460	6,810	3,340	3,580	3,090	1,080	1,080	1,080	1,080	1,080	2,000	5,850
Highest	22,600	30,300	24,600	8,100	4,410	2,730	4,070	11,500	10,600	16,000	11,100	14,300
Average	12,900	15,900	8,450	4,240	3,470	1,510	1,680	2,420	3,410	4,270	5,340	7,500
Lowest	5,460	5,920	2,540	3,350	2,240	940	940	1,080	1,080	1,080	1,160	2,390

SPOKANE RIVER AT SPOKANE, AT UPPER FALLS AND MONROE STREET POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLANS NOS. 2-A AND 6-A

Plan no. 2-A: Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Spokane River above Spokane and Clark Fork. Plan no. 6-A: Columbia Basin Irrigation Project, 1,449,690 acres, assumed to be served by gravity diversion from Spokane River above Spokane, Clark Fork, and Wenatchee River. Additional allowance made for future irrigation of about 20,000 acres in Idaho. Upstream regulation of 430,000 acre-feet in Coeur d'Alene Reservoir. These plans of regulation assume a diversion of water from the conduit of the Columbia Basin irrigation project to Spokane River after the end of August, to compensate power interests on Spokane River for their equity in that part of Coeur d'Alene Lake storage which was used during the period May to August to meet irrigation demand of the Columbia Basin project.

TABLE No. 2-15.—*Modified discharge, in second-feet, of Spokane River at Spokane*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	18,100	26,600	15,400	2,670	2,670	3,240	3,210	3,210	3,220	4,070	4,920	8,600
1914–15	13,700	11,300	3,180	2,310	2,310	2,350	2,350	2,720	2,720	2,720	2,720	4,680
1915–16	5,600	4,650	3,040	2,180	2,180	2,210	2,210	2,210	2,540	2,800	4,210	13,700
1916–17	20,900	19,100	16,400	5,950	2,900	2,900	2,900	2,900	2,900	2,900	2,900	2,880
1917–18	13,300	29,600	23,500	2,860	2,860	2,880	2,880	2,880	9,920	16,900	11,500	11,500
1918–19	12,400	11,200	5,780	2,260	2,260	2,290	2,290	2,290	3,090	6,160	6,030	8,210
1919–20	17,800	14,300	3,980	2,000	2,000	2,020	2,020	2,020	2,020	2,020	2,870	4,640
1920–21	9,880	9,440	6,120	2,700	2,700	2,800	2,800	3,630	4,490	7,820	10,400	13,900
1921–22	17,800	19,000	6,690	2,260	2,260	2,290	2,290	2,290	3,340	3,340	3,340	3,340
1922–23	9,410	17,600	8,690	2,030	2,030	2,060	2,060	2,060	2,060	4,700	4,700	4,700
1923–24	13,700	16,300	10,900	2,380	2,380	2,380	2,380	2,380	2,380	2,380	7,820	8,400
1924–25	8,400	8,400	1,920	1,920	1,920	1,970	1,970	1,970	4,410	4,570	10,900	11,200
1925–26	23,200	18,300	5,560	2,150	2,150	2,180	2,180	2,180	2,180	2,540	4,700	7,220
1926–27	7,060	4,900	1,950	1,950	1,950	2,330	2,330	4,370	7,200	7,200	7,760	8,880
1927–28	13,700	19,700	14,300	3,200	3,200	3,480	4,310	11,600	11,600	10,300	10,300	12,900
1928–29	15,300	18,400	5,020	1,860	1,860	1,860	1,860	1,860	1,860	1,870	1,870	3,060
1929–30	6,590	6,600	3,970	1,720	1,720	1,740	1,740	1,740	1,740	1,740	3,100	4,570
1930–31	5,480	5,500	2,820	1,630	1,630	1,650	1,650	1,650	1,650	1,650	2,140	5,680
Highest	23,200	29,600	23,500	5,950	3,200	3,480	4,310	11,600	11,600	16,900	11,500	13,900
Average	12,900	14,500	7,730	2,450	2,280	2,370	2,410	3,000	3,850	4,760	5,680	7,670
Lowest	5,480	4,650	1,920	1,630	1,630	1,650	1,650	1,650	1,650	1,650	1,870	2,880

PEND OREILLE RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Upstream regulation in three reservoirs aggregating 3,209,000 acre-feet of storage. Re-regulation in Pend Oreille Reservoir for joint benefit of Columbia Basin irrigation project and power sites on lower Clark Fork, between elevations 2,049.04 feet and 2,066.80 feet, United States Coast and Geodetic Survey datum, providing 1,624,000 acre-feet of storage. Regulated levation 50 percent of time about 2,055.57 feet.

TABLE No. 2-16.—*Regulated stage of Pend Oreille Reservoir on the last day of each month*

[Add 2,000 to determine elevation in feet, U.S. Coast and Geodetic Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	56.24	57.65	66.80	66.80	60.89	54.30	50.86	51.53	50.39	50.97	49.98	53.11
1914–15	57.78	65.42	66.80	64.80	58.42	52.85	53.17	57.62	59.87	61.07	62.15	64.98
1915–16	66.23	66.14	66.80	64.43	58.39	52.45	50.15	50.72	51.47	49.63	52.33	53.20
1916–17	56.97	58.30	62.26	66.80	65.03	60.52	57.65	57.42	56.19	54.94	54.21	52.62
1917–18	55.87	58.50	66.80	66.80	60.39	53.86	50.49	49.80	53.71	59.13	56.67	55.38
1918–19	55.62	61.48	66.80	64.77	59.02	52.19	50.11	50.33	49.93	51.07	51.65	52.79
1919–20	56.05	62.11	66.80	61.74	55.26	50.97	49.26	49.78	49.54	50.66	52.30	54.73
1920–21	54.87	58.17	66.80	66.80	58.14	51.88	50.64	51.14	51.10	51.10	52.53	56.02
1921–22	55.61	59.80	66.80	66.80	58.99	52.48	49.72	50.15	52.74	53.26	53.76	54.77
1922–23	55.57	55.57	66.80	65.35	58.34	52.36	49.85	49.39	49.27	51.78	51.22	52.18
1923–24	55.47	55.47	66.80	66.80	59.78	53.36	50.88	51.19	51.54	50.65	54.41	56.57
1924–25	55.46	61.68	66.80	63.23	56.47	50.84	49.70	51.01	51.01	51.01	52.45	51.49
1925–26	57.02	66.80	66.80	66.80	60.28	55.31	53.87	55.24	57.07	58.77	61.33	64.48
1926–27	65.83	66.80	63.86	58.91	53.94	50.94	49.83	50.46	51.71	51.37	52.16	54.25
1927–28	55.78	56.79	66.80	66.80	58.82	52.58	51.35	59.41	61.54	60.75	58.01	58.51
1928–29	56.88	66.75	66.80	66.80	61.20	56.25	54.53	55.54	55.91	55.00	54.57	56.29
1929–30	54.86	58.54	66.80	63.14	56.24	50.60	49.13	49.72	51.43	51.17	53.94	56.31
1930–31	62.70	66.80	66.80	61.74	55.14	49.96	49.04	50.16	50.85	51.83	53.20	56.17
Average	57.49	61.27	66.38	64.96	58.60	52.98	51.12	52.26	53.07	53.56	54.27	55.77

CLARK FORK AT ALBANY FALLS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork above Albany Falls and Spokane River. Additional allowance made for future irrigation of about 435,000 acres in Montana and Idaho. Upstream regulation in three reservoirs aggregating 3,209,000 acre-feet of storage. Re-regulation by use of 1,624,000 acre-feet in Pend Oreille Reservoir for joint benefit of Columbia Basin irrigation project and power sites on lower Clark Fork.

TABLE NO. 2-17.—*Modified discharge, in second-feet, of Clark Fork at Albany Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	27,000	38,000	79,000	28,200	17,900	17,900	17,900	17,900	17,900	17,900	17,900	17,900
1914-15	18,800	18,900	18,900	14,400	14,400	14,400	14,400	14,400	14,400	14,400	14,500	14,500
1915-16	14,500	14,500	14,500	15,000	15,000	15,000	15,000	15,400	15,400	15,400	15,400	31,000
1916-17	31,000	44,800	63,000	63,100	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
1917-18	17,000	41,300	71,100	39,600	17,400	17,400	17,400	17,400	17,400	25,800	25,800	25,800
1918-19	25,800	39,200	39,300	14,400	14,400	14,400	14,400	15,400	15,700	17,200	17,200	17,200
1919-20	17,200	17,300	17,300	9,200	9,200	9,200	9,200	11,500	11,500	11,500	11,500	11,500
1920-21	11,500	22,800	22,900	20,000	16,800	16,800	16,800	18,400	18,500	20,600	20,600	20,600
1921-22	20,600	44,100	51,400	13,900	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800
1922-23	13,800	30,500	43,300	12,900	12,900	12,900	12,900	13,800	13,900	14,300	14,300	14,300
1923-24	14,300	31,100	35,500	18,600	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
1924-25	13,500	18,300	18,400	11,200	11,200	11,200	11,200	13,500	16,000	18,000	23,000	23,000
1925-26	23,000	56,900	56,400	16,900	12,700	12,700	12,700	12,700	12,800	12,800	12,800	12,800
1926-27	12,800	12,800	8,660	8,660	8,660	8,660	13,400	15,600	17,000	17,000	17,000	17,000
1927-28	17,000	36,200	83,500	31,900	21,300	21,300	21,300	22,900	28,200	28,200	28,200	28,200
1928-29	28,200	57,100	57,000	28,800	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600
1929-30	13,600	14,700	14,700	10,000	10,000	10,000	10,000	10,900	10,900	11,200	10,900	10,900
1930-31	11,800	11,800	11,500	9,700	9,700	9,700	10,100	11,200	11,200	11,200	11,200	11,200
Highest	31,000	57,100	83,500	63,100	21,300	21,300	21,300	22,900	28,200	28,200	28,200	31,000
Average	18,400	30,600	39,200	20,500	13,900	13,900	14,200	15,000	15,500	16,400	16,600	17,500
Lowest	11,500	11,800	8,660	8,660	8,660	8,660	9,200	10,900	10,900	11,200	10,900	10,900

CLARK FORK AT METALINE FALLS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 435,000 acres in Montana and Idaho. Upstream regulation in four reservoirs aggregating 4,833,000 acre-feet of storage.

TABLE NO. 2-18.—*Modified discharge, in second-feet, of Clark Fork at Metaline Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	27,600	39,600	83,000	28,900	18,400	18,300	18,200	18,200	18,200	18,200	18,200	18,200
1914-15	19,700	21,600	21,000	15,100	14,700	14,800	14,700	14,900	14,700	14,700	14,800	14,800
1915-16	15,500	15,800	15,300	15,400	15,300	15,300	15,300	15,700	15,700	15,600	15,700	31,400
1916-17	31,600	46,200	65,500	64,100	18,400	18,400	18,300	18,300	18,300	18,200	18,200	18,300
1917-18	17,300	42,700	74,100	40,800	17,800	17,700	17,700	17,700	17,700	26,100	26,100	26,100
1918-19	26,300	40,200	40,400	14,900	14,700	14,600	14,700	15,600	15,900	17,500	17,500	17,400
1919-20	17,900	19,500	19,200	9,800	9,500	9,500	9,500	11,900	11,800	11,800	11,800	11,700
1920-21	11,700	23,400	23,900	20,400	17,400	17,300	17,100	18,800	18,800	20,900	20,900	21,000
1921-22	21,300	46,100	53,400	14,600	14,200	14,100	14,000	14,000	14,000	14,000	14,100	14,300
1922-23	14,000	31,400	44,700	13,300	13,200	13,200	13,200	14,100	14,200	14,600	14,600	14,500
1923-24	14,600	32,400	36,800	19,100	13,800	13,700	13,700	13,700	13,800	13,800	13,900	13,800
1924-25	13,800	19,300	18,800	11,400	11,400	11,300	11,400	13,700	16,200	18,300	23,500	23,400
1925-26	23,900	59,000	58,200	17,400	13,000	13,000	13,000	13,000	13,000	13,000	13,000	13,000
1926-27	13,200	14,000	9,360	8,860	8,760	8,860	13,700	16,000	17,500	17,300	17,300	17,300
1927-28	17,400	37,700	85,500	35,700	21,800	21,800	21,800	23,700	29,000	28,700	28,700	28,600
1928-29	28,800	59,200	59,000	29,400	14,000	13,900	13,900	14,100	13,800	13,800	13,800	13,800
1929-30	13,900	14,500	16,700	13,600	11,300	10,300	10,100	11,100	10,900	11,300	11,000	11,000
1930-31	11,100	12,500	13,000	11,300	10,100	9,900	10,200	11,200	11,300	11,300	11,500	11,500
Highest	31,600	59,200	85,500	64,100	21,800	21,800	21,800	23,700	29,000	28,700	28,700	31,400
Average	18,900	32,000	41,000	21,300	14,300	14,200	14,500	15,300	15,800	16,600	16,900	17,800
Lowest	11,100	12,500	9,360	8,860	8,760	8,860	9,500	11,100	10,900	11,300	11,000	11,000

COLUMBIA RIVER AT KETTLE FALLS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 575,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in five reservoirs aggregating 5,548,000 acre-feet of storage.

TABLE NO. 2-19.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Kettle Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	42.8	139.0	368	229	140.0	96.7	60.6	50.8	42.2	38.6	38.5	40.3
1914-15	71.0	166.0	241	223	121.0	74.8	61.6	57.4	42.8	34.7	33.9	36.1
1915-16	66.8	142.0	153	159	145.0	83.7	49.8	40.6	40.2	34.8	33.0	55.2
1916-17	75.2	154.0	274	351	157.0	97.8	54.1	46.8	37.2	34.2	33.2	32.3
1917-18	37.1	132.0	295	259	131.0	75.8	62.4	48.4	44.6	51.3	50.3	48.6
1918-19	66.2	164.0	256	214	124.0	85.5	65.6	48.7	41.1	39.1	39.2	39.6
1919-20	58.2	149.0	234	199	128.0	73.1	43.5	32.9	28.6	27.8	27.5	27.9
1920-21	29.1	102.0	180	276	167.0	89.9	84.3	62.4	46.9	45.7	43.1	44.4
1921-22	62.4	176.0	326	207	126.0	65.0	52.3	54.8	41.3	34.7	32.4	31.1
1922-23	37.1	119.0	285	180	115.0	83.8	55.0	41.6	32.7	32.5	30.8	30.6
1923-24	48.9	146.0	275	210	119.0	82.9	46.7	35.8	32.3	30.9	31.3	32.0
1924-25	33.6	140.0	176	139	106.0	76.4	48.7	48.2	44.0	44.8	47.7	48.2
1925-26	97.5	235.0	281	204	121.0	68.4	42.9	33.7	31.0	29.4	28.9	29.5
1926-27	51.6	126.0	110	125	82.6	66.6	62.6	52.3	44.6	37.1	37.3	36.5
1927-28	47.1	137.0	321	243	147.0	123.0	101.0	84.0	65.2	56.8	55.3	57.6
1928-29	72.4	235.0	293	221	118.0	66.7	49.3	36.2	32.4	30.7	28.9	29.2
1929-30	30.1	85.2	211	138	94.5	62.3	38.1	31.1	27.2	24.3	25.0	25.6
1930-31	48.9	118.0	181	171	111.0	71.5	41.4	32.8	28.6	26.4	26.1	27.2
Highest	97.5	235.0	368	351	167.0	123.0	101.0	84.0	65.2	56.8	55.3	57.6
Average	54.2	148.0	248	208	125.0	80.2	56.7	47.1	39.0	36.3	35.7	37.3
Lowest	29.1	85.2	110	125	82.6	62.3	38.1	31.1	27.2	24.3	25.0	25.6

COLUMBIA RIVER AT GRAND COULEE AND FOSTER CREEK POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 625,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River Reservoir, aggregating 5,978,000 acre-feet of storage.

Without reregulation in Columbia River Reservoir.

TABLE NO. 2-20.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Grand Coulee and Foster Creek power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	66.4	169.0	386	233	144.0	101.0	64.9	55.2	46.6	44.4	45.6	52.4
1914-15	89.1	181.0	247	227	125.0	77.9	65.1	60.3	45.5	37.9	37.8	42.8
1915-16	76.3	150.0	158	163	148.0	86.6	53.0	52.9	44.0	38.6	39.5	73.2
1916-17	101.0	176.0	294	363	162.0	102.0	58.0	50.8	41.2	38.1	37.2	37.5
1917-18	55.3	166.0	324	264	135.0	79.4	66.2	52.5	54.7	69.9	63.6	62.3
1918-19	82.7	179.0	264	217	127.0	88.2	68.6	51.8	45.0	46.2	46.9	51.0
1919-20	81.7	168.0	241	203	131.0	76.1	46.6	36.2	32.0	31.1	31.8	34.4
1920-21	42.5	115.0	188	280	171.0	93.3	87.9	67.0	52.7	55.1	56.6	62.4
1921-22	85.2	199.0	335	211	129.0	68.0	55.5	58.1	45.6	38.8	36.6	37.0
1922-23	52.2	141.0	296	182	118.0	86.6	58.0	44.6	35.8	38.8	36.4	37.8
1923-24	67.4	166.0	289	219	125.0	89.5	51.3	39.7	35.8	34.7	41.3	42.1
1924-25	45.2	151.0	180	142	109.0	79.4	51.7	51.3	49.6	51.4	62.6	62.3
1925-26	125.0	258.0	288	208	123.0	71.4	46.1	36.9	34.3	33.0	35.9	39.0
1926-27	62.2	133.0	114	128	85.3	69.7	66.0	57.6	53.4	46.1	48.6	48.9
1927-28	65.1	161.0	337	248	151.0	127.0	107.0	98.2	79.6	69.7	68.1	75.1
1928-29	92.5	257.0	303	228	126.0	73.5	55.3	42.6	37.8	35.0	32.6	34.7
1929-30	39.0	89.2	215	141	100.0	67.7	43.0	35.6	30.6	27.3	29.9	32.9
1930-31	53.9	121.0	184	177	116.0	76.9	45.3	36.4	32.4	30.1	30.5	35.1
Highest	125.0	258.0	386	363	171.0	127.0	107.0	98.2	79.6	69.9	68.1	75.1
Average	71.3	166.0	258	213	129.0	84.1	60.5	51.5	44.3	42.6	43.4	47.8
Lowest	39.0	89.2	114	128	85.3	67.7	43.0	35.6	30.6	27.3	29.9	32.9

COLUMBIA RIVER AT CHELAN POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING—PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 685,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River Reservoir, aggregating 5,978,000 acre-feet of storage.

