

**Western Area Power Administration
Hydro Conditions and Purchase Power Report
October 2015**

Western-Wide

	Generation (Megawatt-Hours [MWh])				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 14	1,826,532	1,977,668	1,886,361	1,959,502	217,758	\$10,380,564	\$6,775,943	\$8,459,359
Nov 14	1,678,876	1,878,130	1,730,985	1,779,466	500,496	\$12,052,771	\$8,753,145	\$20,099,121
Dec 14	1,400,852	1,466,433	1,741,762	1,495,299	512,380	\$27,892,938	\$22,193,540	\$22,600,706
Jan 15	1,582,275	1,685,555	1,858,893	1,772,024	493,750	\$21,978,980	\$17,467,062	\$18,481,338
Feb 15	1,394,573	1,413,966	1,708,390	1,455,474	421,248	\$19,588,891	\$18,262,214	\$15,873,450
Mar 15	1,864,152	1,820,595	1,906,554	1,862,739	440,814	\$11,564,400	\$12,466,384	\$12,119,933
Apr 15	2,110,829	2,225,796	2,143,336	2,025,729	346,192	\$5,743,735	\$3,508,301	\$7,876,971
May 15	2,236,720	2,352,849	2,616,795	2,175,381	201,099	\$2,800,825	\$1,217,038	\$4,106,615
Jun 15	2,262,474	2,393,989	2,699,771	2,359,536	169,342	\$3,213,271	\$2,965,229	\$4,773,850
Jul 15	2,361,247	2,456,073	2,963,554	2,471,035	239,179	\$6,466,623	\$6,989,211	\$8,240,596
Aug 15	2,196,185	2,298,318	2,764,387	2,262,350	244,681	\$5,393,773	\$4,964,505	\$6,965,739
Sep 15	1,716,187	1,879,064	2,347,420	1,818,655	117,174	\$5,468,915	\$4,329,750	\$4,071,774
Total	22,630,902	23,848,436	26,368,208	23,437,190	3,904,113	\$132,545,686	\$109,892,323	\$133,669,451
	Actual generation as a percentage of average: 88.9%					Cost per MWh: \$34.24		

Western Area Power Administration (Western) generated a total of 23,437 gigawatt-hours (GWh) during fiscal year 2015, or 88.9 percent of the average. For the same period, total purchase power was 3,904 GWh and actual purchase power expenses were \$133,669,451, which equates to \$34.24 per MWh.

The following pages indicate Western’s Regional snowpack, lake/reservoir inflow and content, generation, and purchase power expenses, among other things. Snowpack is reported as snow water equivalent, which is the depth of water that theoretically would result if the entire snowpack is melted instantaneously.

Colorado River Storage Project

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
	Oct 14	0.20	0.30	408.80	636.00	15.01	12.29	248,012	338,348	382,430	357,465	87,211	\$6,704,081	\$2,989,589
Nov 14	1.80	3.90	510.71	420.00	14.91	11.93	230,952	308,547	388,155	337,735	139,836	\$7,549,826	\$4,237,967	\$5,504,854
Dec 14	5.10	7.80	474.22	465.00	14.86	11.54	270,310	408,665	437,962	473,595	36,641	\$7,692,571	\$1,952,432	\$1,405,094
Jan 15	8.70	9.40	363.30	449.00	14.98	11.15	355,138	405,825	457,394	474,003	40,968	\$4,412,679	\$2,266,923	\$1,523,337
Feb 15	12.20	11.70	362.24	464.00	15.99	11.02	265,647	301,110	390,580	322,910	116,656	\$5,024,221	\$3,790,958	\$3,744,097
Mar 15	15.80	12.60	391.67	543.00	16.77	10.91	272,465	304,805	390,170	353,115	122,197	\$5,517,603	\$4,342,357	\$3,876,509
Apr 15	19.60	10.50	665.00	539.00	16.74	10.84	250,695	328,527	397,861	332,925	75,298	\$3,468,325	\$1,662,291	\$1,968,191
May 15	19.90	8.30	1,059.34	1,431.00	16.30	11.49	320,070	383,522	501,886	450,972	6,927	\$2,044,585	\$460,798	\$172,668
Jun 15	9.00	0.30	2,339.33	2,570.00	16.00	13.09	337,289	400,213	585,467	543,787	4,310	\$2,301,440	\$603,666	\$95,862
Jul 15	0.60	0.30	2,665.79	1,002.00	15.88	13.00	436,357	499,635	612,093	654,656	0	\$708,807	\$0	\$0
Aug 15	0.00	0.00	1,088.30	466.00	15.68	12.37	429,891	511,788	574,470	515,145	12,123	\$1,004,331	\$0	\$313,612
Sep 15	0.00	0.00	517.00	435.00	15.38	12.33	323,889	371,889	452,939	323,889	4,504	\$2,244,686	\$1,020,974	\$101,851
Total							3,740,716	4,562,873	5,571,407	5,140,198	646,671	\$48,673,154	\$23,327,954	\$22,059,837

