65-407 MAINE PUBLIC UTILITIES COMMISSION ELECTRIC TRANSMISSION AND DISTRIBUTION UTILITY SERVICE **STANDARDS** SUMMARY: This Chapter establishes service standards and service quality metrics and reporting requirements for electric transmission and distribution utilities. TABLE OF CONTENTS § 1. DEFINITIONS \_\_\_\_\_\_2 § 2. GENERAL PROVISIONS 4 § 3. § 4. SERVICE INTERRUPTIONS; SERVICE QUALITY METRICS ...... 787 § 5. RELIABILITY METRICS......8 CUSTOMER SERVICE METRICS..... 810 BILL<u>ING PERFORMANCE METRICS.</u> <del>911</del> CUSTOMER SATISFACTION METRICS -<u>SURVEY</u>......102 § 109. REPORTING ON 

AND TESTING PROTOCOLS ...... 113

§ 1106. METERING REQUIREMENTS, STANDARDS,

# § 1. SCOPE AND PURPOSE

### A. Scope

Unless otherwise specified, this Chapter applies to all Transmission and Distribution Utilities.

# B. Purpose

This Chapter establishes system standards and associated protocols for record keeping and reporting requirements for Transmission and Distribution Utilities. It also establishes for the investor-owned utilities metrics and reporting requirements for system reliability, call answering, billing and customer satisfaction.

# § 2. **DEFINITIONS**

The following words and terms, when used in this Chapter, shall have the following meanings, unless the context clearly indicates otherwise.

- A. "Applicable Codes, Standards and Requirements" means any codes standards or requirements identified by the American National Standards Institute (ANSI), Institute of Electrical and Electronics Engineers (IEEE), Independent System Operator New England (ISO-NE), National Electric Safety Code (NESC), North American Electric Reliability Corporation (NERC), Northern Maine Independent System Administrator (NMISA) or Northeast Power Coordinating Council, Inc. (NPCC). The version that applies to a device will be the version in effect at the time the device is initially put into service.
- B. "Call" means a telephone call received on the utility's customer service line as specified on customer bills. Call time begins when a customer opts to speak to a live person and ends when the call is answered by a live person.
- **CB.** "**Commission**" means the Public Utilities Commission of the State of Maine.
- Consumer-Owned T&D Utility" means any transmission and distribution utility wholly owned by its consumers, including, but not limited to:
  - The transmission and distribution portion of a rural electrification cooperative organized under chapter 37;
  - 2. The transmission and distribution portion of an electrification cooperative organized on a cooperative plan under the laws of the State;
  - 3. A municipal or quasi-municipal transmission and distribution utility;
  - 4. The transmission and distribution portion of a municipal or quasi-municipal entity providing generation and other services; and
  - 5. A transmission and distribution utility wholly owned by a municipality.
- **ED.** "Customer" means a person or entity that receives service from a T&D Utility.

 $CAIDI = \underbrace{\sum customer \ Sustained \ i Interruption \ durations}_{Total \ number \ of \ customer \ \underline{Sustained \ i Interruptions}}$ 

- GF. "Flicker" means noticeable illuminations changes from lighting equipment caused by fluctuations in power demands.
- HG. "Harmonics" means, a sinusoidal component of the 60 Hertz fundamental wave having a frequency that is an integral multiple of the fundamental frequency.
- IH. "IEEE 2.5 Beta Method" is used for identifying outlying service performance, usually caused by major storms, when calculating service quality metrics. The IEEE 2.5 Beta Method identifies "major event days," which is a day in which daily SAIDI exceeds a threshold value T<sub>med</sub>. These "major event days" are then removed from the calculation of a particular service quality metric.
- II. "Investor-Owned T&D Utility" means a transmission and distribution utility that is not a Consumer-Owned T&D Utility.
- K. "IVR" means Interactive Voice Response telephone answering system.
- L. "Major Event Days" means a day in which the daily system SAIDI exceeds a threshold value that is determined by using the IEEE 2.5 beta method.
- MLM: "Major Outage Event" means a disruption of utility service to more than 500 customers or 1% of a utility's customers, whichever is greater, for a period of longer than 30 minutes.
- **NALL "Meter"** means a device that measures the amount of energy consumption or real and reactive demand by a customer from a T&D Utility.
- •\*Momentary Interruption" means the brief loss of power delivery to one or more customers caused by the opening and closing operation of an interrupting device. A Momentary Interruption does not exceed 5 minutes.
- POL. "Nominal System Voltage" means the voltage by which a portion of the system is designed, and to which certain operating characteristics of the system are related. Each Nominal System Voltage pertains to a portion of the system bounded by transformers or utilization equipment.
- QPM. "Service Sustained Interruption" means any service interruption that lasts longer than 5 minutes.
- RQN. "System Average Interruption Duration Index or "SAIDI" is the average time that customers are interrupted. It is measured in minutes or hours of interruption.

