

TITLE 17 PUBLIC UTILITIES AND UTILITY SERVICES
CHAPTER 9 ELECTRIC SERVICES
PART 589 RELIABILITY METRICS REPORTING

17.9.589.1 ISSUING AGENCY: New Mexico Public Regulation Commission.
[17.9.589.1 NMAC - N, 9/24/2024]

17.9.589.2 SCOPE: This rule applies to all investor-owned electric public utilities subject to the jurisdiction of the commission.
[17.9.589.2 NMAC - N, 9/24/2024]

17.9.589.3 STATUTORY AUTHORITY: Section 62-6-25 NMSA 1978; Paragraph (1) of Subsection B of Section 62-8-13 NMSA 1978; Paragraph (3) of Subsection D of Section 62-9-1 NMSA 1978; Subsection E of Section 62-9-3 NMSA 1978; Paragraph (2) of Subsection B of Section 62-16-4 NMSA 1978; and Subsection B of Section 62-16-6 NMSA 1978.
[17.9.589.3 NMAC - N, 9/24/2024]

17.9.589.4 DURATION: Permanent.
[17.9.589.4 NMAC - N, 9/24/2024]

17.9.589.5 EFFECTIVE DATE: September 24, 2024, unless a later date is cited at the end of a section.
[17.9.589.5 NMAC - N, 9/24/2024]

17.9.589.6 OBJECTIVE: This rule is intended to promote electric service reliability by requiring investor-owned electric utilities to report a variety of reliability metrics to the commission on an annual basis with the goal of identifying, prioritizing, and meeting reliability needs.
[17.9.589.6 NMAC - N, 9/24/2024]

17.9.589.7 DEFINITIONS: Unless otherwise specified, as used in this rule:

A. Definitions beginning with “A”: “average service availability index” (ASAI) means the fraction of time (commonly converted to a percentage) that a customer has received power during the defined reporting period, as given in the following equation: customer hours service availability divided by customer hours service demand. This definition incorporates the definition from IEEE-1366-2022.

B. Definitions beginning with “B”: [RESERVED]

C. Definitions beginning with “C”:

(1) “commission” means the New Mexico public regulation commission;

(2) “customer average interruption duration index” (CAIDI) means the average time required to restore service, as given in the following equation: total customer minutes of interruption divided by total number of customers interrupted. This definition incorporates the definition from IEEE-1366-2022; and

(3) “customers experiencing long interruption durations” (CELID) means the ratio of individual customers that experience interruptions with durations longer than or equal to a given time. That time is either the duration of a single interruption, or the total amount of time that a customer has been interrupted during the reporting period. This definition incorporates the definition from IEEE-1366-2022.

D. Definitions beginning with “D”: [RESERVED]

E. Definitions beginning with “E”: [RESERVED]

F. Definitions beginning with “F”: “feeder SAIFI” means the average number of times that a customer on a specific circuit is interrupted during the year, as given in the following equation: total number of customers interrupted on the circuit during the year divided by average number of customers served on the circuit during the year.

G. Definitions beginning with “G”: [RESERVED]

H. Definitions beginning with “H”: [RESERVED]

I. Definitions beginning with “I”:

(1) “IEEE” means the institute of electrical and electronics engineers; and

(2) **“interruption”** means the total loss of electric power on one or more normally energized conductors to one or more customers connected to the distribution portion of the system. Interruption does not include any power quality issues such as sags, swells, impulses, or harmonics. This definition incorporates the definition from IEEE-1366-2022; and

(3) **“interruption cause code categories”** incorporates the categories and sub-categories defined in IEEE-1782-2022 and additionally means the following categories used in reliability reports to be filed by utilities in accordance with this Rule:

- (a) equipment,
- (b) lightning,
- (c) planned,
- (d) power supply (transmission),
- (e) public,
- (f) vegetation,
- (g) weather (other than lightning),
- (h) wildlife,
- (i) unknown, and
- (j) other (please specify).