Without reregulation in Columbia River Reservoir.

TABLE NO. 2-21.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Chelan power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	68.9	176.0	404	252	152.0	108.0	69.0	59.3	50.6	46.7	48.0	54.6
1914–15	93.2	195.0	265	240	132.0	83.0	68.6	62.2	49.2	39.4	39.8	44.6
1915–16	79.9	157.0	166	169	155.0	93.3	55.7	55.7	47.1	40.5	41.8	75.4
1916–17	110.0	196.0	314	380	174.0	109.0	61.6	52.0	43.7	39.7	39.3	38.9
1917–18	54.1	168.0	343	283	142.0	86.2	71.6	55.3	56.7	74.4	67.4	64.1
1918–19	86.2	191.0	277	230	135.0	92.1	72.2	54.5	47.3	48.1	50.0	52.3
1919–20	84.2	175.0	261	217	138.0	81.2	48.2	38.9	33.9	32.3	34.0	35.0
1920–21	41.5	117.0	196	239	178.0	96.5	92.0	67.3	55.7	57.2	58.3	64.4
1921–22	87.4	209.0	358	225	135.0	73.3	57.4	61.4	48.8	40.8	37.8	39.0
1922–23	51.8	143.0	313	194	121.0	90.7	61.2	47.6	38.4	41.2	38.4	39.4
1923–24	67.1	174.0	305	232	130.0	92.8	54.2	42.4	38.0	36.1	43.1	44.0
1924–25	45.2	157.0	190	144	110.0	82.2	53.7	53.4	52.0	53.3	65.5	64.3
1925–26	124.0	269.0	304	217	127.0	74.8	49.6	39.5	36.6	35.3	37.5	40.5
1926–27	62.4	136.0	115	130	87.7	72.4	67.3	60.9	56.5	49.3	51.1	51.9
1927–28	64.9	163.0	351	261	156.0	131.0	112.0	105.0	86.2	75.8	74.0	78.2
1928–29	95.3	266.0	323	240	132.0	76.5	57.9	45.3	39.7	36.4	33.5	35.5
1929–30	38.7	90.8	226	147	103.0	69.3	45.2	37.5	31.7	28.9	31.2	34.0
1930–31	56.1	129.0	194	182	118.0	79.0	46.8	38.1	33.5	30.9	31.5	35.4
Highest	124.0	269.0	404	380	178.0	131.0	112.0	105.0	86.2	75.8	74.0	78.2
Average	72.8	173.0	272	224	135.0	88.4	63.6	54.2	47.0	44.8	45.7	49.5
Lowest	38.7	90.8	115	130	87.7	69.3	45.2	37.5	31.7	28.9	31.2	34.0

COLUMBIA RIVER AT ROCKY REACH POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING—PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 712,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in seven reservoirs, exclusive of Columbia River Reservoir, aggregating 6,643,000 acre-feet of storage.

Without reregulation in Columbia River Reservoir.

TABLE NO. 2-22.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rocky Reach power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	71.0	178.0	409	260	157.0	113.0	72.3	62.6	54.1	49.1	50.7	57.3
1914–15	94.5	198.0	272	246	136.0	86.6	71.3	64.1	52.3	41.3	41.8	46.7
1915–16	81.3	159.0	168	171	159.0	97.6	58.1	58.1	49.8	42.6	44.0	77.4
1916–17	116.0	202.0	318	387	183.0	115.0	64.6	53.9	46.4	42.0	41.7	41.0
1917–18	54.9	168.0	348	295	148.0	91.3	76.0	58.4	59.6	78.1	71.1	66.7
1918–19	88.9	194.0	279	237	141.0	95.8	75.8	57.6	50.4	50.9	53.5	54.9
1919–20	85.9	175.0	266	224	143.0	85.1	50.5	41.6	36.5	34.3	36.4	36.9
1920–21	42.6	117.0	197	293	182.0	99.4	94.8	68.6	58.7	59.7	60.5	66.7
1921–22	89.3	212.0	363	234	139.0	77.5	59.6	64.1	51.5	42.9	39.5	41.3
1922–23	52.7	143.0	317	200	125.0	94.2	64.2	50.5	41.2	43.9	40.8	41.6
1923–24	67.4	174.0	309	238	133.0	95.6	56.9	45.0	40.5	38.2	45.2	46.2
1924–25	46.3	158.0	195	147	112.0	85.3	56.2	55.9	54.5	55.4	68.0	66.6
1925–26	123.0	270.0	309	223	130.0	77.7	52.6	42.1	39.0	37.5	39.3	42.1
1926–27	62.1	138.0	119	133	90.6	75.2	69.1	63.7	59.3	52.2	53.4	54.4
1927–28	65.9	163.0	355	268	161.0	134.0	116.0	108.0	89.8	78.9	77.4	80.2
1928–29	97.1	264.0	331	245	135.0	78.7	59.9	47.5	41.7	38.2	35.2	37.3
1929–30	40.2	92.1	231	151	105.0	71.3	47.4	39.7	33.7	31.0	33.0	35.7
1930–31	56.7	131.0	197	184	120.0	81.1	48.9	40.3	35.1	32.4	32.8	36.5
Highest	123.0	270.0	409	387	183.0	134.0	116.0	108.0	89.8	78.9	77.4	80.2
Average	74.2	174.0	277	230	139.0	91.9	66.3	56.8	49.7	47.1	48.0	51.6
Lowest	40.2	92.1	119	133	90.6	71.3	47.4	39.7	33.7	31.0	32.8	35.7

COLUMBIA RIVER AT ROCK ISLAND RAPIDS AND VANTAGE POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River Reservoir, aggregating 8,125,000 acre-feet of storage.

Without reregulation in Columbia River Reservoir.

TABLE NO. 2-23.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rock Island Rapids and Vantage power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	74.8	181.0	416	270	162.0	118.0	75.9	66.2	57.7	52.2	53.6	60.5
1914–15	98.1	203.0	279	253	141.0	90.9	74.7	66.7	55.9	43.9	44.6	49.5
1915–16	84.3	161.0	171	175	165.0	102.0	61.1	61.0	53.2	45.5	46.9	81.1
1916–17	123.0	210.0	323	395	190.0	120.0	68.3	56.3	49.6	44.8	44.8	43.7
1917–18	56.5	169.0	354	299	153.0	96.8	80.6	61.5	63.9	83.3	75.1	69.7
1918–19	92.5	199.0	283	244	147.0	99.9	79.7	60.9	54.1	54.1	57.2	57.7
1919–20	88.8	178.0	273	231	147.0	89.6	53.1	44.9	39.6	37.4	39.7	39.5
1920–21	44.4	118.0	200	298	187.0	104.0	98.6	70.4	62.3	63.2	64.0	70.3
1921–22	92.4	215.0	370	241	144.0	82.4	62.6	67.3	55.8	45.6	41.9	44.0
1922–23	54.4	144.0	322	207	128.0	98.2	67.6	53.7	44.4	47.2	43.6	44.3
1923–24	69.4	177.0	314	244	138.0	99.1	59.9	48.0	43.5	40.9	48.8	49.6
1924–25	48.3	159.0	201	150	114.0	88.9	59.1	58.8	58.1	58.4	71.3	70.0
1925–26	124.0	272.0	317	229	133.0	81.4	56.3	45.1	42.4	40.8	42.1	45.4
1926–27	63.9	141.0	121	136	93.8	78.7	71.9	67.2	63.0	55.9	56.4	57.6
1927–28	67.8	165.0	360	277	165.0	137.0	119.0	112.0	94.4	83.2	81.1	83.1
1928–29	99.7	265.0	340	251	138.0	81.7	62.6	50.1	44.3	40.9	37.6	39.7
1929–30	42.2	93.5	237	156	107.0	74.1	50.1	42.3	36.1	33.8	35.5	38.4
1930–31	58.3	133.0	199	186	122.0	83.2	50.3	41.6	36.9	33.9	34.7	38.2
Highest	124.0	272.0	416	395	190.0	137.0	119.0	112.0	94.4	83.3	81.1	83.1
Average	76.8	177.0	282	236	143.0	95.9	69.5	59.7	53.1	50.3	51.0	54.6
Lowest	42.2	93.5	121	136	93.8	74.1	50.1	41.6	36.1	33.8	34.7	38.2

COLUMBIA RIVER AT PRIEST RAPIDS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River Reservoir, aggregating 8,125,000 acre-feet of storage.

Without reregulation in Columbia River Reservoir.

TABLE NO. 2-24.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Priest Rapids power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	75.2	182.0	417	271	163.0	119.0	77.2	67.6	58.5	52.7	54.0	60.8
1914–15	98.5	204.0	280	254	142.0	92.2	75.9	68.1	56.7	44.4	45.0	49.8
1915–16	84.6	162.0	172	176	166.0	104.0	62.4	62.4	54.0	46.0	47.3	81.4
1916–17	123.0	211.0	324	396	192.0	121.0	69.5	57.6	50.4	45.3	45.2	44.0
1917–18	56.9	170.0	355	300	155.0	98.0	81.9	62.9	64.7	83.8	75.5	70.0
1918–19	92.8	199.0	284	245	148.0	101.0	80.9	62.3	54.9	54.6	57.6	58.0
1919–20	89.1	178.0	274	232	148.0	90.9	54.4	46.2	40.4	37.9	40.1	39.7
1920–21	44.7	119.0	201	299	188.0	105.0	99.6	71.8	63.1	63.7	64.4	70.6
1921–22	92.8	216.0	372	242	145.0	83.7	63.8	68.6	56.5	46.1	42.3	44.3
1922–23	54.8	145.0	323	208	129.0	99.5	68.8	55.0	45.2	47.7	44.0	44.6
1923–24	69.7	178.0	315	246	139.0	100.0	61.2	49.3	44.2	41.4	49.2	49.8
1924–25	48.7	160.0	202	151	116.0	90.2	60.4	60.2	58.8	58.9	71.7	70.2
1925–26	124.0	273.0	318	230	134.0	82.7	57.6	46.5	43.1	41.3	42.5	45.6
1926–27	64.3	142.0	123	137	95.1	80.0	73.2	68.5	63.8	56.4	56.8	57.9
1927–28	68.2	166.0	361	278	167.0	138.0	121.0	113.0	95.1	83.7	81.5	83.3
1928–29	100.0	266.0	341	252	139.0	83.1	63.8	51.5	45.1	41.4	38.0	40.0
1929–30	42.5	94.2	238	157	109.0	75.4	51.4	43.6	36.8	34.3	35.9	38.6
1930–31	58.6	134.0	201	187	123.0	84.5	51.6	43.0	37.6	34.4	35.1	38.4
Highest	124.0	273.0	417	396	192.0	138.0	121.0	113.0	95.1	83.8	81.5	83.3
Average	77.1	178.0	283	237	144.0	97.1	70.8	61.0	53.8	50.8	51.4	54.8
Lowest	42.5	94.2	123	137	95.1	75.4	51.4	43.0	36.8	34.3	35.1	38.4

COLUMBIA RIVER AT MOUTH OF SNAKE RIVER

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 1,027,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in 14 reservoirs, exclusive of Columbia River Reservoir, aggregating 9,100,000 acre-feet of storage.

Without reregulation in Columbia River Reservoir.

TABLE NO. 2-25.—*Effect of upstream regulation on discharge of Columbia River at mouth of Snake River, in units of 1,000 second-feet*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	−7.6	−36.8	−70.1	−52.0	−7.5	+7.0	+8.4	+8.1	+11.4	+11.2	+14.3	+5.2
1914-15	−19.1	−55.1	−58.5	−28.1	−1.5	+8.5	+7.8	−2.7	−.3	+8.6	+12.3	+8.0
1915-16	−20.1	−36.9	−36.9	−19.8	−3.1	+3.6	+8.1	+8.6	+7.5	+13.6	+11.0	+10.4
1916-17	−18.6	−40.1	−43.7	−63.5	−24.3	−1.9	+3.6	+10.2	+12.7	+15.8	+14.7	+14.5
1917-18	−4.7	−31.2	−61.5	−55.9	−10.3	+6.2	+11.5	+17.9	+13.4	−16.2	+14.0	+19.1
1918-19	−16.7	−43.6	−57.9	−41.2	−2.6	+5.7	+9.5	+9.3	+9.3	+13.8	+6.8	+11.3
1919-20	−14.0	−52.6	−67.7	−29.5	−2.5	+2.6	+6.4	+10.6	+11.8	+10.4	+8.9	+7.1
1920-21	−6.2	−36.9	−58.7	−38.9	−.9	+0.2	+4.2	+6.9	+9.5	+10.3	+11.6	+.6
1921-22	−14.8	−40.2	−74.4	−43.8	−4.7	+5.7	+9.5	+8.1	−2.2	+7.4	+12.5	+12.6
1922-23	−6.6	−30.4	−74.4	−37.1	−3.6	+5.5	+9.3	+10.9	+13.1	+3.5	+13.7	+12.1
1923-24	−15.8	−40.3	−66.9	−41.6	−6.0	+4.4	+9.1	+12.3	+10.8	+15.1	+2.0	+3.5
1924-25	−5.4	−58.2	−55.7	−24.4	−.3	+5.8	+10.4	+10.2	+10.7	+12.0	+2.2	+8.3
1925-26	−27.1	−46.3	−55.1	−39.0	−7.6	+3.2	+5.5	+9.6	+8.1	+10.1	+8.0	+5.5
1926-27	−17.6	−49.4	−33.3	−12.1	+1.9	+6.6	+10.3	+.3	−3.8	+8.1	+12.1	+7.8
1927-28	−5.3	−42.8	−51.9	−51.2	−2.3	+9.9	+2.3	−5.1	−8.3	+11.6	+20.2	+17.1
1928-29	−8.5	−47.2	−62.1	−32.5	−12.6	+1.3	+7.8	+5.2	+7.5	+11.3	+12.6	+11.2
1929-30	−4.3	−37.8	−63.1	−26.5	−5.2	+4.0	+5.9	+9.8	+8.8	+10.9	+10.2	+6.6
1930-31	−24.5	−49.3	−45.4	−18.9	−4.0	+5.5	+3.9	+6.6	+6.3	+8.8	+7.9	+4.2
Average	−13.2	−43.1	−57.6	−36.4	−5.4	+5.2	+7.4	+7.6	+7.0	+9.2	+10.8	+9.2

COLUMBIA RIVER RESERVOIR

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Upstream regulation in six reservoirs, aggregating 5,950,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, between elevations 1,127.6 feet and 1,157.6 feet, United States Geological Survey datum, providing 776,000 acre-feet of storage. Regulated elevation 50 percent of time about 1,157.6 feet.

TABLE NO. 2-26.—*Regulated stage of Columbia River Reservoir on the last day of each month*

[Add 1,100 to determine elevation in feet, U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	52.1	41.2	32.6	37.8
1914-15	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	45.7	33.2	32.6
1915-16	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	56.7	43.7	32.6	57.6
1916-17	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	51.8	43.5	32.6
1917-18	43.0	57.6	57.6	57.6	57.6	57.6	57.6	46.9	39.8	51.1	43.6	32.6
1918-19	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	50.8	41.8	35.1	32.6
1919-20	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	52.6	45.8	37.8	32.6
1920-21	36.3	57.6	57.6	57.6	57.6	57.6	57.6	57.6	47.7	38.2	32.6	38.2
1921-22	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	52.3	43.1	32.6
1922-23	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	51.3	49.0	40.7	32.6
1923-24	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	49.2	35.9	37.2	40.3
1924-25	32.6	57.6	57.6	57.6	57.6	57.6	56.8	57.0	45.5	32.6	32.6	45.5
1925-26	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	52.8	42.8	39.4	32.6
1926-27	50.1	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	45.6	37.8	32.6
1927-28	37.9	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	47.1	32.6	32.6
1928-29	37.1	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	54.2	45.3	37.4
1929-30	32.6	46.6	57.6	57.6	57.6	57.6	57.6	57.6	52.9	42.7	34.6	27.6
1930-31	40.2	57.6	57.6	57.6	57.6	57.6	57.6	57.6	53.9	46.0	37.8	32.6
Average	47.8	57.0	57.6	57.6	57.6	57.6	57.6	57.0	52.8	44.9	37.3	35.7

GRAND COULEE RESERVOIR

PLAN NO. 4, LOW DAM

Regulation of Grand Coulee Reservoir between elevations 1,555 feet and 1,570 feet, United States Geological Survey datum, providing 325,800 acre-feet of storage. Regulated elevation 50 percent of time 1,570 feet.

