

### Base Case Forecast

<b>Heavy Summer Inc. Generation for 2030</b>		<b>Gs(PV)</b>	<b>Gs(CS)</b>	<b>Gw</b>	<b>Gc</b>	<b>Total</b>
		293	1282	895	923	3393
<b>Utility</b>	<b>Fraction of need</b>					
Black Hills	0.06	18	77	54	55	204
PSCo	0.51	149	654	456	471	1730
IREA	0.00					
CSU	0.08	23	103	72	74	271
PRPA	0.11	32	141	98	102	373
T-S	0.24	70	308	215	222	814
<b>Total</b>		293	1282	895	923	3393
<b>50% Heavy Summer Inc. Generation for 2030</b>		<b>Gs(PV)</b>	<b>Gs(CS)</b>	<b>Gw</b>	<b>Gc</b>	<b>Total</b>
		0	0	3579	923	4502
<b>Utility</b>	<b>Fraction of need</b>					
Black Hills	0.06	0	0	215	55	270
PSCo	0.51	0	0	1825	471	2296
IREA	0.00					
CSU	0.08	0	0	286	74	360
PRPA	0.11	0	0	394	102	495
T-S	0.24	0	0	859	222	1080
<b>Total</b>		0	0	3579	923	4502

**Table 10**

### 3% forecast

<b>Heavy Summer Inc. Generation for 2030</b>		<b>Gs(PV)</b>	<b>Gs(CS)</b>	<b>Gw</b>	<b>Gc</b>	<b>Total</b>
		386	1692	1180	4987	8245
<b>Utility</b>	<b>Fraction of need</b>					
Black Hills	0.04	15	68	47	199	330
PSCo IREA	0.64	247	1083	755	3192	5277
CSU	0.08	31	135	94	399	660
PRPA	0.07	27	118	83	349	577
T-S	0.17	66	288	201	848	1402
Totals		386	1692	1180	4987	8245
<b>50% Heavy Summer Inc. Generation for 2030</b>		<b>Gs(PV)</b>	<b>Gs(CS)</b>	<b>Gw</b>	<b>Gc</b>	<b>Total</b>
		0	0	4772	4987	9759
<b>Utility</b>	<b>Fraction of need</b>					
Black Hills	0.04	0	0	191	199	390
PSCo IREA	0.64	0	0	3054	3192	6246
CSU	0.08	0	0	382	399	781
PRPA	0.07	0	0	334	349	683
T-S	0.17	0	0	811	848	1659
Totals		0	0	4772	4987	9759

**Table 11**

	Base Case 923 MW	3% Case 4987 MW
<b>PSCo</b>		
Pawnee 40%	188	1277
Ft.St. Vrain 40%	188	1277
RMEC 10%	47	319
Spruce	48	319
<b>Black Hills</b>		
ERZ 5 100%	55	199
<b>Colo Springs Utilities</b>		
Nixon 100%	74	399
<b>Platte River Power Authority</b>		
Rawhide 100%	102	349
<b>Tri-State</b>		
Lamar EC 100%	222	848

**Table 12**

**Allocation of conventional generation (Gc) by utility for the year 2030 depicting heavy summer conditions for the base case load forecast and the 3% load forecast.**

## 2012-2030 Load Increment

Needed 600 MVA rated 230kV lines for load serving\*

Utility	Base		3%	
	Delta MW	Number of 230kV lines	Delta MW	Number of 230kV lines
Black Hills	185	2	287	2
PSCo	1500	4	4541	9
CSU	238	2	595	2
PRPA	308	2	473	2
T-S	694	2	1212	3

\*Criteria - For load greater than 100 MW, needed lines plus one line to meet N-1 criteria. Assume existing system can absorb at least 100 MVA to cover the N-1.

Table 13

**Year 2030**

<b>Key Transmission Lines</b>	<b>Base</b>	<b>* Forecast</b>	<b>3%</b>	<b>** Forecast</b>
	<b>Heavy Summer</b>	<b>50% Heavy Summer</b>	<b>Heavy Summer</b>	<b>50% Heavy Summer</b>
St. Vrain – Ft. Lupton	2-230kV	2-230kV	2-345kV	2-345kV
Pawnee-Missile Site	2-230kV	2-345kV	2-345kV	3-345kV
Missile Site-Smoky Hill	2-230kV	2-345kV	3-345kV	4-345kV
Missile Site-Daniels Park	1-230kV	2-230kV	1-345kV	1-345kV
Missile Site-Big Sandy	2-230kV	2-230kV	2-345kV	2-345kV
Big Sandy-Burlington	2-230kV	2-230kV	2-345kV	2-345kV
Burlington-Lamar	2-230kV	2-230kV	2-345kV	2-345kV
Lamar-Boone-Comanche	2-230kV	2-345kV	2-230kV	2-345kV
Lamar- Vilas	2-230kV	2-345kV	2-230kV	3-345kV
Vilas-Gladstone	1-230kV	1-230kV	1-230kV	1-230kV
Comanche-Midway	3-345kV	3-345kV	3-345kV	3-345kV
Midway-Daniels Park/Waterton	3-345kV	3-345kV	4-345kV	3-345kV
San Luis-Poncha	1-230kV	1-230kV	2-345kV	2-345kV
San Luis Calumet	2-345kV	2-345kV	2-345kV	2-345kV
Calumet-Comanche	2-345kV	2-345kV	2-345kV	2-345kV

