

February 1, 2016

Mark D. Marini, Secretary  
Department of Public Utilities  
One South Station, 5<sup>th</sup> Floor  
Boston, MA 02110

**Re: D.P.U. 16-08, Massachusetts Electric Company and Nantucket Electric Company  
d/b/a National Grid Service Quality Compliance Plan**

Dear Secretary Marini:

On behalf of Massachusetts Electric Company (“MECo”) and Nantucket Electric Company (“Nantucket”), each d/b/a National Grid (together, “National Grid” or “Company”), enclosed please find the Company’s Service Quality Plans in compliance with the Department’s D.P.U. 12-120-D Order (“Order”) and Service Quality Guidelines (“Guidelines”). Please also find my appearance of counsel enclosed.

The Company is including: (1) the MECo and Nantucket service quality plans; (2) a summary and redline comparison of the changes from the model Guidelines; and (3) the Company-specific benchmarks.

Please contact me with any questions. Thank you for your time and attention to this matter.

Very truly yours,



Andrea G. Keefe

Enclosures

cc: Heather Castillo, Esq., Hearing Officer  
D.P.U. 12-120 Service List

**COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF PUBLIC UTILITIES**

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National Grid's Service Quality  
Compliance Plan Filing  
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**D.P.U. 16-08**

**APPEARANCE OF COUNSEL**

In the above-entitled proceeding, I hereby appear for and on behalf of Massachusetts Electric Company and Nantucket Electric Company, each d/b/a National Grid.

Respectfully submitted,



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Dated: February 1, 2016

**Service Quality Benchmarks**

**Electric Reliability Metrics**

	<b>MECO SAIFI</b>	<b>MECO SAIDI</b>	<b>Nantucket SAIFI</b>	<b>Nantucket SAIDI</b>
Average (1996-2005)	1.254	114.32	0.426	24.06
Standard Deviation (Std. Dev.)	0.177	39.66	0.253	14.94
GPIV-PM: 1/6 Standard Deviation	0.030	6.61	0.042	2.49
GPIV-PT: 1/6 Standard Deviation	0.030	6.61	0.042	2.49

**(2016 - 2018)**

GP1 PM: Average + 2 Stnd. Dev	1.608	193.640	0.932	53.940
GP1 PT: Average + 1 Stnd. Dev.	1.431	153.980	0.679	39.000

**(2019-2021)**

GP2 PM: GP1PM - GPIV-PM	1.579	187.030	0.890	51.450
GP2 PT: GP1PT - GPIV-PT	1.402	147.370	0.637	36.510

**(2022 - 2024)**

GP3 PM: GP2PM - GPIV-PM	1.549	180.420	0.848	48.960
GP3 PT: GP2PT - GPIV-PT	1.372	140.760	0.595	34.020

**(2025 and out)**

GP4 PM: GP3PM - GPIV-PM	1.520	173.810	0.806	46.470
GP4 PT: GP3PT - GPIV-PT	1.343	134.150	0.553	31.530

**Customer Complaints**

**(2016-2018)**

	<b>MECO</b>	<b>Nantucket</b>
DPU Cases (DPU 04-116)	Mean - 0.8 Penalty - 1.0	Mean - 0.3 Penalty - 0.5

**(2019 and out)**

Customer Complaints (DPU 12-120-D)	TBD	TBD
Credit Cases (DPU 12-120-D)	TBD	TBD

**Service Appointments**

**(2016-2018)**

	<b>MECO</b>	<b>Nantucket</b>
Service Appointments (DPU 04-116)	Mean - 96.5% Penalty - 93.8%	Mean - 96.4% Penalty - 87.6%

**(2019 and out)**

Service Appointments (DPU 12-120-D)	TBD	TBD
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**Substantive Changes from Model Service Quality Guidelines in D.P.U. 12-120-D**

<u>Redline Comparison Page</u>	<u>Change Made</u>
Throughout (not redlined)	Removed references to gas company metrics.
Page 2, “Critical Facility”	Aligned the definition of “critical facility” with D.P.U. 12-120-D, Order (“Order”) at 35.
Page 3, “Downed-Wire Response”	Removed the reference to “downed-wire” to clarify that Priority 1-3 is used for all public safety agency calls.
Page 8, Service Appointments	Removed “with the assent of the customer” to clarify that the Company’s ability to cancel the appointment is not contingent on the customer’s assent; rather, the rescheduling of the appointment requires the customer’s assent since a “Service Appointment” is defined as a mutual agreement by the Company and a customer. <u>See</u> D.P.U. 12-120-D Guidelines at 6.
Page 12, Circuit Level Reliability	Added “for Chronic Circuits that were not remediated by the end of the third year” to clarify that the mean test will be applied to Chronic Circuits that have not be remediated pursuant to the Order at 21, 25.
Page 12, Circuit Level Reliability	Added and removed select language to clarify the calculation of the mean and comparison test.
Page 16, CEMI and CELID	Added “a status report about its ability to calculate CEMI and CELID” for clarification purposes.
Page 22, Customer Satisfaction Surveys	Added language to the survey question anchors to reflect the language used by National Grid.
Page 23, Customer Service Guarantee	Added “for a missed notification of a planned service interruptions or a missed service appointment, including” and “service” for clarification purposes.

**Substantive Changes from Model Service Quality Guidelines in D.P.U. 12-120-D**

<u>Redline Comparison Page</u>	<u>Change Made</u>
Throughout (not redlined)	Removed references to gas company metrics.
Page 2, “Critical Facility”	Aligned the definition of “critical facility” with D.P.U. 12-120-D, Order (“Order”) at 35.
Page 3, “Downed-Wire Response”	Removed the reference to “downed-wire” to clarify that Priority 1-3 is used for all emergency calls by appropriate public safety representatives.
Page 8, Service Appointments	Removed “with the assent of the customer” to clarify that the Company’s ability to cancel the appointment is not contingent on the customer’s assent; rather, the rescheduling of the appointment requires the customer’s assent since a “Service Appointment” is defined as a mutual agreement by the Company and a customer. <u>See</u> D.P.U. 12-120-D Guidelines at 6.
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	clarification purposes.
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**MASSACHUSETTS ELECTRIC COMPANY  
D/B/A NATIONAL GRID**

**SERVICE QUALITY PLAN**

I. GENERAL

A. Purpose and Scope

The purpose of this plan is to ensure that Massachusetts Electric Company d/b/a National Grid (“National Grid” or the “Company”) provides adequate service to its customers in Massachusetts in compliance with the Service Quality Guidelines issued by the Department of Public Utilities (the “Department”) as Attachment A to Order D.P.U. 12-120-D on December 18, 2015 (the “Guidelines”).<sup>1</sup> The Company is required to (1) meet the benchmarks established in the Guidelines or be subject to a penalty, (2) report data as defined in the Guidelines, and (3) report service quality performance annually. This Plan supersedes prior plans filed by the Company and is effective January 1, 2016.

B. Definitions

“Chronic Circuit” means a Problem Circuit(s) that appears among the worst five percent of all of an Electric Company’s active Circuits or feeders for the third consecutive reporting year.

“Circuit” or “Feeder” means a system of conductors through which electric energy is delivered to the customer. A “Circuit” or “Feeder” begins at the terminals of the substation protective device or at the terminals of a supply line protective device and ends at the terminals of the customer’s point of interconnection with the utility system. The customers normally supplied by a given Circuit do not change Circuit assignment for temporary system configuration changes such as maintenance switching or restoration activities. Supply lines that do not have customers directly connected to them (connected only with a protective device such as a recloser) are considered as non-reportable. Conversely, Circuits or Feeders connected to such supply lines via protective devices such as reclosers have a separate designation and are reportable.

“Circuit Average Interruption Duration Index” or “CKAIDI” means the total minutes of customer Interruptions for a Circuit divided by the total number of customers connected to the Circuit, expressed in minutes per year. If the total number of customers connected to the Circuit differs from Interruption to Interruption, then the average number of customers served by that Circuit shall be used. CKAIDI characterizes the average length of time customers connected to a Circuit are without electric service during the reporting period.

“Circuit Average Interruption Frequency Index” or “CKAIFI” means the total number of customer Interruptions divided by the total number of customers connected to the

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<sup>1</sup> In the event of a conflict between these Guidelines and any orders or regulations of the Department, said orders and regulations shall govern.

Circuit, expressed in number of Interruptions per year. If the total number of customers connected to the Circuit differs from Interruption to Interruption, then the average number of customers served by that Circuit shall be used. CKAIFI characterizes the average frequency of Interruptions for customers connected to a Circuit during a reporting period.

“Critical Facility” means a building or structure where the loss of electrical service would result in disruption of a critical public safety function. The Company’s Critical Facilities list is developed by the Company and supplemented by agreed-upon requests from municipalities. Critical Facilities are those facilities deemed critical by both the Electric Company and the municipality. Examples of critical facilities may include, but are not limited to hospitals, police and fire stations, airports, emergency management agencies, acute/postacute medical facilities with life sustaining equipment, water sewer, pump stations, evacuation centers, and emergency communications centers which serve a life safety function (E911 centers). These facilities are typically required by the town or state to have emergency generation or provisions for emergency generation on site in order to address safety concerns.

“Customer Average Interruption Duration Index” or “CAIDI” means the total duration of customer Interruption in minutes divided by the total number of customer Interruptions (i.e., total number of interrupted customers), expressed in minutes per year. CAIDI characterizes the average time required to restore service to the average customer per sustained Interruption during the reporting period.

“Customer Complaint” means any residential customer complaint recorded by the Consumer Division that meets the criteria set forth in Section II.B.2

“Customer Credit Case” means any residential customer complaint recorded by the Consumer Division relating to the following matters: payment and arrearage management plans, inability to pay, shut-off notices, and terminations, as set forth in Section II.B.3.

“Customer Equipment Outage” means an electric Outage/Interruption caused by customer operation or the failure of customer-owned equipment.

“Customers Experiencing Long Interruption Duration” or “CELID” means the percent of customers who have experienced Interruption duration of a given number of hours or more during the reporting period.

“Customers Experiencing Multiple Interruptions” or “CEMI” means the percent of customers who have experienced a given number or more sustained Interruptions during the reporting period.

“Downed-Wire Response” means an Electric Company’s response to Priority 1, 2, and 3 emergencies as reported by public safety agencies.

“Electric Distribution Company Service Territory” means the service territory or territories approved by the Department for Electric Companies providing electric service in the Commonwealth.



“Electric Distribution Facility” means plant or equipment used for the distribution of electricity that is not a transmission facility, a cogeneration facility, or a small power production facility.

“Electric Distribution Service” means the delivery of electricity over lines that operate at a voltage level typically equal to or greater than 110 volts and less than 69,000 volts to an end-use customer within the Commonwealth.

“Electric Line Loss” means a total energy loss on a distribution and transmission system calculated as the difference between energy purchased and sold, expressed as a percentage. The total energy loss includes: (1) technical losses (actual load and no load loss in the electric system, consisting of transmission and distribution losses between sources of supply and points of delivery); and (2) nontechnical losses (losses such as meter reading error or theft).

“Emergency Call” means a telephone call to the Company where the caller believes that he or she is confronting special circumstances that might lead to bodily harm and/or system-related damage if the circumstances remain unaddressed. Examples include, but are not limited to, downed wires, gas leaks, and gas odor reports.

“Excludable Major Event” means a major Interruption event that meets one of the three following criteria: (1) the event is caused by earthquake, fire or storm of sufficient intensity to give rise to a state of emergency proclaimed by the Governor (as provided under the Massachusetts Civil Defense Act); (2) any other event that causes an unplanned Interruption of service to fifteen percent or more of the Electric Company’s total customers in the Electric Company’s entire service territory; or (3) the event was a result of the failure of another Company’s transmission or power supply system. Excludable Major Events apply to all SQ reliability metrics. Notwithstanding the foregoing criteria, an Interruption event caused by extreme temperature condition is not an Excludable Major Event.

“Glide Path Method” means a benchmarking method with increasing stringency over a fixed number of years. A ten year Glide Path period is separated into three downwardly shifting benchmarks that will apply for three years each, and a fourth period of one year. The year ten benchmarks will remain in effect unless revised by the Department.

“High-Profile Customer” means any customer for whom an Interruption to service could pose a threat to public safety (e.g., a hospital, airport, etc.) or a large commercial or institutional customer with a demand of one megawatt or greater.

“IEEE 1366” means the information set forth in the most recent Institute of Electrical and Electronics Engineers’ Standard, the Guide for Electric Power Distribution Reliability Indices.

“Interruption” means the loss of electric service to one or more customers connected to the distribution portion of the system. Interruptions are the result of one or more component Outages, depending on system configuration.

“Lost Work Time Accident Rate” or “LWTA” means the Incidence Rate of Lost Work

Time Injuries and Illness per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

"Momentary Average Interruption Frequency Index" or ("MAIFI") means the total number of customer momentary Interruptions divided by the total number of customers served. MAIFI is a measure of momentary Interruptions of electric service of less than one minute, expressed in average number of momentary Interruptions per customer per year during the reporting period.

"Momentary Outage" or "Momentary Interruption" means an Outage or Interruption of electric service of less than one minute.

"Non-Emergency Call" means any telephone call to the Company other than an Emergency Call.

"Outage" means the state of a component when it is not available to perform its intended function due to some event directly associated with that component, but may not necessarily result in Interruption of service to customers.

"Penalty Zone" means the performance zone in which penalties apply for a metric, depending upon the benchmarking method specified for that metric.

"Penalty-Free Zone" means the performance zone where no penalties apply for a metric, depending upon the benchmarking method specified for that metric.

"Planned Outage" or "Planned Interruption" means an Outage or Interruption that is scheduled by the Company and of which customers are notified in advance, including, for example, during the connection of new customers or to ensure the safe performance of maintenance activities.

"Poor Performing Circuit" means any distribution Circuit or Feeder that possesses a CKAIID or CKAIIFI value(s) for a reporting year that is among the highest (worst) five percent of all of a Company's active Circuits or Feeders.

"Priority 1 Downed Wires: Life Threatening / Imminent Danger" means an event in which utility equipment is preventing emergency response personnel from performing rescue efforts and/or administering first-aid treatment to a person or persons who may be injured or in danger of being injured.

"Priority 2 Downed Wires: Hindering Emergency Operation" means an event in which utility equipment is preventing emergency response personnel from responding to an emergency situation which is not considered life threatening, yet requires the attention of emergency response personnel.

"Priority 3 Downed Wires: Non-Threatening Electrical Hazard" means an event in which utility equipment creates the need for emergency response personnel and/or apparatus to remain on the scene in order to protect the public from the hazard created by the utility's equipment.

“Problem Circuit” means any electric distribution Circuit or Feeder that possesses a CKAIID or CKAIIF value(s) for a reporting year that is among the highest (worst) five percent of all of the Company’s active Circuits’ or Feeders’ CKAIID and CKAIIF values for any two consecutive reporting years.

“Restricted Work Day Rate” or “RWD” means the Incidence Rate of Restricted Work cases per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

“Service Appointment” means a mutual agreement between a Company and a customer, scheduled at least the day prior, that shall be recorded in the Company’s business records in the ordinary course of business as to date, time, and location where Company personnel are scheduled to perform a service activity, whether the appointment is Company-initiated or customer-initiated, and that requires the presence of the customer at the time of service.

“Service Interruption to a High-Profile Customer” means an Interruption that has a reasonable probability of involving a High-Profile Customer, including a hospital, airport, or large manufacturing, commercial, or institutional customer (with a demand of one megawatt or greater).

“Sustained Outage” or “Sustained Interruption” means an Outage or Interruption of electric service that lasts at least one minute and is not classified as a Momentary Outage or Momentary Interruption.

“System Average Interruption Duration Index” or “SAIDI” means the total duration of customer Interruptions in minutes divided by the total number of customers served by the distribution Company, expressed in minutes per year. SAIDI characterizes the average length of time that customers are without electric service during the reporting period.

“System Average Interruption Frequency Index” or “SAIFI” means the total number of customer Interruptions divided by the total number of customers served by the distribution Company, expressed in number of Interruptions per customer per year. SAIFI characterizes the average number of sustained electric service Interruptions for each customer during the reporting period.

“Transmission and Distribution Revenues” means revenues collected through the base rates of a transmission and distribution Company.

“Year” means calendar year unless otherwise noted.

### C. Benchmarking Methods

To establish the benchmarks by which Company performance shall be measured, all metrics shall use one of the following three benchmarking methods: (1) Glide Path Method, (2) Company-specific Method; or (3) Poor Performing Circuits Method. Penalty metrics are assigned a benchmarking method and penalty formula described in Section V.

## 1. Glide Path Method

The Glide Path Method uses a ten-year Glide Path divided into four time periods: three three-year periods called Glide Path One (“GP1”), Glide Path Two (“GP2”), Glide Path Three (“GP3”); and a final one year period called Glide Path Four (“GP4”). This benchmarking method also requires the calculation of a three-year rolling average (“Rolling Average”) based on a Company’s most recent three years of performance data (performance year plus two preceding years). Failure to meet benchmarks established by this method shall result in a penalty.

