

Part 1 - Appendix 3D
GMOC Reports

Missouri 4 CSR 240-22.030 8.C Reporting Requirements
Load Analysis and Forecasting

(8)(C) For the net system load, the utility shall provide plots of energy usage and peak demand.

(8)(C)(1) The energy plots shall include the summer, non-summer and total energy usage for each calendar year.

(8)(C)(2) The peak demand plots shall include the summer and winter peak demands.

Compliance: See Plots 3D-1 through 3D-9 for base-case GMO forecast reports designed to comply with section (8)(C) reporting requirements.

Forecast uncertainty is quantified through the use of alternative economic scenarios. Moody's Economy.com provided three economic scenarios termed Low, Base and High that represent a 95% confidence range around the base case for economic growth. These economic scenarios were each used to forecast load growth and these forecasts represent a 95% confidence interval around load growth based on the uncertainty due to economic growth.

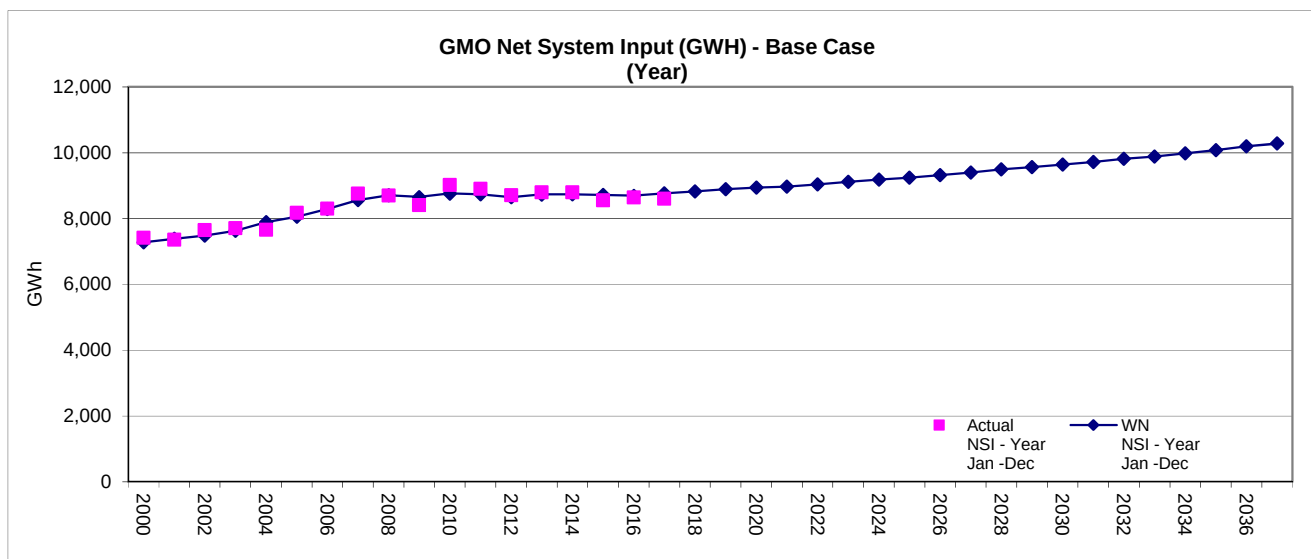
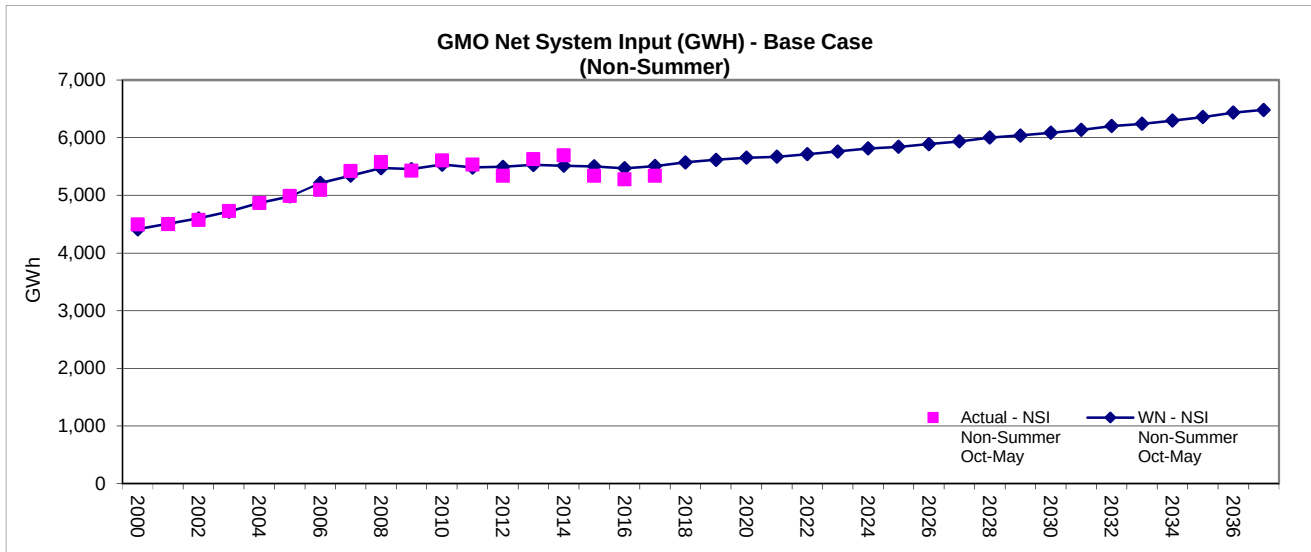
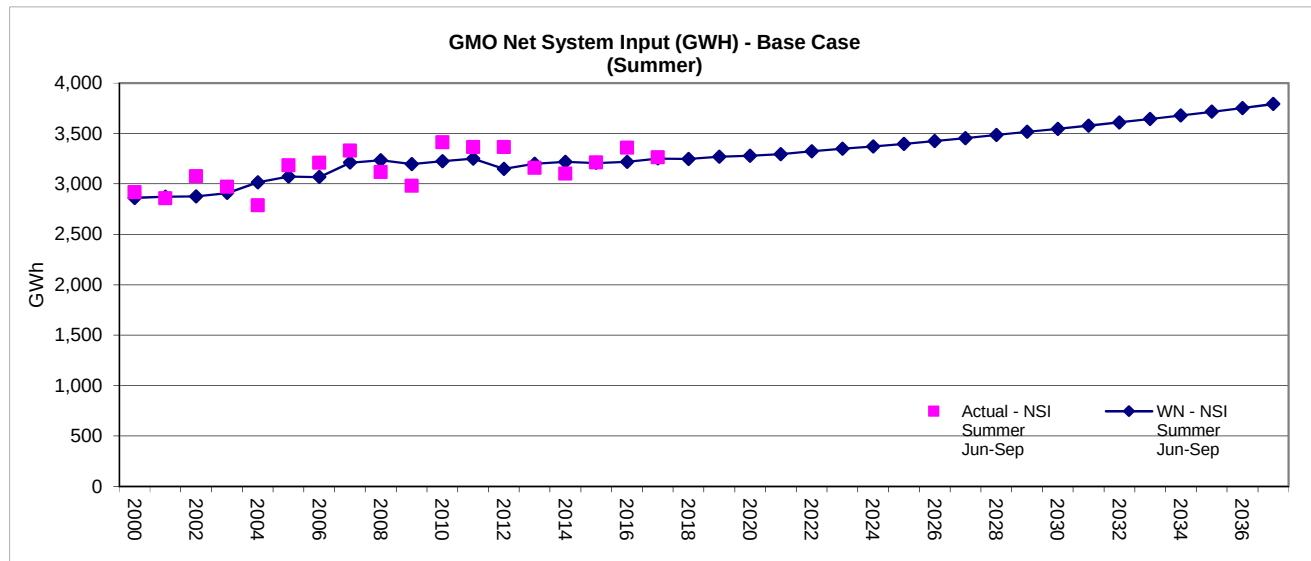
Linked Files:

IRP_8C_GMO_NSI_Peak.xls
GMO Base System_Datalyzer.xls
GMO Low System_Datalyzer.xls
GMO High System_Datalyzer.xls

**Plot 3D-1 Greater Missouri Operation Company (GMOC) Energy Forecast (GWH) - Base Case: Net System Input (NSI)
(Actual vs. Weather Normalized)**

Year	Actual - NSI Summer Jun-Sep	WN - NSI Summer Jun-Sep	Actual - NSI Non-Summer Oct-May	WN - NSI Non-Summer Oct-May	Actual NSI - Year Jan -Dec	WN NSI - Year Jan -Dec
2000	2,917.1	2,861.7	4,494.8	4,412.4	7,412.0	7,274.1
2001	2,856.5	2,873.7	4,497.5	4,506.8	7,354.0	7,380.5
2002	3,075.9	2,878.2	4,569.0	4,599.8	7,644.9	7,477.9
2003	2,973.5	2,910.5	4,726.1	4,716.6	7,699.5	7,627.1
2004	2,788.1	3,017.7	4,868.6	4,869.4	7,656.7	7,887.1
2005	3,183.9	3,073.0	4,989.6	4,981.7	8,173.5	8,054.7
2006	3,209.2	3,068.9	5,091.1	5,213.6	8,300.2	8,282.6
2007	3,331.3	3,211.7	5,420.3	5,343.4	8,751.6	8,555.1
2008	3,116.5	3,235.9	5,578.1	5,471.9	8,694.7	8,707.7
2009	2,980.4	3,196.4	5,427.9	5,454.6	8,408.3	8,651.0
2010	3,412.0	3,224.9	5,602.6	5,533.3	9,014.5	8,758.2
2011	3,364.3	3,252.4	5,533.3	5,482.6	8,897.6	8,735.0
2012	3,364.3	3,150.3	5,338.7	5,494.9	8,703.0	8,645.2
2013	3,159.9	3,200.2	5,628.4	5,529.0	8,788.3	8,729.2
