460

PRELIMINARY DRAFT

UNITED STATES DEPARTMENT OF THE INTERIOR

Bureau of Reclamation

Ellis L. Armstrong, Commissioner

Region 4 - Salt Lake City, Utah

David L. Crandall, Regional Director

Annual Operating Plan - 1970

C O L O R A D O R I V E R S T O R A G E P R O J E C T

1969 Past Operations

1970 Present Outlook

1971 Future Projections

April 1970

ANNUAL OPERATING PLAN - 1970
COLORADO RIVER STORAGE PROJECT
APR. 1970 - MARCH 1972

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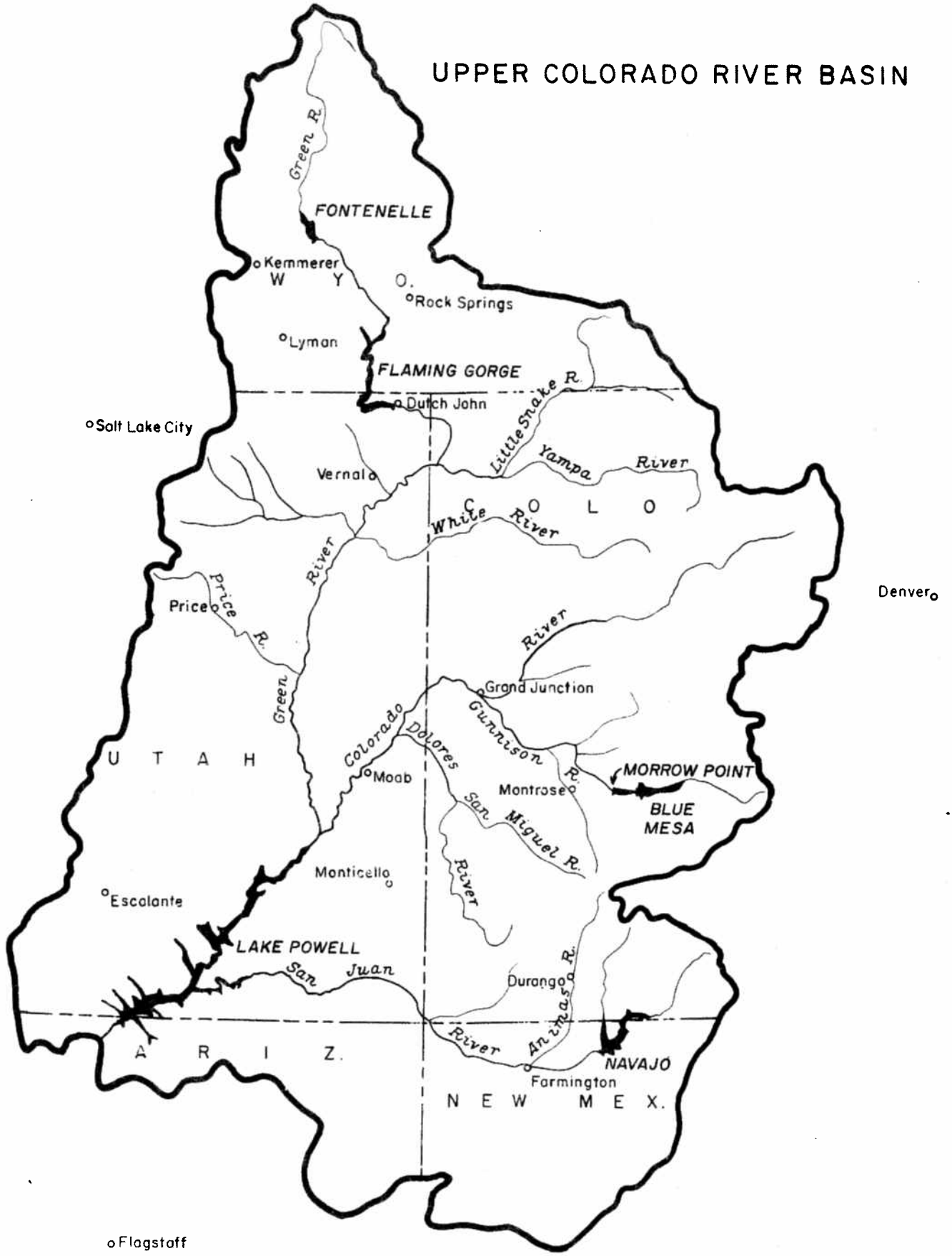
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PURPOSE OF REPORT

The purpose of this report is to provide a means to present to all Federal, State, and local agencies who have an interest in the operation of the reservoirs of the Colorado River Storage Project and to the public, the Bureau of Reclamation's plan of operation for these reservoirs during the year beginning April 1, 1970. A review of last year's operation is included for comparative purposes to help bring into focus and evaluate the changes that are to be expected in the current year. The plan has been extended through March 1972 assuming that the mean forecast runoff in 1970 will be followed by average flows in 1971.

In order to expose some of the operational problems that might occur if the runoff deviates from the mean forecast, we have included plans for operating with an April-July runoff equal to both a lower quartile and an upper quartile forecast followed by average flows in 1971.

Schedules of storage and releases under the three assumed conditions of water supply provide whenever possible for the development of optimum regulation to meet water demands and other requirements of multiple-purpose operation. The proposed operations reflect domestic use, irrigation, hydroelectric power generation, fish and wildlife propagation, recreation, flood control, and Colorado River Compact requirements.

The three possible conditions of water supply presented here are: (1) the most probable (mean), (2) a reasonable minimum (lower quartile), and (3) a reasonable maximum (upper quartile).

These plans are subject to modification as additional precipitation data become available upon which runoff and streamflows can be more accurately forecasted.

GENERAL

Background

The Upper Colorado River Basin covers about 110,000 square miles of area and is located between the Continental Divide and the Wasatch Mountain Range in the states of Arizona, Colorado, New Mexico, Utah, and Wyoming. The region is characterized by rugged mountains and narrow valleys cut by the Colorado River and its tributaries. Elevations range from about 14,000 feet on the highest mountain peaks to about 3100 feet at the level of the Colorado River at Lee Ferry. The climate in the Basin is arid to semi-arid except in the high altitudes in the headwater areas, where precipitation is moderately heavy. In general, the climate is associated with Pacific Ocean air masses which move inland from the west, bringing most of the Basin's precipitation. Seasonal influences include cyclonic thunderstorms that enter into the southern portion of the Basin from the Gulf of Mexico, and Canadian Arctic air occasionally extends into the northern portion of the Basin during the winter months.

An average of about 95 million acre-feet of water annually is provided by precipitation in the Basin. About 80 million acre-feet of the total is returned to the atmosphere by evapotranspiration. The remaining 15 million acre-feet is the average annual runoff of virgin flow measured at Lee Ferry in Arizona. In the past, the annual runoff has fluctuated from a low of less than 6 million acre-feet to a high of more than 24 million acre-feet.

Gradually over the hundred years or so that man has lived in the Upper Basin, reservoirs have been built to impound and regulate these erratic flows. At the present time, over 90% of the runoff will be controlled with the addition of the Colorado River Storage Project reservoirs (Lake Powell, Flaming Gorge, Navajo, Blue Mesa, Morrow Point, and Crystal Reservoir).

The chart in Exhibit I, shows the historic and virgin flows of the Colorado River at Lee Ferry for years 1896 through 1967. A progressive 10-year average of virgin flow is shown as a solid continuous line.

Study Period

This report covers three periods of operation: actual operations for 1969, planned operations for 1970, and projected operations for 1971. These plans cover a base forecast period of four months from April 1 through July 31, 1970, a correlated period of eight months through March 31, 1971, plus a projected period of mean monthly flows for an additional 12 months through March 1972. Approximately 65 percent of the runoff available for operation annually occurs within the four months April through July. This runoff can be reasonably predicted from accumulated precipitation and snowpack measurements available on April 1. Runoff for the following eight months is estimated by the use of a correlated relationship between the April through July runoff and the August through March runoff that follows. Thus the estimated water supply for the 12-month base period is determined by the predicted snowmelt runoff. The flows for the 12-month projection are 1906-68 mean monthly values. This projection provides a basis for studying operational problems that might develop after March 1971.

Coordination between Regions 3 and 4, Bureau of Reclamation

Since operation of Lake Mead is the responsibility of the Regional Director of Region 3, all scheduled releases from Lake Mead and estimates of gains and losses in the river flows between Glen Canyon Dam and Lake Mead are furnished by his staff. These releases and gains and losses are incorporated in the reservoir operation studies prepared by Region 4.

Furthermore, the regulation of the water surface level at Lake Mead for the propagation of bass is also incorporated in these studies.

Streamflow Forecasts

The April 1, 1970, streamflow forecasts of the April through July period for each of the reservoirs of the Colorado River Storage Project and for Fontenelle Reservoir, Seedskadee Project, are given in Exhibit II.

Synopsis of Exhibits

Exhibit I. This chart shows the historic and virgin flows of the Colorado River at Lee Ferry, Arizona, for years 1896 through 1969. Also shown is a progressive 10-year average of virgin flow line.

Exhibit II. This is the April 1, 1970, forecasts of streamflow of the Colorado River drainage area above Lees Ferry, Arizona, and at each of the CRSP reservoirs and Fontenelle Reservoir for the April through July 1970 period.

Exhibit III. This exhibit consists of six graphs, one for each reservoir, showing the monthly releases and end-of-month reservoir content. These values have been taken from the three operation plans as shown as Exhibits IV., V., and VI.

Exhibits IV., V., and VI. These exhibits consist of the most probable (Mean), a reasonable minimum (Lower Quartile), and a reasonable maximum (Upper Quartile) operation plan for each of the five reservoirs in the Colorado River Storage Project and for Fontenelle Reservoir, Seedskadee Project.

Exhibit VII. The Bureau of Reclamation is in the process of developing and publishing operating rules to govern the day-by-day operation of each reservoir. A copy of the interim rules for Fontenelle and Navajo Reservoirs is appended to this report.

FORECAST OF MONTHLY WATER SUPPLY

From 50 to 75 percent of the annual flow of the various tributaries of the Colorado River above Lees Ferry occurs during the four months of April through July and is largely from snowmelt. The runoff during these four months in past years has been correlated with water year precipitation accumulations and snow depths at key stations to provide a means of forecasting April through July flows at each of the reservoir sites.

Details of the April 1, 1970, forecasts are shown in Exhibit II.

Forecast of Monthly Water Supply

The following is a tabulation of April-July 1970 streamflow forecasts based on the April 1 conditions, correlated flows for August 1970 through March 1971, and average annual flows projected for April 1971 through March 1972.

FORECAST OF MONTHLY WATER SUPPLY

IN 1,000 ACRE-FEET

Inflow	April-July 1970 Forecast 1/	ESTIMATED 2/ April	May	June	July	August through March 31	Apr. '71 thru Mar. 72	Est. Apr. '70 thru Mar. 72
Lake Powell								
Reasonable maximum	8,500	1,018	2,636	3,189	1,657	4,316	11,837	24,653
Most probable	7,500	1,213	2,431	2,553	1,303	3,865	11,837	23,202
Reasonable minimum	6,500	1,182	2,057	2,332	929	3,805	11,837	22,142
Flaming Gorge Reservoir								
Reasonable maximum	1,060	227	309	365	159	536	1,625	3,221
Most probable	930	111	266	360	193	491	1,625	3,046
Reasonable minimum	800	104	144	389	163	338	1,625	2,763
Fontenelle Reservoir								
Reasonable maximum	790	91	202	283	214	330	1,217	2,337
Most probable	680	60	203	270	147	353	1,217	2,250
Reasonable minimum	570	68	123	264	115	284	1,217	2,071
Blue Mesa Reservoir								
Reasonable maximum	830	98	288	298	146	323	1,109	2,262
Most probable	730	126	228	263	113	305	1,109	2,144
Reasonable minimum	630	62	181	275	112	287	1,109	2,026
Navajo Reservoir								
Reasonable maximum	610	173	221	154	62	261	1,142	2,013
Most probable	440	105	183	118	34	245	1,142	1,827
Reasonable minimum	270	55	110	80	25	181	1,142	1,593

1/ Inflows have been adjusted for transmountain diversions and storage changes in small project reservoirs.

2/ Monthly estimates have not been reduced for estimated depletions occurring since 1968.

FONTENELLE RESERVOIR

During the past year, Fontenelle Reservoir has been operated for hydroelectric generation, flood control, fish and wildlife enhancement, and for recreation. The releases from the reservoir have been scheduled to maintain flows to encourage the geese in the Wildlife Refuge to nest at a safe distance from the stream, to prevent river ice buildup, to produce power and to provide summer flows below the dam for fishing.

Starting March 29, 1969, releases were gradually increased until 1500 c.f.s. was reached on April 3 to force the geese to build their nests on higher grounds. The releases were then controlled to avoid inundating the established nests. The maximum release reached during the spring runoff occurred in the middle of June when the reservoir was near full. The reservoir level was kept within four feet of being full for the remainder of the summer.

Our plans of operation for the current year reflect similar purposes. From March 25 through April releases were held at about 1450 c.f.s. to encourage the geese to nest above this level along the river. At present Fontenelle Reservoir content is 160,000 acre-feet of live storage at elevation 6479 feet. With the present mean forecast of 680,000 acre-feet during the months of April through July, Fontenelle Reservoir will fill by the end of July. After the spring runoff the reservoir level will then be controlled by adjusting the releases through the powerplant to slowly reduce the elevation to 6500 feet by the end of the summer. During the fall and winter after recreation activities have slacked off, the reservoir will be drawn to a minimum of about 6485 feet. As the end of

March approaches enough water will be left in storage to once more allow for near maximum power releases as required to provide an environment for successful geese nesting and hatching along the river downstream from the dam.

In near future years the demands on Fontenelle Reservoir will be substantially the same as the current year. The level will normally rise to a maximum of 6506 feet by June or July and be drawn down to elevation 6485 feet late each winter. Within this type of fluctuation all purposes of the project will be served and minimum amounts of water will bypass the powerplant.

