

STATUS REPORTS

ELECTRIC RELIABILITY

Los Alamos County Utilities

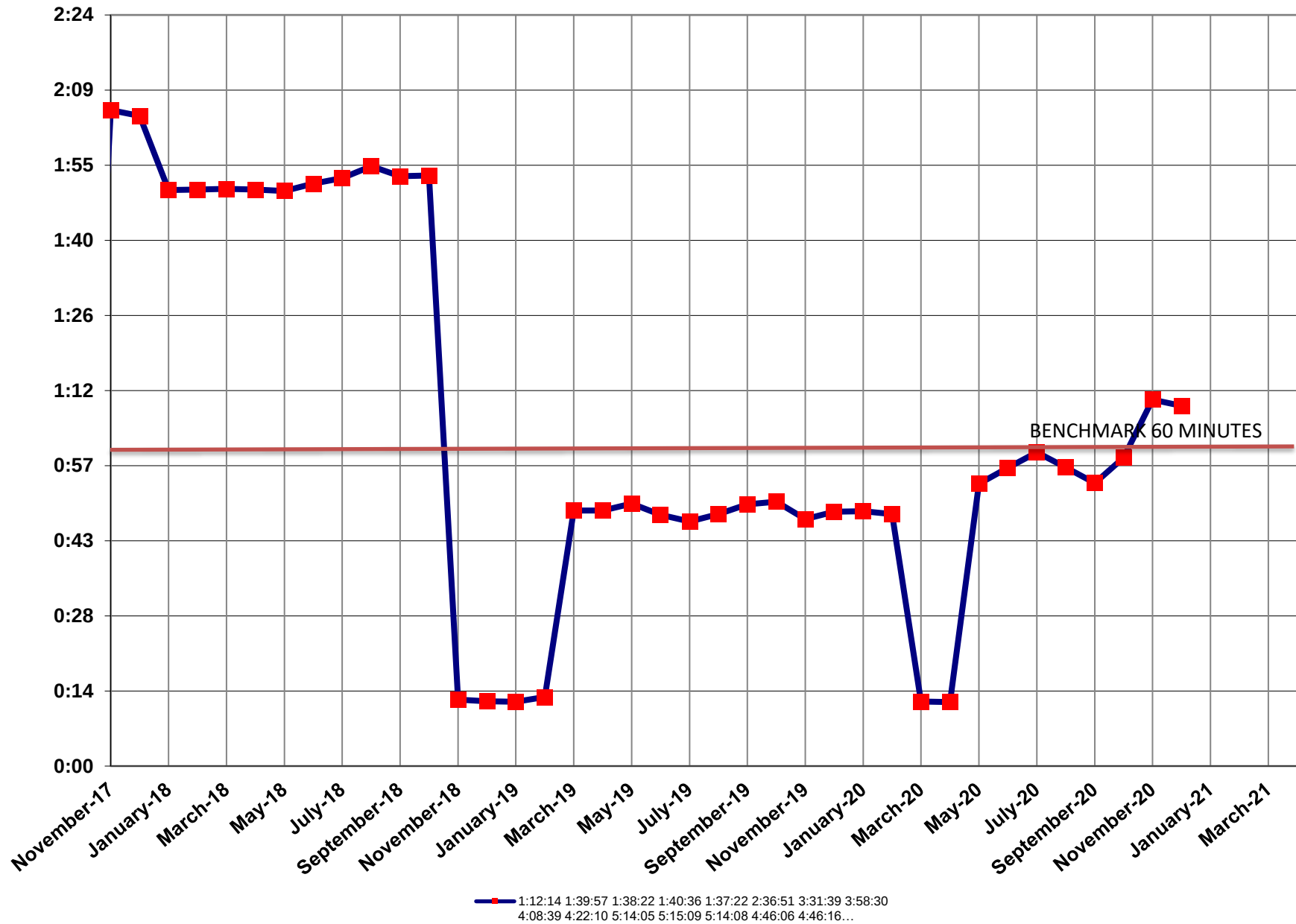


Electric Distribution Reliability

January 20, 2021

Alan Horton
Associate Engineer

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



Twelve Month History	DECEMBER 2020	
Total # Accounts	9045	
Total # Interruptions	41	
Sum Customer Interruption Durations	10410:03:00	hours:min:sec
# Customers Interrupted	4959	
SAIFI (APPA AVG. = 1.0)	0.55	int./cust.
SAIDI (APPA AVG. = 1:00)	1:09	hours:min
CAIDI	2.05	hours:min/INT
ASAI	99.9995%	% 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)

