2018-2019 ISO Reliability Assessment - Preliminary Study Results

Study Area: SCE Tehachapi & Big Creek Corridor

Thermal Overloads

Overloaded Facility	Contingency (All and Worst P6)	Category	Category Description	Loading % (Baseline Scenarios)					Loading % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
MAGUNDEN-PASTORIA 230kV 1(or2)	MAGUNDEN-PASTORIA 230kV 2(or1) and 3(or 2) (with RAS)	P7	N-2	-	-	-	-	-	-	<100	-	Generation Re-dispatch
MAGUNDEN-SPRINGVL 230 kV 1 or 2	MAGUNDEN-VESTAL 230kV 1 and 2 (with RAS)	P7	N-2	<100	<100	<100	-	-	-	-	-	Big Creek RAS
MAGUNDEN-SPRINGVL 230 kV 2	RECTOR-VESTAL 230 kV 1 and 2 (with RAS)	P7	N-2	<100	<100	<100	-	-	-	-	-	Big Creek RAS
	MAGUNDEN-SPRINGVL 230 kV 1 and MAGUNDEN-VESTAL 230kV 1(or)2 (with RAS)	P6	N-1-1	<100	<100	<100	-	-	-	-	-	Big Creek RAS
	MAGUNDEN-SPRINGVL 230 kV 1 and RECTOR-VESTAL 230 kV 1(or)2 (with RAS)	P6	N-1-1	<100	<100	<100	-	-	-	-	-	Big Creek RAS
MAGUNDEN-VESTAL 230kV 1 or 2	MAGUNDEN-SPRINGVL 230 kV 1(or) 2 and MAGUNDEN-VESTAL 230kV 1(or)2 (with RAS)	P6	N-1-1	<100	<100	<100	-	-	-	-	-	Big Creek RAS
SPRINGVL-RECTOR 230 kV 1	MAGUNDEN-VESTAL 230kV 1 and 2 (with RAS)	P6	N-1-1	<100	<100	<100	-	-	-	-	-	Big Creek RAS
BIG CRK 3 - RECTOR 230 kV 1	RECTOR - BIG CRK 3 and BIG CRK 1 - RECTOR	P7	N-2	-	-	-	-	-	<100	-	-	Big Creek RAS- Generation Runback
SPRINGVL- BIG CRK 4 230 kV 1	RECTOR 1- BIG CRK 3 & RECTOR 2 - BIG CRK 3	P7	N-2	-	-	-	-	-	-	-	<100	Big Creek RAS- Generation Runback

Study Area: SCE Tehachapi & Big Creek Corridor

High/Low Voltages

Substation	Contingency (All and Worst P6)	Category	Category Description	Post Cont. Voltage Deviation % (Baseline Scenarios)					Post Cont. Voltage Deviation % (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
No Voltage Deviation violations were identified during the studies												

Study Area: SCE Tehachapi & Big Creek Corridor

Voltage Deviation

Substation	Contingency (All and Worst P6)	Category	Category Description	Voltage PU (Baseline Scenarios)					Voltage PU (Sensitivity Scenarios)			Project & Potential Mitigation Solutions
				2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
BAILEY 230kV	PARDEE-BAILEY 230kV and BAILEY-PASTORIA 230kV	P6	N-1-1	0.88	0.88	0.86	0.85	0.847	0.87	0.846	0.88	Operating Proceedure 46

Study Area: SCE Tehachapi & Big Creek Corridor

Transient Stability

Contingency	Category	Category Description	Transient Stability Performance (Number of voltage and frequency violations)								Potential Mitigation Solutions
			2020 Summer Peak	2023 Summer Peak	2028 Summer Peak	2020 Spring Off-Peak	2023 Spring Off-Peak	2023 SP High CEC Forecast	2023 SpOP Hi Renew & Min Gas Gen	2020 SP Heavy Renewable & Min Gas Gen	
Big Creek 1-Big Creek 2 230 kV line	P5	N-1	Stable	-	Stable	-	local area instability	-	Stable	Stable	Project: Protection project In-Service Date: 12/31/2019 Short term: system re-dispatch
Big Creek 3 (Bus) NRBD	P5	Non-redundant bus-differential	Stable	-	Stable	-	local area instability	-	Stable	Stable	Redundant bus differential being considered
Mangunden NRBD	P5	Non-redundant bus-differential	local area instability	-	local area instability	-	local area instability	-	local area instability	local area instability	Redundant bus differential being considered
Pastoria NRBD	P5	Non-redundant bus-differential	Stable	-	Stable	-	local area instability	-	local area instability	Stable	Redundant bus differential being considered
Springville NRBD	P5	Non-redundant bus-differential	Stable	-	Stable	-	Stable	-	Stable	Stable	
Big Creek 1-Rector & Rector-Vestal No.1	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Big Creek 3-Rector No.1 & Rector-Vestal No.2	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Big Creek 4-Springville & Magunden-Springville No.2	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Big Creek 1-Rector & Big Creek 3-Rector No.1	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Big Creek 3-Rector No.2 & Big Creek 4-Springville	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Big Creek 4-Springville & Rector-Springville	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Rector-Vestal No.1 & Rector-Vestal No.2	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	Big Creek RAS
Magunden-Springville No.1 & Magunden-Springville No.2	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	Big Creek RAS
Magunden-Vestal No.1 & Magunden-Vestal No.2	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	Big Creek RAS
Big Creek 3-Rector No.2 & Rector-Springville	P7	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Magunden-Pastoria No. 1 & Bailey-Pastoria	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Magunden-Pastoria No. 2 & Pardee-Pastoria	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Magunden-Pastoria No. 3 & Pardee-Pastoria-Warne	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Pardee-Pastoria & Pardee-Vincent No.2	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Bailey-Pardee & Pardee-Vincent No.1	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Pardee-Pastoria-Warne & Pardee-Santa clara	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Mesa-Vincent No.2 & Santa Clara-Vincent	P4	1 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Magunden-Pastoria No. 1 & Magunden-Pastoria No. 2	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Magunden-Pastoria No. 1 & Magunden-Pastoria No. 3	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Magunden-Pastoria No. 2 & Magunden-Pastoria No. 3	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Bailey-Pastoria & Pardee-Pastoria	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Bailey-Pastoria & Pardee-Pastoria-Warne	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Pardee-Pastoria & Pardee-Pastoria-Warne	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Pardee-Pastoria & Bailey-Pardee	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Pardee-Pastoria-Warne & Bailey-Pardee	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Antelope-Magunden No. 1 & Antelope-Magunden No. 2	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	
Pardee-Vincent No. 1 & Pardee-Vincent No. 2	P6	3 Phase	Stable	-	Stable	-	Stable	-	Stable	Stable	

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Single Contingency Load Drop

Worst Contingency	Category	Category Description	Amount of Load Drop (MW)								Potential Mitigation Solutions
			Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	

No single contingency resulted in total load drop of more than 250 MW.

2018-2019 ISO Reliability Assessment - Preliminary Study Results

Study Area: SCE Tehachapi & Big Creek Corridor

Single Source Substation with more than 100 MW Load

Substation	Load Served (MW)								Potential Mitigation Solutions
	Select..	Select..	Select..	Select..	Select..	Select..	Select..	Select..	

No single source substation with more than 100 MW Load