

Upper American River Hydroelectric Project

Water Year Types

The minimum streamflow schedules have been separated into five water year types: Wet, AN, BN, Dry, and CD. In addition, a SD water year is defined for the purpose of reservoir level management. The Licensee shall determine the water year type based on the water year forecast of unimpaired runoff in the American River below Folsom Lake published near the beginning of each month from February through May in the California Department of Water Resources (DWR) Bulletin 120 "Report of Water Conditions in California." Specifically, the "American River Below Folsom Lake" forecast is currently shown in the "Water Year Forecast" column of the "Water Year Unimpaired Runoff" table in DWR Bulletin 120. The water year types are defined as follows:

<u>Year Type</u>	<u>American River Water Year Forecast</u>
Wet	greater than or equal to 3.500 Million Acre-Feet (MAF)
AN	greater than or equal to 2.600 MAF but less than 3.500 MAF
BN	greater than or equal to 1.700 MAF but less than 2.600 MAF
Dry	greater than or equal to 0.900 MAF but less than 1.700 MAF
CD	less than 0.900 MAF
SD	any CD year that is immediately preceded by a Dry or CD year or any Dry year that is immediately preceded by any combination of two Dry or CD years

Each month from February through May the Licensee shall determine the water year type based on the DWR Bulletin 120 forecast and shall operate for that month based on that forecast beginning three days after issuance of the forecast and continuing until two days after issuance of a subsequent monthly forecast. The May forecast shall be used to establish the final water year type for the remaining months of the water year and the month of October. The water year type for the months of November through January shall be based on DWR's Full Natural Flow record for the American River at Folsom (California Data Exchange Center American River at Folsom [AMF] Station, sensor 65) for the preceding water year, and the Licensee shall operate based on that record beginning November 1. The Licensee shall provide notice to the Commission, USFS, USFWS, CDFW, and the Deputy Director of the final water year type determination within 30 days of the May forecast.

Rubicon River below Rubicon Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	6 or NF*	6 or NF*	6 or NF*	6 or NF*	6 or NF*
November	6 or NF*	6 or NF*	6 or NF*	6 or NF*	6 or NF*
December	6 or NF*	6 or NF*	6 or NF*	6 or NF*	6 or NF*
January	6 or NF*	6 or NF*	6 or NF*	6 or NF*	6 or NF*
February	6 or NF*	6 or NF*	6 or NF*	6 or NF*	6 or NF*
March	6 or NF*	8	15	15	15
April	8	12	20	20	20
May	10	15	35	35	35
June	6 or NF*	8	15	15	15
July	6 or NF*	6 or NF*	6 or NF*	6 or NF*	6 or NF*
August	6 or NF*	6 or NF*	6 or NF*	6 or NF*	6 or NF*
September	6 or NF*	6 or NF*	6 or NF*	6 or NF*	6 or NF*

* The minimum streamflow shall be 6 cfs or the NF, whichever is less. NF as used here is natural flow.

Little Rubicon River below Buck Island Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	1*	1*	1*	1*	1*
November	1*	1*	1*	1*	1*
December	1*	1*	1*	1*	1*
January	1*	1*	1*	1*	1*
February	1*	1*	1*	1*	1*
March	1*	2	3	3	3
April	2	3	5	5	5
May	2	3	8	8	8
June	1*	2	3	3	3
July	1*	1*	1*	1*	1*
August	1*	1*	1*	1*	1*
September	1*	1*	1*	1*	1*

Gerle Creek below Loon Lake Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	7	11	16	20	23
November	7	11	16	20	23
December	8	13	18	22	26
January	12	15	19	23	28
February	14	18	22	27	32
March	19	24	30	37	44
April	23	32	40	49	58
May	25	32	40	49	58
June	10	16	22	27	32
July	5	14	22	27	32
August	5	10	14	17	20
September	5	10	14	17	20

Gerle Creek below Gerle Creek Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	5	9	10	10	10
November	4	4	6	6	6
December	4	5	6	6	6
January	5	6	6	6	6
February	5	6	6	6	6
March	7	10	12	9	9
April	9	12	15	9	9
May	9	12	15	15	15
June	9	12	15	15	15
July	7	10	13	15	15
August	5	9	12	12	12
September	5	9	10	10	10

