

Tables

Table 1

Dispatch Palo Verde Area Generation to Tucson																								
TEP Load 4266 MW; SWTC Load 952 MW; Citizen's Load 72 MW																								
From bus			To bus			Maximum Contingency Load (p.u. of Emergency Rating) & Contingency Numbers																		
Number	Name	kV	Number	Name	kV	Ck	Base	Cont	Alt1	Cont	Alt2	Cont	Alt3	Cont	Alt4	Cont	Alt5	Cont	Alt6	Cont	Alt7	Cont	Alt8	Cont
17005	BICKNELI	345	17004	BICKNELI	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.00	250	1.00	250
16109	WINCHSTH	345	16002	WINCHSTH	500	1	1.10	368	1.00	277	1.46	542	1.29	542	1.28	542	1.36	542	1.34	542	1.20	402	1.09	402
16104	SPRINGR	345	16106	VAIL2	345	1	1.05	283	1.10	283	1.17	283	1.14	283	1.14	283	1.18	283	1.18	283	1.13	283	1.10	283
16109	WINCHSTH	345	16105	VAIL	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTH	345	16105	VAIL	345	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17007	BUTERFLI	230	17002	APACHE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16702	SONOITA	115	16703	VALENCIA	115	1	---	---	---	---	---	---	1.05	542	1.40	286	1.03	288	1.39	286	---	---	---	---
16105	VAIL	345	16103	SOUTH	345	1	---	---	---	---	---	---	---	---	1.02	542	---	---	1.05	542	---	---	---	---
16104	SPRINGR	345	16101	GREENLEH	345	1	1.02	285	1.08	285	1.03	141	1.11	285	1.10	285	1.14	285	1.14	285	1.10	284	1.07	284
14004	WESTWING	500	16107	WESTWING	345	1	---	---	1.1	368	1.14	141	1.00	141	1.08	286	1.00	1	1.14	368	1.11	401	---	---
14000	CHOLLA	500	15041	SILVERKIN	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1.00	126
Alt 1	Base with Saguaro-Winchester in place of SES-Winchester																							
Alt 2	Base w/o Mobile-Saguaro (w/o Mobile-Toltec when Toltec in-service)																							
Alt 3	Base w/o Saguaro-South																							
Alt 4	Base w/o Saguaro-South, w/o Vail-South #2																							
Alt 5	Base w/o Saguaro-South & Saguaro-Winchester in place of SES-Winchester																							
Alt 6	Base w/o Saguaro-South, w/o Vail-South #2, & Saguaro-Winchester in place of SES-Winchester																							
Alt 7	Base w/o Mobile-Saguaro; SES-Carpas, Carpas-Winchester, Carpas-Saguaro																							
Alt 9	Base w/o Mobile-Saguaro; SES-Carpas, Carpas-Winchester, Carpas-Saguaro, Cholla-Saguaro/Silver King Tie-in																							
Contingency Lists Subset																								
From bus			To bus																					
Number	Name	kV	Number	Name	kV	Ck	Num																	
14004	SAGUARO	500	16002	WINCHSTH	500	1	1																	
16002	WINCHSTH	500	15070	STHESTST	500	1	141																	
16111	TORTOLIA	345	16103	SOUTH	345	1	277																	
16104	SPRINGR	345	16101	GREENLEH	345	1	283																	
16104	SPRINGR	345	16106	VAIL2	345	1	285																	
16105	VAIL	345	16103	SOUTH	345	1	286																	
16107	WESTWING	345	16103	SOUTH	345	1	288																	
16800	TOLTEC	500	14004	SAGUARO	345	1	368																	
16107	WESTWING	345	14005	WESTWING	500	1	542																	
15001	CORONADO	500	15041	SILVERKIN	500	1	126																	
17002	APACHE	230	17007	BUTERFLI	230	1	250																	
16104	SPRINGR	345	16101	GREENLEH	345	1	283																	
16104	SPRINGR	345	16106	VAIL2	345	1	284																	
16004	CARPAS	500	16002	WINCHSTH	500	1	401																	
14004	SAGUARO	500	16004	CARPAS	500	1	402																	

