

**2019 SCE summer Peak case - Buck-J.Hinds line looped into Colorado River and Red Bluff 230 kV substations
Overloaded facilities--Double contingency and N-1-1 (Category C)**

Overloaded Facilities								Pre-project*	Post-project*	delta	Outage description
From	Name	kV	To	Name	kV	ck	Rated Mva				
24017	BLYTHESC	161	24035	EAGLEMTN	161	1	202	124.4%	12.6%	-111.8%	Line EAGLEMTN - IRON MTN 230 kV,Line J.HINDS - MIRAGE 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	52.4%	-99.1%	Line JHINDMWD - EAGLEMTN 230 kV,Line PALOVRDE 500.0 to COLRIVER 500 kV Ckt 1
24017	BLYTHESC	161	24035	EAGLEMTN	161	1	202	111.6%	12.6%	-99.0%	CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE,Line J.HINDS - MIRAGE 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	52.5%	-99.0%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line PALOVRDE 500.0 to COLRIVER 5
25406	J.HINDS	230	24806	MIRAGE	230	1	357	152.1%	56.9%	-95.2%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - MIRAGE 230 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	152.1%	56.9%	-95.2%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - MIRAGE 230 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	152.1%	57.0%	-95.1%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - MIRAGE 230 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	152.1%	57.0%	-95.1%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - MIRAGE 230 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.4%	57.5%	-93.9%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - VISTA (LR) 230 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.4%	57.6%	-93.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - VISTA (LR) 230 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	57.9%	-93.7%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - EL CASCO (LR) 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	58.0%	-93.6%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - EL CASCO (LR) 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.4%	58.0%	-93.4%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - VISTA (LR) 230 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.4%	58.1%	-93.3%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - VISTA (LR) 230 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	58.4%	-93.1%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - SANBRDNO (SBLR) 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	58.5%	-93.0%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - SANBRDNO (SBLR) 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.5%	-92.3%	Line JHINDMWD - EAGLEMTN 230 kV,Line MIRALOMA - SERRANO 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.2%	-92.3%	Line JHINDMWD - EAGLEMTN 230 kV,Line SANBRDNO - VSTA 230 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.4%	-92.3%	Line JHINDMWD - EAGLEMTN 230 kV,Line COLRIVER - REDBLUFF 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.4%	-92.3%	Line JHINDMWD - EAGLEMTN 230 kV,Line COLRIVER - REDBLUFF 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.6%	-92.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line MIRALOMA - SERRANO 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.3%	-92.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line SANBRDNO - VSTA 230 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.5%	-92.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line COLRIVER - REDBLUFF 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.5%	-92.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line COLRIVER - REDBLUFF 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.6%	-92.1%	Line JHINDMWD - EAGLEMTN 230 kV,Tran MIRAGE 230/115 1A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.6%	-92.1%	Line JHINDMWD - EAGLEMTN 230 kV,Tran MIRAGE 230/115 3A Bank

**2019 SCE summer Peak case - Buck-J.Hinds line looped into Colorado River and Red Bluff 230 kV substations
Overloaded facilities--Double contingency and N-1-1 (Category C)**