Actual generation as a percentage of average: 92.3%

Cost per MWh: \$34.11

Lake/Reservoir Levels

Lake Powell's elevation was 3,606 feet at the end of September, about 94 feet from maximum reservoir level and about 116 feet from the minimum generation level.

Most Probable Projected and Actual Purchase Power Expenses

The Colorado River Storage Project's total most probable projected and actual purchase power expenses respectively were \$23,327,954 and \$22,059,837.

Desert Southwest Region

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 14	0.20	0.30	58.00	68.00	20.53	12.27	294,250	294,250	380,500	272,691	2,420	\$0	\$109,870	\$106,819
Nov 14	1.80	3.90	54.00	44.00	20.57	12.41	325,000	372,000	363,500	357,310	530	\$10,239	\$22,472	\$23,998
Dec 14	5.10	7.80	75.00	56.00	20.69	12.77	286,750	290,400	373,900	251,260	8,905	\$294,966	\$120	\$534,300
Jan 15	8.70	9.40	93.00	72.00	20.84	13.01	411,100	411,100	398,400	428,462	1,179	\$0	\$0	\$39,296
Feb 15	12.20	11.70	110.00	89.00	20.86	12.99	352,400	319,250	391,500	335,602	274	\$0	\$0	\$8,661
Mar 15	15.80	12.60	105.00	57.00	20.66	12.69	543,600	526,100	531,400	560,224	5,187	\$57,626	\$94,756	\$166,762
Apr 15	19.60	10.50	85.00	26.00	20.49	12.20	601,550	601,750	571,800	583,186	187	\$0	\$0	\$7,714
May 15	19.90	8.30	60.00	26.00	20.61	12.03	555,600	530,800	573,200	466,936	5,005	\$0	\$0	\$212,462
Jun 15	9.00	0.30	26.87	15.00	20.83	11.93	479,650	471,300	538,800	458,404	10,978	\$163,991	\$300,890	\$467,114
Jul 15	0.60	0.30	65.95	81.00	20.73	12.13	467,200	463,150	551,200	411,961	27,481	\$342,373	\$536,409	\$1,325,069
Aug 15	0.00	0.00	99.66	115.00	20.60	12.13	406,900	406,900	515,700	427,419	24,387	\$979,257	\$974,741	\$1,197,370
Sep 15	0.00	0.10	88.31	73.00	20.48	12.04	390,200	407,000	434,000	388,018	28,751	\$821,525	\$959,272	\$1,447,613
Total							5,114,200	5,094,000	5,623,900	4,941,473	115,284	\$2,669,977	\$2,998,530	\$5,537,178

Actual generation as a percentage of average: 87.9%

Cost per MWh: \$48.03

Lake/Reservoir Levels

Lake Mead's elevation was 1,078 feet at the end of September, about 141 feet below full storage level and about 28 feet from the minimum generation level.

Most Probable Projected and Actual Purchase Power Expenses

The Desert Southwest Region's (DSWR) total most probable projected and actual purchase power expenses respectively were \$2,998,530 and \$5,537,178. A contributing factor to the difference is DSWR's practice of developing its most probable projection of monthly purchase power expenses at the beginning of the fiscal year and retaining that projection throughout the year in order to serve as a hard baseline. However, the disparity mainly can be attributed to reduced head and power generation caused by Lake Mead beginning the fiscal year at a lower-than-average elevation and dry hydrology conditions in later months. In addition, Hoover Dam unit N6 was out of service for the entire fiscal year due to a major stator fault and a turbine replacement.

