

Los Alamos County
Department of Public Utilities

Electric Distribution
Reliability

July 16, 2025

Stephen Marez

Deputy Utility Manager
Electric Distribution

Twelve Month History	JUNE 25	
Total # Accounts	9045	
Total # Interruptions	36	
Sum Customer Interruption Durations	7131:39:00	hours:min
# Customers Interrupted	3298	
SAIFI (APPA AVG. = 1.0)	.36	int./cust.
SAIDI (APPA AVG. = 1:00)	00:47:18	hours:min
CAIDI	2.09	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)

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

Electric Distribution Reliability Study Twelve Month Outage History

**Prepared by Stephen Marez
Deputy Utility Manager**

Date	Call Rcd.	Circuit	Cause	Start Time	End Time	Duration	Customers Affected (Meters)	Combined Customer Outage Durations	Total Outage H:M:S	Running SAIDI
7/1/2024	Utilities	13	WEATHER	18:45	19:45	1:00	5	5:00:00	5:00:00	0:00:02
7/1/2024	Utilities	13	WEATHER	21:30	1:30	4:00	2	8:00:00	13:00:00	0:00:05
7/11/2024	Utilities	16	Unknown	19:15	21:30	2:15	6	13:30:00	26:30:00	0:00:11
7/11/2024	Utilities	15	ANIMAL	0:00	1:30	1:30	30	45:00:00	71:30:00	0:00:28
8/8/2024	Utilities	16	URD Failure	16:30	17:40	1:10	59	68:50:00	140:20:00	0:00:56
8/9/2024	Utilities	WR2	WEATHER	18:30	20:30	2:00	5	10:00:00	150:20:00	0:01:00
8/11/2024	Utilities	15	WEATHER	4:00	6:30	2:30	30	75:00:00	225:20:00	0:01:30
8/20/2024	Utilities	15	URD Failure	16:00	22:00	6:00	8	48:00:00	273:20:00	0:01:49
8/25/2024	Utilities	13	URD Failure	11:30	15:30	4:00	317	1268:00:00	1541:20:00	0:10:13
8/25/2024	Utilities	WR2	WEATHER	18:00	21:45	3:45	46	172:30:00	1713:50:00	0:11:22
10/2/2024	Utilities	14	URD Failure	22:30	23:30	1:00	75	75:00:00	1788:50:00	0:11:52
10/2/2024	Utilities	14	URD Failure	22:30	5:00	6:30	28	182:00:00	1970:50:00	0:13:04
10/3/2024	LANL	EA4 LANL	TREE	12:19	13:05	0:46	23	17:38:00	1988:28:00	0:13:11
10/5/2024	Utilities	13	ANIMAL	11:15	12:15	1:00	29	29:00:00	2017:28:00	0:13:23
10/13/2024	Utilities	13	Unknown	19:24	20:30	1:06	99	108:54:00	2126:22:00	0:14:06
10/14/2024	Utilities	16	URD Failure	19:02	20:00	0:58	142	137:16:00	2263:38:00	0:15:01
10/14/2024	Utilities	16	ANIMAL	2:30	2:49	0:19	45	14:15:00	2277:53:00	0:15:07
11/4/2024	Utilities	13	TREE	8:02	9:00	0:58	625	604:10:00	2882:03:00	0:19:07
11/7/2024	Utilities	13	TREE	8:02	9:40	1:38	675	1102:30:00	3984:33:00	0:26:37
11/7/2024	Utilities	WR2	WEATHER	0:00	4:45	4:45	6	28:30:00	4013:03:00	0:26:37
11/19/2024	Utilities	13	TREE	8:36	9:10	0:34	43	24:22:00	4037:25:00	0:26:47
12/18/2024	Utilities	WR1	URD Failure	6:00	6:50	0:50	15	12:30:00	4049:55:00	0:26:52
1/9/2025	Utilities	ELK RIDGE	Unknown	18:00	19:00	1:00	6	6:00:00	4055:55:00	0:26:54
1/30/2025	Utilities	15	Unknown	11:30	12:15	0:45	30	22:30:00	4078:25:00	0:27:03
3/1/2025	Utilities	13	Unknown	12:45	15:00	2:15	25	56:15:00	4134:40:00	0:27:26
3/14/2025	Utilities	ELK RIDGE	WEATHER	10:30	11:08	0:38	20	12:40:00	4147:20:00	0:27:31
3/18/2025	Utilities	13	TREE	15:30	16:30	1:00	25	25:00:00	4172:20:00	0:27:41
3/19/2025	Utilities	WR2	URD Failure	21:30	4:20	6:50	22	150:20:00	4322:40:00	0:28:40
3/25/2025	Utilities	WR2	URD Failure	20:00	1:45	5:45	79	454:15:00	4776:55:00	0:31:41
3/31/2025	Utilities	16	URD Failure	18:00	21:00	3:00	692	2076:00:00	6852:55:00	0:45:28
5/5/2025	Utilities	15	WEATHER	3:26	7:15	3:49	16	61:04:00	6913:59:00	0:45:52
5/8/2025	Utilities	14	URD Failure	9:07	10:00	0:53	20	17:40:00	6931:39:00	0:45:59
6/8/2025	Utilities	WR2	URD Failure	5:00	8:00	3:00	15	45:00:00	6976:39:00	0:46:17
6/8/2025	Utilities	WR2	URD Failure	5:00	10:00	5:00	20	100:00:00	7076:39:00	0:46:57
6/8/2025	Utilities	WR2	URD Failure	5:00	13:00	8:00	5	40:00:00	7116:39:00	0:47:12
6/19/2025	Utilities	WR1	OH Failure	16:00	17:30	1:30	10	15:00:00	7131:39:00	0:47:18

