

STATUS REPORTS

ELECTRIC RELIABILITY

Los Alamos County Utilities



Electric Distribution Reliability

August 17, 2016

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Project Engineer

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							Customers Affected	Combined Customer Outage	Total Outage	Running
Date	Call Rcd.	Circuit	Cause	Start Time	End Time	Duration	(Meters)	Durations	H:M:S	SAIDI
8/1/2015	Dispatch	WR2	Weather	12:45	13:30	0:45	963	722:15:00	722:15:00	0:04:49
8/2/2015	Utilities	16	OH Failure	8:45	10:30	1:45	10	17:30:00	739:45:00	0:04:56
8/11/2015	Utilities	14	Planned	8:30	11:50	3:20	9	30:00:00	769:45:00	0:05:08
8/21/2015	Dispatch	15	Animal	0:00	1:30	1:30	15	22:30:00	792:15:00	0:05:17
8/25/2015	Dispatch	15	Animal	2:00	3:15	1:15	16	20:00:00	812:15:00	0:05:25
8/28/2014	Utilities	WR1	URD Failure	14:15	14:30	0:15	30	7:30:00	819:45:00	0:05:28
9/2/2015	Utilities	WR1	Planned	14:00	14:03	0:03	1590	79:30:00	899:15:00	0:05:59
9/2/2015	Utilities	WR2	Planned	14:00	14:03	0:03	963	48:09:00	947:24:00	0:06:19
9/4/2015	Utilities	14	Animal	10:00	10:45	0:45	537	402:45:00	1350:09:00	0:08:59
9/15/2015	Utilities	13	URD Failure	8:30	12:15	3:45	24	90:00:00	1440:09:00	0:09:35
9/7/2015	Utilities	14	Animal	1:15	1:45	0:30	11	5:30:00	1445:39:00	0:09:38
9/17/2015	Utilities	WR2	Planned	8:40	10:15	1:35	6	9:30:00	1455:09:00	0:09:41
10/23/2015	Utilities	15	URD Failure	7:00	12:30	5:30	12	66:00:00	1521:09:00	0:10:08
10/26/2015	Utilities	15	Animal	0:30	2:10	1:40	90	150:00:00	1671:09:00	0:11:08
10/26/2015	Utilities	15	Animal	5:30	8:10	2:40	70	186:40:00	1857:49:00	0:12:22
11/11/2015	Utilities	15	TREE	9:00	12:30	3:30	10	35:00:00	1892:49:00	0:12:36
11/20/2015	Utilities	13	URD Failure	19:50	22:05	2:15	20	45:00:00	1937:49:00	0:12:54
12/8/2015	Utilities	WR2	Planned	9:00	10:30	1:30	30	45:00:00	1982:49:00	0:13:12
12/30/2015	Utilities	WR1	Planned	10:00	11:45	1:45	14	24:30:00	2007:19:00	0:13:22
1/12/2016	Utilities	15	Planned	9:00	11:30	2:30	83	207:30:00	2214:49:00	0:14:45
1/12/2016	Utilities	WR1	Planned	10:30	12:00	1:30	8	12:00:00	2226:49:00	0:14:50
2/11/2016	Utilities	WR1	Planned	9:00	9:30	0:30	8	4:00:00	2230:49:00	0:14:51
3/2/2016	Utilities	EA4	OH Failure	14:40	15:09	0:29	18	8:42:00	2239:31:00	0:14:55
3/2/2016	Utilities	WR2	Planned	9:00	10:40	1:40	10	16:40:00	2256:11:00	0:15:01
3/10/2016	Utilities	WR2	Planned	9:30	10:30	1:00	7	7:00:00	2263:11:00	0:15:04
3/28/2016	Utilities	16	URD Failure	19:36	22:30	2:54	30	87:00:00	2350:11:00	0:15:39
4/3/2016	Utilities	WR2	URD Failure	11:18	13:00	1:42	12	20:24:00	2370:35:00	0:15:47
4/3/2016	Utilities	16	URD Failure	21:15	22:20	1:05	50	54:10:00	2424:45:00	0:16:09
4/13/2016	Utilities	13	Unknown	10:00	10:20	0:20	24	8:00:00	2432:45:00	0:16:12
4/28/2016	Dispatch	WR1	OH Failure	22:15	23:30	1:15	30	37:30:00	2470:15:00	0:16:27
5/10/2016	Utilities	16	Planned	9:00	9:10	0:10	18	3:00:00	2473:15:00	0:16:28
5/17/2016	Utilities	15	Planned	9:00	10:00	1:00	7	7:00:00	2480:15:00	0:16:31
5/21/2016	Utilities	WR2	Planned	10:00	10:15	0:15	7	1:45:00	2482:00:00	0:16:32
6/9/2016	Utilities	13	Planned	9:00	10:00	1:00	27	27:00:00	2509:00:00	0:16:42
6/9/2015	Utilities	14	URD Failure	1:45	4:00	2:15	24	54:00:00	2563:00:00	0:17:04
6/10/2016	Utilities	WR2	Planned	9:00	11:00	2:00	17	34:00:00	2597:00:00	0:17:18
6/23/2016	Utilities	WR2	Weather	19:00	0:00	5:00	4	20:00:00	2617:00:00	0:17:26
7/12/2016	Utilities	16	URD Failure	1:44	3:00	1:16	306	387:36:00	3004:36:00	0:20:01
7/15/2016	Utilities	13	URD Failure	10:30	13:30	3:00	88	264:00:00	3268:36:00	0:21:46
7/15/2016	Dispatch	WR1	URD Failure	21:40	0:00	2:20	21	49:00:00	3317:36:00	0:22:06
7/16/2016	Utilities	14	Animal	12:00	13:22	1:22	537	733:54:00	4051:30:00	0:26:59
7/19/2016	Utilities	18	Planned	0:00	5:00	5:00	4	20:00:00	4071:30:00	0:27:07
7/19/2016	Utilities	EA4	HUMAN	16:30	22:30	6:00	3	18:00:00	4089:30:00	0:27:14
7/20/2016	Utilities	13	Unknown	20:00	20:45	0:45	20	15:00:00	4104:30:00	0:27:20
7/27/2016	Utilities	14	URD Failure	8:17	9:30	1:13	120	146:00:00	4250:30:00	0:28:18
7/28/2016	Dispatch	WR1	URD Failure	2:30	5:30	3:00	12	36:00:00	4286:30:00	0:28:33