South Fork Rubicon River below Robbs Peak Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	3	3	3	3	3
November	1	2	3	3	3
December	1	3	4	4	4
January	2	5	7	7	7
February	2	5	8	8	8
March	3	7	11	9	9
April	4	9	13	10	10
May	4	9	13	13	13
June	4	9	13	13	13
July	3	5	6	13	13
August	3	5	6	11	11
September	3	5	6	6	6

South Fork Silver Creek below Ice House Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	5	10	15	15	15
November	5	7	8	8	8
December	5	8	11	11	11
January	6	12	18	18	18
February	6	12	18	18	18
March	8	16	24	24	24
April	15	28	41	41	41
May	30	46	68	68	68
June	25	31	46	46	46
July	21	21	30	30	30
August	14	14	15	15	15
September	10	10	15	15	15

Silver Creek below Junction Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	5	10	15	15	15
November	5	7	20	20	20
December	5	8	20	20	20
January	6	12	20	20	20
February	6	12	20	20	20
March	8	16	25	25	25
April	15	28	42	42	42
May	30	46	68	68	68
June	25	31	50	59	59
July	21	21	30	35	35*
August	14	14	15	18	18*
September	10	10	15	18	18*

* The Licensee may be required to release additional water below Junction Reservoir Dam in Wet years.

Silver Creek below Camino Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	5	10	15	15	15
November	5	7	20	20	20
December	5	8	20	20	20
January	6	12	20	20	20
February	6	12	20	20	20
March	8	16	25	25	25
April	15	28	42	42	42
May	30	46	68	68	68
June	25	31	50	59	59
July	21	21	30	35	35*
August	14	14	15	18	18*
September	10	10	15	18	18*

* The Licensee may be required to release additional water below Camino Reservoir Dam in Wet years.

Brush Creek below Brush Creek Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs)					
Month	CD	DRY	BN	AN	WET
October	4 or NF*	4 or NF*	4 or NF*	4 or NF*	4 or NF*
November	6 or NF*	7 or NF*	8 or NF*	9 or NF*	9 or NF*
December	6 or NF*	7 or NF*	8 or NF*	9 or NF*	10 or NF*
January	6 or NF*	7 or NF*	8 or NF*	9 or NF*	10 or NF*
February	6 or NF*	7 or NF*	8 or NF*	9 or NF*	10 or NF*
March	6 or NF*	7 or NF*	8 or NF*	9 or NF*	10 or NF*
April	6 or NF*	7 or NF*	8 or NF*	9 or NF*	10 or NF*
May	6 or NF*	7 or NF*	8 or NF*	9 or NF*	10 or NF*
June	6 or NF*	7 or NF*	8 or NF*	9 or NF*	9 or NF*
July	5 or NF*	5 or NF*	5 or NF*	5 or NF*	5 or NF*
August	4 or NF*	4 or NF*	4 or NF*	4 or NF*	4 or NF*
September	3 or NF*	3 or NF*	3 or NF*	3 or NF*	3 or NF*

* The minimum streamflow shall be the value specified or the NF, whichever is less. NF as used here is natural flow.

South Fork American River below Slab Creek Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs): Years 1 through 3					
Month	CD	DRY	BN	AN	WET
October	63	63	70	80	90
November	63	63	70	80	90
December	63	63	70	80	90
January	63	63	70	80	90
February	63	63	70	80	90
March	63	101	110-130-150-180	110-130-150-180	110-130-150-180
April	100	101-132-156-183	188-197-213-222	188-197-213-222	188-197-213-222
May	109	164-145-126-107	229-236-247-263*	229-236-247-263*	229-236-247-263*
June	90	90	228-193-158-123	228-193-158-123	228-193-158-123
July	77	90	90	90	90
August	63	70	70	70	70
September	63	63	70	70	70

* Or maximum capacity of the existing valve, whichever is less. The theoretical maximum capacity of the existing valve is 263 cfs.