 $SAIDI = \underbrace{\sum Customer \ Sustained \ Iinterruption \ durations}_{Total \ number \ of \ customers \ served}$ 

"System Average Interruption Frequency Index" or "SAIFI" is the average frequency of Sustained service-Interruptions per customer over a predefined area.

> SAIFI = <u>Total number of customer Sustained I</u>nterruptions Total number of customers served

- TSP. "Service Voltage" means the voltage at the point where the electrical system of the T&D Utility and electrical system of the Customer are connected.
- "Terms and Conditions" are the provisions filed by the public utility with the Commission U<del>TQ</del>. which show the basis on which various utility services will be provided to customers, or which in any manner affect the rates charged for any service. 35-A M.R.S.A. §304 requires that public utility schedules which were formerly designated as "rules" shall be designated as "terms and conditions".
- <u>V</u>R<u>U</u>. "Transmission and Distribution Utility" or "T&D Utility" means a person, its lessees, trustees, receivers or trustees appointed by a court, owning, controlling, operating, or managing electric transmission and/or distribution plant for compensation within the State.

#### GENERAL PROVISIONS § 3.

- A. Each T&D Utility shall construct, maintain and operate its T&D ssystem such that it provides safe and adequate T&D service to its Customers.
- В. All new construction, reconstruction, maintenance, design, and operation of T&D Systems shall comply with the provisions of this Chapter and with all Applicable Codes, Standards, and Requirements.
- Each Investor-Owned T&D Utility shall collect all information required by this rule that is necessary to comply with Sections 5, 6, 7, and 8.
- Each T&D Utility shall maintain Terms and Conditions to implement the provisions of this D<del>C</del>. Chapter. The Terms and Conditions must be approved by the Commission and must be periodically reviewed and modified or updated as necessary by each T&D Utility to conform to any changes or updates to, or replacements of, the applicable standards and requirements set forth in this Chapter, or to any other Applicable Codes, Standards and Requirements. Modifications or updates to the Terms and Conditions must be approved by the Commission.
- ED. Unless otherwise indicated in this Chapter, T&D Utilities shall keep all records required by this rule for a period of at least ten years. All such records shall be available to the Commission upon request.

### QUALITY OF SERVICE § 4.

#### A. **Frequency**

Each T&D Utility shall design and operate its T&D sSystem such that alternating current service shall be supplied at 60 cycles per second (Hertz or Hz) under normal, steady state conditions and shall vary only in accordance with Applicable Codes, Standards, and Requirements. The system shall operate within a +/-0.5 Hertz limit.

#### В. Voltage

#### 1. Nominal System and Service Voltages

Each T&D Utility shall establish and maintain Nominal System and Service Voltages as may be required by the design of its T&D System and the service to be provided to its Customers. The Nominal System and Service Voltages shall conform with the standard nominal system voltages established by ANSI C84.1.

#### 2. Voltage Variation; Limits

- Each T&D Utility shall maintain and operate its system to conform to the voltage variation ranges established by ANSI C84.1 for Voltage Range A and Voltage Range B. Figure IV.B.2.a and Figure IV.B.2.b below set forth the voltage variation limit requirements specified by the current version of ANSI C84.1 (ANSI C84.1-2016), Range A and Range B.
- T&D Systems shall be designed, maintained, and operated so that Service b. Voltages will generally be within the Range A limits. Infrequent and limited periods during which Service Voltages are outside of the Range A limits but are within the Range B limits are acceptable. When Service Voltages occur that are outside of Range B, T&D Utilities shall take prompt corrective action to restore the Service Voltages to acceptable levels.