TABLE NO. 2–27.—*Regulated stage of Grand Coulee Reservoir on the last day of each month*

[Add 1,500 to determine elevation in feet, U. S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	69.2	70.0	68.5	69.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1914–15	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1915–16	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1916–17	70.0	70.0	70.0	66.8	66.8	66.8	70.0	70.0	70.0	70.0	70.0	70.0
1917–18	65.7	65.7	65.5	65.3	65.3	69.8	70.0	70.0	70.0	70.0	70.0	70.0
1918–19	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1919–20	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	69.3	68.2	67.0	67.8
1920–21	55.0	61.8	65.1	64.5	64.5	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1921–22	70.0	70.0	69.9	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1922–23	63.9	63.9	63.9	63.9	63.9	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1923–24	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1924–25	59.6	59.6	59.6	59.6	59.6	67.8	67.8	70.0	70.0	70.0	70.0	70.0
1925–26	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1926–27	68.1	68.1	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1927–28	70.0	70.0	69.4	69.4	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0
1928–29	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	69.9	70.0
1929–30	55.8	61.6	64.3	64.3	70.0	70.0	69.0	70.0	69.0	66.2	64.9	64.9
1930–31	61.8	68.2	70.0	70.0	70.0	70.0	70.0	70.0	69.9	68.5	67.2	68.5
Average	66.6	67.7	68.1	67.9	68.3	69.7	69.8	70.0	69.9	69.6	69.4	69.5

COLUMBIA RIVER AT GRAND COULEE AND FOSTER CREEK POWER SITES

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 625,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 5,950,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE NO. 2–28.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Grand Coulee and Foster Creek power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	58.3	164.0	398	235	136	96.2	64.6	58.1	52.0	52.0	52.0	53.0
1914–15	78.4	185.0	246	224	120	76.9	68.0	66.1	51.1	49.0	49.0	49.0
1915–16	62.4	145.0	153	155	141	83.9	54.5	57.2	48.2	48.2	48.1	53.3
1916–17	104.0	180.0	291	373	158	96.3	57.1	52.8	43.2	42.8	43.3	43.9
1917–18	49.2	153.0	339	260	129	77.6	68.6	63.0	63.0	63.0	63.0	63.0
1918–19	70.1	191.0	262	213	122	86.2	70.6	55.9	51.6	51.6	51.6	51.6
1919–20	68.1	168.0	245	198	126	74.9	49.4	39.8	38.2	38.2	38.6	39.8
1920–21	41.6	101.0	193	277	166	89.3	90.3	70.4	59.9	59.9	59.9	61.0
1921–22	76.4	197.0	337	212	122	64.6	56.3	61.9	48.8	44.5	44.5	44.5
1922–23	51.2	120.0	305	180	112	83.8	59.2	48.0	42.1	42.4	42.7	43.5
1923–24	52.1	162.0	300	220	118	86.1	52.1	43.7	43.6	44.3	44.7	44.6
1924–25	48.8	137.0	177	138	106	79.5	56.5	56.5	56.5	56.5	57.4	57.4
1925–26	114.0	267.0	287	208	118	69.8	48.7	42.6	42.1	42.6	43.0	43.3
1926–27	49.2	120.0	109	127	85	72.4	68.1	59.8	55.2	52.1	52.1	52.1
1927–28	62.5	137.0	355	246	148	128.0	111.0	105.0	78.6	74.7	74.7	75.3
1928–29	75.3	263.0	304	222	119	70.2	56.1	46.6	41.7	40.6	40.9	41.5
1929–30	43.4	78.1	210	135	93	65.9	45.8	39.6	37.6	37.4	38.4	39.5
1930–31	50.5	108.0	181	172	111	75.4	47.5	40.6	38.4	38.4	38.6	40.4
Highest	114.0	267.0	398	373	166	128.0	111.0	105.0	78.6	74.7	74.7	75.3
Average	64.2	160.0	261	211	124	82.1	62.5	56.0	49.5	48.8	49.0	49.8
Lowest	41.6	78.1	109	127	85	64.6	45.8	39.6	37.6	37.4	38.4	39.5

COLUMBIA RIVER AT CHELAN POWER SITE

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 685,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 5,950,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE NO. 2-29.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Chelan power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	60.8	172.0	417	254	144.0	104.0	68.7	62.2	56.0	54.3	54.4	55.2
1914-15	82.5	198.0	264	237	127.0	82.0	71.5	68.0	54.8	50.5	51.0	50.8
1915-16	65.9	152.0	161	161	149.0	90.3	57.2	60.0	51.3	50.1	50.3	55.5
1916-17	112.0	200.0	311	389	170.0	104.0	60.7	54.0	45.7	44.4	45.4	45.3
1917-18	48.0	155.0	359	278	137.0	84.4	74.0	65.8	65.0	67.5	66.8	64.8
1918-19	73.6	202.0	275	226	129.0	90.1	74.2	58.6	53.9	53.5	54.7	52.9
1919-20	70.6	175.0	265	212	133.0	80.0	51.0	42.5	40.1	39.4	40.8	40.4
1920-21	40.6	103.0	202	286	173.0	92.5	94.4	70.7	62.9	62.0	61.6	63.0
1921-22	78.6	207.0	360	226	128.0	89.9	58.2	65.2	52.0	46.5	45.7	46.5
1922-23	50.8	122.0	322	192	115.0	87.9	62.4	51.0	44.7	44.8	44.7	45.1
1923-24	51.8	170.0	315	232	123.0	89.4	55.0	46.4	45.8	45.7	46.5	46.6
1924-25	48.8	143.0	187	140	107.0	82.3	58.5	58.6	58.9	58.4	60.3	59.4
1925-26	113.0	278.0	303	217	122.0	73.2	52.2	45.2	44.5	44.9	44.6	44.8
1926-27	49.4	123.0	110	129	87.4	75.2	69.4	63.1	58.3	55.3	54.6	55.1
1927-28	62.3	139.0	368	260	154.0	132.0	117.0	111.0	85.2	80.8	80.6	78.4
1928-29	78.5	272.0	324	233	125.0	73.2	58.7	49.3	43.6	42.0	41.8	42.3
1929-30	43.1	79.7	221	141	94.7	67.5	48.0	41.5	38.7	39.0	39.6	40.6
1930-31	52.7	116.0	191	177	113.0	77.5	49.0	42.3	39.5	39.2	39.6	40.7
Highest	113.0	278.0	417	389	173.0	132.0	117.0	111.0	85.2	80.8	80.6	78.4
Average	65.7	167.0	275	222	130.0	86.4	65.6	58.6	52.3	51.0	51.3	51.5
Lowest	40.6	79.7	110	129	87.4	67.5	48.0	41.5	38.7	39.0	39.6	40.4

COLUMBIA RIVER AT ROCKY REACH POWER SITE

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 712,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in seven reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 6,615,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE NO. 2-30.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rocky Reach power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	62.9	174	422	262	149.0	109.0	72.0	65.5	59.5	56.7	57.1	57.9
1914-15	83.8	201	271	243	131.0	85.6	74.2	69.9	57.9	52.4	53.0	52.9
1915-16	67.3	154	163	163	153.0	94.6	59.6	62.4	54.0	52.2	52.5	57.5
1916-17	118.0	206	315	396	179.0	110.0	63.7	55.9	48.4	46.7	47.8	47.4
1917-18	48.8	155	364	290	143.0	89.5	78.4	68.9	67.9	71.2	70.5	67.4
1918-19	76.3	205	277	233	135.0	93.8	77.8	61.7	57.0	56.3	58.2	55.5
1919-20	72.3	175	270	219	138.0	83.9	53.3	45.2	42.7	41.4	43.2	42.3
1920-21	41.7	103	203	290	177.0	95.4	97.2	72.0	65.9	64.5	63.8	65.3
1921-22	80.5	210	365	235	132.0	74.1	60.4	67.9	54.7	48.6	47.4	48.8
1922-23	51.7	122	326	198	119.0	91.4	65.4	53.9	47.5	47.5	47.1	47.3
1923-24	52.1	170	319	238	126.0	92.2	57.7	49.0	48.3	47.8	48.6	48.8
1924-25	49.9	144	192	143	109.0	85.4	61.0	61.1	61.4	60.5	62.8	61.7
1925-26	112.0	279	308	223	125.0	76.1	55.2	47.8	46.9	47.1	46.4	46.4
1926-27	49.1	125	114	132	90.3	78.0	71.2	65.9	61.1	58.2	56.9	57.6
1927-28	63.3	139	372	267	159.0	135.0	121.0	114.0	88.8	83.9	84.0	80.4
1928-29	80.3	270	332	238	128.0	75.4	60.7	51.5	45.6	43.8	43.5	44.1
1929-30	44.6	81	226	145	97.1	69.5	50.2	43.7	40.7	41.1	41.4	42.3
1930-31	53.3	118	194	179	115.0	79.6	51.1	44.5	41.1	40.7	40.9	41.8
Highest	118.0	279	422	396	179.0	135.0	121.0	114.0	88.8	83.9	84.0	80.4
Average	67.1	168	280	227	134.0	89.9	68.3	61.2	55.0	53.4	53.6	53.6
Lowest	41.7	81	114	132	90.3	69.5	50.2	43.7	40.7	40.7	40.9	41.8

COLUMBIA RIVER AT ROCK ISLAND RAPIDS AND VANTAGE POWER SITES

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 8,097,000 acre-feet of storage. Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE NO. 2-31.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rock Island Rapids and Vantage power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	66.7	177.0	429	272	154.0	114.0	75.6	69.1	63.1	59.8	60.0	61.1
1914-15	87.4	206.0	278	250	136.0	89.9	77.6	72.5	61.5	55.0	55.8	55.7
1915-16	70.3	156.0	166	167	159.0	99.4	62.6	65.3	57.4	55.1	55.4	61.2
1916-17	125.0	214.0	320	404	186.0	115.0	67.4	58.3	51.6	49.5	50.9	50.1
1917-18	50.4	156.0	370	294	148.0	95.0	83.0	72.0	72.2	76.4	74.5	70.4
1918-19	79.9	210.0	281	240	141.0	97.9	81.7	65.0	60.7	59.5	61.9	58.3
1919-20	75.2	178.0	277	226	142.0	88.4	55.9	48.5	45.8	44.5	46.5	44.9
1920-21	43.5	104.0	206	295	182.0	99.5	101.0	73.8	69.5	68.0	67.3	68.9
1921-22	83.6	213.0	372	242	137.0	79.0	63.4	71.1	59.0	51.3	49.8	51.5
1922-23	53.4	123.0	331	205	122.0	95.4	68.8	57.1	50.7	50.8	49.9	50.0
1923-24	54.1	173.0	324	244	131.0	95.7	60.7	52.0	51.3	50.5	52.2	52.2
1924-25	51.9	145.0	198	146	111.0	89.0	63.9	64.0	65.0	63.5	66.1	65.1
1925-26	113.0	281.0	316	229	128.0	79.8	58.9	50.8	50.3	50.4	49.2	49.7
1926-27	50.9	128.0	116	135	93.5	81.5	74.0	69.4	64.8	61.9	59.9	60.8
1927-28	65.2	141.0	377	276	163.0	138.0	124.0	118.0	93.4	88.2	87.7	83.3
1928-29	82.9	271.0	341	244	131.0	78.4	63.4	54.1	48.2	46.5	45.9	46.5
1929-30	46.6	82.4	232	150	99.4	72.3	52.9	46.3	43.1	43.9	43.9	45.0
1930-31	54.9	120.0	196	181	117.0	81.7	52.5	45.8	42.9	42.2	42.8	43.5
Highest	125.0	281.0	429	404	186.0	138.0	124.0	118.0	93.4	88.2	87.7	83.3
Average	69.7	171.0	285	233	138.0	93.9	71.5	64.1	58.4	56.5	56.7	56.6
Lowest	43.5	82.4	116	135	93.5	72.3	52.5	45.8	42.9	42.2	42.8	43.5

COLUMBIA RIVER AT PRIEST RAPIDS POWER SITE

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River and Grand Coulee Reservoirs, aggregating 8,097,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE NO. 2-32.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Priest Rapids power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	67.1	178.0	430	273	155.0	115.0	76.9	70.5	63.9	60.3	60.4	61.4
1914–15	87.8	207.0	279	251	137.0	91.2	78.8	73.9	62.3	55.5	56.2	56.0
1915–16	70.6	157.0	167	168	160.0	101.0	63.9	66.7	58.2	55.6	55.8	61.5
1916–17	125.0	215.0	321	405	188.0	116.0	68.6	59.6	52.4	50.0	51.3	50.4
1917–18	50.8	157.0	371	295	150.0	96.2	84.3	73.4	73.0	76.9	74.9	70.7
1918–19	80.2	210.0	282	241	142.0	99.2	82.9	66.4	61.5	60.0	62.3	58.6
1919–20	75.5	178.0	278	227	143.0	89.7	57.2	49.8	46.6	45.0	46.9	45.1
1920–21	43.8	105.0	207	296	183.0	101.0	102.0	75.2	70.3	68.5	67.7	69.2
1921–22	84.0	214.0	374	243	138.0	80.3	64.6	72.4	59.7	51.8	50.2	51.8
1922–23	53.8	124.0	332	206	123.0	96.7	70.0	58.4	51.5	51.3	50.3	50.3
1923–24	54.4	174.0	325	246	132.0	97.0	62.0	53.3	52.0	51.0	52.6	52.4
1924–25	52.3	146.0	199	147	113.0	90.3	65.2	65.4	65.7	64.0	66.5	65.3
1925–26	113.0	282.0	317	230	129.0	81.1	60.2	52.2	51.0	50.9	49.6	49.9
1926–27	51.3	129.0	118	136	94.8	82.8	75.3	70.7	65.6	62.4	60.3	61.1
1927–28	65.6	142.0	378	277	165.0	139.0	126.0	119.0	94.1	88.7	88.1	83.5
1928–29	83.2	272.0	342	245	132.0	79.8	64.6	55.5	49.0	47.0	46.3	46.8
1929–30	46.9	83.1	233	151	101.0	73.6	54.2	47.6	43.8	44.4	44.3	45.2
1930–31	55.2	121.0	198	182	118.0	83.0	53.8	47.2	43.6	42.7	43.2	43.7
Highest	125.0	282.0	430	405	188.0	139.0	126.0	119.0	94.1	88.7	88.1	83.5
Average	70.0	172.0	286	234	139.0	95.2	72.8	65.4	59.1	57.0	57.1	56.8
Lowest	43.8	83.1	118	136	94.8	73.6	53.8	47.2	43.6	42.7	43.2	43.7

COLUMBIA RIVER AT MOUTH OF SNAKE RIVER

COLUMBIA BASIN PUMPING WITH SUPPLEMENTAL PUMPING, PLAN NO. 4

Columbia Basin irrigation project, 1,199,430 acres, assumed to be served by pumping from Columbia River at Grand Coulee. Additional allowance made for future irrigation of about 1,027,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in 14 reservoirs, exclusive of Columbia River and Grand Coulee reservoirs, aggregating 9,072,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage. Regulation of Grand Coulee Reservoir, at infrequent intervals, to avoid excessive pumping; maximum requirement 325,800 acre-feet.

TABLE NO. 2-33.—*Effect of upstream regulation on discharge of Columbia River at mouth of Snake River, in units of 1,000 second-feet*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	−15.7	−40.8	−57.1	−50.0	−15.5	+3.0	+8.1	+11.0	+16.8	+18.8	+20.7	+5.8
1914-15	−29.8	−52.1	−59.5	−31.1	−6.5	+7.5	+10.7	+3.1	+5.3	+19.7	+23.5	+14.2
1915-16	−34.1	−41.9	−41.9	−27.8	−9.1	+.6	+9.6	+12.9	+11.7	+23.2	+19.5	−9.5
1916-17	−16.6	−36.1	−46.7	−54.5	−28.3	−6.9	+2.7	+12.2	+14.7	+20.5	+20.8	+20.9
1917-18	−10.8	−44.2	−45.5	−60.9	−15.3	+4.4	+13.9	+28.4	+21.7	−23.1	+13.4	+19.8
1918-19	−29.3	−32.6	−59.9	−45.2	−8.6	+3.7	+11.5	+13.4	+15.9	+19.2	+11.5	+11.9
1919-20	−27.6	−52.6	−63.7	−34.5	−7.5	+1.4	+9.2	+14.2	+18.0	+17.5	+15.7	+12.5
1920-21	−7.1	−50.9	−52.7	−41.9	−5.9	+5.2	+6.6	+10.3	+16.7	+15.1	+14.9	−.8
1921-22	−23.6	−42.2	−72.4	−42.8	−11.7	+2.3	+10.3	+11.9	+1.0	+13.1	+20.4	+20.1
1922-23	−7.6	−51.4	−65.4	−39.1	−9.6	+2.7	+10.5	+14.3	+19.4	+7.1	+20.0	+17.8
1923-24	−31.1	−44.3	−56.9	−41.6	−13.0	+1.0	+9.9	+16.3	+18.6	+24.7	+5.4	+6.1
1924-25	−1.8	−72.2	−58.7	−28.4	−3.3	+5.9	+15.2	+15.4	+17.6	+17.1	−3.0	+3.4
1925-26	−38.1	−37.3	−56.1	−39.0	−12.6	+1.6	+8.1	+15.3	+16.0	+19.7	+15.1	+9.8
1926-27	+30.6	−62.4	−38.3	−13.1	+1.6	+9.4	+12.4	+2.5	−2.0	+14.1	+15.6	+11.0
1927-28	−7.9	−66.8	−34.9	−52.2	−4.3	+10.9	+7.3	+.9	−9.3	+16.6	+26.8	+17.3
1928-29	−25.3	−41.2	−61.1	−39.5	−19.6	−2.0	+8.6	+9.2	+11.4	+16.9	+20.9	+18.0
1929-30	+.1	−48.9	−68.1	−32.5	−13.2	+2.2	+8.7	+13.8	+15.8	+21.0	+18.6	+13.2
1930-31	−27.9	−62.3	−48.4	−23.9	−9.0	+4.0	+6.1	+10.8	+12.3	+17.1	+16.0	+9.5
Average	−20.3	−48.9	−54.8	−38.8	−10.6	+3.2	+9.4	+12.0	+12.3	+15.5	+16.4	+11.2

COLUMBIA RIVER RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Upstream regulation in six reservoirs aggregating 5,978,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, between elevations 1,127.6 feet and 1,157.6 feet, United States Geological Survey datum, providing 776,000 acre-feet of storage. Regulated elevation 50 percent of time about 1,156.7 feet.