The current "Interim Operating Rules" governing the day-by-day operation of Fontenelle Reservoir are shown in Exhibit VII.

FLAMING GORGE RESERVOIR

Flaming Gorge Reservoir has been operated as part of the Colorado River Storage Project in accordance with compacts and laws to provide optimum power production, recreation, and fish and wildlife enhancement. During the past year releases from the reservoir have been scheduled during late March through April to encourage the geese at Brown's Park to nest at a safe distance from the stream and to maintain flows below the dam during the fishing season. Power loads were managed during the later part of May so that a constant release of about 2500 c.f.s. was maintained to ensure that sufficient water would be available at Green River, Utah, for the Friendship Cruise and the Marathon Race over the Memorial Day weekend. During 1969 the reservoir level reached a high of elevation 5990 feet with a live storage content of 2,000,000 acre-feet.

Our plan of operation for the current year fulfil similar purposes. During the later part of March and through April 1969 releases from the reservoir have been and are being managed to encourage the geese to nest higher along the river. This is being accomplished by varying the releases every other day from high to low flows until nests are established. Flow will then vary on a more uniform pattern throughout the summer but the river should not exceed 4000 c.f.s. and normally would not be less than 1500 c.f.s. We will again this year schedule the releases during the later part of May to enhance the flows at Green River, Utah, for the Memorial Day weekend boat cruise and race.

At present the reservoir content is 1,500,000 acre-feet of live storage at elevation 5968 feet. The reservoir level should remain high enough

until the spring runoff so that boats can be launched from six out of the nine boat ramps. With the present mean forecast of 930,000 acre-feet inflow during the months of April through July, the reservoir is expected to rise 8 feet to elevation 5976 feet by mid-summer. After May, releases should be about 120,000 acre-feet per month through the rest of the summer for a water year total of 1,425,000 acre-feet. The reservoir should reach its lowest level during water year 1971 by the end of March 1971, but will recoup as the snowmelt runoff materializes in early April. The plan of operation will include all purposes previously explained.

Lower Quartile Forecast

To investigate the effect of a light snowmelt runoff on the operation of Flaming Gorge Reservoir we selected the runoff to be expected from the lower quartile forecast, which is 130,000 acre-feet less than the mean forecast or 800,000 acre-feet inflow during the April through July period. If this amount is realized the reservoir will rise 6 feet to elevation 5974 feet by mid-summer. Boat launching conditions should be similar to those that would occur for the mean runoff forecast. Releases will be reduced 120,000 acre-feet to 1,305,000 acre-feet for water year 1970.

Releases for water year 1971 will also be reduced so that the reservoir water surface levels will be similar to those obtained in the mean runoff forecast operation study.

Upper Quartile Forecast

To investigate the effect of a snowmelt runoff greater than the mean forecast on the operation of Flaming Gorge Reservoir we selected the runoff to be expected from the upper quartile forecast, which is 130,000 acre-feet

greater than the mean forecast of 1,060,000 acre-feet inflow during the April through July period. If this amount is realized the reservoir will rise 13 feet to elevation 5981 feet by mid-summer. Boat launching conditions should be similar to those that would occur for the mean runoff forecast. Releases will be slightly increased 20,000 acre-feet to 1,445,000 acre-feet for water year 1970.

Releases for water year 1971 will also be increased 195,000 acre-feet to 1,620,000 acre-feet so the reservoir water surface levels will be only slightly higher than those obtained in the mean runoff forecast operation study.

CURECANTI UNIT

Morrow Point and Blue Mesa Reservoirs

Morrow Point Reservoir, after being full for most of the summer of 1969, was reduced to about elevation 7000 feet during September and October for grouting purposes on the left abutment of the dam. The reservoir stayed at about this elevation during grouting which was started in December and was finished the first part of February 1970. By March 31, 1970, the reservoir was about full at elevation 7156 feet and a content of 114,000 acre-feet. Its inflow is extensively controlled by the larger Blue Mesa Reservoir which is upstream.

Morrow Point Reservoir will normally be operated at or near full capacity regardless of the amount of snowmelt runoff.

The April-July 1969 inflow to Blue Mesa Reservoir was 700,000 acre-feet which caused the reservoir to come within 10 feet of the top with an elevation of 7509 feet and a live content of 740,000 acre-feet. The reservoir was lowered during February and March of 1970 to allow enough space to catch the runoff this spring. On March 31, the reservoir had 411,000 acre-feet of live content with an elevation of 7466 feet. With an April through July mean forecast of 730,000 acre-feet, Blue Mesa Reservoir should rise within one foot of being full to elevation 7518 feet and a live content of 816,000 acre-feet. At this elevation the reservoir has a surface area of 9,102 acres and a reservoir length of 24 miles.

After Labor Day the reservoir will recede to about elevation 7469 feet during the fall and winter prior to the spring runoff of 1971.

Lower Quartile Forecast

The lower quartile forecast of April through July inflow is 630,000 acre-feet. If this inflow occurs the reservoir surface will reach a high elevation of 7508 feet with a live content of about 730,000 acre-feet. At this elevation the reservoir has a surface area of 8,530 acres and a length of 23 miles.

After Labor Day the reservoir will recede to about elevation 7451 feet during the fall and winter prior to the spring runoff of 1971.

Upper Quartile Forecast

The upper quartile forecast of April through July inflow is 830,000 acre-feet. If this amount is realized the reservoir should be full by the end of July with a live content of 825,000 acre-feet and an elevation of 7519 feet. At this elevation the reservoir has a surface area of 9180 acres and a reservoir length of 24 miles.

After Labor Day the reservoir will recede to about elevation 7473 feet during the fall and winter prior to the spring runoff of 1971.

General

Fishing will be enhanced by a minimum flow of 200 c.f.s. below the Gunnison Tunnel Diversion Dam. Coordinated operation of Taylor Park and Blue Mesa without detriment to the Uncompahgre Project irrigation requirements has greatly enhanced fishing on the Taylor and Gunnison Rivers. Continued cooperation is expedted in the future.

A temporary flood control diagram is being used to indicate how much the reservoir should be drawn down according to the forecast to provide space to store snowmelt floods.

NAVAJO RESERVOIR

During 1969 Navajo Reservoir was kept within the limits specified by the Bureau in its interim operating rules. At the end of March 1969 the reservoir had an elevation of 6010 feet and a live storage content of 825,000 acre-feet. During April-July, inflow to Navajo Reservoir was 823,000 acre-feet, which caused it to reach an all-time high elevation of 6045 feet with a live storage content of 1,162,000 acre-feet. The reservoir surface was held near elevation 6040 feet until after September for recreational reasons before dropping it to elevation 6030 feet during January 1970.

The mean forecast of inflow for April-July of 1970 is 440,000 acre-feet which is down from last year. If the mean forecast occurs the reservoir will rise to a maximum elevation of about 6040 feet with a live content of 1,100,000 acre-feet. It will be maintained near this level for the remainder of the summer for recreation purposes, and then dropped to about 6010 feet in the spring of 1971.

A minimum release of 500 c.f.s. will be maintained for the next year to enhance fishing below the dam.

Lower Quartile Forecast

The lower quartile forecast of April through July inflow is 270,000 acre-feet. If this occurs the reservoir will rise to a maximum elevation of about 6028 feet with a live content of 987,000 acre-feet. It will be maintained at this elevation for the rest of the summer for recreation purposes.

Upper Quartile Forecast

The upper quartile forecast of April-July inflow is 610,000 acre-feet. If this occurs the reservoir will rise to a maximum elevation of 6046 feet with a content of about 1,170,000 acre-feet. This elevation will be maintained for the rest of the summer recreation season.

General

For all three inflow forecast amounts the reservoir will be about 29 miles long which is 3 miles into the state of Colorado.

In the future, Navajo Reservoir will regulate the flow of the river for irrigation of the Hammond Project, the Navajo Indian Irrigation Project, and new M&I uses contemplated downstream on the San Juan River. Since sediment is trapped in the reservoir the releases are clear for a few miles below the dam, but the numerous arroyos soon contribute more sediment for the San Juan River to transport.

LAKE POWELL

Lake Powell has been operated as part of the Colorado River Storage Project in accordance with compacts and laws to provide optimum power production, recreation, and fish and wildlife enhancement. An important function of the storage project is to provide water from storage to meet the delivery of 75,000,000 acre-feet to the lower basin each ten years as required by the Colorado River Compact.

Therefore, 8,835,000 acre-feet was released from Lake Powell in 1969 which is more than average. A total of 8,863,000 acre-feet passed the Compact point at Lee Ferry, Arizona. Releases were also scheduled so that Lake Mead remained level during the bass spawning season to provide good habitat for propagation. There is no agreement on a specific minimum flow in the river below Glen Canyon Dam for fish. However, the filling criteria specify a minimum release of 1000 c.f.s., which provides good fish habitat in this section of the river.

On December 31, 1969, there was 2,500,000 acre-feet more of stored water behind Glen Canyon Dam than a year ago. The high for 1969 occurred in the middle of July when the reservoir had 10,400,000 acre-feet of live content with an elevation of 3581 feet. This was an all-time high for Lake Powell, being 11 feet above rated head and 31 feet above the previous year's seasonal high.

On March 31, 1970, Lake Powell had an elevation of 3571 feet and a live content of 9,510,000 acre-feet. Estimated runoff above Lees Ferry, Arizona is 7,500,000 acre-feet for the April through July period, or about 90% of normal. With this inflow the lake should reach elevation

3596 with a live content of 11,800,000 acre-feet. This is 45% of the total live capacity of the reservoir. At elevation 3596 feet, Lake Powell will be at an all-time high but it is expected to recede about 6 feet through the following fall and winter.

The following tabulation shows the data pertinent to power production and recreation as computed by the three water supply conditions projected into the future:

LAKE POWELL
Simulated Operation Studies

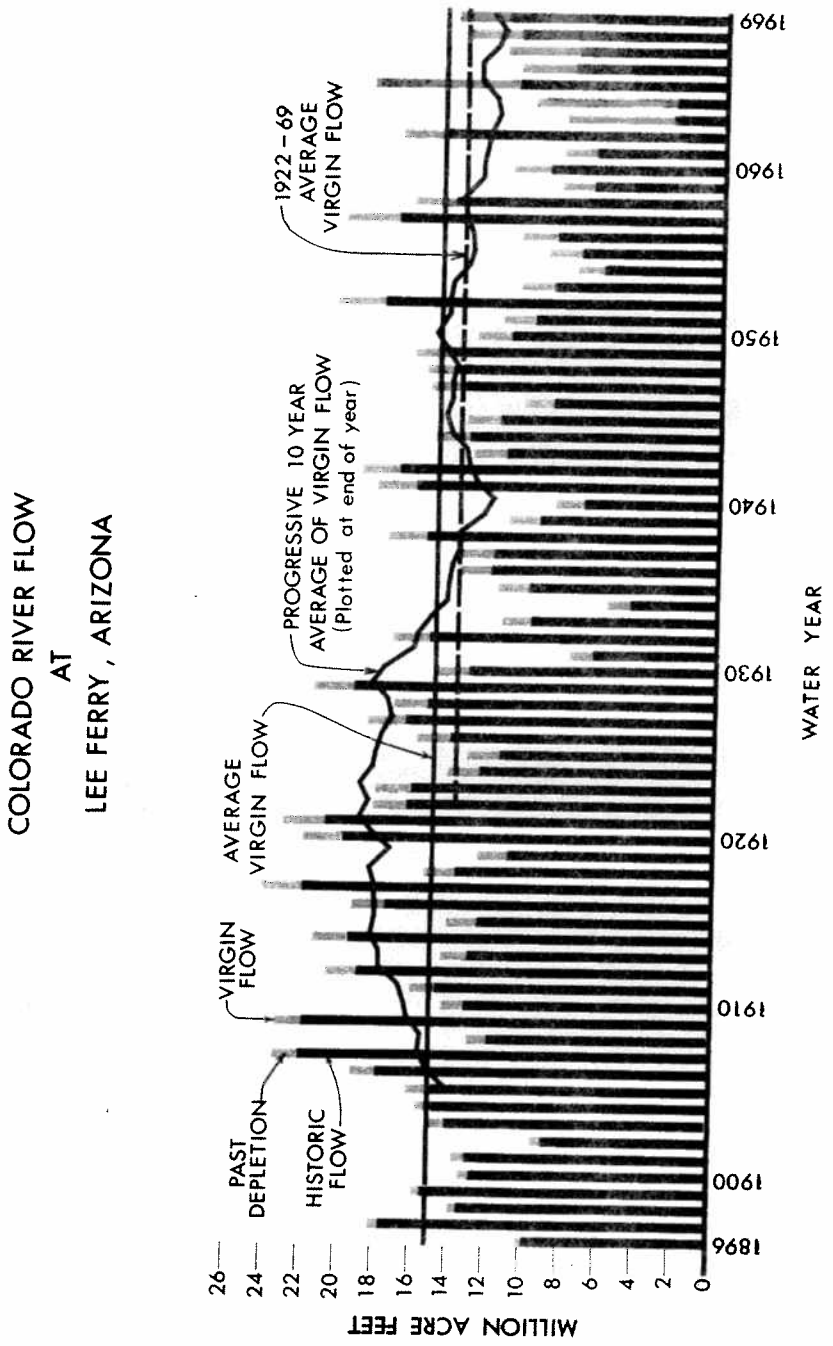
	Most Probable (Mean Forecast)		Reasonable Min. (Lower Quartile)		Reasonable Max. (Upper Quartile)	
	Water Surface Feet	Live Surface Content 1000 Acre-Feet	Water Surface Feet	Live Surface Content 1000 Acre-Feet	Water Surface Feet	Live Surface Content 1000 Acre-Feet
April 1, 1970	3571	9,510	3571	9,510	3571	9,510
Max - Summer 1970	3596	11,770	3590	11,200	3603	12,470
Min - Sept. 1970	3595	11,660	3586	10,800	3602	12,400
Max - Summer 1971	3618	14,000	3609	13,000	3629	15,300
March 1971	3590	11,200	3581	10,400	3604	12,500

Total releases from Lake Powell for water year 1970 have been scheduled at 8,800,000 acre-feet regardless of the inflow. For each of the next two years thereafter Glen Canyon must release about 8,800,000 acre-feet to deliver 75,000,000 acre-feet to the lower basin in the 1963-1972 decade as required by the Colorado River Compact. Generation from these larger releases during the next two years can be easily marketed.