GP 1 uses the company-specific penalty threshold and penalty maximum benchmarks applicable under D.T.E. 04-116 (*i.e.* 1996-2005). From the initial level of GP1, incremental improvements in the standard occur, for both the penalty threshold and penalty maximum benchmarks, through the application of calculated Glide Path Improvement Values (“GPIVs”) to determine the benchmarks for GP2, GP3, and GP4. The GPIV required to adjust the lower penalty threshold benchmark (“GPIV-PT”) equals one sixth of the standard deviations established in D.T.E. 04-116. The GPIV required to adjust the upper penalty maximum benchmark (“GPIV-PM”) equals one sixth of the standard deviations established in D.T.E. 04-116. In year ten and thereafter, GP4 will remain as fixed benchmarks, until further reviewed by the Department.

GP1 Penalty Threshold benchmark (“GP1 PT”) is set at the Company’s D.T.E. 04-116 standard, *i.e.*, company-specific mean plus one standard deviation using historical, company-specific data from 1996-2005. The GP1 Penalty Maximum benchmark (“GP1 PM”) is set at the Company’s D.T.E. 04-116 standard, *i.e.*, company-specific mean plus two standard deviations using historical, company-specific data from 1996-2005. No penalty shall apply below the GP1 PT. The Penalty Zone shall commence at GP1 PT and increase to its maximum level at GP1 PM. These benchmarks will remain fixed for the three GP1 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

GP2 Penalty Threshold benchmark (“GP2 PT”) is set at GP1 PT minus GPIV-PT. GP2 Penalty Maximum benchmark (“GP2 PM”) is set at GP1 PM minus GPIV-PM. No penalty shall apply below GP2 PT. The Penalty Zone shall commence at GP2 PT and increase to its maximum level at GP2 PM. These benchmarks will remain fixed for the three GP2 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean will into the penalty formula as an observed value.

GP3 Penalty Threshold benchmark (“GP3 PT”) is set at GP2 PT minus GPIV-PT. GP3 Penalty Maximum benchmark (“GP3 PM”) is set at GP2 PM minus GPIV-PM. No penalty shall apply below GP3 PT. The Penalty Zone shall commence at GP3 PT and increase to its maximum level at GP3 PM. These benchmarks will remain fixed for the three GP3 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

GP4 Penalty Threshold benchmark (“GP4 PT”) is at GP3 PT minus GPIV-PT. GP4 Penalty Maximum benchmark (“GP4 PM”) is set at GP3 PM minus GPIV-PM. No penalty shall apply below GP4 PT. The Penalty Zone shall commence at GP4 PT and increase to its maximum level at GP4 PM. These benchmarks will remain fixed during and after the GP4 year, until further revised by the Department. The Electric Companies

may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

2. Company-specific Method

This benchmarking method requires the calculation of a fixed Company-specific Mean and a Company-specific Standard Deviation. This method requires the Company to meet its reported average performance. Failure to meet benchmarks established by this method shall result in a penalty.

3. Poor Performing Circuits Method

This benchmarking method requires the Company to identify its worst performing Circuits and compare performance on those Circuits to its overall Circuit performance, per rules in Section IV.A.2.

II. CUSTOMER SERVICE AND SATISFACTION PERFORMANCE METRICS

A. Service Appointments Kept As Scheduled

1. D.T.E. 04-116-C

*Applicable through December 31, 2018.*

The Company shall gather data and report statistics regarding the number of service calls met on the same day requested, excluding when a customer misses a mutually-agreed upon time. The Company shall report the percentage of scheduled Service Appointments met by Company personnel on the same day requested. Service Appointment data shall be compiled and aggregated monthly. Reporting shall occur annually. The reports shall be submitted in accordance with Section VI below. Service Appointments Kept As Scheduled shall be a performance measure subject to a revenue penalty.

2. D.P.U. 12-120-D

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

The Company shall gather data and report statistics regarding the number of four-hour and all-day Service Appointments, available, scheduled, and kept on-time. The Company shall report the percentage of scheduled four-hour and all-day Service Appointments Kept as Scheduled. Service Appointment data shall be compiled and aggregated monthly. The Company shall report Service Appointment data annually.

A Service Appointment is kept if the Company representative arrives at the customer's premises within either the four-hour window or the all-day window originally scheduled by the Company and the customer. Same day appointments, emergency work orders, tagalongs, multiple work orders for a single site, and work orders where the Company has not scheduled a Service Appointment with the customer (*i.e.*, cold calls such as collections) shall be excluded from the data reported for this metric. Service

Appointments that are rescheduled at least 24 hours prior to the appointment time, or by the customer within 24 hours of the appointment time, shall be excluded from the data reported for this metric. For Service Appointments rescheduled due to emergencies, the Company may exclude from their performance calculation appointments missed due to emergencies. The Company must identify each excluded appointment, due to an emergency, and explain the nature of the emergency as part of their annual SQ reports.

When a Service Appointment is not kept as scheduled due to customer unavailability, the Company must count it as a missed appointment in the data reported for this metric, unless either (A) a Company representative has made a visit to the customer's premises, found the customer not at home, and left a note that the Company had attempted to attend its scheduled Service Appointment, or (B) a Company representative has attempted to contact the customer by phone twice and has not reached the customer both times.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. This metric will become effective for penalty purposes after a three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

B. Complaints to the Consumer Division

1. D.T.E. 04-116-C Consumer Division Cases

*Applicable through December 31, 2018.*

Customer complaints shall be categorized as a Consumer Division Case where a written record is opened by the Consumer Division using the following criteria:

- (1) the individual making the complaint provides his or her identity to the Consumer Division and is either a (a) current, prospective, or former customer of the Company against which the complaint has been lodged, or (b) designee of the current, prospective, or former customer of the Company;
- (2) the individual or his/her designee has contacted the Company from which the customer receives distribution service prior to lodging a complaint with the Department;
- (3) the Department's investigator cannot resolve the complaint without contacting the Company to obtain more information;
- (4) the matter involves an issue or issues over which the Department typically exercises jurisdiction; and
- (5) the matter involves an issue or issues over which the Company has control.

Consumer Division Case data shall be employed as a SQ performance measure. The Department will compile and aggregate monthly the frequency of Consumer Division Cases per 1,000 residential customers and provide the compilation to the Companies on a monthly basis. Once the data is provided to the Company, it has forty-five (45) days to

dispute the classification of a complaint as a Consumer Division Case. The Department will also provide an annual measure, and upon request, offer company-specific meetings to discuss the Company's performance. Consumer Division Cases shall be a performance metric subject to a penalty.

## 2. D.P.U. 12-120-D Customer Complaints

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

Customer Complaints shall be defined as any residential customer contact with the Department that is categorized as a Customer Complaint by the Department's Consumer Division using the following criteria:

- (1) the customer making the Customer Complaint provides his or her identity and is a current or former customer of the Company against which the Customer Complaint has been lodged;
- (2) the customer has contacted the Company from which the customer receives distribution service prior to lodging a Customer Complaint with the Department;
- (3) the matter involves an issue or issues over which the Company has control;
- (4) the matter is not a simple customer inquiry;
- (5) the matter is not a circumstance wherein the Company correctly applied the applicable law, orders, rules, standards, procedures; and
- (6) the matter is not a Customer Credit Case as defined in Section II.B.3.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Complaints per 1,000 residential customers and will provide this data to the Company on a monthly basis. Once the Department provides this data to the Company, the Company has forty-five (45) days to dispute the classification of a complaint as a Customer Complaint.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. It will become effective for penalty purposes after a three-year period of data collection (*i.e.*, 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

## 3. D.P.U. 12-120-D Customer Credit Cases

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

Customer Credit Cases shall be defined as any residential Customer Complaint relating to the following matters: payment and arrearage management plans, inability to pay, shut-off notices, and terminations. Matters relating to failure to issue a credit or a refund will

not be categorized as a Customer Credit Case.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Credit Cases per 1,000 residential customers, and will provide data to the Company on a monthly basis. Once the data is provided to the Company, the Company has forty-five (45) days to dispute the classification of a matter as a Customer Credit Case.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. This metric will become effective for penalty purposes after a three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

### III. ASSUMPTIONS FOR CALCULATING ELECTRIC RELIABILITY METRICS

For the purpose of calculating SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, MAIFI, and Downed-Wire Response, the following assumptions and criteria shall be used in accumulating Interruption data:

- A. Customer Equipment Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- B. Planned Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- C. Excludable Major Events shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI, MAIFI, and Downed-Wire Response;
- D. Momentary Interruptions shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI;
- E. The beginning of an Interruption shall be recorded at the earlier of an automatic alarm or the first report of no power;
- F. The end of an Interruption shall be recorded at that point when power to customers is restored;
- G. Interruptions involving primary and secondary distribution Circuits shall be included in the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI (Interruptions involving electric lines that operate at 69,000 volts and above shall be excluded);
- H. Where only part of a Circuit experiences an Interruption, the number of customers affected shall be estimated, unless an actual count is available. When power is partially restored, the number of customers restored also shall be estimated unless an actual count is available; and
- I. When customers lose power as a result of the process of restoring power



(such as switching operations and fault isolation), the duration of these additional Interruptions shall be included in the duration calculation, but the additional number of Interruptions shall not be included in the frequency calculation.

#### IV. RELIABILITY AND SAFETY PERFORMANCE METRICS

##### A. Electric Reliability

##### 1. System Level Reliability

The Company will measure SAIDI and SAIFI on an annual basis in accordance with Section III and the Glide Path Benchmarking Method and Penalty Formula in Section V.B.1. SAIDI and SAIFI shall be subject to monetary penalty as specified in Section V.

GP1 for SAIDI and SAIFI is in effect for the first three years following the issuance of these SQ Guidelines (*i.e.*, for performance years 2016-2018). GP2 is in effect for the subsequent three years (*i.e.*, for performance years 2019-2021). GP3 is in effect for the next subsequent three years (*i.e.*, for performance years 2022-2024). GP4 is in effect starting in 2025 and will remain in effect until revised by the Department.

The Company shall continue to collect IEEE reliability data as a reporting metric only. IEEE calculations shall be based on Sustained Interruptions (*i.e.*, Interruptions more than one (1) minute).

##### 2. Circuit Level Reliability

To address Poor Circuit Remediation (“PCR”), the Company will identify the five percent of Circuits or Feeders in its service territory with the most Interruptions (*i.e.*, duration and frequency) as measured by CKAIDI and CKAIIFI. If the Company does not incur SAIDI or SAIFI penalties in a given year, the Company will evaluate whether CKAIDI and CKAIIFI penalties apply. Data for all Circuits or Feeders (identified for PCR evaluation) that were active at any time during the reporting year shall be included in the PCR calculation for that reporting year.

Any Circuit(s) or Feeder(s) that appears among the worst five percent of all the Company’s active Circuits or Feeders for two consecutive years shall be labeled as a Problem Circuit(s). Any Problem Circuit(s) that appears among the worst five percent of all the Company’s Circuits or Feeders for the third consecutive reporting year shall be labeled a Chronic Circuit. At the end of the third year, for Chronic Circuits that were not remediated by the end of the third year, if the mean of the CKAIDI/CKAIIFI values of the Chronic Circuits is greater than Company-specific Mean plus two Company-specific Standard Deviations, the Company will be subject to a monetary penalty.

The Company-specific Mean applicable to CKAIDI and CKAIIFI shall be same as that which is applicable to SAIDI and SAIFI, filed by the Company in its annual service quality reports from 1996-2005, under the D.T.E. 04-116 guidelines (*i.e.*, the Company-specific system-wide mean for 1996-2005).

All penalties will be apportioned as provided in Section V.C, below. All penalty calculations will use the following penalty formula:

For any Chronic Circuits, if the mean of the CKAIID/CKAIFI values of the Chronic Circuits is greater than the Company-specific Mean plus two Company-specific Standard Deviations, then the maximum penalty for CKAIID and CKAIFI will apply.

Penalty for CKAIID = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year)

Penalty for CKAIFI = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year).

## V. REVENUE PENALTIES

### A. Applicability

Each of the penalty formulas below identify the penalty metrics to which the penalty formula applies.

### B. Penalty Formulas

#### 1. Glide Path Method

This revenue penalty formula is applicable to SAIDI and SAIFI.

$$\text{Penalty} = 0.25 * ((\text{Observed value} - \text{GPPT}) / (\text{GPPM} - \text{GPPT}))^2 * \text{Maximum Penalty}$$

Where:

Observed Value = current year performance or three year average (i.e., mean of current year performance and preceding two years' performance), whichever is less

GPPT = the applicable Glide Path penalty threshold benchmark (GP1 PT; GP2 PT; GP3 PT; and GP4 PT)

GPPM= the applicable Glide Path penalty maximum benchmark (GP1 PM; GP2 PM; GP3 PM; and GP4 PM)

GPPM-GPPT= Company-Specific standard deviation

Maximum Penalty = 2.5 percent of Annual Transmission and Distribution Revenues of a Company allocated to the metric, as apportioned by the table in Section V.C.

## 2. Company-Specific Penalty Formula

This revenue penalty formula is applicable to Service Appointments, Customer Complaints, and Customer Credit Cases.

If: (Observed Result – Company-Specific Mean) is a positive value.

$Penalty_M = (0.25 * ((Observed\ Result - Company-Specific\ Mean) / Company-Specific\ Standard\ Deviation)^2) * Maximum\ Penalty$

Observed Result = the average actual performance measure achieved in year, rounded to the applicable decimal place;

Company-Specific Standard Deviation = standard deviation of the historical average result; and

Maximum Penalty =  $(PCL_M) * (AR * 0.025)$

Where:

$PCL_M$  = Performance category liability for the metric expressed as a percentage (derived from Section V.C); and

AR = Annual Transmission and Distribution Revenues of the Company for the applicable year.

## 3. Poor Circuit Remediation Penalty formula

Penalty for CKAIDI = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year)

Penalty for CKAIFI = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year).

C. Apportionment of Penalty Among Performance Metrics

The following table reflects the percentage of the overall two and one half percent of Transmission/Distribution Revenue specified in G. L. c. 164, § 11 allocable to each penalty metric.

<b>Metric</b>	<b>Penalty Percentage</b>
SAIDI	27.5
SAIFI	27.5
CKAIDI	11.25*
CKAIFI	11.25*
Service Appointments	15
Consumer Division Cases (2016-2018)	30
Customer Complaints (begin 2019)	20
Customer Credit Cases (begin 2019)	10
*Penalty may only be assessed if Electric Company is not subject to SAIDI or SAIFI penalty in a given year.	

VI. DATA REPORTING REQUIREMENTS

A. Reliability, Electric Line Loss, and Safety Indices and Rates

The Company will report on an annual basis performance data on the following: SAIDI, SAIFI, CKAIFI, CKAIDI, CAIDI, LWTA, RWD, Electric Line Loss, Downed-Wire Response, Service Appointments, Customer Satisfaction Surveys, Consumer Division Cases, Customer Complaints, and Customer Credit Cases. These reports shall be submitted in accordance with Section VI and Section VII, below.

All calculated performance results of all metrics shall be reported to the 1000<sup>th</sup> decimal place, three places after the decimal point. Similarly, all values entered in the penalty formula shall be rounded to the 1000<sup>th</sup> decimal place. For inputs and outputs of other calculations the Companies conduct, the Companies shall not round values other than what Excel automatically truncates.

Additionally, the Company will report in their annual SQ reports, their increased capabilities for measuring MAIFI, CEMI, and CELID. For MAIFI, each Electric Company shall (1) submit a status report on its increased ability to measure momentary Interruptions; and (2) report in the annual SQ report any and all MAIFI data that it was able to collect in the reporting year. For CEMI and CELID, the Company shall submit a status report on its ability to accurately determine its CEMI and CELID data, including a status report about its ability to calculate CEMI and CELID as a percentage of the total number of customers served by the Company.

For annual reporting of Electric Line Loss, the Company shall provide and support with sufficient substantiation:

- (1) its electric distribution and transmission line loss value separately for technical losses and non-technical losses,

- (2) electric transmission and distribution line loss value in megawatts by voltage class at system peak, and
- (3) the parameters, assumptions, and methodological approaches used in the calculations.

B. Excludable Major Events

The Company shall identify and report on an annual basis any Interruptions that are considered Excludable Major Events. For each Excludable Major Event, the Company shall report the total number of customers affected, the service area affected, the number of customers without service at periodic intervals, the time frame of longest customer Interruption, and the number of crews used to restore service on a per shift basis. These reports shall be submitted in accordance with Section VII, below.

