



Circuit Reliability Review

Hanford

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://www.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 and Communities in the San Joaquin Region

Armona

Delano

Ducor

Earlimart

East Porterville

Exeter

Farmersville

Goshen

Hanford

Ivanhoe

Lemon Cove

Lindsay

Mcfarland

Pixley

Poplar-Cotton Center

Porterville

Richgrove

Springville

Strathmore

Terra Bella

Three Rivers

Tipton

Tulare

Visalia

Woodlake

Woodville

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
SCE SystemWide	108.13		0.89		102.61		0.91		112.00		0.96		114.83		0.92		134.48		1.10	

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.

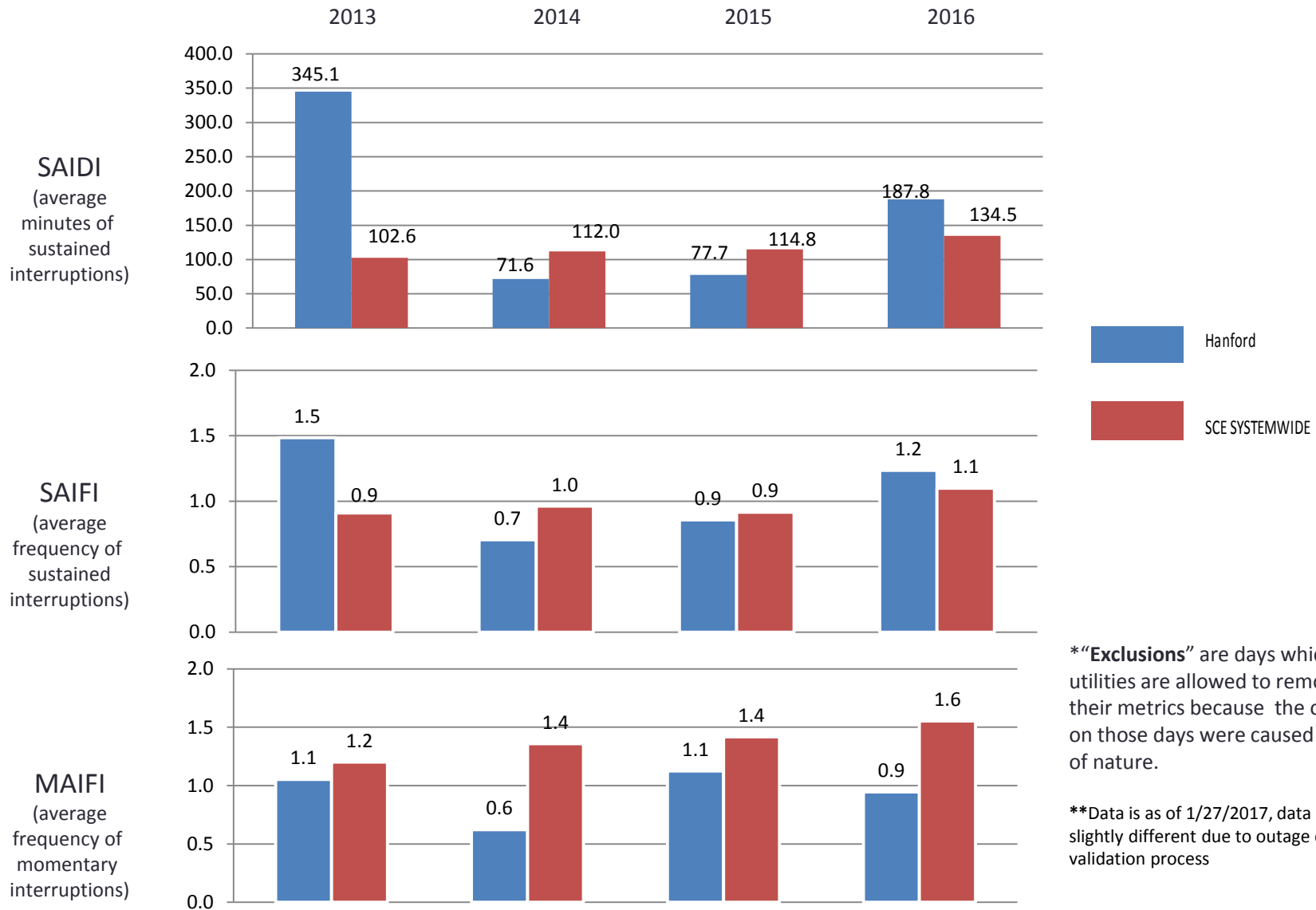