2014	3,103.4	3,219.4	5,693.4	5,513.0	8,796.8	8,732.5
2015	3,214.2	3,208.7	5,338.2	5,502.0	8,552.4	8,710.6
2016	3,359.5	3,220.6	5,279.4	5,469.4	8,638.8	8,690.1
2017	3,262.5	3,253.2	5,339.3	5,507.3	8,601.9	8,760.6
2018		3,249.4		5,573.5		8,822.9
2019		3,271.2		5,616.0		8,887.3
2020		3,281.2		5,654.2		8,935.5
2021		3,296.0		5,668.9		8,964.9
2022		3,323.4		5,713.2		9,036.7
2023		3,350.3		5,760.7		9,110.9
2024		3,371.6		5,812.8		9,184.4
2025		3,396.9		5,840.7		9,237.6
2026		3,425.4		5,889.0		9,314.5
2027		3,454.8		5,936.8		9,391.5
2028		3,486.3		6,003.3		9,489.6
2029		3,517.3		6,039.6		9,556.9
2030		3,546.8		6,087.0		9,633.8
2031		3,577.9		6,136.1		9,714.0
2032		3,610.0		6,202.7		9,812.7
2033		3,643.5		6,240.5		9,884.0
2034		3,679.0		6,296.9		9,975.9
2035		3,716.4		6,357.6		10,074.0
2036		3,754.2		6,436.4		10,190.6
2037		3,792.7		6,483.1		10,275.7
09-'14	0.8%	0.1%	1.0%	0.2%	0.9%	0.2%
10-'15		-0.1%		-0.1%		-0.1%
15-'20		0.4%		0.5%		0.5%
20-'25		0.7%		0.7%		0.7%
25-'30		0.9%		0.8%		0.8%
30-'35		0.9%		0.9%		0.9%
15-'35		0.7%		0.7%		0.7%

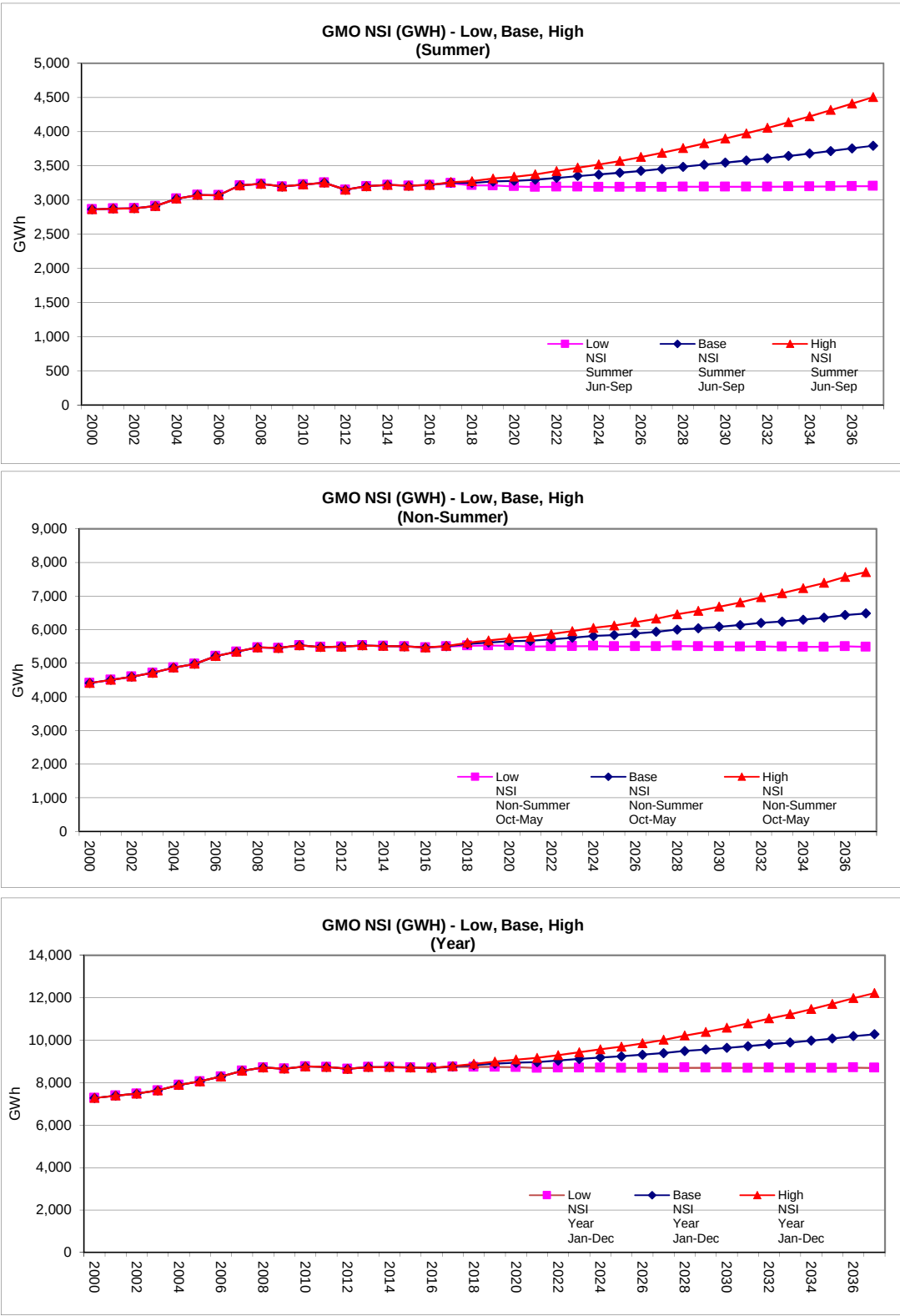
Note: Energy MWH (NSI) Includes annual system losses