C. Poor Circuit Remediation

The Company shall identify and report on an annual basis its performance data on its poor performing Circuits. The report on PCR shall include the following information for the most recent three years (in an active Excel spreadsheet):

- (1) the Feeder or Circuit identification number;
- (2) the Feeder or Circuit location;
- (3) the reason(s) why the Circuits performed poorly during the reporting year;
- (4) the number of years that the Circuit(s) performed poorly;
- (5) the steps that are being considered and/or have been implemented to improve the reliability of these Circuits;
- (6) the CKAIIDI or CKAIIFI value for the specific Circuit(s) whether mitigated or not mitigated. In addition, the Company shall continue to provide the detailed Circuit data, filed in an active Excel format. In this data, active Circuits and the top worst performing Circuits in each year must be clearly identified; and
- (7) a listing of the dedicated/assigned Circuits/Feeders feeding a customer or group of customers that will be used for PCR evaluation purposes.

The reports shall be submitted in accordance with Section VII, below.

D. IEEE Reporting Requirement

The Company shall compile its SAIDI and SAIFI measures in accordance with these Guidelines. In addition, the Company shall compile and calculate its SAIDI and SAIFI performances using IEEE standards and shall report these measures to the Department annually in accordance with Section VII, below.

E. Department's Outage and Accident Reporting Procedures

1. Reporting Electric Service Interruptions

The Company shall continue to maintain and update its distribution and transmission Interruption data consistent with the Department's Outage and Accident Reporting Procedures.

The Company shall include every sustained distribution and transmission Interruption that occurs within or impacts its service territory. The Company shall update within a one-hour period, from the beginning of the Interruption, every Interruption that results in 500 or more customer-Interruption hours or that results in a service Interruption to a High-Profile Customer or Critical Facility. All other Interruptions shall be updated within a 24-hour period from the beginning of the Interruption. Data shall be revised to reflect updated/analyzed Interruption information within seven (7) days of the initial Interruption reporting.

All Interruption reports shall include the following information:

1. Date filed
2. Company name (i.e., Massachusetts Electric Company d/b/a National Grid)
3. District/Division name
4. Location of Interruption (City/town where fault occurred)
5. Street name
6. Substation name and ID
7. Circuit number ID
8. Circuit branch ID
9. Voltage level, such as to the nearest: transmission, 35kV, 25kV, 12kV, 5kV, Secondary, etc.
10. Circuit type (OH/UG/Customer owned)
11. Original number of customers affected
12. Current number of customers affected (show zero if restoration is completed)
13. Actual duration (in hours)
14. Total customer Interruption hours
15. Date and time service out
16. Date and time service in
17. Reason for Interruption (nature/cause of Interruption)
18. Failed or damaged device/equipment
19. Indicate if the Interruption was planned/unplanned/intentional
20. Weather condition
21. Primarily affected load type (Residential/Industrial/Commercial/mix)
22. Whether the Interruption affected a Critical Facility/ High Profile customer (yes/no)
23. Whether the Interruption is an Excludable Major Event (yes/no)
24. Whether an injury occurred as a result of the event (yes/no)
25. Name of the person responsible for filling out the report
26. Time restoration commenced
27. Expected duration
28. Town/City Official notification (yes/no)

29. Name of notified/contacted person
30. Telephone number of notified/contacted person(s)

The Company shall file annually, with its Annual SQ Report, a compact disc that contains a compilation of all Interruptions for the filing year, in working Microsoft Excel spreadsheet format. The Company shall submit these reports in accordance with Section VIII.

## 2. Reporting Accidents

In compliance with the requirements of G.L. c. 164, § 95, the Company shall (1) maintain accident data in the Outage and Accident Reporting Protocol (“ORP”) maintained by the Company, and (2) report to the Department within a 24-hour period of an accident the following information (including downed wires incidents that result in electrical shock, injury or fatality):

- (1) time and date of accident;
- (2) time and date of the notice to the Department;
- (3) location of the accident;
- (4) a detailed description of the accident including information about fatalities, injuries, facilities and third-party property damage; and
- (5) the name and telephone number of a Company employee who may be contacted about the accident.

These standards supersede previous Interruption and Accident Reporting Procedures. The Company shall submit these reports in accordance with Section VIII.

## F. Reporting Emergency Response Times

The Company shall compile and report an annual average of its response times to formal emergency incidents reported by official emergency personnel. The Company will calculate the total duration of time between notification of a system incident and an arrival response by the Company. The Company shall also report the location (street address) and nature of each incident. Such data shall be compiled by city and town and reported monthly, with an annual average duration calculated and reported to the Department, and shall be submitted in accordance with Section VII. The Company will provide information per this section only if that information is not already provided based on Downed-Wire Response reported per Section VI.F.1.

### 1. Reporting Requirements for Downed-Wire Response

The Company shall measure and report its response to Priority 1, 2, and 3 downed-wire calls. The Company shall measure its Downed-Wire Response time from the time of notification to the time a Company representative arrives on site. The Downed-Wire Response metric is for reporting purposes only. For purposes of reporting information and calculating performance percentages related to Downed-Wire Response, the Company shall complete the template in Attachment B, Emergency Response Time

Reporting to be filed with its annual SQ Report. With respect to performance percentages, for each Priority 1, 2, and 3 downed-wire call, the Company shall calculate average response times for 100 percent of downed wire calls, 98 percent of downed wire calls (excluding the worst 2%), and 95 percent of downed wire calls (excluding the worst 5%). In calculating average response times, the Company will exclude from the calculation data relating to: (1) emergency calls received from individuals other than municipal officials; (2) emergency calls involving a facility not belonging to the Company and the Company has coordinated a response through the telephone or cable companies; and (3) instances in which a Company has dispatched personnel to respond to a Priority call in a timely manner, but emergency response is hindered/delayed due to circumstances beyond the Company's control.

In responding to Downed-Wire calls, the Company shall follow the protocols approved in Investigation by the Department of Public Utilities regarding the development of Emergency Response Time Protocols for Investor Owned Distribution Companies, D.P.U. 08-112, Letter Order at 1-2 (December 23, 2010).

H. Reporting Requirements for Lost Work Time Accident Rate and Restricted Work Day Rate

1. Lost Work Time Accident Rate

The Company shall measure its Lost Work Time Accident Rate. The Lost Work Time Accident Rate shall be reported annually and data will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

2. Restricted Work Day Rate

The Company shall measure its Restricted Work Day Rate. The Restricted Work Day Rate shall be reported annually and data will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

I. Reporting Requirements for Customer Satisfaction Surveys

The Company shall report the results of two surveys to the Department: (1) a customer satisfaction survey of a statistically representative sample of residential customers within the Company's service territory; and (2) a survey of customers randomly selected from those customers who have contacted the Company's customer service department within the year in which service is being measured. The latter representative sample shall be newly drawn from customers contacting the Company's customer service area in the year previous and shall be conducted with a sample of respondents who are redialed after having concluded a contact with the Company's customer service department. The surveys, if conducted internally, shall be pre-approved by the Department regarding the method and customer questions.

For the residential customer satisfaction survey, the following question shall be asked: "Using a scale where 1 = very dissatisfied and 7 = very satisfied; how satisfied are you with the service, excluding price, that you are receiving from National Grid?"



For the customer-specific survey, the following question shall be asked: “Using a scale where 1 = not at all courteous, and 7 = very courteous; how courteous was the customer service department of National Grid?”

For the customer-specific survey, the following question shall be asked: “Using a scale where 1 = not at all responsive, and 7 = very responsive; how well did the customer service department of National Grid respond to your call?”

The Company shall report the arithmetic mean of the responses to the three survey questions, as well as the arithmetic mean of each question, in the Company’s annual service quality report. The Company shall include the results from all available previous years of the survey up to a maximum of ten years. This metric will be used for reporting purposes only.

## VII. SUBMITTING ANNUAL REPORTS TO THE DEPARTMENT

The annual SQ reports shall be submitted to the Department by March 1 of each year reflecting the data from the previous calendar year(s) and shall be submitted in the following manner:

- A. the original to the Secretary;
- B. one (1) copy to the Electric Power Division Director;
- C. one (1) copy to the Rates and Revenue Requirements Division Director;
- D. one (1) copy to the Consumer Division Director; and

A copy of the report should also be submitted to the Department in electronic format using one of the following methods: (1) by e-mail attachment to [dpu.efiling@state.ma.us](mailto:dpu.efiling@state.ma.us), or (2) on a CD-ROM. The text of the e-mail or CD-ROM must specify: (1) the docket number of the proceeding (if known); (2) the name of the person or Company submitting the filing; and (3) a brief descriptive title of the document (e.g., annual service quality report). The electronic filing should also include the name, title, and telephone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. All data must be reported in active spreadsheets using Microsoft Excel. All documents submitted in electronic format will be posted on the Department’s website: <http://www.mass.gov/dpu>.

VIII. SUBMITTING INTERRUPTION AND ACCIDENT REPORTS TO THE DEPARTMENT

The Interruption and Accident reports required by these standards shall be submitted to the Department in the following manner:

- A. Consistent with the Department's Outage Reporting Protocol ("ORP"), on-line through ORP databases maintained by the Electric Companies. If website access is not available, an electronic copy of the report shall be submitted to the Department, using one of the following methods: by e-mail attachment to [dpu.efiling@state.ma.us](mailto:dpu.efiling@state.ma.us); or compact disc, to the Director of Electric Power Division, Department of Public Utilities, One South Station, Boston Massachusetts 02110. The text of the e-mail or disc label must specify: (1) an easily identifiable case caption; (2) docket number; (3) name of person or Company submitting the filing; and (4) a brief descriptive title of document (e.g., Company Name Outage or Interruption report). The electronic filing should also include the name, title and phone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. Data or spreadsheet responses should be compatible with Microsoft Excel; and
- B. One (1) copy of each report submitted to the Consumer Division Director, Department of Public Utilities, One South Station, Boston Massachusetts 02110.

For electric service Interruptions that are required to be reported within a one-hour period as described in Section VI.E.1, the Company will, in addition to submitting a written report, contact by telephone the Electric Power Division Director, Consumer Division Director, Executive Director, or one of the Commissioners of the Department to convey the information surrounding the Interruption.

IX. DEPARTMENT CONTACT INFORMATION ON CUSTOMER BILLS

The Company will include language placed on the back side of customer bills, which notifies customers of (a) their ability to contact the Department regarding service quality complaints or questions, and (b) the Department's website address: [www.mass.gov/dpu](http://www.mass.gov/dpu).

X. CUSTOMER SERVICE GUARANTEE

If the Company fails to keep a Service Appointment as defined in Section II or to notify customers of planned service Interruptions, the Company shall pay \$100 directly to those customers affected. The Company shall automatically credit the payment to the affected customer's account. The Company shall provide to the Department on a monthly basis information regarding the number of Customer Service Guarantee payments made to customers for a missed notification of a planned service interruption or a missed service appointment, including the reason for each missed service appointment. The information shall be reported to Director, Consumer Division, Department of Public Utilities, One South Station, Boston Massachusetts 02110.

XI. COMPANY EXEMPTION REQUESTS

The Company may request that the Department grant an exemption from a particular portion of the SQ Guidelines for that reporting year. The Company must file the request for exemption 60 days from the date of the event to be exempted.

XII. GENERAL RESERVATION

The Company acknowledges that the Department retains the discretion to waive or depart from any provision of the Guidelines.

**NANTUCKET ELECTRIC COMPANY  
D/B/A NATIONAL GRID**

**SERVICE QUALITY PLAN**

I. GENERAL

A. Purpose and Scope

The purpose of this plan is to ensure that Nantucket Electric Company d/b/a National Grid (“National Grid” or the “Company”) provides adequate service to its customers in Massachusetts in compliance with the Service Quality Guidelines issued by the Department of Public Utilities (the “Department”) as Attachment A to Order D.P.U. 12-120-D on December 18, 2015 (the “Guidelines”).<sup>1</sup> The Company is required to (1) meet the benchmarks established in the Guidelines or be subject to a penalty, (2) report data as defined in the Guidelines, and (3) report service quality performance annually. This Plan supersedes prior plans filed by the Company and is effective January 1, 2016.

B. Definitions

“Chronic Circuit” means a Problem Circuit(s) that appears among the worst five percent of all of an Electric Company’s active Circuits or feeders for the third consecutive reporting year.

“Circuit” or “Feeder” means a system of conductors through which electric energy is delivered to the customer. A “Circuit” or “Feeder” begins at the terminals of the substation protective device or at the terminals of a supply line protective device and ends at the terminals of the customer’s point of interconnection with the utility system. The customers normally supplied by a given Circuit do not change Circuit assignment for temporary system configuration changes such as maintenance switching or restoration activities. Supply lines that do not have customers directly connected to them (connected only with a protective device such as a recloser) are considered as non-reportable. Conversely, Circuits or Feeders connected to such supply lines via protective devices such as reclosers have a separate designation and are reportable.

“Circuit Average Interruption Duration Index” or “CKAIDI” means the total minutes of customer Interruptions for a Circuit divided by the total number of customers connected to the Circuit, expressed in minutes per year. If the total number of customers connected to the Circuit differs from Interruption to Interruption, then the average number of customers served by that Circuit shall be used. CKAIDI characterizes the average length of time customers connected to a Circuit are without electric service during the reporting period.

“Circuit Average Interruption Frequency Index” or “CKAIFI” means the total number of customer Interruptions divided by the total number of customers connected to the

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<sup>1</sup> In the event of a conflict between these Guidelines and any orders or regulations of the Department, said orders and regulations shall govern.

Circuit, expressed in number of Interruptions per year. If the total number of customers connected to the Circuit differs from Interruption to Interruption, then the average number of customers served by that Circuit shall be used. CKAIFI characterizes the average frequency of Interruptions for customers connected to a Circuit during a reporting period.

“Critical Facility” means a building or structure where the loss of electrical service would result in disruption of a critical public safety function. The Company’s Critical Facilities list is developed by the Company and supplemented by agreed-upon requests from municipalities. Critical Facilities are those facilities deemed critical by both the Electric Company and the municipality. Examples of critical facilities may include, but are not limited to hospitals, police and fire stations, airports, emergency management agencies, acute/postacute medical facilities with life sustaining equipment, water sewer, pump stations, evacuation centers, and emergency communications centers which serve a life safety function (E911 centers). These facilities are typically required by the town or state to have emergency generation or provisions for emergency generation on site in order to address safety concerns.

“Customer Average Interruption Duration Index” or “CAIDI” means the total duration of customer Interruption in minutes divided by the total number of customer Interruptions (i.e., total number of interrupted customers), expressed in minutes per year. CAIDI characterizes the average time required to restore service to the average customer per sustained Interruption during the reporting period.

“Customer Complaint” means any residential customer complaint recorded by the Consumer Division that meets the criteria set forth in Section II.B.2

“Customer Credit Case” means any residential customer complaint recorded by the Consumer Division relating to the following matters: payment and arrearage management plans, inability to pay, shut-off notices, and terminations, as set forth in Section II.B.3.

“Customer Equipment Outage” means an electric Outage/Interruption caused by customer operation or the failure of customer-owned equipment.

“Customers Experiencing Long Interruption Duration” or “CELID” means the percent of customers who have experienced Interruption duration of a given number of hours or more during the reporting period.

“Customers Experiencing Multiple Interruptions” or “CEMI” means the percent of customers who have experienced a given number or more sustained Interruptions during the reporting period.

“Downed-Wire Response” means an Electric Company’s response to Priority 1, 2, and 3 emergencies as reported by public safety agencies.

“Electric Distribution Company Service Territory” means the service territory or territories approved by the Department for Electric Companies providing electric service in the Commonwealth.

“Electric Distribution Facility” means plant or equipment used for the distribution of electricity that is not a transmission facility, a cogeneration facility, or a small power production facility.

“Electric Distribution Service” means the delivery of electricity over lines that operate at a voltage level typically equal to or greater than 110 volts and less than 69,000 volts to an end-use customer within the Commonwealth.

“Electric Line Loss” means a total energy loss on a distribution and transmission system calculated as the difference between energy purchased and sold, expressed as a percentage. The total energy loss includes: (1) technical losses (actual load and no load loss in the electric system, consisting of transmission and distribution losses between sources of supply and points of delivery); and (2) nontechnical losses (losses such as meter reading error or theft).

“Emergency Call” means a telephone call to the Company where the caller believes that he or she is confronting special circumstances that might lead to bodily harm and/or system-related damage if the circumstances remain unaddressed. Examples include, but are not limited to, downed wires, gas leaks, and gas odor reports.

“Excludable Major Event” means a major Interruption event that meets one of the three following criteria: (1) the event is caused by earthquake, fire or storm of sufficient intensity to give rise to a state of emergency proclaimed by the Governor (as provided under the Massachusetts Civil Defense Act); (2) any other event that causes an unplanned Interruption of service to fifteen percent or more of the Electric Company’s total customers in the Electric Company’s entire service territory; or (3) the event was a result of the failure of another Company’s transmission or power supply system. Excludable Major Events apply to all SQ reliability metrics. Notwithstanding the foregoing criteria, an Interruption event caused by extreme temperature condition is not an Excludable Major Event.