Overview of Hanford

There are 18 circuits that serve Hanford

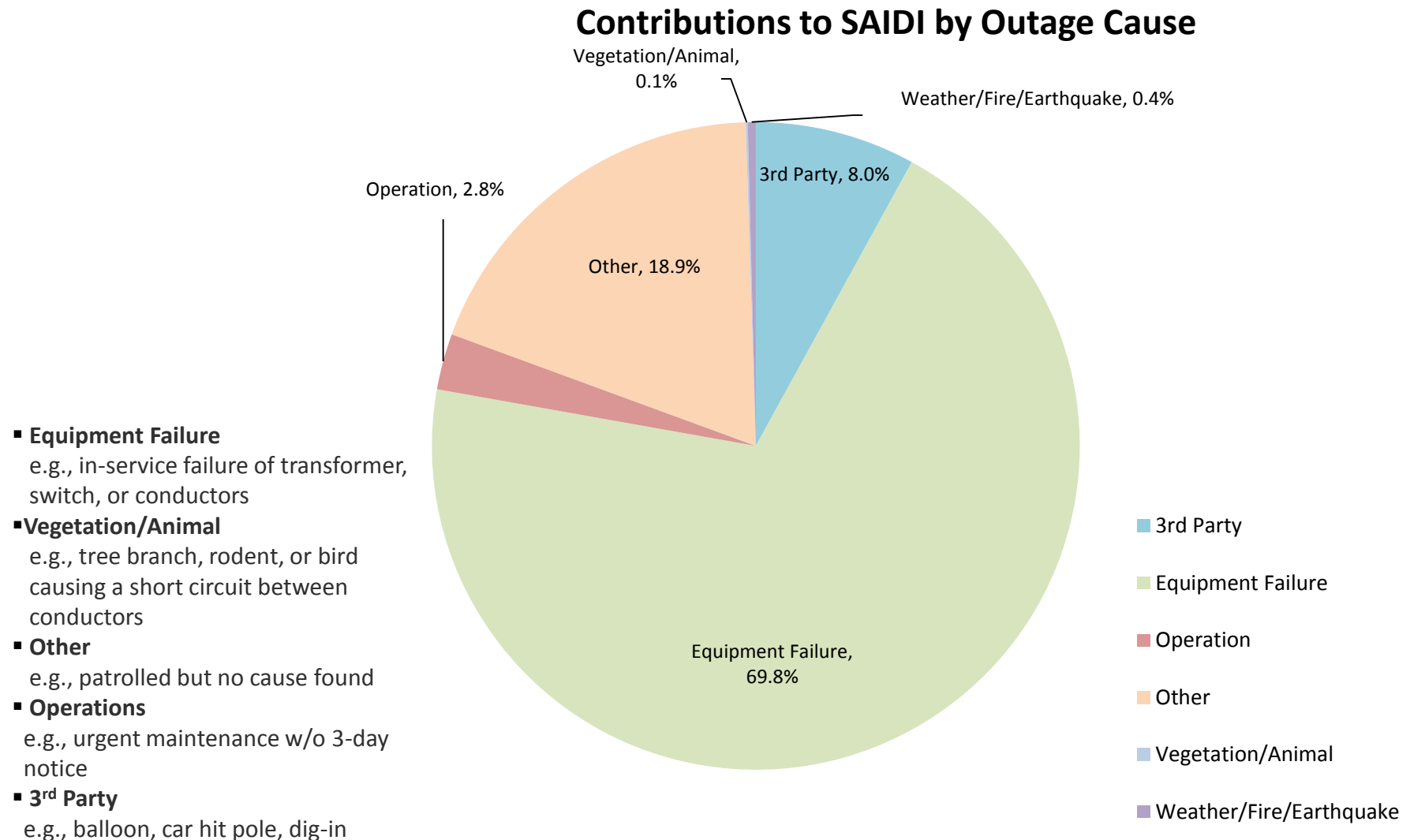
Circuit Type	Sum of Customers	Circuit Type	Sum of Customers	Circuit Type	Sum of Customers	Circuit Type	Sum of Customers
BULLPUP(12KV)	1,803						
BURRIS(12KV)	637						
CORDIAL(12KV)	1,652						
FLORINDA(12KV)	1,926						
GEE BEE(12KV)	1,666						
GOLDENBEAR(12KV)	694						
IONA(12KV)	2,667						
LATON(12KV)	2,245						
LEMOORE(12KV)	1,982						
MUSSEL(12KV)	1,795						
NAVIGATOR(12KV)	1,608						
PEOPLES(12KV)	659						
REDINGTON(12KV)	152						
SABER(12KV)	881						
SQUADRON(12KV)	1,290						
STOCKTON(12KV)	742						
SWATZKE(12KV)	1,851						
TRAILBLAZER(12KV)	1,467						