An estimated 962,940 recreation days were counted at Glen Canyon facilities around the dam during 1969 compared with 883,000 in 1968 and

588,000 in 1967. The National Park Service is continuing its development of 10 recreation areas around Lake Powell. The present water surface area of the lake is 84,000 acres with a length of 178 miles. The area will increase to 96,000 acres with a length of 180 miles at the maximum summer lake level about July 1970.

EXHIBIT I.


COLORADO RIVER FLOW
AT
LEE FERRY, ARIZONA
MILLION ACRE FEET
26
24
22
20
18
16
14
12
10
8
6
4
2
0
1896
1900
1910
1920
1930
1940
1950
1960
1969
WATER YEAR
PAST DEPLETION
HISTORIC FLOW
VIRGIN FLOW
AVERAGE VIRGIN FLOW
PROGRESSIVE 10 YEAR AVERAGE OF VIRGIN FLOW (Plotted at end of year)
1922-69 AVERAGE VIRGIN FLOW

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
SALT LAKE CITY, UTAH

April 1, 1970

Forecast of Streamflow of the Colorado River above Lees Ferry for April-July 1970 Period

October through March precipitation over the Upper Colorado River Basin varied from 107% of normal for the Colorado River watershed above Cisco, Utah, to 78% of normal for the Green River watershed above Green River, Utah, and 85% of normal for the San Juan River watershed above Bluff, Utah. April 1 water equivalent of snow courses within or adjacent to the above subbasins is, respectively, **108 percent, 97 percent, and 77 percent** of the 25-year average (1936-60). Based on these data, the forecast runoff of the Colorado River and tributaries at damsites of the Colorado River Storage Project is as follows:

Water Supply Forecasts for the Period April-July 1970
(Unit: 1,000 acre-feet)

	April-July Inflow to Reservoir				
	Fontenelle	Navajo	Blue Mesa	Flaming Gorge	Lake Powell
Unadjusted most probable forecast	680	460	740	940	8,000
Transmountain diversions and storage changes in small project reservoirs	None	-20	-10	1/-10	2/-500
Adjusted most probable forecast	680	440	730	930	7,500
Deviation from most probable forecast 3/					
90 percent	+270	+420	+260	+320	+2,500
50 percent	±110	±170	±100	±130	±1,000
Percent of 1906-68 average inflow	78	53	93	80	90

1/ Does not reflect storage changes at Fontenelle Reservoir.

2/ Does not reflect storage changes at Flaming Gorge, Navajo, Blue Mesa, and Fontenelle Reservoirs.

3/ Percent of the time actual runoff will not deviate from the most probable forecast more than the amount shown.

Lake Powell forecast is derived from a summation of three tributary forecasts: The Green River at Green River, Utah; the San Juan River at Bluff, Utah; and the Colorado River near Cisco, Utah. Each of the tributary forecasts is derived by correlation of the April-through-July runoff (adjusted for major diversions and storage changes) with the previous October-through-March precipitation and April 1 water equivalent of snow for the 27-year period (1936-62). Data from 58 precipitation stations and 48 snow courses located throughout the basins are used.

Precipitation at 13 Index Stations

The attached print of Drawing No. 56-400-93, "Accumulated Monthly Precipitation, Upper Colorado River Basin," shows a comparison of the accumulated precipitation from October 1, 1969, at 13 index stations used in preparing the forecast, with similar data for other selected years of record. During the October 1969 through March 1970 period, the precipitation above Lees Ferry was about 94 percent of average.

Snow Data Analysis

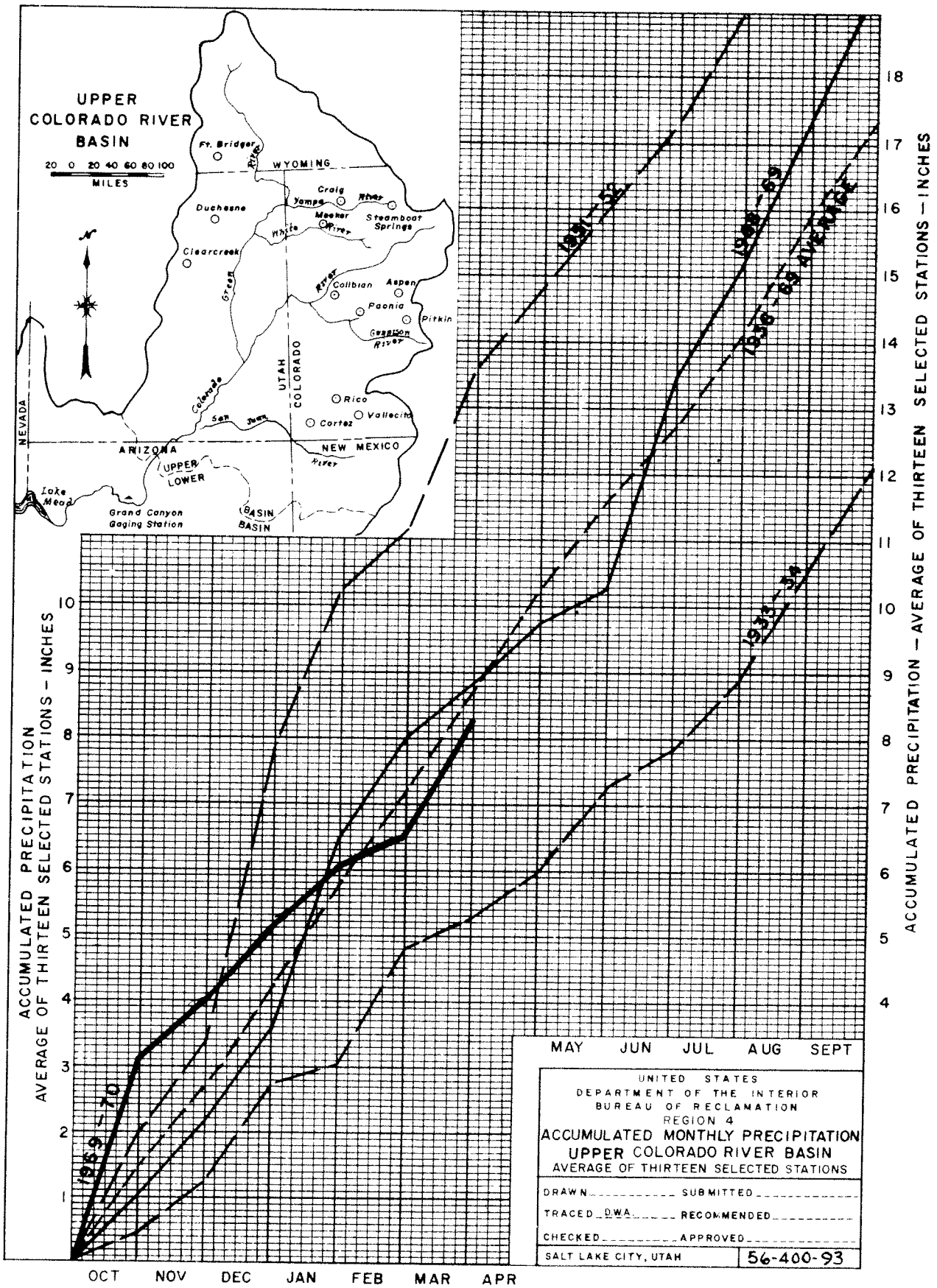
The April 1, 1970, snow surveys for 48 courses reveal that the water equivalent of accumulated snow cover in the Colorado River watershed above Lees Ferry is **near** average. The following tabulation lists comparative results for the watersheds of the three main tributaries for April 1, 1970, 1969, 1968 & 1967. **Approximately 97 percent of the water** passing Lees Ferry originates above these three locations.

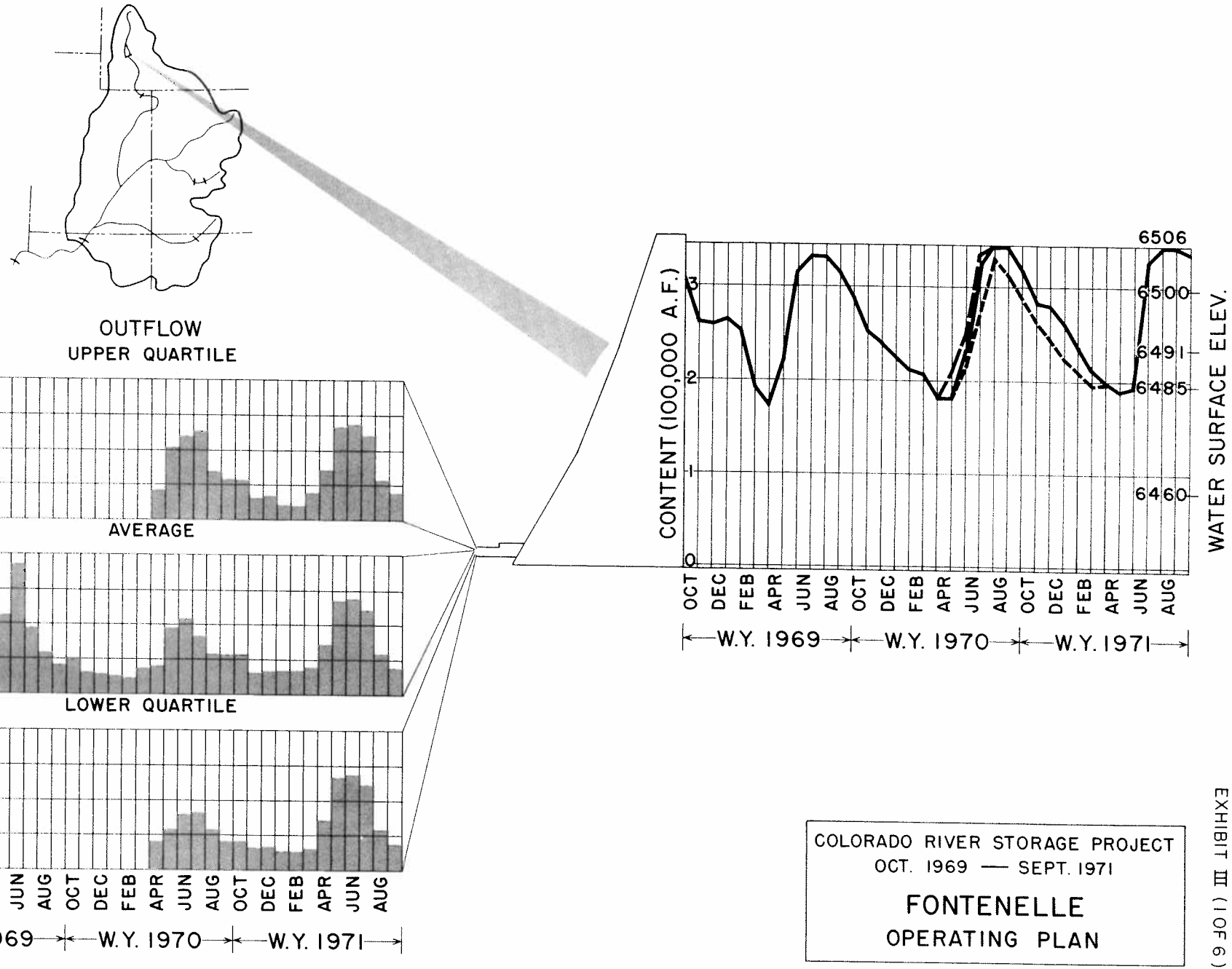
Average Water Equivalent of Snow on April 1

Drainage Basin	Inches in Water				Percent of average			
	1970	1969	1968	1967	1970	1969	1968	1967
Colorado River above Cisco, Utah	15.0	17.0	13.7	10.5	108	122	98	75
Green River above Green River, Utah	15.7	19.7	15.5	15.2	97	122	96	93
San Juan River above Bluff, Utah	11.6	20.6	15.9	8.7	77	137	106	58
April-July Runoff in Million Acre-Feet						8.2	7.3	6.0

Attachment
(Drawing)

EXHIBIT II (3 OF 3)