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

Prepared by Alan Horton
Associate Engineer L.A.C.U.

							Customers	Combined		
							Affected	Customer	Total Outage	Running
Date	Call Rcd.	Circuit	Cause	Start Time	End Time	Duration	(Meters)	Outage	H:M:S	SAIDI
1/11/2020	Utilities	WR1	TREE	14:15	15:15	1:00	11	11:00:00	11:00:00	0:00:04
1/11/2020	Utilities	16	ANIMAL	19:15	20:00	0:45	8	6:00:00	17:00:00	0:00:07
2/12/2020	Utilities	16	URD Failure	15:50	21:30	5:40	13	73:40:00	90:40:00	0:00:36
3/13/2020	Utilities	WR2	URD Failure	15:00	18:45	3:45	3	11:15:00	101:55:00	0:00:41
3/15/2020	Utilities	16	URD Failure	7:00	15:30	8:30	6	51:00:00	152:55:00	0:01:01
5/13/2020	Utilities	16	HUMAN	19:30	20:15	0:45	31	23:15:00	176:10:00	0:01:10
5/30/2020	Utilities	WR2	Weather	20:35	0:00	3:25	951	3249:15:00	3425:25:00	0:22:43
5/31/2020	Utilities	WR2	Weather	0:00	3:28	3:28	951	3296:48:00	6722:13:00	0:44:36
6/7/2020	Utilities	WR1	UNKNOWN	2:40	4:10	1:30	66	99:00:00	6821:13:00	0:45:15
6/8/2020	Utilities	WR2	UNKNOWN	13:20	15:20	2:00	18	36:00:00	6857:13:00	0:45:29
6/11/2020	Utilities	WR2	URD Failure	6:50	7:35	0:45	13	9:45:00	6866:58:00	0:45:33
6/11/2020	Utilities	EA-4	OH Failure	16:30	17:20	0:50	100	83:20:00	6950:18:00	0:46:06
6/14/2020	Utilities	EA-4	UNKNOWN	11:00	13:00	2:00	30	60:00:00	7010:18:00	0:46:30
6/17/2020	Utilities	WR2	UNKNOWN	21:00	23:30	2:30	80	200:00:00	7210:18:00	0:47:50
6/28/2020	Utilities	17	UNKNOWN	11:25	13:00	1:35	2	3:10:00	7213:28:00	0:47:51
7/5/2020	Utilities	WR2	URD Failure	13:00	14:00	1:00	20	20:00:00	7233:28:00	0:47:59
7/11/2020	Utilities	WR1	URD Failure	12:30	13:50	1:20	15	20:00:00	7253:28:00	0:48:07
7/11/2020	Utilities	13	OH Failure	20:30	21:30	1:00	13	13:00:00	7266:28:00	0:48:12
7/12/2020	Utilities	17	UNKNOWN	21:30	23:00	1:30	17	25:30:00	7291:58:00	0:48:22
7/18/2020	Utilities	13	ANIMAL	21:50	22:30	0:40	25	16:40:00	7308:38:00	0:48:29
7/25/2020	Utilities	WR1	ANIMAL	18:30	19:30	1:00	75	75:00:00	7383:38:00	0:48:59
7/27/2020	Utilities	WR2	URD Failure	11:45	18:30	6:45	44	297:00:00	7680:38:00	0:50:57
8/7/2020	Utilities	14	URD Failure	6:20	7:25	1:05	4	4:20:00	7684:58:00	0:50:59
8/9/2020	Utilities	WR2	URD Failure	13:00	13:30	0:30	25	12:30:00	7697:28:00	0:51:04
8/17/2020	Utilities	WR1	URD Failure	0:35	2:00	1:25	59	83:35:00	7781:03:00	0:51:37
8/19/2020	Utilities	13	URD Failure	4:00	4:30	0:30	25	12:30:00	7793:33:00	0:51:42
9/4/2020	Utilities	16	UNKNOWN	16:00	17:00	1:00	11	11:00:00	7804:33:00	0:51:46
9/4/2020	Utilities	WR1	UNKNOWN	17:00	18:00	1:00	2	2:00:00	7806:33:00	0:51:47
9/5/2020	Utilities	13	UNKNOWN	18:00	19:00	1:00	1	1:00:00	7807:33:00	0:51:47
10/2/2020	Utilities	15	ANIMAL	1:00	3:30	2:30	50	125:00:00	7932:33:00	0:52:37
10/9/2020	Utilities	15	ANIMAL	22:15	23:15	1:00	25	25:00:00	7957:33:00	0:52:47
10/12/2020	Utilities	15	URD Failure	7:00	8:15	1:15	25	31:15:00	7988:48:00	0:53:00
10/27/2020	Utilities	17	Weather	5:00	6:30	1:30	70	105:00:00	8093:48:00	0:53:41
10/27/2020	Utilities	17	URD Failure	9:00	19:00	10:00	10	100:00:00	8193:48:00	0:54:21
11/8/2020	Utilities	WR1	OH Failure	9:35	13:40	4:05	1	4:05:00	8197:53:00	0:54:23
11/23/2020	Utilities	WR1	Weather	18:30	20:00	1:30	528	792:00:00	8989:53:00	0:59:38
11/23/2020	Utilities	WR1	Weather	20:00	20:50	0:50	1586	1321:40:00	10311:33:00	1:08:24
11/23/2020	Utilities	13	Weather	18:30	21:30	3:00	4	12:00:00	10323:33:00	1:08:29
11/27/2020	Utilities	WR1	URD Failure	1:29	4:15	2:46	20	55:20:00	10378:53:00	1:08:51
12/19/2020	Utilities	14	URD Failure	17:00	18:10	1:10	1	1:10:00	10380:03:00	1:08:51
12/27/2020	Utilities	15	UNKNOWN	1:00	2:30	1:30	20	30:00:00	10410:03:00	1:09:03