# Figure IV.B.2.a (Range A)

Established Standard Service Voltage	Minimum Voltage	Maximum Voltage	Type of Service
120	114	126	Single Phase
120/240	114/228	126/252	Single or Polyphase
208Y/120	197Y/114	218Y/126	Single or Polyphase
240	228	252	Single or Polyphase
480Y/277	456Y/263	504Y/291	Single or Polyphase

**Formatted Table** 

480	456	504	Single or Polyphase
600	570	630	Single or Polyphase
2400	2340	2520	Single or Polyphase
4160Y/2400	4050Y/2340	4370Y/2520	Single or Polyphase
12470Y/7200	12160Y/7020	13090Y/7560	Single or Polyphase

Established Standard Service Voltage	Minimum Voltage	Maximum Voltage	Type of Service
120	110	127	Single Phase
120/240	110/220	127/254	Single or Polyphase
208Y/120	191Y/110	220Y/127	Single or Polyphase
240	220	254	Single or Polyphase
480Y/277	440Y/254	508Y/293	Single or Polyphase
480	440	508	Single or Polyphase
600	550	635	Single or Polyphase
2400	2280	2540	Single or Polyphase
4160Y/2400	3950Y/2280	4400Y/2540	Single or Polyphase
12470Y/7200	11850Y/6840	13200Y/7620	Single or Polyphase

# 3. Voltage Testing and Records

Each T&D Utility shall sufficiently test voltage levels within its service territory to assess and ensure compliance with voltage requirements set forth in this Rule. The voltage testing protocols shall be specified in the T&D Utility's Terms and Conditions, subject to Commission review and approval. Test results shall be maintained and made accessible in accordance with Section III.D of this Rule.

Formatted Table

#### 4. **Harmonics**

Each T&D Utility shall maintain and operate its system in a manner consistent with the IEEE 519 Standard: Recommended Practice and Requirements for Harmonic Control in Electric Power Systems. In accordance with the IEEE 519 recommendations, current distortion limits are determined by the short-circuit ratio, or the ratio of short-circuit current at the point of common coupling (PCC) to the maximum load or demand current.

#### 5. Flicker

T&D Utilities shall limit the frequency and magnitude of Flicker events in accordance with IEEE Recommended Practice 1453.

#### SERVICE INTERRUPTIONS; SERVICE QUALITY METRICS § 5.

#### A. General

In the event of a Service Sustained Interruption, each T&D Utility shall employ reasonable utility practices to restore service in a timely manner, consistent with appropriate consideration of safety and costs.

#### B. **Service-Sustained Interruption/Outage Reporting**

In the event of a Service Sustained Interruption affecting more than 500 customers or 1% of a T&D Utility's customers, whichever is greater, the T&D Utility shall provide immediate notification to the Commission. The notification shall include the date and time of the Service-Sustained Interruption; the number of Customers affected in each service center or county, and town; the cause of the Service-Sustained Interruption; and any other information descriptive of or relevant to the event. The T&D Utility shall provide periodic updates no less frequently than daily for the duration of the Service Sustained Interruption. This reporting requirement does not apply to Momentary Interruptions.

# **Major Outage Event Response**

For each Major Outage Event, each Investor-Owned T&D Utility shall calculate the percentage of customers that experience one or more Sustained Interruptions in each hour of the event. The utility shall quarterly provide to the Commission a graph for each Major Outage Event showing the number of customers experiencing one or more Sustained Interruptions for every hour of the event. The Commission may ask utilities to provide reports that support the reasonableness of its restoration response for Major Outage Events.

# **Metrics and Reporting**

Each Investor Owned T&D Utility shall maintain the following Service Interruption and Service Outage metrics and information:

a. Monthly and annual CAIDI.

b. Monthly and annual SAIFI calculated by circuit where each circuit is the pre defined area.

e. Monthly and annual SAIDI.

d. For each service area, provide on a monthly and annual basis a classification of interruptions by the identified cause.