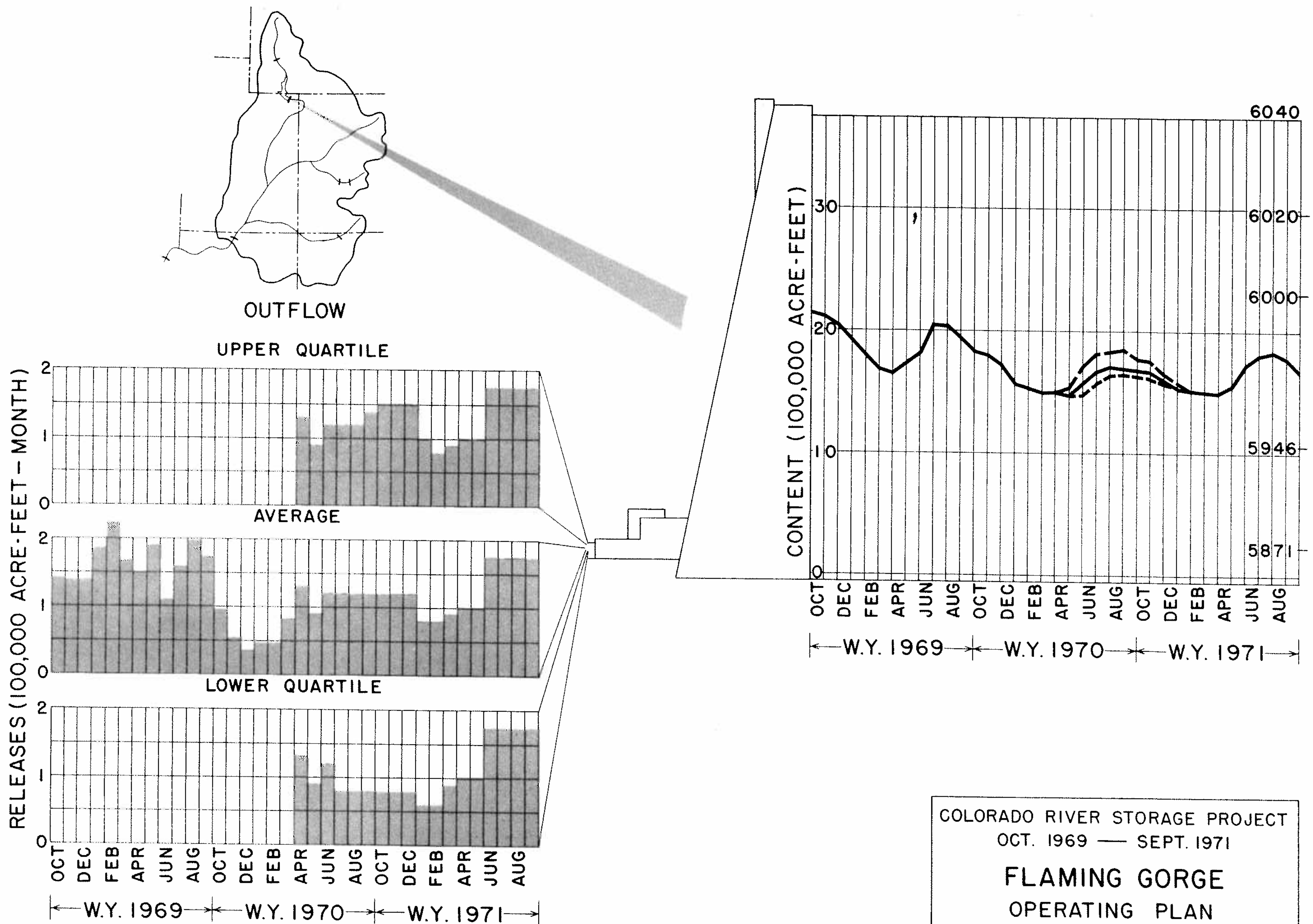




COLORADO RIVER STORAGE PROJECT
OCT. 1969 — SEPT. 1971

FONTENELLE
OPERATING PLAN

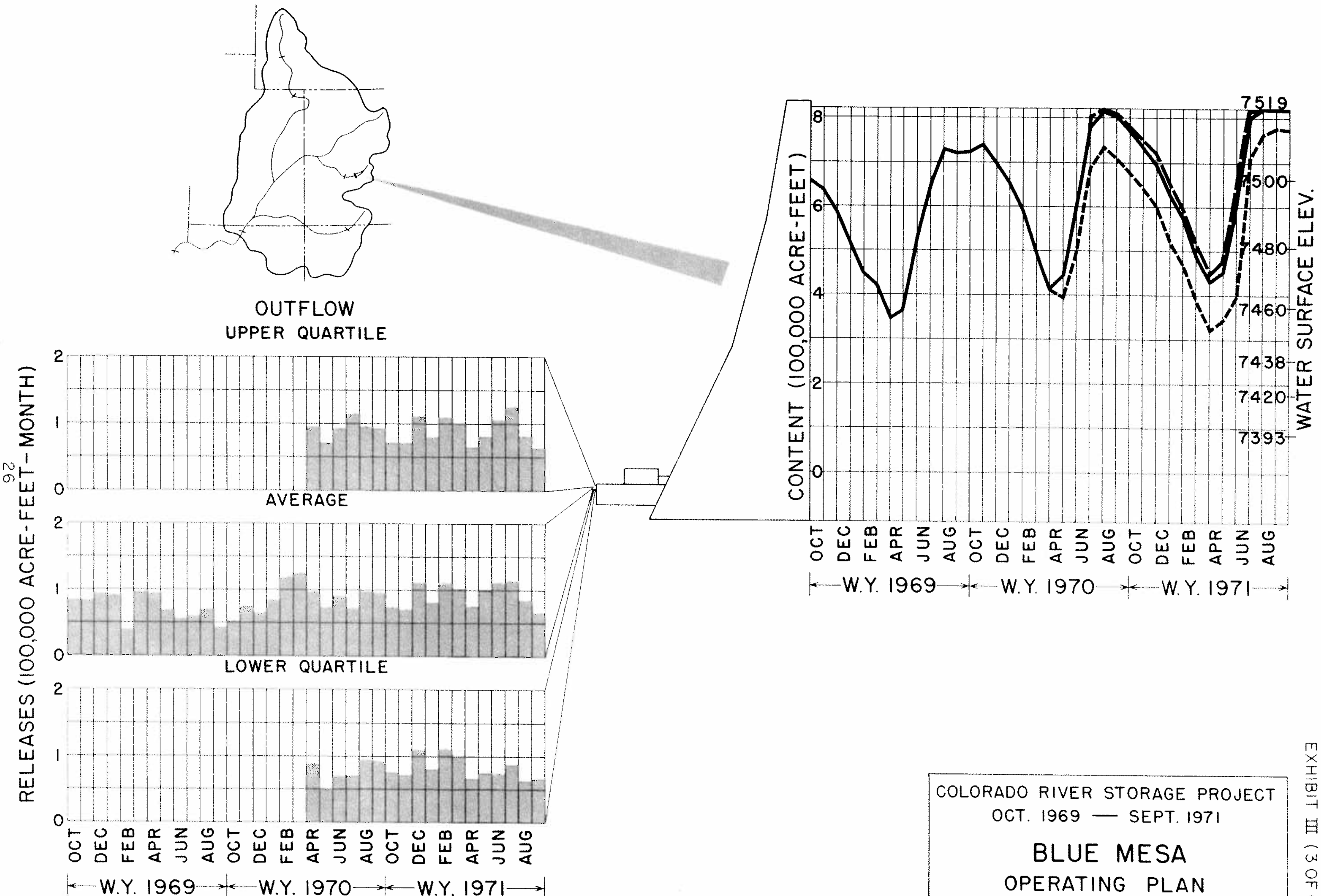
EXHIBIT III (1 OF 6)



COLORADO RIVER STORAGE PROJECT
OCT. 1969 — SEPT. 1971

FLAMING GORGE
OPERATING PLAN

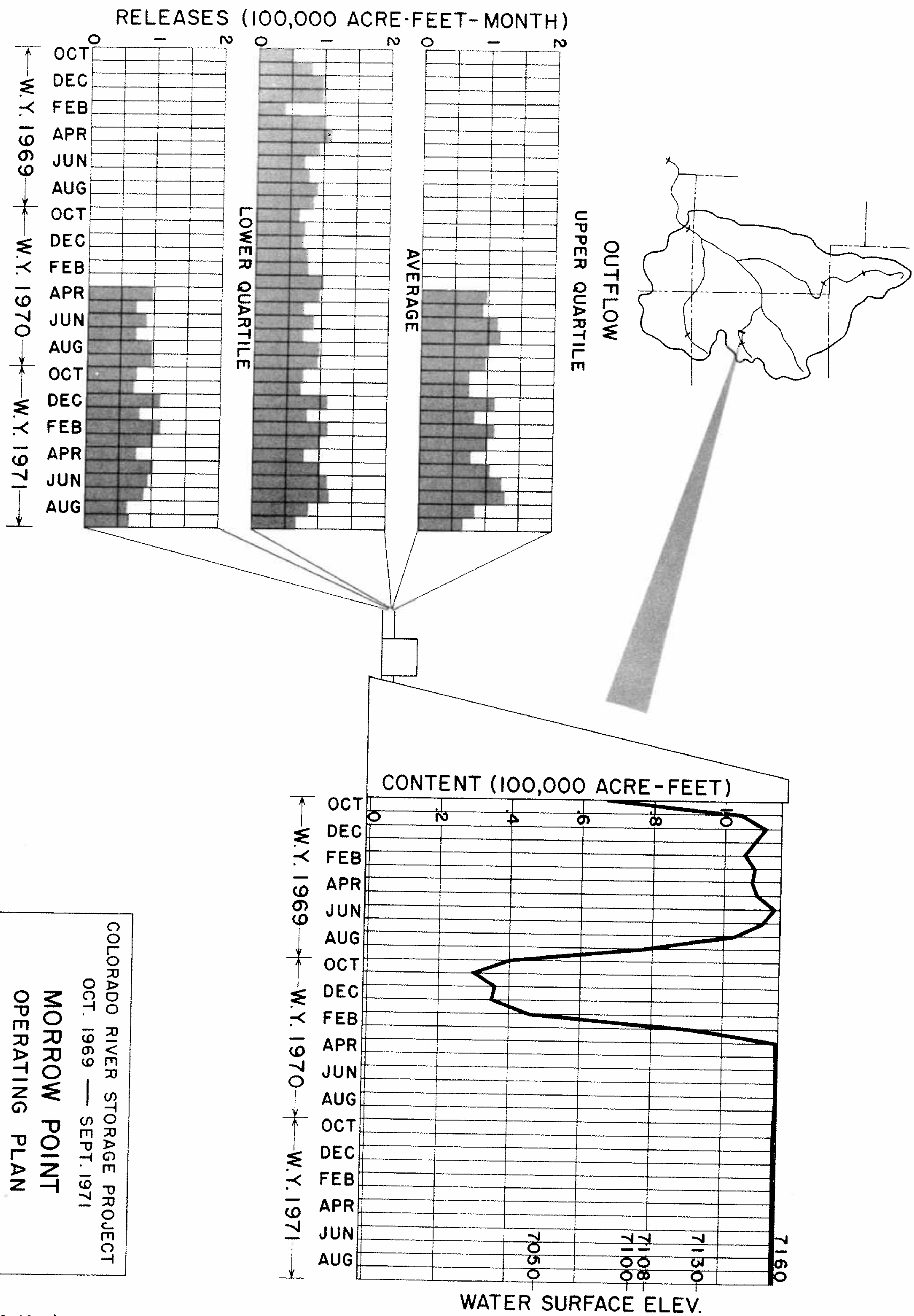
EXHIBIT III (2 OF 6)



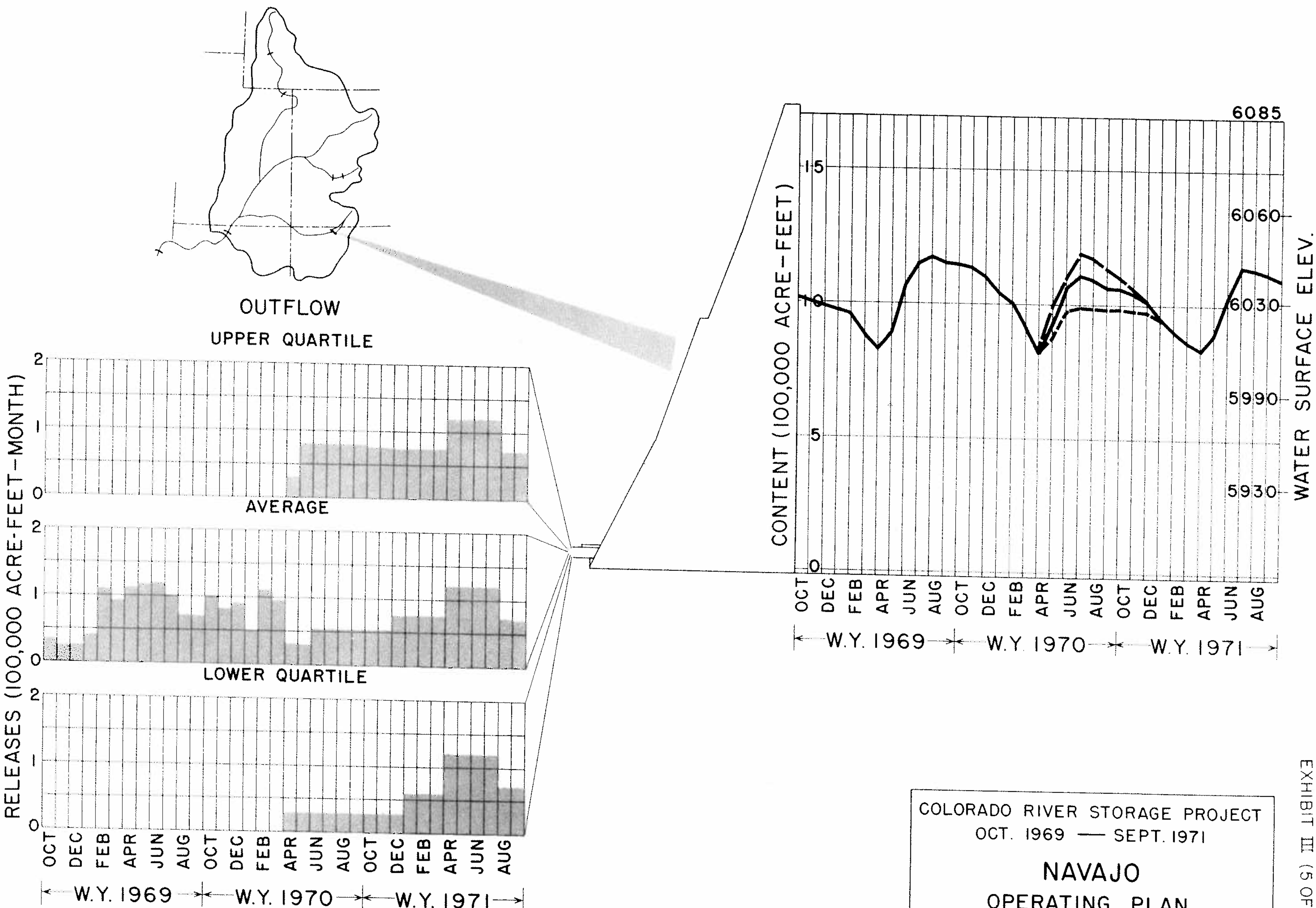
COLORADO RIVER STORAGE PROJECT
OCT. 1969 — SEPT. 1971