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>Running 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>
			0:00:12				0:00:25		JANUARY	0:00:07	17:00:00	
			0:02:36						FEBRUARY	0:00:29	73:40:00	
			0:04:15					0:00:42	MARCH	0:00:25	62:15:00	
			0:05:01									
								3:23:34				0:21:33
								6:49:24	MAY	0:43:35	6620:18:00	0:21:52
							0:04:10					
								6:51:39				
								6:52:16				
						0:00:03						
						0:00:11						
				0:00:55				7:04:45				
								7:06:00	JUNE	0:03:16	491:15:00	
0:00:28							0:04:55					
				0:08:14								
0:01:05												
							0:07:45					
	0:00:29							7:24:32	JULY	0:03:06	467:10:00	
								7:25:19				
							0:10:36					
0:01:32			0:05:22						AUG	0:00:45	112:55:00	
							0:10:40					
0:01:34									SEP	0:00:06	14:00:00	
		0:04:00										
		0:04:48										
		0:05:46										
				0:38:22								0:00:42
				1:07:05					OCT	0:02:34	386:15:00	
							0:10:45					
												0:05:15
												0:08:46
	4:20:00						0:10:49		NOV	0:14:30	2185:05:00	0:00:05
		0:06:43							DEC	0:00:12	31:10:00	
Circ 13 1655	Circ 14 539	Circ 15 1875	Circ 16 1842	Circ 17 209	Circ 18 213	Circ EA4 165	Circ WR1 1586	Circ WR2 961	Total 9045	1:09:03		0:58:13