\*From Figures 1A-1 and 1A-2 Modified

\*\*From Figures 2A-1 and 2A-2 Modified

**Table 14**





2030 ALT 1B

Transmission System  
3% Case - Heavy Summer

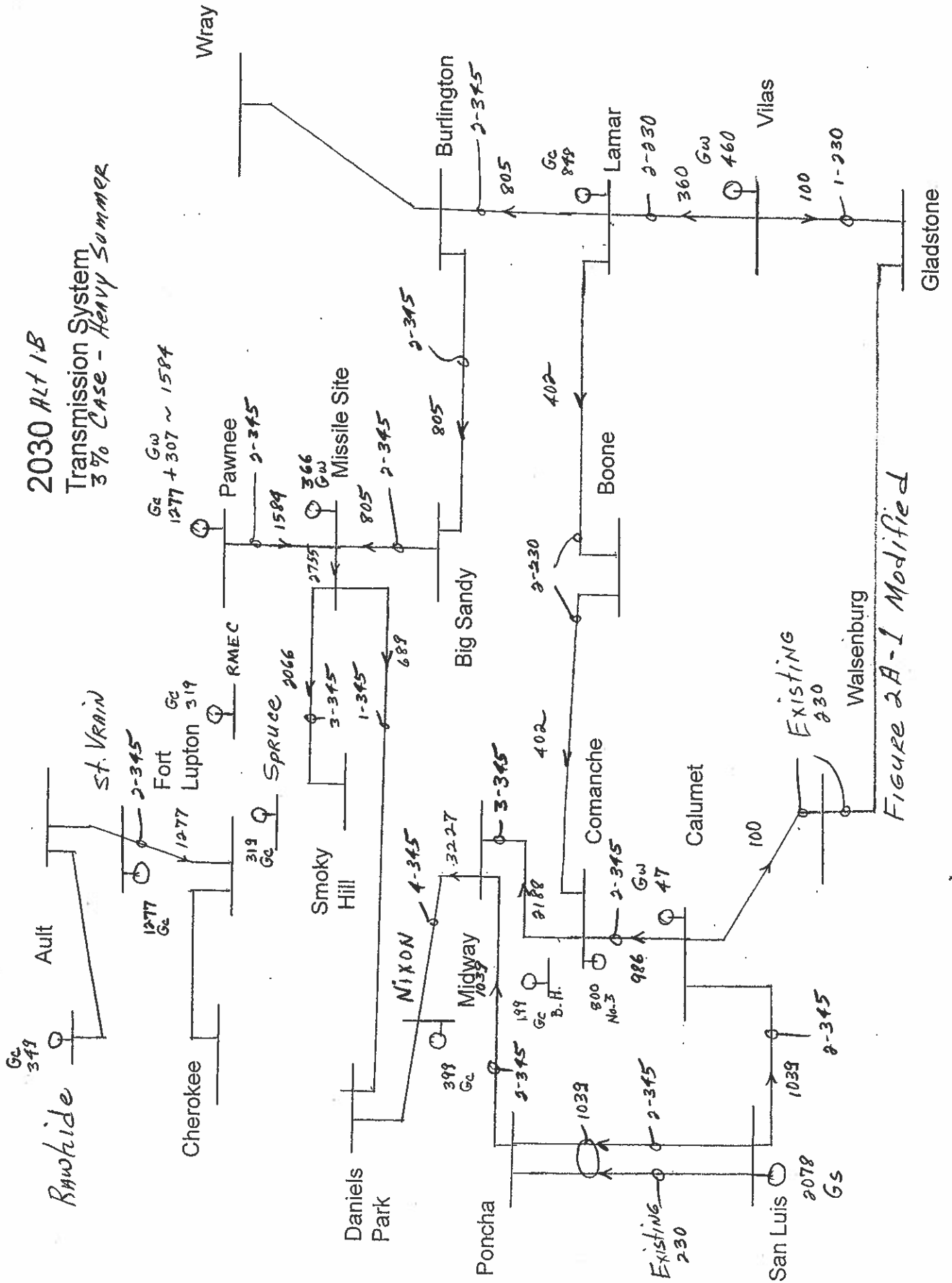


Figure 2A-1 Modified

