

# **APPENDIX F3**

## **POWER PRODUCTION AND ENERGY CONSUMPTION MODEL OUTPUT**

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# APPENDIX F3

## POWER MODEL OUTPUT

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## CEQA YUBA ACCORD ALTERNATIVE COMPARED TO THE CEQA NO PROJECT ALTERNATIVE

**Table F3-1. Average Annual Power Generation**

Location	Power Generation (MWh)			
	CEQA No Project Alternative	CEQA Yuba Accord Alternative	Change (CEQA Yuba Accord Alternative-CEQA No Project Alternative)	Percent Change (CEQA Yuba Accord Alternative-CEQA No Project Alternative)
New Colgate Powerhouse	1,318,711	1,321,976	3,265	0%
Narrow I and II Powerhouses	275,183	277,523	2,340	1%
Hyatt Pumping-Generating Plant	33,268,233	33,258,205	-10,027	0%
Thermalito Pumping-Generating Plant	4,316,462	4,315,905	-556	0%
San Luis Pumping Generating Plant	182,160	182,248	88	0%
Total Power Generation	39,360,748	39,355,858	-4,891	0%

Table F3-2. Average Monthly Power Generation

Power Generation (MWh)												
CEQA No Project Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	51,833	59,866	97,129	124,367	103,364	113,216	118,778	173,001	159,489	142,862	117,874	56,934
Narrows I and II Powerhouses	9,205	12,581	20,984	28,564	26,689	27,703	27,851	36,543	30,251	25,042	20,390	9,381
Hyatt Pumping-Generating Plant	1,376,479	1,058,164	1,871,082	2,592,548	3,157,233	3,295,603	2,772,233	3,278,000	3,983,205	4,770,616	3,358,658	1,754,411
Thermalito Pumping-Generating Plant	185,095	129,699	240,710	308,577	405,359	394,833	351,640	401,797	516,556	654,170	483,189	244,838
San Luis Pumping Generating Plant	2,752	6,498	1,973	404	3,717	4,347	26,966	54,408	38,603	23,548	15,625	3,320
Total Power Generation	1,625,363	1,266,808	2,231,878	3,054,459	3,696,361	3,835,702	3,297,468	3,943,749	4,728,104	5,616,238	3,995,735	2,068,884

CEQA Yuba Accord Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	56,596	57,228	84,536	107,533	97,686	110,411	118,033	160,259	160,518	160,398	146,200	62,579
Narrows I and II Powerhouses	10,144	12,355	19,143	25,661	25,853	27,308	27,922	34,261	30,437	28,244	25,747	10,450
Hyatt Pumping-Generating Plant	1,395,644	1,070,644	1,873,233	2,585,000	3,161,534	3,292,151	2,756,877	3,286,795	3,869,726	4,876,397	3,350,370	1,739,836
Thermalito Pumping-Generating Plant	188,234	131,625	241,018	307,679	406,105	394,467	349,533	403,314	499,475	669,826	482,129	242,500
San Luis Pumping Generating Plant	2,746	6,570	1,864	404	3,717	4,397	26,957	54,599	38,582	23,532	15,593	3,287
Total Power Generation	1,653,364	1,278,421	2,219,793	3,026,277	3,694,895	3,828,733	3,279,322	3,939,227	4,598,737	5,758,397	4,020,038	2,058,652

Change (CEQA Yuba Accord Alternative-CEQA No Project Alternative)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	4,763	-2,638	-12,594	-16,833	-5,678	-2,805	-745	-12,742	1,029	17,536	28,325	5,645
Narrows I and II Powerhouses	939	-226	-1,841	-2,903	-836	-396	71	-2,282	186	3,202	5,357	1,069
Hyatt Pumping-Generating Plant	19,164	12,479	2,151	-7,548	4,301	-3,452	-15,356	8,795	-113,479	105,781	-8,288	-14,575
Thermalito Pumping-Generating Plant	3,140	1,926	308	-897	747	-366	-2,107	1,516	-17,081	15,656	-1,060	-2,338
San Luis Pumping Generating Plant	-6	72	-109	0	0	50	-9	191	-21	-16	-31	-33
Total Power Generation	28,001	11,614	-12,085	-28,181	-1,466	-6,969	-18,146	-4,522	-129,366	142,159	24,303	-10,232

Percent Change (CEQA Yuba Accord Alternative-CEQA No Project Alternative)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	9%	-4%	-13%	-14%	-5%	-2%	-1%	-7%	1%	12%	24%	10%
Narrows I and II Powerhouses	10%	-2%	-9%	-10%	-3%	-1%	0%	-6%	1%	13%	26%	11%
Hyatt Pumping-Generating Plant	1%	1%	0%	0%	0%	0%	-1%	0%	-3%	2%	0%	-1%
Thermalito Pumping-Generating Plant	2%	1%	0%	0%	0%	0%	-1%	0%	-3%	2%	0%	-1%
San Luis Pumping Generating Plant	0%	1%	-6%	0%	0%	1%	0%	0%	0%	0%	0%	-1%
Total Power Generation	2%	1%	-1%	-1%	0%	0%	-1%	0%	-3%	3%	1%	0%

