

United States Bureau of Reclamation - Mid Pacific Region, Central Valley Operations Office
Forecast of CVP Generation with Uncertainty Bounds Bracketing a Randomly Distributed Population
Based on USBR 50 Pct Forecast -B2, Dated 3/15/2019
Losses are Estimated per WAPA Contractual Provisions
Uncertainty Bounded Energy Generation (All values in GWh)

Month	Trinity	JF Carr	Spring Creek	Shasta	Keswick	Folsom	Nimbus	New Melones	Federal San Luis	O'Neill	At Plant Total	Total Losses	Total Energy at Tracy			
													Expected Proj Use	Exp Est Net CVP	Low Est Net CVP	High Est Net CVP
MAR	8	2	35	442	47	88	0	149	0	0	771	13	110	650	500	740
APR	30	26	15	169	31	92	0	85	25	0	473	8	50	420	320	470
MAY	47	0	1	219	36	134	3	108	49	3	600	10	70	520	400	590
JUN	72	36	31	239	43	106	10	87	31	0	655	11	125	520	450	560
JUL	63	50	46	270	51	73	8	59	38	0	658	11	155	490	430	530
AUG	45	51	46	224	45	62	7	51	20	0	551	10	145	400	290	460
SEP	42	45	41	203	41	68	9	40	20	0	509	9	65	440	340	500
OCT	12	7	18	162	32	48	6	36	0	0	321	6	55	260	200	300
NOV	15	13	10	114	9	30	4	11	2	0	208	4	25	180	100	230
DEC	10	6	7	120	23	31	4	10	0	0	211	4	140	70	0	120
JAN	7	0	10	120	23	31	4	12	0	0	207	4	135	70	0	120
FEB	7	1	17	175	33	62	9	16	0	0	320	6	140	170	50	250
Total	358	237	277	2457	414	825	64	664	185	3	5484	96	1215	4190	3080	4870

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Forecast of CVP Generation
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Expected Capacity Based on Estimated Gross Head (All values in MW)

Month	Trinity	JF Carr	Spring Creek	Shasta	Keswick	Folsom	Nimbus	New Melones	Federal San Luis	O'Neill	At Plant Total	Total Losses	Total Capacity at Tracy			
													Expected CVP	Schd. Out	Expected Proj Use	Expected Net CVP
MAR	64	74	182	568	44	121	0	190	0	0	1242	22	1220	410	110	1110
APR	65	150	182	426	43	129	0	376	175	0	1547	25	1520	310	80	1440
MAY	66	147	182	568	50	205	0	378	143	3	1744	29	1715	170	110	1605
JUN	66	147	182	568	62	210	14	382	125	0	1757	30	1725	125	190	1535
JUL	65	147	182	568	72	204	12	383	117	0	1751	30	1720	160	235	1485
AUG	64	147	182	568	62	194	10	382	110	0	1720	29	1690	200	225	1465
SEP	63	147	182	568	59	122	12	379	98	1	1630	28	1600	230	110	1490
OCT	0	150	182	559	29	114	9	377	0	0	1419	25	1395	160	80	1315
NOV	62	154	182	692	0	109	6	188	78	0	1472	25	1445	130	55	1390
DEC	62	154	182	697	11	162	3	188	0	0	1458	26	1435	120	155	1280
JAN	62	154	182	710	21	163	6	378	0	0	1676	29	1645	70	130	1515
FEB	63	77	182	710	50	165	6	380	0	0	1633	28	1605	135	155	1450

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Forecast of CVP Generation
Based on USBR 50 Pct Forecast -B2, Dated 3/15/2019
Project Use Pumping
Expected Project Energy Use at Tracy Load Center (All values in GWh)

Month	Tracy	Federal Banks	Contra Costa	O'Neill	Federal		San Felipe	Dos Amigos	Other Uses	Total at Tracy		
					San Luis					Exp CVP PU	Expected On Peak	Expected Off Peak
MAR	48	0	2	8	28	1	9	12	110	45	65	
APR	21	0	2	0	0	2	11	14	50	30	20	
MAY	18	0	2	0	0	3	15	31	70	40	30	
JUN	62	0	2	2	0	4	23	32	125	70	55	
JUL	64	7	2	1	0	5	30	47	155	90	65	
AUG	64	7	2	3	0	4	24	40	145	85	60	
SEP	30	7	2	0	0	3	12	10	65	40	25	
OCT	34	0	3	2	2	3	3	8	55	30	25	
NOV	13	0	3	1	0	3	3	2	25	15	10	
DEC	62	0	3	15	49	2	3	8	140	55	85	
JAN	56	0	2	13	48	1	5	10	135	50	85	
FEB	57	0	2	12	46	1	6	15	140	55	85	
Total	528	22	28	57	173	32	143	230	1215	605	610	

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Forecast of CVP Generation
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Project Use Pumping
Expected Project Capacity Use at Tracy Load Center (All values in MW)

Month	Tracy		Federal Banks		Contra Costa		O'Neill		Federal San Luis		San Felipe		Dos Amigos		Other On/Off
	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	
MAR	66	66	0	0	3	3	12	12	0	95	2	2	12	12	17
APR	36	36	0	0	3	3	0	0	0	0	3	3	18	18	20
MAY	36	36	0	0	3	3	0	0	0	0	4	4	24	24	41
JUN	96	96	0	0	2	2	4	4	0	0	5	5	36	36	45
JUL	96	96	20	0	2	2	4	4	0	0	6	6	42	42	63
AUG	96	96	20	0	3	3	8	8	0	0	6	6	36	36	54
SEP	51	51	20	0	3	3	0	0	0	0	5	5	18	18	14
OCT	51	51	0	0	4	4	4	4	0	19	4	4	6	6	10
NOV	36	36	0	0	4	4	4	4	0	0	4	4	6	6	3
DEC	96	96	0	0	4	4	20	20	16	125	3	3	6	6	11
JAN	81	81	0	0	3	3	20	20	0	160	2	2	12	12	13
FEB	96	96	0	0	3	3	20	20	0	178	1	1	12	12	23