BLUE MESA
OPERATING PLAN

EXHIBIT III (3 OF 6)

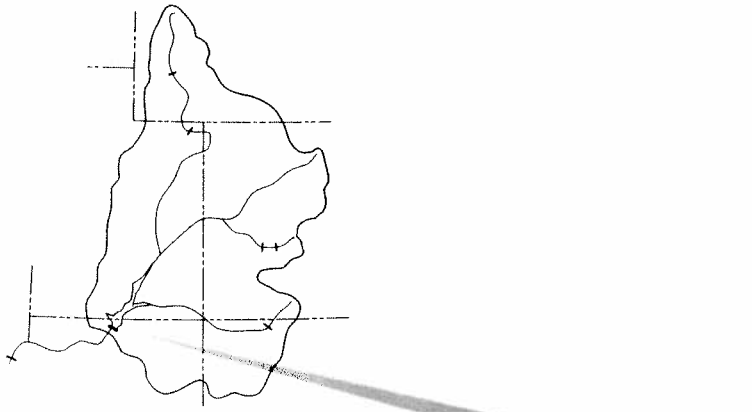


COLORADO RIVER STORAGE PROJECT
OCT. 1969 — SEPT. 1971
MORROW POINT
OPERATING PLAN



COLORADO RIVER STORAGE PROJECT
OCT. 1969 — SEPT. 1971

NAVAJO
OPERATING PLAN



OUTFLOW

UPPER QUARTILE

AVERAGE

LOWER QUARTILE

RELEASES (MILLION ACRE FEET-MONTH)

1.0
.5
0

OCT DEC FEB APR JUN AUG OCT DEC FEB APR JUN AUG OCT DEC FEB APR JUN AUG

W.Y. 1969 W.Y. 1970 W.Y. 1971

CONTENT (MILLION ACRE FEET)

25
20
15
10
5
0

WATER SURFACE ELEV.-FEET

3700
3650
3600
3570
3490
3400

OCT DEC FEB APR JUN AUG OCT DEC FEB APR JUN AUG OCT DEC FEB APR JUN AUG

W.Y. 1969 W.Y. 1970 W.Y. 1971

COLORADO RIVER STORAGE PROJECT
OCT. 1969 — SEPT. 1971

GLEN CANYON
OPERATING PLAN

EXHIBIT III (6 OF 6)

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** MOST PROBABLE FORECAST *** SALT LAKE CITY, UTAH 470-1

FONTENELLE RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH		
			POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969							
OCT 1969 MAR 1970	174	1	260	30	29	286	6498.40
APR 1970	60	0	60	0	18	180	6482.40
MAY 1970	203	3	90	52	18	180	6482.49
JUN 1970	270	4	90	71	23	233	6490.89
JUL 1970	147	5	86	38	33	328	6503.89
AUG 1970	86	4	85	0	34	345	6506.03
SEP 1970	57	2	84	0	34	342	6505.65
WY 1970 TOTALS	997	19	755	191	31	316	6502.35
OCT 1970	51	2	85	0	28	283	6497.97
NOV 1970	41	0	45	0	28	279	6497.43
DEC 1970	30	0	50	0	26	261	6494.93
JAN 1971	24	0	50	0	24	237	6491.48
FEB 1971	23	0	50	0	21	213	6487.87
MAR 1971	41	0	58	0	20	197	6485.33
APR 1971	98	0	87	20	19	189	6484.02
MAY 1971	207	3	89	111	19	193	6484.68
JUN 1971	359	4	90	115	33	328	6503.89
JUL 1971	205	5	86	96	34	345	6506.03
AUG 1971	91	4	85	2	34	345	6506.03
SEP 1971	51	3	57	0	34	336	6504.90
WY 1971 TOTALS	1220	21	832	344			
OCT 1971	46	2	60	0	32	322	6503.12
NOV 1971	37	0	60	0	30	301	6500.44
DEC 1971	25	0	60	0	27	269	6496.05
JAN 1972	26	0	60	0	24	238	6491.62
FEB 1972	25	0	30	0	23	234	6491.04
MAR 1972	48	0	45	0	24	236	6491.33

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** MOST PROBABLE FORECAST *** SALT LAKE CITY, UTAH 470-1

FLAMING GORGE RESERVOIR

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	UNREG	REG		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969								
OCT 1969 MAR 1970	240	358	9	725	0	183	1826	5981.85
APR 1970	110	110	4	130	0	148	1485	5967.33
MAY 1970	259	198	5	90	0	146	1463	5966.34
JUN 1970	351	242	7	120	0	156	1556	5970.55
JUL 1970	191	168	8	120	0	166	1661	5975.11
AUG 1970	106	105	6	120	0	170	1697	5976.63
SEP 1970	77	104	5	120	0	168	1678	5975.83
WY 1970 TOTALS	1334	1285	44	1425	0	166	1659	5975.03
OCT 1970	72	106	3	120	0	164	1644	5974.39
NOV 1970	54	58	1	120	0	159	1586	5971.88
DEC 1970	42	62	1	120	0	153	1533	5969.53
JAN 1971	32	58	1	80	0	151	1512	5968.58
FEB 1971	34	61	1	80	0	149	1494	5967.76
MAR 1971	74	91	2	90	0	149	1493	5967.72
APR 1971	171	190	4	100	0	156	1562	5970.82
MAY 1971	279	272	6	100	0	171	1713	5977.29
JUN 1971	438	285	7	175	0	181	1806	5981.05
JUL 1971	240	217	8	175	0	184	1837	5982.27
AUG 1971	114	110	6	175	0	177	1773	5979.74
SEP 1971	66	72	5	175	0	168	1674	5975.66
WY 1971 TOTALS	1618	1572	45	1510	0			
OCT 1971	63	77	3	175	0	158	1583	5971.75
NOV 1971	51	74	1	125	0	154	1535	5969.61
DEC 1971	37	72	1	80	0	153	1527	5969.26
JAN 1972	34	68	1	90	0	152	1515	5968.72
FEB 1972	41	46	1	80	0	148	1484	5967.31
MAR 1972	91	88	2	100	0	147	1471	5966.71

EXHIBIT IV. (2 of 6)

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** MOST PROBABLE FORECAST *** SALT LAKE CITY, UTAH 470-1

BLUE MESA RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH		
			POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969							
OCT 1969					72	720	7507.00
NOV 1969	180	1	519	0	41	411	7466.29
DEC 1969	126	1	89	0	44	444	7471.26
JAN 1970	228	1	50	0	60	605	7493.04
FEB 1970	263	1	70	0	78	779	7513.81
MAR 1970	113	2	70	0	82	816	7517.93
APR 1970	85	1	95	0	81	806	7516.82
MAY 1970	57	1	93	0	77	773	7513.13
JUN 1970							
JUL 1970							
AUG 1970							
SEP 1970							
WY 1970 TOTALS	1052	8	986	0			
OCT 1970	32	1	72	0	74	735	7508.77
NOV 1970	30	0	70	0	70	699	7504.55
DEC 1970	27	0	110	0	62	624	7495.43
JAN 1971	22	0	80	0	57	571	7488.70
FEB 1971	22	0	110	0	49	491	7477.97
MAR 1971	32	0	100	0	43	429	7469.04
APR 1971	90	1	65	0	45	451	7472.28
MAY 1971	245	1	75	0	60	605	7493.04
JUN 1971	311	1	92	0	80	803	7516.49
JUL 1971	142	2	112	0	83	828	7519.24
AUG 1971	84	1	81	0	83	830	7519.46
SEP 1971	60	1	65	0	82	825	7518.91
WY 1971 TOTALS	1097	9	1032	0			
OCT 1971	43	1	71	0	80	798	7515.93
NOV 1971	32	0	69	0	76	765	7512.22
DEC 1971	26	0	110	0	69	688	7503.24
JAN 1972	23	0	110	0	61	609	7493.55
FEB 1972	20	0	110	0	53	527	7482.89
MAR 1972	37	0	100	0	47	466	7474.45

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** MOST PROBABLE FORECAST *** SALT LAKE CITY, UTAH 470-1

MORROW POINT RESERVOIR

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	BLUE MESA RELEASE	SIDE INFLOW		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969						4	41	7033.10
OCT 1969 MAR 1970	519	27	0	0	465	11	114	7156.73
APR 1970	89	11	0	0	97	12	116	7158.75
MAY 1970	50	24	0	0	73	12	117	7159.97
JUN 1970	70	20	1	0	89	12	117	7159.97
JUL 1970	70	4	1	0	73	12	117	7159.97
AUG 1970	95	2	0	0	97	12	117	7159.97
SEP 1970	93	1	0	96	0	12	115	7157.52
WY 1970 TOTALS	986	89	2	96	894			
OCT 1970	72	1	0	73	0	12	115	7157.52
NOV 1970	70	1	0	71	0	12	115	7157.52
DEC 1970	110	0	0	110	0	12	115	7157.52
JAN 1971	80	1	0	91	0	12	115	7157.52
FEB 1971	110	1	0	111	0	12	115	7157.52
MAR 1971	100	1	0	101	0	12	115	7157.52
APR 1971	65	11	0	76	0	12	115	7157.52
MAY 1971	75	24	0	99	0	12	115	7157.52
JUN 1971	92	20	1	111	0	12	115	7157.52
JUL 1971	112	4	1	114	0	12	116	7158.75
AUG 1971	81	2	0	84	0	12	115	7157.52
SEP 1971	65	1	0	66	0	12	115	7157.52
WY 1971 TOTALS	1032	87	2	1097	0			
OCT 1971	71	1	0	72	0	12	115	7157.52
NOV 1971	69	1	0	70	0	12	115	7157.52
DEC 1971	110	0	0	110	0	12	115	7157.52
JAN 1972	110	1	0	111	0	12	115	7157.52
FEB 1972	110	1	0	111	0	12	115	7157.52
MAR 1972	100	1	0	101	0	12	115	7157.52

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** MOST PROBABLE FORECAST *** SALT LAKE CITY, UTAH 470-1

NAVAJO RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH			NAVAJO INDIAN PROJECT
			POWER	OTHER	BANK ST	SURFACE ST	ELEV	
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)	(1000 AC-FT)
SEP 1969								
OCT 1969 MAR 1970	217	4	0	526	114	1144	6043.17	
APR 1970	105	2	0	30	86	859	6014.41	0
MAY 1970	179	3	0	30	93	925	6021.61	0
JUN 1970	115	3	0	54	106	1058	6035.13	0
JUL 1970	33	4	0	54	111	1111	6040.15	0
AUG 1970	28	3	0	54	109	1088	6038.00	0
SEP 1970	46	2	0	54	106	1062	6035.51	0
WY 1970 TOTALS	723	21	0	802	105	1053	6034.65	0
								0
OCT 1970	40	1	0	54	104	1039	6033.28	0
NOV 1970	24	1	0	54	101	1011	6030.50	0
DEC 1970	10	0	0	75	96	957	6024.98	0
JAN 1971	16	0	0	75	90	904	6019.35	0
FEB 1971	34	0	0	75	87	866	6015.17	0
MAR 1971	41	1	0	75	83	835	6011.67	0
APR 1971	178	2	0	120	89	885	6017.27	0
MAY 1971	274	2	0	120	102	1024	6031.80	0
JUN 1971	255	3	0	120	114	1144	6043.18	0
JUL 1971	105	4	0	120	113	1126	6041.53	0
AUG 1971	63	3	0	72	112	1115	6040.52	0
SEP 1971	40	2	0	72	109	1093	6038.47	0
WY 1971 TOTALS	1095	19	0	1032				0
OCT 1971	49	1	0	72	107	1070	6036.28	0
NOV 1971	27	1	0	72	103	1028	6032.19	0
DEC 1971	21	0	0	72	98	982	6027.57	0
JAN 1972	20	0	0	72	93	935	6022.67	0
FEB 1972	22	1	0	72	89	893	6018.15	0
MAR 1972	76	1	0	120	85	851	6013.49	0

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** MOST PROBABLE FORECAST *** SALT LAKE CITY, UTAH 470-1

GLEN CANYON------LAKE POWELL

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	UNREG	REG		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969								
OCT 1969 MAR 1970	2770	3820	122	3827	0	4697	9708	3573.32
APR 1970	1204	1110	21	890	0	4850	9535	3571.27
MAY 1970	2353	1856	29	956	0	4868	9716	3573.42
JUN 1970	2492	2007	35	847	0	4946	10499	3582.41
JUL 1970	1277	1183	42	954	0	5048	11522	3593.51
AUG 1970	763	817	44	795	0	5074	11783	3596.23
SEP 1970	435	524	38	800	0	5073	11768	3596.08
WY 1970 TOTALS	11294	11313	331	8769	0	5063	11664	3594.99
OCT 1970	430	572	33	579	0	5056	11591	3594.23
NOV 1970	435	571	28	812	0	5050	11528	3593.57
DEC 1970	346	566	23	800	0	5045	11476	3593.03
JAN 1971	307	472	17	735	0	5020	11221	3590.31
FEB 1971	374	549	16	574	0	5016	11184	3589.92
MAR 1971	775	897	20	800	0	5023	11250	3590.62
APR 1971	1125	971	23	862	0	5031	11328	3591.45
MAY 1971	2344	1841	33	954	0	5109	12104	3599.54
JUN 1971	3085	2466	40	881	0	5249	13509	3613.31
JUL 1971	1387	1306	48	749	0	5295	13972	3617.63
AUG 1971	714	782	50	788	0	5290	13921	3617.16
SEP 1971	523	660	43	627	0	5289	13912	3617.08
WY 1971 TOTALS	11845	11609	374	8761	0			
OCT 1971	532	696	38	596	0	5295	13968	3617.59
NOV 1971	443	599	33	620	0	5290	13919	3617.14
DEC 1971	356	574	27	649	0	5277	13790	3615.94
JAN 1972	327	512	20	780	0	5251	13528	3613.49
FEB 1972	376	550	18	609	0	5244	13457	3612.81
MAR 1972	625	745	24	818	0	5235	13370	3611.99