Grand Total 25,717

Reliability History of Circuits Serving Hanford (No Exclusions)



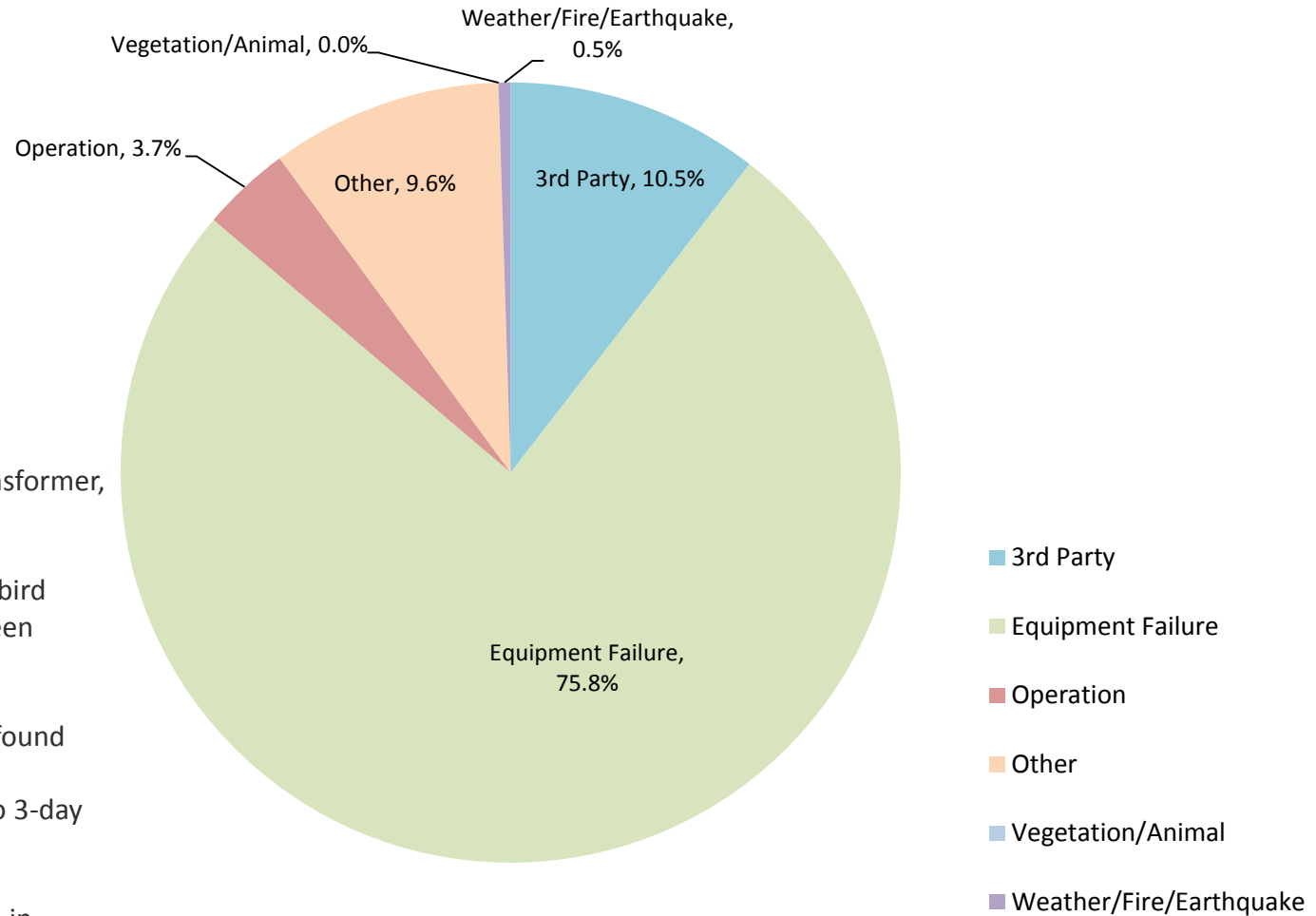
Causes of Repair Outages in Hanford Circuits 2016 YTD



