



# Circuit Reliability Review

## **Apple Valley**

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January 2017

# Providing Safe, Reliable, and Affordable Power

Southern California Edison is modernizing the power grid to meet the changing needs and expectations of our customers and to help California achieve its clean energy goals.

We are investing more than \$12 billion into our power grid between 2015 – 2017 with the goal of increasing power reliability through significant upgrades. These investments include:

- Updating thousands of transmission and distribution poles
- Replacing hundreds of miles of underground cables
- Replacing hundreds of underground structures such as vaults and manholes
- Upgrading critical distribution equipment; capacitor banks, switches, and circuit breakers
- Building new distribution circuits to serve electrical demands in our communities
- Inspecting and replacing overhead conductor and equipment to improve public safety

Our investments in local communities will help ensure that customers receive safe, reliable, and affordable electricity now and in the future.

# Understanding Your Reliability Report

As your electric utility, we want you to always have power when you need it. To get there, we constantly track and monitor electric outages across our service territory, and we measure our “system reliability” from this data.

The two metrics we rely on are common in the electric utility industry: the System Average Interruption Duration Index (SAIDI) and the System Average Interruption Frequency Index (SAIFI). Both are described in more detail on the next page.

Replacing and upgrading our infrastructure will help SCE maintain or improve SAIDI and SAIFI measurements.

This report provides historical reliability data for the circuits that serve your jurisdiction and our proposed infrastructure upgrades for the current year.

To view other reliability reports, visit [sce.com>Outage Center>Maintaining Reliable Service](https://sce.com/Outage-Center/Maintaining-Reliable-Service)

# Reliability Metrics

## MOMENTARY OUTAGES:

OUTAGES LASTING 5 MINUTES OR LESS

### MAIFI:

- The number of times the average customer is interrupted by Momentary outages each year.

## SUSTAINED OUTAGES:

OUTAGES LASTING LONGER THAN 5 MINUTES

### SAIFI:

- The number of times the average customer is interrupted by Sustained outages each year.

### SAIDI:

- The cumulative amount of time the average customer is interrupted by Sustained outages each year.

# Cities in the Victorville District

Adelanto

Hesperia

Mountain View Acres

**Town of Apple Valley**

Victorville

Wrightwood

# Reliability by SCE District (No Exclusions)

District Name	2012				2013				2014				2015				2016			
	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking	District SAIDI	SAIDI RANKING	District SAIFI	SAIFI Ranking
ANTELOPE VALLEY	78.60	28	0.56	31	94.42	22	0.62	31	51.05	35	0.59	34	104.34	22	0.68	30	107.67	24	0.87	29
ARROWHEAD	129.58	13	1.31	7	180.59	7	1.39	8	193.25	5	1.59	5	362.61	4	3.97	1	659.46	3	2.85	5
BARSTOW	184.80	7	1.15	12	204.33	6	1.40	7	201.53	4	1.34	10	187.11	8	1.17	12	134.83	18	1.35	9
BIG CREEK	1184.25	1	4.52	1	176.51	8	3.08	1	920.25	1	1.34	11	422.77	2	3.42	2	1062.01	2	4.99	1
BISHOP	463.09	2	1.25	9	104.44	17	0.51	35	118.79	17	0.59	35	298.11	6	2.22	4	168.59	8	1.22	14
BLYTHE	225.88	6	1.53	3	483.13	1	1.38	9	707.54	2	2.42	2	427.00	1	1.52	7	396.38	5	2.71	6
CATALINA	78.46	30	0.72	29	105.94	16	2.97	2	97.02	24	4.17	1	42.56	35	2.25	3	65.01	35	3.66	3
COVINA	108.73	19	0.92	19	100.51	19	0.86	20	91.60	27	0.87	22	100.08	23	0.81	25	112.13	22	0.97	24
DOMINGUEZ HILLS	117.22	18	0.82	24	89.17	26	0.80	21	82.30	29	0.71	28	130.63	15	0.97	17	146.38	12	1.11	17
FOOTHILL	91.69	25	0.90	20	85.80	27	0.79	24	93.35	25	0.93	21	109.64	20	0.95	20	142.81	14	1.03	21
FULLERTON	68.99	33	0.42	35	90.57	25	0.79	22	82.23	30	0.72	27	76.59	29	0.67	31	92.72	30	0.76	34
HUNTINGTON BEACH	95.78	23	0.89	21	66.51	32	0.68	29	79.61	31	0.78	25	98.32	25	0.95	19	128.02	20	1.26	12
KERNVILLE	226.76	5	1.31	6	232.18	4	1.96	3	178.69	8	1.99	3	286.38	7	0.96	18	2421.32	1	3.67	2
LONG BEACH	75.83	31	0.55	33	75.11	30	0.70	28	66.33	34	0.61	32	164.46	9	0.89	23	135.16	17	0.86	31
MENIFEE	99.32	22	0.84	23	107.39	15	1.26	10	156.68	11	1.32	12	111.46	19	0.98	16	156.75	9	1.31	10
MONROVIA	108.11	20	1.13	15	99.12	20	1.02	16	133.32	14	1.16	16	96.68	26	0.88	24	116.57	21	0.84	32
MONTEBELLO	131.06	12	1.13	14	118.08	13	1.17	12	158.34	10	1.16	15	150.28	12	1.18	11	133.52	19	1.17	15
ONTARIO	93.09	24	0.87	22	77.39	29	0.79	23	97.91	23	1.00	19	94.04	27	0.74	27	105.07	27	0.93	27
PALM SPRINGS	175.92	8	1.27	8	112.80	14	0.77	25	107.04	20	0.71	29	99.54	24	0.80	26	107.58	25	1.07	19
REDLANDS	120.13	16	1.11	16	96.48	21	1.04	15	154.25	12	1.04	18	124.52	17	1.01	14	137.11	16	0.98	23
RIDGECREST	229.65	4	1.44	4	161.95	9	1.12	13	176.84	9	1.57	6	148.90	13	1.01	15	254.31	6	1.05	20
SADDLEBACK	83.01	27	0.73	27	70.69	31	0.53	34	99.07	22	0.74	26	46.03	34	0.39	35	65.99	34	0.65	35
SAN JOAQUIN	135.90	10	1.04	18	244.44	2	1.45	6	138.25	13	1.17	14	127.50	16	1.05	13	108.44	23	1.09	18
SANTA ANA	78.60	29	0.55	32	93.35	24	0.74	26	91.68	26	0.84	23	67.46	32	0.71	29	97.27	29	1.00	22
SANTA BARBARA	153.81	9	1.15	13	82.00	28	0.70	27	183.78	7	1.38	9	152.37	11	1.52	6	156.66	10	1.41	8
SANTA MONICA	101.69	21	0.79	25	122.78	12	1.00	17	110.76	19	0.99	20	75.41	30	0.62	32	91.08	31	0.95	26
SOUTH BAY	122.68	15	1.17	10	142.15	10	1.49	5	125.28	16	1.39	8	164.07	10	1.31	8	183.90	7	1.88	7
TEHACHAPI	117.96	17	1.43	5	232.67	3	1.12	14	130.70	15	1.29	13	298.96	5	1.21	9	97.29	28	1.13	16
THOUSAND OAKS	127.73	14	1.05	17	93.86	23	0.91	18	104.37	21	1.10	17	106.59	21	0.92	21	143.78	13	1.31	11
VALENCIA	62.01	35	0.46	34	51.04	34	0.53	33	79.23	32	0.61	33	72.27	31	0.61	33	105.09	26	0.97	25
VENTURA	134.81	11	1.15	11	100.52	18	1.21	11	183.79	6	1.65	4	148.85	14	1.19	10	150.41	11	1.24	13
VICTORVILLE	67.70	34	0.66	30	61.33	33	0.63	30	68.85	33	0.63	31	87.03	28	0.91	22	79.35	33	0.92	28
WHITTIER	72.60	32	0.74	26	135.04	11	0.86	19	87.60	28	0.70	30	114.52	18	0.73	28	137.34	15	0.81	33
WILDOMAR	88.54	26	0.72	28	40.51	35	0.56	32	118.49	18	0.81	24	52.70	33	0.60	34	84.01	32	0.87	30
YUCCA VALLEY	319.82	3	3.41	2	216.97	5	1.50	4	304.25	3	1.49	7	389.08	3	1.80	5	463.68	4	3.39	4
<b>SCE SystemWide</b>	<b>108.13</b>		<b>0.89</b>		<b>102.61</b>		<b>0.91</b>		<b>112.00</b>		<b>0.96</b>		<b>114.83</b>		<b>0.92</b>		<b>134.48</b>		<b>1.10</b>	