Plot 3D-2 Greater Missouri Operation Company (GMOC) Energy Forecast (GWH): Net System Input (NSI)
(Low Case, Base Case, High Case)

Year	Low NSI Summer Jun-Sep	Base NSI Summer Jun-Sep	High NSI Summer Jun-Sep	Low NSI Non-Summer Oct-May	Base NSI Non-Summer Oct-May	High NSI Non-Summer Oct-May	Low NSI Year Jan-Dec	Base NSI Year Jan-Dec	High NSI Year Jan-Dec
2000	2,861.7	2,861.7	2,861.7	4,412.4	4,412.4	4,412.4	7,274.1	7,274.1	7,274.1
2001	2,873.7	2,873.7	2,873.7	4,506.8	4,506.8	4,506.8	7,380.5	7,380.5	7,380.5
2002	2,878.2	2,878.2	2,878.2	4,599.8	4,599.8	4,599.8	7,477.9	7,477.9	7,477.9
2003	2,910.5	2,910.5	2,910.5	4,716.6	4,716.6	4,716.6	7,627.1	7,627.1	7,627.1
2004	3,017.7	3,017.7	3,017.7	4,869.4	4,869.4	4,869.4	7,887.1	7,887.1	7,887.1
2005	3,073.0	3,073.0	3,073.0	4,981.7	4,981.7	4,981.7	8,054.7	8,054.7	8,054.7
2006	3,068.9	3,068.9	3,068.9	5,213.6	5,213.6	5,213.6	8,282.6	8,282.6	8,282.6
2007	3,211.7	3,211.7	3,211.7	5,343.4	5,343.4	5,343.4	8,555.1	8,555.1	8,555.1
2008	3,235.9	3,235.9	3,235.9	5,471.9	5,471.9	5,471.9	8,707.7	8,707.7	8,707.7
2009	3,196.4	3,196.4	3,196.4	5,454.6	5,454.6	5,454.6	8,651.0	8,651.0	8,651.0
2010	3,224.9	3,224.9	3,224.9	5,533.3	5,533.3	5,533.3	8,758.2	8,758.2	8,758.2
2011	3,252.4	3,252.4	3,252.4	5,482.6	5,482.6	5,482.6	8,735.0	8,735.0	8,735.0
2012	3,150.3	3,150.3	3,150.3	5,494.9	5,494.9	5,494.9	8,645.2	8,645.2	8,645.2
2013	3,200.2	3,200.2	3,200.2	5,529.0	5,529.0	5,529.0	8,729.2	8,729.2	8,729.2
2014	3,219.4	3,219.4	3,219.4	5,513.0	5,513.0	5,513.0	8,732.5	8,732.5	8,732.5
2015	3,208.7	3,208.7	3,208.7	5,502.0	5,502.0	5,502.0	8,710.6	8,710.6	8,710.6
2016	3,220.6	3,220.6	3,220.6	5,469.4	5,469.4	5,469.4	8,690.1	8,690.1	8,690.1
2017	3,245.6	3,253.2	3,260.4	5,497.3	5,507.3	5,514.5	8,742.9	8,760.6	8,774.9
2018	3,214.7	3,249.4	3,274.3	5,523.4	5,573.5	5,607.7	8,738.1	8,822.9	8,882.0
2019	3,212.2	3,271.2	3,312.6	5,525.6	5,616.0	5,676.3	8,737.8	8,887.3	8,988.9
2020	3,198.4	3,281.2	3,339.8	5,523.7	5,654.2	5,743.2	8,722.1	8,935.5	9,083.0
2021	3,189.1	3,296.0	3,374.0	5,498.5	5,668.9	5,789.4	8,687.7	8,964.9	9,163.4
2022	3,191.5	3,323.4	3,422.7	5,501.0	5,713.2	5,869.2	8,692.5	9,036.7	9,291.9
2023	3,192.7	3,350.3	3,472.7	5,505.4	5,760.7	5,955.5	8,698.1	9,110.9	9,428.3
2024	3,188.2	3,371.6	3,518.5	5,513.0	5,812.8	6,050.1	8,701.2	9,184.4	9,568.5
2025	3,186.8	3,396.9	3,570.1	5,496.7	5,840.7	6,122.1	8,683.5	9,237.6	9,692.1
2026	3,187.8	3,425.4	3,627.9	5,498.3	5,889.0	6,220.8	8,686.1	9,314.5	9,848.7
2027	3,189.0	3,454.8	3,689.6	5,498.4	5,936.8	6,324.7	8,687.4	9,391.5	10,014.3
2028	3,191.6	3,486.3	3,756.9	5,514.2	6,003.3	6,455.4	8,705.9	9,489.6	10,212.3
2029	3,193.2	3,517.3	3,826.9	5,502.0	6,039.6	6,558.8	8,695.2	9,556.9	10,385.7
2030	3,192.7	3,546.8	3,898.8	5,498.2	6,087.0	6,681.1	8,690.9	9,633.8	10,579.9
2031	3,192.9	3,577.9	3,974.8	5,494.6	6,136.1	6,809.4	8,687.5	9,714.0	10,784.3
2032	3,193.2	3,610.0	4,054.1	5,504.5	6,202.7	6,962.5	8,697.7	9,812.7	11,016.6
2033	3,193.9	3,643.5	4,137.0	5,488.6	6,240.5	7,084.7	8,682.5	9,884.0	11,221.7
2034	3,195.5	3,679.0	4,224.2	5,487.0	6,296.9	7,232.6	8,682.5	9,975.9	11,456.8
2035	3,198.0	3,716.4	4,315.6	5,487.6	6,357.6	7,388.6	8,685.6	10,074.0	11,704.2
2036	3,199.9	3,754.2	4,408.7	5,501.4	6,436.4	7,569.4	8,701.3	10,190.6	11,978.1
2037	3,201.7	3,792.7	4,504.3	5,487.8	6,483.1	7,712.1	8,689.5	10,275.7	12,216.4
09-'14	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%	0.2%	0.2%	0.2%
10-'15	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%	-0.1%
15-'20	-0.1%	0.4%	0.8%	0.1%	0.5%	0.9%	0.0%	0.5%	0.8%
20-'25	-0.1%	0.7%	1.3%	-0.1%	0.7%	1.3%	-0.1%	0.7%	1.3%
25-'30	0.0%	0.9%	1.8%	0.0%	0.8%	1.8%	0.0%	0.8%	1.8%
30-'35	0.0%	0.9%	2.1%	0.0%	0.9%	2.0%	0.0%	0.9%	2.0%
15-'35	0.0%	0.7%	1.5%	0.0%	0.7%	1.5%	0.0%	0.7%	1.5%

