

Los Alamos County
Department of Public Utilities

Electric Distribution
Reliability

September 2025

Dennis G. Astley
Acting Deputy Utility Manager
Electric Distribution

<u>Accounts</u>	9045	
Total Interruptions	36	
<u>Sum Customer Interruption Durations</u>	15661:31:00	hours:min:sec
<u>#Customers Interrupted</u>	9008.0	
SAIFI	1.00	int./cust.
SAIDI	1:43	hours:min
WEATHER SAIDI	0:00	
CAIFI	0.400%	
CAIDI	1:44	hours:min
ASAI	99.9992%	

- **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 Dennis G Astley Acting Deputy Utility Manager			
<u>Date</u>	<u>Call Rcd.</u>	<u>Circuit</u>	<u>Cause</u>	<u>Start Time</u>	<u>End Time</u>	<u>Duration</u>	<u>Customers Affected (Meters)</u>	<u>Combined Customer Outage Durations</u>	<u>Total Outage H:M:S</u>	<u>Running SAIDI</u>
10/2/2024	Utilities	14	URD Failure	22:30	23:30	1:00	75	75:00:00	75:00:00	0:00:30
10/2/2024	Utilities	14	URD Failure	22:30	5:00	6:30	28	182:00:00	257:00:00	0:01:42
10/3/2024	LANL	EA4 LANL	TREE	12:19	13:05	0:46	23	17:38:00	274:38:00	0:01:49
10/5/2024	Utilities	13	ANIMAL	11:15	12:15	1:00	29	29:00:00	303:38:00	0:02:01
10/13/2024	Utilities	13	Unknown	19:24	20:30	1:06	99	108:54:00	412:32:00	0:02:44
10/14/2024	Utilities	16	URD Failure	19:02	20:00	0:58	142	137:16:00	549:48:00	0:03:39
10/14/2024	Utilities	16	ANIMAL	2:30	2:49	0:19	45	14:15:00	564:03:00	0:03:44
11/4/2024	Utilities	13	TREE	8:02	9:00	0:58	625	604:10:00	1168:13:00	0:07:45
11/4/2024	Utilities	13	TREE	8:02	9:40	1:38	675	1102:30:00	2270:43:00	0:15:04
11/7/2024	Utilities	WR2	WEATHER	0:00	4:45	4:45	6	28:30:00	2299:13:00	0:15:15
11/19/2024	Utilities	13	TREE	8:36	9:10	0:34	43	24:22:00	2323:35:00	0:15:25
12/18/2024	Utilities	WR1	URD Failure	6:00	6:50	0:50	15	12:30:00	2336:05:00	0:15:30
1/9/2025	Utilities	ELK RIDGE	Unknown	18:00	19:00	1:00	6	6:00:00	2342:05:00	0:15:32
1/30/2025	Utilities	15	Unknown	11:30	12:15	0:45	30	22:30:00	2364:35:00	0:15:41
3/1/2025	Utilities	13	Unknown	12:45	15:00	2:15	25	56:15:00	2420:50:00	0:16:04
3/14/2025	Utilities	ELK RIDGE	WEATHER	10:30	11:08	0:38	20	12:40:00	2433:30:00	0:16:09
3/18/2025	Utilities	13	TREE	15:30	16:30	1:00	25	25:00:00	2458:30:00	0:16:19
3/19/2025	Utilities	WR2	URD Failure	21:30	4:20	6:50	22	150:20:00	2608:50:00	0:17:18
3/25/2025	Utilities	WR2	URD Failure	20:00	1:45	5:45	79	454:15:00	3063:05:00	0:20:19
3/31/2025	Utilities	16	URD Failure	18:00	21:00	3:00	692	2076:00:00	5139:05:00	0:34:05
5/5/2025	Utilities	15	WEATHER	3:26	7:15	3:49	16	61:04:00	5200:09:00	0:34:30
5/8/2025	Utilities	14	URD Failure	9:07	10:00	0:53	20	17:40:00	5217:49:00	0:34:37
6/8/2025	Utilities	WR2	URD Failure	5:00	8:00	3:00	15	45:00:00	5262:49:00	0:34:55
6/8/2025	Utilities	WR2	URD Failure	5:00	10:00	5:00	20	100:00:00	5362:49:00	0:35:34
6/8/2025	Utilities	WR2	URD Failure	5:00	13:00	8:00	5	40:00:00	5402:49:00	0:35:50
6/19/2025	Utilities	WR1	OH Failure	16:00	17:30	1:30	10	15:00:00	5417:49:00	0:35:56
7/16/2025	Utilities	16	Weather	9:25	10:15	0:50	10	8:20:00	63:20:00	0:00:25
7/22/2025	Utilities	13	OH Failure	12:25	13:20	0:55	1675	1535:25:00	1535:25:00	0:10:11
7/22/2025	Utilities	13	Transformer Failure	17:30	18:45	1:15	10	12:30:00	12:30:00	0:00:05
7/28/2025	Utilities	15	Weather	16:05	18:00	1:55	1	1:55:00	6975:59:00	0:46:17
8/8/2025	Utilities	WR1	Transformer Failure	3:20	6:00	2:40	2612	6965:20:00	13941:19:00	1:32:29
8/12/2025	Utilities	WR2	Vehicle	10:00	11:00	1:00	961	961:00:00	14827:19:00	1:38:21
8/25/2025	Utilities	WR1	weather	19:22	20:10	0:48	949	759:12:00	15661:31:00	1:43:53

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

[illegible]

EACH POINT IS A MONTHLY SAIDI HISTORY
60 MINUTES = LACDPU SAIDI BENCHMARK

SAIDI = STANDARD AVERAGE INTERRUPTION DURATION

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