Overloaded Facilities								Pre-project*	Post-project*	delta	Outage description
From	Name	kV	To	Name	kV	ck	Rated Mva				
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.6%	-92.1%	Line JHINDMWD - EAGLEMTN 230 kV,Tran MIRAGE 230/115 4A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.6%	-92.1%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran MIRAGE 230/115 1A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.6%	-92.1%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran MIRAGE 230/115 3A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	59.6%	-92.1%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran MIRAGE 230/115 4A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.6%	-92.0%	Line JHINDMWD - EAGLEMTN 230 kV,Tran DEVERS 230/115 1A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.6%	-92.0%	Line JHINDMWD - EAGLEMTN 230 kV,Tran DEVERS 230/115 3A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.6%	-92.0%	Line JHINDMWD - EAGLEMTN 230 kV,Tran DEVERS 230/115 4A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.8%	-92.0%	Line JHINDMWD - EAGLEMTN 230 kV,Tran VALLEYSC - VALLEYSC 500/115.00 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.8%	-92.0%	Line JHINDMWD - EAGLEMTN 230 kV,Tran VALLEYSC - VALLEYSC 500/115.00 2AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.7%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Tran ALBERHIL 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.7%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Tran ALBERHIL 500/230 2AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.9%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Tran VALLEYSC - VALLEY-S 500/115.00 3AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.9%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Tran VALLEYSC - VALLEY-S 500/115.00 4AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.7%	-91.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran DEVERS 230/115 1A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.7%	-91.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran DEVERS 230/115 3A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.7%	-91.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran DEVERS 230/115 4A Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.9%	-91.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran VALLEYSC - VALLEYSC 500/115.00 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.9%	-91.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran VALLEYSC - VALLEYSC 500/115.00 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.9%	-91.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran VALLEYSC - VALLEY-S 500/115.00 3
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	59.9%	-91.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran VALLEYSC - VALLEY-S 500/115.00 4
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line BLYTHESC - EAGLEMTN 161 kV,Line JHINDMWD - EAGLEMTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line BLYTHESC - EAGLEMTN 161 kV,Breaker J.HINDS 230 kV Bus Tie (MWD - SCE)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line EAGLEMTN 1A Bank 230 kV Lead,Line JHINDMWD - EAGLEMTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line EAGLEMTN 2A Bank 230 kV Lead,Line JHINDMWD - EAGLEMTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Breaker J.HINDS 230 kV Bus Tie (MWD - SCE)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Line J.HINDS 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Line J.HINDS 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,J.HINDS 25MVAR Shunt Reactor
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Tran EAGLEMTN 230/161 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Line ETIWANDA - SANBRDNO 230 kV

**2019 SCE summer Peak case - Buck-J.Hinds line looped into Colorado River and Red Bluff 230 kV substations
Overloaded facilities--Double contingency and N-1-1 (Category C)**

Overloaded Facilities								Pre-project*	Post-project*	delta	Outage description
From	Name	kV	To	Name	kV	ck	Rated Mva				
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Line JHINDMWD - EAGLEMTN 230 kV,Line MIRALOMW - VSTA 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.6%	-91.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran EAGLEMTN 230/161 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Stuck Breaker 513
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line EAGLEMTN 1A Bank 230 kV Lead,Breaker J.HINDS 230 kV Bus Tie (MWD - SCE)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line EAGLEMTN 2A Bank 230 kV Lead,Breaker J.HINDS 230 kV Bus Tie (MWD - SCE)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line GENE 1A Bank 230 kV Lead,Line JHINDMWD - EAGLEMTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line GENE 1A Bank 230 kV Lead,Breaker J.HINDS 230 kV Bus Tie (MWD - SCE)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line GENE 2A Bank 230 kV Lead,Line JHINDMWD - EAGLEMTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line GENE 2A Bank 230 kV Lead,Breaker J.HINDS 230 kV Bus Tie (MWD - SCE)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line JHINDMWD - EAGLEMTN 230 kV,Line PARKER 230.0 to GENE 230.0 Ck
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.3%	59.5%	-91.8%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVRSVC1 Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line JHINDMWD - EAGLEMTN 230 kV,Line LUGO - VINCENT 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Line JHINDMWD - EAGLEMTN 230 kV,Line LUGO - VINCENT 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line J.HINDS 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line J.HINDS 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line PARKER 230.0 to GENE
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),J.HINDS 25MVAR Shunt Reactor
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line ETIWANDA - SANBRDNO 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line MIRALOMW - VSTA 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line LUGO - VINCENT 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line LUGO - VINCENT 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran ALBERHIL 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.7%	-91.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran ALBERHIL 500/230 2AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	59.9%	-91.7%	Line JHINDMWD - EAGLEMTN 230 kV,Line ETIWANDA - VSTA 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.2%	59.5%	-91.7%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVRSVC1 Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	150.8%	59.2%	-91.6%	Line BLYTHE 161 kV Bus Tie (WALC - SCE),Breaker J.HINDS 230 kV Bus Tie (MWD - SC
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.2%	-91.6%	Line JHINDMWD - EAGLEMTN 230 kV,Gen IEEC-G1 (PMAX 405MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.2%	-91.6%	Line JHINDMWD - EAGLEMTN 230 kV,Gen IEEC-G2 (PMAX 405MW)