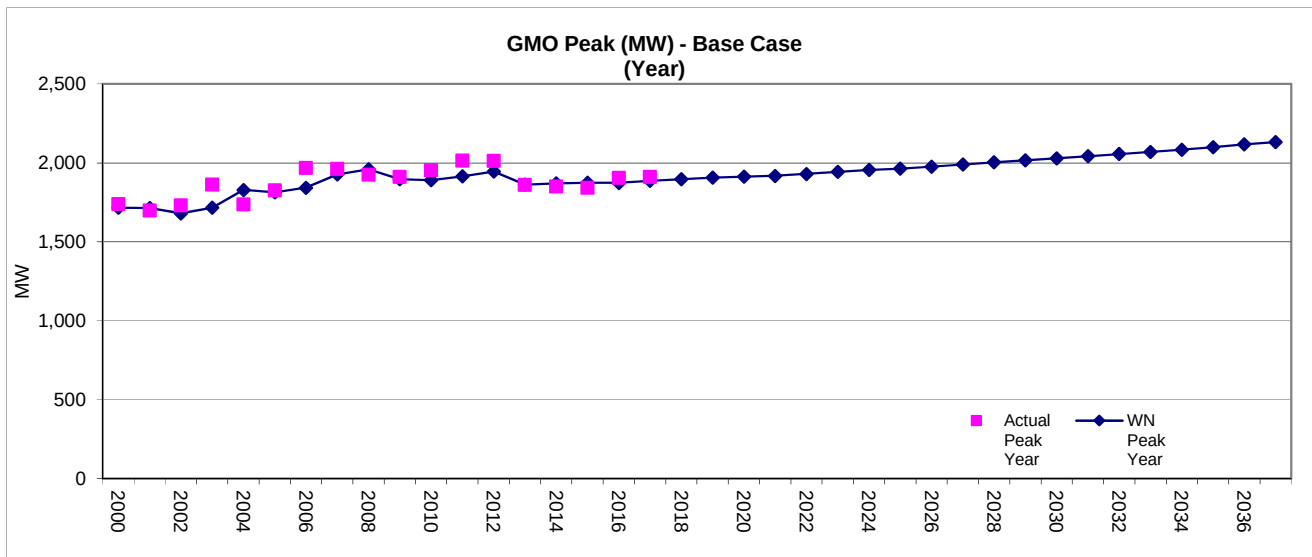
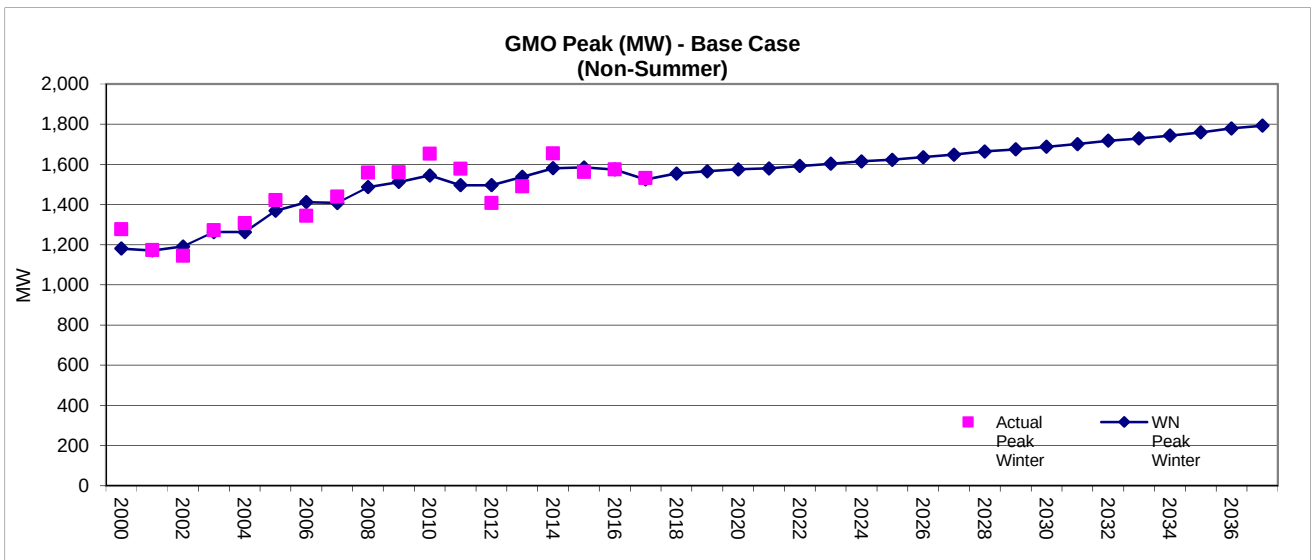
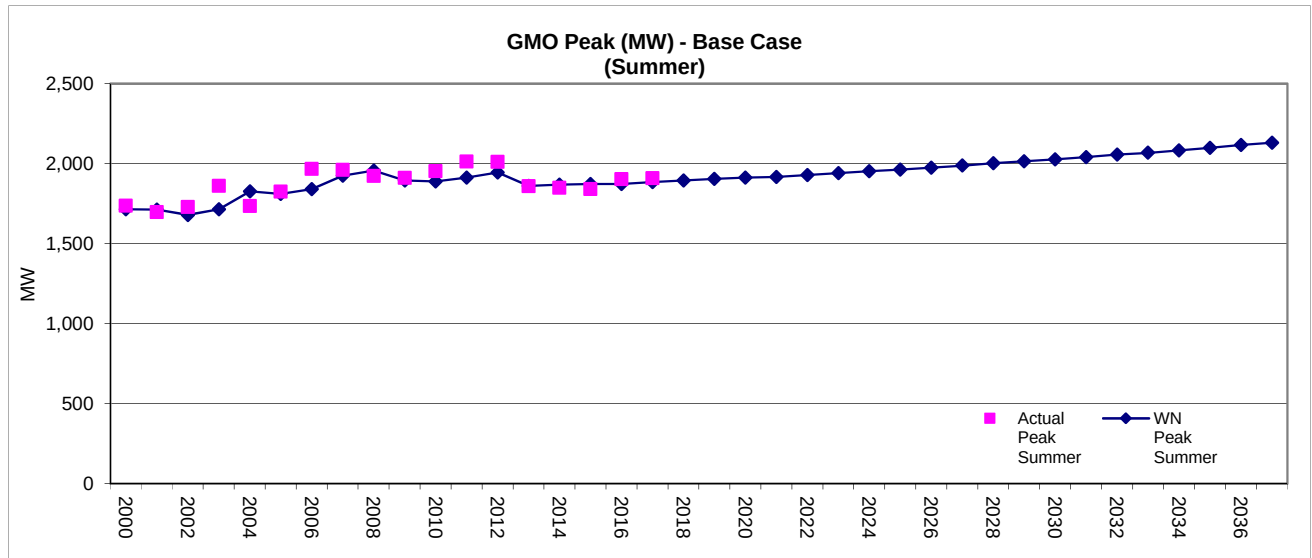
Note: Energy MWH (NSI) Includes annual system losses