Circuit SAIDI is Calculated According to the Number of Customers in Each Circuit Respectively											
Running SAIDI Circuit 13	Running SAIDI Circuit 14	Running SAIDI Circuit 15	Running SAIDI Circuit 16	Running SAIDI Circuit 17	Running SAIDI Circuit 18	Running SAIDI & ELK RIDGE	Running SAIDI Circuit WR1	Running SAIDI Circuit WR2	Monthly SAIDI	Monthly Customer Minutes out of service	Weather SAIDI
0:00:11									0:00:02		
0:00:17									0:00:03		0:00:05
			0:00:26								
		0:01:26							JULY	0:00:05	
			0:02:15							0:00:18	0:00:28
								0:00:37		0:00:27	
										0:00:04	
										0:00:30	
		0:02:24								0:00:19	0:00:34
		0:01:32									
0:45:58									0:08:25		
								0:10:46	AUGUST	0:01:09	0:01:09
	0:08:21									0:00:30	
	0:20:16									0:01:12	
0:01:03						0:06:25				0:00:07	
0:03:57										0:00:12	
										0:00:43	
			0:04:28							0:00:55	
			0:00:28						OCTOBER	0:00:06	0:03:44
0:21:54										0:04:00	
0:39:58								0:01:47		0:07:19	
										0:00:11	0:00:11
0:00:53									NOVEMBER	0:00:10	0:11:40
							0:00:47		DECEMBER	0:00:05	0:00:05
						0:02:11				0:00:02	
		0:00:43							JANUARY	0:00:09	0:00:11
0:02:02										0:00:22	
						0:04:36				0:00:05	0:00:05
0:00:54										0:00:10	
								0:09:23		0:01:00	
								0:28:22		0:03:01	
			1:07:37						MARCH	0:13:46	0:18:24
		0:01:57								0:00:24	0:00:24
	0:01:58								MAY	0:00:07	0:00:31
								0:02:49		0:00:18	
								0:06:15		0:00:40	
								0:02:30		0:00:16	
							0:00:56		JUNE	0:00:06	0:01:20
1:57:09	0:30:35	0:06:06	1:15:14	#REF!	#REF!	0:13:12	0:01:43	1:02:28	Total	0:47:18	0:02:28
1655	539	1875	1842	209	213	165	1586	961	9045		
NUMBER OF CUSTOMERS BY CIRCUIT											

2000	2010	NUMBER OF CUSTOMERS BY CIRCUIT
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EACH POINT IS A MONTHLY SAIDI HISTORY
60 MINUTES = LACDPU SAIDI BENCHMARK

SAIDI = STANDARD AVERAGE INTERRUPTION DURATION

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