**Table F3-3. Range of Average Annual Power Required for Groundwater Pumping**

	Range of Average Annual Power Required for Groundwater Pumping (MWh)			
	CEQA No Project Alternative	CEQA Yuba Accord Alternative	Change (CEQA Yuba Accord Alternative-CEQA No Project Alternative)	Percent Change (CEQA Yuba Accord Alternative-CEQA No Project Alternative)
Maximum	5,762	6,366	605	10%
Minimum	393	434	41	10%

**Table F3-4. Average Annual Power Required for Pumping**

Location	Power Required for Pumping (MWh)			
	CEQA No Project Alternative	CEQA Yuba Accord Alternative	Change (CEQA Yuba Accord Alternative-CEQA No Project Alternative)	Percent Change (CEQA Yuba Accord Alternative-CEQA No Project Alternative)
Banks Pumping Plant	931,070	935,691	4,621	0%
Tracy Pumping Plant	554,663	557,047	2,385	0%
O'Neill Forebay Pumping Plant	7,840	7,840	0	0%
San Luis Pumping Generating Plant	150,205	150,160	-45	0%
Maximum Groundwater Pumping	5,762	6,366	605	10%
Total Power Required for Pumping	1,649,539	1,657,105	7,566	0%

## CEQA MODIFIED FLOW ALTERNATIVE COMPARED TO THE CEQA NO PROJECT ALTERNATIVE

**Table F3-5. Average Annual Power Generation**

Location	Power Generation (MWh)			
	CEQA No Project Alternative	CEQA Modified Flow Alternative	Change (CEQA Modified Flow Alternative-CEQA No Project Alternative)	Percent Change (CEQA Modified Flow Alternative-CEQA No Project Alternative)
New Colgate Powerhouse	1,318,711	1,316,511	-2,200	0%
Narrow I and II Powerhouses	275,183	274,995	-188	0%
Hyatt Pumping-Generating Plant	33,268,233	33,265,726	-2,507	0%
Thermalito Pumping-Generating Plant	4,316,462	4,316,381	-81	0%
San Luis Pumping Generating Plant	182,160	182,223	63	0%
Total Power Generation	39,360,748	39,355,836	-4,913	0%

Table F3-6. Average Monthly Power Generation

Power Generation (MWh)												
CEQA No Project Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	51,833	59,866	97,129	124,367	103,364	113,216	118,778	173,001	159,489	142,862	117,874	56,934
Narrows I and II Powerhouses	9,205	12,581	20,984	28,564	26,689	27,703	27,851	36,543	30,251	25,042	20,390	9,381
Hyatt Pumping-Generating Plant	1,376,479	1,058,164	1,871,082	2,592,548	3,157,233	3,295,603	2,772,233	3,278,000	3,983,205	4,770,616	3,358,658	1,754,411
Thermalito Pumping-Generating Plant	185,095	129,699	240,710	308,577	405,359	394,833	351,640	401,797	516,556	654,170	483,189	244,838
San Luis Pumping Generating Plant	2,752	6,498	1,973	404	3,717	4,347	26,966	54,408	38,603	23,548	15,625	3,320
Total Power Generation	1,625,363	1,266,808	2,231,878	3,054,459	3,696,361	3,835,702	3,297,468	3,943,749	4,728,104	5,616,238	3,995,735	2,068,884

CEQA Modified Flow Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	52,960	52,608	84,118	114,147	102,901	113,388	116,226	161,029	152,732	166,955	141,914	57,534
Narrows I and II Powerhouses	9,485	11,421	18,922	26,787	26,618	27,564	27,339	34,247	28,928	29,212	24,912	9,561
Hyatt Pumping-Generating Plant	1,383,863	1,074,178	1,870,507	2,589,219	3,157,260	3,297,096	2,779,836	3,307,438	3,938,534	4,764,945	3,347,959	1,754,890
Thermalito Pumping-Generating Plant	186,099	131,884	240,649	308,148	405,440	394,996	352,937	406,518	509,849	653,395	481,523	244,944
San Luis Pumping Generating Plant	2,752	6,528	1,990	404	3,717	4,382	26,967	54,406	38,601	23,547	15,624	3,306
Total Power Generation	1,635,159	1,276,618	2,216,186	3,038,705	3,695,936	3,837,426	3,303,304	3,963,637	4,668,643	5,638,054	4,011,932	2,070,236

Change (CEQA Modified Flow Alternative-CEQA No Project Alternative)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	1,127	-7,259	-13,012	-10,220	-463	172	-2,552	-11,972	-6,757	24,094	24,040	601
Narrows I and II Powerhouses	281	-1,160	-2,062	-1,776	-71	-140	-512	-2,296	-1,323	4,170	4,522	180
Hyatt Pumping-Generating Plant	7,384	16,014	-575	-3,329	27	1,493	7,603	29,438	-44,671	-5,671	-10,699	479
Thermalito Pumping-Generating Plant	1,004	2,185	-60	-429	81	163	1,297	4,721	-6,707	-775	-1,666	105
San Luis Pumping Generating Plant	0	30	18	0	0	35	0	-3	-2	0	-1	-14
Total Power Generation	9,796	9,810	-15,692	-15,754	-425	1,724	5,836	19,888	-59,460	21,816	16,197	1,351