**Plot 3D-3 Greater Missouri Operation Company (GMOC) Peak Forecast (MW) - Base Case
(Actual vs. Weather Normalized)**

Year	Actual Peak Summer	WN Peak Summer	Actual Peak Winter	WN Peak Winter	Actual Peak Year	WN Peak Year
2000	1,738	1,716	1,277	1,181	1,738	1,716
2001	1,698	1,713	1,173	1,171	1,698	1,713
2002	1,729	1,680	1,144	1,191	1,729	1,680
2003	1,861	1,716	1,272	1,263	1,861	1,716
2004	1,735	1,828	1,307	1,263	1,735	1,828
2005	1,826	1,812	1,422	1,369	1,826	1,812
2006	1,967	1,842	1,343	1,412	1,967	1,842
2007	1,961	1,926	1,439	1,408	1,961	1,926
2008	1,924	1,958	1,558	1,487	1,924	1,958
2009	1,911	1,896	1,560	1,512	1,911	1,896
2010	1,953	1,890	1,653	1,545	1,953	1,890
2011	2,013	1,914	1,578	1,496	2,013	1,914
2012	2,011	1,945	1,407	1,496	2,011	1,945
2013	1,860	1,861	1,491	1,537	1,860	1,861
2014	1,849	1,870	1,655	1,581	1,849	1,870
2015	1,841	1,873	1,562	1,585	1,841	1,873
2016	1,904	1,873	1,575	1,575	1,904	1,873
2017	1,910	1,886	1,531	1,525	1,910	1,886
2018		1,895		1,555		1,895
2019		1,905		1,566		1,905
2020		1,912		1,575		1,912
2021		1,917		1,580		1,917
2022		1,929		1,592		1,929
2023		1,942		1,603		1,942
2024		1,954		1,615		1,954
2025		1,963		1,623		1,963
2026		1,976		1,636		1,976
2027		1,988		1,648		1,988
2028		2,004		1,665		2,004
2029		2,015		1,675		2,015
2030		2,028		1,688		2,028
2031		2,041		1,701		2,041
2032		2,056		1,717		2,056
2033		2,068		1,729		2,068
2034		2,083		1,743		2,083
2035		2,099		1,759		2,099
2036		2,117		1,779		2,117
2037		2,131		1,792		2,131

09-'14	-0.7%	-0.3%	1.2%	0.9%	-0.7%	-0.3%
10-'15		-0.2%		0.5%		-0.2%
15-'20		0.4%		-0.1%		0.4%
20-'25		0.5%		0.6%		0.5%
25-'30		0.7%		0.8%		0.7%
30-'35		0.7%		0.8%		0.7%
15-'35		0.6%		0.5%		0.6%



Plot 3D-10 Greater Missouri Operation Company (GMOC) Peak Forecast (MW)
(Low Case, Base Case, High Cast)