“Glide Path Method” means a benchmarking method with increasing stringency over a fixed number of years. A ten year Glide Path period is separated into three downwardly shifting benchmarks that will apply for three years each, and a fourth period of one year. The year ten benchmarks will remain in effect unless revised by the Department.

“High-Profile Customer” means any customer for whom an Interruption to service could pose a threat to public safety (e.g., a hospital, airport, etc.) or a large commercial or institutional customer with a demand of one megawatt or greater.

“IEEE 1366” means the information set forth in the most recent Institute of Electrical and Electronics Engineers’ Standard, the Guide for Electric Power Distribution Reliability Indices.

“Interruption” means the loss of electric service to one or more customers connected to the distribution portion of the system. Interruptions are the result of one or more component Outages, depending on system configuration.

“Lost Work Time Accident Rate” or “LWTA” means the Incidence Rate of Lost Work

Time Injuries and Illness per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

"Momentary Average Interruption Frequency Index" or ("MAIFI") means the total number of customer momentary Interruptions divided by the total number of customers served. MAIFI is a measure of momentary Interruptions of electric service of less than one minute, expressed in average number of momentary Interruptions per customer per year during the reporting period.

"Momentary Outage" or "Momentary Interruption" means an Outage or Interruption of electric service of less than one minute.

"Non-Emergency Call" means any telephone call to the Company other than an Emergency Call.

"Outage" means the state of a component when it is not available to perform its intended function due to some event directly associated with that component, but may not necessarily result in Interruption of service to customers.

"Penalty Zone" means the performance zone in which penalties apply for a metric, depending upon the benchmarking method specified for that metric.

"Penalty-Free Zone" means the performance zone where no penalties apply for a metric, depending upon the benchmarking method specified for that metric.

"Planned Outage" or "Planned Interruption" means an Outage or Interruption that is scheduled by the Company and of which customers are notified in advance, including, for example, during the connection of new customers or to ensure the safe performance of maintenance activities.

"Poor Performing Circuit" means any distribution Circuit or Feeder that possesses a CKAIID or CKAIIFI value(s) for a reporting year that is among the highest (worst) five percent of all of a Company's active Circuits or Feeders.

"Priority 1 Downed Wires: Life Threatening / Imminent Danger" means an event in which utility equipment is preventing emergency response personnel from performing rescue efforts and/or administering first-aid treatment to a person or persons who may be injured or in danger of being injured.

"Priority 2 Downed Wires: Hindering Emergency Operation" means an event in which utility equipment is preventing emergency response personnel from responding to an emergency situation which is not considered life threatening, yet requires the attention of emergency response personnel.

"Priority 3 Downed Wires: Non-Threatening Electrical Hazard" means an event in which utility equipment creates the need for emergency response personnel and/or apparatus to remain on the scene in order to protect the public from the hazard created by the utility's equipment.

“Problem Circuit” means any electric distribution Circuit or Feeder that possesses a CKAIID or CKAIIF value(s) for a reporting year that is among the highest (worst) five percent of all of the Company’s active Circuits’ or Feeders’ CKAIID and CKAIIF values for any two consecutive reporting years.

“Restricted Work Day Rate” or “RWD” means the Incidence Rate of Restricted Work cases per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

“Service Appointment” means a mutual agreement between a Company and a customer, scheduled at least the day prior, that shall be recorded in the Company’s business records in the ordinary course of business as to date, time, and location where Company personnel are scheduled to perform a service activity, whether the appointment is Company-initiated or customer-initiated, and that requires the presence of the customer at the time of service.

“Service Interruption to a High-Profile Customer” means an Interruption that has a reasonable probability of involving a High-Profile Customer, including a hospital, airport, or large manufacturing, commercial, or institutional customer (with a demand of one megawatt or greater).

“Sustained Outage” or “Sustained Interruption” means an Outage or Interruption of electric service that lasts at least one minute and is not classified as a Momentary Outage or Momentary Interruption.

“System Average Interruption Duration Index” or “SAIDI” means the total duration of customer Interruptions in minutes divided by the total number of customers served by the distribution Company, expressed in minutes per year. SAIDI characterizes the average length of time that customers are without electric service during the reporting period.

“System Average Interruption Frequency Index” or “SAIFI” means the total number of customer Interruptions divided by the total number of customers served by the distribution Company, expressed in number of Interruptions per customer per year. SAIFI characterizes the average number of sustained electric service Interruptions for each customer during the reporting period.

“Transmission and Distribution Revenues” means revenues collected through the base rates of a transmission and distribution Company.

“Year” means calendar year unless otherwise noted.

### C. Benchmarking Methods

To establish the benchmarks by which Company performance shall be measured, all metrics shall use one of the following three benchmarking methods: (1) Glide Path Method, (2) Company-specific Method; or (3) Poor Performing Circuits Method. Penalty metrics are assigned a benchmarking method and penalty formula described in Section V.



## 1. Glide Path Method

The Glide Path Method uses a ten-year Glide Path divided into four time periods: three three-year periods called Glide Path One (“GP1”), Glide Path Two (“GP2”), Glide Path Three (“GP3”); and a final one year period called Glide Path Four (“GP4”). This benchmarking method also requires the calculation of a three-year rolling average (“Rolling Average”) based on a Company’s most recent three years of performance data (performance year plus two preceding years). Failure to meet benchmarks established by this method shall result in a penalty.

GP 1 uses the company-specific penalty threshold and penalty maximum benchmarks applicable under D.T.E. 04-116 (i.e. 1996-2005). From the initial level of GP1, incremental improvements in the standard occur, for both the penalty threshold and penalty maximum benchmarks, through the application of calculated Glide Path Improvement Values (“GPIVs”) to determine the benchmarks for GP2, GP3, and GP4. The GPIV required to adjust the lower penalty threshold benchmark (“GPIV-PT”) equals one sixth of the standard deviations established in D.T.E. 04-116. The GPIV required to adjust the upper penalty maximum benchmark (“GPIV-PM”) equals one sixth of the standard deviations established in D.T.E. 04-116. In year ten and thereafter, GP4 will remain as fixed benchmarks, until further reviewed by the Department.

GP1 Penalty Threshold benchmark (“GP1 PT”) is set at the Company’s D.T.E. 04-116 standard, i.e., company-specific mean plus one standard deviation using historical, company-specific data from 1996-2005. The GP1 Penalty Maximum benchmark (“GP1 PM”) is set at the Company’s D.T.E. 04-116 standard, i.e., company-specific mean plus two standard deviations using historical, company-specific data from 1996-2005. No penalty shall apply below the GP1 PT. The Penalty Zone shall commence at GP1 PT and increase to its maximum level at GP1 PM. These benchmarks will remain fixed for the three GP1 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

GP2 Penalty Threshold benchmark (“GP2 PT”) is set at GP1 PT minus GPIV-PT. GP2 Penalty Maximum benchmark (“GP2 PM”) is set at GP1 PM minus GPIV-PM. No penalty shall apply below GP2 PT. The Penalty Zone shall commence at GP2 PT and increase to its maximum level at GP2 PM. These benchmarks will remain fixed for the three GP2 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean will into the penalty formula as an observed value.

GP3 Penalty Threshold benchmark (“GP3 PT”) is set at GP2 PT minus GPIV-PT. GP3 Penalty Maximum benchmark (“GP3 PM”) is set at GP2 PM minus GPIV-PM. No penalty shall apply below GP3 PT. The Penalty Zone shall commence at GP3 PT and increase to its maximum level at GP3 PM. These benchmarks will remain fixed for the three GP3 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

GP4 Penalty Threshold benchmark (“GP4 PT”) is at GP3 PT minus GPIV-PT. GP4 Penalty Maximum benchmark (“GP4 PM”) is set at GP3 PM minus GPIV-PM. No penalty shall apply below GP4 PT. The Penalty Zone shall commence at GP4 PT and increase to its maximum level at GP4 PM. These benchmarks will remain fixed during and after the GP4 year, until further revised by the Department. The Electric Companies

may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

2. Company-specific Method

This benchmarking method requires the calculation of a fixed Company-specific Mean and a Company-specific Standard Deviation. This method requires the Company to meet its reported average performance. Failure to meet benchmarks established by this method shall result in a penalty.

3. Poor Performing Circuits Method

This benchmarking method requires the Company to identify its worst performing Circuits and compare performance on those Circuits to its overall Circuit performance, per rules in Section IV.A.2.

II. CUSTOMER SERVICE AND SATISFACTION PERFORMANCE METRICS

A. Service Appointments Kept As Scheduled

1. D.T.E. 04-116-C

*Applicable through December 31, 2018.*

The Company shall gather data and report statistics regarding the number of service calls met on the same day requested, excluding when a customer misses a mutually-agreed upon time. The Company shall report the percentage of scheduled Service Appointments met by Company personnel on the same day requested. Service Appointment data shall be compiled and aggregated monthly. Reporting shall occur annually. The reports shall be submitted in accordance with Section VI below. Service Appointments Kept As Scheduled shall be a performance measure subject to a revenue penalty.

2. D.P.U. 12-120-D

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

The Company shall gather data and report statistics regarding the number of four-hour and all-day Service Appointments, available, scheduled, and kept on-time. The Company shall report the percentage of scheduled four-hour and all-day Service Appointments Kept as Scheduled. Service Appointment data shall be compiled and aggregated monthly. The Company shall report Service Appointment data annually.

A Service Appointment is kept if the Company representative arrives at the customer's premises within either the four-hour window or the all-day window originally scheduled by the Company and the customer. Same day appointments, emergency work orders, tagalongs, multiple work orders for a single site, and work orders where the Company has not scheduled a Service Appointment with the customer (*i.e.*, cold calls such as collections) shall be excluded from the data reported for this metric. Service

Appointments that are rescheduled at least 24 hours prior to the appointment time, or by the customer within 24 hours of the appointment time, shall be excluded from the data reported for this metric. For Service Appointments rescheduled due to emergencies, the Company may exclude from their performance calculation appointments missed due to emergencies. The Company must identify each excluded appointment, due to an emergency, and explain the nature of the emergency as part of their annual SQ reports.

When a Service Appointment is not kept as scheduled due to customer unavailability, the Company must count it as a missed appointment in the data reported for this metric, unless either (A) a Company representative has made a visit to the customer's premises, found the customer not at home, and left a note that the Company had attempted to attend its scheduled Service Appointment, or (B) a Company representative has attempted to contact the customer by phone twice and has not reached the customer both times.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. This metric will become effective for penalty purposes after a three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

## B. Complaints to the Consumer Division

### 1. D.T.E. 04-116-C Consumer Division Cases

*Applicable through December 31, 2018.*

Customer complaints shall be categorized as a Consumer Division Case where a written record is opened by the Consumer Division using the following criteria:

- (1) the individual making the complaint provides his or her identity to the Consumer Division and is either a (a) current, prospective, or former customer of the Company against which the complaint has been lodged, or (b) designee of the current, prospective, or former customer of the Company;
- (2) the individual or his/her designee has contacted the Company from which the customer receives distribution service prior to lodging a complaint with the Department;
- (3) the Department's investigator cannot resolve the complaint without contacting the Company to obtain more information;
- (4) the matter involves an issue or issues over which the Department typically exercises jurisdiction; and
- (5) the matter involves an issue or issues over which the Company has control.

Consumer Division Case data shall be employed as a SQ performance measure. The Department will compile and aggregate monthly the frequency of Consumer Division Cases per 1,000 residential customers and provide the compilation to the Companies on a monthly basis. Once the data is provided to the Company, it has forty-five (45) days to

dispute the classification of a complaint as a Consumer Division Case. The Department will also provide an annual measure, and upon request, offer company-specific meetings to discuss the Company's performance. Consumer Division Cases shall be a performance metric subject to a penalty.

## 2. D.P.U. 12-120-D Customer Complaints

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

Customer Complaints shall be defined as any residential customer contact with the Department that is categorized as a Customer Complaint by the Department's Consumer Division using the following criteria:

- (1) the customer making the Customer Complaint provides his or her identity and is a current or former customer of the Company against which the Customer Complaint has been lodged;
- (2) the customer has contacted the Company from which the customer receives distribution service prior to lodging a Customer Complaint with the Department;
- (3) the matter involves an issue or issues over which the Company has control;
- (4) the matter is not a simple customer inquiry;
- (5) the matter is not a circumstance wherein the Company correctly applied the applicable law, orders, rules, standards, procedures; and
- (6) the matter is not a Customer Credit Case as defined in Section II.B.3.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Complaints per 1,000 residential customers and will provide this data to the Company on a monthly basis. Once the Department provides this data to the Company, the Company has forty-five (45) days to dispute the classification of a complaint as a Customer Complaint.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. It will become effective for penalty purposes after a three-year period of data collection (*i.e.*, 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

## 3. D.P.U. 12-120-D Customer Credit Cases

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

Customer Credit Cases shall be defined as any residential Customer Complaint relating to the following matters: payment and arrearage management plans, inability to pay, shut-off notices, and terminations. Matters relating to failure to issue a credit or a refund will

not be categorized as a Customer Credit Case.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Credit Cases per 1,000 residential customers, and will provide data to the Company on a monthly basis. Once the data is provided to the Company, the Company has forty-five (45) days to dispute the classification of a matter as a Customer Credit Case.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. This metric will become effective for penalty purposes after a three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

### III. ASSUMPTIONS FOR CALCULATING ELECTRIC RELIABILITY METRICS

For the purpose of calculating SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, MAIFI, and Downed-Wire Response, the following assumptions and criteria shall be used in accumulating Interruption data:

- A. Customer Equipment Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- B. Planned Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- C. Excludable Major Events shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI, MAIFI, and Downed-Wire Response;
- D. Momentary Interruptions shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI;
- E. The beginning of an Interruption shall be recorded at the earlier of an automatic alarm or the first report of no power;
- F. The end of an Interruption shall be recorded at that point when power to customers is restored;
- G. Interruptions involving primary and secondary distribution Circuits shall be included in the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI (Interruptions involving electric lines that operate at 69,000 volts and above shall be excluded);
- H. Where only part of a Circuit experiences an Interruption, the number of customers affected shall be estimated, unless an actual count is available. When power is partially restored, the number of customers restored also shall be estimated unless an actual count is available; and
- I. When customers lose power as a result of the process of restoring power

(such as switching operations and fault isolation), the duration of these additional Interruptions shall be included in the duration calculation, but the additional number of Interruptions shall not be included in the frequency calculation.

#### IV. RELIABILITY AND SAFETY PERFORMANCE METRICS

##### A. Electric Reliability

##### 1. System Level Reliability

The Company will measure SAIDI and SAIFI on an annual basis in accordance with Section III and the Glide Path Benchmarking Method and Penalty Formula in Section V.B.1. SAIDI and SAIFI shall be subject to monetary penalty as specified in Section V.

GP1 for SAIDI and SAIFI is in effect for the first three years following the issuance of these SQ Guidelines (*i.e.*, for performance years 2016-2018). GP2 is in effect for the subsequent three years (*i.e.*, for performance years 2019-2021). GP3 is in effect for the next subsequent three years (*i.e.*, for performance years 2022-2024). GP4 is in effect starting in 2025 and will remain in effect until revised by the Department.

The Company shall continue to collect IEEE reliability data as a reporting metric only. IEEE calculations shall be based on Sustained Interruptions (*i.e.*, Interruptions more than one (1) minute).

##### 2. Circuit Level Reliability

To address Poor Circuit Remediation (“PCR”), the Company will identify the five percent of Circuits or Feeders in its service territory with the most Interruptions (*i.e.*, duration and frequency) as measured by CKAIIDI and CKAIIFI. If the Company does not incur SAIDI or SAIFI penalties in a given year, the Company will evaluate whether CKAIIDI and CKAIIFI penalties apply. Data for all Circuits or Feeders (identified for PCR evaluation) that were active at any time during the reporting year shall be included in the PCR calculation for that reporting year.

Any Circuit(s) or Feeder(s) that appears among the worst five percent of all the Company’s active Circuits or Feeders for two consecutive years shall be labeled as a Problem Circuit(s). Any Problem Circuit(s) that appears among the worst five percent of all the Company’s Circuits or Feeders for the third consecutive reporting year shall be labeled a Chronic Circuit. At the end of the third year, for Chronic Circuits that were not remediated by the end of the third year, if the mean of the CKAIIDI/CKAIIFI values of the Chronic Circuits is greater than Company-specific Mean plus two Company-specific Standard Deviations, the Company will be subject to a monetary penalty.

The Company-specific Mean applicable to CKAIIDI and CKAIIFI shall be same as that which is applicable to SAIDI and SAIFI, filed by the Company in its annual service quality reports from 1996-2005, under the D.T.E. 04-116 guidelines (*i.e.*, the Company-specific system-wide mean for 1996-2005).