\*\*Exclusions\*\* are days which utilities are allowed to remove from their metrics because the outages on those days were caused by a severe acts of nature.

\*\*In the columns showing "Rank," lower numbers indicate poorer performance.

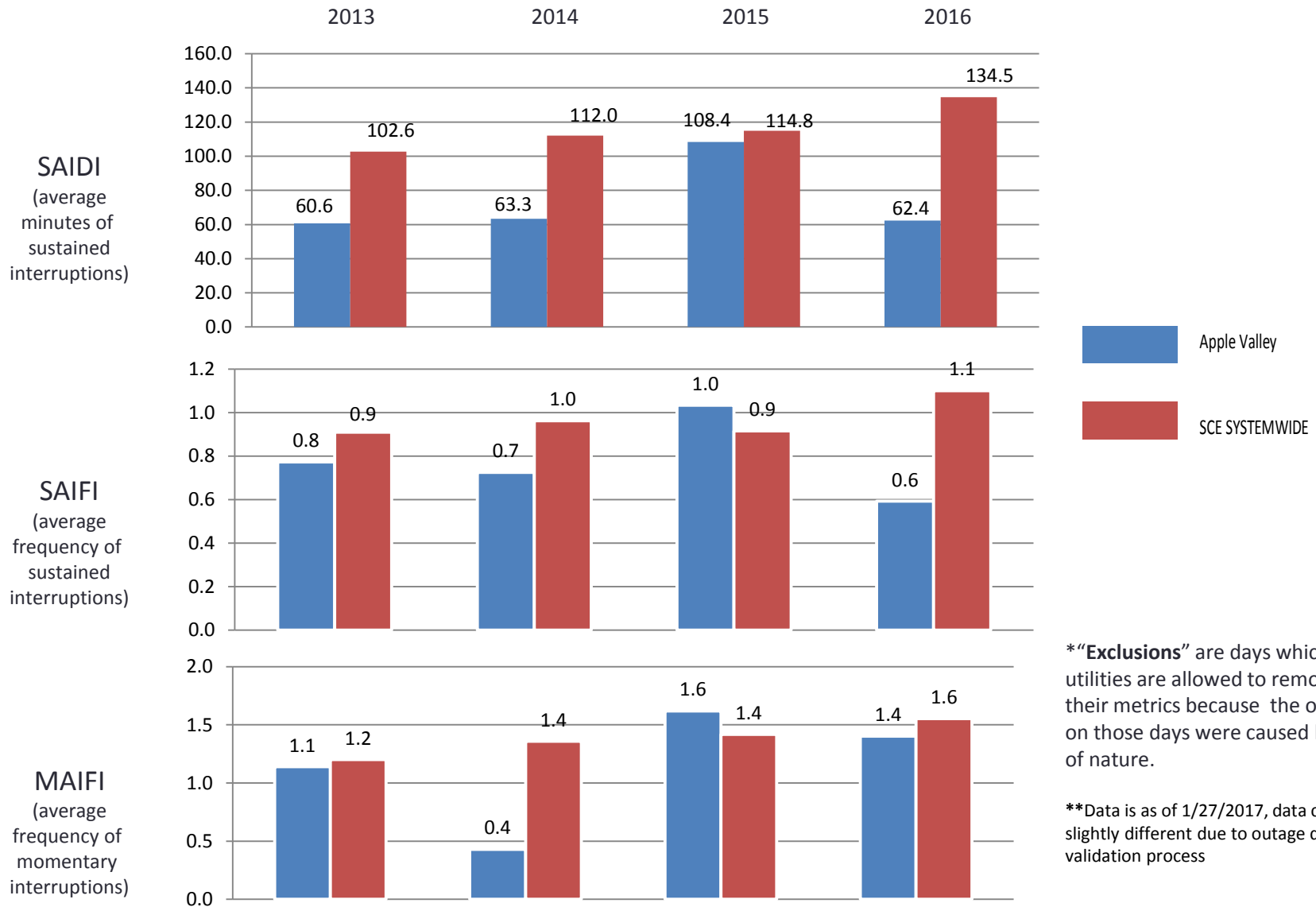
# Overview of Apple Valley

## There are 23 circuits that serve Apple Valley

Circuit Type	Sum of Customers	Circuit Type	Sum of Customers	Circuit Type	Sum of Customers	Circuit Type	Sum of Customers
BOISE(12KV)	1,681						
CHOICEANNA(12KV)	2,383						
COCHISE(12KV)	1,157						
DEEP CREEK(12KV)	1,303						
DELORO(12KV)	2,315						