Table 2

From bus			To bus			Maximum Contingency Load (p.u. of Emergency Rating) & Contingency Number														
Number	Name	kV	Number	Name	kV	Ck	Base	Cont	Alt1	Cont	Alt2	Cont	Alt3	Cont	Alt4	Cont	Alt5	Cont	Alt6	Cont
17012	MARANA	115	17003	AVRA	115	1	1.16	525	1.16	---	1.17	---	1.17	---	1.17	---	1.16	---	1.16	---
17003	AVRA	115	17022	THREEPNT	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17012	MARANA	115	17013	MARANATP	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17008	DOSCONDO	230	17035	DOSCONDO	69	2	1.31	532	1.31	---	1.31	---	1.31	---	1.31	---	1.31	---	1.31	---
17008	DOSCONDO	230	17035	DOSCONDO	69	1	1.31	533	1.31	---	1.31	---	1.31	---	1.31	---	1.31	---	1.31	---
17010	GREEN-AE	345	17009	GREEN-AE	230	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17010	GREEN-AE	345	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17005	BICKNELL	345	17004	BICKNELL	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17000	APACHE	69	17001	APACHE	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16002	WINCHSTR	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17014	MORENCI	230	17017	GREEN-PD	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17014	MORENCI	230	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16104	SPRINGR	345	16106	VAIL2	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16105	VAIL	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16105	VAIL	345	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17007	BUTERFLD	230	17002	APACHE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16702	SONOITA	115	16703	VALENCIA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alt 1	Base with Saguaro-Winchester in place of SES-Winchester																			
Alt 2	Base w/o Mobile-Saguaro (w/o Mobile-Toltec when Toltec in-service)																			
Alt 3	Base w/o Saguaro-South																			
Alt 4	Base w/o Saguaro-South, w/o Vail-South #2																			
Alt 5	Base w/o Saguaro-South & Saguaro-Winchester in place of SES-Winchester																			
Alt 6	Base w/o Saguaro-South, w/o Vail-South #2, & Saguaro-Winchester in place of SES-Winchester																			
Contingency Lists Subset																				
From bus			To bus																	
Number	Name	kV	Number	Name	kV	Ck	Num													
17004	BICKNELL	230	17006	BICKNELL	115	1	525													
17035	DOSCONDO	69	17008	DOSCONDO	230	1	532													
17035	DOSCONDO	69	17008	DOSCONDO	230	2	533													

Table 3

Dispatch Bowie Generation to Phoenix																			
TEP Load 1748 MW; SWTC Load 493 MW; Citizen's Load 50 MW																			
From bus		To bus					Maximum Contingency Load (p.u. of Emergency Rating) & Contingency Number												
Number	Name	kV	Number	Name	kV	Ck	Base Cont	Alt1 Cont	Alt2 Cont	Alt3 Cont	Alt4 Cont	Alt5 Cont	Alt6 Cont						
17012	MARANA	115	17003	AVRA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---
17003	AVRA	115	17022	THREEPNT	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---
17012	MARANA	115	17013	MARANATP	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---
17008	DOSCONDO	230	17035	DOSCONDO	69	2	---	---	---	---	---	---	---	---	---	---	---	---	---
17008	DOSCONDO	230	17035	DOSCONDO	69	1	---	---	---	---	---	---	---	---	---	---	---	---	---
17010	GREEN-AE	345	17009	GREEN-AE	230	2	---	---	---	---	---	---	---	---	---	---	---	---	---
17010	GREEN-AE	345	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---
17005	BICKNELL	345	17004	BICKNELL	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---
17000	APACHE	69	17001	APACHE	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16002	WINCHSTR	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---
17014	MORENCI	230	17017	GREEN-PD	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---
17014	MORENCI	230	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---
16104	SPRINGR	345	16106	VAIL2	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16105	VAIL	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16105	VAIL	345	2	---	---	---	---	---	---	---	---	---	---	---	---	---
17007	BUTERFLD	230	17002	APACHE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---
16702	SONOITA	115	16703	VALENCIA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---
Alt 1	Base with Saguaro-Winchester in place of SES-Winchester																		
Alt 2	Base w/o Mobile-Saguaro (w/o Mobile-Toltec when Toltec in-service)																		
Alt 3	Base w/o Saguaro-South																		
Alt 4	Base w/o Saguaro-South, w/o Vail-South #2																		
Alt 5	Base w/o Saguaro-South & Saguaro-Winchester in place of SES-Winchester																		
Alt 6	Base w/o Saguaro-South, w/o Vail-South #2, & Saguaro-Winchester in place of SES-Winchester																		