All penalties will be apportioned as provided in Section V.C, below. All penalty calculations will use the following penalty formula:

For any Chronic Circuits, if the mean of the CKAIID/CKAIFI values of the Chronic Circuits is greater than the Company-specific Mean plus two Company-specific Standard Deviations, then the maximum penalty for CKAIID and CKAIFI will apply.

Penalty for CKAIID = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year)

Penalty for CKAIFI = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year).

## V. REVENUE PENALTIES

### A. Applicability

Each of the penalty formulas below identify the penalty metrics to which the penalty formula applies.

### B. Penalty Formulas

#### 1. Glide Path Method

This revenue penalty formula is applicable to SAIDI and SAIFI.

$$\text{Penalty} = 0.25 * ((\text{Observed value} - \text{GPPT}) / (\text{GPPM} - \text{GPPT}))^2 * \text{Maximum Penalty}$$

Where:

Observed Value = current year performance or three year average (i.e., mean of current year performance and preceding two years' performance), whichever is less

GPPT = the applicable Glide Path penalty threshold benchmark (GP1 PT; GP2 PT; GP3 PT; and GP4 PT)

GPPM= the applicable Glide Path penalty maximum benchmark (GP1 PM; GP2 PM; GP3 PM; and GP4 PM)

GPPM-GPPT= Company-Specific standard deviation

Maximum Penalty = 2.5 percent of Annual Transmission and Distribution Revenues of a Company allocated to the metric, as apportioned by the table in Section V.C.

## 2. Company-Specific Penalty Formula

This revenue penalty formula is applicable to Service Appointments, Customer Complaints, and Customer Credit Cases.

If: (Observed Result – Company-Specific Mean) is a positive value.

$Penalty_M = (0.25 * ((Observed\ Result - Company-Specific\ Mean) / Company-Specific\ Standard\ Deviation)^2) * Maximum\ Penalty$

Observed Result = the average actual performance measure achieved in year, rounded to the applicable decimal place;

Company-Specific Standard Deviation = standard deviation of the historical average result; and

Maximum Penalty =  $(PCL_M) * (AR * 0.025)$

Where:

$PCL_M$  = Performance category liability for the metric expressed as a percentage (derived from Section V.C); and

AR = Annual Transmission and Distribution Revenues of the Company for the applicable year.

## 3. Poor Circuit Remediation Penalty formula

Penalty for CKAIDI = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year)

Penalty for CKAIFI = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year).



C. Apportionment of Penalty Among Performance Metrics

The following table reflects the percentage of the overall two and one half percent of Transmission/Distribution Revenue specified in G. L. c. 164, § 11 allocable to each penalty metric.

<b>Metric</b>	<b>Penalty Percentage</b>
SAIDI	27.5
SAIFI	27.5
CKAIDI	11.25*
CKAIFI	11.25*
Service Appointments	15
Consumer Division Cases (2016-2018)	30
Customer Complaints (begin 2019)	20
Customer Credit Cases (begin 2019)	10
*Penalty may only be assessed if Electric Company is not subject to SAIDI or SAIFI penalty in a given year.	

VI. DATA REPORTING REQUIREMENTS

A. Reliability, Electric Line Loss, and Safety Indices and Rates

The Company will report on an annual basis performance data on the following: SAIDI, SAIFI, CKAIFI, CKAIDI, CAIDI, LWTA, RWD, Electric Line Loss, Downed-Wire Response, Service Appointments, Customer Satisfaction Surveys, Consumer Division Cases, Customer Complaints, and Customer Credit Cases. These reports shall be submitted in accordance with Section VI and Section VII, below.

All calculated performance results of all metrics shall be reported to the 1000<sup>th</sup> decimal place, three places after the decimal point. Similarly, all values entered in the penalty formula shall be rounded to the 1000<sup>th</sup> decimal place. For inputs and outputs of other calculations the Companies conduct, the Companies shall not round values other than what Excel automatically truncates.

Additionally, the Company will report in their annual SQ reports, their increased capabilities for measuring MAIFI, CEMI, and CELID. For MAIFI, each Electric Company shall (1) submit a status report on its increased ability to measure momentary Interruptions; and (2) report in the annual SQ report any and all MAIFI data that it was able to collect in the reporting year. For CEMI and CELID, the Company shall submit a status report on its ability to accurately determine its CEMI and CELID data, including a status report about its ability to calculate CEMI and CELID as a percentage of the total number of customers served by the Company.

For annual reporting of Electric Line Loss, the Company shall provide and support with sufficient substantiation:

- (1) its electric distribution and transmission line loss value separately for technical losses and non-technical losses,

- (2) electric transmission and distribution line loss value in megawatts by voltage class at system peak, and
- (3) the parameters, assumptions, and methodological approaches used in the calculations.

B. Excludable Major Events

The Company shall identify and report on an annual basis any Interruptions that are considered Excludable Major Events. For each Excludable Major Event, the Company shall report the total number of customers affected, the service area affected, the number of customers without service at periodic intervals, the time frame of longest customer Interruption, and the number of crews used to restore service on a per shift basis. These reports shall be submitted in accordance with Section VII, below.

C. Poor Circuit Remediation

The Company shall identify and report on an annual basis its performance data on its poor performing Circuits. The report on PCR shall include the following information for the most recent three years (in an active Excel spreadsheet):

- (1) the Feeder or Circuit identification number;
- (2) the Feeder or Circuit location;
- (3) the reason(s) why the Circuits performed poorly during the reporting year;
- (4) the number of years that the Circuit(s) performed poorly;
- (5) the steps that are being considered and/or have been implemented to improve the reliability of these Circuits;
- (6) the CKAIIDI or CKAIIFI value for the specific Circuit(s) whether mitigated or not mitigated. In addition, the Company shall continue to provide the detailed Circuit data, filed in an active Excel format. In this data, active Circuits and the top worst performing Circuits in each year must be clearly identified; and
- (7) a listing of the dedicated/assigned Circuits/Feeders feeding a customer or group of customers that will be used for PCR evaluation purposes.

The reports shall be submitted in accordance with Section VII, below.

D. IEEE Reporting Requirement

The Company shall compile its SAIDI and SAIFI measures in accordance with these Guidelines. In addition, the Company shall compile and calculate its SAIDI and SAIFI performances using IEEE standards and shall report these measures to the Department annually in accordance with Section VII, below.

E. Department's Outage and Accident Reporting Procedures

1. Reporting Electric Service Interruptions

The Company shall continue to maintain and update its distribution and transmission Interruption data consistent with the Department's Outage and Accident Reporting Procedures.

The Company shall include every sustained distribution and transmission Interruption that occurs within or impacts its service territory. The Company shall update within a one-hour period, from the beginning of the Interruption, every Interruption that results in 500 or more customer-Interruption hours or that results in a service Interruption to a High-Profile Customer or Critical Facility. All other Interruptions shall be updated within a 24-hour period from the beginning of the Interruption. Data shall be revised to reflect updated/analyzed Interruption information within seven (7) days of the initial Interruption reporting.

All Interruption reports shall include the following information:

1. Date filed
2. Company name (i.e., Nantucket Electric Company d/b/a National Grid)
3. District/Division name
4. Location of Interruption (City/town where fault occurred)
5. Street name
6. Substation name and ID
7. Circuit number ID
8. Circuit branch ID
9. Voltage level, such as to the nearest: transmission, 35kV, 25kV, 12kV, 5kV, Secondary, etc.
10. Circuit type (OH/UG/Customer owned)
11. Original number of customers affected
12. Current number of customers affected (show zero if restoration is completed)
13. Actual duration (in hours)
14. Total customer Interruption hours
15. Date and time service out
16. Date and time service in
17. Reason for Interruption (nature/cause of Interruption)
18. Failed or damaged device/equipment
19. Indicate if the Interruption was planned/unplanned/intentional
20. Weather condition
21. Primarily affected load type (Residential/Industrial/Commercial/mix)
22. Whether the Interruption affected a Critical Facility/ High Profile customer (yes/no)
23. Whether the Interruption is an Excludable Major Event (yes/no)
24. Whether an injury occurred as a result of the event (yes/no)
25. Name of the person responsible for filling out the report
26. Time restoration commenced
27. Expected duration
28. Town/City Official notification (yes/no)

29. Name of notified/contacted person
30. Telephone number of notified/contacted person(s)

The Company shall file annually, with its Annual SQ Report, a compact disc that contains a compilation of all Interruptions for the filing year, in working Microsoft Excel spreadsheet format. The Company shall submit these reports in accordance with Section VIII.

## 2. Reporting Accidents

In compliance with the requirements of G.L. c. 164, § 95, the Company shall (1) maintain accident data in the Outage and Accident Reporting Protocol (“ORP”) maintained by the Company, and (2) report to the Department within a 24-hour period of an accident the following information (including downed wires incidents that result in electrical shock, injury or fatality):

- (1) time and date of accident;
- (2) time and date of the notice to the Department;
- (3) location of the accident;
- (4) a detailed description of the accident including information about fatalities, injuries, facilities and third-party property damage; and
- (5) the name and telephone number of a Company employee who may be contacted about the accident.

These standards supersede previous Interruption and Accident Reporting Procedures. The Company shall submit these reports in accordance with Section VIII.

## F. Reporting Emergency Response Times

The Company shall compile and report an annual average of its response times to formal emergency incidents reported by official emergency personnel. The Company will calculate the total duration of time between notification of a system incident and an arrival response by the Company. The Company shall also report the location (street address) and nature of each incident. Such data shall be compiled by city and town and reported monthly, with an annual average duration calculated and reported to the Department, and shall be submitted in accordance with Section VII. The Company will provide information per this section only if that information is not already provided based on Downed-Wire Response reported per Section VI.F.1.

### 1. Reporting Requirements for Downed-Wire Response

The Company shall measure and report its response to Priority 1, 2, and 3 downed-wire calls. The Company shall measure its Downed-Wire Response time from the time of notification to the time a Company representative arrives on site. The Downed-Wire Response metric is for reporting purposes only. For purposes of reporting information and calculating performance percentages related to Downed-Wire Response, the Company shall complete the template in Attachment B, Emergency Response Time

Reporting to be filed with its annual SQ Report. With respect to performance percentages, for each Priority 1, 2, and 3 downed-wire call, the Company shall calculate average response times for 100 percent of downed wire calls, 98 percent of downed wire calls (excluding the worst 2%), and 95 percent of downed wire calls (excluding the worst 5%). In calculating average response times, the Company will exclude from the calculation data relating to: (1) emergency calls received from individuals other than municipal officials; (2) emergency calls involving a facility not belonging to the Company and the Company has coordinated a response through the telephone or cable companies; and (3) instances in which a Company has dispatched personnel to respond to a Priority call in a timely manner, but emergency response is hindered/delayed due to circumstances beyond the Company's control.

In responding to Downed-Wire calls, the Company shall follow the protocols approved in Investigation by the Department of Public Utilities regarding the development of Emergency Response Time Protocols for Investor Owned Distribution Companies, D.P.U. 08-112, Letter Order at 1-2 (December 23, 2010).

H. Reporting Requirements for Lost Work Time Accident Rate and Restricted Work Day Rate

1. Lost Work Time Accident Rate

The Company shall measure its Lost Work Time Accident Rate. The Lost Work Time Accident Rate shall be reported annually and data will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

2. Restricted Work Day Rate

The Company shall measure its Restricted Work Day Rate. The Restricted Work Day Rate shall be reported annually and data will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

I. Reporting Requirements for Customer Satisfaction Surveys

The Company shall report the results of two surveys to the Department: (1) a customer satisfaction survey of a statistically representative sample of residential customers within the Company's service territory; and (2) a survey of customers randomly selected from those customers who have contacted the Company's customer service department within the year in which service is being measured. The latter representative sample shall be newly drawn from customers contacting the Company's customer service area in the year previous and shall be conducted with a sample of respondents who are redialed after having concluded a contact with the Company's customer service department. The surveys, if conducted internally, shall be pre-approved by the Department regarding the method and customer questions.

For the residential customer satisfaction survey, the following question shall be asked: "Using a scale where 1 = very dissatisfied and 7 = very satisfied; how satisfied are you with the service, excluding price, that you are receiving from National Grid?"

For the customer-specific survey, the following question shall be asked: “Using a scale where 1 = not at all courteous, and 7 = very courteous; how courteous was the customer service department of National Grid?”

For the customer-specific survey, the following question shall be asked: “Using a scale where 1 = not at all responsive, and 7 = very responsive; how well did the customer service department of National Grid respond to your call?”

The Company shall report the arithmetic mean of the responses to the three survey questions, as well as the arithmetic mean of each question, in the Company’s annual service quality report. The Company shall include the results from all available previous years of the survey up to a maximum of ten years. This metric will be used for reporting purposes only.

## VII. SUBMITTING ANNUAL REPORTS TO THE DEPARTMENT

The annual SQ reports shall be submitted to the Department by March 1 of each year reflecting the data from the previous calendar year(s) and shall be submitted in the following manner:

- A. the original to the Secretary;
- B. one (1) copy to the Electric Power Division Director;
- C. one (1) copy to the Rates and Revenue Requirements Division Director;
- D. one (1) copy to the Consumer Division Director; and

A copy of the report should also be submitted to the Department in electronic format using one of the following methods: (1) by e-mail attachment to [dpu.efiling@state.ma.us](mailto:dpu.efiling@state.ma.us), or (2) on a CD-ROM. The text of the e-mail or CD-ROM must specify: (1) the docket number of the proceeding (if known); (2) the name of the person or Company submitting the filing; and (3) a brief descriptive title of the document (e.g., annual service quality report). The electronic filing should also include the name, title, and telephone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. All data must be reported in active spreadsheets using Microsoft Excel. All documents submitted in electronic format will be posted on the Department’s website: <http://www.mass.gov/dpu>.

VIII. SUBMITTING INTERRUPTION AND ACCIDENT REPORTS TO THE DEPARTMENT

The Interruption and Accident reports required by these standards shall be submitted to the Department in the following manner:

- A. Consistent with the Department's Outage Reporting Protocol ("ORP"), on-line through ORP databases maintained by the Electric Companies. If website access is not available, an electronic copy of the report shall be submitted to the Department, using one of the following methods: by e-mail attachment to [dpu.efiling@state.ma.us](mailto:dpu.efiling@state.ma.us); or compact disc, to the Director of Electric Power Division, Department of Public Utilities, One South Station, Boston Massachusetts 02110. The text of the e-mail or disc label must specify: (1) an easily identifiable case caption; (2) docket number; (3) name of person or Company submitting the filing; and (4) a brief descriptive title of document (e.g., Company Name Outage or Interruption report). The electronic filing should also include the name, title and phone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. Data or spreadsheet responses should be compatible with Microsoft Excel; and
- B. One (1) copy of each report submitted to the Consumer Division Director, Department of Public Utilities, One South Station, Boston Massachusetts 02110.

For electric service Interruptions that are required to be reported within a one-hour period as described in Section VI.E.1, the Company will, in addition to submitting a written report, contact by telephone the Electric Power Division Director, Consumer Division Director, Executive Director, or one of the Commissioners of the Department to convey the information surrounding the Interruption.

IX. DEPARTMENT CONTACT INFORMATION ON CUSTOMER BILLS

The Company will include language placed on the back side of customer bills, which notifies customers of (a) their ability to contact the Department regarding service quality complaints or questions, and (b) the Department's website address: [www.mass.gov/dpu](http://www.mass.gov/dpu).

X. CUSTOMER SERVICE GUARANTEE

If the Company fails to keep a Service Appointment as defined in Section II or to notify customers of planned service Interruptions, the Company shall pay \$100 directly to those customers affected. The Company shall automatically credit the payment to the affected customer's account. The Company shall provide to the Department on a monthly basis information regarding the number of Customer Service Guarantee payments made to customers for a missed notification of a planned service interruption or a missed service appointment, including the reason for each missed service appointment. The information shall be reported to Director, Consumer Division, Department of Public Utilities, One South Station, Boston Massachusetts 02110.

XI. COMPANY EXEMPTION REQUESTS

The Company may request that the Department grant an exemption from a particular portion of the SQ Guidelines for that reporting year. The Company must file the request for exemption 60 days from the date of the event to be exempted.

XII. GENERAL RESERVATION

The Company acknowledges that the Department retains the discretion to waive or depart from any provision of the Guidelines.



**MASSACHUSETTS ELECTRIC COMPANY**  
**D/B/A NATIONAL GRID**

**SERVICE QUALITY PLAN**

I. **GENERAL**

A. **Purpose and Scope**

The purpose of ~~these guidelines~~this plan is to ensure that ~~every gas and electric distribution company (referred to separately as “Gas Companies” or “Massachusetts Electric Companies” and collectively as “Companies~~Company d/b/a National Grid (“National Grid” or the “Company”) provides adequate service to its customers in Massachusetts. ~~Every in compliance with the Service Quality Guidelines issued by the Department of Public Utilities (the “Department”) as Attachment A to Order D.P.U. 12-120-D on December 18, 2015 (the “Guidelines”).~~<sup>1</sup> The Company is required to (1) meet the benchmarks established in ~~these guidelines~~the Guidelines or be subject to a penalty, (2) report data as defined in ~~these guidelines~~the Guidelines, and (3) report service quality performance annually. This Plan supersedes prior plans filed by the Company and is effective January 1, 2016.