JESS(12KV)	1,638						
KASOTA(12KV)	1,772						
KIOWA(12KV)	1,960						
KNOLLS(12KV)	2,046						
LAKOTA(12KV)	2,828						
MARIANNA(12KV)	1,802						
NISQUALLY(33KV)	1						
PAHUTE(12KV)	1,606						
PRAYER(12KV)	1,060						
SEALS(12KV)	964						
SENECA(33KV)	1						
SPEAR(12KV)	1,571						
STANDING ROCK(12KV)	2,296						
SYMERON(12KV)	1,504						
TONTO(12KV)	2,588						
TUSSING(12KV)	1,883						
UNDERWORLD(12KV)	554						
YUCCA LOMA(12KV)	1,215						

**Grand Total** 36,128

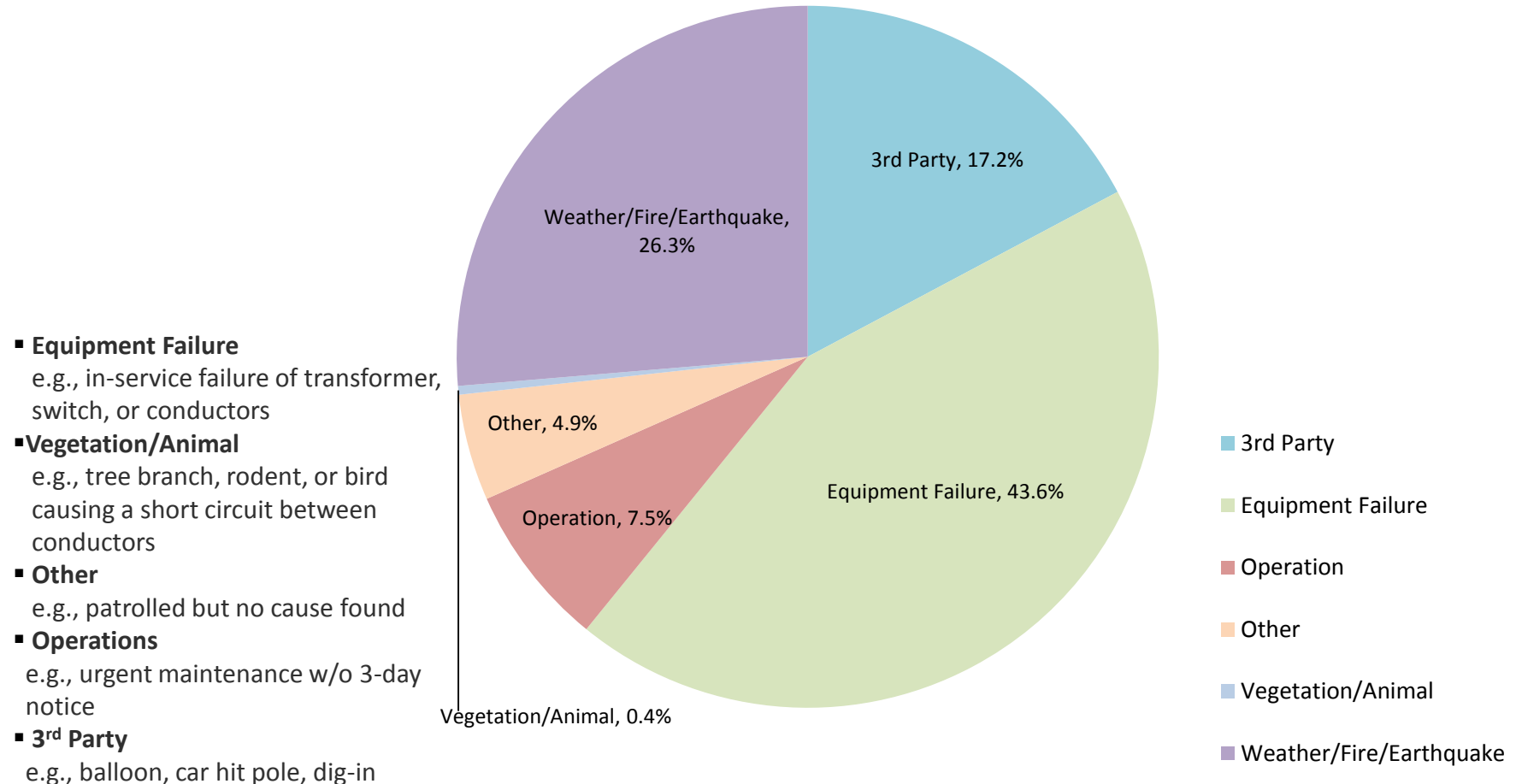
# Reliability History of Circuits Serving Apple Valley (No Exclusions)