TABLE NO. 2-34.—*Regulated stage of Columbia River Reservoir on the last day of each month*

[Add 1,100 to determine elevation in feet, U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	52.0	41.0	32.6	32.6
1914-15	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	46.0	33.8	32.6
1915-16	32.6	32.6	40.0	57.6	57.6	57.6	57.6	57.6	56.7	43.8	32.6	32.6
1916-17	32.6	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.4	50.5	42.0	32.6
1917-18	32.6	32.6	57.6	57.6	57.6	57.6	57.6	43.4	32.6	44.0	40.3	32.6
1918-19	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	47.3	39.1	32.6	32.6
1919-20	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	52.3	43.6	35.7	32.6
1920-21	32.6	32.6	32.6	57.6	57.6	57.6	57.6	57.6	45.0	37.1	32.6	32.6
1921-22	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	52.5	43.1	32.6
1922-23	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	49.6	47.3	39.5	32.6
1923-24	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.2	47.6	32.6	32.6	32.6
1924-25	32.6	32.6	57.6	57.6	57.6	57.6	53.3	48.2	38.6	32.6	33.1	32.6
1925-26	32.6	32.6	57.6	57.6	57.6	57.6	57.6	56.8	49.8	38.4	32.6	32.6
1926-27	32.6	57.6	40.1	57.6	57.6	57.6	57.6	57.6	57.6	45.7	39.5	32.6
1927-28	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	47.1	32.6	32.6
1928-29	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	52.4	41.7	32.6
1929-30	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	52.9	39.4	30.6	27.6
1930-31	27.6	27.6	51.3	57.6	57.6	57.6	57.6	57.6	53.8	43.6	33.4	32.6
Average	32.3	33.7	52.5	57.6	57.6	57.6	57.4	56.2	51.3	43.2	35.6	32.3

COLUMBIA RIVER AT GRAND COULEE AND FOSTER CREEK POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 625,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River Reservoir, aggregating 5,978,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-35.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Grand Coulee and Foster Creek power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	66.4	169.0	375	233	144.0	101.0	64.9	55.2	49.2	49.2	49.3	52.4
1914-15	89.1	181.0	236	226	124.0	77.9	65.1	60.3	45.5	43.2	43.3	43.3
1915-16	76.3	150.0	155	155	148.0	86.6	53.0	52.9	44.4	44.4	44.4	73.2
1916-17	101.0	176.0	294	352	162.0	102.0	58.0	50.8	41.3	41.3	41.3	41.3
1917-18	55.3	166.0	313	264	134.0	79.4	66.2	59.1	59.1	65.3	65.3	65.4
1918-19	82.7	179.0	253	217	127.0	88.2	68.6	51.8	49.7	49.7	49.7	51.0
1919-20	81.7	168.0	230	203	131.0	76.1	46.6	36.2	34.5	34.9	35.3	35.6
1920-21	42.5	115.0	188	269	171.0	93.3	87.9	67.0	58.4	58.4	58.5	62.4
1921-22	85.2	199.0	324	211	129.0	68.0	55.5	58.1	45.6	41.2	41.2	41.2
1922-23	52.2	141.0	285	182	118.0	86.6	58.0	44.6	39.5	39.8	40.1	40.5
1923-24	67.4	166.0	278	219	125.0	89.5	51.3	39.9	40.2	40.9	41.3	42.1
1924-25	45.2	151.0	169	142	109.0	79.4	53.7	53.7	53.7	53.7	62.4	62.5
1925-26	125.0	258.0	277	208	123.0	71.4	46.1	37.3	37.5	37.9	38.4	39.0
1926-27	62.2	122.0	122	120	85.3	69.7	66.0	57.6	53.4	51.5	51.5	51.6
1927-28	65.1	161.0	326	248	151.0	127.0	106.0	98.2	79.6	74.5	74.5	75.1
1928-29	92.5	257.0	292	228	126.0	73.5	55.3	42.6	37.8	37.4	37.8	38.3
1929-30	39.0	89.2	204	141	100.0	67.7	43.0	35.6	32.8	33.2	33.7	34.0
1930-31	53.9	121.0	174	174	116.0	76.9	45.3	36.4	34.2	34.6	35.1	35.4
Highest	125.0	258.0	375	352	171.0	127.0	106.0	98.2	79.6	74.5	74.5	75.1
Average	71.3	165.0	250	211	129.0	84.1	60.6	52.1	46.5	46.2	46.8	49.1
Lowest	39.0	89.2	122	120	85.3	67.7	43.0	35.6	32.8	33.2	33.7	34.0

COLUMBIA RIVER AT CHELAN POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 685,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River Reservoir, aggregating 5,978,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-36.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Chelan power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	68.9	176.0	393	252	152.0	108.0	69.0	59.3	53.2	51.5	51.7	54.6
1914-15	93.2	195.0	254	240	132.0	83.0	68.6	62.2	49.2	44.7	45.3	45.1
1915-16	79.9	157.0	163	161	155.0	93.3	55.7	55.7	47.5	46.3	46.7	75.4
1916-17	110.0	196.0	314	369	174.0	109.0	61.6	52.0	43.8	42.9	43.4	42.7
1917-18	54.1	168.0	332	283	142.0	86.2	71.6	61.9	61.1	69.8	69.1	67.2
1918-19	86.2	191.0	266	230	135.0	92.1	72.2	54.5	52.0	51.6	52.8	52.3
1919-20	84.2	175.0	250	217	138.0	81.2	48.2	38.9	36.4	36.1	37.5	36.2
1920-21	41.5	117.0	196	278	178.0	96.5	92.0	67.3	61.4	60.5	60.2	64.4
1921-22	87.4	209.0	347	225	135.0	73.3	57.4	61.4	48.8	43.2	42.4	43.2
1922-23	51.8	143.0	302	194	121.0	90.7	61.2	47.6	42.1	42.2	42.1	42.1
1923-24	67.1	174.0	294	232	130.0	92.8	54.2	42.6	42.4	42.3	43.1	44.0
1924-25	45.2	157.0	179	144	110.0	82.2	55.7	55.8	56.1	55.6	65.3	64.5
1925-26	124.0	269.0	293	217	127.0	74.8	49.6	39.9	39.8	40.2	40.0	40.5
1926-27	62.4	125.0	123	122	87.7	72.4	67.3	60.9	56.5	54.7	54.0	54.6
1927-28	64.9	163.0	340	261	156.0	131.0	112.0	105.0	86.2	80.6	80.4	78.2
1928-29	95.3	266.0	312	240	132.0	76.5	57.9	45.3	39.7	38.8	38.7	39.1
1929-30	38.7	90.8	215	147	103.0	69.3	45.2	37.5	33.9	34.8	35.0	35.1
1930-31	56.1	129.0	184	179	118.0	79.0	46.8	38.1	35.3	35.4	36.1	35.7
Highest	124.0	269.0	393	369	178.0	131.0	112.0	105.0	86.2	80.6	80.4	78.2
Average	72.8	172.0	264	222	135.0	88.4	63.7	54.8	49.2	48.4	49.1	50.8
Lowest	38.7	90.8	123	122	87.7	69.3	45.2	37.5	33.9	34.8	35.0	35.1

COLUMBIA RIVER AT ROCKY REACH POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 712,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in seven reservoirs, exclusive of Columbia River Reservoir, aggregating 6,643,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-37.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rocky Reach power site*

Storage year	Apr.	May	June	July	Aug.	Sept	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	71.0	178.0	398	260	157.0	113.0	72.3	62.6	56.7	53.9	54.4	57.3
1914-15	94.5	198.0	261	246	136.0	86.6	71.3	64.1	52.3	46.6	47.3	47.2
1915-16	81.3	159.0	165	163	159.0	97.6	58.1	58.1	50.2	48.4	48.9	77.4
1916-17	116.0	202.0	318	376	183.0	115.0	64.6	53.9	46.5	45.2	45.8	44.8
1917-18	54.9	168.0	337	295	148.0	91.3	76.0	65.0	64.0	73.5	72.8	69.8
1918-19	88.9	194.0	268	237	141.0	95.8	75.8	57.6	55.1	54.4	56.3	54.9
1919-20	85.9	175.0	255	224	143.0	85.1	50.5	41.6	39.0	38.1	39.9	38.1
1920-21	42.6	117.0	197	282	182.0	99.4	94.8	68.6	64.4	63.0	62.4	66.7
1921-22	89.3	212.0	352	234	139.0	77.5	59.6	64.1	51.5	45.3	44.1	45.5
1922-23	52.7	143.0	306	200	125.0	94.2	64.2	50.5	44.9	44.9	44.5	44.3
1923-24	67.4	174.0	298	238	133.0	95.6	56.9	45.2	44.9	44.4	45.2	46.2
1924-25	46.3	158.0	184	147	112.0	85.3	58.2	58.3	58.6	57.7	67.8	66.8
1925-26	123.0	270.0	298	223	130.0	77.7	52.6	42.5	42.2	42.4	41.8	42.1
1926-27	62.1	127.0	127	125	90.6	75.2	69.1	63.7	59.3	57.6	56.3	57.1
1927-28	65.9	163.0	344	268	161.0	134.0	116.0	108.0	89.8	83.7	83.8	80.2
1928-29	97.1	264.0	320	245	135.0	78.7	59.9	47.5	41.7	40.6	40.4	40.9
1929-30	40.2	92.1	220	151	105.0	71.3	47.4	39.7	35.9	36.9	36.8	36.8
1930-31	56.7	131.0	187	181	120.0	81.1	48.9	40.3	36.9	36.9	37.4	36.8
Highest	123.0	270.0	398	376	183.0	134.0	116.0	108.0	89.8	83.7	83.8	80.2
Average	74.2	174.0	269	228	139.0	91.9	66.5	57.3	51.9	50.8	51.4	52.9
Lowest	40.2	92.1	127	125	90.6	71.3	47.4	39.7	35.9	36.9	36.8	36.8

COLUMBIA RIVER AT ROCK ISLAND RAPIDS AND VANTAGE POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River Reservoir, aggregating 8,125,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-38.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rock Island Rapids and Vantage power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	74.8	181.0	405	270	162.0	118.0	75.9	66.2	60.3	57.0	57.3	60.5
1914–15	98.1	203.0	268	253	141.0	90.9	74.7	66.7	55.9	49.2	50.1	50.0
1915–16	84.3	161.0	168	167	165.0	102.0	61.1	61.0	53.6	51.3	51.8	81.1
1916–17	123.0	210.0	323	384	190.0	120.0	68.3	56.3	49.7	48.0	48.9	47.5
1917–18	56.5	169.0	343	299	153.0	96.8	80.6	68.1	68.3	78.7	76.8	72.8
1918–19	92.5	199.0	272	244	147.0	99.9	79.7	60.9	58.8	57.6	60.0	57.7
1919–20	88.8	178.0	262	231	147.0	89.6	53.1	44.9	42.1	41.2	43.2	40.7
1920–21	44.4	118.0	200	287	187.0	104.0	98.6	70.4	68.0	66.5	65.9	70.3
1921–22	92.4	215.0	359	241	144.0	82.4	62.6	67.3	55.8	48.0	46.5	48.2
1922–23	54.4	144.0	311	207	128.0	98.2	67.6	53.7	48.1	48.2	47.3	47.0
1923–24	69.4	177.0	303	244	138.0	99.1	59.9	48.2	47.9	47.1	48.8	49.6
1924–25	48.3	159.0	190	150	114.0	88.9	61.1	61.2	62.2	60.7	71.1	70.2
1925–26	124.0	272.0	306	229	133.0	81.4	56.3	45.5	45.6	45.7	44.6	45.4
1926–27	63.9	130.0	129	128	93.8	78.7	71.9	67.2	63.0	61.3	59.3	60.3
1927–28	67.8	165.0	349	277	165.0	137.0	119.0	112.0	94.4	88.0	87.5	83.1
1928–29	99.7	265.0	329	251	138.0	81.7	62.6	50.1	44.3	43.3	42.8	43.3
1929–30	42.2	93.5	226	156	107.0	74.1	50.1	42.3	38.3	39.7	39.3	39.5
1930–31	58.3	133.0	189	183	122.0	83.2	50.3	41.6	38.7	38.4	39.3	38.5
Highest	124.0	272.0	405	384	190.0	137.0	119.0	112.0	94.4	88.0	87.5	83.1
Average	76.8	176.0	274	233	143.0	95.9	69.6	60.2	55.3	53.9	54.5	55.9
Lowest	42.2	93.5	129	128	93.8	74.1	50.1	41.6	38.3	38.4	39.3	38.5

COLUMBIA RIVER AT PRIEST RAPIDS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River Reservoir, aggregating 8,125,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-39.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Priest Rapids power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	75.2	182.0	406	271	163.0	119.0	77.2	67.6	61.1	57.5	57.7	60.8
1914–15	98.5	204.0	269	254	142.0	92.2	75.9	68.1	56.7	49.7	50.5	50.3
1915–16	84.6	162.0	169	168	166.0	104.0	62.4	62.4	54.4	51.8	52.2	81.4
1916–17	123.0	211.0	324	385	192.0	121.0	69.5	57.6	50.5	48.5	49.3	47.8
1917–18	56.9	170.0	344	300	155.0	98.0	81.9	69.5	69.1	79.2	77.2	73.1
1918–19	92.8	199.0	273	245	148.0	101.0	80.9	62.3	59.6	58.1	60.4	58.0
1919–20	89.1	178.0	263	232	148.0	90.9	54.4	46.2	42.9	41.7	43.6	40.9
1920–21	44.7	119.0	201	288	188.0	105.0	99.6	71.8	68.8	67.0	66.3	70.6
1921–22	92.8	216.0	361	242	145.0	83.7	63.8	68.6	56.5	48.5	46.9	48.5
1922–23	54.8	145.0	312	208	129.0	99.5	68.8	55.0	48.9	48.7	47.7	47.3
1923–24	69.7	178.0	304	246	139.0	100.0	61.2	49.5	48.6	47.6	49.2	49.8
1924–25	48.7	160.0	191	151	116.0	90.2	62.4	62.6	62.9	61.2	71.5	70.4
1925–26	124.0	273.0	307	230	134.0	82.7	57.6	46.9	46.3	46.2	45.0	45.6
1926–27	64.3	131.0	131	129	95.1	80.0	73.2	68.5	63.8	61.8	59.7	60.6
1927–28	68.2	166.0	350	278	167.0	138.0	121.0	113.0	95.1	88.5	87.9	83.3
1928–29	100.0	266.0	330	252	139.0	83.1	63.8	51.5	45.1	43.8	43.2	43.6
1929–30	42.5	94.2	227	157	109.0	75.4	51.4	43.6	39.0	40.2	39.7	39.7
1930–31	58.6	134.0	191	184	123.0	84.5	51.6	43.0	39.4	38.9	39.7	38.7
Highest	124.0	273.0	406	385	192.0	138.0	121.0	113.0	95.1	88.5	87.9	83.3
Average	77.1	177.0	275	234	144.0	97.1	70.9	61.5	56.0	54.4	54.9	56.1
Lowest	42.5	94.2	131	129	95.1	75.4	51.4	43.0	39.0	38.9	39.7	38.7

COLUMBIA RIVER AT MOUTH OF SNAKE RIVER

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 1,027,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in 14 reservoirs, exclusive of Columbia River Reservoir, aggregating 9,100,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-40.—*Effect of upstream regulation on discharge of Columbia River at mouth of Snake River, in units of 1,000 second-feet*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	−7.6	−36.8	−81.1	−52.0	−7.5	+7.0	+8.4	+8.1	+14.0	+16.0	+18.0	+5.2
1914–15	−19.1	−55.1	−69.5	−28.1	−1.5	+8.5	+7.8	−2.7	−0.3	+13.9	+17.8	+8.5
1915–16	−20.1	−36.9	−39.9	−27.8	−3.1	+3.6	+8.1	+8.6	+7.9	+19.4	+15.9	+10.4
1916–17	−18.6	−40.1	−43.7	−74.5	−24.3	−1.9	+3.6	+10.2	+12.8	+19.0	+18.8	+18.3
1917–18	−4.7	−31.2	−72.5	−55.9	−10.3	+6.2	+11.5	+24.5	+17.8	−20.8	+15.7	+22.2
1918–19	−16.7	−43.6	−68.9	−41.2	−2.6	+5.7	+9.5	+9.3	+14.0	+17.3	+9.6	+11.3
1919–20	−14.0	−52.6	−78.7	−29.5	−2.5	+2.6	+6.4	+10.6	+14.3	+14.2	+12.4	+8.3
1920–21	−6.2	−36.9	−58.7	−49.9	−.9	+9.2	+4.2	+6.9	+15.2	+13.6	+13.5	+.6
1921–22	−14.8	−40.2	−85.4	−43.8	−4.7	+5.7	+9.5	+8.1	−2.2	+9.8	+17.1	+16.8
1922–23	−6.6	−30.4	−85.4	−37.1	−3.6	+5.5	+9.3	+10.9	+16.8	+4.5	+17.4	+14.8
1923–24	−15.8	−40.3	−77.9	−41.6	−6.0	+4.4	+9.1	+12.5	+15.2	+21.3	+2.0	+3.5
1924–25	−5.4	−58.2	−66.7	−24.4	−.3	+5.8	+12.4	+12.6	+14.8	+14.3	+2.0	+8.5
1925–26	−27.1	−46.3	−66.1	−39.0	−7.6	+3.2	+5.5	+10.0	+11.3	+15.0	+10.5	+5.5
1926–27	−17.6	−60.4	−25.3	−20.1	+1.9	+6.6	+10.3	+.3	−3.8	+13.5	+15.0	+10.5
1927–28	−5.3	−42.8	−62.9	−51.2	−2.3	+9.9	+2.3	−5.1	−8.3	+16.4	+26.6	+17.1
1928–29	−8.5	−47.2	−73.1	−32.5	−12.6	+1.3	+7.8	+5.2	+7.5	+13.7	+17.8	+14.8
1929–30	−4.3	−37.8	−74.1	−26.5	−5.2	+4.0	+5.9	+9.8	+11.0	+16.8	+14.0	+7.7
1930–31	−24.5	−49.3	−55.4	−21.9	−4.0	+5.5	+3.9	+6.6	+8.1	+13.3	+12.5	+4.5
Average	−13.2	−43.7	−65.8	−38.7	−5.4	+5.2	+7.5	+8.1	+9.2	+12.8	+14.3	+10.5

PEND OREILLE RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin Irrigation Project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Upstream regulation in three reservoirs aggregating 3,209,000 acre-feet of storage.

Reregulation in Pend Oreille Reservoir for joint benefit of Columbia Basin irrigation project and power sites on lower Clark Fork, between elevations 2,049.70 feet and 2,066.80 feet, United States Coast and Geodetic Survey datum, providing 1,568,000 acre-feet of storage. Regulated elevation 50 percent of time about 2,060.27 feet.