Table 4

Dispatch Springerville Expansion, Bowie, and Winchester Generation to Tucson																				
TEP Load 3609 MW; SWTC Load 860 MW; Citizen's Load 72 MW																				
From bus			To bus			Maximum Contingency Load (p.u. of Emergency Rating) & Contingency Number														
Number	Name	kV	Number	Name	kV	Ck	Base	Cont	Alt1	Cont	Alt2	Cont	Alt3	Cont	Alt4	Cont	Alt5	Cont	Alt6	Cont
17012	MARANA	115	17003	AVRA	115	1	1.17	525	1.17	525	1.19	525	1.18	525	1.18	525	1.17	525	1.17	525
17003	AVRA	115	17022	THREEPNT	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17012	MARANA	115	17013	MARANATP	115	1	---	---	---	---	1.00	525	---	---	---	---	---	---	---	---
17008	DOSCONDO	230	17035	DOSCONDO	69	2	1.31	532	1.31	532	1.31	532	1.31	532	1.31	532	1.31	532	1.31	532
17008	DOSCONDO	230	17035	DOSCONDO	69	1	1.31	533	1.31	533	1.31	533	1.31	533	1.31	533	1.31	533	1.31	533
17010	GREEN-AE	345	17009	GREEN-AE	230	2	1.10	400	1.11	400	1.11	400	1.11	400	1.11	400	1.11	400	1.11	400
17010	GREEN-AE	345	17009	GREEN-AE	230	1	1.04	400	1.04	400	1.05	400	1.04	400	1.04	400	1.05	400	1.05	400
17005	BICKNELL	345	17004	BICKNELL	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17000	APACHE	69	17001	APACHE	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16002	WINCHSTR	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17014	MORENCI	230	17017	GREEN-PD	230	1	---	---	---	---	1.00	262	---	---	---	---	1.00	262	---	---
17014	MORENCI	230	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16104	SPRINGR	345	16106	VAIL2	345	1	---	---	---	---	1.02	50	---	---	---	---	1.02	283	1.01	283
16109	WINCHSTR	345	16105	VAIL	345	1	1.08	3	---	---	1.17	3	1.14	3	1.13	3	1.05	3	1.04	3
16109	WINCHSTR	345	16105	VAIL	345	2	1.08	2	---	---	1.17	2	1.14	2	1.13	2	1.05	2	1.04	2
17007	BUTERFLD	230	17002	APACHE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16702	SONOITA	115	16703	VALENCIA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Alt 1	Base with Saguaro-Winchester in place of SES-Winchester																			
Alt 2	Base w/o Mobile-Saguaro (w/o Mobile-Toltec when Toltec in-service)																			
Alt 3	Base w/o Saguaro-South																			
Alt 4	Base w/o Saguaro-South, w/o Vail-South #2																			
Alt 5	Base w/o Saguaro-South & Saguaro-Winchester in place of SES-Winchester																			
Alt 6	Base w/o Saguaro-South, w/o Vail-South #2, & Saguaro-Winchester in place of SES-Winchester																			
Contingency Lists Subset																				
From bus			To bus																	
Number	Name	kV	Number	Name	kV	Ck	Num													
16109	WINCHSTR	345	16105	VAIL	345	1	2													
16109	WINCHSTR	345	16105	VAIL	345	2	3													
14000	CHOLLA	500	14004	SAGUARO	500	1	50													
17104	MORENCI	230	17009	GREEN-AE	230	1	262													
16104	SPRINGR	345	16101	GREENLEE	345	1	283													
17014	MORENCI	230	17107	GREEN-PD	230	1	400													
17004	BICKNELL	230	17006	BICKNELL	115	1	525													
17035	DOSCONDO	69	17008	DOSCONDO	230	1	532													
17035	DOSCONDO	69	17008	DOSCONDO	230	2	533													