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** MOST PROBABLE FORECAST *** SALT LAKE CITY, UTAH 470-1

GLEN CANYON------LAKE POWELL

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	UNREG	REG		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969						4697	9708	3573.32
OCT 1969 MAR 1970	2770	3820	122	3827	0	4850	9535	3571.27
APR 1970	1204	1110	21	890	0	4868	9716	3573.42
MAY 1970	2353	1856	29	966	0	4946	10499	3582.41
JUN 1970	2492	2007	35	847	0	5048	11522	3593.51
JUL 1970	1277	1183	42	854	0	5074	11783	3596.23
AUG 1970	763	817	44	795	0	5073	11768	3596.08
SEP 1970	435	524	38	800	0	5063	11664	3594.99
WY 1970 TOTALS	11294	11313	331	8769	0			
OCT 1970	430	572	33	579	0	5056	11591	3594.23
NOV 1970	435	571	28	612	0	5050	11528	3593.57
DEC 1970	346	566	23	600	0	5045	11476	3593.03
JAN 1971	307	472	17	735	0	5020	11221	3590.31
FEB 1971	374	549	16	574	0	5016	11184	3589.92
MAR 1971	775	897	20	800	0	5023	11250	3590.62
APR 1971	1125	971	23	862	0	5031	11328	3591.45
MAY 1971	2344	1841	33	954	0	5109	12104	3599.54
JUN 1971	3085	2466	40	881	0	5249	13509	3613.31
JUL 1971	1387	1306	48	749	0	5295	13972	3617.63
AUG 1971	714	782	50	788	0	5290	13921	3617.16
SEP 1971	523	660	43	627	0	5289	13912	3617.08
WY 1971 TOTALS	11845	11609	374	8761	0			
OCT 1971	532	696	38	696	0	5295	13968	3617.59
NOV 1971	443	599	33	620	0	5290	13919	3617.14
DEC 1971	356	574	27	649	0	5277	13790	3615.94
JAN 1972	327	512	20	780	0	5251	13528	3613.49
FEB 1972	376	550	18	609	0	5244	13457	3612.81
MAR 1972	625	746	24	818	0	5235	13370	3611.99

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

ACP *** LOWER QUARTILE *** SALT LAKE CITY, UTAH 470-3

FONTENELLE RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH		
			POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969							
OCT 1969 MAR 1970	174	1	260	30	29	286	6498.40
APR 1970	69	0	60	0	18	180	6482.40
MAY 1970	127	3	88	0	19	187	6483.68
JUN 1970	264	4	90	28	22	216	6488.33
JUL 1970	115	5	86	39	34	346	6506.15
AUG 1970	66	4	85	0	33	332	6504.40
SEP 1970	30	2	59	0	31	311	6501.73
WY 1970 TOTALS	844	19	728	97	29	286	6498.38
OCT 1970	35	2	59	0	26	263	6495.21
NOV 1970	29	0	48	0	24	245	6492.64
DEC 1970	24	0	48	0	22	223	6489.40
JAN 1971	25	0	40	0	21	209	6487.25
FEB 1971	24	0	40	0	19	195	6485.01
MAR 1971	49	0	45	0	20	197	6485.33
APR 1971	98	0	87	20	19	189	6484.02
MAY 1971	207	3	89	111	19	193	6484.68
JUN 1971	359	4	90	115	33	328	6503.89
JUL 1971	205	5	86	96	34	345	6506.03
AUG 1971	91	4	85	2	34	345	6506.03
SEP 1971	51	3	57	0	34	336	6504.90
WY 1971 TOTALS	1198	21	774	344			
OCT 1971	66	2	60	0	32	322	6503.12
NOV 1971	37	0	60	0	30	301	6500.44
DEC 1971	25	0	60	0	27	269	6496.05
JAN 1972	26	0	60	0	24	238	6491.62
FEB 1972	25	0	30	0	23	234	6491.04
MAR 1972	49	0	45	0	24	236	6491.33

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** LOWER QUARTILE *** SALT LAKE CITY, UTAH 470-3

FLAMING GORGE RESERVOIR

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	UNREG	REG		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969						183	1826	5981.85
OCT 1969 MAR 1970	240	358	9	725	0	148	1485	5967.33
APR 1970	103	95	4	130	0	145	1449	5965.69
MAY 1970	137	102	5	90	0	146	1455	5965.97
JUN 1970	383	238	6	120	0	156	1557	5970.60
JUL 1970	161	171	7	80	0	163	1634	5973.96
AUG 1970	76	95	6	90	0	164	1642	5974.30
SEP 1970	37	62	5	80	0	162	1621	5973.40
WY 1970 TOTALS	1137	1121	42	1305	0			
OCT 1970	35	59	3	80	0	160	1599	5972.45
NOV 1970	36	56	1	80	0	158	1576	5971.44
DEC 1970	32	56	1	80	0	155	1554	5970.46
JAN 1971	27	42	1	60	0	154	1536	5969.66
FEB 1971	34	50	1	60	0	153	1526	5969.21
MAR 1971	61	58	2	90	0	149	1496	5967.85
APR 1971	171	180	4	100	0	157	1564	5970.91
MAY 1971	279	272	6	100	0	171	1716	5977.42
JUN 1971	438	285	7	175	0	181	1809	5981.17
JUL 1971	240	217	8	175	0	184	1840	5982.39
AUG 1971	114	110	6	175	0	178	1775	5979.82
SEP 1971	66	72	5	175	0	168	1677	5975.79
WY 1971 TOTALS	1533	1457	45	1350	0			
OCT 1971	63	77	3	175	0	159	1585	5971.83
NOV 1971	51	74	1	100	0	156	1561	5970.77
DEC 1971	37	72	1	80	0	155	1553	5970.42
JAN 1972	34	58	1	80	0	154	1541	5969.88
FEB 1972	41	46	1	80	0	151	1509	5968.44
MAR 1972	91	88	2	100	0	150	1496	5967.85

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** LOWER QUARTILE *** SALT LAKE CITY, UTAH 470-3

BLUE MESA RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH		
			POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969					72	720	7507.00
OCT 1969 MAR 1970	180	1	519	0	41	411	7466.29
APR 1970	62	1	89	0	39	385	7462.27
MAY 1970	181	1	50	0	50	504	7479.77
JUN 1970	275	1	70	0	69	689	7503.36
JUL 1970	112	1	70	0	73	726	7507.73
AUG 1970	75	1	95	0	71	707	7505.50
SEP 1970	55	1	93	0	67	672	7501.32
WY 1970 TOTALS	940	7	986	0			
OCT 1970	36	1	74	0	64	636	7496.92
NOV 1970	30	0	70	0	60	600	7492.41
DEC 1970	23	0	110	0	52	521	7482.08
JAN 1971	20	0	80	0	47	466	7474.45
FEB 1971	18	0	110	0	38	383	7461.96
MAR 1971	30	0	100	0	32	319	7451.22
APR 1971	90	1	65	0	34	341	7455.04
MAY 1971	245	1	75	0	49	495	7478.53
JUN 1971	311	1	75	0	71	708	7505.61
JUL 1971	142	2	85	0	76	758	7511.42
AUG 1971	80	1	62	0	78	777	7513.58
SEP 1971	60	1	65	0	77	772	7513.02
WY 1971 TOTALS	1089	8	971	0			
OCT 1971	43	1	72	0	75	744	7509.82
NOV 1971	32	0	70	0	71	710	7505.85
DEC 1971	25	0	110	0	63	634	7496.67
JAN 1972	23	0	110	0	55	555	7486.61
FEB 1972	20	0	110	0	47	473	7475.44
MAR 1972	33	0	100	0	41	412	7466.48

EXHIBIT V. (3 of 6)

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** LOWER QUARTILE *** SALT LAKE CITY, UTAH 470-3

MORROW POINT RESERVOIR

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	BLUE MESA RELEASE	SIDE INFLOW		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969						4	41	7033.10
OCT 1969 MAR 1970	519	27	0	0	465	11	114	7156.73
APR 1970	89	11	0	0	97	12	116	7158.75
MAY 1970	50	24	0	0	73	12	117	7159.97
JUN 1970	70	20	1	0	89	12	117	7159.97
JUL 1970	70	4	1	0	73	12	117	7159.97
AUG 1970	95	2	0	0	97	12	117	7159.97
SEP 1970	93	1	0	96	0	12	115	7157.52
WY 1970 TOTALS	986	89	2	96	894			
OCT 1970	74	1	0	75	0	12	115	7157.52
NOV 1970	70	1	0	71	0	12	115	7157.52
DEC 1970	110	0	0	110	0	12	115	7157.52
JAN 1971	80	1	0	81	0	12	115	7157.52
FEB 1971	110	1	0	111	0	12	115	7157.52
MAR 1971	100	1	0	101	0	12	115	7157.52
APR 1971	65	11	0	76	0	12	115	7157.52
MAY 1971	75	24	0	99	0	12	115	7157.52
JUN 1971	75	20	1	94	0	12	115	7157.52
JUL 1971	85	4	1	88	0	12	115	7157.52
AUG 1971	62	2	0	64	0	11	116	7158.75
SEP 1971	65	1	0	67	0	12	114	7156.27
WY 1971 TOTALS	971	67	2	1037	0			
OCT 1971	72	1	0	72	0	12	115	7157.52
NOV 1971	70	1	0	71	0	12	115	7157.52
DEC 1971	110	0	0	110	0	12	115	7157.52
JAN 1972	110	1	0	111	0	12	115	7157.52
FEB 1972	110	1	0	111	0	12	115	7157.52
MAR 1972	100	1	0	101	0	12	115	7157.52

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

ACP *** LOWER QUARTILE *** SALT LAKE CITY, UTAH 470-3

NAVAJO RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH			NAVAJO INDIAN PROJECT
			POWER	OTHER	BANK ST	SURFACE ST	ELEV	
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)	(1000 AC-FT)
SEP 1969					114	1144	6043.17	
OCT 1969 MAR 1970	217	4	0	526	86	859	6014.41	0
APR 1970	55	2	0	30	88	880	6016.72	0
MAY 1970	106	2	0	30	95	947	6023.93	0
JUN 1970	77	3	0	30	99	987	6028.08	0
JUL 1970	24	3	0	30	98	979	6027.26	0
AUG 1970	38	3	0	30	98	984	6027.77	0
SEP 1970	27	2	0	30	98	975	6026.85	0
WY 1970 TOTALS	540	19	0	706				0
OCT 1970	23	1	0	30	97	967	6026.03	0
NOV 1970	16	1	0	30	95	954	6024.67	0
DEC 1970	15	0	0	30	94	940	6023.19	0
JAN 1971	15	0	0	60	90	899	6018.81	0
FEB 1971	14	0	0	60	86	857	6014.16	0
MAR 1971	38	1	0	60	84	836	6011.79	0
APR 1971	179	2	0	120	89	887	6017.49	0
MAY 1971	274	2	0	120	102	1026	6031.99	0
JUN 1971	255	4	0	120	115	1144	6043.18	0
JUL 1971	105	4	0	120	113	1127	6041.63	0
AUG 1971	63	3	0	72	112	1116	6040.61	0
SEP 1971	49	2	0	72	109	1094	6038.56	0
WY 1971 TOTALS	1048	20	0	894				0
OCT 1971	49	1	0	72	107	1071	6036.38	0
NOV 1971	27	1	0	72	103	1029	6032.29	0
DEC 1971	21	0	0	72	98	983	6027.67	0
JAN 1972	20	0	0	72	94	935	6022.67	0
FEB 1972	27	1	0	72	89	894	6018.26	0
MAR 1972	75	1	0	120	85	852	6013.60	0

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** LOWER QUARTILE *** SALT LAKE CITY, UTAH 470-3

GLEN CANYON------LAKE POWELL

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	UNREG	REG		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969						4697	9708	3573.32
OCT 1969 MAR 1970	2770	3820	122	3827	0	4850	9535	3571.27
APR 1970	1174	1200	21	892	0	4876	9796	3574.36
MAY 1970	1985	1730	29	969	0	4943	10461	3581.98
JUN 1970	2276	1760	35	878	0	5020	11231	3590.42
JUL 1970	905	798	41	951	0	5011	11136	3589.40
AUG 1970	483	499	41	776	0	4982	10847	3586.26
SEP 1970	541	631	35	534	0	4983	10858	3586.38
WY 1970 TOTALS	10134	10428	324	8777	0			
OCT 1970	554	645	31	602	0	4984	10869	3586.50
NOV 1970	424	522	27	631	0	4972	10745	3585.14
DEC 1970	366	516	22	620	0	4961	10630	3583.87
JAN 1971	364	502	16	732	0	4939	10406	3581.36
FEB 1971	419	583	15	555	0	4940	10418	3581.50
MAR 1971	654	775	13	801	0	4936	10377	3581.04
APR 1971	1125	971	22	852	0	4944	10456	3581.93
MAY 1971	2340	1838	31	954	0	5022	11231	3590.42
JUN 1971	3081	2446	38	881	0	5161	12619	3604.70
JUL 1971	1386	1278	45	750	0	5205	13058	3609.00
AUG 1971	714	762	47	771	0	5200	13007	3608.50
SEP 1971	523	661	41	624	0	5200	13003	3608.46
WY 1971 TOTALS	11950	11499	354	8793	0			
OCT 1971	532	696	36	807	0	5205	13051	3608.93
NOV 1971	443	575	31	651	0	5195	12954	3607.99
DEC 1971	356	574	26	662	0	5181	12814	3606.62
JAN 1972	327	513	19	736	0	5153	12539	3603.91
FEB 1972	336	550	18	621	0	5145	12458	3603.10
MAR 1972	525	746	22	818	0	5136	12373	3602.25

