

Los Alamos County Utilities



Electric Distribution Reliability

November 20, 2019

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Electric Distribution Reliability Study
Twelve Month Outage History

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Date	Call Rcd.	Circuit	Cause	Start Time	End Time	Duration	Customers Affected (Meters)	Combined Customer Outage Durations	Total Outage H:M:S	Running SAIDI
11/13/2018	Utilities	13	SAFETY	9:45	15:00	5:15	87	456:45:00	456:45:00	0:03:02
11/23/2018	Utilities	13	URD Failure	11:45	12:00	0:15	7	1:45:00	458:30:00	0:03:02
11/30/2018	Utilities	13	TREE	19:00	20:52	1:52	15	28:00:00	486:30:00	0:03:14
11/30/2018	Utilities	13	TREE	19:00	0:00	5:00	15	75:00:00	561:30:00	0:03:43
2/4/2019	Utilities	WR2	HUMAN	9:30	9:34	0:04	961	64:04:00	625:34:00	0:04:09
2/8/2019	Utilities	WR2	URD Failure	15:57	17:15	1:18	25	32:30:00	658:04:00	0:04:22
2/14/2019	Utilities	WR1	URD Failure	4:00	6:00	2:00	30	60:00:00	718:04:00	0:04:46
3/3/2019	Utilities	EA4	OH Failure	14:41	17:45	3:04	15	46:00:00	764:04:00	0:05:04
3/12/2019	Utilities	WR2	OH Failure	14:30	14:58	0:28	13	6:04:00	770:08:00	0:05:07
3/12/2019	Utilities	13	TREE	3:00	9:40	6:40	104	693:20:00	1463:28:00	0:09:42
3/12/2019	Utilities	13	TREE	3:00	0:00	21:00	12	252:00:00	1715:28:00	0:11:23
3/12/2019	Utilities	13	TREE	14:30	17:10	2:40	1541	4109:20:00	5824:48:00	0:38:38
3/12/2019	Utilities	13	TREE	14:30	17:30	3:00	114	342:00:00	6166:48:00	0:40:54
3/12/2019	Utilities	13	TREE	16:30	20:30	4:00	2	8:00:00	6174:48:00	0:40:58
3/12/2019	Utilities	15	TREE	15:00	17:10	2:10	10	21:40:00	6196:28:00	0:41:06
4/15/2019	Utilities	16	OH Failure	7:00	9:30	2:30	7	17:30:00	6213:58:00	0:41:13
5/22/2019	Utilities	14	URD Failure	15:00	18:15	3:15	5	16:15:00	6230:13:00	0:41:20
5/22/2019	Utilities	16	OH Failure	22:00	23:30	1:30	120	180:00:00	6410:13:00	0:42:31
5/27/2019	Utilities	WR1	URD Failure	17:00	23:30	6:30	10	65:00:00	6475:13:00	0:42:57
6/14/2019	Utilities	16	OH Failure	21:30	2:30	5:00	6	30:00:00	6505:13:00	0:43:09
8/15/2019	Utilities	18	URD Failure	11:35	12:00	0:25	189	78:45:00	6583:58:00	0:43:40
8/15/2019	Utilities	18	URD Failure	11:35	13:00	1:25	24	34:00:00	6617:58:00	0:43:54
8/16/2019	Utilities	16	Weather	16:45	19:00	2:15	40	90:00:00	6707:58:00	0:44:30
8/21/2019	Utilities	16	URD Failure	10:00	12:25	2:25	24	58:00:00	6765:58:00	0:44:53
8/21/2019	Utilities	16	URD Failure	10:00	15:00	5:00	14	70:00:00	6835:58:00	0:45:21
8/21/2019	Utilities	13	TREE	18:00	19:00	1:00	7	7:00:00	6842:58:00	0:45:24
8/30/2019	Utilities	13	URD Failure	3:15	9:30	6:15	36	225:00:00	7067:58:00	0:46:53
9/7/2019	Utilities	15	TREE	7:00	9:00	2:00	8	16:00:00	7083:58:00	0:46:59
9/9/2019	Utilities	WR1	HUMAN	17:30	19:38	2:08	200	426:40:00	7510:38:00	0:49:49
9/28/2019	Utilities	WR1	OH Failure	10:00	14:30	4:30	7	31:30:00	7542:08:00	0:50:02
10/2/2019	Utilities	WR1	ANIMAL	17:30	18:30	1:00	6	6:00:00	7548:08:00	0:50:04
10/15/2019	Utilities	WR2	URD Failure	20:30	21:15	0:45	3	2:15:00	7550:23:00	0:50:05
10/17/2019	Utilities	13	OH Failure	16:45	18:00	1:15	5	6:15:00	7556:38:00	0:50:08
10/18/2019	Utilities	WR2	URD Failure	0:30	1:45	1:15	8	10:00:00	7566:38:00	0:50:12
10/19/2019	Utilities	17	URD Failure	12:00	18:15	6:15	5	31:15:00	7597:53:00	0:50:24
10/29/2019	Utilities	13	UNKNOWN	21:00	22:00	1:00	28	28:00:00	7625:53:00	0:50:35
10/29/2019	Utilities	13	UNKNOWN	2:30	3:00	0:30	28	14:00:00	7639:53:00	0:50:41

Twelve Month History	OCT. 2019	
Total # Accounts	9045	
Total # Interruptions	37	
Sum Customer Interruption Durations	7693:53:00	hours:min:sec
# Customers Interrupted	3731	
SAIFI (APPA AVG. = 1.0)	.41	int./cust.
SAIDI (APPA AVG. = 1:00)	00:50	hours:min
CAIDI	2:02	hours:min/INT
ASAI	99.9996%	% available

- SAIFI - System Average Interruption Frequency Index**
 A measure of interruptions per customer (Per Year)

$$\text{SAIFI} = \frac{\text{(Total number of customer interruptions)}}{\text{(Total number of customers served)}}$$

- SAIDI – System Average Interruption Duration Index**
 A measure of outage time per customer if all customers were out at the same time (hours per year)

$$\text{SAIDI} = \frac{\text{(Sum of all customer outage durations)}}{\text{(Total number of customers served)}}$$

- CAIDI – Customer Average Interruption Duration Index**
 A measure of the average outage duration per customer (hours per interruption)

$$\text{CAIDI} = \frac{\text{(Sum of all customer outage durations)}}{\text{(Total number of customer interruptions)}} = \frac{\text{SAIDI}}{\text{SAIFI}}$$

- ASAI – Average System Availability Index**
 A measure of the average service availability (Per unit)

$$\text{ASAI} = \frac{\text{(Service hours available)}}{\text{(Customer demand hours)}} = \frac{8760 - \text{SAIDI}}{8760}$$

EACH POINT IS A 12 MONTH SAIDI HISTORY
1:00:00 = APPA BENCHMARK SAIDI