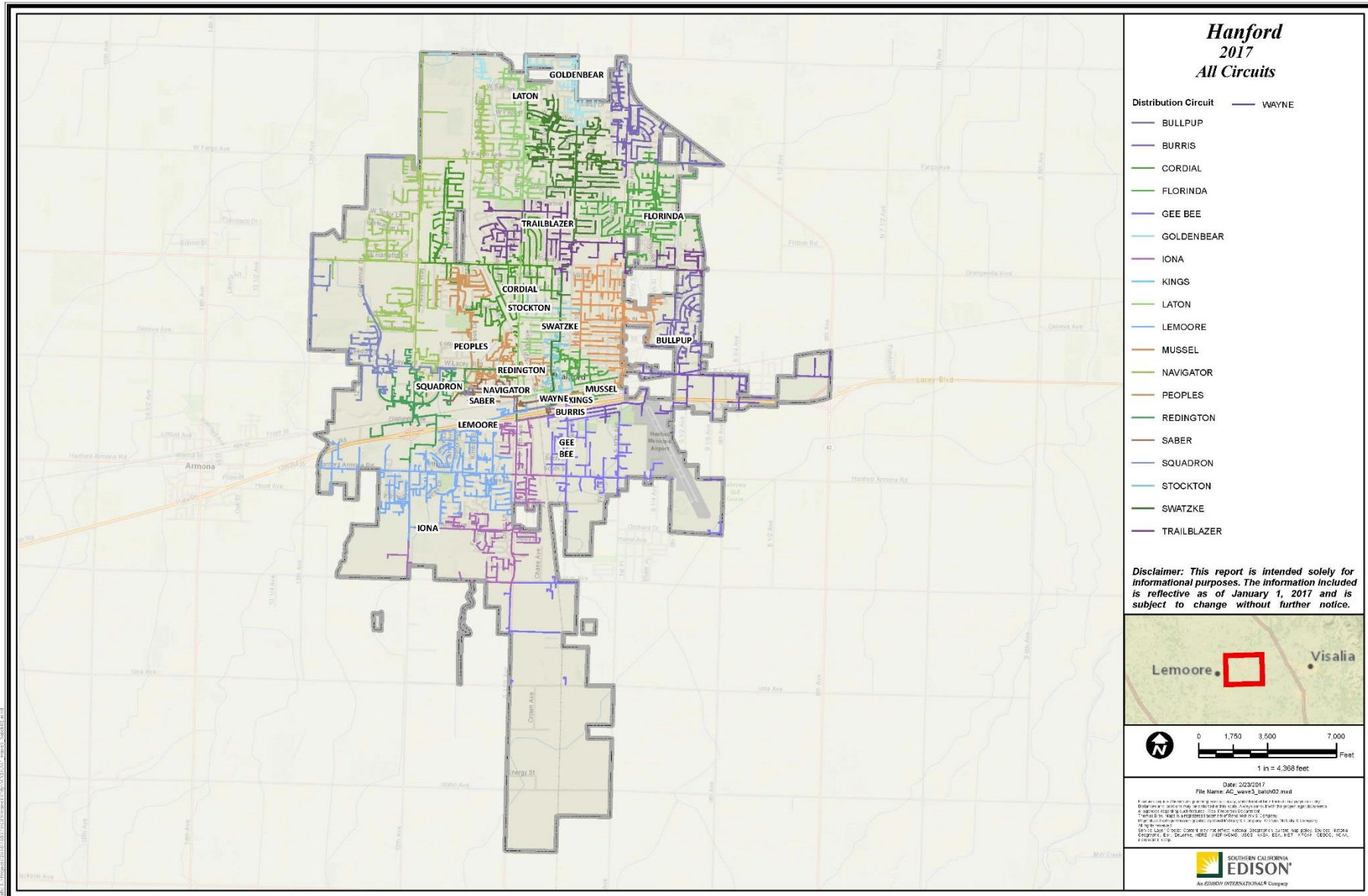
SAIDI = the cumulative amount of time the average customer is interrupted by “sustained” outages each year.