- The Commission shall set individual performance targets for SAIFI and CAIDI metrics for each utility through Commission Order. The targets shall be based on the historic performance of each utility, or otherwise at levels that reflect reasonable service quality. The Commission shall, by Commission Order (1) direct the Investor Owned T&D Utility to take corrective actions if performance targets are not met or (2) impose financial penalties established by the Order.
- The CAIDI, SAIFI, and SAIDI metrics required by this provision shall be calculated and reported with and without major event exemption days. The IEEE 2.5 Beta Method will be used to determine "major event days" that will be removed from the service metric calculation.
- Each Investor Owned T&D Utility shall file Annual Reliability Reports with the Commission by April 1 of each year. The Annual Reliability Reports shall provide detailed information for the prior calendar year regarding each of the Metrics listed in Section 5(C)(1).
- All service metrics listed in this section shall be retained by the utility for a period of at least ten years.

#### **RELIABILITY METRICS** § 6.

- C. **Reliability Metrics and Reporting**
- -Each Investor-Owned T&D Utility shall collect and maintain the following Service 1A. <u>Sustained</u> Interruption and <u>Service Oo</u>utage metrics and information:
- a. Monthly and annual CAIDI.
- Monthly and annual SAIFI ealeulated by circuit where each circuit is the predefined area.
- Monthly and annual SAIDI. c.
- d. For each service area, provide on a monthly and annual basis a classification of Sustained Linterruptions by the identified cause. Information in this subsection (d) shall not be included in the Sec. 109(B) reports to customers.
- -The Commission shall set individual performance targets benchmarks for SAIFI and CAIDI metrics for each utility through Commission Order. The targets-benchmarks shall be based on the historic performance of each utility, or otherwise at levels that reflect reasonable service quality. The Commission shallmay, by Commission Order (1) direct the Investor-Owned T&D Utility to take corrective actions if performance targets benchmarks are not met, or, (2) impose financial penalties established by the Order.
- 3C. The CAIDI, SAIFI, and SAIDI metrics required by this provision shall be calculated and reported with and without "major event exemption days." The IEEE 2.5 Beta Method will be used to determine "major event days." that will be removed from the service metric calculation.

Formatted: Indent: Left: 0.5", Tab stops: 1", Left

Formatted: Indent: Left: 0.5", Hanging: 0.5"

- 4. Each Investor Owned T&D Utility shall file Annual Reliability Reports with the Commission by April 1 of each year. The Annual Reliability Reports shall provide detailed information for the prior calendar year regarding each of the Metrics listed in Section 5(C)(1):
- All service metrics listed in this section shall be retained by the utility for a period of at least ten years.

# § 7. CUSTOMER SERVICE METRICS

# A. Utility Call Response Metrics

- 1. Each Investor-Owned T&D Utility shall collect and maintain the following annual Call answering metrics. For the purpose of this section a "live person" is someone working for or on behalf of the utility who is qualified to assist the customer in the subject area of the metric.
  - Speed of Answer for Calls to Business Office. The formula for this metric is:

Number of Calls answered ≤30 seconds
Total number of Calls answered by a live person

 The benchmark for each metric in this subsection is 80% of Calls answered by a live person in thirty (30) seconds or less. Compliance with the benchmark for these metrics shall be calculated excluding major event days.

# B. Call Abandonment Rate

1. Each Investor-Owned T&D Utility shall collect and maintain annual Call abandonment data for the purpose of this metric. A call is considered "abandoned" if the caller hangs up after the Call is received by the utility's IVR system (or other automated call answering system) and after the customer makes a choice to speak with a live person. The "call abandonment rate" is calculated by the following formula:

Number of abandoned Calls
Total number of business Calls received

2. The benchmark for this metric is 7% and shall be calculated excluding major event days.

# C. Blocked Call Rate

1. Each Investor-Owned T&D Utility shall collect and maintain annual blocked Call data for the purposes of this metric. A Call is considered "blocked" if the caller receives a busy signal, automated message asking to call back later, or the Call is terminated by the system prior to the Call reaching the utility's IVR (or other automatic call distribution system). A busy signal condition is only recognized under this subsection if all phone line trunks into the utility's telephone phone system are being utilized. The "blocked call rate" is calculated by the following formula:

# Number of blocked Calls Total number of business Calls received

 The benchmark for this metric is 3% and shall be calculated excluding major event days.