**2019 SCE summer Peak case - Buck-J.Hinds line looped into Colorado River and Red Bluff 230 kV substations
Overloaded facilities--Double contingency and N-1-1 (Category C)**

Overloaded Facilities								Pre-project*	Post-project*	delta	Outage description
From	Name	kV	To	Name	kV	ck	Rated Mva				
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.9%	-91.6%	Line EAGLEMTN - IRON MTN 230 kV,Line JHINDMWD - EAGLEMTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	59.9%	-91.6%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line ETIWANDA - VSTA 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.5%	60.0%	-91.5%	CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE,Line JHINDMWD - EAGLEMTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.4%	-91.4%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Gen IEEC-G1 (PMAX 405MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.4%	-91.4%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Gen IEEC-G2 (PMAX 405MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	60.3%	-91.4%	Line JHINDMWD - EAGLEMTN 230 kV,Line LUGO - MIRALOMA 500 kV Ckt 3
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.5%	-91.3%	Line JHINDMWD - EAGLEMTN 230 kV,Line LUGO - MOHAVE 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	60.4%	-91.3%	Line JHINDMWD - EAGLEMTN 230 kV,Line LUGO - MIRALOMA 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	60.4%	-91.3%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line LUGO - MIRALOMA 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	60.4%	-91.3%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line LUGO - MIRALOMA 500 kV Ckt 3
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.6%	-91.2%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - VALLEYSC 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.6%	-91.2%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - VALLEYSC 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.6%	-91.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - VALLEYSC 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.6%	-91.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - VALLEYSC 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	60.6%	-91.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line LUGO - MOHAVE 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	150.2%	59.2%	-91.0%	Line BLYTHE 161 kV Bus Tie (WALC - SCE),Line JHINDMWD - EAGLEMTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	60.8%	-90.8%	Line JHINDMWD - EAGLEMTN 230 kV,Line MIRAGE - RAMON 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	60.8%	-90.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line MIRAGE - RAMON 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	60.9%	-90.7%	Line JHINDMWD - EAGLEMTN 230 kV,Line LUGO - VICTORVL 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	60.9%	-90.7%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line LUGO - VICTORVL 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.9%	61.6%	-90.3%	Line JHINDMWD - EAGLEMTN 230 kV,Line ELDORDO - LUGO 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	61.4%	-90.3%	Line JHINDMWD - EAGLEMTN 230 kV,Gen MNTV-CCGT1 (PMAX 695MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	61.4%	-90.3%	Line JHINDMWD - EAGLEMTN 230 kV,Gen MNTV-CCGT2 (PMAX 695MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.9%	61.6%	-90.3%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line ELDORDO - LUGO 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	152.0%	61.8%	-90.2%	Line JHINDMWD - EAGLEMTN 230 kV,Line LUGO - RANCHVST 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	152.0%	61.8%	-90.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line LUGO - RANCHVST 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	61.5%	-90.2%	Line JHINDMWD - EAGLEMTN 230 kV,Line CVSUB230 - MIRAGE 230 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.7%	61.6%	-90.1%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line CVSUB230 - MIRAGE 230 kV Ckt 1

**2019 SCE summer Peak case - Buck-J.Hinds line looped into Colorado River and Red Bluff 230 kV substations
Overloaded facilities--Double contingency and N-1-1 (Category C)**