Table 5

Dispatch Springerville Expansion, Bowie, and Winchester Generation to Phoenix																					
TEP Load 1748 MW; SWTC Load 493 MW; Citizen's Load 50 MW																					
From bus		To bus					Maximum Contingency Load (p.u. of Emergency Rating) & Contingency Number														
Number	Name	kV	Number	Name	kV	Ck	Base	Cont	Alt1	Cont	Alt2	Cont	Alt3	Cont	Alt4	Cont	Alt5	Cont	Alt6	Cont	
17012	MARANA	115	17003	AVRA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17003	AVRA	115	17022	THREEPNT	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17012	MARANA	115	17013	MARANATP	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17008	DOSCONDO	230	17035	DOSCONDO	69	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17008	DOSCONDO	230	17035	DOSCONDO	69	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17010	GREEN-AE	345	17009	GREEN-AE	230	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17010	GREEN-AE	345	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17005	BICKNELL	345	17004	BICKNELL	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17000	APACHE	69	17001	APACHE	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16002	WINCHSTR	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17014	MORENCI	230	17017	GREEN-PD	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17014	MORENCI	230	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16104	SPRINGR	345	16106	VAIL2	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16105	VAIL	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16105	VAIL	345	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17007	BUTERFLD	230	17002	APACHE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16702	SONOITA	115	16703	VALENCIA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16100	CORONADO	345	15001	CORONADO	500	1	1.15	551	1.18	285	1.15	285	1.15	141	1.16	141	1.18	551	1.18	551	
16100	CORONADO	345	16104	SPRINGR	345	1	1.00	285	1.03	285	1.01	285	1.01	141	1.02	141	1.03	285	1.03	285	
Alt 1	Base with Saguaro-Winchester in place of SES-Winchester																				
Alt 2	Base w/o Mobile-Saguaro (w/o Mobile-Toltec when Toltec in-service)																				
Alt 3	Base w/o Saguaro-South																				
Alt 4	Base w/o Saguaro-South, w/o Vail-South #2																				
Alt 5	Base w/o Saguaro-South & Saguaro-Winchester in place of SES-Winchester																				
Alt 6	Base w/o Saguaro-South, w/o Vail-South #2, & Saguaro-Winchester in place of SES-Winchester																				
Contingency Lists Subset																					
From bus		To bus																			
Number	Name	kV	Number	Name	kV	Ck	Num														
16002	WINCHSTR	500	15070	STHESTST	500	1	141														
16104	SPRINGR	345	16106	VAIL2	345	1	285														
16106	VAIL2	345	16220	VAIL2	138	1	551														

Table 6

Dispatch Springerville Expansion, Bowie, and Winchester Generation to Phoenix & Tucson																					
TEP Load 1748 MW; SWTC Load 493 MW; Citizen's Load 50 MW																					
From bus		To bus					Maximum Contingency Load (p.u. of Emergency Rating) & Contingency Number														
Number	Name	kV	Number	Name	kV	Ck	Base	Cont	Alt1	Cont	Alt2	Cont	Alt3	Cont	Alt4	Cont	Alt5	Cont	Alt6	Cont	
17012	MARANA	115	17003	AVRA	115	1	1.17	525	1.16	525	1.17	525	1.17	525	1.17	525	1.17	525	1.17	525	
17003	AVRA	115	17022	THREEPNT	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17012	MARANA	115	17013	MARANATP	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17008	DOSCONDO	230	17035	DOSCONDO	69	2	1.31	532	1.31	532	1.31	532	1.31	532	1.31	532	1.31	532	1.31	532	
17008	DOSCONDO	230	17035	DOSCONDO	69	1	1.31	533	1.31	533	1.31	533	1.31	533	1.31	533	1.31	533	1.31	533	
17010	GREEN-AE	345	17009	GREEN-AE	230	2	1.02	400	1.02	400	1.03	400	1.03	400	1.02	400	1.02	400	1.02	400	
17010	GREEN-AE	345	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17005	BICKNELL	345	17004	BICKNELL	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17000	APACHE	69	17001	APACHE	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16002	WINCHSTR	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17014	MORENCI	230	17017	GREEN-PD	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17014	MORENCI	230	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16104	SPRINGR	345	16106	VAIL2	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16105	VAIL	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16105	VAIL	345	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17007	BUTERFLD	230	17002	APACHE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16702	SONOITA	115	16703	VALENCIA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16100	CORONADO	345	15001	CORONADO	500	1	1.02	551	1.01	285	1.01	551	1.00	285	1.01	551	---	---	1.00	551	
16100	CORONADO	345	16104	SPRINGR	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Alt 1	Base with Saguaro-Winchester in place of SES-Winchester																				
Alt 2	Base w/o Mobile-Saguaro (w/o Mobile-Toltec when Toltec in-service)																				
Alt 3	Base w/o Saguaro-South																				
Alt 4	Base w/o Saguaro-South, w/o Vail-South #2																				
Alt 5	Base w/o Saguaro-South & Saguaro-Winchester in place of SES-Winchester																				
Alt 6	Base w/o Saguaro-South, w/o Vail-South #2, & Saguaro-Winchester in place of SES-Winchester																				
Contingency Lists Subset																					
From bus		To bus																			
Number	Name	kV	Number	Name	kV	Ck	Num														
16104	SPRINGR	345	16106	VAIL2	345	1	285														
17014	MORENCI	230	17107	GREEN-PD	230	1	400														
17004	BICKNELL	230	17006	BICKNELL	115	1	525														
17035	DOSCONDO	69	17008	DOSCONDO	230	1	532														
17035	DOSCONDO	69	17008	DOSCONDO	230	2	533														
16106	VAIL2	345	16220	VAIL2	138	1	551														