# § 8. BILLING PERFORMANCE METRICS

### A. Bill Error

Each Investor-Owned T&D Utility shall measure the number of erroneous bills. For purposes of this Chapter, a bill is considered erroneous if: (1) it contains an incorrect rate or charge or is issued to the wrong customer, account or address; (2) it lacks a proper charge, fee, or tax; (3) the total amount due is not correct; or (4) it is not sent to the customer within ten days of the scheduled monthly billing date for that customer. Estimated bills are not considered erroneous. The calculation is based on actual bills and not on accounts. The "Bill Error" rate is calculated by the following formula:

Number of erroneous bills
Total number of bills

2. The benchmark for this metric is 0.4%.

# B. Percentage of Bills Based on Estimated Meter Reads

1. Each T&D Utility shall measure the annual number of estimated bills issued. A bill is considered estimated when an actual meter read is not obtained, either through the utility's AMI system or through a manual read and the utility estimates usage. A utility may exclude from this calculation meter reads that fall on "major event days" to be determined using the IEEE 2.5 Beta method, estimated reads that meet the conditions specified in Chapter 815, section 8(L), and estimated reads for customers that have declined to have remote meter reads. This calculation is based on actual bills issued and not on accounts. The "Bills Based on Estimated Meter Reads" rate is calculated by the following formula:

Total number of estimated bills
Total number of bills issued

2. The benchmark for this metric is measured as a percentage of the utility's bills based on estimated meter reads over a one-year period. The benchmarks are no more than 1) 1% for utilities using automatic meter reads, or 2) 5% for utilities using manual meter reads.

# § 9. CUSTOMER SATISFACTION METRICS - SURVEY

Each T&D Utility annually shall contract with a third party not affiliated with the T&D Utility to randomly survey a statistically valid sample of customers who have contacted the utility with a report, request, inquiry, complaint, or request for work. The purpose of the survey is to assess the level of customer satisfaction with the utility's response. Surveys will be conducted by email, follow-up cards sent through the U.S. Postal Service, or via a phone call. The unaffiliated, third-party contractor will process completed surveys and report results. The administrative process and question format for the survey will be established by Commission Order. The utility may add more questions to the list of prescribed questions.

# § 109 REPORTING ON METRICS

### A. Reports to the Commission

Beginning in 2023, each Investor-Owned T&D Utility shall file a report with the Commission every quarter. Each report shall provide the cumulative calculations and underlying information for the prior quarter or quarters for that calendar year for each of the metrics listed in Sections 6, 7, and 8. Each report shall provide information on a monthly basis. The reports shall be provided no later than 30 days after the close of the quarter.

### B. Customer Report Cards

Beginning in 2023 and each year thereafter, each Investor-Owned T&D Utility shall, on or before June 1, issue a report to each of its residential customers with information regarding the utility's performance and rates. The report shall include (i) explanations in non-technical, plain language of the individual performance benchmarks described in sections 6, 7, and 8 including an explanation of how each is measured and providing the utility's performance score in the previous calendar year with respect to each benchmark. The report shall be in substantial conformance with a template to be reviewed and approved by Commission order for each utility. The report shall be sent to each customer in either a U.S. Postal Service mailing, or in an email, depending on how the customer is billed. The utility shall also post this report on its website.

# § 1106. METERING REQUIREMENTS, STANDARDS, AND TESTING PROTOCOLS

# A. General

All T&D Service provided by a T&D Utility shall be measured by Meters owned and maintained by the utility, except where it is impracticable to do so.

Each T&D Utility shall keep a complete set of records of its Meters by Customer account, including the meter type, unique meter identification code, and date of installation. The records should include all Meter repairs and upgrades, including all physical, hardware, software, or firmware repairs, modifications, upgrades, and updates, as well as all notifications or other relevant information provided by the Meter Manufacturers that could potentially affect meter registration.

### B. Performance and Accuracy Standards

Each T&D Utility shall ensure that its Meters comply with the performance criteria and other applicable standards set forth in ANSI C12.1 (American National Standard for Electric Meters – Code for Electricity Metering).

