

# **STATUS REPORTS**

## **ELECTRIC RELIABILITY**

# Los Alamos County Utilities



## Electric Distribution Reliability

February 16, 2017

Stephen Marez  
Senior Engineer

| Twelve Month History                | January 2017 |               |
|-------------------------------------|--------------|---------------|
| Total # Accounts                    | 9045         |               |
| Total # Interruptions               | 48           |               |
| Sum Customer Interruption Durations | 5442:38:00   | hours:min:sec |
| # Customers Interrupted             | 4466         |               |
| SAIFI( APPA AVG. = 1.0)             | .49          | int./cust.    |
| SAIDI ( APPA AVG. = 1:00)           | :36          | hours:min     |
| CAIDI                               | 1:13         | hours:min/INT |
| ASAI                                | 99.9997%     | % 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)

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



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 &amp; 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> |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|---------------------------------|--|----------------------------------|----------------------------------|----------------------|--------------------|--|----------------------|
|                                 |                                 |                                 |                                 |                                 |                                 | 0:04:01                                    | 0:00:09                          |                                  | FEBRUARY             | 0:00:02            | 4:00:00  |                      |
|                                 |                                 |                                 |                                 |                                 |                                 |  |                                  | 0:01:50                          |                      |                    |  |                      |
|                                 |                                 |                                 | 0:02:50                         |                                 |                                 |  |                                  | 0:04:06                          | MARCH                | 0:00:48            | 119:22:00                                      |                      |
|                                 |                                 |                                 | 0:04:36                         |                                 |                                 |  |                                  | 0:13:03                          |                      |                    |  |                      |
| 0:00:17                         |                                 |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 |                                 | 0:04:42                         |                                 |                                 |  | 0:01:34                          |                                  | APRIL                | 0:00:48            | 230:44:00                                      |                      |
|                                 |                                 | 0:00:13                         |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
| 0:01:15                         |                                 |                                 |                                 |                                 |                                 |  |                                  | 0:28:57                          | JUNE                 | 0:00:05            | 11:45:00                                       |                      |
|                                 | 0:06:01                         |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 |                                 |                                 |                                 |                                 |  |                                  | 0:52:01                          |                      |                    |  |                      |
|                                 |                                 |                                 | 0:17:21                         |                                 |                                 |  |                                  | 0:24:19                          | JULY                 | 0:00:54            | 135:00:00                                      | 0:00:08              |
| 0:10:43                         |                                 |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 | 1:27:42                         |                                 |                                 |                                 |                                 |  | 0:03:25                          |                                  |                      |                    |  |                      |
|                                 |                                 |                                 |                                 |                                 | 0:05:38                         |  |                                  |                                  |                      |                    |  |                      |
| 0:11:15                         |                                 |                                 |                                 |                                 |                                 | 0:12:19                                    |                                  |                                  |                      |                    |  |                      |
|                                 | 1:43:58                         |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
| 0:11:50                         |                                 |                                 |                                 |                                 |                                 |  | 0:04:46                          |                                  | AUGUST               | 0:11:04            | 1017:54:00                                     |                      |
|                                 |                                 |                                 |                                 | 0:20:00                         |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 |                                 |                                 |                                 |                                 |  | 0:05:11                          |                                  |                      |                    |  |                      |
|                                 |                                 |                                 |                                 |                                 |                                 |  | 0:05:38                          |                                  |                      |                    |  |                      |
|                                 |                                 |                                 |                                 |                                 |                                 |  | 0:07:09                          |                                  | SEPTEMBER            | 0:00:59            | 148:35:00                                      |                      |
|                                 |                                 |                                 |                                 |                                 | 0:06:50                         |  |                                  |                                  | OCTOBER              | 0:00:02            | 4:15:00  |                      |
|                                 | 2:42:58                         |                                 |                                 |                                 |                                 |  |                                  | 2:18:56                          |                      |                    |  |                      |
|                                 |                                 |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 | 2:55:39                         |                                 |                                 |                                 |                                 |  | 0:00:40                          |                                  | NOVEMBER             | 0:03:45            | 564:51:00                                      |                      |
|                                 |                                 |                                 |                                 | 0:27:19                         |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 | 3:01:39                         |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 | 0:00:50                         |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 | 0:02:30                         |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 | 3:04:20                         |                                 |                                 |                                 |                                 |  |                                  |                                  | DECEMBER             | 0:01:55            | 288:17:00                                      |                      |
| 0:13:35                         |                                 |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
| 0:19:45                         |                                 |                                 |                                 |                                 |                                 |  |                                  |                                  | JANUARY              | 0:01:27            | 218:19:00                                      |                      |
|                                 |                                 | 0:00:36                         |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
| 0:00:41                         |                                 |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  | 0:00:07              |
|                                 |                                 | 0:24:29                         |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 | 0:28:20                         |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 | 0:31:25                         |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 | 1:08:02                         |                                 |                                 |                                 |  |                                  |                                  | FEBRUARY             | 0:14:19            | 2158:40:00                                     |                      |
|                                 |                                 |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
|                                 |                                 |                                 |                                 |                                 |                                 |  |                                  |                                  |                      |                    |  |                      |
| <b>Circ 13</b>                  | <b>Circ 14</b>                  | <b>Circ 15</b>                  | <b>Circ 16</b>                  | <b>Circ 17</b>                  | <b>Circ 18</b>                  | <b>Circ EA4</b>                            | <b>Circ WR1</b>                  | <b>Circ WR2</b>                  | <b>Total</b>         | <b>SAIDI TOTAL</b> |  | <b>WEATHER</b>       |
| 1655                            | 539                             | 1875                            | 1842                            | 209                             | 213                             | 165  | 1586                             | 961                              | 9045                 | 0:36:06            |  | 0:00:15              |

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