Percent Change (CEQA Modified Flow Alternative-CEQA No Project Alternative)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	2%	-12%	-13%	-8%	0%	0%	-2%	-7%	-4%	17%	20%	1%
Narrows I and II Powerhouses	3%	-9%	-10%	-6%	0%	-1%	-2%	-6%	-4%	17%	22%	2%
Hyatt Pumping-Generating Plant	1%	2%	0%	0%	0%	0%	0%	1%	-1%	0%	0%	0%
Thermalito Pumping-Generating Plant	1%	2%	0%	0%	0%	0%	0%	1%	-1%	0%	0%	0%
San Luis Pumping Generating Plant	0%	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Total Power Generation	1%	1%	-1%	-1%	0%	0%	0%	1%	-1%	0%	0%	0%

**Table F3-7. Range of Average Annual Power Required for Groundwater Pumping**

	Range of Average Annual Power Required for Groundwater Pumping (MWh)			
	CEQA No Project Alternative	CEQA Modified Flow Alternative	Change (CEQA Modified Flow Alternative - CEQA No Project Alternative)	Percent Change (CEQA Modified Flow Alternative - CEQA No Project Alternative)
Maximum	5,762	5,167	-594	-10%
Minimum	393	353	-41	-10%

**Table F3-8. Average Annual Power Required for Pumping**

Location	Power Required for Pumping (MWh)			
	CEQA No Project Alternative	CEQA Modified Flow Alternative	Change (CEQA Modified Flow Alternative-CEQA No Project Alternative)	Percent Change (CEQA Modified Flow Alternative-CEQA No Project Alternative)
Banks Pumping Plant	931,070	933,976	2,906	0%
Tracy Pumping Plant	554,663	554,988	326	0%
O'Neill Forebay Pumping Plant	7,840	7,840	0	0%
San Luis Pumping Generating Plant	150,205	150,247	42	0%
Maximum Groundwater Pumping	5,762	5,167	-594	-10%
Total Power Required for Pumping	1,649,539	1,652,218	2,680	0%

## CEQA YUBA ACCORD ALTERNATIVE COMPARED TO THE CEQA EXISTING CONDITION

**Table F3-9. Average Annual Power Generation**

Location	Power Generation (MWh)			
	CEQA Existing Condition	CEQA Yuba Accord Alternative	Change (CEQA Yuba Accord Alternative-CEQA Existing Condition)	Percent Change (CEQA Yuba Accord Alternative-CEQA Existing Condition)
New Colgate Powerhouse	1,315,668	1,321,976	6,309	0%
Narrow I and II Powerhouses	275,212	277,523	2,311	1%
Hyatt Pumping-Generating Plant	33,263,959	33,258,205	-5,753	0%
Thermalito Pumping-Generating Plant	4,316,303	4,315,905	-397	0%
San Luis Pumping Generating Plant	182,232	182,248	16	0%
Total Power Generation	39,353,373	39,355,858	2,485	0%

Table F3-10. Average Monthly Power Generation

Power Generation (MWh)												
CEQA Existing Condition												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	52,693	52,266	79,549	110,173	101,701	114,703	113,740	158,312	149,712	174,338	149,375	59,108
Narrows I and II Powerhouses	9,492	11,482	18,182	26,069	26,442	27,801	27,024	33,773	28,370	30,432	26,257	9,888
Hyatt Pumping-Generating Plant	1,397,192	1,083,534	1,873,055	2,591,658	3,150,630	3,296,548	2,778,315	3,304,603	3,932,589	4,772,452	3,332,808	1,750,575
Thermalito Pumping-Generating Plant	188,255	133,332	241,007	308,547	404,559	394,996	352,633	406,116	509,086	654,393	479,241	244,138
San Luis Pumping Generating Plant	2,752	6,543	2,012	404	3,717	4,365	26,966	54,407	38,602	23,548	15,624	3,292
Total Power Generation	1,650,383	1,287,156	2,213,805	3,036,849	3,687,049	3,838,413	3,298,678	3,957,210	4,658,359	5,655,163	4,003,305	2,067,001

CEQA Yuba Accord Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	56,596	57,228	84,536	107,533	97,686	110,411	118,033	160,259	160,518	160,398	146,200	62,579
Narrows I and II Powerhouses	10,144	12,355	19,143	25,661	25,853	27,308	27,922	34,261	30,437	28,244	25,747	10,450
Hyatt Pumping-Generating Plant	1,395,644	1,070,644	1,873,233	2,585,000	3,161,534	3,292,151	2,756,877	3,286,795	3,869,726	4,876,397	3,350,370	1,739,836
Thermalito Pumping-Generating Plant	188,234	131,625	241,018	307,679	406,105	394,467	349,533	403,314	499,475	669,826	482,129	242,500
San Luis Pumping Generating Plant	2,746	6,570	1,864	404	3,717	4,397	26,957	54,599	38,582	23,532	15,593	3,287
Total Power Generation	1,653,364	1,278,421	2,219,793	3,026,277	3,694,895	3,828,733	3,279,322	3,939,227	4,598,737	5,758,397	4,020,038	2,058,652