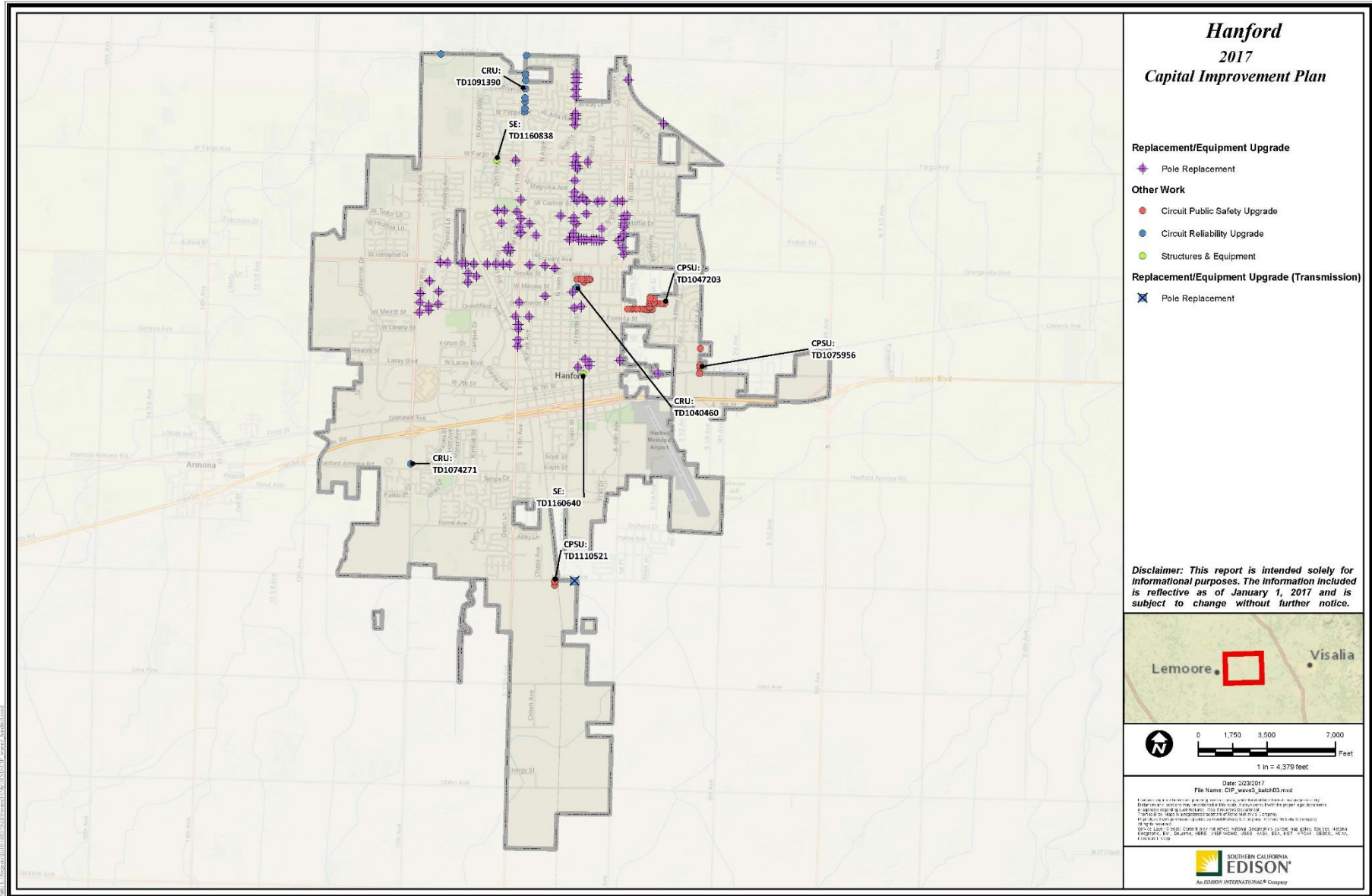
Causes of Repair Outages in Hanford Circuits 2016 YTD