# Causes of Repair Outages in Apple Valley Circuits 2016 YTD

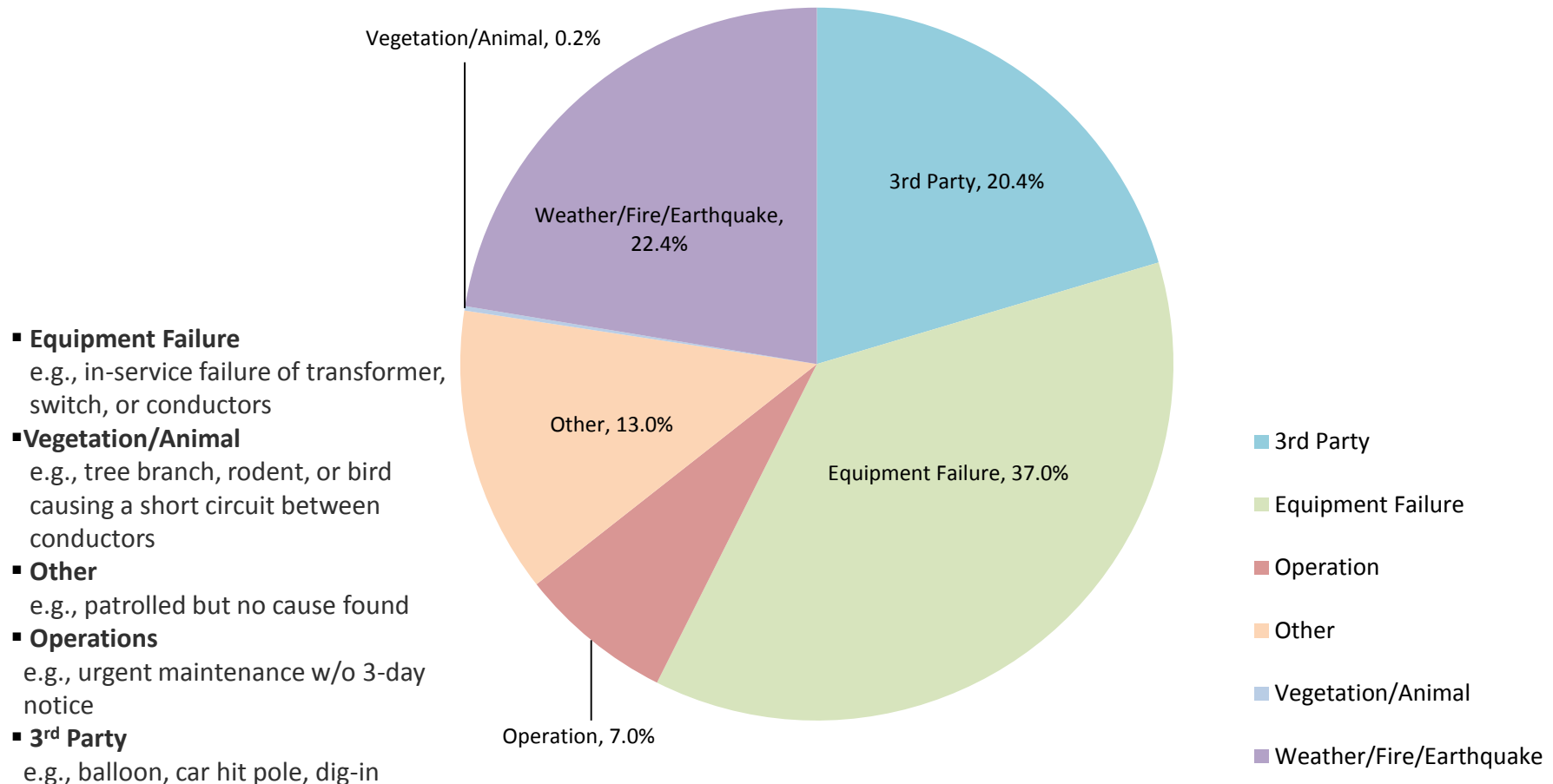
## Contributions to SAIDI by Outage Cause



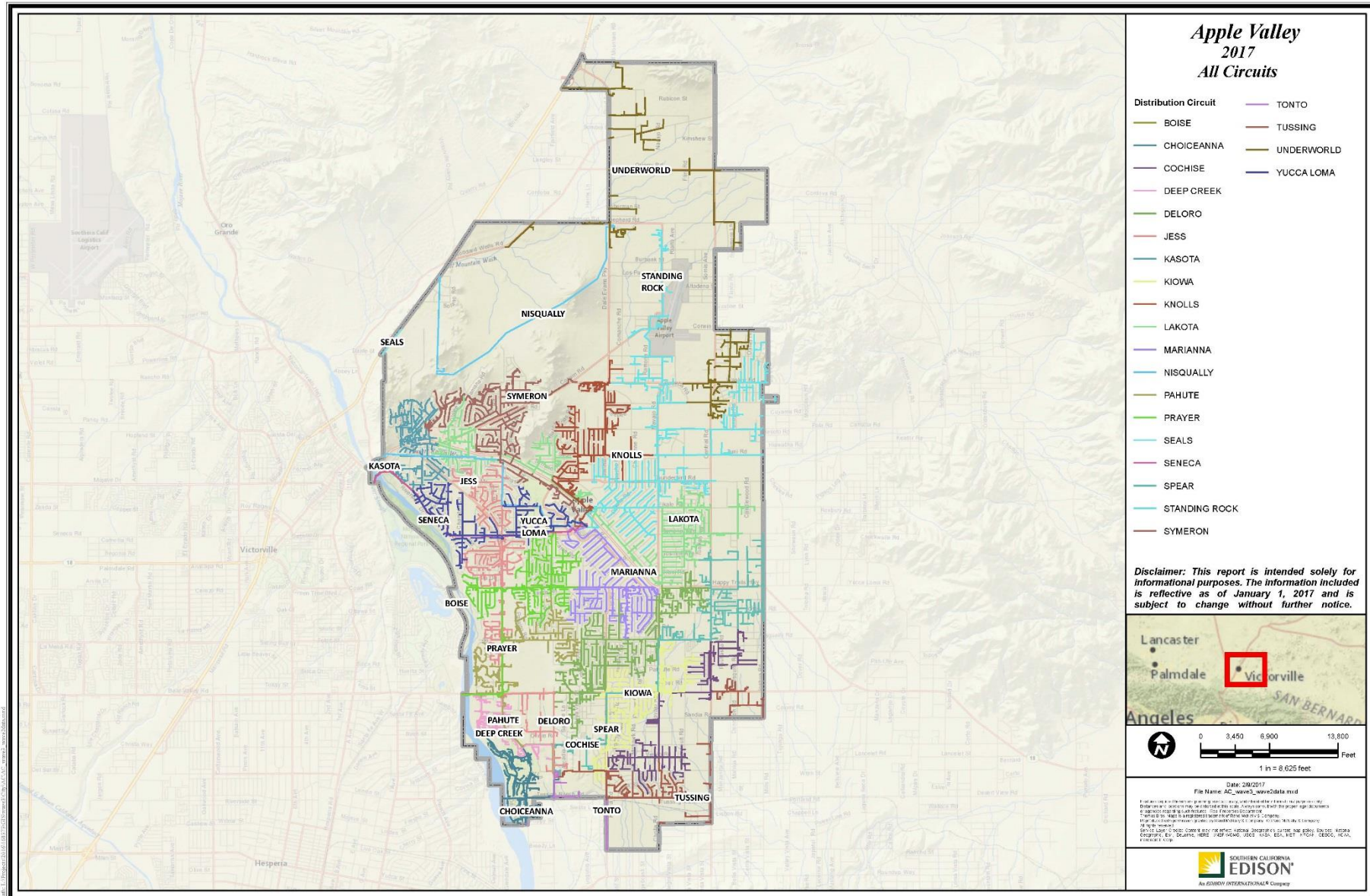
**SAIDI** = the cumulative amount of time the average customer is interrupted by “sustained” outages each year.