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Energy Generation (All values in GWh)

Month	Trinity	JF Carr	Spring Creek	Shasta	Keswick	Folsom	Nimbus	New Melones	Federal San Luis	O'Neill	Total Losses	Total at Tracy		
												CVP	Proj Use	Net CVP
MAR	8	2	35	442	47	88	0	149	0	0	13	760	110	650
APR	30	26	15	169	31	92	0	85	25	0	8	470	50	420
MAY	47	0	1	219	36	134	3	108	49	3	10	590	70	520
JUN	72	36	31	239	43	106	10	87	31	0	11	640	125	515
JUL	63	50	46	270	51	73	8	59	38	0	11	650	155	495
AUG	45	51	46	224	45	62	7	51	20	0	10	540	145	395
SEP	42	45	41	203	41	68	9	40	20	0	9	500	65	435
OCT	12	7	18	162	32	48	6	36	0	0	6	320	55	265
NOV	15	13	10	114	9	30	4	11	2	0	4	200	25	175
DEC	10	6	7	120	23	31	4	10	0	0	4	210	140	70
JAN	7	0	10	120	23	31	4	12	0	0	4	200	135	65
FEB	7	1	17	175	33	62	9	16	0	0	6	310	140	170
Total	359	238	278	2457	413	826	65	663	185	3	96	5390	1215	4175

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Capacity Based on Estimated Gross Head (All values in MW)

Month	Trinity	JF Carr	Spring Creek	Shasta	Keswick	Folsom	Nimbus	New Melones	Federal San Luis	O'Neill	Tot. Cap. at Plant	Total Losses	Total Capacity at Tracy			
													CVP	Sch. Out	PU	Net CVP
MAR	64	74	182	568	44	121	0	190	0	0	1242	22	1220	410	110	1110
APR	65	150	182	426	43	129	0	376	175	0	1547	25	1520	310	80	1440
MAY	66	147	182	568	50	205	0	378	143	3	1744	29	1715	170	110	1605
JUN	66	147	182	568	62	210	14	382	125	0	1757	30	1725	125	190	1535
JUL	65	147	182	568	72	204	12	383	117	0	1751	30	1720	160	235	1485
AUG	64	147	182	568	62	194	10	382	110	0	1720	29	1690	200	225	1465
SEP	63	147	182	568	59	122	12	379	98	1	1630	28	1600	230	110	1490
OCT	0	150	182	559	29	114	9	377	0	0	1419	25	1395	160	80	1315
NOV	62	154	182	692	0	109	6	188	78	0	1472	25	1445	130	55	1390
DEC	62	154	182	697	11	162	3	188	0	0	1458	26	1435	120	155	1280
JAN	62	154	182	710	21	163	6	378	0	0	1676	29	1645	70	130	1515
FEB	63	77	182	710	50	165	6	380	0	0	1633	28	1605	135	155	1450

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Project Use Pumping
Project Energy Use at Tracy Load Center (All values in GWh)

Month	Tracy	Federal Banks	Contra Costa	O'Neill	Federal San Luis	San Felipe	Dos Amigos	Other Uses	Total at Tracy		
									CVP	On Peak	Off Peak
MAR	48	0	2	8	28	1	9	12	110	45	65
APR	21	0	2	0	0	2	11	14	50	30	20
MAY	18	0	2	0	0	3	15	31	70	40	30
JUN	62	0	2	2	0	4	23	32	125	70	55
JUL	64	7	2	1	0	5	30	47	155	90	65
AUG	64	7	2	3	0	4	24	40	145	85	60
SEP	30	7	2	0	0	3	12	10	65	40	25
OCT	34	0	3	2	2	3	3	8	55	30	25
NOV	13	0	3	1	0	3	3	2	25	15	10
DEC	62	0	3	15	49	2	3	8	140	55	85
JAN	56	0	2	13	48	1	5	10	135	50	85
FEB	57	0	2	12	46	1	6	15	140	55	85
Total	528	22	28	57	173	32	143	230	1215	605	610

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Project Use Pumping
Project Capacity Use at Tracy Load Center (All values in MW)

Month	Tracy		Federal Banks		Contra Costa		O'Neill		Federal San Luis		San Felipe		Dos Amigos		Other On/Off
	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	
MAR	66	66	0	0	3	3	12	12	0	95	2	2	12	12	17
APR	36	36	0	0	3	3	0	0	0	0	3	3	18	18	20
MAY	36	36	0	0	3	3	0	0	0	0	4	4	24	24	41
JUN	96	96	0	0	2	2	4	4	0	0	5	5	36	36	45
JUL	96	96	20	0	2	2	4	4	0	0	6	6	42	42	63
AUG	96	96	20	0	3	3	8	8	0	0	6	6	36	36	54
SEP	51	51	20	0	3	3	0	0	0	0	5	5	18	18	14
OCT	51	51	0	0	4	4	4	4	0	19	4	4	6	6	10
NOV	36	36	0	0	4	4	4	4	0	0	4	4	6	6	3
DEC	96	96	0	0	4	4	20	20	16	125	3	3	6	6	11
JAN	81	81	0	0	3	3	20	20	0	160	2	2	12	12	13
FEB	96	96	0	0	3	3	20	20	0	178	1	1	12	12	23