Rocky Mountain Region

Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)			
Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual	
Oct 14		139.20	200.80	3.84	4.47	99,021	102,458	83,694	91,560	53,455	\$2,257,085	\$2,257,085	\$2,257,085	
Nov 14		121.40	129.20	3.87	4.47	60,006	60,146	82,089	55,233	91,858	\$3,178,702	\$3,178,702	\$3,178,702	
Dec 14		97.90	139.40	3.83	4.47	89,969	90,045	103,710	88,510	60,861	\$2,294,873	\$2,294,873	\$2,294,873	
Jan 15	407.20	427.80	96.20	129.40	3.80	4.47	106,726	106,906	113,597	102,961	42,800	\$2,614,295	\$2,606,695	\$1,239,741
Feb 15	808.10	739.20	95.00	128.60	3.80	4.51	85,735	86,024	102,200	79,516	36,728	\$2,054,163	\$2,042,763	\$1,126,026
Mar 15	1,065.10	994.40	158.40	199.30	3.83	4.56	96,042	108,706	120,988	103,860	37,448	\$2,128,149	\$1,645,549	\$1,045,168
Apr 15	1,341.70	1,016.80	253.10	257.80	3.85	4.60	125,443	138,545	140,995	128,526	46,301	\$1,707,570	\$1,278,170	\$941,947
May 15	301.50	355.20	694.10	758.20	4.18	5.21	190,340	198,107	198,626	166,491	29,838	\$180,000	\$180,000	\$680,151
Jun 15			1,105.70	1,462.30	4.74	5.69	263,985	259,220	243,234	223,790	0	\$180,000	\$180,000	\$0
Jul 15			521.10	382.40	4.45	5.36	219,918	225,508	257,413	213,347	44,520	\$249,600	\$287,258	\$1,696,970
Aug 15			188.60	124.00	4.00	4.83	200,091	206,451	205,091	168,316	34,196	\$296,240	\$230,880	\$1,139,770
Sep 15			129.90	92.70	3.80	4.50	112,470	120,419	139,671	132,772	31,644	\$1,006,004	\$952,804	\$788,372
Total							1,649,745	1,702,533	1,791,308	1,554,882	509,649	\$18,146,682	\$17,134,780	\$16,388,805

Actual generation as a percentage of average: 86.8%

Cost per MWh: \$32.16

Lake/Reservoir Content

The overall reservoir content at the end of September was 118 percent of average.

Most Probable Projected and Actual Purchase Power Expenses

The Rocky Mountain Region's (RMR) total most probable projected and actual purchase power expenses respectively were \$17,134,780 and \$16,388,805. RMR does not project purchase power expenses for the months of October through December; consequently, for those months actual expenses are indicated in place of projected amounts.

Sierra Nevada Region

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 14			329.00	263.00	5.61	2.49	161,181	106,181	163,000	115,957	56,702	\$1,419,398	\$1,419,398	\$2,380,441
Nov 14	5.26	1.00	404.00	281.00	5.56	2.40	99,417	69,417	104,000	75,640	53,074	\$1,314,004	\$1,314,004	\$2,396,084
Dec 14	4.94	5.00	1,014.00	1,450.00	6.06	3.66	69,042	0	143,000	13,282	60,541	\$1,252,191	\$1,252,191	\$2,458,218
Jan 15	5.80	4.00	954.00	508.00	6.39	3.89	0	0	163,000	23,872	62,660	\$1,508,460	\$1,508,460	\$2,077,046
Feb 15	9.00	5.00	997.00	1,232.00	6.92	4.93	0	14,968	195,000	29,080	55,937	\$1,363,440	\$1,363,440	\$1,800,319
Mar 15	15.00	2.00	1,330.00	412.00	7.56	5.01	115,340	100,340	207,000	40,197	61,698	\$1,506,498	\$1,506,498	\$1,974,521
Apr 15	10.00	1.00	1,245.00	341.00	7.95	4.91	171,316	231,316	288,000	126,768	53,919	\$567,840	\$567,840	\$1,283,377
May 15			1,203.00	301.00	7.91	4.42	246,135	336,135	442,000	230,955	48,416	\$576,240	\$576,240	\$1,270,668
Jun 15			739.00	251.00	7.44	3.97	337,065	457,065	440,000	295,101	50,921	\$567,840	\$567,840	\$1,271,064
Jul 15			434.00	225.00	6.70	3.50	349,780	404,780	524,000	316,029	52,701	\$1,444,840	\$1,444,840	\$1,732,931
Aug 15			347.00	224.00	5.97	2.96	255,220	285,220	402,000	271,148	53,936	\$1,444,840	\$1,444,840	\$1,749,472
Sep 15			312.00	212.00	5.59	2.59	86,850	166,850	269,000	193,784	52,275	\$1,396,700	\$1,396,700	\$1,733,938
Total							1,891,346	2,172,272	3,340,000	1,731,813	662,780	\$14,362,292	\$14,362,292	\$22,128,080

Actual generation as a percentage of average: 51.9%

Cost per MWh: \$33.39

Lake/Reservoir Content

Accumulated inflow at the end of September was 75 percent of average for Trinity, 72 percent for Shasta, 40 percent for Folsom, and 37 percent for New Melones. The overall reservoir content was 46 percent of average.