# Causes of Repair Outages in Apple Valley Circuits 2016 YTD

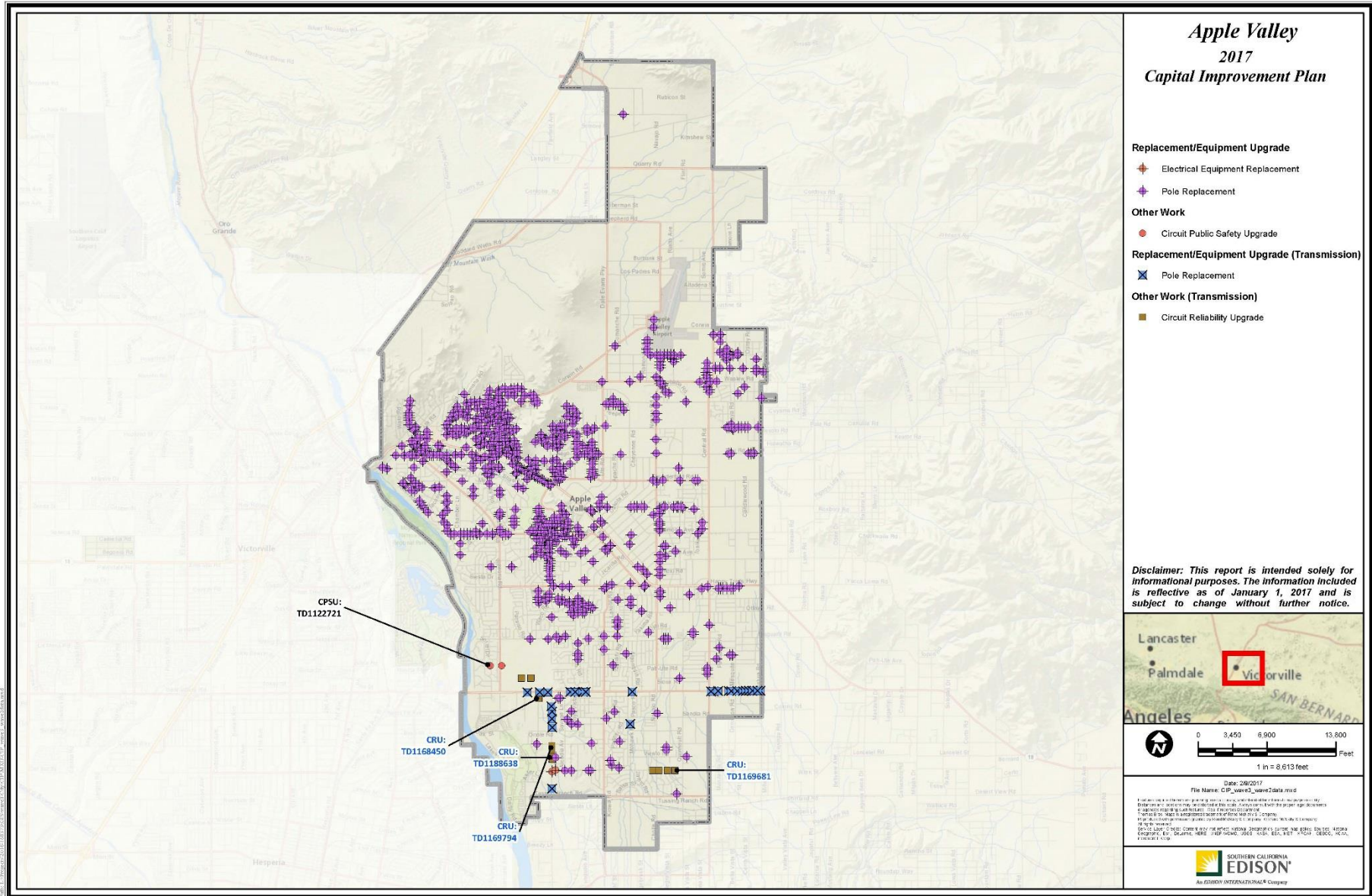
## Contributions to SAIFI by Outage Cause



**SAIFI** = the number of times the average customer is interrupted by “sustained” outages each year.







# Back-up Slides

**Reliability Histories of Circuits Serving Apple Valley**

**Updated through Year-End 2016**

# Average Reliability of 23 Circuits Serving Apple Valley

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
<b>Apple Valley</b>	<b>60.6</b>	<b>0.8</b>	<b>1.1</b>	<b>63.3</b>	<b>0.7</b>	<b>0.4</b>	<b>108.4</b>	<b>1.0</b>	<b>1.6</b>	<b>7.3</b>	<b>0.1</b>	<b>0.2</b>	<b>18.0</b>	<b>0.2</b>	<b>0.3</b>	<b>4.5</b>	<b>0.0</b>	<b>0.2</b>	<b>32.5</b>	<b>0.3</b>	<b>0.7</b>	<b>62.4</b>	<b>0.6</b>	<b>1.4</b>
3rd Party	37%	27%	20%	56%	44%	3%	7%	11%	6%	69%	90%	22%	11%	19%	35%	1%	1%	43%	11%	5%	2%	17%	20%	18%
Equipment Failure	30%	26%	19%	25%	28%	10%	40%	32%	18%	27%	8%	26%	64%	59%	21%	69%	40%	46%	32%	33%	36%	44%	37%	33%
Operation	17%	22%	0%	8%	14%	15%	4%	12%	25%	4%	2%	26%	14%	4%	0%	0%	11%	11%	6%	10%	0%	8%	7%	6%
Other	12%	23%	50%	3%	2%	62%	17%	23%	38%	0%	0%	27%	3%	7%	36%	27%	46%	0%	4%	17%	17%	5%	13%	19%
Vegetation/Animal	3%	2%	3%	7%	11%	0%	2%	7%	2%	0%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	1%	1%	8%	0%	0%	10%	30%	15%	11%	0%	0%	0%	8%	10%	7%	0%	0%	0%	46%	35%	45%	26%	22%	24%
<b>SCE Systemwide</b>	<b>102.6</b>	<b>0.9</b>	<b>1.2</b>	<b>112.0</b>	<b>1.0</b>	<b>1.4</b>	<b>114.8</b>	<b>0.9</b>	<b>1.4</b>	<b>40.5</b>	<b>0.3</b>	<b>0.4</b>	<b>34.8</b>	<b>0.3</b>	<b>0.4</b>	<b>29.4</b>	<b>0.2</b>	<b>0.3</b>	<b>29.8</b>	<b>0.3</b>	<b>0.4</b>	<b>134.5</b>	<b>1.1</b>	<b>1.6</b>

## Notes:

No outages are excluded from the metrics.