Change (CEQA Yuba Accord Alternative-CEQA Existing Condition)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	3,903	4,962	4,986	-2,639	-4,015	-4,292	4,294	1,948	10,806	-13,940	-3,175	3,471
Narrows I and II Powerhouses	651	873	961	-408	-590	-493	898	488	2,067	-2,188	-510	562
Hyatt Pumping-Generating Plant	-1,548	-12,890	178	-6,658	10,904	-4,397	-21,438	-17,808	-62,863	103,945	17,562	-10,740
Thermalito Pumping-Generating Plant	-21	-1,707	11	-867	1,547	-529	-3,100	-2,803	-9,611	15,433	2,888	-1,638
San Luis Pumping Generating Plant	-6	27	-148	0	0	32	-9	192	-20	-16	-31	-5
Total Power Generation	2,981	-8,735	5,988	-10,572	7,846	-9,680	-19,356	-17,983	-59,621	103,234	16,733	-8,349

Percent Change (CEQA Yuba Accord Alternative-CEQA Existing Condition)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	7%	9%	6%	-2%	-4%	-4%	4%	1%	7%	-8%	-2%	6%
Narrows I and II Powerhouses	7%	8%	5%	-2%	-2%	-2%	3%	1%	7%	-7%	-2%	6%
Hyatt Pumping-Generating Plant	0%	-1%	0%	0%	0%	0%	-1%	-1%	-2%	2%	1%	-1%
Thermalito Pumping-Generating Plant	0%	-1%	0%	0%	0%	0%	-1%	-1%	-2%	2%	1%	-1%
San Luis Pumping Generating Plant	0%	0%	-7%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Total Power Generation	0%	-1%	0%	0%	0%	0%	-1%	0%	-1%	2%	0%	0%

Table F3-11. Range of Average Annual Power Required for Groundwater Pumping

	Range of Average Annual Power Required for Groundwater Pumping (MWh)			
	CEQA Existing Condition	CEQA Yuba Accord Alternative	Change (CEQA Yuba Accord Alternative - CEQA Existing Condition)	Percent Change (CEQA Yuba Accord Alternative - CEQA Existing Condition)
Maximum	4,213	6,366	2,153	51%
Minimum	287	434	147	51%

Table F3-12. Average Annual Power Required for Pumping

Location	Power Required for Pumping (MWh)			
	CEQA Existing Condition	CEQA Yuba Accord Alternative	Change (CEQA Yuba Accord Alternative-CEQA Existing Condition)	Percent Change (CEQA Yuba Accord Alternative-CEQA Existing Condition)
Banks Pumping Plant	940,123	935,691	-4,432	0%
Tracy Pumping Plant	556,665	557,047	383	0%
O'Neill Forebay Pumping Plant	7,840	7,840	0	0%
San Luis Pumping Generating Plant	150,260	150,160	-100	0%
Maximum Groundwater Pumping	4,213	6,366	2,153	51%
Total Power Required for Pumping	1,659,100	1,657,105	-1,995	0%

## CEQA MODIFIED FLOW ALTERNATIVE COMPARED TO THE CEQA EXISTING CONDITION

**Table F3-13. Average Annual Power Generation**

Location	Power Generation (MWh)			
	CEQA Existing Condition	CEQA Modified Flow Alternative	Change (CEQA Modified Flow Alternative-CEQA Existing Condition)	Percent Change (CEQA Modified Flow Alternative-CEQA Existing Condition)
New Colgate Powerhouse	1,315,668	1,316,511	844	0%
Narrow I and II Powerhouses	275,212	274,995	-217	0%
Hyatt Pumping-Generating Plant	33,263,959	33,265,726	1,767	0%
Thermalito Pumping-Generating Plant	4,316,303	4,316,381	78	0%
San Luis Pumping Generating Plant	182,232	182,223	-9	0%
Total Power Generation	39,353,373	39,355,836	2,463	0%

Table F3-14. Average Monthly Power Generation

Power Generation (MWh)												
CEQA Existing Condition												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	52,693	52,266	79,549	110,173	101,701	114,703	113,740	158,312	149,712	174,338	149,375	59,108
Narrows I and II Powerhouses	9,492	11,482	18,182	26,069	26,442	27,801	27,024	33,773	28,370	30,432	26,257	9,888
Hyatt Pumping-Generating Plant	1,397,192	1,083,534	1,873,055	2,591,658	3,150,630	3,296,548	2,778,315	3,304,603	3,932,589	4,772,452	3,332,808	1,750,575
Thermalito Pumping-Generating Plant	188,255	133,332	241,007	308,547	404,559	394,996	352,633	406,116	509,086	654,393	479,241	244,138
San Luis Pumping Generating Plant	2,752	6,543	2,012	404	3,717	4,365	26,966	54,407	38,602	23,548	15,624	3,292
Total Power Generation	1,650,383	1,287,156	2,213,805	3,036,849	3,687,049	3,838,413	3,298,678	3,957,210	4,658,359	5,655,163	4,003,305	2,067,001

CEQA Modified Flow Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	52,960	52,608	84,118	114,147	102,901	113,388	116,226	161,029	152,732	166,955	141,914	57,534
Narrows I and II Powerhouses	9,485	11,421	18,922	26,787	26,618	27,564	27,339	34,247	28,928	29,212	24,912	9,561
Hyatt Pumping-Generating Plant	1,383,863	1,074,178	1,870,507	2,589,219	3,157,260	3,297,096	2,779,836	3,307,438	3,938,534	4,764,945	3,347,959	1,754,890
Thermalito Pumping-Generating Plant	186,099	131,884	240,649	308,148	405,440	394,996	352,937	406,518	509,849	653,395	481,523	244,944
San Luis Pumping Generating Plant	2,752	6,528	1,990	404	3,717	4,382	26,967	54,406	38,601	23,547	15,624	3,306
Total Power Generation	1,635,159	1,276,618	2,216,186	3,038,705	3,695,936	3,837,426	3,303,304	3,963,637	4,668,643	5,638,054	4,011,932	2,070,236

