

# Preliminary Sequence of Events

06/14/2004 PVNGS LOOP

Time (APS)	Time (SRP)	T+	Event
07:40:55.747	07:40:55.790		<i>Fault inception, C phase to ground, 115<sup>th</sup> Ave and Union Hills (Westwing – Liberty line)</i>
07:40:55.814		4.0 cycles	<i>Westwing breaker 1126 opens</i>
07:40:55.822		8.5 cycles	<i>Liberty breaker 1282 opens</i>
07:40:56.115	07:40:56.118	22.1 cycles	<i>Breakers AFX732 and AFX735 open SEL-321 directional ground time overcurrent</i>
07:40:56.136		23.3 cycles	<i>Westwing breakers 1426 and 1522 open</i>
07:40:56.165		25.1 cycles	<i>Deer Valley breakers 322, 722, and 962 open</i>
07:40:56.172		25.5 cycles	<i>Westwing 1726 and 1822 open</i>
07:40:56.515		46.1 cycles	<i>Westwing 1222 opens</i>
	07:40:59.489	3.7 sec	<i>Hassayampa 935 and 938 open (Arlington Valley Line) Received direct transfer trip from Arlington</i>
07:41:01.982			<i>Fault becomes phase B and C to ground</i>
07:41:02.154			<i>Fault becomes phase C to ground</i>
07:41:02.799			<i>Fault becomes phase B and C to ground</i>
	07:41:07.851	12.06 sec	<i>PVNGS Switchyard 975 and 972 open (Hassayampa #2 line) trips on broken conductor detection</i>
	07:41:07.875	12.08 sec	<i>PVNGS Switchyard 982 and 985 open (Hassayampa #3 line) trips on broken conductor detection</i>
	07:41:07.88	12.09 sec	<i>PVNGS Switchyard 942 and 945 open (Hassayampa #1 line) trips on broken conductor detection</i>
07:41:08.104			<i>Fault becomes phase A, B, C to ground</i>
	07:41:20.005	24.21 sec	<i>PVNGS Switchyard 992 opens (Devers line)</i>
	07:41:20.113	24.32 sec	<i>PVNGS Switchyard 932 and 935 open (Rudd line) GE D60, POTT (permissive overreaching transfer trip)</i>
	07:41:20.864	25.07 sec	<i>PVNGS Switchyard 912 and 915 open (Westwing 1 line) SEL-321, POTT</i>
	07:41:20.895	25.10 sec	<i>PVNGS Switchyard 922 and 925 open (Westwing 2 line) GE D60, POTT</i>
	07:41:23.848	28.06 sec	<i>PVNGS Switchyard 988 opens (trips Unit 3)</i>
	07:41:24.641	28.85 sec	<i>PVNGS Switchyard 918 opens (trips Unit 1)</i>
	07:41:24.652	28.86 sec	<i>PVNGS Switchyard 938 opens (trips Unit 2)</i>
07:41:34.615		38.868 sec	<i>Fault cleared</i>

C/11