## Outage Causes:

Other: e.g., patrolled but no cause could be found

Operations: e.g., urgent maintenance w/o 3-day notice to customers

3<sup>rd</sup> Party: e.g., balloons, car hit pole, dig-in

Vegetation/Animal: e.g., tree branch, rodent, or bird causing short circuit across conductors

SAIDI (minutes) = the cumulative amount of time the average customer is interrupted by "sustained" (longer than 5 minutes) outages.

SAIFI (interruptions) = the number of times the average customer is interrupted by "sustained" outages.

MAIFI (interruptions) = the number of times the average customer is interrupted by "momentary" (lasting 5 minutes or less) outages.

# Reliability Histories for Individual Circuits Serving Apple Valley

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
<b>BOISE(12KV) - Customers: 1,681</b>	<b>4.2</b>	<b>0.2</b>	<b>1.0</b>	<b>89.6</b>	<b>0.4</b>	<b>0.0</b>	<b>364.1</b>	<b>3.7</b>	<b>1.5</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>13.7</b>	<b>0.0</b>	<b>0.0</b>	<b>14.3</b>	<b>0.1</b>	<b>0.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	24%	47%	0%	76%	45%	0%	92%	65%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	98%	77%	0%	94%	63%	0%
Operation	76%	53%	0%	24%	55%	0%	6%	7%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	2%	23%	0%	6%	37%	0%
Other	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	2%	27%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>CHOICEANNA(12KV) - Customers: 2,383</b>	<b>0.0</b>	<b>0.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>172.3</b>	<b>0.5</b>	<b>2.0</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>7.0</b>	<b>0.3</b>	<b>0.0</b>	<b>7.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	12%	31%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	100%	100%	100%	0%	0%	0%	41%	44%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	29%	100%	100%	29%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	0%	0%	14%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	48%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	57%	0%	0%	57%
<b>COCHISE(12KV) - Customers: 1,157</b>	<b>0.1</b>	<b>0.0</b>	<b>1.0</b>	<b>9.5</b>	<b>0.0</b>	<b>1.0</b>	<b>6.3</b>	<b>0.0</b>	<b>5.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.5</b>	<b>0.0</b>	<b>0.0</b>	<b>1.6</b>	<b>0.0</b>	<b>0.0</b>	<b>3.5</b>	<b>0.0</b>	<b>0.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	43%	29%	100%	5%	5%	19%	0%	0%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%	100%	100%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	19%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	100%	57%	71%	0%	21%	59%	39%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	100%	100%	0%	0%	0%	0%	4%	9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	70%	27%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>DEEP CREEK(12KV) - Customers: 1,303</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>215.5</b>	<b>1.1</b>	<b>1.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	0%	0%	0%	93%	95%	42%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	100%	100%	0%	0%	0%	0%	7%	5%	58%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

# Reliability Histories for Individual Circuits Serving Apple Valley

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
<b>DELOORO(12KV) - Customers: 2,315</b>	<b>130.1</b>	<b>1.1</b>	<b>0.0</b>	<b>112.4</b>	<b>2.2</b>	<b>0.1</b>	<b>0.3</b>	<b>0.0</b>	<b>1.3</b>	<b>23.4</b>	<b>0.5</b>	<b>0.0</b>	<b>9.5</b>	<b>0.0</b>	<b>0.9</b>	<b>4.3</b>	<b>0.0</b>	<b>0.5</b>	<b>68.3</b>	<b>0.6</b>	<b>0.0</b>	<b>105.6</b>	<b>1.1</b>	<b>1.3</b>
3rd Party	79%	90%	0%	71%	52%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	22%	40%	34%
Equipment Failure	21%	9%	0%	6%	1%	0%	100%	100%	0%	0%	0%	0%	66%	70%	100%	100%	100%	0%	46%	4%	0%	40%	6%	66%
Operation	0%	0%	0%	22%	47%	100%	0%	0%	68%	0%	0%	0%	34%	30%	0%	0%	0%	0%	40%	77%	0%	29%	43%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	32%	0%	0%	0%	0%	0%	0%	0%	0%	0%	14%	20%	0%	9%	11%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>JESS(12KV) - Customers: 1,638</b>	<b>135.8</b>	<b>4.2</b>	<b>1.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>26.9</b>	<b>1.9</b>	<b>1.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.3</b>	<b>0.0</b>	<b>1.3</b>	<b>0.6</b>	<b>0.0</b>	<b>1.0</b>	<b>57.3</b>	<b>0.4</b>	<b>0.0</b>	<b>64.2</b>	<b>0.4</b>	<b>2.3</b>
3rd Party	46%	22%	8%	0%	0%	0%	51%	49%	10%	0%	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	1%	0%	43%
Equipment Failure	39%	53%	0%	0%	0%	0%	3%	0%	22%	0%	0%	0%	1%	2%	0%	0%	0%	0%	100%	100%	0%	89%	92%	0%
Operation	14%	24%	0%	0%	0%	0%	45%	50%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	1%	1%	92%	0%	0%	0%	0%	0%	62%	0%	0%	0%	99%	98%	100%	0%	0%	0%	0%	0%	0%	10%	8%	57%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>KASOTA(12KV) - Customers: 1,772</b>	<b>21.4</b>	<b>0.1</b>	<b>1.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>29.0</b>	<b>0.1</b>	<b>1.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>
3rd Party	0%	0%	49%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	0%	0%	0%	93%	45%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%
Operation	100%	100%	0%	0%	0%	0%	7%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	51%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>KIOWA(12KV) - Customers: 1,960</b>	<b>52.0</b>	<b>0.1</b>	<b>0.6</b>	<b>299.3</b>	<b>1.2</b>	<b>0.2</b>	<b>2.8</b>	<b>0.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>5.8</b>	<b>0.0</b>	<b>0.0</b>	<b>6.3</b>	<b>0.0</b>	<b>0.0</b>
3rd Party	0%	0%	67%	97%	87%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	89%	71%	33%	0%	0%	0%	24%	50%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	7%	5%	0%
Operation	11%	29%	0%	3%	13%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	93%	95%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	76%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%