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 Hanford

Updated through Year-End 2016

Average Reliability of 18 Circuits Serving Hanford

	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
Hanford	345.1	1.5	1.1	71.6	0.7	0.6	77.7	0.9	1.1	25.1	0.2	0.5	136.6	0.9	0.1	23.9	0.2	0.2	2.2	0.0	0.1	187.8	1.2	0.9
3rd Party	3%	3%	14%	27%	35%	10%	20%	31%	16%	53%	47%	59%	0%	0%	0%	7%	31%	19%	0%	0%	0%	8%	10%	35%
Equipment Failure	12%	16%	33%	60%	41%	26%	32%	22%	13%	42%	47%	0%	73%	86%	0%	84%	55%	42%	21%	8%	77%	70%	76%	19%
Operation	2%	7%	9%	12%	23%	24%	6%	12%	0%	2%	2%	0%	1%	1%	0%	9%	14%	0%	65%	81%	0%	3%	4%	0%
Other	83%	74%	44%	1%	0%	4%	2%	4%	39%	2%	4%	41%	25%	13%	100%	0%	0%	39%	14%	11%	23%	19%	10%	47%
Vegetation/Animal	0%	0%	0%	0%	0%	37%	18%	12%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	22%	19%	26%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
SCE Systemwide	102.6	0.9	1.2	112.0	1.0	1.4	114.8	0.9	1.4	40.5	0.3	0.4	34.8	0.3	0.4	29.4	0.2	0.3	29.8	0.3	0.4	134.5	1.1	1.6

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

3rd 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 Hanford

	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
BULLPUP(12KV) - Customers: 1,803	687.4	3.2	4.1	52.5	1.0	1.0	78.7	1.4	0.0	0.0	0.0	0.0	133.6	1.1	1.0	0.0	0.0	0.0	3.4	0.0	0.0	136.9	1.1	1.0
3rd Party	22%	6%	24%	88%	95%	0%	46%	72%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	27%	31%	52%	0%	0%	0%	54%	28%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	98%	98%	0%
Operation	0%	0%	0%	12%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	2%	2%	0%
Other	51%	63%	24%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	100%
Vegetation/Animal	0%	0%	0%	0%	0%	100%	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%
BURRIS(12KV) - Customers: 637	206.4	1.0	0.0	6.9	0.0	0.0	181.5	2.7	4.0	0.0	0.0	2.0	151.5	1.0	1.0	28.2	1.5	2.5	0.0	0.0	0.0	179.7	2.5	5.5
3rd Party	0%	0%	0%	0%	0%	0%	66%	38%	25%	0%	0%	100%	0%	0%	0%	100%	100%	60%	0%	0%	0%	16%	60%	64%
Equipment Failure	1%	0%	0%	90%	83%	0%	8%	24%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	84%	40%	0%
Operation	0%	0%	0%	10%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	99%	100%	0%	0%	0%	0%	16%	38%	50%	0%	0%	0%	0%	0%	100%	0%	0%	40%	0%	0%	0%	0%	0%	36%
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%	11%	1%	25%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
CORDIAL(12KV) - Customers: 1,652	255.3	1.0	1.0	125.5	1.1	0.6	38.3	0.1	0.0	0.0	0.0	0.0	143.7	1.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	147.3	1.0	0.0
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	8%	2%	100%	87%	95%	0%	16%	34%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	98%	98%	0%
Operation	0%	0%	0%	13%	5%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	2%	2%	0%
Other	92%	98%	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%	84%	66%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
FLORINDA(12KV) - Customers: 1,926	250.8	1.0	0.0	15.1	0.1	0.0	21.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0	0.0	0.0	0.0	8.5	0.0	0.0
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%	77%	73%	0%	56%	45%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	100%	100%	0%
Operation	5%	10%	0%	23%	27%	0%	44%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	95%	90%	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%