Table 7

Dispatch Toltec Generation to Phoenix																					
TEP Load 1748 MW; SWTC Load 493 MW; Citizen's Load 50 MW																					
From bus			To bus			Maximum Contingency Load (p.u. of Emergency Rating) & Contingency Number															
Number	Name	kV	Number	Name	kV	Ck	Base	Cont	Alt1	Cont	Alt2	Cont	Alt3	Cont	Alt4	Cont	Alt5	Cont	Alt6	Cont	
17012	MARANA	115	17003	AVRA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17003	AVRA	115	17022	THREEPNT	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17012	MARANA	115	17013	MARANATP	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17008	DOSCONDO	230	17035	DOSCONDO	69	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17008	DOSCONDO	230	17035	DOSCONDO	69	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17010	GREEN-AE	345	17009	GREEN-AE	230	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17010	GREEN-AE	345	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17005	BICKNELL	345	17004	BICKNELL	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17000	APACHE	69	17001	APACHE	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16002	WINCHSTR	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17014	MORENCI	230	17017	GREEN-PD	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17014	MORENCI	230	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16104	SPRINGR	345	16106	VAIL2	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16105	VAIL	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16109	WINCHSTR	345	16105	VAIL	345	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
17007	BUTERFLD	230	17002	APACHE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16702	SONOITA	115	16703	VALENCIA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16100	CORONADO	345	15001	CORONADO	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16100	CORONADO	345	16104	SPRINGR	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
16800	TOLTEC	500	16801	TOLTEC	345	1	---	---	---	---	1.12	367	---	---	---	---	---	---	---	---	
16800	TOLTEC	500	16801	TOLTEC	345	2	---	---	---	---	1.12	367	---	---	---	---	---	---	---	---	
Alt 1	Base with Saguaro-Winchester in place of SES-Winchester																				
Alt 2	Base w/o Mobile-Saguaro (w/o Mobile-Toltec when Toltec in-service)																				
Alt 3	Base w/o Saguaro-South																				
Alt 4	Base w/o Saguaro-South, w/o Vail-South #2																				
Alt 5	Base w/o Saguaro-South & Saguaro-Winchester in place of SES-Winchester																				
Alt 6	Base w/o Saguaro-South, w/o Vail-South #2, & Saguaro-Winchester in place of SES-Winchester																				
Contingency Lists Subset																					
From bus			To bus																		
Number	Name	kV	Number	Name	kV	Ck	Num														
16800	TOLTEC	500	14004	SAGUARO	500	1	367														