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** UPPER QUARTILE *** SALT LAKE CITY, UTAH 470-2

FONTENELLE RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH		
			POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969					29	286	6498.40
OCT 1969 MAR 1970	174	1	260	30	18	180	6482.40
APR 1970	91	0	60	0	21	208	6487.09
MAY 1970	202	3	92	63	25	248	6493.07
JUN 1970	283	4	89	99	33	331	6504.27
JUL 1970	214	5	86	108	34	345	6506.03
AUG 1970	105	4	85	17	34	345	6506.03
SEP 1970	47	2	85	0	30	304	6500.90
WY 1970 TOTALS	1112	19	757	317			
OCT 1970	44	2	85	0	27	264	6495.35
NOV 1970	37	0	45	0	25	254	6493.93
DEC 1970	25	0	50	0	23	231	6490.59
JAN 1971	24	0	30	0	23	225	6489.70
FEB 1971	22	0	30	0	22	218	6488.64
MAR 1971	36	0	57	0	20	197	6485.33
APR 1971	98	0	87	20	19	189	6484.02
MAY 1971	207	3	89	111	19	193	6484.68
JUN 1971	359	4	90	115	33	328	6503.89
JUL 1971	205	5	86	96	34	345	6506.03
AUG 1971	91	4	85	2	34	345	6506.03
SEP 1971	51	3	57	0	34	336	6504.90
WY 1971 TOTALS	1199	21	791	344			
OCT 1971	48	2	60	0	32	322	6503.12
NOV 1971	33	0	60	0	30	301	6500.44
DEC 1971	25	0	60	0	27	269	6496.05
JAN 1972	26	0	60	0	24	238	6491.62
FEB 1972	25	0	30	0	23	234	6491.04
MAR 1972	48	0	45	0	24	236	6491.33

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** UPPER QUARTILE *** SALT LAKE CITY, UTAH 470-2

FLAMING GORGE RESERVOIR

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	UNREG	REG		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969						183	1826	5981.85
OCT 1969 MAR 1970	240	359	9	725	0	148	1485	5967.33
APR 1970	226	195	4	130	0	154	1540	5969.84
MAY 1970	300	253	5	90	0	168	1684	5976.08
JUN 1970	354	259	7	120	0	180	1804	5980.97
JUL 1970	156	136	8	120	0	181	1811	5981.25
AUG 1970	141	137	6	120	0	182	1821	5981.64
SEP 1970	53	96	5	140	0	178	1776	5979.86
WY 1970 TOTALS	1470	1434	44	1445	0			
OCT 1970	61	102	3	150	0	173	1730	5978.00
NOV 1970	41	53	1	150	0	164	1641	5974.26
DEC 1970	24	49	1	150	0	155	1548	5970.20
JAN 1971	30	36	1	100	0	149	1489	5967.53
FEB 1971	112	120	1	80	0	152	1525	5969.17
MAR 1971	74	97	2	90	0	153	1529	5969.35
APR 1971	171	180	4	100	0	160	1598	5972.40
MAY 1971	279	272	6	100	0	175	1749	5978.77
JUN 1971	438	285	8	175	0	184	1842	5982.46
JUL 1971	240	217	8	175	0	187	1873	5983.67
AUG 1971	114	110	6	175	0	181	1808	5981.13
SEP 1971	66	72	5	175	0	171	1710	5977.17
WY 1971 TOTALS	1650	1593	46	1620	0			
OCT 1971	63	77	3	175	0	162	1618	5973.27
NOV 1971	51	74	1	150	0	155	1548	5970.20
DEC 1971	37	72	1	90	0	154	1540	5969.84
JAN 1972	34	69	1	90	0	153	1528	5969.30
FEB 1972	41	46	1	80	0	150	1496	5967.85
MAR 1972	91	89	2	100	0	148	1484	5967.31

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** UPPER QUARTILE *** SALT LAKE CITY, UTAH 470-2

BLUE MESA RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH		
			POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969							
OCT 1969 MAR 1970	180	1	519	0	72	720	7507.00
APR 1970	98	1	89	0	41	411	7466.29
MAY 1970	298	1	68	0	42	418	7467.39
JUN 1970	298	1	94	0	62	617	7494.56
JUL 1970	145	2	114	0	80	802	7516.38
AUG 1970	72	1	95	0	83	829	7519.35
SEP 1970	59	1	93	0	81	807	7516.93
WY 1970 TOTALS	1149	8	1072	0	77	775	7513.35
OCT 1970	47	1	72	0	75	751	7510.62
NOV 1970	37	0	70	0	72	721	7507.14
DEC 1970	29	0	110	0	65	647	7498.27
JAN 1971	25	0	80	0	60	597	7492.03
FEB 1971	22	0	110	0	52	517	7481.54
MAR 1971	33	0	100	0	46	456	7473.01
APR 1971	90	1	65	0	48	478	7476.15
MAY 1971	245	1	80	0	63	627	7495.80
JUN 1971	311	1	104	0	81	815	7517.81
JUL 1971	149	2	125	0	83	828	7519.24
AUG 1971	94	1	81	0	83	830	7519.46
SEP 1971	69	1	65	0	82	825	7518.91
WY 1971 TOTALS	1125	8	1062	0			
OCT 1971	47	1	71	0	80	798	7515.93
NOV 1971	32	0	69	0	76	765	7512.22
DEC 1971	26	0	110	0	69	688	7503.24
JAN 1972	23	0	110	0	61	609	7493.55
FEB 1972	20	0	110	0	53	527	7482.89
MAR 1972	33	0	100	0	47	466	7474.45

EXHIBIT VI. (3 of 6)

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** UPPER QUARTILE *** SALT LAKE CITY, UTAH 470-2

MORROW POINT RESERVOIR

MONTH AND YEAR	INFLOW		EVAP LOSSES	RELEASE		END OF MONTH		
	BLUE MESA RELEASE	STDF INFLOW		POWER	OTHER	BANK ST	SURFACE ST	ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969						4	41	7033.10
OCT 1969 MAR 1970	519	27	0	0	465	11	114	7156.73
APR 1970	89	11	0	0	97	12	116	7158.75
MAY 1970	68	24	0	0	91	12	117	7159.97
JUN 1970	94	20	1	0	113	12	117	7159.97
JUL 1970	114	4	1	0	117	12	117	7159.97
AUG 1970	95	2	0	0	97	12	117	7159.97
SEP 1970	93	1	0	96	0	12	115	7157.52
WY 1970 TOTALS	1072	89	2	96	980			
OCT 1970	72	1	0	73	0	12	115	7157.52
NOV 1970	70	1	0	71	0	12	115	7157.52
DEC 1970	110	0	0	110	0	12	115	7157.52
JAN 1971	80	1	0	81	0	12	115	7157.52
FEB 1971	110	1	0	111	0	12	115	7157.52
MAR 1971	100	1	0	101	0	12	115	7157.52
APR 1971	65	11	0	76	0	12	115	7157.52
MAY 1971	80	24	0	104	0	12	115	7157.52
JUN 1971	104	20	1	123	0	12	115	7157.52
JUL 1971	125	4	1	128	0	12	115	7157.52
AUG 1971	81	2	0	83	0	12	115	7157.52
SEP 1971	65	1	0	66	0	12	115	7157.52
WY 1971 TOTALS	1062	67	2	1127	0			
OCT 1971	71	1	0	72	0	12	115	7157.52
NOV 1971	69	1	0	70	0	12	115	7157.52
DEC 1971	110	0	0	110	0	12	115	7157.52
JAN 1972	110	1	0	111	0	12	115	7157.52
FEB 1972	110	1	0	111	0	12	115	7157.52
MAR 1972	100	1	0	101	0	12	115	7157.52

OPERATION PLAN FOR COLORADO RIVER STORAGE PROJECT

AOP *** UPPER QUARTILE *** SALT LAKE CITY, UTAH 470-2

NAVAJO RESERVOIR

MONTH AND YEAR	INFLOW	EVAPORATION LOSSES	RELEASE		END OF MONTH			NAVAJO INDIAN PROJECT
			POWER	OTHER	BANK ST	SURFACE ST	ELEV	
	(1000AC-FT)	(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)	(1000 AC-FT)
SEP 1969								
OCT 1969 MAR 1970	217	4	0	526	114	1144	6043.17	
APR 1970	173	2	0	30	86	859	6014.41	0
MAY 1970	217	3	0	80	99	987	6028.08	0
JUN 1970	151	4	0	80	111	1109	6039.97	0
JUL 1970	61	4	0	80	117	1170	6045.51	0
AUG 1970	56	3	0	80	115	1149	6043.63	0
SEP 1970	37	2	0	80	112	1125	6041.44	0
WY 1970 TOTALS	912	22	0	956	108	1084	6037.62	0
								0
OCT 1970	38	1	0	75	105	1047	6034.06	0
NOV 1970	25	1	0	75	100	1002	6029.60	0
DEC 1970	18	0	0	75	95	950	6024.25	0
JAN 1971	17	0	0	75	90	897	6018.59	0
FEB 1971	19	0	0	75	85	846	6012.93	0
MAR 1971	52	1	0	75	82	825	6010.52	0
APR 1971	178	2	0	120	88	875	6016.17	0
MAY 1971	274	2	0	120	101	1014	6030.80	0
JUN 1971	255	3	0	120	113	1134	6042.27	0
JUL 1971	105	4	0	120	112	1116	6040.61	0
AUG 1971	67	3	0	72	111	1105	6039.59	0
SEP 1971	49	2	0	72	108	1083	6037.52	0
WY 1971 TOTALS	1092	19	0	1074				0
OCT 1971	48	1	0	72	106	1060	6035.32	0
NOV 1971	27	1	0	72	102	1018	6031.20	0
DEC 1971	21	0	0	72	97	972	6026.54	0
JAN 1972	20	0	0	72	92	925	6021.61	0
FEB 1972	27	0	0	72	88	884	6017.16	0
MAR 1972	75	1	0	120	84	842	6012.47	0

EXHIBIT VI. (5 of 6)

O P E R A T I O N P L A N F O R C O L O R A D O R I V E R S T O R A G E P R O J E C T

AOP *** UPPER QUARTILE *** SALT LAKE CITY, UTAH 470-2

G L E N C A N Y O N------L A K E P O W E L L

MONTH AND YEAR	INFLOW UNREG	INFLOW REG	EVAP LOSSES	RELEASE POWER	RELEASE OTHER	END OF MONTH BANK ST	END OF MONTH SURFACE ST	END OF MONTH ELEV
	(1000 AC-FT)		(1000 AC-FT)	(1000 AC-FT)		(1000 AC-FT)		(FT)
SEP 1969						4697	9708	3573.32
OCT 1969 MAR 1970	2770	3820	122	3827	0	4850	9535	3571.27
APR 1970	1009	758	20	894	0	4836	9393	3569.58
MAY 1970	2553	1385	28	968	0	4926	10292	3580.07
JUN 1970	3124	2614	36	876	0	5081	11839	3596.82
JUL 1970	1629	1580	44	944	0	5144	12468	3603.20
AUG 1970	702	728	45	808	0	5133	12354	3602.06
SEP 1970	532	699	39	552	0	5142	12443	3602.95
WY 1970 TOTALS	12319	12194	334	8779	0			
OCT 1970	795	938	35	554	0	5174	12760	3606.09
NOV 1970	481	672	30	586	0	5179	12811	3606.59
DEC 1970	408	672	25	571	0	5186	12880	3607.27
JAN 1971	358	541	19	700	0	5170	12718	3605.68
FEB 1971	381	493	18	573	0	5161	12629	3604.80
MAR 1971	669	775	22	800	0	5157	12586	3604.37
APR 1971	1125	971	25	863	0	5165	12661	3605.12
MAY 1971	2344	1846	36	954	0	5243	13439	3612.64
JUN 1971	3084	2477	43	879	0	5384	14853	3625.59
JUL 1971	1387	1319	52	788	0	5428	15288	3629.40
AUG 1971	714	781	53	827	0	5419	15198	3628.62
SEP 1971	523	660	46	671	0	5414	15146	3628.17
WY 1971 TOTALS	12259	12145	404	8766	0			
OCT 1971	532	696	41	580	0	5421	15214	3628.76
NOV 1971	443	624	35	587	0	5421	15216	3628.78
DEC 1971	356	534	29	532	0	5409	15101	3627.78
JAN 1972	327	512	22	791	0	5384	14855	3625.61
FEB 1972	376	550	20	593	0	5378	14798	3625.10
MAR 1972	625	748	25	818	0	5369	14710	3624.32

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Interim Operating Rules
Fontenelle Reservoir
Seedskadee Project

The following rules will govern the operation of the Fontenelle Dam and Reservoir constructed by the Bureau of Reclamation on the Green River in southwestern Wyoming. These rules are subject to change from time to time as operating experience dictates and circumstances and needs change. Otherwise they shall remain in effect until consumptive-use water deliveries from the reservoir require permanent operating rules.

1. The United States will operate Fontenelle Dam and Powerplant in accordance with the terms of the Upper Colorado River Basin Compact, the Colorado River Compact, the Colorado River Storage Project Act of April 11, 1956 (70 Stat. 105), and such other laws as are applicable.

2. Water released from Fontenelle Reservoir, for purposes and provisions of Paragraph 4(a) through 4(f) below, shall not cause any encroachment upon the use of the M & I water made possible by the yield of 60,000 acre-feet of storage capacity in Fontenelle Reservoir contracted for by the State of Wyoming pursuant to Title III, Water Supply Act of July 3, 1958, and contract, numbered 14-06-400-2474, June 14, 1962, with the United States.

3. The reservoir will be operated for flood control in accordance with the attached preliminary flood control diagram and procedure pending the development and adoption of formal Flood Control Regulations and Diagram, which would be published

in the Federal Register by the Corps of Engineers. The flood control operation will not cause the reservoir to be drawn below elevation 6476 feet, the lowest level at which the power plant can be operated.