~~These guidelines apply to every Gas and Electric Company authorized to do business in the Commonwealth of Massachusetts, unless otherwise indicated. In the event of a conflict between these guidelines and any Orders or regulations of the Department of Public Utilities (“Department”), said Orders and regulations shall govern. These standards supersede those previously issued, including the guidelines issued in D.T. E. 99-84, D.T.E. 04-116, and D.P.U. 12-120-C.~~

B. **Definitions**

“Chronic Circuit” means a Problem Circuit(s) that appears among the worst five percent of all of an Electric Company’s active Circuits or ~~Feeders~~feeders for the third consecutive reporting year.

“Circuit” or “Feeder” means a system of conductors through which electric energy is delivered to the customer. A “Circuit” or “Feeder” begins at the terminals of the substation protective device or at the terminals of a supply line protective device and ends at the terminals of the customer’s point of interconnection with the utility system. The customers normally supplied by a given Circuit do not change Circuit assignment for temporary system configuration changes such as maintenance switching or restoration activities. Supply lines that do not have customers directly connected to them (connected only with a protective device such as a recloser) are considered as non-reportable. Conversely, Circuits or Feeders connected to such supply lines via

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<sup>1</sup> In the event of a conflict between these Guidelines and any orders or regulations of the Department, said orders and regulations shall govern.

protective devices such as reclosers have a separate designation and are reportable.

“Circuit Average Interruption Duration Index” or “CKAIDI” means the total minutes of customer Interruptions for a Circuit divided by the total number of customers connected to the Circuit, expressed in minutes per year. If the total number of customers connected to the Circuit differs from Interruption to Interruption, then the average number of customers served by that Circuit shall be used. CKAIDI characterizes the average length of time customers connected to a Circuit are without electric service during the reporting period.

“Circuit Average Interruption Frequency Index” or “CKAIFI” means the total number of customer Interruptions divided by the total number of customers connected to the Circuit, expressed in number of Interruptions per year. If the total number of customers connected to the Circuit differs from Interruption to Interruption, then the average number of customers served by that Circuit shall be used. CKAIFI characterizes the average frequency of Interruptions for customers connected to a Circuit during a reporting period.

~~“Company” or “Companies” refer to investor-owned gas and electric distribution companies unless otherwise indicated.~~

“Critical Facility” means a building or structure where the loss of electrical service would result in disruption of a critical public safety function. ~~Each~~ The Company’s Critical Facilities list is developed by the Company and supplemented by agreed-upon requests from municipalities. ~~Critical Facilities~~ Critical Facilities are those facilities deemed critical by both the Electric Company and the municipality. Examples of critical facilities may include, but are not limited to hospitals, police and fire stations, airports, emergency management agencies, acute/postacute medical facilities with life sustaining equipment, water sewer, pump stations, evacuation centers, and emergency communications centers which serve a life safety function (E911 centers). These facilities are typically required by the town or state to have emergency generation or provisions for emergency generation on site in order to address safety concerns.

“Customer Average Interruption Duration Index” or “CAIDI” means the total duration of customer Interruption in minutes divided by the total number of customer Interruptions (i.e., total number of interrupted customers), expressed in minutes per year. CAIDI characterizes the average time required to restore service to the average customer per sustained Interruption during the reporting period.

“Customer Complaint” means any residential customer complaint recorded by the ~~Consumer Division that meets the criteria set forth in Section II.B.2.~~ Consumer Division that meets the criteria set forth in Section II.B.2

“Customer Credit Case” means any residential customer complaint recorded by the Consumer Division relating to the following matters: payment and arrearage management plans, inability to pay, shut-off notices, and terminations, as set forth in Section II.B.3.

“Customer Equipment Outage” means an electric Outage/Interruption caused by customer operation or the failure of customer-owned equipment.

“Customers Experiencing Long Interruption Duration” or “CELID” means the percent of customers who have experienced Interruption duration of a given number of hours or more during the reporting period.

“Customers Experiencing Multiple Interruptions” or “CEMI” means the percent of customers who have experienced a given number or more sustained Interruptions during the reporting period.

“Downed-Wire Response” means an Electric Company’s response to Priority 1, 2, and 3 ~~downed-wire~~ emergencies as reported by public safety agencies.

“Electric Distribution Company Service Territory” means the service territory or territories approved by the Department for Electric Companies providing electric service in the Commonwealth.

“Electric Distribution Facility” means plant or equipment used for the distribution of electricity that is not a transmission facility, a cogeneration facility, or a small power production facility.

“Electric Distribution Service” means the delivery of electricity over lines that operate at a voltage level typically equal to or greater than 110 volts and less than 69,000 volts to an end-use customer within the Commonwealth.

“Electric Line Loss” means a total energy loss on a distribution and transmission system calculated as the difference between energy purchased and sold, expressed as a percentage. The total energy loss includes: (1) technical losses (actual load and no load loss in the electric system, consisting of transmission and distribution losses between sources of supply and points of delivery); and (2) nontechnical losses (losses such as meter reading error or theft).

“Emergency Call” means a telephone call to the Company where the caller believes that he or she is confronting special circumstances that might lead to bodily harm and/or system-related damage if the circumstances remain unaddressed. Examples include, but are not limited to, downed wires, gas leaks, and gas odor reports.

“Excludable Major Event” means a major Interruption event that meets one of the three following criteria: (1) the event is caused by earthquake, fire or storm of sufficient intensity to give rise to a state of emergency proclaimed by the Governor (as provided under the Massachusetts Civil Defense Act); (2) any other event that causes an unplanned Interruption of service to fifteen percent or more of the Electric Company’s total customers in the Electric Company’s entire service territory; or (3) the event was a result of the failure of another Company’s transmission or power supply system. Excludable Major Events apply to all SQ reliability metrics. Notwithstanding the foregoing criteria, an Interruption event caused by extreme temperature condition is not an Excludable Major Event.

“Glide Path Method” means a benchmarking method with increasing stringency over a fixed number of years. A ten year Glide Path period is separated into three downwardly shifting benchmarks that will apply for three years each, and a fourth period of one year. The year ten benchmarks will remain in effect unless revised by the Department.

“High-Profile Customer” means any customer for whom an Interruption to service could pose a threat to public safety (e.g., a hospital, airport, etc.) or a large commercial or institutional customer with a demand of one megawatt or greater.

“IEEE 1366” means the information set forth in the most recent Institute of Electrical and Electronics Engineers’ Standard, the Guide for Electric Power Distribution Reliability Indices.

“Interruption” means the loss of electric service to one or more customers connected to the distribution portion of the system. Interruptions are the result of one or more component Outages, depending on system configuration.

“Lost Work Time Accident Rate” or “LWTA” means the Incidence Rate of Lost Work Time Injuries and Illness per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

“Momentary Average Interruption Frequency Index” or (“MAIFI”) means the total number of customer momentary Interruptions divided by the total number of customers served. MAIFI is a measure of momentary Interruptions of electric service of less than one minute, expressed in average number of momentary Interruptions per customer per year during the reporting period.

“Momentary Outage” or “Momentary Interruption” means an Outage or Interruption of electric service of less than one minute.

“Non-Emergency Call” means any telephone call to the Company other than an Emergency Call.

“Outage” means the state of a component when it is not available to perform its intended function due to some event directly associated with that component, but may not necessarily result in Interruption of service to customers.

“Penalty Zone” means the performance zone in which penalties apply for a metric, depending upon the benchmarking method specified for that metric.

“Penalty-Free Zone” means the performance zone where no penalties apply for a metric, depending upon the benchmarking method specified for that metric.

“Planned Outage” or “Planned Interruption” means an Outage or Interruption that is scheduled by the Company and of which customers are notified in advance, including, for example, during the connection of new customers or to ensure the safe performance of maintenance activities.

“Poor Performing Circuit” means any distribution Circuit or Feeder that possesses a

CKAIDI or CKAIFI value(s) for a reporting year that is among the highest (worst) five percent of all of a Company's active Circuits or Feeders.

“Priority 1 Downed Wires: Life Threatening / Imminent Danger” means an event in which utility equipment is preventing emergency response personnel from performing rescue efforts and/or administering first-aid treatment to a person or persons who may be injured or in danger of being injured.

“Priority 2 Downed Wires: Hindering Emergency Operation” means an event in which utility equipment is preventing emergency response personnel from responding to an emergency situation which is not considered life threatening, yet requires the attention of emergency response personnel.

“Priority 3 Downed Wires: Non-Threatening Electrical Hazard” means an event in which utility equipment creates the need for emergency response personnel and/or apparatus to remain on the scene in order to protect the public from the hazard created by the utility's equipment.

“Problem Circuit” means any electric distribution Circuit or Feeder that possesses a CKAIDI or CKAIFI value(s) for a reporting year that is among the highest (worst) five percent of all of the Company's active Circuits' or Feeders' CKAIDI and CKAIFI values ~~percent of all of the Company's active Circuits' or Feeders' CKAIDI and CKAIFI values~~ for any two consecutive reporting years.

“Restricted Work Day Rate” or “RWD” means the Incidence Rate of Restricted Work cases per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

“Service Appointment” means a mutual agreement between a Company and a customer, scheduled at least the day prior, that shall be recorded in the Company's business records in the ordinary course of business as to date, time, and location where Company personnel are scheduled to perform a service activity, whether the appointment is Company-initiated or customer-initiated, and that requires the presence of the customer at the time of service.

“Service Interruption to a High-Profile Customer” means an Interruption that has a reasonable probability of involving a High-Profile Customer, including a hospital, airport, or large manufacturing, commercial, or institutional customer (with a demand of one megawatt or greater).

“Sustained Outage” or “Sustained Interruption” means an Outage or Interruption of electric service that lasts at least one minute and is not classified as a Momentary Outage or Momentary Interruption.

“System Average Interruption Duration Index” or “SAIDI” means the total duration of customer Interruptions in minutes divided by the total number of customers served by the distribution Company, expressed in minutes per year. SAIDI characterizes the average length of time that customers are without electric service during the reporting period.

“System Average Interruption Frequency Index” or “SAIFI” means the total number of customer Interruptions divided by the total number of customers served by the distribution Company, expressed in number of Interruptions per customer per year. SAIFI characterizes the average number of sustained electric service Interruptions for each customer during the reporting period.

“Transmission and Distribution Revenues” means revenues collected through the base rates of a transmission and distribution Company.

“Year” means calendar year unless otherwise noted.

### C. Benchmarking Methods

To establish the benchmarks by which Company performance shall be measured, all metrics shall use one of the following three benchmarking methods: (1) Glide Path Method, (2) Company-specific Method; or (3) Poor Performing Circuits Method. Penalty metrics are assigned a benchmarking method and penalty formula described in Section V.

#### 1. Glide Path Method

The Glide Path Method uses a ten-year Glide Path divided into four time periods: three three-year periods called Glide Path One (“GP1”), Glide Path Two (“GP2”), Glide Path Three (“GP3”); and a final one year period called Glide Path Four (“GP4”). This benchmarking method also requires the calculation of a three-year rolling average (“Rolling Average”) based on a Company’s most recent three years of performance data (performance year plus two preceding years). Failure to meet benchmarks established by this method shall result in a penalty.

~~GP1~~ GP 1 uses the company-specific penalty threshold and penalty maximum benchmarks applicable under D.T.E. 04-116 (i.e. 1996-2005). From the initial level of GP1, incremental improvements in the standard occur, for both the penalty threshold and penalty maximum benchmarks, through the application of calculated Glide Path Improvement Values (“GPIVs”) to determine the benchmarks for GP2, GP3, and GP4. The GPIV required to adjust the lower penalty threshold benchmark (“GPIV-PT”) equals one sixth of the standard deviations established in D.T.E. 04-116. The GPIV required to adjust the upper penalty maximum benchmark (“GPIV-PM”) equals one sixth of the standard deviations established in D.T.E. 04-116. In year ten and thereafter, GP4 will remain as fixed benchmarks, until further reviewed by the Department.

GP1 Penalty Threshold benchmark (“GP1 PT”) is set at ~~each~~the Company’s D.T.E. 04-116 standard, i.e., company-specific mean plus one standard deviation using historical, company-specific data from 1996-2005. The GP1 Penalty Maximum benchmark (“GP1 PM”) is set at ~~each~~the Company’s D.T.E. 04-116 standard, i.e., company-specific mean plus two standard deviations using historical, company-specific data from 1996-2005. No penalty shall apply below the GP1 PT. The Penalty Zone shall commence at GP1 PT and increase to its maximum level at GP1 PM. These benchmarks will remain fixed for the three GP1 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.



GP2 Penalty Threshold benchmark (“GP2 PT”) is set at GP1 PT minus GPIV-PT. GP2 Penalty Maximum benchmark (“GP2 PM”) is set at GP1 PM minus GPIV-PM. No penalty shall apply below GP2 PT. The Penalty Zone shall commence at GP2 PT and increase to its maximum level at GP2 PM. These benchmarks will remain fixed for the three GP2 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean will into the penalty formula as an observed value.

GP3 Penalty Threshold benchmark (“GP3 PT”) is set at GP2 PT minus GPIV-PT. GP3 Penalty Maximum benchmark (“GP3 PM”) is set at GP2 PM minus GPIV-PM. No penalty shall apply below GP3 PT. The Penalty Zone shall commence at GP3 PT and increase to its maximum level at GP3 PM. These benchmarks will remain fixed for the three GP3 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

GP4 Penalty Threshold benchmark (“GP4 PT”) is at GP3 PT minus GPIV-PT. GP4 Penalty Maximum benchmark (“GP4 PM”) is set at GP3 PM minus GPIV-PM. No penalty shall apply below GP4 PT. The Penalty Zone shall commence at GP4 PT and increase to its maximum level at GP4 PM. These benchmarks will remain fixed during and after the GP4 year, until further revised by the Department. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

## 2. Company-specific Method

This benchmarking method requires the calculation of a fixed Company-specific Mean and a Company-specific Standard Deviation. This method requires ~~at~~the Company to meet its reported ~~the~~ average performance. Failure to meet benchmarks established by this method shall result in a penalty.

## ~~3.~~ Poor Performing Circuits Method

This benchmarking method requires ~~each~~the Company to identify its worst performing Circuits and compare performance on those Circuits to its overall Circuit performance, per rules in Section IV.A.2.

# II. CUSTOMER SERVICE AND SATISFACTION PERFORMANCE METRICS

## A. Service Appointments Kept As Scheduled

### 1. D.T.E. 04-116-C

*Applicable through December 31, 2018.*

~~Each~~The Company shall gather data and report statistics regarding the number of service calls met on the same day requested, excluding when a customer misses a mutually--agreed upon time. ~~Each~~The Company shall report the percentage of scheduled Service Appointments met by Company personnel on the same day requested. Service Appointment data shall be compiled and aggregated monthly. Reporting shall occur annually. The reports shall be submitted in accordance with Section VI below. Service

Appointments Kept As Scheduled shall be a performance measure subject to a revenue penalty.

2. D.P.U. 12-120-D

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

*Each 1, 2019.*

The Company shall gather data and report statistics regarding the number of four-hour and all-day Service Appointments, available, scheduled, and kept on-time. ~~Each~~ The Company shall report the percentage of scheduled four-hour and all-day Service Appointments Kept as Scheduled. Service Appointment data shall be compiled and aggregated monthly. ~~Each~~ The Company shall report Service Appointment data annually.

A Service Appointment is kept if the Company representative arrives at the customer's premises within either the four-hour window or the all-day window originally scheduled by the Company and the customer. Same day appointments, emergency work orders, tagalongs, multiple work orders for a single site, and work orders where the Company has not scheduled a Service Appointment with the customer (i.e., cold calls such as collections) shall be excluded from the data reported for this metric. Service Appointments that are rescheduled at least 24 hours prior to the appointment time ~~with the assent of the customer~~, or by the customer within 24 hours of the appointment time, shall be excluded from the data reported for this metric. For Service Appointments rescheduled due to emergencies, ~~Companies~~ the Company may exclude from their performance calculation appointments missed due to emergencies. ~~Companies~~ The Company must identify each excluded appointment, due to an emergency, and explain the nature of the emergency as part of their annual SQ reports.

When a Service Appointment is not kept as scheduled due to customer unavailability, the Company must count it as a missed appointment in the data reported for this metric, unless either (A) a Company representative has made a visit to the customer's premises, found the customer not at home, and left a note that the Company had attempted to attend its scheduled Service Appointment, or (B) a Company representative has attempted to contact the customer by phone twice and has not reached the customer both times.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. This metric will become effective for penalty purposes after a three ~~year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.~~ year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.