# Reliability Histories for Individual Circuits Serving Apple Valley

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
<b>KNOLLS(12KV) - Customers: 2,046</b>	<b>118.7</b>	<b>1.0</b>	<b>0.0</b>	<b>85.0</b>	<b>1.2</b>	<b>0.0</b>	<b>127.4</b>	<b>1.1</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>83.3</b>	<b>1.0</b>	<b>1.7</b>	<b>84.2</b>	<b>1.0</b>	<b>1.7</b>
3rd Party	0%	0%	0%	62%	84%	0%	3%	2%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	78%	29%	0%	78%	29%	0%
Equipment Failure	100%	100%	100%	0%	0%	0%	96%	96%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	22%	71%	100%	21%	71%	100%
Operation	0%	0%	0%	38%	16%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>LAKOTA(12KV) - Customers: 2,828</b>	<b>37.4</b>	<b>1.0</b>	<b>1.0</b>	<b>75.2</b>	<b>1.3</b>	<b>2.0</b>	<b>40.7</b>	<b>1.0</b>	<b>0.0</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>4.0</b>	<b>0.0</b>	<b>0.0</b>	<b>31.9</b>	<b>0.1</b>	<b>0.5</b>	<b>187.9</b>	<b>1.5</b>	<b>0.5</b>	<b>224.7</b>	<b>1.5</b>	<b>0.9</b>
3rd Party	0%	0%	100%	12%	10%	0%	0%	0%	0%	0%	0%	0%	27%	53%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%
Equipment Failure	1%	0%	0%	8%	12%	0%	0%	0%	0%	0%	0%	0%	73%	47%	0%	100%	100%	100%	0%	0%	0%	15%	4%	48%
Operation	0%	1%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	99%	99%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	79%	77%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	100%	84%	95%	52%
<b>MARIANNA(12KV) - Customers: 1,802</b>	<b>3.1</b>	<b>0.2</b>	<b>0.0</b>	<b>68.8</b>	<b>0.2</b>	<b>0.0</b>	<b>53.1</b>	<b>1.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3.3</b>	<b>0.0</b>	<b>0.0</b>	<b>3.3</b>	<b>0.0</b>	<b>0.0</b>
3rd Party	0%	0%	0%	12%	21%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	10%	4%	0%	88%	79%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	90%	96%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	11%	12%	0%	11%	12%	0%
Other	0%	0%	0%	0%	0%	0%	96%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	89%	88%	0%	89%	88%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>NISQUALLY(33KV) - Customers: 1</b>	<b>604.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3.0</b>
3rd Party	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

# Reliability Histories for Individual Circuits Serving Apple Valley

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
<b>PAHUTE(12KV) - Customers: 1,606</b>	<b>6.9</b>	<b>0.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>107.8</b>	<b>1.4</b>	<b>1.6</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>1.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Equipment Failure	0%	0%	0%	0%	0%	0%	6%	1%	72%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	100%	100%	0%	0%	0%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%
Other	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	94%	99%	13%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>PRAYER(12KV) - Customers: 1,060</b>	<b>0.3</b>	<b>0.0</b>	<b>4.6</b>	<b>0.3</b>	<b>0.0</b>	<b>1.0</b>	<b>252.0</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.8</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>6.8</b>	<b>0.0</b>	<b>0.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	47%	60%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	65%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%
Vegetation/Animal	53%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	100%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>SEALS(12KV) - Customers: 964</b>	<b>231.7</b>	<b>1.0</b>	<b>0.0</b>	<b>0.1</b>	<b>0.0</b>	<b>2.0</b>	<b>702.6</b>	<b>4.0</b>	<b>1.4</b>	<b>55.0</b>	<b>0.2</b>	<b>0.0</b>	<b>73.8</b>	<b>1.7</b>	<b>1.7</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>128.7</b>	<b>1.8</b>	<b>2.7</b>
3rd Party	99%	99%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	31%	61%	0%	0%	0%	0%	0%	0%	0%	18%	55%	0%
Equipment Failure	0%	0%	0%	0%	0%	0%	2%	2%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	43%	10%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	37%
Other	1%	1%	0%	0%	0%	100%	51%	25%	1%	0%	0%	0%	0%	0%	59%	0%	0%	0%	0%	0%	0%	0%	0%	37%
Vegetation/Animal	0%	0%	0%	100%	100%	0%	10%	30%	98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	37%	39%	0%	0%	0%	0%	69%	39%	41%	0%	0%	0%	0%	0%	0%	39%	36%	26%
<b>SENECA(33KV) - Customers: 1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>279.0</b>	<b>1.0</b>	<b>1.0</b>	<b>136.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>136.0</b>	<b>1.0</b>	<b>1.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%
Operation	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