Year	Low Peak Summer	Base Peak Summer	High Peak Summer	Low Peak Winter	Base Peak Winter	High Peak Winter	Low NSI Year	Base NSI Year	High NSI Year
2000	1,716	1,716	1,716	1,181	1,181	1,181	1,716	1,716	1,716
2001	1,713	1,713	1,713	1,171	1,171	1,171	1,713	1,713	1,713
2002	1,680	1,680	1,680	1,191	1,191	1,191	1,680	1,680	1,680
2003	1,716	1,716	1,716	1,263	1,263	1,263	1,716	1,716	1,716
2004	1,828	1,828	1,828	1,263	1,263	1,263	1,828	1,828	1,828
2005	1,812	1,812	1,812	1,369	1,369	1,369	1,812	1,812	1,812
2006	1,842	1,842	1,842	1,412	1,412	1,412	1,842	1,842	1,842
2007	1,926	1,926	1,926	1,408	1,408	1,408	1,926	1,926	1,926
2008	1,958	1,958	1,958	1,487	1,487	1,487	1,958	1,958	1,958
2009	1,896	1,896	1,896	1,512	1,512	1,512	1,896	1,896	1,896
2010	1,890	1,890	1,890	1,545	1,545	1,545	1,890	1,890	1,890
2011	1,914	1,914	1,914	1,496	1,496	1,496	1,914	1,914	1,914
2012	1,945	1,945	1,945	1,496	1,496	1,496	1,945	1,945	1,945
2013	1,861	1,861	1,861	1,537	1,537	1,537	1,861	1,861	1,861
2014	1,870	1,870	1,870	1,581	1,581	1,581	1,870	1,870	1,870
2015	1,873	1,873	1,873	1,585	1,585	1,585	1,873	1,873	1,873
2016	1,873	1,873	1,873	1,575	1,575	1,575	1,873	1,873	1,873
2017	1,882	1,886	1,889	1,525	1,525	1,525	1,882	1,886	1,889
2018	1,880	1,895	1,906	1,541	1,555	1,561	1,880	1,895	1,906
2019	1,880	1,905	1,923	1,541	1,566	1,578	1,880	1,905	1,923
2020	1,877	1,912	1,938	1,539	1,575	1,594	1,877	1,912	1,938
2021	1,872	1,917	1,951	1,532	1,580	1,607	1,872	1,917	1,951
2022	1,874	1,929	1,973	1,532	1,592	1,627	1,874	1,929	1,973
2023	1,876	1,942	1,995	1,531	1,603	1,649	1,876	1,942	1,995
2024	1,877	1,954	2,018	1,530	1,615	1,672	1,877	1,954	2,018
2025	1,875	1,963	2,038	1,526	1,623	1,691	1,875	1,963	2,038
2026	1,876	1,976	2,063	1,525	1,636	1,717	1,876	1,976	2,063
2027	1,877	1,988	2,089	1,523	1,648	1,745	1,877	1,988	2,089
2028	1,881	2,004	2,120	1,525	1,665	1,779	1,881	2,004	2,120
2029	1,880	2,015	2,147	1,521	1,675	1,808	1,880	2,015	2,147
2030	1,880	2,028	2,177	1,519	1,688	1,842	1,880	2,028	2,177
2031	1,881	2,041	2,208	1,516	1,701	1,877	1,881	2,041	2,208
2032	1,883	2,056	2,243	1,516	1,717	1,918	1,883	2,056	2,243
2033	1,882	2,068	2,275	1,512	1,729	1,953	1,882	2,068	2,275
2034	1,883	2,083	2,311	1,509	1,743	1,994	1,883	2,083	2,311
2035	1,884	2,099	2,349	1,508	1,759	2,036	1,884	2,099	2,349
2036	1,888	2,117	2,391	1,508	1,779	2,084	1,888	2,117	2,391
2037	1,887	2,131	2,427	1,504	1,792	2,124	1,887	2,131	2,427
09-'14	-0.3%	-0.3%	-0.3%	0.9%	0.9%	0.9%	-0.3%	-0.3%	-0.3%
10-'15	-0.2%	-0.2%	-0.2%	0.5%	0.5%	0.5%	-0.2%	-0.2%	-0.2%
15-'20	0.0%	0.4%	0.7%	-0.6%	-0.1%	0.1%	0.0%	0.4%	0.7%
20-'25	0.0%	0.5%	1.0%	-0.2%	0.6%	1.2%	0.0%	0.5%	1.0%
25-'30	0.1%	0.7%	1.3%	-0.1%	0.8%	1.7%	0.1%	0.7%	1.3%
30-'35	0.0%	0.7%	1.5%	-0.1%	0.8%	2.0%	0.0%	0.7%	1.5%
15-'35	0.0%	0.6%	1.1%	-0.2%	0.5%	1.3%	0.0%	0.6%	1.1%