B. Complaints to the Consumer Division

1. D.T.E. 04-116-C Consumer Division Cases

*Applicable through December 31, 2018.*

Customer complaints shall be categorized as a Consumer Division Case where a written record is opened by the Consumer Division using the following criteria:

- (1) the individual making the complaint provides his or her identity to the Consumer Division and is either a (a) current, prospective, or former customer of the Company against which the complaint has been lodged, or (b) designee of the current, prospective, or former customer of the Company;
- (2) the individual or his/her designee has contacted the Company from which the customer receives distribution service prior to lodging a complaint with the Department;
- (3) the Department's investigator cannot resolve the complaint without contacting the Company to obtain more information;
- (4) the matter involves an issue or issues over which the Department typically exercises jurisdiction; and
- ~~(4)~~-(5) the matter involves an issue or issues over which the Company has control.

Consumer Division Case data shall be employed as a SQ performance measure. The Department will compile and aggregate monthly the frequency of Consumer Division Cases per 1,000 residential customers and provide the compilation to the Companies on a monthly basis. Once the data is provided to ~~at~~the Company, it has forty-five (45) days to dispute the classification of a complaint as a Consumer Division Case. The Department will also provide an annual measure, and upon request, offer company-specific meetings to discuss ~~each~~the Company's performance. Consumer Division Cases shall be a performance metric subject to a penalty.

2. D.P.U. 12-120-D Customer Complaints

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

Customer Complaints shall be defined as any residential customer contact with the Department that is categorized as a Customer Complaint by the Department's Consumer Division using the following criteria:

- (1) the customer making the Customer Complaint provides his or her identity and is a current or former customer of the Company against which the Customer Complaint has been lodged;
- (2) the customer has contacted the Company from which the customer receives

distribution service prior to lodging a Customer Complaint with the Department;

~~(4)~~ (3) the matter involves an issue or issues over which the Company has control;

(4) the matter is not a simple customer inquiry;

(5) the matter is not a circumstance wherein the Company correctly applied the applicable law, orders, rules, standards, procedures; and

(6) the matter is not a Customer Credit Case as defined in Section II.B.3.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Complaints per 1,000 residential customers and will provide this data to ~~each~~the Company on a monthly basis. Once the Department provides this data to ~~at~~the Company, the Company has forty-five (45) days to dispute the classification of a complaint as a Customer Complaint.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. It will become effective for penalty purposes after a three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

### 3. D.P.U. 12-120-D Customer Credit Cases

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

Customer Credit Cases shall be defined as any residential Customer Complaint relating to the following matters: payment and arrearage management plans, inability to pay, ~~shut-off~~~~shut-off~~ notices, and terminations. Matters relating to failure to issue a credit or a refund will not be categorized as a Customer Credit Case.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Credit Cases per 1,000 residential customers, and will provide data to ~~each~~the Company on a monthly basis. Once the data is provided to ~~at~~the Company, the Company has forty-five (45) days to dispute the classification of a matter as a Customer Credit Case.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. This metric will become effective for penalty purposes after a three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

### III.- ASSUMPTIONS FOR CALCULATING ELECTRIC RELIABILITY METRICS

For the purpose of calculating SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, MAIFI, and Downed-Wire Response, the following assumptions and criteria shall be used in accumulating Interruption data:

- A. Customer Equipment Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- B. Planned Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- C. Excludable Major Events shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI, MAIFI, and Downed-Wire Response;
- D. Momentary Interruptions shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI;
- E. The beginning of an Interruption shall be recorded at the earlier of an automatic alarm or the first report of no power;
- F. The end of an Interruption shall be recorded at that point when power to customers is restored;
- G. Interruptions involving primary and secondary distribution Circuits shall be included in the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI (Interruptions involving electric lines that operate at 69,000 volts and above shall be excluded);
- H. Where only part of a Circuit experiences an Interruption, the number of customers affected shall be estimated, unless an actual count is available. When power is partially restored, the number of customers restored also shall be estimated unless an actual count is available; and
- I. When customers lose power as a result of the process of restoring power (such as switching operations and fault isolation), the duration of these additional Interruptions shall be included in the duration calculation, but the additional number of Interruptions shall not be included in the frequency calculation.

### IV.- RELIABILITY AND SAFETY PERFORMANCE METRICS

#### A. Electric Reliability

##### 1. System Level Reliability

~~Each Electric~~The Company ~~shall~~will measure SAIDI and SAIFI on an annual basis in accordance with Section III and the Glide Path Benchmarking Method and Penalty Formula in Section V.B.1. SAIDI and SAIFI shall be subject to monetary penalty as specified in Section V.

GP1 for SAIDI and SAIFI is in effect for the first three years following the issuance of these SQ Guidelines (i.e., for performance years 2016-2018). GP2 is in effect for the subsequent three years (i.e., for performance years 2019-2021). GP3 is in effect for the next subsequent three years (i.e., for performance years 2022-2024). GP4 is in effect starting in 2025 and will remain in effect until revised by the Department.

The ~~Electric Companies~~ Company shall continue to collect IEEE reliability data as a reporting metric only. IEEE calculations shall be based on Sustained Interruptions (i.e., Interruptions more than one (1) minute).

## 2. Circuit Level Reliability

To address Poor Circuit Remediation (“PCR”), ~~each Electric~~, the Company ~~shall will~~ identify the five percent of Circuits or Feeders in its service territory with the most Interruptions (i.e., duration and frequency) as measured by CKAIID and CKAIIF. ~~Electric Companies that do~~ If the Company does not incur SAIDI or SAIFI penalties in a given year ~~must, the Company will~~ evaluate whether CKAIID and CKAIIF penalties apply. Data for all Circuits or Feeders (identified for PCR evaluation) that were active at any time during the reporting year shall be included in the PCR calculation for that reporting year.

Any Circuit(s) or Feeder(s) that appears among the worst five percent of all the Company’s active Circuits or Feeders for two consecutive years shall be labeled as a Problem Circuit(s). Any Problem Circuit(s) that appears among the worst five percent of all the Company’s Circuits or Feeders for the third consecutive reporting year shall be labeled a Chronic Circuit. ~~At~~ At the end of the third year, for Chronic Circuits that were not remediated by the end of the third year, if the mean of the CKAIID/CKAIIF values of the Chronic Circuits is greater than Company-specific Mean plus two Company-specific Standard Deviations, the ~~Electric~~ Company ~~shall will~~ be subject to a monetary penalty.

The Company-specific Mean applicable to CKAIID and CKAIIF shall be same as that which is applicable to SAIDI and SAIFI, ~~i.e., using the performance data for these metrics~~ filed by ~~each of the Electric Distribution Companies~~ the Company in ~~their~~ its annual service quality reports from 1996-2005, under the D.T.E. 04-116 guidelines: (i.e., the Company-specific system-wide mean for 1996-2005).

All penalties will be apportioned as provided in Section V.C, below. All penalty calculations will use the following penalty formula:

For any Chronic Circuits, if the mean of the CKAIID/CKAIFI values of the Chronic Circuits is greater than the Company-specific Mean plus two Company-specific Standard Deviations, then the maximum penalty for CKAIID and CKAIFI will apply.

Penalty for CKAIID = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year)

Penalty for CKAIFI = 11.25% \* (2.5% of Company's total Annual Transmission and ~~Distribution Revenue for the applicable year~~;  
Distribution Revenue for the applicable year).

## V. REVENUE PENALTIES

### A. Applicability

Each of the penalty formulas below identify the penalty metrics to which the penalty formula applies.

### B. Penalty Formulas

#### 1. Glide Path Method

This revenue penalty formula is applicable to SAIDI and SAIFI.

Penalty = 0.25 \* ~~((Observed value -- GPPT) / (GPPM-GPPT))~~<sup>2</sup> \* Maximum Penalty

Where:

Observed Value = current year performance or three year average (i.e., mean of current year performance and preceding two years' performance), whichever is less

GPPT = the applicable Glide Path penalty threshold benchmark (GP1 PT; GP2 ~~PT~~;  
~~GP3 PT; and GP4 PT~~);  
PT; GP3 PT; and GP4 PT)

GPPM= the applicable Glide Path penalty maximum benchmark (GP1 PM; GP2 PM; GP3 PM; and GP4 PM)

GPMM-GPPT= Company-Specific standard deviation

Maximum Penalty = 2.5 percent of Annual Transmission and Distribution Revenues of a Company allocated to the metric, as apportioned by the table in Section V.C.

## 2. Company-Specific Penalty Formula

This revenue penalty formula is applicable to Service Appointments, Customer Complaints, and Customer Credit Cases.

If: (Observed Result – Company-Specific Mean) is a positive value.

$Penalty_M = (0.25 * (((Observed\ Result - Company-Specific\ Mean) / Company-Specific\ Standard\ Deviation)^2) * Maximum\ Penalty$

Observed Result = the average actual performance measure achieved in year<sub>y</sub>, rounded to the applicable decimal place;

Company-Specific Standard Deviation = standard deviation of the historical average result; and

Maximum Penalty =  $(PCL_M) * (AR * 0.025)$

Where:

$PCL_M$  = Performance category liability for the metric expressed as a percentage (derived from Section V.C); and

AR = Annual Transmission and Distribution Revenues of the Company for the applicable year.

## 3. Poor Circuit Remediation Penalty Formula

Penalty for CKAIID = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year)

Penalty for CKAIIF = 11.25% \* (2.5% of Company's total Annual Transmission and ~~Distribution Revenue for the applicable year.~~  
Distribution Revenue for the applicable year.)

C. Apportionment of Penalty Among Performance Metrics

The following table reflects the percentage of the overall two and one half percent of Transmission/Distribution Revenue specified in G. L. c. 164, § 11 allocable to each penalty metric.

<b>Metric</b>	<b>Penalty Percentage</b>
SAIDI	27.5
SAIFI	27.5
CKAIDI	11.25*
CKAIFI	11.25*
Service Appointments	15
Consumer Division Cases (2016-2018)	30
Customer Complaints (begin 2019)	20
Customer Credit Cases (begin 2019)	10
*Penalty may only be assessed if Electric Company is not subject to SAIDI or SAIFI penalty in a given year.	

VI. DATA REPORTING REQUIREMENTS

A. Reliability, Electric Line Loss, and Safety Indices and Rates

Each

The Company ~~shall~~will report on an annual basis performance data on the following: SAIDI, SAIFI, CKAIFI, CKAIDI, CAIDI, LWTA, RWD, Electric Line Loss, Downed-- Wire Response, Service Appointments, Customer Satisfaction Surveys, Consumer Division Cases, Customer Complaints, and Customer Credit Cases. These reports shall be submitted in accordance with Section VI and Section VII, below.

All calculated performance results of all metrics shall be reported to the 1000<sup>th</sup> decimal place, three places after the decimal point. Similarly, all values entered in the penalty formula shall be rounded to the 1000<sup>th</sup> decimal place. For inputs and outputs of other calculations the Companies conduct, the Companies shall not round values other than what Excel automatically truncates.

Additionally, ~~Electric Companies shall~~the Company will report in their annual SQ reports, their increased capabilities for measuring MAIFI, CEMI, and CELID. For MAIFI, each Electric Company shall (1) submit a status report on its increased ability to measure momentary Interruptions; and (2) report in the annual SQ report any and all MAIFI data that it was able to collect in the reporting year. For CEMI and CELID, ~~each Electric~~the Company shall submit a status report on its ability to accurately determine its CEMI and CELID data, including a status report about its ability to calculate CEMI and CELID as a percentage of the total number of customers served by the Company.

For annual reporting of Electric Line Loss, ~~each Electric~~the Company shall provide and support with sufficient substantiation:

- (1) its electric distribution and transmission line loss value separately for technical losses and non-technical losses,



(2) electric transmission and distribution line loss value in megawatts by voltage class at system peak, and

(3) the parameters, assumptions, and methodological approaches used in the calculations.

#### B. Excludable Major Events

~~Each Electric~~The Company shall identify and report on an annual basis any Interruptions that are considered Excludable Major Events. For each Excludable Major Event, ~~each Electric~~the Company shall report the total number of customers affected, the service area affected, the number of customers without service at periodic intervals, the time frame of longest customer Interruption, and the number of crews used to restore service on a per shift basis. These reports shall be submitted in accordance with Section VII, below.

#### C. Poor Circuit Remediation

~~Each Electric~~The Company shall identify and report on an annual basis its performance data on its poor performing Circuits. The report on PCR shall include the following information for the most recent three years (in an active Excel spreadsheet):

~~(1)~~(1) the Feeder or Circuit identification number;

(2) the Feeder or Circuit location;

~~(2)~~(3) the reason(s) why the Circuits performed poorly during the reporting year;

(4) the number of years that the Circuit(s) performed poorly;

(5) the steps that are being considered and/or have been implemented to improve the reliability of these Circuits;

(6) the CKAIID or CKAIIF value for the specific Circuit(s) whether mitigated or not mitigated. In addition, the ~~Companies~~Company shall continue to provide the detailed Circuit data, filed in an active Excel format. In this data, active Circuits and the top worst performing Circuits in each year must be clearly identified; and

(7) a listing of the dedicated/assigned Circuits/Feeders feeding a customer or group of customers that will be used for PCR evaluation purposes.

The reports shall be submitted in accordance with Section VII, below.

#### D. IEEE Reporting Requirement

~~Each Electric~~The Company shall compile its SAIDI and SAIFI measures in accordance with these Guidelines. In addition, ~~each Electric~~the Company shall compile and calculate its SAIDI and SAIFI performances using IEEE standards and shall report these measures to the Department annually in accordance with Section VII, below.

E. Department's Outage and Accident Reporting Procedures

1. Reporting Electric Service Interruptions

~~Each Electric~~The Company shall continue to maintain and update its distribution and transmission Interruption data consistent with the Department's Outage and Accident Reporting Procedures.

~~Each Electric~~The Company shall include every sustained distribution and transmission Interruption that occurs within or impacts its service territory. ~~Each Electric~~The Company shall update within a one-hour period, from the beginning of the Interruption, every Interruption that results in 500 or more customer-Interruption hours or that results in a service Interruption to a High-Profile Customer or Critical Facility. All other Interruptions shall be updated within a 24-hour period from the beginning of the Interruption. Data shall be revised to reflect updated/analyzed Interruption information within seven (7) days of the initial Interruption reporting.

All Interruption reports shall include the following information:

1.      Date filed
2.      Company name (i.e., Massachusetts Electric Company d/b/a National Grid)
3.      District/Division name
4.      Location of Interruption (City/town where fault occurred)
5.      Street name
6.      Substation name and ID
7.      Circuit number ID
8.      Circuit branch ID
9.      Voltage level, such as to the nearest: transmission, 35kV, 25kV, 12kV, 5kV, Secondary, etc.
10.     Circuit type (OH/UG/Customer owned)
11.     Original number of customers affected
12.     Current number of customers affected (show zero if restoration is completed)
13.     Actual duration (in hours)
14.     Total customer Interruption hours
15.     Date and time service out
16.     Date and time service in
17.     Reason for Interruption (nature/cause of Interruption)
18.     Failed or damaged device/equipment
19.     Indicate if the Interruption was planned/unplanned/intentional
20.     Weather condition
21.     Primarily affected load type (Residential/Industrial/Commercial/mix)
22.     Whether the Interruption affected a Critical Facility/ High Profile customer (yes/no)
23.     Whether the Interruption is an Excludable Major Event (yes/no)
24.     Whether an injury occurred as a result of the event (yes/no)
25.     Name of the person responsible for filling out the report
26.     Time restoration commenced
27.     Expected duration
28.     Town/City Official notification (yes/no)

29. Name of notified/contacted person

30. Telephone number of notified/contacted person(s)

~~Each Electric~~The Company shall file annually, with its Annual SQ Report, a compact disc that contains a compilation of all Interruptions for the filing year, in working Microsoft Excel spreadsheet format. ~~Each~~ The Company shall submit these reports in accordance with Section VIII.

## 2. Reporting Accidents

In compliance with the requirements of G.L. c. 164, § 95, ~~each Electric~~the Company shall (1) maintain accident data in the Outage and Accident Reporting Protocol (“ORP”) maintained by the Company, and (2) report to the Department within a 24-hour period of an accident the following information (including downed wires incidents that result in electrical shock, injury or fatality):

(1) time and date of accident;

~~(1)~~ (2) time and date of the notice to the Department;

(3) location of the accident;

(4) a detailed description of the accident including information about fatalities, injuries, facilities and third-party property damage; and

(5) the name and telephone number of a Company employee who may be contacted about the accident.

These standards supersede previous Interruption and Accident Reporting Procedures. ~~Each~~The Company shall submit these reports in accordance with Section VIII.