# Reliability Histories for Individual Circuits Serving Apple Valley

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
<b>SPEAR(12KV) - Customers: 1,571</b>	<b>84.1</b>	<b>0.9</b>	<b>1.7</b>	<b>226.4</b>	<b>3.1</b>	<b>0.7</b>	<b>59.6</b>	<b>2.0</b>	<b>2.1</b>	<b>0.1</b>	<b>0.0</b>	<b>0.0</b>	<b>0.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>9.2</b>	<b>0.0</b>	<b>0.4</b>	<b>10.1</b>	<b>0.0</b>	<b>0.4</b>
3rd Party	93%	97%	2%	81%	45%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	4%	1%	0%	19%	54%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%	0%	0%	0%	10%	5%	0%	17%	20%	0%
Operation	3%	2%	0%	0%	0%	39%	21%	49%	2%	0%	0%	0%	0%	0%	0%	100%	100%	0%	1%	10%	0%	1%	12%	0%
Other	0%	0%	98%	0%	0%	55%	11%	49%	98%	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	15%	25%	3%	12%	25%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	5%	0%	6%	4%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	68%	3%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	78%	65%	75%	72%	52%	75%
<b>STANDING ROCK(12KV) - Customers: 2,296</b>	<b>116.0</b>	<b>1.3</b>	<b>0.4</b>	<b>0.9</b>	<b>0.0</b>	<b>0.6</b>	<b>144.5</b>	<b>2.2</b>	<b>2.1</b>	<b>2.7</b>	<b>0.0</b>	<b>0.0</b>	<b>23.0</b>	<b>0.2</b>	<b>0.9</b>	<b>18.8</b>	<b>0.2</b>	<b>0.0</b>	<b>62.8</b>	<b>0.7</b>	<b>0.6</b>	<b>107.2</b>	<b>1.1</b>	<b>1.5</b>
3rd Party	0%	0%	0%	0%	0%	0%	59%	45%	4%	0%	0%	0%	83%	28%	100%	0%	0%	0%	0%	0%	38%	18%	6%	76%
Equipment Failure	39%	15%	0%	4%	8%	0%	7%	45%	48%	0%	0%	0%	4%	3%	0%	6%	2%	0%	99%	99%	62%	60%	64%	24%
Operation	0%	0%	0%	12%	15%	100%	3%	7%	0%	100%	100%	0%	0%	0%	0%	1%	20%	0%	0%	0%	0%	3%	5%	0%
Other	31%	65%	100%	85%	77%	0%	3%	0%	48%	0%	0%	0%	12%	69%	0%	83%	75%	0%	0%	0%	0%	17%	25%	0%
Vegetation/Animal	19%	15%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	10%	3%	0%	0%	0%	0%	2%	0%	0%
Weather/Fire/Earthquake	12%	6%	0%	0%	0%	0%	27%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>SYMERON(12KV) - Customers: 1,504</b>	<b>16.9</b>	<b>0.1</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.8</b>	<b>0.0</b>	<b>0.0</b>	<b>72.8</b>	<b>0.9</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>0.0</b>	<b>0.0</b>	<b>73.0</b>	<b>0.9</b>	<b>0.0</b>
3rd Party	76%	75%	100%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	5%	33%	0%	100%	100%	0%
Equipment Failure	6%	7%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	67%	0%	0%	0%	0%
Operation	18%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>TONTO(12KV) - Customers: 2,588</b>	<b>143.4</b>	<b>1.8</b>	<b>1.0</b>	<b>67.2</b>	<b>1.5</b>	<b>0.1</b>	<b>138.5</b>	<b>1.1</b>	<b>4.0</b>	<b>7.6</b>	<b>0.1</b>	<b>0.1</b>	<b>149.0</b>	<b>1.3</b>	<b>0.0</b>	<b>1.2</b>	<b>0.0</b>	<b>1.0</b>	<b>5.2</b>	<b>0.6</b>	<b>0.6</b>	<b>163.0</b>	<b>2.0</b>	<b>1.8</b>
3rd Party	8%	7%	100%	32%	48%	0%	0%	0%	0%	92%	98%	0%	0%	0%	0%	25%	40%	0%	0%	0%	0%	4%	4%	0%
Equipment Failure	14%	7%	0%	65%	51%	0%	61%	59%	16%	0%	0%	0%	99%	99%	0%	75%	60%	100%	11%	0%	0%	92%	64%	57%
Operation	72%	80%	0%	1%	0%	0%	1%	1%	28%	8%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	4%	6%	0%	1%	0%	100%	18%	23%	16%	0%	0%	100%	0%	0%	0%	0%	0%	0%	87%	100%	100%	3%	32%	43%
Vegetation/Animal	2%	1%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	2%	0%	0%	1%	1%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	20%	17%	40%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

# Reliability Histories for Individual Circuits Serving Apple Valley

	2013			2014			2015			1st Qtr 2016			2nd Qtr 2016			3rd Qtr 2016			4th Qtr 2016			2016		
	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI	SAIDI	SAIFI	MAIFI
<b>TUSSING(12KV) - Customers: 1,883</b>	<b>36.1</b>	<b>0.7</b>	<b>3.6</b>	<b>0.5</b>	<b>0.0</b>	<b>0.6</b>	<b>32.5</b>	<b>0.1</b>	<b>1.2</b>	<b>9.3</b>	<b>0.0</b>	<b>2.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.2</b>	<b>2.1</b>	<b>0.0</b>	<b>0.5</b>	<b>3.5</b>	<b>0.0</b>	<b>0.0</b>	<b>15.0</b>	<b>0.1</b>	<b>2.7</b>
3rd Party	51%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	19%
Equipment Failure	12%	4%	0%	100%	100%	0%	61%	46%	0%	96%	93%	50%	0%	0%	0%	100%	100%	0%	100%	100%	0%	97%	97%	37%
Operation	5%	1%	0%	0%	0%	0%	8%	16%	80%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	37%
Other	32%	60%	53%	0%	0%	100%	5%	20%	20%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	6%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	4%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	3%	3%	0%
Weather/Fire/Earthquake	0%	0%	47%	0%	0%	0%	26%	18%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>UNDERWORLD(12KV) - Customers: 554</b>	<b>38.1</b>	<b>1.2</b>	<b>1.2</b>	<b>161.4</b>	<b>2.1</b>	<b>0.0</b>	<b>33.6</b>	<b>1.0</b>	<b>3.0</b>	<b>0.0</b>	<b>0.0</b>	<b>3.0</b>	<b>151.5</b>	<b>0.3</b>	<b>0.0</b>	<b>0.6</b>	<b>0.0</b>	<b>0.0</b>	<b>1.7</b>	<b>0.0</b>	<b>0.0</b>	<b>153.8</b>	<b>0.3</b>	<b>3.0</b>
3rd Party	85%	84%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	14%	16%	85%	22%	49%	0%	29%	2%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	1%	1%	0%
Operation	0%	0%	0%	4%	4%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	98%	98%	0%
Other	0%	0%	0%	74%	46%	0%	42%	98%	67%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Vegetation/Animal	2%	0%	15%	0%	0%	0%	15%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	1%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	15%	0%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
<b>YUCCA LOMA(12KV) - Customers: 1,215</b>	<b>36.3</b>	<b>0.5</b>	<b>0.0</b>	<b>101.8</b>	<b>1.0</b>	<b>0.4</b>	<b>49.3</b>	<b>0.1</b>	<b>1.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>4.6</b>	<b>0.1</b>	<b>1.0</b>	<b>2.5</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>7.0</b>	<b>0.1</b>	<b>1.0</b>
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Equipment Failure	2%	1%	0%	100%	100%	100%	0%	1%	0%	0%	0%	0%	100%	100%	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%
Operation	2%	1%	0%	0%	0%	0%	82%	94%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	96%	99%	0%	0%	0%	0%	0%	0%	78%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	17%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%