TABLE NO. 2-41.—*Regulated stage of Pend Oreille Reservoir on the last day of each month*

[Add 2,000 to determine elevation in feet, U.S. Coast and Geodetic Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	60.99	63.11	66.80	66.80	63.13	58.15	55.41	55.92	54.68	55.11	54.03	56.94
1914-15	61.05	66.80	66.80	66.02	60.97	56.03	55.91	59.18	60.27	60.35	60.48	62.32
1915-16	63.91	65.12	66.80	65.66	60.94	55.64	52.95	52.62	52.45	49.70	51.56	56.58
1916-17	62.24	63.99	65.05	66.80	66.80	64.05	62.10	62.01	60.96	59.90	59.30	57.92
1917-18	61.88	63.99	66.80	66.80	61.73	55.84	52.16	50.37	53.16	59.93	58.70	58.78
1918-19	61.64	64.34	66.80	65.92	61.43	55.18	52.63	52.30	51.58	53.41	54.60	56.41
1919-20	61.57	64.76	66.80	64.35	60.69	56.76	54.34	54.91	54.74	55.89	57.54	59.95
1920-21	61.49	61.49	66.80	66.80	60.89	56.74	54.35	54.04	53.23	53.91	55.94	60.02
1921-22	61.60	62.12	66.80	66.80	61.39	56.64	54.71	55.13	57.62	58.12	58.61	59.58
1922-23	61.70	62.99	66.80	66.80	61.55	56.63	54.17	53.59	53.37	56.01	55.64	56.77
1923-24	61.50	63.00	66.80	66.80	62.17	57.50	55.83	56.13	56.46	55.61	59.24	61.33
1924-25	61.59	64.57	66.80	65.11	60.40	56.11	51.73	50.64	49.90	50.64	54.66	56.53
1925-26	63.01	66.80	66.80	66.80	61.82	57.67	56.11	56.54	57.48	58.30	60.09	62.43
1926-27	64.31	66.80	65.88	63.16	60.53	56.13	53.87	54.10	55.87	56.08	57.33	59.89
1927-28	63.19	64.04	66.80	66.80	61.23	56.74	52.77	58.50	61.83	62.22	60.64	62.31
1928-29	63.19	66.80	66.80	66.80	63.56	60.31	59.36	60.33	60.68	59.81	59.39	61.06
1929-30	61.02	61.52	66.80	65.14	60.44	55.28	53.24	53.07	53.97	52.95	55.00	56.61
1930-31	62.35	66.80	66.80	64.28	60.42	55.29	53.58	53.83	53.69	53.82	54.43	56.57
Average	62.12	64.39	66.65	65.98	61.67	57.04	54.73	55.18	55.66	56.21	57.07	59.06

CLARK FORK AT ALBANY FALLS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork above Albany Falls, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 435,000 acres in Montana and Idaho. Upstream regulation in three reservoirs aggregating 3,209,000 acre-feet of storage.

Reregulation by use of 1,568,000 acre-feet in Pend Oreille Reservoir for joint benefit of Columbia Basin irrigation project and power sites in lower Clark Fork.

TABLE NO. 2-42.—*Modified discharge, in second-feet, of Clark Fork at Albany Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	28,500	40,500	91,200	31,800	18,100	18,100	18,100	18,100	18,100	18,100	18,100	18,100
1914-15	21,600	25,200	24,800	16,100	16,100	16,100	16,100	16,100	16,100	16,100	16,100	16,100
1915-16	16,100	16,100	16,500	16,700	16,700	16,700	16,700	16,700	16,700	16,700	16,700	25,000
1916-17	30,000	47,700	71,100	71,100	18,800	17,800	17,800	17,800	17,800	17,800	17,800	17,800
1917-18	17,800	45,600	83,400	43,300	19,000	19,000	19,000	19,000	19,000	23,800	23,800	23,800
1918-19	23,800	47,400	47,500	16,200	16,200	16,200	16,200	16,200	16,200	16,200	16,200	16,200
1919-20	16,200	25,100	25,100	8,800	8,800	11,400	11,400	11,400	11,400	11,400	11,400	11,400
1920-21	11,406	31,300	31,700	23,600	16,300	16,300	19,600	19,600	19,600	19,600	19,600	19,600
1921-22	19,600	53,200	58,700	17,500	13,800	13,800	13,800	13,800	13,800	13,800	13,800	13,800
1922-23	13,800	32,200	58,400	14,200	14,000	14,000	14,000	14,000	14,000	14,000	14,000	14,000
1923-24	14,000	32,400	50,800	22,200	13,500	13,500	13,500	13,500	13,500	13,500	13,500	13,500
1924-25	13,500	26,600	26,600	11,900	11,900	11,900	17,000	17,000	17,000	17,000	18,900	18,900
1925-26	23,300	69,500	60,100	20,500	14,000	14,000	14,000	14,100	14,100	14,100	14,100	14,100
1926-27	14,100	14,100	9,000	9,000	9,000	13,500	16,200	16,200	16,200	16,200	16,200	16,200
1927-28	16,200	40,000	98,500	38,500	21,300	21,300	26,400	26,400	26,400	26,400	26,400	26,400
1928-29	26,400	70,200	60,700	32,400	13,600	13,600	13,600	13,600	13,600	13,600	13,600	13,600
1929-30	13,600	23,000	22,900	10,500	10,500	12,000	12,000	12,000	12,000	12,300	12,000	12,000
1930-31	14,900	14,900	15,100	9,400	9,400	12,400	12,400	12,400	12,400	12,400	12,400	12,400
Highest	30,000	70,200	98,500	71,100	21,300	21,300	26,400	26,400	26,400	26,400	26,400	26,400
Average	18,600	36,400	47,300	23,000	14,500	15,100	16,000	16,000	16,000	16,300	16,400	16,800
Lowest	11,400	14,100	9,000	8,800	8,800	11,400	11,400	11,400	11,400	11,400	11,400	11,400

CLARK FORK AT METALINE FALLS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 435,000 acres in Montana, and Idaho. Upstream regulation in four reservoirs aggregating 4,777,000 acre-feet of storage.

TABLE NO. 2-43.—*Modified discharge, in second-feet, of Clark Fork at Metaline Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	29,100	42,100	95,200	32,500	18,600	18,500	18,400	18,400	18,400	18,400	18,400	18,400
1914–15	22,500	27,900	26,900	16,800	16,400	16,500	16,400	16,600	16,400	16,400	16,400	16,400
1915–16	17,100	17,400	17,300	17,100	17,000	17,000	17,000	17,000	17,000	16,900	17,000	25,400
1916–17	30,600	49,100	73,600	72,100	19,200	18,200	18,100	18,100	18,100	18,000	18,000	18,100
1917–18	18,100	47,000	86,400	44,500	19,400	19,300	19,300	19,300	19,300	24,100	24,100	24,100
1918–19	24,300	48,400	48,600	16,700	16,500	16,400	16,500	16,400	16,400	16,500	16,500	16,400
1919–20	16,900	27,300	27,000	9,400	9,100	11,700	11,700	11,800	11,700	11,700	11,700	11,600
1920–21	11,600	31,900	32,700	24,000	16,900	16,800	19,900	20,000	19,900	19,900	19,900	20,000
1921–22	20,300	55,200	60,700	18,200	14,200	14,100	14,000	14,000	14,000	14,000	14,100	14,300
1922–23	14,000	33,100	59,800	14,600	14,300	14,300	14,300	14,300	14,300	14,300	14,300	14,200
1923–24	14,300	33,700	52,100	22,700	13,800	13,700	13,700	13,700	13,800	13,800	13,900	13,800
1924–25	13,800	27,600	27,000	12,100	12,100	12,000	17,200	17,200	17,200	17,300	19,400	19,300
1925–26	24,200	71,600	61,900	21,000	14,300	14,300	14,300	14,400	14,300	14,300	14,300	14,300
1926–27	14,500	15,300	9,700	9,200	9,100	13,700	16,500	16,600	16,700	16,500	16,500	16,500
1927–28	16,600	41,500	100,000	39,300	21,800	21,800	26,900	27,200	27,200	26,900	26,900	26,800
1928–29	27,000	72,300	62,700	33,000	14,000	13,900	13,900	14,100	13,800	13,800	13,800	13,800
1929–30	13,900	22,800	24,900	14,100	11,800	12,300	12,100	12,200	12,000	12,400	12,100	12,100
1930–31	14,200	15,600	16,600	11,000	9,800	12,600	12,500	12,400	12,500	12,500	12,700	12,700
Highest	30,600	72,300	100,000	72,100	21,800	21,800	26,900	27,200	27,200	26,900	26,900	26,800
Average	19,100	37,800	49,100	23,800	14,900	15,400	16,300	16,300	16,300	16,500	16,700	17,100
Lowest	11,600	15,300	9,700	9,200	9,100	11,700	11,700	11,800	11,700	11,700	11,700	11,600

COLUMBIA RIVER AT KETTLE FALLS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 575,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in five reservoirs aggregating 5,492,000 acre-feet storage.

TABLE NO. 2-44—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Kettle Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	44.3	141.0	380	232	141.0	96.9	60.8	51.0	42.4	38.8	38.7	40.5
1914–15	73.8	172.0	247	225	123.0	76.5	63.3	59.1	44.5	36.4	35.5	37.7
1915–16	68.4	143.0	155	161	146.0	85.4	51.5	50.9	41.5	36.1	34.3	49.2
1916–17	74.2	157.0	282	359	158.0	97.6	53.9	46.6	37.0	34.0	33.0	32.1
1917–18	37.9	136.0	308	263	132.0	77.4	64.0	50.0	46.2	49.3	48.3	46.6
1918–19	64.2	173.0	265	216	126.0	87.3	67.4	49.5	41.6	38.1	38.2	38.6
1919–20	57.2	156.0	242	199	128.0	75.3	45.7	32.8	28.5	27.7	27.4	27.8
1920–21	29.0	111.0	189	279	167.0	89.4	87.1	63.6	48.0	44.7	42.1	43.4
1921–22	61.4	185.0	333	211	126.0	65.0	52.3	54.8	41.3	34.7	32.4	31.1
1922–23	37.1	120.0	300	181	116.0	84.9	56.1	41.8	32.8	32.2	30.5	30.3
1923–24	48.6	148.0	290	214	119.0	82.9	46.7	35.8	32.3	30.9	31.3	32.0
1924–25	33.6	148.0	184	140	107.0	77.1	54.5	51.7	45.0	43.8	43.6	44.1
1925–26	97.8	248.0	285	207	122.0	69.7	44.2	35.1	32.3	30.7	30.2	30.8
1926–27	52.9	127.0	110	125	82.9	71.4	65.4	52.9	43.8	36.3	36.5	35.7
1927–28	46.3	141.0	336	247	147.0	123.0	106.0	87.5	63.4	55.0	53.5	55.8
1928–29	70.6	248.0	297	224	118.0	66.7	49.3	36.2	32.4	30.7	28.9	29.2
1929–30	30.1	93.5	219	138	95.0	64.3	40.1	32.2	28.3	25.4	26.1	26.7
1930–31	52.0	122.0	185	171	111.0	74.2	43.7	34.0	29.8	27.6	27.3	28.4
Highest	97.8	248.0	380	359	167.0	123.0	106.0	87.5	63.4	55.0	53.5	55.8
Average	54.4	154.0	256	211	126.0	81.4	58.4	48.1	39.5	36.2	35.4	36.7
Lowest	29.0	93.5	110	125	82.9	64.3	40.1	32.2	28.3	25.4	26.1	26.7

COEUR D'ALENE RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. No upstream regulation. Regulation in Coeur d'Alene Reservoir for joint benefit of Columbia Basin irrigation project and power sites on Spokane River, between elevations 2,117.70 feet and 2,129.10 feet, United States Coast and Geodetic Survey datum, providing 430,000 acre-feet of storage. Modified elevation 50 percent of time about 2,122.13 feet.

TABLE NO. 2-45.—*Modified stage of Coeur d'Alene Reservoir on the last day of each month*

[Add 2,100 to determine elevation in feet, U.S. Coast and Geodetic Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	30.91	30.80	28.86	28.60	25.32	22.31	19.89	20.74	18.85	20.22	20.22	24.22
1914-15	20.10	28.99	28.86	25.60	19.96	18.59	18.07	21.58	20.85	18.89	18.70	22.13
1915-16	28.18	28.99	28.86	25.76	20.70	19.26	18.07	18.07	20.00	18.96	21.51	28.64
1916-17	20.10	28.99	28.86	29.10	26.43	25.28	23.51	22.35	20.33	18.78	19.00	18.67
1917-18	29.54	31.53	28.86	28.24	25.40	23.47	20.92	18.63	26.86	29.10	25.58	23.60
1918-19	20.10	28.99	28.86	25.82	20.96	19.04	18.11	18.29	19.59	21.91	20.70	23.47
1919-20	29.32	28.99	28.86	25.90	21.29	19.70	18.29	18.00	18.00	19.96	19.52	22.09
1920-21	23.76	28.99	28.86	25.64	19.41	18.22	18.85	19.56	19.93	23.21	22.71	26.53
1921-22	26.53	28.99	28.86	26.06	21.14	19.44	18.14	18.07	21.57	22.71	19.56	19.11
1922-23	25.94	28.99	28.86	26.06	21.43	19.78	18.63	17.96	18.22	23.93	19.85	20.22
1923-24	28.77	28.99	28.86	27.03	23.17	20.81	18.96	18.29	19.11	18.29	24.94	20.33
1924-25	23.73	28.99	28.56	24.94	19.11	18.22	17.70	19.78	21.10	19.93	27.44	27.12
1925-26	30.32	28.99	28.86	26.00	21.36	19.81	18.63	18.00	19.26	18.44	22.06	23.41
1926-27	29.10	28.99	27.28	22.50	18.37	17.89	18.78	20.59	24.68	20.81	22.39	22.09
1927-28	26.96	28.99	28.86	26.18	19.63	18.59	20.66	29.04	29.10	28.24	22.96	25.19
1928-29	25.38	29.58	28.86	26.61	22.85	21.32	20.55	20.37	19.74	18.81	18.03	19.70
1929-30	23.24	28.99	28.86	26.08	21.36	19.93	18.92	17.85	18.67	17.92	20.00	20.00
1930-31	29.04	28.99	28.86	25.68	20.55	19.19	18.40	18.37	17.70	18.33	18.96	22.60
Average	27.67	29.43	28.76	26.21	21.58	20.05	19.17	19.75	20.92	21.02	21.34	22.73

SPOKANE RIVER AT POST FALLS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Spokane River below Post Falls, Clark Fork, and Wenatchee River. Additional allowance made for future irrigation of about 20,000 acres in Idaho. Regulation of 430,000 acre-feet in Coeur d'Alene Reservoir for joint benefit of Columbia Basin irrigation project and power sites on Spokane River. This plan of regulation assumes a diversion of water from the conduit of the Columbia River irrigation project to Spokane River after the end of August, to compensate power interests on Spokane River for their equity in that part of Coeur d'Alene Reservoir storage which was used during the period May to August to meet irrigation demand of the Columbia Basin project.

TABLE NO. 2-46.—*Modified discharge, in second-feet, of Spokane River at Post Falls power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	18,200	27,300	16,000	4,240	3,980	2,730	2,730	2,730	2,730	3,760	4,880	8,700
1914-15	14,200	13,300	4,220	3,980	3,640	1,500	1,500	2,910	2,470	2,030	2,050	4,990
1915-16	6,290	6,380	4,240	4,100	3,590	1,420	1,420	1,510	2,230	2,600	4,490	14,300
1916-17	20,800	20,500	17,900	7,890	4,000	2,240	2,260	2,290	2,360	2,380	2,390	2,390
1917-18	13,200	30,400	24,700	4,500	4,070	1,950	1,950	1,950	9,740	16,000	11,100	11,300
1918-19	13,200	13,800	7,090	3,890	3,480	1,460	1,460	1,560	2,780	5,940	5,470	7,990
1919-20	18,500	17,000	5,330	3,690	3,220	1,260	1,260	1,260	1,260	1,550	2,560	4,520
1920-21	9,760	11,700	7,210	4,280	3,940	1,630	2,030	3,260	4,230	7,660	9,940	13,400
1921-22	17,100	20,200	7,010	3,590	3,450	1,360	1,360	1,360	3,150	2,620	2,770	2,990
1922-23	9,190	18,700	8,710	5,060	3,270	1,220	1,220	1,220	1,580	4,150	3,870	4,460
1923-24	13,500	17,700	11,600	3,640	3,530	1,620	1,620	1,620	1,780	1,790	7,750	7,720
1924-25	8,130	9,770	2,660	3,690	3,250	940	940	1,500	4,260	4,330	10,800	10,900
1925-26	22,600	19,400	6,030	3,610	3,380	1,280	1,280	1,280	1,680	2,080	4,570	7,090
1926-27	6,940	6,020	2,910	3,680	2,240	1,140	1,790	4,170	7,090	6,830	7,650	8,570
1927-28	13,500	20,800	14,800	4,460	4,410	2,120	4,070	11,500	10,600	9,710	9,680	12,700
1928-29	14,900	19,900	5,390	3,140	2,890	1,110	1,160	1,160	1,160	1,160	1,160	2,760
1929-30	6,470	8,080	4,810	3,270	3,090	1,080	1,080	1,080	1,120	1,120	2,940	4,410
1930-31	5,460	6,910	3,460	3,370	3,090	1,080	1,080	1,080	1,080	1,080	2,000	5,850
Highest	22,600	30,400	24,700	7,890	4,410	2,730	4,070	11,500	10,600	16,000	11,100	14,300
Average	12,900	16,000	8,560	4,120	3,470	1,510	1,680	2,420	3,410	4,270	5,340	7,500
Lowest	5,460	6,020	2,660	3,140	2,240	940	940	1,080	1,080	1,080	1,160	2,390

COLUMBIA RIVER RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING PLAN NO. 6-A

Columbus Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Upstream regulation in six reservoirs, aggregating 5,922,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, between elevations 1,127.6 feet and 1,157.6 feet, United States Geological Survey datum, providing 776,000 acre-feet of storage. Regulated elevation 50 percent of time about 1,157.2 feet.