4. Releases from Fontenelle Reservoir shall be in accord with the following specific criteria. If unusual or emergency conditions arise, the criteria may be departed from and in this event, the agencies and individuals listed in paragraph 6 hereof will be notified. If at all possible those agencies and individuals will be consulted prior to departures from the criteria.

    a. The continuous flow of at least 300 cubic feet per second be maintained at all times in the channel immediately below Fontenelle Dam for the benefit of fish life habitat. This is an absolute minimum reached only under unusual circumstances and then only with the prior approval of the Project Power Manager. A normal minimum release of 500 cfs, which is the power plant capacity at minimum power head, shall be the discretionary minimum.

    b. Specific operating objective is to avoid short-time fluctuation. The seasonal swings necessary to accommodate seasonal changes in water supply will be made gradually. Changes in releases from Fontenelle Reservoir will be limited to less than 100 cubic feet per second per hour and 1000 cubic

feet per second per day except in case of emergency. Further short-term operating plans shall be developed to avoid changes in releases for periods of time of two weeks or less. Variations in inflow are to be reflected in changes in reservoir content. On holidays and special days when sport and recreation activities on or along the Green River are especially high such as the 4th of July, opening day of the fishing season, opening day of the sage grouse hunt, etc., and for two days both preceding and following these days, the release from Fontenelle Reservoir will not be changed except in case of emergency.

c. In the late fall and during the winter after thawing, weather conditions shall be closely monitored to anticipate the onset of temperatures low enough to cause the river to freeze. Flows shall be increased about 200 cfs above projected operating levels until substantial freezing occurs. Then the flow should be reduced to the projected level. In no case shall the flow be below 500 cfs when ice cover is in place or being formed. These conditions are necessary to allow diversions at intake structures of M & I users and community of Green River, Wyoming.

d. In coordination with the Seedskadee Wildlife Refuge Manager, increased flows will be maintained to compel the geese to nest above low stage shoreline. After

the geese have nested, releases from Fontenelle Reservoir will be controlled to avoid inundating the established nests. The nesting season usually occurs during the last part of March through mid-May. The exact time will be determined by the Wildlife Refuge Manager.

e. During the duck nesting season in the Seedskadee Wildlife Refuge, with most nesting occurring from May 25 through June 20, release is particularly important and shall be maintained to the uniformity of the greatest degree practicable to minimize flooding of nests.

f. During the ice-free times of the year, fish spawning and fish planting activities may be improved by specific flow conditions. As yet, quantitative parameters are not fully defined, but in April and August of each year the Wyoming Game and Fish Department shall be contacted to ascertain whether a change in operating projections may be warranted for these reasons.

g. All water released from Fontenelle Reservoir for purposes and provisions of Paragraph 4(a) through 4(f) above will be passed through the power plant, except during periods when excess water must be released in order to avoid forecasted unregulated spills or during emergencies when the power plant is inoperative.

5. Procedures used in operating the dam and reservoir must recognize the following limitations in use of equipment.

a. Fontenelle generation and bypasses are changed by the plant attendant on orders from the dispatcher.

b. There is no provision for supervisory control of the bypass gates.

c. The automatic bypass feature, in case the generating unit either shuts down or goes to speed-no-load, is normally in service. It is generally set to bypass 75 cubic feet per second less than the power release. Depending on whether the unit shuts down or goes to speed-no-load, the river flow will either be decreased or increased 75 cubic feet per second from what it was prior to the above change.

d. The plant is normally attended during the regular working hours, Monday through Friday. There are three CRSP employees residing in the Fontenelle Government camp. Two of them are qualified to perform all necessary operations, and the other one is qualified for radial gate operation only.

e. There is no specific after-working-hours standby arrangement for the Fontenelle employees, but it is normally possible to get one of them to the plant within an hour. The dispatcher is advised as to how at least one of the employees can be reached.

6. The Bureau of Reclamation shall prepare and publish an Annual Plan of Operation each year during the month of April after a forecast of the April-July runoff based on April 1 snow conditions is available. A copy of the plan will be furnished to the following agencies and interested individuals.

a. Upper Colorado River Commission

b. Wyoming State Engineer

c. Wyoming Recreation Commission

d. Wyoming Game and Fish Commission

e. Seedskadee Wildlife Refuge, Bureau of Sport Fisheries and Wildlife.

f. Bureau of Sport Fisheries and Wildlife, Regional Office

g. Wyoming Bureau of Reclamation Representative

h. Upper Green River Project Office, Bureau of Reclamation

7. Project Power Manager, Montrose, and Project Manager, Rock Springs, shall closely coordinate on all operations affecting streamflow. Whenever there is a daily change greater than 100 cfs or the release pattern is to be changed, the Project Manager at Rock Springs shall be promptly advised and the reasons for change fully explained. He will then provide a statement, but in no case less than once a week, on the immediate past and future short-term operation of Fontenelle Reservoir, to be distributed to the press and other news media serving the area, to the official agency representatives and to the industrial water users diverting from the river. Specific streamflow factors in terms most understandable to the layman shall be used.

APPENDIX

PRELIMINARY FLOOD CONTROL PLAN
FOR FONTENELLE RESERVOIR

Forecasts are made as of the first of each month from March 1 to June 1 of the remaining inflow to the reservoir to July 31. These forecasts can be adjusted to any day between forecasts by subtracting the inflow since the latest forecast from the latest forecast.

The allowable reservoir content is determined from the preliminary drawdown diagram by entering the diagram on the date of the forecast with the adjusted forecast. If the actual reservoir content is greater than the allowable content, then the release should be increased until the actual content is equal to the allowable content. The total release (including that through the power plant) should be large enough to reduce the actual to the allowable content within two weeks, but the total release should not exceed the safe channel capacity of 15,000 c.f.s.

PRELIMINARY DRAWDOWN DIAGRAM

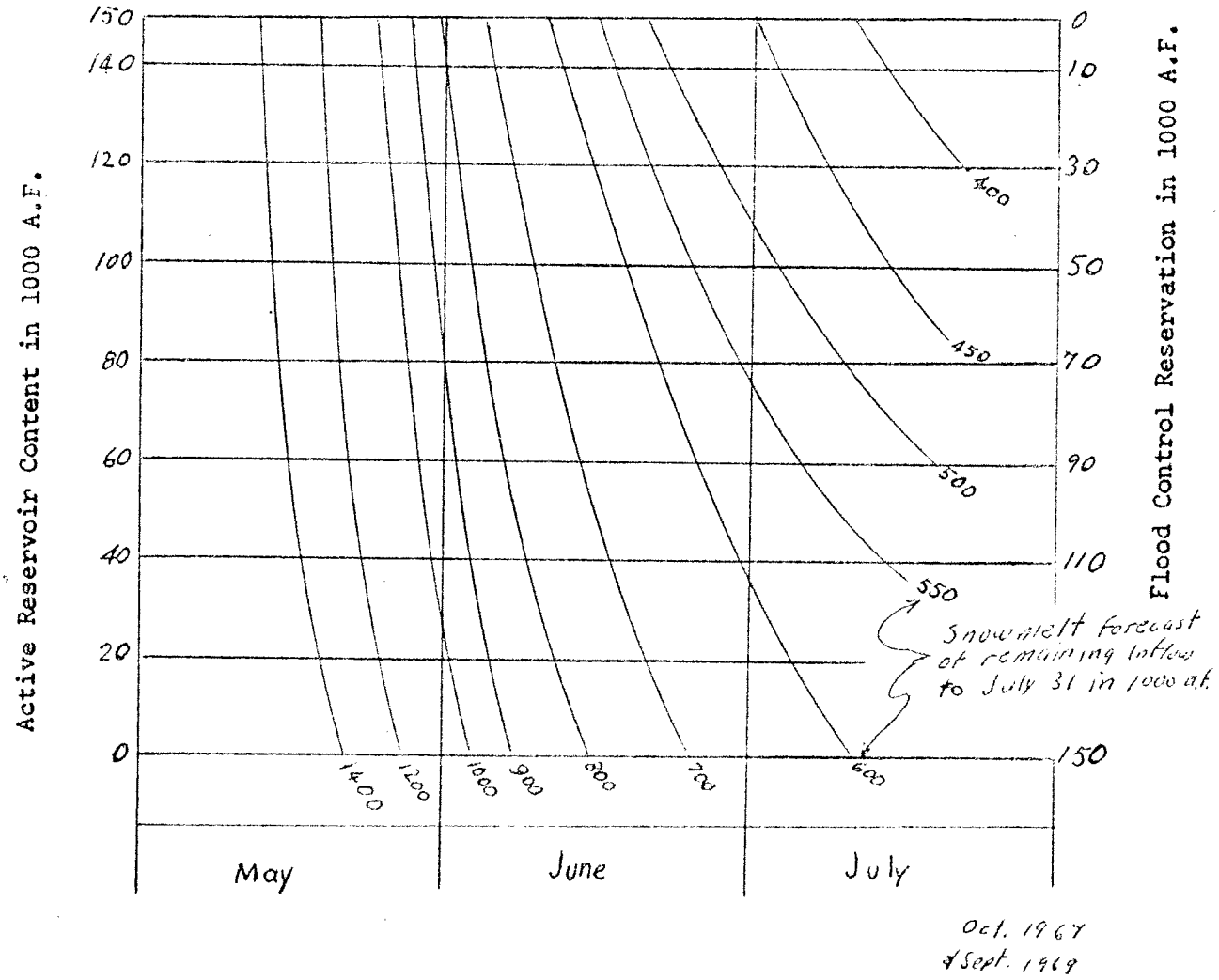


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EXHIBIT VIII. (1 of 4) Revised February 28, 1970
Preliminary

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

Interim Operating Rules
Navajo Reservoir
Navajo Unit
Colorado River Storage Project

The following interim rules will govern the operation of the Navajo Dam and Reservoir constructed by the Bureau of Reclamation on the San Juan River in northwestern New Mexico. These rules will be changed from time to time by the Bureau of Reclamation as operating experience dictates but, in general, shall remain in effect until water deliveries for the Navajo Indian Irrigation Project or other consumptive-use deliveries from the reservoir require permanent operating rules.

1. The United States will operate Navajo Reservoir as a storage unit of the Colorado River Storage Project in accordance with the terms of the Upper Colorado River Basin Compact, the Colorado River Compact, the Colorado River Storage Project Act of April 11, 1956 (70 Stat. 105), the Act of June 13, 1962 (76 Stat. 96) authorizing the San Juan-Chama and Navajo Indian Irrigation Projects, and such other laws as are applicable.

2. The reservoir will be operated for flood control in accordance with the preliminary flood control regulations submitted to the U.S. Corps of Engineers (copy on file with Reservoir Regulation Branch, Regional Office, Salt Lake City, Utah) which are pending publication in the Federal Register. Operating under these regulations, the reservoir will not be drawn below elevation 5,990 feet for flood control.

3. Releases from Navajo Reservoir shall be in accord with the following specific criteria. If unusual or emergency conditions arise, the criteria may be departed from and, in this event, the agencies and individuals listed in paragraph 5 hereof will be notified. If at all possible, those agencies and individuals will be consulted prior to departures from the criteria:

a. A continuous flow of at least 350 cubic feet per second shall be maintained at all times in the channel immediately below Navajo Dam or such larger amount as may be required to maintain a flow of at least 500 cubic feet per second in the San Juan River below the mouth of the Animas River.

b. Specific operating objective is to maintain a constant flow below the dam with minimum variations. Short-term operation plans shall be developed to avoid changes in releases for periods of time of less than 2 weeks. Maximum release will be 1,000 cubic feet per second from August through November except for flood control releases provided for in paragraph 2.

c. During the recreation season any water stored involuntarily above elevation 5,990 feet and not required to be released under the provisions of paragraphs 2 and 3(a) will be maintained through October 31 and thereafter released as rapidly as practicable without violating paragraph 3(b).

d. Nothing in these Rules is intended to preclude the use of storage below elevation 5,990 feet for beneficial uses or to restrict larger releases for beneficial purposes.

e. Under normal operation of Navajo Dam the 4x4 auxiliary outlet works will not be used. Should it be necessary to use this outlet during maintenance or repair work on the main outlets or in case of emergency, every effort would be made, within the operating capability of the various outlets, to provide a smooth transition and thus minimize the chance for fish kill.

4. Procedures used in operating the dam and reservoir must recognize the following limitations:

a. Changes in releases will be made on orders from the Project Manager, Durango Projects Office, as representative of the Regional Director.

b. The Reservoir Superintendent lives in a Government house near the dam's control works, with two other employees residing nearby. All men are qualified to perform all necessary operations. There is no specific after-working-hours standby arrangement, but the Project Manager is advised as to how at least one of the employees can be reached for emergencies.

5. The Bureau of Reclamation shall prepare and publish an Annual Plan of Operation each year during the month of April after a forecast of the April-July runoff, based on April 1 snow conditions and antecedent precipitation, is available. A copy of the plan will be furnished to the following agencies and interested individuals:

a. Upper Colorado River Commission

b. Colorado State Engineer

c. New Mexico State Engineer

d. Colorado State Division of Game, Fish & Parks

e. New Mexico Department of Game and Fish

f. New Mexico State Park and Recreation Commission

g. Bureau of Sport Fisheries and Wildlife, Regional Office

h. National Park Service, Southwest Region

i. Colorado Water Conservation Board

j. Project Manager, Durango Projects Office

6. Regional Supervisor of Water and Land Operations, Salt Lake City, and Project Manager, Durango, shall closely coordinate on all operations affecting streamflow. The Project Manager, Durango, shall provide a statement, but in no case less than once every 2 weeks, on the immediate, past, and future short-term operation of Navajo Reservoir, to be distributed to the press and other news media serving the area, to the official agency representatives, and to the irrigation and municipal water users diverting from the river. Specific streamflow factors in terms most understandable to the layman shall be used.