J. Definitions beginning with “J”: [RESERVED]

K. Definitions beginning with “K”: [RESERVED]

L. Definitions beginning with “L”: [RESERVED]

M. Definitions beginning with “M”: [RESERVED]

(1) **“major events”** means an event that exceeds reasonable design or operational limits of the electric power system. A major event includes at least one major event day. This definition incorporates the definition from IEEE-1366-2022;

(2) **“major event day” (MED)** means a day in which the daily system average interruption duration index (SAIDI) exceeds a MED threshold value. For the purposes of calculating daily SAIDI, any interruption that spans multiple calendar days is accrued to the day on which the interruption began. Statistically, days having a daily system SAIDI greater than the MED threshold are days on which the energy delivery system experienced stresses beyond that normally expected (such as during severe weather). This definition incorporates the definition from IEEE-1366-2022; and

(3) **“momentary average interruption frequency index” (MAIFI)** means the average frequency of momentary interruptions. This definition incorporates the definition from IEEE-1366-2022.

N. Definitions beginning with “N”: [RESERVED]

O. Definitions beginning with “O”: [RESERVED]

P. Definitions beginning with “P”: **“planned interruption”** means the loss of electric power to one or more customers as a result of a planned interruption. Planned interruptions derive from transmission and distribution applications and do not apply to generation interruptions. The key test to determine if an interruption should be classified as a planned or unplanned interruption is as follows: if it is possible to defer the interruption, then the interruption is a planned interruption; otherwise, the interruption is an unplanned interruption. This definition incorporates the definition from IEEE-1366-2022.

Q. Definitions beginning with “Q”: [RESERVED]

R. Definitions beginning with “R”: [RESERVED]

S. Definitions beginning with “S”:

(1) **“system average interruption duration index” (SAIDI)** means the total duration of interruption for the average customer during a specified period of time, measured in minutes of interruption, as given in the following equation: total customer minutes of interruption divided by total number of customers served. This definition incorporates the definition from IEEE-1366-2022;

(2) **“system average interruption frequency index” (SAIFI)** means how often the average customer experiences a sustained interruption over a predefined period of time, as given in the following equation: total number of customers interrupted divided by total number of customers served. This definition incorporates the definition from IEEE-1366-2022; and

(3) **“sustained interruptions”** means an interruption that lasts more than five minutes. This definition incorporates the definition from IEEE-1366-2022.

T. Definitions beginning with “T”: [RESERVED]

U. Definitions beginning with “U”: **“utility”** means an investor-owned electric public utility subject to the requirements of this Rule.

- V. **Definitions beginning with “V”:** [RESERVED]
- W. **Definitions beginning with “W”:** [RESERVED]
- X. **Definitions beginning with “X”:** [RESERVED]
- Y. **Definitions beginning with “Y”:** [RESERVED]
- Z. **Definitions beginning with “Z”:** [RESERVED]

17.9.589.7 NMAC - N, 9/24/2024]

17.9.589.8 General Reliability Metrics Reporting Requirements:

- A. A utility shall file, no later than March 15 of each year, a report in the commission’s reliability reporting compliance docket pursuant to the report outline provided in Appendix A.
- B. The report shall contain an affidavit with an attestation made by the employee of the utility who prepared the report.
- C. The utility shall serve the report upon the commissioners, the commissioners’ advisors, utility division staff, and all persons and entities listed on the certificate of service for the utility’s last base rate case.
- D. Utility division staff shall file, within 45 days of a report’s filing, staff’s assessment of the report. Staff’s assessment shall include a statement of compliance with this rule, detailing areas of non-compliance.
- E. After the utility’s second annual filing, the report shall include an analysis of trends, a comparison of previous years, and a recommendation for future distribution investments.
- F. The utility shall present, no later than June 1 of each year, its report to the commission at an open meeting, which shall include all requirements contained in Appendix A plus a linkage between the reliability metrics and the utility’s distribution planning.