TABLE NO. 2-47.—*Regulated stage of Columbia River Reservoir on the last day of each month*

[Add 1,100 to determine elevation in feet, U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	52.0	41.0	32.6	32.6
1914-15	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	46.0	33.8	32.6
1915-16	32.6	32.6	39.9	57.6	57.6	57.6	57.6	57.6	56.8	43.8	32.6	32.6
1916-17	32.6	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.4	50.5	42.0	32.6
1917-18	32.6	32.6	57.6	57.6	57.6	57.6	57.6	43.4	32.6	44.0	40.3	32.6
1918-19	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	49.6	40.3	32.6	32.6
1919-20	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	52.3	43.6	35.7	32.6
1920-21	32.6	32.6	32.6	57.6	57.6	57.6	57.6	57.6	48.3	38.6	32.6	32.6
1921-22	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	52.5	43.1	32.6
1922-23	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	49.6	47.3	39.5	32.6
1923-24	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.2	47.6	32.6	32.6	32.6
1924-25	32.6	32.6	57.6	57.6	57.6	57.6	57.6	56.2	45.3	32.6	32.6	32.6
1925-26	32.6	32.6	57.6	57.6	57.6	57.6	57.6	56.8	49.8	38.4	32.6	32.6
1926-27	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	45.7	39.5	32.6
1927-28	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	47.1	32.6	32.6
1928-29	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	52.4	41.7	32.6
1929-30	32.6	32.6	57.6	57.6	57.6	57.6	57.6	57.6	52.9	39.4	30.6	27.6
1930-31	27.6	27.6	51.3	57.6	57.6	57.6	57.6	57.6	53.8	43.6	33.4	32.6
Average	32.3	33.7	53.5	57.6	57.6	57.6	57.6	56.7	52.0	43.3	35.6	32.3

COLUMBIA RIVER AT GRAND COULEE AND FOSTER CREEK POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 625,000 acres, in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River Reservoir, aggregating 5,922,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-48.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Grand Coulee and Foster Creek power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	67.9	171.0	387	236	144.0	101.0	65.1	55.4	49.4	49.4	49.5	52.6
1914-15	91.9	188.0	242	228	126.0	79.6	66.8	62.0	47.2	44.9	44.9	44.9
1915-16	77.9	152,0	157	156	149.0	88.3	54.7	54.2	45.7	45.7	45.7	67.2
1916-17	100.0	179.0	302	360	162.0	101.0	57.8	50.6	41.1	41.1	41.1	41.0
1917-18	56.1	170.0	325	268	136.0	81.0	67.8	60.7	60.7	63.3	63.3	63.4
1918-19	80.7	188.0	261	219	129.0	90.0	70.4	52.6	49.2	49.2	49.3	50.0
1919-20	80.7	175.0	237	203	131.0	78.3	48.8	36.1	34.4	34.8	35.2	35.5
1920-21	42.4	124.0	196	273	170.0	92.8	90.7	68.2	58.1	58.2	58.2	61.4
1921-22	84.2	208.0	331	214	129.0	68.0	55.5	58.1	45.6	41.2	41.2	41.2
1922 23	52.2	142.0	299	184	119.0	87.7	59.1	44.8	39.6	39.5	39.8	40.2
1923-24	67.1	167.0	293	223	125.0	89.5	51.3	39.9	40.2	40.9	41.3	42.1
1924-25	45.2	160.0	177	143	110.0	80.1	57.5	55.5	55.5	55.6	58.5	58.2
1925-26	125.0	270.0	281	211	125.0	72.7	47.4	38.7	38.8	39.2	39.7	40.3
1926-27	63.5	124.0	114	128	85.6	74.5	68.8	58.2	52.6	50.7	50.7	50.8
1927-28	64.3	164.0	341	251	151.0	127.0	112.0	102.0	77.8	72.7	72.7	73.3
1928-29	90.7	270.0	296	232	126.0	73.5	55.3	42.6	37.8	37.4	37.8	38.3
1929-30	39.0	97.5	212	142	101.0	69.7	45.0	36.7	33.9	34.3	34.8	35.1
1930-31	57.0	124.0	178	174	116.0	79.6	47.6	37.6	35.4	35.8	36.3	36.6
Highest	125.0	270.0	387	360	170.0	127.0	112.0	102.0	77.8	72.7	72.7	73.3
Average	71.4	171.0	257	214	130.0	85.2	62.3	53.0	46.8	46.3	46.7	48.4
Lowest	39.0	97.5	114	128	85.6	68.0	45.0	36.1	33.9	34.3	34.8	35.1

COLUMBIA RIVER AT CHELAN POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 685,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River Reservoir, aggregating 5,922,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-49.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Chelan power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	70.4	178.0	405	255	152	108.0	69.2	59.5	53.4	51.7	51.9	54.8
1914-15	96.0	202.0	260	242	134	84.7	70.3	63.9	50.9	46.4	46.9	46.7
1915-16	81.5	159.0	165	162	156	95.0	57.4	57.0	48.8	47.6	48.0	69.4
1916-17	109.0	199.0	322	377	174	108.0	61.4	51.8	43.6	42.7	43.2	42.4
1917-18	54.9	172.0	344	287	144	87.8	73.2	63.5	62.7	67.8	67.1	65.2
1918-19	84.2	200.0	274	232	137	93.9	74.0	55.3	51.5	51.1	52.4	51.3
1919-20	83.2	182.0	257	217	138	83.4	50.4	38.8	36.3	36.0	37.4	36.1
1920-21	41.4	126.0	204	282	177	96.0	94.8	68.5	61.1	60.3	59.9	63.4
1921-22	86.4	218.0	354	228	135	73.3	57.4	61.4	48.8	43.2	42.4	43.2
1922-23	51.8	144.0	316	196	122	91.8	62.3	47.8	42.2	41.9	41.8	41.8
1923-24	66.8	175.0	309	236	130	92.8	54.2	42.6	42.4	42.3	43.1	44.0
1924-25	45.2	166.0	187	145	111	82.9	59.5	57.6	57.9	57.5	61.4	60.2
1925-26	124.0	281.0	297	220	129	76.1	50.9	41.3	41.1	41.5	41.3	41.8
1926-27	63.7	127.0	115	130	88	77.2	70.1	61.5	55.7	53.9	53.2	53.8
1927-28	64.1	166.0	355	204	156	131.0	118.0	109.0	84.4	78.8	78.6	76.4
1928-29	93.5	279.0	316	244	132	76.5	57.9	45.3	39.7	38.8	38.7	39.1
1929-30	38.7	99.1	223	148	104	71.3	47.2	38.6	35.0	35.9	36.1	36.2
1930-31	59.2	132.0	188	179	118	81.7	49.1	39.3	36.5	36.6	37.3	36.9
Highest	124.0	281.0	405	377	177	131.0	118.0	109.0	84.4	78.8	78.6	76.4
Average	73.0	178.0	272	225	135	89.5	65.4	55.7	49.6	48.6	48.9	50.2
Lowest	38.7	99.1	115	130	88	71.3	47.2	38.6	35.0	35.9	36.1	36.1

COLUMBIA RIVER AT ROCKY REACH POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 712,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in seven reservoirs, exclusive of Columbia River Reservoir, aggregating 6,587,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-50.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rocky Reach power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	72.5	180	410	263	157.0	113.0	72.5	62.8	56.9	54.1	54.6	57.5
1914-15	97.3	205	267	248	138.0	88.3	73.0	65.8	54.0	48.3	48.9	48.8
1915-16	82.9	161	167	164	160.0	99.3	59.8	59.4	51.5	49.7	50.2	71.4
1916-17	115.0	205	326	384	183.0	114.0	64.4	53.7	46.3	45.0	45.6	44.5
1917-18	55.7	172	349	299	150.0	92.9	77.6	66.6	65.6	71.5	70.8	67.8
1918-19	86.9	203	276	239	143.0	97.6	77.6	58.4	54.6	53.9	55.9	53.9
1919-20	84.9	182	262	224	143.0	87.3	52.7	41.5	38.9	38.0	39.8	38.0
1920-21	42.5	126	205	286	181.0	98.9	97.6	69.8	64.1	62.8	62.1	65.7
1921-22	88.3	221	359	237	139.0	77.5	59.6	64.1	51.5	45.3	44.1	45.5
1922-23	52.7	144	320	202	126.0	95.3	65.3	50.7	45.0	44.6	44.2	44.0
1923-24	67.1	175	313	242	133.0	95.6	56.9	45.2	44.9	44.4	45.2	46.2
1924-25	46.3	167	192	148	113.0	86.0	62.0	60.1	60.4	59.6	63.9	62.5
1925-26	123.0	282	302	226	132.0	79.0	53.9	43.9	43.5	43.7	43.1	43.4
1926-27	63.4	129	119	133	90.9	80.0	71.9	64.3	58.5	56.8	55.5	56.3
1927-28	65.1	166	359	271	161.0	134.0	122.0	112.0	88.0	81.9	82.0	78.4
1928-29	95.3	277	324	249	135.0	78.7	59.9	47.5	41.7	40.6	40.4	40.9
1929-30	40.2	100	228	152	106.0	73.3	49.4	40.8	37.0	38.0	37.9	37.9
1930-31	59.8	134	191	181	120.0	83.8	51.2	41.5	38.1	38.1	38.6	38.0
Highest	123.0	282	410	384	183.0	134.0	122.0	112.0	88.0	81.9	82.0	78.4
Average	74.4	179	276	230	139.0	93.0	68.2	58.2	52.2	50.9	51.3	52.3
Lowest	40.2	100	119	133	90.9	73.3	49.4	40.8	37.0	38.0	37.9	37.9

WENATCHEE RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Upstream regulation of 482,000 acre-feet in Chiwawa Reservoir. Reregulation in Wenatchee Reservoir between elevations 1,875 feet and 2,009 feet, United States Geological Survey datum, providing 1,656,000 acre-feet of storage. Regulated elevation 50 percent of time about 1,977 feet. For this regulation storage operations were framed on the basis of the flow available for the 26-year period, April 1905 to March 1931. The reservoir would be emptied only once, in September 1906. Hence, the lower limit of regulation would not occur during the 18-year period chosen for investigation.

TABLE NO. 2-51.—*Regulated elevation of Wenatchee Reservoir on the last day of each month*

[U. S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	1,964	1,968	1,982	1,984	1,976	1,970	1,969	1,972	1,974	1,977	1,978	1,982
1914-15	1,983	1,987	1,987	1,981	1,971	1,963	1,962	1,968	1,970	1,971	1,972	1,974
1915-16	1,976	1,971	1,964	1,953	1,940	1,931	1,927	1,930	1,932	1,933	1,935	1,940
1916-17	1,941	1,947	1,961	1,967	1,961	1,954	1,951	1,952	1,953	1,953	1,955	1,956
1917-18	1,950	1,952	1,963	1,967	1,959	1,951	1,948	1,950	1,961	1,973	1,976	1,978
1918-19	1,978	1,979	1,986	1,980	1,970	1,963	1,961	1,964	1,969	1,972	1,974	1,976
1919-20	1,976	1,980	1,986	1,987	1,979	1,972	1,969	1,973	1,975	1,979	1,982	1,984
1920-21	1,980	1,977	1,977	1,973	1,962	1,957	1,960	1,963	1,966	1,969	1,975	1,981
1921-22	1,981	1,988	2,001	2,000	1,992	1,986	1,985	1,989	1,999	2,001	2,003	2,004
1922-23	2,001	2,003	2,009	2,002	1,992	1,985	1,982	1,983	1,985	1,988	1,989	1,990
1923-24	1,993	1,998	2,003	2,000	1,992	1,985	1,982	1,983	1,985	1,987	1,995	2,000
1924-25	1,998	2,005	2,004	1,996	1,985	1,978	1,976	1,978	1,983	1,987	1,989	1,993
1925-26	1,995	2,004	2,007	2,002	1,993	1,986	1,983	1,984	1,988	1,990	1,992	1,998
1926-27	2,000	1,998	1,992	1,982	1,971	1,963	1,963	1,966	1,969	1,971	1,972	1,973
1927-28	1,970	1,972	1,984	1,981	1,972	1,966	1,967	1,974	1,980	1,986	1,989	1,993
1928-29	1,992	2,003	2,005	1,999	1,989	1,982	1,981	1,982	1,983	1,984	1,984	1,985
1929-30	1,981	1,981	1,982	1,975	1,964	1,956	1,952	1,953	1,953	1,954	1,955	1,959
1930-31	1,959	1,955	1,950	1,940	1,923	1,909	1,903	1,903	1,903	1,904	1,906	1,909
Average	1,979	1,982	1,986	1,982	1,972	1,964	1,962	1,965	1,968	1,971	1,973	1,976

WENATCHEE RESERVOIR, COMBINED IRRIGATION AND POWER DIVERSION

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River and Wenatchee River. Additional allowance made for future irrigation of about 20,000 acres in Wenatchee, Malaga, and Moses Coulee districts. Upstream regulation of 482,000 acre-feet in Chiwawa Reservoir. Reregulation of 1,656,000 acre-feet in Wenatchee Reservoir for joint benefit of irrigation of Greater Wenatchee and Quincy Flats projects, and power at the Dryden site. This plan of development assumes a diversion from the irrigation conduit of 723 second-feet for the period April 1913 to June 1925, and 636 second-feet thereafter, to be dropped through a head of about 575 feet to the proposed Dryden plant.

TABLE No. 2-52.—*Regulated discharge, in second-feet, from Wenatchee River*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1914–15	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1915–16	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1916–17	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1917–18	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1918–19	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1919–20	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1920–21	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1921–22	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1922–23	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1923–24	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1924–25	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
1925–26	2,590	3,870	3,830	4,030	3,860	2,840	1,590	636	636	636	636	636
1926–27	2,510	3,780	3,740	4,030	3,860	2,840	1,590	636	636	636	636	636
1927–28	2,510	3,780	3,740	4,030	3,860	2,840	1,590	636	636	636	636	636
1928–29	2,510	3,780	3,740	4,030	3,860	2,840	1,590	636	636	636	636	636
1929–30	2,510	3,780	3,740	4,030	3,860	2,840	1,590	636	636	636	636	636
1930–31	2,510	3,780	3,740	4,030	3,860	2,840	1,590	636	636	636	636	636
Highest	2,590	3,870	3,830	4,120	3,950	2,930	1,680	723	723	723	723	723
Average	2,570	3,840	3,800	4,090	3,920	2,900	1,650	694	694	694	694	694
Lowest	2,510	3,780	3,740	4,030	3,860	2,840	1,590	636	636	636	636	636

WENATCHEE RIVER AT DRYDEN POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Entire discharge from Wenatchee Reservoir is diverted through conduit to serve Greater Wenatchee and Quincy Flats irrigation projects, and for power at proposed Dryden plant. This table shows estimated natural inflow between Wenatchee Reservoir and Dryden, and is exclusive of water diverted from the conduit at Dryden. Upstream irrigation diversion is responsible for the low flow during recent years.

TABLE No. 2-53.—*Modified discharge, in second-feet, of Wenatchee River at Dryden power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	1,830	3,070	4,430	2,440	660	460	420	430	370	630	374	830
1914–15	2,160	3,430	2,630	1,160	369	320	401	730	347	296	274	520
1915–16	1,950	1,460	910	460	346	287	257	410	386	255	372	1,640
1916–17	3,230	3,710	4,830	3,560	1,250	589	346	247	282	279	297	303
1917–18	597	2,690	3,870	2,890	630	466	253	262	1,760	2,060	650	524
1918–19	1,620	2,390	3,280	1,230	430	333	463	402	930	560	432	508
1919–20	1,700	2,990	3,230	2,110	700	441	224	500	540	800	600	580
1920–21	740	1,720	2,020	1,420	390	760	1,230	450	468	710	1,120	1,200
1921–22	1,560	3,570	4,550	1,870	630	483	650	620	1,860	475	377	377
1922–23	940	2,530	3,400	860	330	319	263	225	321	650	305	411
1923–24	2,300	3,140	2,980	1,590	620	322	235	252	443	351	1,550	1,130
1924–25	1,080	3,470	1,950	830	294	261	333	340	1,020	660	660	760
1925–26	2,140	3,880	2,750	1,180	360	271	207	213	650	382	475	1,170
1926–27	2,140	1,720	1,090	414	206	210	670	336	580	310	253	307
1927–28	1,000	2,420	4,330	1,520	440	504	860	930	1,030	1,130	494	920
1928–29	1,310	4,150	2,520	1,060	310	267	455	198	202	173	158	245
1929–30	470	1,810	2,000	750	179	36	126	89	154	141	323	580
1930–31	1,730	1,630	1,510	720	223	158	187	197	168	259	410	570
Highest	3,230	4,150	4,830	3,560	1,250	760	1,230	930	1,860	2,060	1,550	1,640
Average	1,580	2,770	2,900	1,450	465	360	421	379	640	562	507	699
Lowest	470	1,460	910	414	179	36	126	89	154	141	158	245