Reliability Histories for Individual Circuits Serving Hanford

	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
GEE BEE(12KV) - Customers: 1,666	249.6	1.3	0.7	98.3	0.5	1.0	23.9	0.3	1.8	180.0	1.3	0.7	118.9	1.0	0.0	5.4	0.0	0.0	12.6	0.1	0.1	316.9	2.4	0.9
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	13%	20%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	7%	11%	87%
Equipment Failure	1%	1%	0%	98%	50%	77%	98%	91%	45%	86%	79%	0%	100%	100%	0%	43%	24%	0%	36%	14%	0%	89%	85%	0%
Operation	0%	1%	0%	2%	50%	23%	2%	8%	0%	1%	1%	0%	0%	0%	0%	57%	76%	0%	28%	55%	0%	3%	4%	0%
Other	98%	98%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	36%	31%	100%	1%	1%	13%
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%	55%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
GOLDENBEAR(12KV) - Customers: 694	461.1	3.4	1.0	11.8	0.0	1.0	226.6	1.4	2.0	0.0	0.0	0.0	4.1	0.0	0.0	23.3	0.7	0.0	0.0	0.0	0.0	27.4	0.7	0.0
3rd Party	6%	39%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	5%	28%	0%	42%	17%	0%	19%	17%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Operation	9%	3%	0%	58%	83%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	85%	98%	0%
Other	80%	29%	0%	0%	0%	0%	0%	0%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	15%	2%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	81%	83%	50%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
IONA(12KV) - Customers: 2,667	314.3	1.5	1.6	139.7	1.8	1.5	53.8	0.8	1.4	0.0	0.0	1.2	135.8	1.0	0.1	194.7	1.2	0.0	0.0	0.0	0.0	330.4	2.3	1.3
3rd Party	0%	0%	0%	42%	22%	0%	44%	12%	0%	0%	0%	0%	0%	0%	0%	5%	17%	100%	0%	0%	0%	3%	9%	1%
Equipment Failure	15%	28%	37%	21%	17%	37%	0%	0%	0%	0%	0%	0%	97%	98%	0%	95%	82%	0%	0%	0%	0%	96%	89%	0%
Operation	1%	1%	63%	37%	61%	63%	0%	0%	0%	0%	0%	0%	3%	2%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%
Other	85%	71%	0%	0%	0%	0%	20%	10%	46%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	0%	0%	0%	99%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	1%	1%	31%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	35%	78%	23%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
LATON(12KV) - Customers: 2,245	293.9	1.0	1.0	206.7	2.9	0.8	2.2	0.0	1.1	0.0	0.0	0.0	193.8	1.1	0.0	0.0	0.0	1.0	0.0	0.0	0.0	193.8	1.1	1.0
3rd Party	0%	0%	0%	14%	35%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	0%	0%	0%	86%	65%	100%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	100%	0%	0%	0%	100%	100%	100%
Operation	0%	0%	0%	0%	0%	0%	73%	92%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	100%	100%	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%	27%	8%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hanford

	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
LEMOORE(12KV) - Customers: 1,982	423.8	1.6	2.5	40.2	0.1	0.0	27.3	0.7	1.0	153.4	0.7	2.3	324.6	1.0	0.0	0.5	0.0	0.0	0.3	0.0	0.0	478.8	1.8	2.3
3rd Party	0%	0%	0%	0%	0%	0%	0%	0%	0%	95%	89%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	30%	38%	100%
Equipment Failure	35%	38%	20%	91%	76%	0%	37%	10%	0%	0%	0%	0%	4%	8%	0%	100%	100%	0%	0%	0%	0%	3%	5%	0%
Operation	2%	2%	0%	0%	0%	0%	63%	90%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%
Other	64%	60%	80%	9%	24%	0%	0%	0%	100%	5%	11%	0%	96%	92%	0%	0%	0%	0%	0%	0%	0%	66%	57%	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%
MUSSEL(12KV) - Customers: 1,795	261.8	1.9	0.0	9.7	0.0	1.0	455.9	4.9	2.5	0.0	0.0	0.0	178.6	1.0	0.0	2.6	0.0	0.0	3.2	0.0	0.0	184.4	1.1	0.0
3rd Party	0%	0%	0%	0%	0%	0%	14%	36%	76%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	2%	0%	0%	83%	74%	0%	46%	27%	8%	0%	0%	0%	95%	97%	0%	0%	0%	0%	0%	0%	0%	92%	94%	0%
Operation	7%	52%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	3%	0%	100%	100%	0%	100%	100%	0%	8%	6%	0%
Other	91%	47%	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%	100%	22%	16%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	17%	26%	0%	19%	20%	8%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
NAVIGATOR(12KV) - Customers: 1,608	263.8	1.0	1.0	11.5	0.4	0.4	7.9	0.4	0.0	6.6	0.0	0.0	115.8	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	122.4	1.0	0.0
3rd Party	0%	1%	100%	97%	99%	100%	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%	3%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	95%	96%	0%
Operation	4%	3%	0%	3%	1%	0%	97%	100%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	4%	0%
Other	96%	97%	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%
PEOPLES(12KV) - Customers: 659	862.2	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	128.0	1.0	0.0	4.6	0.1	0.0	0.0	0.0	0.0	132.6	1.1	0.0
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	2%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	97%	93%	0%
Operation	1%	14%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	0%	0%	0%	3%	7%	0%
Other	97%	75%	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%