South Fork American River below Slab Creek Reservoir Dam					
Minimum Streamflow by Water Year Type (cfs): Years 4 through the Term of New License and Any Extensions					
Month	CD	DRY	BN	AN	WET
October	63	63	70	80	90
November	63	63	70	80	90
December	63	63	70	80	90
January	63	63	70	80	90
February	63	63	70	80	90
March	63	101	110-130-150-180	110-130-150-180	110-130-150-180
April	100	110-130-150-183	222-236-247-263	222-236-247-263	222-236-247-263
May	109	164-145-126-107	272-286-297-303	272-316-367-395	272-337-387-415
June	90	90	255-210-165-120	324-256-188-120	352-274-197-120
July	77	90	90	90	90
August	63	70	70	70	70
September	63	63	70	70	70

Gerle Creek below Loon Lake Reservoir Dam Pulse Flows (cfs)			
	BN	AN	WET
Day 1	125	200	600
Day 2	125	200	600
Day 3	180	250	740*
Day 4	125	200	600
Day 5	125	200	600

*Or maximum capacity of outlet works, whichever is less.

South Fork Silver Creek below Ice House Reservoir Dam Pulse Flows (cfs)			
	BN	AN	WET
Day 1	450	550	600
Day 2	450	550	600
Day 3	550	650	780*
Day 4	450	550	600
Day 5	450	550	600

*Or maximum capacity of outlet works, whichever is less.

Recreation Flows: South Fork Silver Creek below Ice House Reservoir Dam (First Five Years After License Issuance)				
Water Year Type	Month	Flow (cfs)	Time	Duration
CD	May	300	10 am-3 pm	1 weekend day
D	May	300	10 am- 3 pm	3 weekend days
BN	May/June	400 Plus* 500	10 am- 3 pm	2 weekend days/holidays Plus* 2 weekend days/holidays
AN	May/June	400 Plus* 500	10 am- 3 pm	2 weekend days/holidays Plus* 4 weekend days/holidays
W	May/June	400 Plus* 500	10 am- 3 pm	4 weekend days/holidays or Fridays Plus* 5 weekend days/holidays or Fridays

* Two different flow levels are required for the specified number of days.

Recreation Flows: South Fork Silver Creek below Ice House Reservoir Dam (Year 6 through the License Term and Any Extensions)				
Water Year Type	Month	Flow (cfs)	Time	Duration
CD	May	300	10 am-3 pm	2 weekend days
D	May	300	10 am- 3 pm	6 weekend days
BN	May/June	400 Plus* 500	10 am- 3 pm	5 weekend days/holidays Plus* 2 weekend days/holidays
AN	May/June	400 Plus* 500	10 am- 3 pm	5 weekend days/holidays Plus* 6 weekend days/holidays
W	May/June	400 Plus* 500	10 am- 3 pm	7 weekend days/holidays or Fridays Plus* 9 weekend days/holidays or Fridays

* Two different flow levels are required for the specified number of days.

ACCORDINGLY, BASED ON ITS INDEPENDENT REVIEW OF THE RECORD, THE STATE WATER RESOURCES CONTROL BOARD CERTIFIES THAT OPERATION OF THE CHILI BAR HYDROELECTRIC PROJECT BY PACIFIC GAS AND ELECTRIC COMPANY will comply with sections 301, 302, 303, 306, and 307 of the Clean Water Act, and with applicable provisions of State law, if the Licensee complies with the following terms and conditions during the Project activities certified herein.

CONDITION 1. Minimum Instream Flows to Protect Aquatic Life Beneficial Uses

Within three months of license issuance, the Licensee, in consultation with the UARP Licensee (SMUD), shall maintain streamflows in the SF American River below Chili Bar Dam as set forth in the schedule in Table 2, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these streamflows³. The compliance point for the measurement of the required minimum streamflows shall be United States Geological Survey (USGS) gage 11444500 (PG&E gage A49). All specified streamflows are in cfs. The schedule specifies minimum streamflows by month and six water year types denoted as: Wet, Above Normal (AN), Below Normal (BN), Dry, Critically Dry (CD), and Super Dry (SD). Water year types are described further in the next section.