# 1. Testing Protocols and Processes

Each T&D Utility shall conform to the testing protocols and processes set forth in ANSI C12.1 for new and in-service metering devices.

# 2. Testing Upon Customer Request

a. Each T&D Utility shall test the accuracy of a Customer's Meter upon request of the Customer. The test shall be done at no charge to the Customer, provided that the Customer has not requested such a test within

- the past 12 months or the Meter has not otherwise been tested within the past 12 months.
- b. If a Customer requests a Meter test within 12 months of the date of the most recent test of its Meter, the T&D Utility may charge the Customer for the reasonable cost of the test. The charge shall be refunded or credited to the Customer if the Meter does not meet the Performance and Accuracy Standards of this Rule.
- c. A Customer may be present when the T&D Utility conducts the requested test of its Meter or, the Customer may send another person as its representative. The T&D Utility shall provide a written report to the Customer that provides the results of the Meter test and shall retain a copy of the report for a period of no less than five years.

# C. Audits Performed by the T&D Utility

The results of any audits evaluating the accuracy or performance of a T&D utility's billing or metering systems, performed by or for the T&D utility, shall be provided to the Commission within 60 days of the completion of the audit.

# § 1217. INDEPENDENT AUDITS OF METERING AND BILLING SYSTEMS

- A. The Commission shall administer periodic audits by an independent auditor of the billing and metering systems of Investor-Owned T&D Utilities. The audits shall be conducted pursuant to 35-A M.R.S. §113.
- B. The independent auditor shall be selected by the Commission pursuant to the applicable rules and processes of the State of Maine Division of Procurement Services, or any successor entity. In selecting an independent auditor, the Commission shall ensure that the methodologies to be used by the auditor are sufficiently objective, thorough and rigorous, and that any statistical sampling and analyses will be sufficiently robust to represent the relevant population and range of systems being audited.
- C. An audit shall be conducted once every five years for each Investor-Owned T&D Utility, or as otherwise deemed necessary by the Commission. The Commission may focus the audit on only residential and small commercial customers, or the Commission may include other customer groups in the audit.
- D. The Commission shall determine the allocation of the cost of the periodic audit between the utility and its ratepayers based on the results of the audit.

### § 1328. WAIVER OR EXEMPTION

Upon the request of any person subject to the provisions of this Chapter or upon its own motion, the Commission may, for good cause, waive any of the requirements of this Chapter that are not required by statute. The waiver may not be inconsistent with the purpose of this Chapter or Title 35-A. The Commission, the Director of Electric and Natural Gas Industries, the Director of Consumer Assistance and Safety, or the Presiding Officer assigned to a proceeding related to this Chapter may grant the waiver.

# STATUTORY AUTHORITY:

35-A M.R.S. §§ 104, 111, 301(1-A), 2305-A, 3104-A, 3106.

Formatted: Font: Bold

**BASIS STATEMENT:** The factual and policy basis for this rule is set forth in the Commission's Order Amending Rule and Statement of Factual and Policy Basis, Docket No 2022-00052, issued on July 29, 2022. Copies of the Statement and Order have been filed with this rule at the Office of the Secretary of State. Copies may also be obtained from the Administrative, Public Utilities Commission, 18 State House Station, Augusta Maine 04333-0018

# HISTORY OF CHAPTER 320:

**EFFECTIVE DATE**: This major substantive rule adoption was approved as to form and legality by the Attorney General on June 12, 2019. It was filed with the Secretary of State on June 14, 2019, and became effective on July 14, 2019 (filing 2019-098).

**EFFECTIVE DATE**: This routine technical rule adoption was approved as to form and legality by the Attorney General on May 1, 2020. It was filed with the Secretary of State on May 1, 2020, and became effective on May 6, 2020 (filing 2020-113).

EFFECTIVE DATE: This routine technical rule adoption was approved as to form and legality by the Attorney General on \_\_\_\_\_, 2022. It was filed with the Secretary of State on \_\_\_\_\_, 2022, and became effective on \_\_\_\_\_, 2022 (filing 2022-00052XXXX).

Formatted: Font: Bold

Formatted: Font: Bold

Formatted: Font: Bold