Most Probable Projected and Actual Purchase Power Expenses

The Sierra Nevada Region's (SNR) total most probable projected and actual purchase power expenses respectively were \$14,362,292 and \$22,128,080. The difference is the result of SNR's practice of indicating its projected purchase power expenses based upon term purchases of 70-75 percent of anticipated power needs, with the remainder being left to day-ahead market purchases after project pumping and generation have been scheduled.

Upper Great Plains Region

	Snowpack (Inches in Snow Water Equivalent)		Lake/Reservoir Inflow (Thousand Acre-Feet)		Lake/Reservoir Content (Million Acre-Feet)		Generation (MWh)				Purchase Power (MWh)	Purchase Power Expenses (Dollars)		
	Median	Actual	Average	Actual	Average	Actual	Projected Dry	Most Probable	Average	Actual	Actual	Projected Dry	Most Probable	Actual
Oct 14	0.09	0.00	8,092.00	10,685.90	55.94	59.74	1,024,068	1,136,432	876,737	1,121,829	17,970	\$0	\$0	\$361,250
Nov 14	1.20	0.30	7,411.00	8,616.60	54.83	58.09	963,501	1,068,021	793,241	953,548	215,198	\$0	\$0	\$8,995,483
Dec 14	3.80	3.90	6,468.00	6,229.90	54.23	57.97	684,781	677,324	683,190	668,651	345,432	\$16,358,337	\$16,693,924	\$15,908,221
Jan 15	7.10	7.30	6,658.00	6,786.10	53.94	58.03	709,312	761,724	726,502	742,726	346,143	\$13,443,547	\$11,084,984	\$13,601,918
Feb 15	10.30	9.70	6,291.00	6,679.80	54.25	58.60	690,792	692,614	629,110	688,365	211,653	\$11,147,066	\$11,065,054	\$9,194,348
Mar 15	12.90	11.50	8,226.00	7,837.90	56.02	59.12	836,705	780,645	656,996	805,343	214,284	\$2,354,524	\$4,877,224	\$5,056,973
Apr 15	15.80	10.70	8,061.00	9,554.70	56.91	55.89	961,825	925,659	744,680	854,325	170,487	\$0	\$0	\$3,675,743
May 15	15.10	9.10	9,699.00	9,287.30	58.18	60.04	924,575	904,285	901,082	860,028	110,913	\$0	\$0	\$1,770,665
Jun 15	6.60	2.30	11,819.00	11,339.70	60.38	61.93	844,485	806,191	892,270	838,454	103,133	\$0	\$1,312,834	\$2,939,810
Jul 15	0.60	0.00	10,827.00	9,376.20	60.36	62.45	887,993	863,000	1,018,848	875,042	114,477	\$3,721,004	\$4,720,704	\$3,485,626
Aug 15	0.00	0.00	9,829.00	10,099.50	58.77	62.90	904,083	887,960	1,067,126	880,322	120,040	\$1,669,104	\$2,314,044	\$2,565,515
Sep 15	0.00	0.00	8,732.00	5,511.05	57.20	60.77	802,779	812,906	1,051,811	780,192	0	\$0	\$0	\$0
Total							10,234,896	10,316,758	10,041,592	10,068,825	1,969,730	\$48,693,581	\$52,068,767	\$67,555,552

Actual generation as a percentage of average: 100.3%

Cost per MWh: \$34.30

Lake/Reservoir Content

As of October 6, the active conservation pools for the Canyon Ferry and Yellowtail Dams were 78.1 percent and 94.9 percent full, respectively.

Most Probable Projected and Actual Purchase Power Expenses

The Upper Great Plains' (UGPR) total most probable projected and actual purchase power expenses respectively were \$52,068,767 and \$67,555,552. The difference is due to UGPR's indication of projected purchase power expenses based on anticipated purchases for UGPR rather than the entire Joint Marketing Program (JMP), and the indication of actual purchase power expenses based on total purchases for the entire JMP in conformance with the purchase power data and in order to determine the average cost per MWh.