Change (CEQA Modified Flow Alternative-CEQA Existing Condition)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	267	342	4,568	3,974	1,200	-1,315	2,486	2,717	3,020	-7,383	-7,460	-1,573
Narrows I and II Powerhouses	-7	-61	740	719	176	-237	314	474	558	-1,221	-1,345	-327
Hyatt Pumping-Generating Plant	-13,329	-9,356	-2,548	-2,438	6,630	548	1,521	2,836	5,945	-7,507	15,151	4,315
Thermalito Pumping-Generating Plant	-2,156	-1,448	-358	-399	881	0	304	401	763	-999	2,282	805
San Luis Pumping Generating Plant	0	-15	-22	0	0	17	0	-1	-1	0	0	14
Total Power Generation	-15,224	-10,538	2,381	1,856	8,887	-987	4,626	6,427	10,285	-17,109	8,627	3,234

Percent Change (CEQA Modified Flow Alternative-CEQA Existing Condition)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	1%	1%	6%	4%	1%	-1%	2%	2%	2%	-4%	-5%	-3%
Narrows I and II Powerhouses	0%	-1%	4%	3%	1%	-1%	1%	1%	2%	-4%	-5%	-3%
Hyatt Pumping-Generating Plant	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Thermalito Pumping-Generating Plant	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
San Luis Pumping Generating Plant	0%	0%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Total Power Generation	-1%	-1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table F3-15. Range of Average Annual Power Required for Groundwater Pumping

	Range of Average Annual Power Required for Groundwater Pumping (MWh)			
	CEQA Existing Condition	CEQA Modified Flow Alternative	Change (CEQA Modified Flow Alternative - CEQA Existing Condition)	Percent Change (CEQA Modified Flow Alternative - CEQA Existing Condition)
Maximum	4,213	5,167	954	23%
Minimum	287	353	65	23%

Table F3-16. Average Annual Power Required for Pumping

Location	Power Required for Pumping (MWh)			
	CEQA Existing Condition	CEQA Modified Flow Alternative	Change (CEQA Modified Flow Alternative-CEQA Existing Condition)	Percent Change (CEQA Modified Flow Alternative-CEQA Existing Condition)
Banks Pumping Plant	940,123	933,976	-6,147	-1%
Tracy Pumping Plant	556,665	554,988	-1,676	0%
O'Neill Forebay Pumping Plant	7,840	7,840	0	0%
San Luis Pumping Generating Plant	150,260	150,247	-13	0%
Maximum Groundwater Pumping	4,213	5,167	954	23%
Total Power Required for Pumping	1,659,100	1,652,218	-6,882	0%

## CEQA NO PROJECT ALTERNATIVE COMPARED TO THE CEQA EXISTING CONDITION

**Table F3-17. Average Annual Power Generation**

Location	Power Generation (MWh)			
	CEQA Existing Condition	CEQA No Project Alternative	Change (CEQA No Project Alternative-CEQA Existing Condition)	Percent Change (CEQA No Project Alternative-CEQA Existing Condition)
New Colgate Powerhouse	1,315,668	1,318,711	3,044	0%
Narrow I and II Powerhouses	275,212	275,183	-29	0%
Hyatt Pumping-Generating Plant	33,263,959	33,268,233	4,274	0%
Thermalito Pumping-Generating Plant	4,316,303	4,316,462	159	0%
San Luis Pumping Generating Plant	182,232	182,160	-72	0%
Total Power Generation	39,353,373	39,360,748	7,376	0%

Table F3-18. Average Monthly Power Generation

Power Generation (MWh)												
CEQA Existing Condition												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	52,693	52,266	79,549	110,173	101,701	114,703	113,740	158,312	149,712	174,338	149,375	59,108
Narrows I and II Powerhouses	9,492	11,482	18,182	26,069	26,442	27,801	27,024	33,773	28,370	30,432	26,257	9,888
Hyatt Pumping-Generating Plant	1,397,192	1,083,534	1,873,055	2,591,658	3,150,630	3,296,548	2,778,315	3,304,603	3,932,589	4,772,452	3,332,808	1,750,575
Thermalito Pumping-Generating Plant	188,255	133,332	241,007	308,547	404,559	394,996	352,633	406,116	509,086	654,393	479,241	244,138
San Luis Pumping Generating Plant	2,752	6,543	2,012	404	3,717	4,365	26,966	54,407	38,602	23,548	15,624	3,292
Total Power Generation	1,650,383	1,287,156	2,213,805	3,036,849	3,687,049	3,838,413	3,298,678	3,957,210	4,658,359	5,655,163	4,003,305	2,067,001