Overloaded Facilities								Pre-project*	Post-project*	delta	Outage description
From	Name	kV	To	Name	kV	ck	Rated Mva				
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	61.6%	-90.0%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Gen MNTV-CCGT1 (PMAx 695MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.6%	61.6%	-90.0%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Gen MNTV-CCGT2 (PMAx 695MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.0%	61.6%	-89.4%	Line JHINDMWD - EAGLEMTN 230 kV,Line ALBERHIL - SERRANO 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.0%	61.6%	-89.4%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line ALBERHIL - SERRANO 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.0%	62.8%	-88.2%	Line JHINDMWD - EAGLEMTN 230 kV,Line ALBERHIL - VALLEYSC 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.0%	62.8%	-88.2%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line ALBERHIL - VALLEYSC 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.4%	64.7%	-86.7%	Line JHINDMWD - EAGLEMTN 230 kV,Tran DEVERS 500/230 2AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.3%	64.8%	-86.5%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran DEVERS 500/230 2AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.3%	65.4%	-85.9%	Line JHINDMWD - EAGLEMTN 230 kV,Tran DEVERS 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.3%	65.4%	-85.9%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran DEVERS 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	134.6%	55.6%	-79.0%	Stuck Breaker 513
25406	J.HINDS	230	24806	MIRAGE	230	1	357	152.1%	77.2%	-74.9%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - REDBLUFF 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	77.0%	-74.8%	Line JHINDMWD - EAGLEMTN 230 kV,Line DEVERS - REDBLUFF 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.8%	77.0%	-74.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - REDBLUFF 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	152.1%	77.3%	-74.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Line DEVERS - REDBLUFF 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.4%	80.6%	-70.8%	Line JHINDMWD - EAGLEMTN 230 kV,Tran COLRIVER 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.4%	80.6%	-70.8%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran COLRIVER 500/230 1AA Bank
25512	JHINDMWD	230	25406	J.HINDS	230	r1	359	104.4%	37.8%	-66.6%	Line EAGLEMTN - IRON MTN 230 kV,Line J.HINDS - MIRAGE 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	117.3%	51.4%	-65.9%	Line BLYTHESC - EAGLEMTN 161 kV,Line EAGLEMTN - IRON MTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	117.3%	51.4%	-65.9%	Line EAGLEMTN - IRON MTN 230 kV,Tran EAGLEMTN 230/161 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	115.9%	51.1%	-64.8%	Line BLYTHE 161 kV Bus Tie (WALC - SCE),Line EAGLEMTN - IRON MTN 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	111.0%	50.1%	-60.9%	Line BLYTHESC - EAGLEMTN 161 kV,CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE
25406	J.HINDS	230	24806	MIRAGE	230	1	357	111.0%	50.1%	-60.9%	CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE,Tran EAGLEMTN 230/161 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	109.8%	49.7%	-60.1%	Line BLYTHE 161 kV Bus Tie (WALC - SCE),CAMINO - GENE - IRON MTN - MEAD 230 KV O
25406	J.HINDS	230	24806	MIRAGE	230	1	357	113.3%	54.2%	-59.1%	Line COLRIVER - REDBLUFF 500 kV Ckt 1,Line COLRIVER - REDBLUFF 500 kV Ckt 2
25512	JHINDMWD	230	25406	J.HINDS	230	r1	359	102.3%	43.3%	-59.0%	CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE,Line J.HINDS - MIRAGE 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	102.3%	44.3%	-58.0%	Line EAGLEMTN - IRON MTN 230 kV,Line PALOVRDE 500.0 to COLRIVER 500 kV Ckt 1

**2019 SCE summer Peak case - Buck-J.Hinds line looped into Colorado River and Red Bluff 230 kV substations
Overloaded facilities--Double contingency and N-1-1 (Category C)**