Table 8

Dispatch Toltec Generation to Tucson																				
TEP Load 3214 MW; SWTC Load 805 MW; Citizen's Load 72 MW																				
From bus			To bus			Maximum Contingency Load (p.u. of Emergency Rating) & Contingency Number														
Number	Name	kV	Number	Name	kV	Ck	Base	Cont	Alt1	Cont	Alt2	Cont	Alt3	Cont	Alt4	Cont	Alt5	Cont	Alt6	Cont
17012	MARANA	115	17003	AVRA	115	1	1.40	524	1.39	524	1.40	524	1.41	524	1.41	524	1.40	524	1.40	524
17003	AVRA	115	17022	THREEPNT	115	1	1.09	524	1.08	524	1.10	524	1.10	524	1.10	524	1.09	524	1.09	524
17012	MARANA	115	17013	MARANATP	115	1	1.16	524	1.15	524	1.16	524	1.17	524	1.17	524	1.16	524	1.16	524
17008	DOSCONDO	230	17035	DOSCONDO	69	2	1.46	531	1.46	531	1.46	531	1.46	531	1.46	531	1.46	531	1.46	531
17008	DOSCONDO	230	17035	DOSCONDO	69	1	1.46	532	1.46	532	1.46	532	1.46	532	1.46	532	1.46	532	1.46	532
17010	GREEN-AE	345	17009	GREEN-AE	230	2	1.08	399	1.08	399	1.08	399	1.09	399	1.09	399	1.08	399	1.08	399
17010	GREEN-AE	345	17009	GREEN-AE	230	1	1.02	399	1.02	399	1.02	399	1.03	399	1.03	399	1.02	399	1.02	399
17005	BICKNELL	345	17004	BICKNELL	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17000	APACHE	69	17001	APACHE	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16002	WINCHSTR	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17014	MORENCI	230	17017	GREEN-PD	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17014	MORENCI	230	17009	GREEN-AE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16104	SPRINGR	345	16106	VAIL2	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16105	VAIL	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16109	WINCHSTR	345	16105	VAIL	345	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---
17007	BUTERFLD	230	17002	APACHE	230	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16702	SONOITA	115	16703	VALENCIA	115	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16100	CORONADO	345	15001	CORONADO	500	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16100	CORONADO	345	16104	SPRINGR	345	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---
16800	TOLTEC	500	16801	TOLTEC	345	1	---	---	---	---	1.13	367	---	---	---	---	---	---	---	---
16800	TOLTEC	500	16801	TOLTEC	345	2	---	---	---	---	1.13	367	---	---	---	---	---	---	---	---
16801	TOLTEC	345	16103	SOUTH	345	1	---	---	---	---	1.13	367	---	---	---	---	---	---	---	---
Alt 1	Base with Saguaro-Winchester in place of SES-Winchester																			
Alt 2	Base w/o Mobile-Saguaro (w/o Mobile-Toltec when Toltec in-service)																			
Alt 3	Base w/o Saguaro-South																			
Alt 4	Base w/o Saguaro-South, w/o Vail-South #2																			
Alt 5	Base w/o Saguaro-South & Saguaro-Winchester in place of SES-Winchester																			
Alt 6	Base w/o Saguaro-South, w/o Vail-South #2, & Saguaro-Winchester in place of SES-Winchester																			
Contingency Lists Subset																				
From bus			To bus																	
Number	Name	kV	Number	Name	kV	Ck	Num													
16800	TOLTEC	500	14004	SAGUARO	500	1	367													
17014	MORENCI	230	17107	GREEN-PD	230	1	399													
17004	BICKNELL	230	17006	BICKNELL	115	1	524													
17035	DOSCONDO	69	17008	DOSCONDO	230	1	531													
17035	DOSCONDO	69	17008	DOSCONDO	230	2	532													

Table 9

Stressing: Palo Verde Area Generation into Phoenix Metro					
APS Alternatives Comparison					
Alternative	Limiting Element	%Loading	Outage	Stressing	PHX Import
Base Case (1-JJ-Mobile)	Jjob-Kyrene 500KV Line	100.3	Palo Verde-Estrella	4150 MW	12297 MW
Alt. 2 (2-JJ-Mobile)	Jjob-Kyrene 500KV Line	101	Palo Verde-Estrella	4350 MW	12497 MW
Alt. 1 (JJ-Mob., Watrmon-Mobile)	Jjob-Kyrene 500KV Line	100.6	Palo Verde-Estrella	4350 MW	12492 MW
Alternative w/ Silverking Out-in	Limiting Element	%Loading	Outage	Stressing	PHX Import
Base Case (1-JJ-Mobile)	Jjob-Kyrene 500KV Line	100.9	Palo Verde-Estrella	4650 MW	12800 MW
Alt. 2 (2-JJ-Mobile)	Jjob-Kyrene 500KV Line	101	Palo Verde-Estrella	4850 MW	12998 MW
Alt. 1 (JJ-Mob., Watrmon-Mobile)	Jjob-Kyrene 500KV Line	100.6	Palo Verde-Estrella	4850 MW	12994 MW
NOTE: JJ-KYXLINE RATED AT 2292 MVA					