CIRCUIT SAIDI IS CALCULATED ACCORDING TO THE NUMBER OF CUSTOMERS IN EACH CIRCUIT RESPECTIVELY

<u>Running SAIDI Circuit 13</u>	<u>Running SAIDI Circuit 14</u>	<u>Running SAIDI Circuit 15</u>	<u>Running SAIDI Circuit 16</u>	<u>Running SAIDI Circuit 17</u>	<u>Running SAIDI Circuit 18</u>	<u>SAIDI Circuit EA4 & Royal Crest</u>	<u>Running SAIDI Circuit WR1</u>	<u>Running SAIDI Circuit WR2</u>	<u>Monthly SAIDI</u>		<u>Monthly Customer Minutes out of service</u>	<u>WEATHER SAIDI</u>
			0:00:34					0:45:00				0:04:49
	0:03:21											
		0:00:43 0:01:22										
							0:00:17 0:03:17		AUGUST	0:05:28	819:45:00	
								1:44:02				
	0:48:21											
0:03:13	0:48:58											
								3:14:41	SEPTEMBER	0:04:14	635:24:00	
		0:03:29 0:08:17										
		0:14:17 0:15:24							OCTOBER	0:02:41	402:40:00	
0:04:50									NOVEMBER	0:00:32	80:00:00	
								5:18:14				
		0:22:03					0:04:12		DECEMBER	0:00:28	69:30:00	
							0:04:40 0:04:49		JANUARY FEBRUARY	0:01:28 0:00:02	219:30:00 4:00:00	
						0:04:01		7:38:48 2:21:00				
			0:03:25					2:27:42	MARCH	0:00:48	119:22:00	
			0:05:11									
0:05:07							0:06:14		APRIL	0:00:48	230:44:00	
			0:05:16									
		0:22:17										
								5:02:20	JUNE	0:00:05	11:45:00	
0:06:05	0:55:00											
								7:44:09 2:43:03	JULY	0:00:54	135:00:00	0:00:08
0:15:33			0:17:55									
							0:08:05					
	2:17:00 2:19:14											
0:16:05						0:12:19						
	2:35:33											
							0:09:26		AUGUST	0:11:07	1017:54:00	
Circ 13 1675	Circ 14 537	Circ 15 1871	Circ 16 1839	Circ 17 193	Circ 18 212	Circ EA4 130	Circ WR1 1590	Circ WR2 963	Total 9010	SAIDI TOTAL 0:28:33		WEATHER 0:04:57

Twelve Month History	July 2016	
Total # Accounts	9010	
Total # Interruptions	45	
Sum Customer Interruption Durations	4286:30:00	hours:min:sec
# Customers Interrupted	5915	
SAIFI(APPA AVG. = 1.0)	.66	int./cust.
SAIDI (APPA AVG. = 1:00)	:28	hours:min
CAIDI	:43	hours:min/INT
ASAI	99.9998%	% 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)

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

- **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