CEQA No Project Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	51,833	59,866	97,129	124,367	103,364	113,216	118,778	173,001	159,489	142,862	117,874	56,934
Narrows I and II Powerhouses	9,205	12,581	20,984	28,564	26,689	27,703	27,851	36,543	30,251	25,042	20,390	9,381
Hyatt Pumping-Generating Plant	1,376,479	1,058,164	1,871,082	2,592,548	3,157,233	3,295,603	2,772,233	3,278,000	3,983,205	4,770,616	3,358,658	1,754,411
Thermalito Pumping-Generating Plant	185,095	129,699	240,710	308,577	405,359	394,833	351,640	401,797	516,556	654,170	483,189	244,838
San Luis Pumping Generating Plant	2,752	6,498	1,973	404	3,717	4,347	26,966	54,408	38,603	23,548	15,625	3,320
Total Power Generation	1,625,363	1,266,808	2,231,878	3,054,459	3,696,361	3,835,702	3,297,468	3,943,749	4,728,104	5,616,238	3,995,735	2,068,884

Change (CEQA No Project Alternative-CEQA Existing Condition)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	-860	7,601	17,580	14,194	1,663	-1,487	5,038	14,689	9,777	-31,477	-31,500	-2,174
Narrows I and II Powerhouses	-287	1,099	2,802	2,495	246	-97	827	2,770	1,881	-5,390	-5,867	-507
Hyatt Pumping-Generating Plant	-20,712	-25,370	-1,973	890	6,603	-945	-6,082	-26,603	50,616	-1,836	25,849	3,836
Thermalito Pumping-Generating Plant	-3,160	-3,633	-297	30	800	-163	-993	-4,319	7,470	-223	3,948	700
San Luis Pumping Generating Plant	0	-45	-39	0	0	-18	0	1	1	0	0	28
Total Power Generation	-25,020	-20,348	18,073	17,609	9,312	-2,711	-1,210	-13,461	69,745	-38,925	-7,570	1,883

Percent Change (CEQA No Project Alternative-CEQA Existing Condition)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	-2%	15%	22%	13%	2%	-1%	4%	9%	7%	-18%	-21%	-4%
Narrows I and II Powerhouses	-3%	10%	15%	10%	1%	0%	3%	8%	7%	-18%	-22%	-5%
Hyatt Pumping-Generating Plant	-1%	-2%	0%	0%	0%	0%	0%	-1%	1%	0%	1%	0%
Thermalito Pumping-Generating Plant	-2%	-3%	0%	0%	0%	0%	0%	-1%	1%	0%	1%	0%
San Luis Pumping Generating Plant	0%	-1%	-2%	0%	0%	0%	0%	0%	0%	0%	0%	1%
Total Power Generation	-2%	-2%	1%	1%	0%	0%	0%	0%	1%	-1%	0%	0%

Table F3-19. Range of Average Annual Power Required for Groundwater Pumping

	Range of Average Annual Power Required for Groundwater Pumping (MWh)			
	CEQA Existing Condition	CEQA No Project Alternative	Change (CEQA No Project Alternative - CEQA Existing Condition)	Percent Change (CEQA No Project Alternative - CEQA Existing Condition)
Maximum	4,213	5,762	1,549	37%
Minimum	287	393	106	37%

Table F3-20. Average Annual Power Required for Pumping

Location	Power Required for Pumping (MWh)			
	CEQA Existing Condition	CEQA No Project Alternative	Change (CEQA No Project Alternative - CEQA Existing Condition)	Percent Change (CEQA No Project Alternative - CEQA Existing Condition)
Banks Pumping Plant	940,123	931,070	-9,053	-1%
Tracy Pumping Plant	556,665	554,663	-2,002	0%
O'Neill Forebay Pumping Plant	7,840	7,840	0	0%
San Luis Pumping Generating Plant	150,260	150,205	-55	0%
Maximum Groundwater Pumping	4,213	5,762	1,549	37%
Total Power Required for Pumping	1,659,100	1,649,539	-9,561	-1%

## NEPA YUBA ACCORD ALTERNATIVE COMPARED TO THE NEPA NO ACTION ALTERNATIVE

**Table F3-21. Average Annual Power Generation**

Location	Power Generation (MWh)			
	NEPA No Action Alternative	NEPA Yuba Accord Alternative	Change (NEPA Yuba Accord Alternative-NEPA No Action Alternative)	Percent Change (NEPA Yuba Accord Alternative-NEPA No Action Alternative)
New Colgate Powerhouse	1,319,949	1,323,070	3,121	0%
Narrow I and II Powerhouses	275,446	277,735	2,289	1%
Hyatt Pumping-Generating Plant	33,188,233	33,175,767	-12,466	0%
Thermalito Pumping-Generating Plant	4,328,627	4,329,452	825	0%
San Luis Pumping Generating Plant	175,121	175,350	229	0%
Total Power Generation	39,287,376	39,281,374	-6,002	0%

Table F3-22. Average Monthly Power Generation

Power Generation (MWh)												
NEPA No Action Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	52,559	60,546	97,051	124,353	103,364	113,216	118,782	173,537	160,016	143,904	114,872	57,749
Narrows I and II Powerhouses	9,343	12,712	20,984	28,561	26,689	27,703	27,852	36,644	30,357	25,244	19,825	9,533
Hyatt Pumping-Generating Plant	1,327,959	1,029,096	1,752,411	2,464,630	3,117,822	3,305,123	2,728,575	3,319,671	4,139,507	4,960,767	3,333,233	1,709,438
Thermalito Pumping-Generating Plant	178,484	125,967	223,882	291,530	404,085	402,685	345,995	407,966	539,386	685,130	483,426	240,092
San Luis Pumping Generating Plant	2,972	7,033	974	8	4,073	5,540	38,874	44,783	26,161	20,844	19,133	4,727
Total Power Generation	1,571,315	1,235,354	2,095,303	2,909,082	3,656,032	3,854,268	3,260,077	3,982,601	4,895,427	5,835,889	3,970,489	2,021,540