Overloaded Facilities								Pre-project*	Post-project*	delta	Outage description
From	Name	kV	To	Name	kV	ck	Rated Mva				
25406	J.HINDS	230	24806	MIRAGE	230	1	357	106.1%	52.5%	-53.6%	Line EAGLEMTN - IRON MTN 230 kV,Line J.HINDS 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	106.1%	52.5%	-53.6%	Line EAGLEMTN - IRON MTN 230 kV,Line J.HINDS 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	105.7%	52.3%	-53.4%	Line EAGLEMTN - IRON MTN 230 kV,Line EAGLEMTN 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	105.7%	52.3%	-53.4%	Line EAGLEMTN - IRON MTN 230 kV,Line EAGLEMTN 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.1%	99.8%	-51.3%	Line JHINDMWD - EAGLEMTN 230 kV,Tran REDBLUFF 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	151.1%	99.8%	-51.3%	Breaker J.HINDS 230 kV Bus Tie (MWD - SCE),Tran REDBLUFF 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.0%	50.7%	-50.3%	Line EAGLEMTN - IRON MTN 230 kV,Line COLRIVER - REDBLUFF 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.0%	50.7%	-50.3%	Line EAGLEMTN - IRON MTN 230 kV,Line COLRIVER - REDBLUFF 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.0%	51.0%	-50.0%	CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE,Line J.HINDS 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.0%	51.0%	-50.0%	CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE,Line J.HINDS 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.7%	50.7%	-50.0%	Line EAGLEMTN - IRON MTN 230 kV,Line MIRALOMA - SERRANO 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.6%	50.8%	-49.8%	Line EAGLEMTN - IRON MTN 230 kV,Line PARKER 230.0 to GENE 230.0 Ck
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.5%	50.8%	-49.7%	Line EAGLEMTN - IRON MTN 230 kV,Line GENE 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.5%	50.8%	-49.7%	Line EAGLEMTN - IRON MTN 230 kV,Line GENE 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.5%	50.9%	-49.6%	CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE,Line EAGLEMTN 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.5%	50.9%	-49.6%	CAMINO - GENE - IRON MTN - MEAD 230 KV OUTAGE,Line EAGLEMTN 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.0%	50.8%	-49.2%	Line EAGLEMTN - IRON MTN 230 kV,Line ETIWANDA - VSTA 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.5%	51.4%	-49.1%	Line EAGLEMTN - IRON MTN 230 kV,Line LUGO - MIRALOMA 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.5%	51.4%	-49.1%	Line EAGLEMTN - IRON MTN 230 kV,Line LUGO - MIRALOMA 500 kV Ckt 3
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.5%	51.4%	-49.1%	Line EAGLEMTN - IRON MTN 230 kV,Gen IEEC-G1 (PMAX 405MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.5%	51.4%	-49.1%	Line EAGLEMTN - IRON MTN 230 kV,Gen IEEC-G2 (PMAX 405MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.6%	51.6%	-49.0%	Line EAGLEMTN - IRON MTN 230 kV,Line LUGO - MOHAVE 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.0%	52.1%	-48.9%	Line EAGLEMTN - IRON MTN 230 kV,Line LUGO - VICTORVL 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.7%	52.0%	-48.7%	Line EAGLEMTN - IRON MTN 230 kV,Line MIRAGE - RAMON 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.5%	52.9%	-48.6%	Line EAGLEMTN - IRON MTN 230 kV,Line ELDORDO - LUGO 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.6%	53.1%	-48.5%	Line EAGLEMTN - IRON MTN 230 kV,Line LUGO - RANCHVST 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.1%	52.7%	-48.4%	Line EAGLEMTN - IRON MTN 230 kV,Line CVSUB230 - MIRAGE 230 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.3%	52.4%	-47.9%	Line EAGLEMTN - IRON MTN 230 kV,Gen MNTV-CCGT1 (PMAX 695MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.3%	52.4%	-47.9%	Line EAGLEMTN - IRON MTN 230 kV,Gen MNTV-CCGT2 (PMAX 695MW)
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.3%	53.6%	-47.7%	Line BLYTHESC - EAGLEMTN 161 kV,Line J.HINDS 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.3%	53.6%	-47.7%	Line BLYTHESC - EAGLEMTN 161 kV,Line J.HINDS 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.3%	53.6%	-47.7%	Line J.HINDS 1A Bank 230 kV Lead,Tran EAGLEMTN 230/161 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.3%	53.6%	-47.7%	Line J.HINDS 2A Bank 230 kV Lead,Tran EAGLEMTN 230/161 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.6%	53.4%	-47.2%	Line BLYTHESC - EAGLEMTN 161 kV,Line EAGLEMTN 1A Bank 230 kV Lead

**2019 SCE summer Peak case - Buck-J.Hinds line looped into Colorado River and Red Bluff 230 kV substations
Overloaded facilities--Double contingency and N-1-1 (Category C)**