Table 2. SF American River below Chili Bar Dam						
	Minimum Streamflow by Water Year Type (cfs)*					
Month	SD	CD	DRY	BN	AN	WET
October	150	185	200	250	250	250
November	150	185	200	200	200	250
December	150	185	200	200	200	250
January	150	185	200	200	200	250
February	150	185	200	200	200	250
March	150	185	200	200	200	250
April	150	200	250	250	300	350
May	150	200	250	250	350	500
June	200	200	250	250	350	500
July	150	185	200	250	300	350
August	150	185	200	250	300	300
September	150	185	200	250	250	250

*As measured at USGS gauge 11444500 (PG&E gauge A49)

The minimum streamflows specified in the schedule may be temporarily modified if required by equipment malfunction, operating emergencies or public safety emergencies, which are reasonably beyond the control of the Licensee. If the streamflow is so modified, the Licensee shall provide Notice to the Commission, BLM, CDFG, USFWS, and the State Water Board's Deputy Director of the Division of Water Rights (Deputy Director) as soon as possible, but no later than 10 days after such an incident. The minimum streamflows specified may also be

³ To comply with the flow requirements of the water quality certification (i.e., minimum instream flows, ramping rates, recreational flows), the Project generally must receive adequate inflows of water in a timely manner from SMUD's UARP. As noted in Condition 4 of this certification (Coordination with UARP Licensee), the Licensee shall develop a plan and coordinate Project operations with the UARP Licensee (SMUD) to enable compliance with Conditions 1-3 of this certification.

temporarily modified for short periods in non-emergency situations five days after Notice to the Commission, and upon approval by the Deputy Director.

Where facility modification is needed to maintain the specified minimum streamflows, the Licensee shall complete such modifications as soon as reasonably practicable and no later than three years after license issuance. Prior to such facility modifications, the Licensee shall make a good-faith effort to provide the specified minimum streamflows within the capabilities of the existing facilities.

In order for the Licensee to adjust operations to meet the required minimum streamflows, the Licensee shall have a three-year period after the license is issued or three years after completion of necessary facility modifications, whichever is later, in which daily mean streamflows may vary up to 10 percent below the amounts specified in the minimum streamflow schedules, provided that the average monthly streamflow in any given month equals or exceeds the required minimum streamflow for the month. After the applicable three-year period, the Licensee shall meet the minimum streamflow requirements specified in the minimum streamflow schedules, provided that inflows to Chili Bar Reservoir and Chili Bar Reservoir elevations are sufficient to maintain these streamflows.

Water Year Types. The Licensee shall determine the water year type based on the water year forecast of unimpaired runoff in the American River below Folsom Lake that is published near the beginning of each month from February through May in DWR's Bulletin 120 "*Report of Water Conditions in California.*" Specifically, the "American River Below Folsom Lake" forecast is currently shown in the "Water Year Forecast" column of the "Water Year Unimpaired Runoff" table in Bulletin 120. The water year types are defined as follows:

<u>Year Type</u>	<u>American River Water Year Forecast</u>
Wet	greater than or equal to 3.500 million acre-feet (MAF)
AN	greater than or equal to 2.600 MAF but less than 3.500 MAF
BN	greater than or equal to 1.700 MAF but less than 2.600 MAF
Dry	greater than or equal to 0.900 MAF but less than 1.700 MAF
CD	less than 0.900 MAF
SD	any CD year that is immediately preceded by a Dry or CD year or any Dry year that is immediately preceded by any combination of two Dry or CD years

Each month from February through May the Licensee shall determine the water year type based on the DWR Bulletin 120 forecast and shall operate for that month based on the most recent forecast beginning three days after issuance of the forecast and continuing until two days after issuance of the subsequent monthly forecast. The May forecast shall be used to establish the final water year type for the remaining months of the water year and the month of October. The water year type for the months of November through January shall be based on DWR's Full Natural Flow record for the American River at Folsom (California Data Exchange Center site AMF sensor 65) for the preceding water year, and the Licensee shall operate based on that record beginning November 1. The Licensee shall provide Notice to the Commission, CDFG, USFWS, and the Deputy Director of the final water year type determination within 30 days of the May forecast.

CONDITION 2. Ramping Rates to Protect Aquatic Life Beneficial Uses

As early as is reasonably practicable and within three months after license issuance the Licensee, in consultation and coordination with the UARP Licensee (SMUD), shall use the