NEPA Yuba Accord Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	57,329	57,926	84,571	107,627	97,683	110,411	117,785	160,666	160,621	162,619	142,310	63,520
Narrows I and II Powerhouses	10,284	12,490	19,163	25,679	25,853	27,308	27,876	34,347	30,458	28,659	24,992	10,626
Hyatt Pumping-Generating Plant	1,346,384	1,043,329	1,757,726	2,454,315	3,122,616	3,288,973	2,713,274	3,327,027	4,107,781	4,985,918	3,331,562	1,696,863
Thermalito Pumping-Generating Plant	181,630	128,226	224,740	290,290	404,942	401,579	343,895	409,256	534,901	688,659	483,308	238,025
San Luis Pumping Generating Plant	2,967	7,100	965	8	4,073	5,588	38,862	44,965	26,222	20,827	19,073	4,701
Total Power Generation	1,598,593	1,249,071	2,087,165	2,877,919	3,655,167	3,833,859	3,241,691	3,976,261	4,859,983	5,886,683	4,001,245	2,013,735

Change (NEPA Yuba Accord Alternative-NEPA No Action Alternative)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	4,770	-2,620	-12,480	-16,726	-5,681	-2,805	-996	-12,871	604	18,715	27,439	5,771
Narrows I and II Powerhouses	941	-222	-1,821	-2,882	-836	-396	24	-2,297	101	3,415	5,167	1,093
Hyatt Pumping-Generating Plant	18,425	14,233	5,315	-10,315	4,795	-16,151	-15,301	7,356	-31,726	25,151	-1,671	-12,575
Thermalito Pumping-Generating Plant	3,147	2,259	858	-1,240	858	-1,105	-2,100	1,290	-4,485	3,529	-118	-2,067
San Luis Pumping Generating Plant	-5	67	-9	0	0	48	-12	181	62	-17	-60	-26
Total Power Generation	27,278	13,718	-8,138	-31,162	-864	-20,409	-18,386	-6,340	-35,444	50,793	30,756	-7,804

Percent Change (NEPA Yuba Accord Alternative-NEPA No Action Alternative)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	9%	-4%	-13%	-13%	-5%	-2%	-1%	-7%	0%	13%	24%	10%
Narrows I and II Powerhouses	10%	-2%	-9%	-10%	-3%	-1%	0%	-6%	0%	14%	26%	11%
Hyatt Pumping-Generating Plant	1%	1%	0%	0%	0%	0%	-1%	0%	-1%	1%	0%	-1%
Thermalito Pumping-Generating Plant	2%	2%	0%	0%	0%	0%	-1%	0%	-1%	1%	0%	-1%
San Luis Pumping Generating Plant	0%	1%	-1%	0%	0%	1%	0%	0%	0%	0%	0%	-1%
Total Power Generation	2%	1%	0%	-1%	0%	-1%	-1%	0%	-1%	1%	1%	0%

Table F3-23. Range of Average Annual Power Required for Groundwater Pumping

	Range of Average Annual Power Required for Groundwater Pumping (MWh)			
	NEPA No Action Alternative	NEPA Yuba Accord Alternative	Change (NEPA Yuba Accord Alternative - NEPA No Action Alternative)	Percent Change (NEPA Yuba Accord Alternative - NEPA No Action Alternative)
Maximum	5,288	5,879	592	11%
Minimum	361	401	40	11%

Table F3-24. Average Annual Power Required for Pumping

Location	Power Required for Pumping (MWh)			
	NEPA No Action Alternative	NEPA Yuba Accord Alternative	Change (NEPA Yuba Accord Alternative-NEPA No Action Alternative)	Percent Change (NEPA Yuba Accord Alternative-NEPA No Action Alternative)
Banks Pumping Plant	943,340	949,935	6,595	1%
Tracy Pumping Plant	564,894	567,240	2,346	0%
O'Neill Forebay Pumping Plant	8,123	8,123	0	0%
San Luis Pumping Generating Plant	145,758	145,849	91	0%
Maximum Groundwater Pumping	5,288	5,879	592	11%
Total Power Required for Pumping	1,667,403	1,677,027	9,624	1%

## NEPA MODIFIED FLOW ALTERNATIVE COMPARED TO THE NEPA NO ACTION ALTERNATIVE

**Table F3-25. Average Annual Power Generation**

Location	Power Generation (MWh)			
	NEPA No Action Alternative	NEPA Modified Flow Alternative	Change (NEPA Modified Flow Alternative-NEPA No Action Alternative)	Percent Change (NEPA Modified Flow Alternative-NEPA No Action Alternative)
New Colgate Powerhouse	1,319,949	1,319,877	-72	0%
Narrow I and II Powerhouses	275,446	275,937	491	0%
Hyatt Pumping-Generating Plant	33,188,233	33,183,973	-4,260	0%
Thermalito Pumping-Generating Plant	4,328,627	4,329,789	1,162	0%
San Luis Pumping Generating Plant	175,121	175,179	58	0%
Total Power Generation	39,287,376	39,284,755	-2,621	0%