COLUMBIA RIVER AT ROCK ISLAND RAPIDS AND VANTAGE POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 762,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in 9 reservoirs, exclusive of Columbia River Reservoir, aggregating 8,725,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-54.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rock Island Rapids and Vantage power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	74.8	182	416	272	161.0	117.0	74.6	64.9	59.0	55.7	56.0	59.2
1914-15	99.4	209	273	254	142.0	91.1	74.9	66.9	56.1	49.4	50.2	50.1
1915-16	84.4	162	169	167	165.0	102.0	61.3	60.8	53.4	51.1	51.6	73.6
1916-17	120.0	211	329	390	188.0	117.0	66.5	54.5	47.9	46.2	47.1	45.6
1917-18	55.7	171	353	301	153.0	96.8	80.6	68.1	68.3	75.1	73.2	69.2
1918-19	88.9	206	278	244	147.0	100.0	79.9	60.1	56.7	55.5	58.0	55.1
1919-20	86.2	183	267	229	145.0	90.2	53.7	43.2	40.4	39.5	41.5	39.0
1920-21	42.7	125	206	289	184.0	102.0	99.8	70.0	66.1	64.7	64.0	67.7
1921-22	89.8	222	364	242	142.0	80.8	61.0	65.7	54.2	46.4	44.9	46.6
1922-23	52.8	143	323	208	128.0	97.8	67.2	52.4	46.7	46.4	45.5	45.2
1923-24	67.6	177	317	247	137.0	97.6	58.4	46.7	46.4	45.6	47.3	48.1
1924-25	46.8	167	197	150	114.0	88.1	63.4	61.5	62.5	61.1	65.7	64.4
1925-26	122.0	282	308	230	134.0	81.2	56.1	45.4	45.4	45.5	44.4	45.2
1926-27	63.7	131	120	135	92.6	82.0	73.2	66.3	60.7	59.0	57.0	58.0
1927-28	65.5	167	363	279	164.0	136.0	124.0	114.0	91.1	84.7	84.2	79.8
1928-29	96.4	277	332	254	137.0	80.2	61.1	48.6	42.8	41.8	41.3	41.8
1929-30	40.7	100	233	156	107.0	74.6	50.6	41.9	37.9	39.3	38.9	39.1
1930-31	60.7	135	192	182	121.0	85.2	51.9	42.1	39.2	38.9	39.8	39.0
Highest	122.0	282	416	390	188.0	136.0	124.0	114.0	91.1	84.7	84.2	79.8
Average	75.4	181	280	235	142.0	95.5	69.9	59.6	54.2	52.6	52.8	53.7
Lowest	40.7	100	120	135	92.6	74.6	50.6	41.9	37.9	38.9	38.9	39.0

COLUMBIA RIVER AT PRIEST RAPIDS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 762,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River Reservoir, aggregating 8,725,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-55.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Priest Rapids power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	75.2	183	417	273	162.0	118.0	75.9	66.3	59.8	56.2	56.4	59.5
1914-15	99.8	210	274	255	143.0	92.4	76.1	68.3	56.9	49.9	50.6	50.4
1915-16	84.7	163	170	168	166.0	104.0	62.6	62.2	54.2	51.6	52.0	73.9
1916-17	120.0	212	330	391	190.0	118.0	67.7	55.8	48.7	46.7	47.5	45.9
1917-18	56.1	172	354	302	155.0	98.0	81.9	69.5	69.1	75.6	73.6	69.5
1918-19	89.2	206	279	245	148.0	101.0	81.1	61.5	57.5	56.0	58.4	55.4
1919-20	86.5	183	268	230	146.0	91.5	55.0	44.5	41.2	40.0	41.9	39.2
1920-21	43.0	126	207	290	185.0	103.0	101.0	71.4	66.9	65.2	64.4	68.0
1921-22	90.2	223	366	243	143.0	82.1	62.2	67.0	54.9	46.9	45.3	46.9
1922-23	53.2	144	324	209	129.0	99.1	68.4	53.7	47.5	46.9	45.9	45.5
1923-24	67.9	178	318	249	138.0	98.9	59.7	48.0	47.1	46.1	47.7	48.3
1924-25	47.2	168	198	151	116.0	89.4	64.7	62.9	63.2	61.6	66.1	64.6
1925-26	122.0	283	309	231	135.0	82.5	57.4	46.8	46.1	46.0	44.8	45.4
1926-27	64.1	132	122	136	93.9	83.3	74.5	67.6	61.5	59.5	57.4	58.3
1927-28	65.9	168	364	280	166.0	137.0	126.0	115.0	91.8	85.2	84.6	80.0
1928-29	96.7	278	333	255	138.0	81.6	62.3	50.0	43.6	42.3	41.7	42.1
1929-30	41.0	101	234	157	109.0	75.9	51.9	43.2	38.6	39.8	39.3	39.3
1930-31	61.0	136	194	183	122.0	86.5	53.2	43.5	39.9	39.4	40.2	39.2
Highest	122.0	283	417	391	190.0	137.0	126.0	115.0	91.8	85.2	84.6	80.0
Average	75.8	181	281	236	144.0	96.8	71.2	61.0	54.9	53.0	53.2	54.0
Lowest	41.0	101	122	136	93.9	75.9	51.9	43.2	38.6	39.4	39.3	39.2

COLUMBIA RIVER AT MOUTH OF SNAKE RIVER

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 6-A

Columbia Basin irrigation project, 1,449,690 acres, assumed to be served by gravity diversion from Clark Fork, Spokane River, and Wenatchee River. Additional allowance made for future irrigation of about 1,047,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in 14 reservoirs, exclusive of Columbia River Reservoir, aggregating 9,700,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind low dam for joint benefit of Grand Coulee and other downstream power sites, by use of 776,000 acre-feet of storage.

TABLE NO. 2-56.—*Effect of upstream regulation on discharge of Columbia River at mouth of Snake River, in units of 1,000 second-feet*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	−7.6	−35.8	−70.1	−50.0	−8.5	+6.0	+7.1	+6.8	+12.7	+14.7	+16.7	+3.9
1914-15	−17.8	−49.1	−64.5	−27.1	−.5	+8.7	+8.0	−2.5	−.1	+14.1	+17.9	+8.6
1915-16	−20.0	−35.9	−38.9	−27.8	−3.1	+3.6	+8.3	+8.4	+7.7	+19.2	+15.7	+2.9
1916-17	−21.6	−39.1	−37.7	−68.5	−26.3	−4.9	+1.8	+8.4	+11.0	+17.2	+17.0	+16.4
1917-18	−5.5	−29.2	−62.5	−53.9	−10.3	+6.2	+11.5	+24.5	+17.8	−24.4	+12.1	+18.6
1918-19	−20.3	−36.6	−62.9	−41.2	−2.6	+5.9	+9.7	+8.5	+11.9	+15.2	+7.6	+8.7
1919-20	−16.6	−47.6	−73.7	−31.5	−4.5	+3.2	+7.0	+8.9	+12.6	+12.5	+10.7	+6.6
1920-21	−7.9	−29.9	−52.7	−47.9	−3.9	+7.2	+5.4	+6.5	+13.3	+11.8	+11.6	−2.0
1921-22	−17.4	−33.2	−80.4	−42.8	−6.7	+4.1	+7.9	+6.5	−3.8	+8.2	+15.5	+15.2
1922-23	−8.2	−31.4	−73.4	−36.1	−3.6	+5.1	+8.9	+9.6	+15.4	+2.7	+15.6	+13.0
1923-24	−17.6	−40.3	−63.9	−38.6	−7.0	+2.9	+7.6	+11.0	+13.7	+19.8	+.5	+2.0
1924-25	−6.9	−50.2	−59.7	−24.4	−.3	+5.0	+14.7	+12.9	+15.1	+14.7	−3.4	+2.7
1925-26	−29.1	−36.3	−64.1	−38.0	−6.6	+3.0	+5.3	+9.9	+11.1	+14.8	+10.3	+5.3
1926-27	−17.8	−59.4	−34.3	−13.1	+.7	+9.9	+11.6	−.6	−6.1	+11.2	+12.7	+8.2
1927-28	−7.6	−40.8	−48.9	−49.2	−3.3	+8.9	+7.3	−3.1	−11.6	+13.1	+23.3	+13.8
1928-29	−11.8	−35.2	−70.1	−29.5	−13.6	−.2	+6.3	+3.7	+6.0	+12.2	+16.3	+13.3
1929-30	−5.8	−31.0	−67.1	−26.5	−5.2	+4.5	+6.4	+9.4	+10.6	+16.4	+13.6	+7.3
1930-31	−22.1	−47.3	−52.4	−22.9	−5.0	+7.5	+5.5	+7.1	+8.6	+13.8	+13.0	+5.0
Average	−14.5	−39.4	−59.8	−37.2	−6.1	+4.8	+7.8	+7.6	+8.1	+11.5	+12.6	+8.3

GRAND COULEE RESERVOIR

PLAN NO. 4, HIGH DAM

Regulation of Grand Coulee Reservoir between elevations 1,554.8 feet and 1,570 feet, United States Geological Survey datum, providing 328,900 acre-feet of storage. Regulated elevation 50 percent of time, 1,570 feet.

TABLE No. 2-57.—*Regulated stage of Grand Coulee Reservoir on the last day of each month*

[Add 1,500 to determine elevation in feet, U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1914-15	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1915-16	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1916-17	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1917-18	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1918-19	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1919-20	70.0	70	70	70	70	70	70	70	68.4	65.8	63.1	64.1
1920-21	54.8	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1921-22	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1922-23	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1923-24	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1924-25	64.8	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1925-26	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1926-27	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70 0
1927-28	70.0	70	70	70	70	70	70	70	70.0	70.0	70.0	70.0
1928-29	70.0	70	70	70	70	70	70	70	70.0	70.0	69.3	70.0
1929-30	58.9	70	70	70	70	70	70	70	67.8	65.1	62.4	62.2
1930-31	55.0	70	70	70	70	70	70	70	69.3	66.7	64.1	66.1
Average	67.4	70	70	70	70	70	70	70	69.8	69.3	68.8	69.0

COLUMBIA RIVER RESERVOIR

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Upstream regulation in six reservoirs aggregating 5,978,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind high dam for joint benefit of Grand Coulee and other downstream power sites, between elevations 1,287.6 feet and 1,207.6 feet, United States Geological Survey datum, providing 5,028,000 acre-feet of storage. Regulated elevation 50 percent of time, about 1,267.3 feet.

TABLE No. 2-58.—*Regulated stage of Columbia River Reservoir on the last day of each month*

[Add 1,200 to determine elevation in feet, U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	17.6	17.6	87.6	87.6	87.6	87.6	87.6	80.7	65.8	47.7	30.7	17.6
1914-15	17.6	17.6	64.7	87.6	87.6	87.6	87.6	87.6	75.8	56.4	36.7	17.6
1915-16	17.6	33.3	54.5	78.3	87.6	87.6	81.4	75.2	60.6	39.4	17.6	17.6
1916-17	17.6	17.6	19.8	87.6	87.6	87.6	87.6	83.6	71.3	55.3	38.8	18.4
1917-18	17.6	17.6	81.2	87.6	87.6	87.6	81.2	63.3	45.1	40.9	30.9	17.6
1918-19	17.6	17.6	75.6	87.6	87.6	87.6	87.6	78.5	62.7	46.7	31.5	17.6
1919-20	17.6	17.6	72.3	87.6	87.6	87.6	87.6	80.3	68.4	54.3	40.0	25.0
1920-21	17.6	17.6	17.6	87.6	87.6	87.6	87.6	82.3	64.2	46.7	30.6	17.6
1921-22	17.6	17.6	87.6	87.6	87.6	87.6	86.4	87.2	77.8	61.9	44.4	23.1
1922-23	17.6	17.6	87.6	87.6	87.6	87.6	87.6	81.7	67.3	53.8	37.5	17.6
1923-24	17.6	17.6	85.1	87.6	87.6	87.6	87.6	79.1	66.1	50.3	39.8	27.6
1924-25	17.6	37.5	79.3	87.6	87.6	87.6	74.8	61.4	44.7	28.1	23.3	17.6
1925-26	17.6	41.6	87.6	87.6	87.6	87.6	85.7	76.2	63.0	46.7	32.5	17.6
1926-27	17.6	52.3	64.7	87.6	87.6	87.6	87.6	81.1	70.5	52.7	37.2	18.5
1927-28	17.6	17.6	87.6	87.6	87.6	87.6	87.6	87.6	77.5	58.1	36.4	17.6
1928-29	17.6	34.4	87.6	87.6	87.6	87.6	87.6	83.4	74.6	62.4	47.8	31.5
1929-30	17.6	17.6	86.7	87.6	87.6	87.6	85.5	77.4	63.7	44.9	27.5	7.6
1930-31	7.6	7.6	54.7	87.6	87.6	87.6	86.9	79.0	66.7	50.4	33.9	17.6
Average	17.0	23.2	71.2	87.1	87.6	87.6	85.9	79.2	65.9	49.8	34.3	19.2

COLUMBIA RIVER AT GRAND COULEE AND FOSTER CREEK POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 625,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River Reservoir, aggregating 5,978,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind high dam for joint benefit of Grand Coulee and other downstream power sites, by use of 5,028,000 acre-feet of storage.

TABLE NO. 2-59.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Grand Coulee and Foster Creek power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	66.4	169.0	310	233	144.0	101.0	64.9	64.0	64.0	64.0	64.0	64.0
1914–15	89.1	181.0	199	199	124.0	77.9	65.1	60.3	59.9	59.9	60.0	60.0
1915–16	76.3	136.0	136	136	137.0	86.6	60.6	60.6	60.7	60.7	60.7	73.2
1916–17	101.0	176.0	292	291	162.0	102.0	58.0	55.9	55.9	56.0	56.0	56.0
1917–18	56.0	166.0	256	256	134.0	79.4	74.1	74.1	74.1	74.1	74.1	74.1
1918–19	82.7	179.0	203	202	127.0	88.2	68.6	63.3	63.3	63.3	63.3	63.3
1919–20	81.7	168.0	184	184	131.0	76.1	46.6	45.5	46.0	46.7	47.5	48.4
1920–21	49.1	115.0	188	206	171.0	93.3	87.9	73.8	73.9	73.9	73.9	73.9
1921–22	85.2	199.0	259	211	129.0	68.0	57.0	57.1	57.1	57.1	57.1	57.1
1922–23	57.1	141.0	220	182	118.0	86.6	58.0	52.1	52.8	53.7	54.7	55.8
1923–24	67.4	166.0	216	216	125.0	89.5	51.3	50.4	51.0	51.9	52.8	53.5
1924–25	54.3	133.0	133	132	109.0	79.4	67.2	67.2	67.3	67.3	67.3	67.3
1925–26	125.0	236.0	235	208	123.0	71.4	48.5	48.8	49.5	50.4	51.3	52.3
1926–27	62.2	100.0	100	101	85.3	69.7	66.0	65.9	65.9	65.9	65.9	65.9
1927–28	65.9	161,0	261	248	151.0	127.0	106.0	98.2	91.9	91.9	91.9	92.0
1928–29	92.5	242.0	242	228	126.0	73.5	55.3	48.0	48.4	49.0	49.8	50.7
1929–30	51.7	89.2	140	140	100.0	67.7	45.6	45.8	46.4	47.4	48.4	49.6
1930–31	53.9	121.0	139	139	116 0	76.9	46.1	46.4	46.9	47.8	48.7	49.7
Highest	125.0	242.0	310	291	171.0	127.0	106.0	98.2	91.9	91.9	91.9	92.0
Average	73.2	160.0	206	195	128.0	84.1	62.6	59.9	59.7	60.1	60.4	61.5
Lowest	49.1	89.2	100	101	85.3	67.7	45.6	45.5	46.0	46.7	47.5	48.4

COLUMBIA RIVER AT CHELAN POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 685,000 acres in Montana, Idaho, British Columbia and Washington. Upstream regulation in six reservoirs, exclusive of Columbia River Reservoir, aggregating 5,978,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind high dam for joint benefit of Grand Coulee and other downstream power sites, by use of 5,028,000 acre-feet of storage.

TABLE No. 2-60.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Chelan power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	68.9	176.0	328	252	152.0	108.0	69.0	68.1	68.0	66.3	66.4	66.2
1914-15	93.2	195.0	217	213	132.0	83.0	68.6	62.2	63.6	61.4	62.0	61.8
1915-16	79.9	143.0	144	142	144.0	93.3	63.3	63.4	63.8	62.6	63.0	75.4
1916-17	110.0	196.0	312	308	174.0	109.0	61.6	57.1	58.4	57.6	58.1	57.4
1917-18	54.8	168.0	275	275	142.0	86.2	70.5	76.9	76.1	78.6	77.9	75.9
1918-19	86.2	191.0	216	215	135.0	92.1	72.2	66.0	65.6	65.2	66.4	64.6
1919-20	84.2	175.0	204	198	138.0	81.2	48.2	48.2	47.9	47.9	49.7	49.0
1920-21	48.1	117.0	196	215	178.0	96.5	92.0	74.1	76.9	76.0	75.6	75.9
1921-22	87.4	209.0	282	225	135.0	73.3	58.9	60.4	60.3	59.1	58.3	59.1
1922-23	56.7	143.0	237	194	121.0	90.7	61.2	55.1	55.4	56.1	56.7	57.4
1923-24	67.1	174.0	232.0	229	130.0	92.8	54.2	53.1	53.2	53.3	54.6	55.4
1924-25	54.3	139.0	143	134	110.0	82.2	69.2	69.3	69.7	69.2	70.2	69.3
1925-26	124.0	247.0	251	217	127.0	74.8	52.0	51.4	51.8	52.7	52.9	53.8
1926-27	62.4	103.0	101	103	87.7	72.4	67.3	69.2	69.0	69.1	68.4	68.9
1927-28	65.7	163.0	275	261	156.0	131.0	112.0	105.0	98.5	98.0	97.8	95.1
1928-29	95.3	251.0	262.0	240	132.0	76.5	57.9	50.7	50.3	50.4	50.7	51.5
1929-30	51.4	90.8	151	146	103.0	69.3	47.8	47.7	47.5	49.0	49.7	50.7
1930-31	56.1	129.0	149	144	118.0	79.0	47.6	48.1	48.0	48.6	49.7	50.0
Highest	124.0	251.0	328	308	178.0	131.0	112.0	105.0	98.5	98.0	97.8	95.1
Average	74.8	167.0	221	206	134.0	88.4	65.7	62.6	62.4	62.3	62.7	63.2
Lowest	48.1	90.8	101	103	87.7	69.3	47.6	47.4	47.5	47.9	49.7	49.0

COLUMBIA RIVER AT ROCKY REACH POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 712,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in seven reservoirs, exclusive of Columbia River Reservoir, aggregating 6,643,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind high dam for joint benefit of Grand Coulee and other downstream power sites, by use of 5,028,000 acre-feet of storage.