[17.9.589.8 NMAC - N, 9/24/2024]

17.9.589.9 Specific Reliability Metrics Reporting Requirements:

- A. MAIFI is not required to be reported unless the utility has installed the necessary technology and has usage data for at least six months across eighty percent of its electric system.
- B. Activities that occur on MEDs should be separately analyzed and reported.
- C. A utility that provides electric service in more than one state may:
 - (1) identify major events based on the reliability events experienced by the combined service territories; and
 - (2) illustrate the effect of identifying major events based on reliability events experienced only in the New Mexico service territory.
- D. A utility may categorize interruptions into more detailed interruption cause categories that are subsets of the defined interruption cause code categories. The utility shall:
 - (1) list sub-causes when weather is the primary interruption cause code;
 - (2) list sub-equipment components when using the equipment interruption cause code;
 - (3) include planned interruptions; and
 - (4) include the utility’s methodology of how it classifies interruptions.

[17.9.589.9 NMAC - N, 9/24/2024]

NMAC History: [RESERVED]

APPENDIX A

Required Sections of Annual Reliability Metric Report Filed Pursuant to Sections 8 and 9 of 17.9.589 NMAC

1. Executive Summary:

Please provide a narrative to illustrate the current state of distribution reliability and major trends.

2. How the Utility Measures Reliability:

Please provide a narrative that describes, in general terms, how the utility’s measures and documents reliability matters, including examples of metrics that are most useful.

3. The Utility’s Service Territory Map with Districts:

Maps should show how the utility operations are divided into geographic regional/divisions. Color coding may be useful to identify districts with above or below average reliability outcomes.

4. Reliability Indices IEEE 1366 for the Last 10 years (Excluding Planned Interruptions):

Tables are required. Charts to illustrate the data would be helpful. Distribution includes distribution lines; substation includes distribution substations; and transmission includes transmission substations and lines.

Table 4.1: Prior Calendar Year Reliability Data

System	Including MEDs				Excluding MEDs			
	SAIDI	SAIFI	CAIDI	MAIFI	SAIDI	SAIFI	CAIDI	MAIFI
Distribution								
Substation								
Transmission								
Total								

Table 4.2: 10 Year History of SAIDI

Including MEDs

SAIDI	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Distribution										
Substation										
Transmission										
Total										

**“YEAR” means the prior calendar year. “YR-1” to “YR-9” means the nine incremental years prior to YEAR.

Excluding MEDs

SAIDI	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Distribution										
Substation										
Transmission										
Total										

Table 4.3: 10 Year History of SAIFI

Including MEDs

SAIFI	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Distribution										
Substation										
Transmission										
Total										

Excluding MEDs

SAIFI	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Distribution										
Substation										
Transmission										
Total										

Table 4.4: 10 Year History of CAIDI

Including MEDs

CAIDI	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Distribution										
Substation										
Transmission										
Total										

Excluding MEDs

CAIDI	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Distribution										
Substation										
Transmission										
Total										

Table 4.5: 10 Year History of MAIFI

Including MEDs

MAIFI	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Distribution										
Substation										
Transmission										
Total										

Excluding MEDs

MAIFI	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Distribution										
Substation										
Transmission										
Total										

Table 4.6: Summary YEAR System Reliability for Each District

By Districts	Including MEDs					Excluding MEDs				
	SAIDI	SAIFI	CAIDI	ASAI	MAIFI	SAIDI	SAIFI	CAIDI	ASAI	MAIFI
District 1										
District 2										
District 3										
District 4										
District 5										
District 6										
District 7										
Add as needed										

Table 4.7: Individual Tables of Reliability Measures for Each Utility District with 10 Year History (where available)

District 1		YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Including MEDs	SAIDI										
	SAIFI										
	CAIDI										
	MAIFI										
Excluding MEDs	SAIDI										
	SAIFI										
	CAIDI										
	MAIFI										

Repeat table above for subsequent districts

5. Worst Performing Feeders:

Threshold based on Feeder SAIDI or Feeder SAIFI \geq Distribution System SAIDI or SAIFI + 300%. Highlighted feeders over threshold for two consecutive years. Minimum 10 customers on feeder.