Table F3-26. Average Monthly Power Generation

Power Generation (MWh)												
NEPA No Action Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	52,559	60,546	97,051	124,353	103,364	113,216	118,782	173,537	160,016	143,904	114,872	57,749
Narrows I and II Powerhouses	9,343	12,712	20,984	28,561	26,689	27,703	27,852	36,644	30,357	25,244	19,825	9,533
Hyatt Pumping-Generating Plant	1,327,959	1,029,096	1,752,411	2,464,630	3,117,822	3,305,123	2,728,575	3,319,671	4,139,507	4,960,767	3,333,233	1,709,438
Thermalito Pumping-Generating Plant	178,484	125,967	223,882	291,530	404,085	402,685	345,995	407,966	539,386	685,130	483,426	240,092
San Luis Pumping Generating Plant	2,972	7,033	974	8	4,073	5,540	38,874	44,783	26,161	20,844	19,133	4,727
Total Power Generation	1,571,315	1,235,354	2,095,303	2,909,082	3,656,032	3,854,268	3,260,077	3,982,601	4,895,427	5,835,889	3,970,489	2,021,540

NEPA Modified Flow Alternative												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	58,079	56,235	86,059	112,044	100,877	112,757	115,266	161,273	153,006	164,185	136,510	63,585
Narrows I and II Powerhouses	10,442	12,205	19,368	26,469	26,236	27,450	27,167	34,309	28,998	28,763	23,847	10,684
Hyatt Pumping-Generating Plant	1,330,479	1,049,288	1,753,493	2,452,740	3,121,836	3,295,973	2,736,110	3,352,151	4,109,397	4,945,082	3,327,986	1,709,438
Thermalito Pumping-Generating Plant	178,784	128,895	224,141	289,751	404,745	402,575	347,263	413,062	534,921	682,840	482,625	240,189
San Luis Pumping Generating Plant	2,971	7,060	992	8	4,073	5,573	38,874	44,782	26,159	20,844	19,133	4,712
Total Power Generation	1,580,755	1,253,682	2,084,053	2,881,011	3,657,767	3,844,328	3,264,680	4,005,575	4,852,481	5,841,713	3,990,101	2,028,609

Change (NEPA Modified Flow Alternative-NEPA No Action Alternative)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	5,520	-4,311	-10,992	-12,309	-2,487	-460	-3,515	-12,264	-7,010	20,281	21,638	5,836
Narrows I and II Powerhouses	1,099	-506	-1,616	-2,092	-452	-254	-685	-2,335	-1,359	3,519	4,022	1,151
Hyatt Pumping-Generating Plant	2,521	20,192	1,082	-11,890	4,014	-9,151	7,534	32,479	-30,110	-15,685	-5,247	0
Thermalito Pumping-Generating Plant	300	2,927	259	-1,779	660	-110	1,268	5,096	-4,466	-2,290	-801	97
San Luis Pumping Generating Plant	0	27	17	0	0	33	0	-2	-2	0	0	-15
Total Power Generation	9,439	18,329	-11,250	-28,071	1,735	-9,940	4,603	22,974	-42,946	5,824	19,612	7,069

Percent Change (NEPA Modified Flow Alternative-NEPA No Action Alternative)												
Location	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
New Colgate Powerhouse	11%	-7%	-11%	-10%	-2%	0%	-3%	-7%	-4%	14%	19%	10%
Narrows I and II Powerhouses	12%	-4%	-8%	-7%	-2%	-1%	-2%	-6%	-4%	14%	20%	12%
Hyatt Pumping-Generating Plant	0%	2%	0%	0%	0%	0%	0%	1%	-1%	0%	0%	0%
Thermalito Pumping-Generating Plant	0%	2%	0%	-1%	0%	0%	0%	1%	-1%	0%	0%	0%
San Luis Pumping Generating Plant	0%	0%	2%	0%	0%	1%	0%	0%	0%	0%	0%	0%
Total Power Generation	1%	1%	-1%	-1%	0%	0%	0%	1%	-1%	0%	0%	0%

Table F3-27. Range of Average Annual Power Required for Groundwater Pumping

	Range of Average Annual Power Required for Groundwater Pumping (MWh)			
	NEPA No Action Alternative	NEPA Modified Flow Alternative	Change (NEPA Modified Flow Alternative - NEPA No Action Alternative)	Percent Change (NEPA Modified Flow Alternative - NEPA No Action Alternative)
Maximum	5,288	4,866	-422	-8%
Minimum	361	332	-29	-8%

Table F3-28. Average Annual Power Required for Pumping

Location	Power Required for Pumping (MWh)			
	NEPA No Action Alternative	NEPA Modified Flow Alternative	Change (NEPA Modified Flow Alternative-NEPA No Action Alternative)	Percent Change (NEPA Modified Flow Alternative-NEPA No Action Alternative)
Banks Pumping Plant	943,340	947,896	4,556	0%
Tracy Pumping Plant	564,894	564,982	89	0%
O'Neill Forebay Pumping Plant	8,123	8,123	0	0%
San Luis Pumping Generating Plant	145,758	145,803	45	0%
Maximum Groundwater Pumping	5,288	4,866	-422	-8%
Total Power Required for Pumping	1,667,403	1,671,670	4,268	0%