Table 10

BASE CASE BENCH MARK

STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA SAGUARO 500KV LINE	1026	109	1117	CORONADO SILVERKING 500KV LINE	BASE CASE
SANTAN CORBELL 230KV LINE	1100	126	1389	CORBEL KYRENE 230KV LINE	BASE CASE
SANTAN CORBELL 230KV LINE	1100	101	1111	SANTAN THUNDRSTONE 230KV LINE	BASE CASE
SANTAN THUNDERSTONE 230KV LINE	1100	119	1311	SILVERKING 500/230KV BK # 1	BASE CASE
KYRENE 500/230 KV BK #6	1233	101	1245	KYRENE 500/230KV BK #7	+ 3000MW
RUDD 500/230KV BK # 3	600	103	620	RUDD 500/230KV BK #1	+ 3000MW
RUDD 500/230KV BK # 2	600	103	620	RUDD 500/230KV BK #1	+ 3000MW
JOJOBA KYRENE 500KV LINE	2647	107	2833	PALOVERDE RUDD 500KV LINE	+ 5000MW
CHOLLA PREHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW

Table 11

SRP ALTERNATIVE #1

**LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SILVER-KING 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PREHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	94	1231		WITH ALT #1
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	112	2988		WITH ALT #1

Table 12

SRP ALTERNATIVE #2

**LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SOUTH EAST 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PREHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	100	1315		WITH ALT #2
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	110	2933		WITH ALT #2

Table 13

SRP ALTERNATIVE #3

**LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SOUTH EAST STATION
 LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SILVER-KING 500KV STATION
 STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PREHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	86.0	1131		WITH ALT #3
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	109	2874		WITH ALT #3

Table 14

**BASE CASE BENCH MARK
Sensitivity 1**

**WITH WINCHESTER TO SAGAURO
WITHOUT SES TO WINCHESTER
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA SAGUARO 500KV LINE	1026	109	1117	CORONADO SILVERKING 500KV LINE	BASE CASE
SANTAN CORBELL 230KV LINE	1100	126	1389	CORBEL KYRENE 230KV LINE	BASE CASE
SANTAN CORBELL 230KV LINE	1100	101	1111	SANTAN THUNDRSTONE 230KV LINE	BASE CASE
SANTAN THUNDERSTONE 230KV LINE	1100	119	1311	SILVERKING 500/230KV BK # 1	BASE CASE
KYRENE 500/230 KV BK #6	1233	101	1245	KYRENE 500/230KV BK #7	+ 3000MW
RUDD 500/230KV BK # 3	600	103	620	RUDD 500/230KV BK #1	+ 3000MW
RUDD 500/230KV BK # 2	600	103	620	RUDD 500/230KV BK #1	+ 3000MW
JOJOBA KYRENE 500KV LINE	2647	107	2833	PALOVERDE RUDD 500KV LINE	+ 5000MW
CHOLLA PREHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
		103	1351		SEN 1
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
		123	3250		SEN 1

Table 15

SRP ALTERNATIVE #1

Sensitivity 1

**WITH WINCHESTER TO SAGAURO
WITHOUT SES TO WINCHESTER
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SILVER-KING 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PREHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	94	1231		WITH ALT #1
		95	1235		SEN_1 / ALT #1
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	112	2988		WITH ALT #1
		113	3000		SEN_1 / ALT #1

Table 16

SRP ALTERNATIVE #2

Sensitivity 1

**WITH WINCHESTER TO SAGAURO
WITHOUT SES TO WINCHESTER
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SOUTH EAST 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PRECHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	100	1315		WITH ALT #2
		100	1312		SEN_1 / ALT #2
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	110	2933		WITH ALT #2
		111	2934		SEN_1 / ALT #2

Table 17

**SRP ALTERNATIVE #3
Sensitivity 1**

**WITH WINCHESTER TO SAGAURO
WITHOUT SES TO WINCHESTER
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SOUTH EAST STATION
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SILVER-KING 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PRECHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	86.0	1131		WITH ALT #3
		86.0	1130		SEN_1 / ALT #3
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	110	2933		WITH ALT #3
		108	2886		SEN_1 / ALT #3

Table 18

**BASE CASE BENCH MARK
Sensitivity 2**

**WITH WINCHESTER TO SAGAURO
NO SES TO WINCHESTER
NO SAGAURO TO SOUTH**

STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA SAGUARO 500KV LINE	1026	109	1117	CORONADO SILVERKING 500KV LINE	BASE CASE
SANTAN CORBELL 230KV LINE	1100	126	1389	CORBEL KYRENE 230KV LINE	BASE CASE
SANTAN CORBELL 230KV LINE	1100	101	1111	SANTAN THUNDRSTONE 230KV LINE	BASE CASE
SANTAN THUNDERSTONE 230KV LINE	1100	119	1311	SILVERKING 500/230KV BK # 1	BASE CASE
KYRENE 500/230 KV BK #6	1233	101	1245	KYRENE 500/230KV BK #7	+ 3000MW
RUDD 500/230KV BK # 3	600	103	620	RUDD 500/230KV BK #1	+ 3000MW
RUDD 500/230KV BK # 2	600	103	620	RUDD 500/230KV BK #1	+ 3000MW
JOJOBA KYRENE 500KV LINE	2647	107	2833	PALOVERDE RUDD 500KV LINE	+ 5000MW
CHOLLA PRECHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
		103	1351		SEN 2
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
		124	3256		SEN 2