Table 5.1: YEAR Feeders Above SAIDI Threshold

YEAR Distribution system SAIDI: x Feeder SAIDI threshold: y Total Feeders: z

YEAR SAIDI Ranking	YR-1 SAIDI Ranking	Substation	Feeder ID	Location	Customers on Feeder	YEAR SAIDI Value	Reason Above Threshold

Table 5.2: YR-1 Feeders Above SAIDI Threshold

YR-1 Distribution system SAIDI: x Feeder SAIDI threshold: y Total Feeders: z

YR-1 SAIDI Ranking	YR-2 SAIDI Ranking	Substation	Feeder ID	Location	Customers on Feeder	YR-1 SAIDI Value	Reason Above Threshold

Table 5.3: YR-2 Feeders Above SAIDI Threshold

Please use Table 5.2 as a template for creating Table 5.3, which will focus on [YR-2] feeders above SAIDI threshold, while showing the SAIDI ranking of those same feeders the previous year.

Table 5.4: YR-3 Feeders Above SAIDI Threshold

Please use Table 5.2 as a template for creating Table 5.4, which will focus on [YR-3] feeders above SAIDI threshold, while showing the SAIDI ranking of those same feeders the previous year.

Table 5.5: YR-4 Feeders Above SAIDI Threshold

Please use Table 5.2 as a template for creating Table 5.5, which will focus on [YR-4] feeders above SAIDI threshold, while showing the SAIDI ranking of those same feeders the previous year.

Table 5.6: YEAR Feeders Above SAIFI Threshold

YEAR Distribution system SAIFI: x Feeder SAIFI threshold: y Total Feeders: z

YEAR SAIFI Ranking	YR-1 SAIFI Ranking	Substation	Feeder ID	Location	Customers on Feeder	YEAR SAIFI Value	Reason Above Threshold

Table 5.7: YR-1 Feeders Above SAIFI Threshold

YR-1 Distribution system SAIFI: x Feeder SAIFI threshold: y Total Feeders: z

YR-1 SAIFI Ranking	YR-2 SAIFI Ranking	Substation	Feeder ID	Location	Customers on Feeder	YR-1 SAIFI Value	Reason Above Threshold

Table 5.8: YR-2 Feeders Above SAIFI Threshold

Please use Table 5.7 as a template for creating Table 5.8, which will focus on YR-2 feeders above SAIFI threshold, while showing the SAIFI ranking of those same feeders the previous year.

Table 5.9: YR-3 Feeders Above SAIFI Threshold

Please use Table 5.7 as a template for creating Table 5.9, which will focus on YR-3 feeders above SAIFI threshold, while showing the SAIFI ranking of those same feeders the previous year.

Table 5.10: YR-4 Feeders Above SAIFI Threshold

Please use Table 5.7 as a template for creating Table 5.10, which will focus on YR-4 feeders above SAIFI threshold, while showing the SAIFI ranking of those same feeders the previous year.

6. Top Five Causes of Interruptions (Interruption Cause Code Categories):

Table 6.1: Five Year Trend of Top Causes by SAIDI Minutes (interruption codes)

Cause	YR-4 SAIDI
#1 cause	
#2 cause	
#3 cause	
#4 cause	
#5 cause	

Cause	YR-1 SAIDI
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#1 cause	
#2 cause	
#3 cause	
#4 cause	
#5 cause	

Cause	YR-3 SAIDI
#1 cause	
#2 cause	
#3 cause	
#4 cause	
#5 cause	

Cause	YEAR SAIDI
#1 cause	
#2 cause	
#3 cause	
#4 cause	
#5 cause	

Cause	YR-2 SAIDI
#1 cause	
#2 cause	
#3 cause	
#4 cause	
#5 cause	

Figure 6.1: Five Year Trend of Top Causes by SAIDI Minutes (present the data from Table 6.1 in graphic form)
Please provide a narrative pertaining to top causes of interruptions.