Reliability Histories for Individual Circuits Serving Hanford

	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
REDINGTON(12KV) - Customers: 152	303.9	1.0	0.0	11.1	0.1	1.0	0.0	0.0	2.1	0.0	0.0	0.0	173.1	1.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	173.1	1.7	0.0
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%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	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	100%	100%	0%	0%	0%	100%	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%
SABER(12KV) - Customers: 881	228.5	1.3	0.0	0.0	0.0	0.0	272.5	1.5	1.5	0.6	0.0	0.0	285.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	285.7	1.0	0.0
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%	2%	0%	0%	100%	100%	0%	2%	0%	0%	0%	0%	0%	0%	0%	0%	3%	1%	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	100%	100%	0%	0%	0%	0%	0%	0%	100%	0%	0%	0%	98%	100%	0%	0%	0%	0%	0%	0%	0%	97%	99%	0%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	98%	99%	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%
SQUADRON(12KV) - Customers: 1,290	213.7	1.1	0.0	48.4	0.8	0.4	146.6	1.2	4.2	10.5	0.1	0.0	134.6	1.1	0.4	13.6	0.0	0.0	2.7	0.0	2.2	161.4	1.3	2.6
3rd Party	0%	0%	0%	0%	0%	26%	47%	59%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	1%	8%	0%	35%	17%	0%	1%	0%	0%	100%	100%	0%	88%	90%	0%	90%	50%	0%	100%	100%	82%	90%	90%	70%
Operation	1%	1%	0%	65%	83%	0%	14%	5%	0%	0%	0%	0%	0%	0%	0%	10%	50%	0%	0%	0%	0%	1%	1%	0%
Other	98%	90%	0%	0%	0%	74%	0%	0%	57%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	18%	0%	0%	30%
Vegetation/Animal	0%	0%	0%	0%	0%	0%	31%	34%	10%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Weather/Fire/Earthquake	0%	0%	0%	0%	0%	0%	8%	1%	24%	0%	0%	0%	12%	10%	0%	0%	0%	0%	0%	0%	0%	10%	9%	0%
STOCKTON(12KV) - Customers: 742	213.4	1.0	0.0	0.0	0.0	0.0	74.3	0.2	0.0	0.0	0.0	1.0	117.7	1.0	0.0	27.1	0.1	0.0	0.0	0.0	0.0	144.8	1.1	1.0
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%	14%	14%	0%	0%	0%	0%	98%	96%	0%	0%	0%	0%	0%	0%	0%	79%	89%	0%
Operation	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	2%	4%	0%	100%	100%	0%	0%	0%	0%	21%	11%	0%
Other	100%	100%	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%	86%	86%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Reliability Histories for Individual Circuits Serving Hanford

	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
SWATZKE(12KV) - Customers: 1,851	304.7	1.0	0.0	86.3	0.2	0.0	19.6	0.1	1.0	0.0	0.0	0.0	76.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	76.0	1.0	0.0
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%	100%	100%	0%	66%	39%	100%	0%	0%	0%	100%	100%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%
Operation	2%	4%	0%	0%	0%	0%	27%	46%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Other	98%	96%	0%	0%	0%	0%	7%	15%	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%
TRAILBLAZER(12KV) - Customers: 1,467	461.7	1.8	1.2	137.1	0.7	1.4	0.0	0.0	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.6	0.0	1.0	12.7	0.1	0.0	13.2	0.1	2.0
3rd Party	0%	0%	0%	87%	88%	29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Equipment Failure	15%	28%	18%	13%	12%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	2%	0%	4%	2%	0%
Operation	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	100%	100%	0%	95%	98%	0%	96%	98%	0%
Other	84%	71%	82%	0%	0%	0%	0%	0%	100%	0%	0%	100%	0%	0%	0%	0%	0%	100%	0%	0%	0%	0%	0%	100%
Vegetation/Animal	0%	0%	0%	0%	0%	71%	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%