Overloaded Facilities								Pre-project*	Post-project*	delta	Outage description
From	Name	kV	To	Name	kV	ck	Rated Mva				
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.6%	53.4%	-47.2%	Line BLYTHESC - EAGLEMTN 161 kV,Line EAGLEMTN 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.6%	53.4%	-47.2%	Line EAGLEMTN 1A Bank 230 kV Lead,Tran EAGLEMTN 230/161 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.6%	53.4%	-47.2%	Line EAGLEMTN 2A Bank 230 kV Lead,Tran EAGLEMTN 230/161 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.7%	53.5%	-47.2%	Line BLYTHE 161 kV Bus Tie (WALC - SCE),Line J.HINDS 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.7%	53.5%	-47.2%	Line BLYTHE 161 kV Bus Tie (WALC - SCE),Line J.HINDS 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.1%	53.3%	-46.8%	Line BLYTHE 161 kV Bus Tie (WALC - SCE),Line EAGLEMTN 1A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.1%	53.3%	-46.8%	Line BLYTHE 161 kV Bus Tie (WALC - SCE),Line EAGLEMTN 2A Bank 230 kV Lead
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.1%	54.9%	-45.2%	Tran EAGLEMTN 230/161 kV,Line ELDORDO - LUGO 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.2%	55.1%	-45.1%	Line BLYTHESC - EAGLEMTN 161 kV,Line LUGO - RANCVST 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.2%	55.1%	-45.1%	Tran EAGLEMTN 230/161 kV,Line LUGO - RANCVST 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.1%	55.0%	-45.1%	Line BLYTHESC - EAGLEMTN 161 kV,Line ELDORDO - LUGO 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.6%	55.6%	-45.0%	Line EAGLEMTN - IRON MTN 230 kV,Tran DEVERS 500/230 2AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.7%	56.2%	-44.5%	Line EAGLEMTN - IRON MTN 230 kV,Tran DEVERS 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.2%	59.7%	-40.5%	Line ELDORDO - LUGO 500 kV Ckt 1,Line LUGO - VICTORVL 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.7%	67.1%	-34.6%	Line EAGLEMTN - IRON MTN 230 kV,Line DEVERS - REDBLUFF 500 kV Ckt 1
25406	J.HINDS	230	24806	MIRAGE	230	1	357	101.8%	67.3%	-34.5%	Line EAGLEMTN - IRON MTN 230 kV,Line DEVERS - REDBLUFF 500 kV Ckt 2
25406	J.HINDS	230	24806	MIRAGE	230	1	357	102.8%	70.5%	-32.3%	Line CVSUB230 - MIRAGE 230 kV Ckt 1,Line MIRAGE - RAMON 230 kV
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.0%	69.1%	-30.9%	Line EAGLEMTN - IRON MTN 230 kV,Tran COLRIVER 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	100.2%	81.1%	-19.1%	Line EAGLEMTN - IRON MTN 230 kV,Tran REDBLUFF 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	119.4%	172.3%	52.9%	Line DEVERS - REDBLUFF 500 kV Ckt 1,Line DEVERS - REDBLUFF 500 kV Ckt 2
25401	EAGLEMTN	230	25405	IRON MTN	230	1	250	19.5%	110.1%	90.6%	Tran COLRIVER 500/230 1AA Bank,Tran REDBLUFF 500/230 1AA Bank
25512	JHINDMWD	230	25401	EAGLEMTN	230	1	359	40.4%	138.1%	97.7%	Tran COLRIVER 500/230 1AA Bank,Tran REDBLUFF 500/230 1AA Bank
25512	JHINDMWD	230	25406	J.HINDS	230	r1	359	55.4%	155.1%	99.7%	Tran COLRIVER 500/230 1AA Bank,Tran REDBLUFF 500/230 1AA Bank
25406	J.HINDS	230	24806	MIRAGE	230	1	357	91.0%	231.4%	140.4%	Tran COLRIVER 500/230 1AA Bank,Tran REDBLUFF 500/230 1AA Bank

* Pre-project is the existing system---Buck Blvd substation is directly connected to Julian Hinds substation through a 230 kV transmission line

Post-project is the existing transmission line looping into Colorado River and Red Bluff 230 kV substations and then terminating into Julian Hinds substation