7. Table of Major Events (MED) and Top 5 Non-MED Events:

Table 7.1: Major Events

Start Time	Customers Affected	% Customers Restored in 24 hours	Time All Customers Restored	Cause	Brief Event Narrative	Index Contribution		
						SAIDI	SAIFI	CAIDI

Table 7.2: Top 5 Non-MED Events

Start Time	Customers Affected	% Customers Restored in 24 hours	Time All Customers Restored	Cause	Brief Event Narrative	Index Contribution		
						SAIDI	SAIFI	CAIDI

Please provide a narrative pertaining to MED and non-MED events.

8. Customers Experiencing Extended Interruptions:

Table 8.1: CELID 12 and 24 Hours Including and Excluding MEDs
YEAR Customers Experiencing Long Interruption Duration (CELID)

	CELID-12 (>= 12 hrs)		CELID-24 (>= 24 hrs)	
	No. of Customers	% of all Customers	No. of Customers	% of all Customers
Including MEDs				
Excluding MEDs				

Please provide a narrative pertaining to customers experiencing extended interruptions.

9. Narrative on Customer Complaints to the Utility About Interruptions:

The narrative shall provide the total number of customer complaints received by the utility about interruptions, as well as an overview of the types of those complaints. Reporting regarding the complaints shall be disaggregated by customer class or voltage level (large customers, residential, etc.) to the extent possible while not identifying individual customer data or disclosing confidential customer information. The narrative is not required to discuss individual customer complaints and what was done to resolve them; however, the utility may choose to include this information for illustrative purposes.

10. Trends of Investment in Transmission and Distribution System (CapEx and O&M) Over 10 Years of Spending on Reliability Improvements:

Please clarify whether all of your transmission is considered part of the bulk electric system as defined by the Federal Energy Regulatory Commission. If a portion of your transmission system is not considered a part of the bulk electric system, expenditures for each portion of the transmission system should be reported separately.

Table 10.1: Total Transmission O&M and Capital Expenditures

Transmission Expenditures	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Capex - (000) USD										
O&M - (000) USD										

Table 10.2: Total Distribution O&M and Capital Expenditures

Distribution	YR-9	YR-8	YR-7	YR-6	YR-5	YR-4	YR-3	YR-2	YR-1	YEAR
Capex spend - (000) USD										
O&M spend - (000) USD										
Dist. line miles at year end										
Dist. customers at year end										

Table 10.3 Major Event and Storm Restoration Expenditures in Prior Year for Events Listed in Section 7.

11. Inspections and Replacements

Table 11.1: Distribution Pole Inspections/Replacement

Year	Total Poles	Poles Inspected	Poles Replaced
YEAR			
YR-1			
YR-2			
YR-3			
YR-4			

Table 11.2: Underground Circuits

Year	Total Miles	Total Miles evaluated	Total Repaired/Replaced
YEAR			
YR-1			
YR-2			
YR-3			
YR-4			

Table 11.3: Vegetation Management (add activities as needed)

Year	Total Overhead Line Length (miles)	Length of Overhead Line Cleared (miles)	Total Cost to Clear (USD)	Other
YEAR				
YR-1				
YR-2				
YR-3				
YR-4				

12. Narrative on Other Work Planned to Improve Reliability:

Please provide a general narrative.

13. Summary of Planned and Unplanned Electric Interruptions Due to Wildfire Risk:

Please provide a narrative with selected charts/graphs to illustrate any planned interruptions or de-energization due to wildfire risk including the interruption area, number of customers impacted (identified by customer class or voltage level), durat