Table 19

**SRP ALTERNATIVE #1
Sensitivity 2**

**WITH WINCHESTER TO SAGAURO
NO SES TO WINCHESTER
NO SAGAURO TO SOUTH
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SILVER-KING 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PRECHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	94	1231		WITH ALT #1
		94	1234		SEN 2 / ALT #1
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	112	2988		WITH ALT #1
		113	2998		SEN 2 / ALT #1

Table 20

**SRP ALTERNATIVE #2
Sensitivity 2**

**WITH WINCHESTER TO SAGAURO
NO SES TO WINCHESTER
NO SAGAURO TO SOUTH
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SOUTH EAST 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PRECHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	100	1315		WITH ALT #2
		100	1309		SEN 2 / ALT #2
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	110	2933		WITH ALT #2
		111	2936		SEN 2 / ALT #2

Table 21

**SRP ALTERNATIVE #3
Sensitivity 2**

**WITH WINCHESTER TO SAGAURO
NO SES TO WINCHESTER
NO SAGAURO TO SOUTH
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SOUTH EAST STATION
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SILVER-KING 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PRECHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	86.0	1131		WITH ALT #3
		86.0	1130		SEN_2 / ALT #3
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	110	2933		WITH ALT #3
		108	2888		SEN_2 / ALT #3

Table 22

**BASE CASE BENCH MARK
Sensitivity 3**

**WITH WINCHESTER TO SAGAURO
NO SES TO WINCHESTER NO SAGAURO TO SOUTH
NO TOLTEC TO SAGURO NO TOLTEC TO MOBILE
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.**

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA SAGUARO 500KV LINE	1026	109	1117	CORONADO SILVERKING 500KV LINE	BASE CASE
SANTAN CORBELL 230KV LINE	1100	126	1389	CORBEL KYRENE 230KV LINE	BASE CASE
SANTAN CORBELL 230KV LINE	1100	101	1111	SANTAN THUNDRSTONE 230KV LINE	BASE CASE
SANTAN THUNDERSTONE 230KV LINE	1100	119	1311	SILVERKING 500/230KV BK # 1	BASE CASE
KYRENE 500/230 KV BK #6	1233	101	1245	KYRENE 500/230KV BK #7	+ 3000MW
RUDD 500/230KV BK # 3	600	103	620	RUDD 500/230KV BK #1	+ 3000MW
RUDD 500/230KV BK # 2	600	103	620	RUDD 500/230KV BK #1	+ 3000MW
JOJOBA KYRENE 500KV LINE	2647	107	2833	PALOVERDE RUDD 500KV LINE	+ 5000MW
CHOLLA PRECHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
		99	1297		SEN 3
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
		129	3421		SEN 3

Table 23

SRP ALTERNATIVE #1
Sensitivity 3

WITH WINCHESTER TO SAGAURO
NO SES TO WINCHESTER NO SAGAURO TO SOUTH
NO TOLTEC TO SAGURO NO TOLTEC TO MOBILE
LOOP-IN THE CHOLLA/SAGUARO 500KV LINE INTO THE SILVER-KING 500KV STATION
STRESSING: SCHEDULE PALO VERDE AREA GENERATION INTO THE PHOENIX AREA.

LINE / XFMR	RATING AMPS/MVA	PERCENT LOADING	AMP /MVA	OUTAGE	STRESSING
CHOLLA PRECHCYN 345KV LINE	1310	101	1332	CHOLLA PNPKAPS 345KV LINE	+ 6000MW
	1310	94	1231		WITH ALT #1
		99	1296		SEN_3 / ALT #1
JOJOBA KYRENE 500KV LINE	2647	120	3191	PALOVERDE RUDD 500KV LINE	+ 6000MW
	2647	112	2988		WITH ALT #1
		125	3315		SEN_3 / ALT #1