TABLE No. 2-61.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rocky Reach power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	71.0	178.0	333	260	157.0	113.0	72.3	71.4	71.5	68.7	69.1	68.9
1914-15	94.5	198.0	224	219	136.0	86.6	71.3	64.1	66.7	63.3	64.0	63.9
1915-16	81.3	145.0	146	144	148.0	97.6	65.7	65.8	66.5	64.7	65.2	77.4
1916-17	116.0	202.0	316	315	183.0	115.0	64.6	59.0	61.1	59.9	60.5	59.5
1917-18	55.6	168.0	280	287	148.0	91.3	83.9	80.0	79.0	82.3	81.6	78.5
1918-19	88.9	194.0	218	222	141.0	95.8	75.8	69.1	68.7	68.0	69.9	67.2
1919-20	85.9	175.0	209	205	143.0	85.1	50.5	50.9	50.5	49.9	52.1	50.9
1920-21	49.2	117.0	197	219	182.0	99.4	94.8	75.4	79.9	78.5	77.8	78.2
1921-22	89.3	212.0	287	234	139.0	77.5	61.1	63.1	63.0	61.2	60.0	61.4
1922-23	57.6	143.0	241	200	125.0	94.2	64.2	58.0	58.2	58.8	59.1	59.6
1923-24	67.4	174.0	236	235	133.0	95.6	56.9	55.7	55.7	55.4	56.7	57.6
1924-25	55.4	140.0	148	137	112.0	85.3	71.7	71.8	72.2	71.3	72.7	71.6
1925-26	123.0	248.0	256	223	130.0	77.7	55.0	54.0	54.2	54.9	54.7	55.4
1926-27	62.1	105.0	105	106	90.6	75.2	69.1	72.0	71.8	72.0	70.7	71.4
1927-28	66.7	163.0	279	268	161.0	134.0	116.0	108.0	102.0	101.0	101.0	97.1
1928-29	97.1	249.0	270	245	135.0	78.7	59.9	52.9	52.3	52.2	52.4	53.3
1929-30	52.9	92.1	156	150	105.0	71.3	50.0	49.9	49.5	51.1	51.5	52.4
1930-31	56.7	131.0	152	146	120.0	81.1	49.7	50.3	49.6	50.1	51.0	51.1
Highest	123.0	249.0	333	315	183.0	134.0	116.0	108.0	102.0	101.0	101.0	97.1
Average	76.1	169.0	225	212	138.0	91.9	68.5	65.1	65.1	64.6	65.0	65.3
Lowest	49.2	92.1	105	106	90.6	71.3	49.7	49.9	49.5	49.9	51.0	50.9

COLUMBIA RIVER AT ROCK ISLAND RAPIDS AND VANTAGE POWER SITES

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River Reservoir, aggregating 8,125,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind high dam for joint benefit of Grand Coulee and other downstream power sites, by use of 5,028,000 acre-feet of storage.

TABLE NO. 2-62.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Rock Island Rapids and Vantage power sites*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	74.8	181.0	340	270	162.0	118.0	75.9	75.0	75.1	71.8	72.0	72.1
1914–15	98.1	203.0	231	226	141.0	90.9	74.7	66.7	70.3	65.9	66.8	66.7
1915–16	84.3	147.0	149	148	154.0	102.0	68.7	68.7	69.9	67.6	68.1	81.1
1916–17	123.0	210.0	321	323	190.0	120,0	68.3	61.4	64.3	62.7	63.6	62.2
1917–18	57.2	169.0	286	291	153.0	96.8	88.5	83.1	83.3	87.5	85.6	81.5
1918–19	92.5	199.0	222	229	147.0	99.9	79.7	72.4	72.4	71.2	73.6	70.0
1919–20	88.8	178.0	216	212	147.0	89.6	53.1	54.2	53.6	53.0	55.4	53.5
1920–21	51.0	118.0	200	224	187.0	104.0	98.6	77.2	83.5	82.0	81.3	81.8
1921–22	92.4	215.0	294	241	144.0	82.4	64.1	66.3	67.3	63.9	62.4	64.1
1922–23	59.3	144.0	246	207	128.0	98.2	67.6	61.2	61.4	62.1	61.9	62.3
1923–24	69.4	177.0	241	241	138.0	99.1	59.9	58.7	58.7	58.1	60.3	61.0
1924–25	57.4	141.0	154	140	114.0	88.9	74.6	74.7	75.8	74.3	76.0	75.0
1925–26	124.0	250.0	264	229	133.0	81.4	58.7	57.0	57.6	58.2	57.5	58.7
1926–27	63.9	108.0	107	109	93.8	78.7	71.9	75.5	75.5	75.7	73.7	74.6
1927–28	68.6	165.0	284	277	165.0	137.0	119.0	112.0	107.0	105.0	105.0	100.0
1928–29	99.7	250.0	279	251	138.0	81.7	62.6	55.5	54.9	54.9	54.8	55.7
1929–30	54.9	93.5	162	155	107.0	74.1	52.7	52.5	51.9	53.9	54.0	55.1
1930–31	58.3	133.0	154	148	122.0	83.2	51.1	51.6	51.4	51.6	52.9	52.8
Highest	124.0	250.0	340	323	190.0	137.0	119.0	112.0	107.0	105.0	105.0	100.0
Average	78.8	171.0	231	218	142.0	95.9	71.6	68.0	68.6	67.7	68.0	68.2
Lowest	51.0	93.5	107	109	93.8	74.1	51.1	51.6	51.4	51.6	52.9	52.8

COLUMBIA RIVER AT PRIEST RAPIDS POWER SITE

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 742,000 acres in Montana, Idaho, British Columbia, and Washington. Upstream regulation in nine reservoirs, exclusive of Columbia River Reservoir, aggregating 8,125,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind high dam for joint benefit of Grand Coulee and other downstream power sites, by use of 5,028,000 acre-feet of storage.

TABLE NO. 2-63.—*Modified discharge, in units of 1,000 second-feet, of Columbia River at Priest Rapids power site*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	75.2	182.0	341	271	163.0	119.0	77.2	76.4	75.9	72.3	72.4	72.4
1914-15	98.5	204.0	232	227	142.0	92.2	75.9	68.1	71.1	66.4	67.2	67.0
1915-16	84.6	148.0	150	149	155.0	104.0	70.0	70.1	70.7	68.1	68.5	81.4
1916-17	123.0	211.0	322	324	192.0	121.0	69.5	62.7	65.1	63.2	64.0	62.5
1917-18	57.6	170.0	287	292	155.0	98.0	80.8	84.5	84.1	88.0	86.0	81.8
1918-19	92.8	199.0	223	230	148.0	101.0	80.9	73.8	73.2	71.7	74.0	70.3
1919-20	89.1	178.0	217	213	148.0	90.9	54.4	55.5	54.4	53.5	55.8	53.7
1920-21	51.3	119.0	201	225	188.0	105.0	99.6	78.6	84.3	82.5	81.7	82.1
1921-22	92.8	216.0	296	242	145.0	83.7	65.3	67.6	68.0	64.4	62.8	64.4
1922-23	59.7	145.0	247	208	129.0	99.5	68.8	62.5	62.2	62.6	62.3	62.6
1923-24	69.7	178.0	242	243	139.0	100.0	61.2	60.0	59.4	58.6	60.7	61.2
1924-25	57.8	142.0	155	141	116.0	90.2	75.9	76.1	76.5	74.8	76.4	75.2
1925-26	124.0	251.0	265	230	134.0	82.7	60.0	58.4	58.3	58.7	57.9	58.9
1926-27	64.3	109.0	109	110	95.1	80.0	73.2	76.8	76.3	76.2	74.1	74.9
1927-28	69.0	166.0	285	278	167.0	138.0	121.0	113.0	107.0	106.0	105.0	100.0
1928-29	100.0	251.0	280	252	139.0	83.1	63.8	56.9	55.7	55.4	55.2	56.0
1929-30	55.2	94.2	163	156	109.0	75.4	54.0	53.8	52.6	54.4	54.4	55.3
1930-31	58.6	134.0	156	149	123.0	84.5	52.4	53.0	52.1	52.1	53.3	53.0
Highest	124.0	251.0	341	324	192.0	138.0	121.0	113.0	107.0	106.0	105.0	100.0
Average	79.1	172.0	232	219	144.0	97.1	72.9	69.3	69.3	68.3	68.4	68.5
Lowest	51.3	94.2	109	110	95.1	75.4	52.4	53.0	52.1	52.1	53.3	53.0

COLUMBIA RIVER AT MOUTH OF SNAKE RIVER

COLUMBIA BASIN GRAVITY WITH SUPPLEMENTAL PUMPING, PLAN NO. 2-A

Columbia Basin irrigation project, 1,519,890 acres, assumed to be served by gravity diversion from Clark Fork and Spokane River. Additional allowance made for future irrigation of about 1,027,000 acres in Montana, Idaho, Britsh Columbia, and Washington. Upstream regulation in 14 reservoirs, exclusive of Columbia River Reservoir, aggregating 9,100,000 acre-feet of storage.

Reregulation in Columbia River Reservoir behind high dam for joint benefit of Grand Coulee and other downstream power sites, by use of 5,028,000 acre-feet of storage.

TABLE NO. 2-64.—*Effect of upstream regulation on discharge of Columbia River at mouth of Snake River, in units of 1,000 second-feet*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913-14	−7.6	−36.8	−146.6	−52.0	−7.5	+7.0	+8.4	+16.9	+28.8	+30.8	+32.7	+16.8
1914-15	−19.1	−55.1	−106.0	−55.1	−1.5	+8.5	+7.8	−2.7	+14.1	+30.6	+34.5	+25.2
1915-16	−20.1	−50.9	−58.9	−46.8	−14.1	+3.6	+15.7	+16.3	+24.2	+35.7	+32.2	+10.4
1916-17	−18.6	−40.1	−45.7	−136.0	−24.3	−1.9	+3.6	+15.3	+27.4	+33.7	+33.5	+33.0
1917-18	−4.0	−31.2	−130.0	−63.9	−10.3	+6.2	+19.4	+39.5	+32.8	−12.0	+24.5	+30.9
1918-19	−16.7	−43.6	−119.0	−56.2	−2.6	+5.7	+9.5	+20.8	+27.6	+30.9	+23.2	+23.6
1919-20	−14.0	−52.6	−125.0	−48.5	−2.5	+2.6	+6.4	+19.9	+25.8	+26.0	+24.6	+21.1
1920-21	+.4	−36.9	−58.7	−113.0	−.9	+9.2	+4.2	+13.7	+30.7	+29.1	+28.9	+12.1
1921-22	−14.8	−40.2	−150.0	−43.8	−4.7	+5.7	+11.0	+7.1	+9.3	+25.7	+33.0	+32.7
1922-23	−1.7	−30.4	−150.0	−37.1	−3.6	+5.5	+9.3	+18.4	+30.1	+18.4	+32.0	+30.1
1923-24	−15.8	−40.3	−140.0	−44.6	−6.0	+4.4	+9.1	+23.0	+26.0	+32.3	+13.5	+14.9
1924-25	+3.7	−76.2	−103.0	−34.4	−.3	+5.8	+25.9	+26.1	+28.4	+27.9	+6.9	+13.3
1925-26	−27.1	−68.3	−108.0	−39.0	−7.6	+3.2	+7.9	+21.5	+23.3	+27.5	+23.4	+18.8
1926-27	−17.6	−82.4	−47.3	−39.1	+1.9	+6.6	+10.3	+8.6	+8.7	+27.9	+29.4	+24.8
1927-28	−4.5	−42.8	−128.0	−51.2	−2.3	+9.9	+2.3	−5.1	+4.0	+33.8	+44.0	+34.0
1928-29	−8.5	−62.2	−123.0	−32.5	−12.6	+1.3	+7.8	+10.6	+18.1	+25.3	+29.8	+27.2
1929-30	+8.4	−37.8	−138.0	−27.5	−5.2	+4.0	+8.5	+20.0	+24.6	+31.0	+28.7	+23.3
1930-31	−24.5	−49.3	−90.4	−56.9	−4.0	+5.5	+4.7	+16.6	+20.8	+26.5	+26.1	+18.8
Average	−11.2	−48.7	−109.0	−54.3	−6.0	+5.2	+9.5	+15.9	+22.5	+26.7	+27.8	+22.8

FLATHEAD RESERVOIR

Intermediate plan of development.—No upstream regulation. Regulation in Flathead Reservoir between elevations 2,884 feet and 2,893 feet, United States Geological Survey datum, providing 1,100,000 acre-feet of storage. Modified elevation 50 percent of time about 2,889.7 feet.

TABLE NO. 2-65.—*Modified stage of Flathead Reservoir on the last day of each month*

[Add 2,800 to determine elevation in feet, U.S. Geological Survey datum]

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	85.3	90.7	94.1	93.0	93.0	91.9	90.7	90.0	88.5	87.0	85.4	84.0
1914–15	85.4	91.3	93.0	93.0	91.7	90.2	90.3	91.6	90.1	88.1	86.1	84.0
1915–16	85.2	89.3	92.2	93.0	92.5	91.3	90.3	89.3	87.9	85.9	84.0	84.2
1916–17	85.9	88.9	94.8	93.0	93.0	93.0	92.8	91.4	90.0	88.0	86.4	84.4
1917–18	84.0	91.2	93.0	93.0	92.7	90.8	88.7	86.6	85.3	87.5	85.4	84.0
1918–19	86.2	89.7	93.0	93.0	93.0	91.9	90.8	89.7	88.4	86.9	85.5	84.0
1919–20	85.0	91.6	93.0	93.0	92.6	91.3	90.0	89.2	87.8	86.5	85.4	84.0
1920–21	84.0	88.7	93.0	93.0	92.2	91.0	90.5	88.9	87.2	85.5	84.0	84.0
1921–22	86.2	92.4	93.0	93.0	92.8	91.5	90.3	89.1	88.4	87.2	85.6	84.0
1922–23	84.0	90.8	93.0	93.0	92.8	91.8	90.6	89.3	87.8	86.9	85.4	84.0
1923–24	84.6	91.6	93.0	93.0	93.0	92.7	90.4	89.0	87.4	86.1	85.1	84.0
1924–25	84.0	93.0	93.0	93.0	92.2	90.6	89.1	87.7	87.4	85.4	84.6	84.0
1925–26	89.5	93.8	93.0	93.0	93.0	92.8	91.4	89.9	88.4	86.5	85.0	84.0
1926–27	86.6	93.0	93.0	91.6	88.9	88.0	89.3	89.0	89.3	87.7	86.0	84.0
1927–28	84.7	92.1	95.0	93.0	92.5	92.3	93.0	91.7	90.4	88.2	86.0	84.4
1928–29	85.0	97.0	93.0	93.0	93.0	92.0	91.5	90.6	89.0	87.2	85.5	84.0
1929–30	84.0	89.8	93.0	93.0	92.3	91.2	89.9	88.5	87.5	85.9	85.0	84.0
1930–31	87.2	90.8	93.0	93.0	91.9	90.7	89.7	88.8	87.4	86.0	84.8	84.0
Average	85.4	91.4	93.2	92.9	92.4	91.4	90.5	89.5	88.2	86.8	85.3	84.1

FLATHEAD RIVER AT POWER SITES BETWEEN FLATHEAD LAKE AND MOUTH

Intermediate plan of development.—Allowance made for future irrigation of about 125,000 acres. No upstream regulation. Regulation of 1,100,000 acre-feet in Flathead Reservoir for direct benefit of power sites on lower Flathead River.

TABLE NO. 2-66.—*Modified discharge, in second-feet, of Flathead River below Flathead Lake; intermediate plan of development*

Storage year	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
1913–14	13,400	26,800	55,000	18,900	6,570	5,860	5,860	5,860	5,860	5,860	5,860	5,860
1914–15	10,800	22,200	22,200	8,330	6,540	6,540	6,540	6,540	6,540	6,550	6,550	6,550
1915–16	10,500	11,600	11,700	11,700	6,700	6,700	6,700	6,700	6,710	6,710	6,710	8,300
1916–17	12,200	23,500	50,600	44,500	10,000	9,810	5,790	5,790	5,790	5,790	5,790	5,790
1917–18	5,790	24,800	49,400	22,300	6,470	6,470	6,470	6,470	6,470	6,470	6,480	6,470
1918–19	12,400	26,300	42,700	10,300	5,100	5,100	5,100	5,100	5,100	5,100	5,080	5,100
1919–20	10,000	23,700	23,700	6,080	4,060	4,060	4,060	4,060	4,060	4,060	4,050	4,050
1920–21	6,120	18,300	30,500	17,200	6,640	6,640	6,640	6,640	6,640	6,640	6,640	7,200
1921–22	12,400	34,500	47,200	15,500	5,740	5,740	5,740	5,740	5,740	5,740	5,730	5,730
1922–23	5,900	23,400	42,000	10,900	5,180	5,180	5,180	5,180	5,180	5,180	5,180	5,180
1923–24	9,350	27,400	42,500	16,500	5,950	5,330	5,330	5,330	5,330	5,350	5,330	5,330
1924–25	6,860	26,500	31,400	11,000	5,940	5,940	5,940	5,940	5,940	5,940	5,930	5,940
1925–26	20,100	49,200	44,800	16,600	6,750	5,880	5,880	5,880	5,880	5,880	5,880	5,900
1926–27	12,800	12,900	12,700	7,580	7,580	7,580	7,580	7,580	7,580	7,580	7,580	7,580
1927–28	9,400	28,900	63,100	30,900	9,780	9,780	9,780	9,620	9,620	9,620	9,620	9,620
1928–29	10,900	44,900	49,700	23,100	7,040	6,030	6,030	6,030	6,030	6,020	6,020	6,020
1929–30	6,170	21,300	29,100	8,410	4,520	4,520	4,520	4,520	4,520	4,520	4,520	4,540
1930–31	14,800	19,400	19,500	7,010	5,160	5,160	5,160	5,160	5,160	5,160	5,160	5,160
Highest	20,100	49,200	63,100	44,500	10,000	9,810	9,780	9,620	9,620	9,620	9,620	9,620
Average	10,500	25,900	37,100	15,900	6,430	6,240	6,020	6,010	6,010	6,010	6,010	6,130
Lowest	5,790	11,600	11,700	6,080	4,060	4,060	4,060	4,060	4,060	4,060	4,050	4,050