## F. Reporting Emergency Response Times

~~Each~~The Company shall compile and report an annual average of its response times to formal emergency incidents reported by official emergency personnel. The ~~Companies~~Company will calculate the total duration of time between notification of a system incident and an arrival response by the Company. ~~Companies~~ The Company shall also report the location (street address) and nature of each incident. Such data shall be compiled by city and town, and reported monthly, with an annual average duration calculated and reported to the Department, and shall be submitted in accordance with Section VII. The ~~Companies must~~Company will provide information per this section only if that information is not already provided based on Downed-Wire Response reported per Section VI.F.1.

### 1. Reporting Requirements for Downed-Wire Response

~~Each Electric~~The Company shall measure and report its response to Priority 1, 2, and 3 downed-wire calls. ~~Each~~ The Company shall measure its Downed-Wire Response time from the time of notification to the time a Company representative arrives on site. The

Downed-Wire Response metric is for reporting purposes only. For purposes of reporting information and calculating performance percentages related to Downed-Wire Response, ~~each Electric~~the Company shall complete the template in Attachment B, Emergency Response Time Reporting to be filed with its annual SQ Report. With respect to performance percentages, for each Priority 1, 2, and 3 downed-wire call, ~~each~~the Company shall calculate average response times for 100 percent of downed wire calls, 98 percent of downed wire calls (excluding the worst 2%), and 95 percent of downed wire calls (excluding the worst 5%). In calculating average response times, ~~each company may~~the Company will exclude from the calculation data relating to: (1) emergency calls received from individuals other than ~~the~~ municipal officials; (2) emergency calls involving a facility not belonging to the ~~Electric~~ Company and the ~~Electric~~ Company has coordinated a response through the telephone or cable companies; and (3) instances in which ~~an Electric~~ Company has dispatched personnel to respond to a Priority call in a timely manner, but emergency response is hindered/delayed due to circumstances beyond the Company's control.

In responding to Downed-Wire calls, the ~~Electric Companies~~Company shall follow the protocols approved in Investigation by the Department of Public Utilities regarding the development of Emergency Response Time Protocols for Investor Owned Distribution Companies, D.P.U. 08-112, Letter Order at 1-2 (December 23, 2010).

#### GH. Reporting Requirements for Lost Work Time Accident Rate and Restricted Work

##### Day Rate

##### 1. Lost Work Time Accident Rate

~~Each~~The Company shall measure its Lost Work Time Accident Rate. The Lost Work Time Accident Rate shall be reported annually and data will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

##### 2. Restricted Work Day Rate

~~Each~~The Company shall measure its Restricted Work Day Rate. The Restricted Work Day Rate shall be reported annually and data will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

#### HI. Reporting Requirements for Customer Satisfaction Surveys

~~Each~~The Company shall report the results of two surveys to the Department: (1) a customer satisfaction survey of a statistically representative sample of residential customers within the Company's service territory; and (2) a survey of customers randomly selected from those customers who have contacted the Company's customer service department within the year in which service is being measured. The latter representative sample shall be newly drawn from customers contacting the Company's customer service area in the year previous and shall be conducted with a sample of respondents who are redialed after having concluded a contact with the Company's customer service department. The surveys, if conducted internally, shall be pre-approved

by the Department regarding the method and customer questions.

For the residential customer satisfaction survey, the following question shall be asked: “Using a scale where 1 = very dissatisfied and 7 = very satisfied; how satisfied are you with the service, excluding price, that you are receiving from Company Name National Grid?”

For the customer-specific survey, the following question shall be asked: “Using a scale where 1 = not at all courteous, and 7 = very courteous; how courteous was the customer service department of Company Name National Grid?”

For the customer-specific survey, the following question shall be asked: “Using a scale where 1 = not at all responsive, and 7 = very responsive; how well did the customer service department of Company Name National Grid respond to your call?”

Each

The Company shall report the arithmetic mean of the responses to the three survey questions, as well as the arithmetic mean of each question, in ~~each~~the Company’s annual service quality report. ~~Each~~ The Company shall include the results from all available previous years of the survey up to a maximum of ten years. This metric will be used for reporting purposes only.

## VII. SUBMITTING ANNUAL REPORTS TO THE DEPARTMENT

The annual SQ reports shall be submitted to the Department by March 1 of each year reflecting the data from the previous calendar year(s) and shall be submitted in the following manner:

A. the original to the Secretary;

B. one (1) copy to the Electric Power Division Director;

C. one (1) copy to the Rates and Revenue Requirements Division Director;

and

D. one (1) copy to the Consumer Division Director; and

A copy of the report should also be submitted to the Department in electronic format using one of the following methods: (1) by e-mail attachment to dpu.efiling@state.ma.us, dpu.efiling@state.ma.us, or (2) on a CD-ROM. The text of the e-mail or CD-ROM must specify: (1) the docket number of the proceeding (if known); (2) the name of the person or Company submitting the filing; and (3) a brief descriptive title of the document (e.g., annual service quality report). The electronic filing should also include the name, title, and telephone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. All data must be reported in active spreadsheets using Microsoft Excel. All documents submitted in electronic format will be posted on the Department’s website: http://www.mass.gov/dpu; http://www.mass.gov/dpu.

VIII. SUBMITTING INTERRUPTION AND ACCIDENT REPORTS TO THE DEPARTMENT

The Interruption and Accident reports required by these standards shall be submitted to the Department in the following manner:

A. Consistent with the Department's Outage Reporting Protocol ("ORP"), on-line through ORP databases maintained by the Electric Companies. If website access is not available, an electronic copy of the report shall be submitted to the Department, using one of the following methods: by e-mail attachment to [dpu.efiling@state.ma.us](mailto:dpu.efiling@state.ma.us); or compact disc, to the Director of Electric Power Division, Department of Public Utilities, One South Station, Boston Massachusetts 02110. The text of the e-mail or disc label must specify: (1) an easily identifiable case caption; (2) docket number; (3) name of person or Company submitting the filing; and (4) a brief descriptive title of document (e.g., Company Name Outage or Interruption report). The electronic filing should also include the name, title and phone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. Data or spreadsheet responses should be compatible with Microsoft Excel; and

B. One (1) copy of each report submitted to the Consumer Division Director, Department of Public Utilities, One South Station, Boston Massachusetts 02110.

For electric service Interruptions that are required to be reported within a one-hour period as described in Section ~~V.F., each Electric~~ VI.E.1, the Company ~~shall~~ will, in addition to submitting a written report, contact by telephone the Electric Power Division Director, Consumer Division Director, Executive Director, or one of the Commissioners of the Department to convey the information surrounding the Interruption.

IX. DEPARTMENT CONTACT INFORMATION ON CUSTOMER BILLS

~~Each~~ The Company ~~is directed to~~ will include language placed on the back side of customer bills, which notifies customers of (a) their ability to contact the Department regarding service quality complaints or questions, and (b) the Department's website address: [www.mass.gov/dpu](http://www.mass.gov/dpu).

X. CUSTOMER SERVICE GUARANTEE

If ~~the~~ the Company fails to keep a Service Appointment as defined in Section II or to notify customers of planned service Interruptions, the Company shall pay \$100 directly to those customers affected. The Company shall automatically credit the payment to the affected customer's account. The Company shall provide to the Department on a monthly basis information regarding the number of Customer Service Guarantee payments made to customers ~~and~~ for a missed notification of a planned service interruption or a missed service appointment, including the reason for each missed service appointment. The information shall be reported to Director,

Consumer Division, Department of Public Utilities, One South Station, Boston  
Massachusetts 02110.



XI. COMPANY EXEMPTION REQUESTS

~~A~~The Company may request that the Department grant an exemption from a particular portion of the SQ Guidelines for that reporting year. The Company must file the request for exemption 60 days from the date of the event to be exempted.

XII. GENERAL RESERVATION

~~The~~The Company acknowledges that the Department retains the discretion to waive or depart from any provision of the ~~SQ~~ Guidelines.

**NANTUCKET ELECTRIC COMPANY**  
**D/B/A NATIONAL GRID**

**SERVICE QUALITY PLAN**

I. GENERAL

A. Purpose and Scope

The purpose of ~~these guidelines~~this plan is to ensure that ~~every gas and electric distribution company (referred to separately as “Gas Companies” or “Nantucket Electric Companies” and collectively as “Companies~~Company d/b/a National Grid (“National Grid” or the “Company”) provides adequate service to its customers in Massachusetts. ~~Every in compliance with the Service Quality Guidelines issued by the Department of Public Utilities (the “Department”) as Attachment A to Order D.P.U. 12-120-D on December 18, 2015 (the “Guidelines”).~~<sup>1</sup> The Company is required to (1) meet the benchmarks established in ~~these guidelines~~the Guidelines or be subject to a penalty, (2) report data as defined in ~~these guidelines~~the Guidelines, and (3) report service quality performance annually. This Plan supersedes prior plans filed by the Company and is effective January 1, 2016.

~~These guidelines apply to every Gas and Electric Company authorized to do business in the Commonwealth of Massachusetts, unless otherwise indicated. In the event of a conflict between these guidelines and any Orders or regulations of the Department of Public Utilities (“Department”), said Orders and regulations shall govern. These standards supersede those previously issued, including the guidelines issued in D.T. E. 99-84, D.T.E. 04-116, and D.P.U. 12-120-C.~~

B. Definitions

“Chronic Circuit” means a Problem Circuit(s) that appears among the worst five percent of all of an Electric Company’s active Circuits or ~~Feeders~~feeders for the third consecutive reporting year.

“Circuit” or “Feeder” means a system of conductors through which electric energy is delivered to the customer. A “Circuit” or “Feeder” begins at the terminals of the substation protective device or at the terminals of a supply line protective device and ends at the terminals of the customer’s point of interconnection with the utility system. The customers normally supplied by a given Circuit do not change Circuit assignment for temporary system configuration changes such as maintenance switching or restoration activities. Supply lines that do not have customers directly connected to them (connected only with a protective device such as a recloser) are considered as non-reportable. Conversely, Circuits or Feeders connected to such supply lines via

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<sup>1</sup> In the event of a conflict between these Guidelines and any orders or regulations of the Department, said orders and regulations shall govern.

protective devices such as reclosers have a separate designation and are reportable.

“Circuit Average Interruption Duration Index” or “CKAIDI” means the total minutes of customer Interruptions for a Circuit divided by the total number of customers connected to the Circuit, expressed in minutes per year. If the total number of customers connected to the Circuit differs from Interruption to Interruption, then the average number of customers served by that Circuit shall be used. CKAIDI characterizes the average length of time customers connected to a Circuit are without electric service during the reporting period.

“Circuit Average Interruption Frequency Index” or “CKAIFI” means the total number of customer Interruptions divided by the total number of customers connected to the Circuit, expressed in number of Interruptions per year. If the total number of customers connected to the Circuit differs from Interruption to Interruption, then the average number of customers served by that Circuit shall be used. CKAIFI characterizes the average frequency of Interruptions for customers connected to a Circuit during a reporting period.

~~“Company” or “Companies” refer to investor-owned gas and electric distribution companies unless otherwise indicated.~~

“Critical Facility” means a building or structure where the loss of electrical service would result in disruption of a critical public safety function. ~~Each~~ The Company’s Critical Facilities list is developed by the Company and supplemented by agreed-upon requests from municipalities. ~~Critical Facilities~~ Critical Facilities are those facilities deemed critical by both the Electric Company and the municipality. Examples of critical facilities may include, but are not limited to hospitals, police and fire stations, airports, emergency management agencies, acute/postacute medical facilities with life sustaining equipment, water sewer, pump stations, evacuation centers, and emergency communications centers which serve a life safety function (E911 centers). These facilities are typically required by the town or state to have emergency generation or provisions for emergency generation on site in order to address safety concerns.

“Customer Average Interruption Duration Index” or “CAIDI” means the total duration of customer Interruption in minutes divided by the total number of customer Interruptions (i.e., total number of interrupted customers), expressed in minutes per year. CAIDI characterizes the average time required to restore service to the average customer per sustained Interruption during the reporting period.

“Customer Complaint” means any residential customer complaint recorded by the ~~Consumer Division that meets the criteria set forth in Section II.B.2.~~ Consumer Division that meets the criteria set forth in Section II.B.2

“Customer Credit Case” means any residential customer complaint recorded by the Consumer Division relating to the following matters: payment and arrearage management plans, inability to pay, shut-off notices, and terminations, as set forth in Section II.B.3.

“Customer Equipment Outage” means an electric Outage/Interruption caused by customer operation or the failure of customer-owned equipment.

“Customers Experiencing Long Interruption Duration” or “CELID” means the percent of customers who have experienced Interruption duration of a given number of hours or more during the reporting period.

“Customers Experiencing Multiple Interruptions” or “CEMI” means the percent of customers who have experienced a given number or more sustained Interruptions during the reporting period.

“Downed-Wire Response” means an Electric Company’s response to Priority 1, 2, and 3 ~~downed-wire~~ emergencies as reported by public safety agencies.

“Electric Distribution Company Service Territory” means the service territory or territories approved by the Department for Electric Companies providing electric service in the Commonwealth.

“Electric Distribution Facility” means plant or equipment used for the distribution of electricity that is not a transmission facility, a cogeneration facility, or a small power production facility.

“Electric Distribution Service” means the delivery of electricity over lines that operate at a voltage level typically equal to or greater than 110 volts and less than 69,000 volts to an end-use customer within the Commonwealth.

“Electric Line Loss” means a total energy loss on a distribution and transmission system calculated as the difference between energy purchased and sold, expressed as a percentage. The total energy loss includes: (1) technical losses (actual load and no load loss in the electric system, consisting of transmission and distribution losses between sources of supply and points of delivery); and (2) nontechnical losses (losses such as meter reading error or theft).

“Emergency Call” means a telephone call to the Company where the caller believes that he or she is confronting special circumstances that might lead to bodily harm and/or system-related damage if the circumstances remain unaddressed. Examples include, but are not limited to, downed wires, gas leaks, and gas odor reports.

“Excludable Major Event” means a major Interruption event that meets one of the three following criteria: (1) the event is caused by earthquake, fire or storm of sufficient intensity to give rise to a state of emergency proclaimed by the Governor (as provided under the Massachusetts Civil Defense Act); (2) any other event that causes an unplanned Interruption of service to fifteen percent or more of the Electric Company’s total customers in the Electric Company’s entire service territory; or (3) the event was a result of the failure of another Company’s transmission or power supply system. Excludable Major Events apply to all SQ reliability metrics. Notwithstanding the foregoing criteria, an Interruption event caused by extreme temperature condition is not an Excludable Major Event.

“Glide Path Method” means a benchmarking method with increasing stringency over a fixed number of years. A ten year Glide Path period is separated into three downwardly shifting benchmarks that will apply for three years each, and a fourth period of one year. The year ten benchmarks will remain in effect unless revised by the Department.

“High-Profile Customer” means any customer for whom an Interruption to service could pose a threat to public safety (e.g., a hospital, airport, etc.) or a large commercial or institutional customer with a demand of one megawatt or greater.

“IEEE 1366” means the information set forth in the most recent Institute of Electrical and Electronics Engineers’ Standard, the Guide for Electric Power Distribution Reliability Indices.

“Interruption” means the loss of electric service to one or more customers connected to the distribution portion of the system. Interruptions are the result of one or more component Outages, depending on system configuration.

“Lost Work Time Accident Rate” or “LWTA” means the Incidence Rate of Lost Work Time Injuries and Illness per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

“Momentary Average Interruption Frequency Index” or (“MAIFI”) means the total number of customer momentary Interruptions divided by the total number of customers served. MAIFI is a measure of momentary Interruptions of electric service of less than one minute, expressed in average number of momentary Interruptions per customer per year during the reporting period.

“Momentary Outage” or “Momentary Interruption” means an Outage or Interruption of electric service of less than one minute.

“Non-Emergency Call” means any telephone call to the Company other than an Emergency Call.

“Outage” means the state of a component when it is not available to perform its intended function due to some event directly associated with that component, but may not necessarily result in Interruption of service to customers.

“Penalty Zone” means the performance zone in which penalties apply for a metric, depending upon the benchmarking method specified for that metric.

“Penalty-Free Zone” means the performance zone where no penalties apply for a metric, depending upon the benchmarking method specified for that metric.

“Planned Outage” or “Planned Interruption” means an Outage or Interruption that is scheduled by the Company and of which customers are notified in advance, including, for example, during the connection of new customers or to ensure the safe performance of maintenance activities.

“Poor Performing Circuit” means any distribution Circuit or Feeder that possesses a

CKAIDI or CKAIFI value(s) for a reporting year that is among the highest (worst) five percent of all of a Company's active Circuits or Feeders.

“Priority 1 Downed Wires: Life Threatening / Imminent Danger” means an event in which utility equipment is preventing emergency response personnel from performing rescue efforts and/or administering first-aid treatment to a person or persons who may be injured or in danger of being injured.

“Priority 2 Downed Wires: Hindering Emergency Operation” means an event in which utility equipment is preventing emergency response personnel from responding to an emergency situation which is not considered life threatening, yet requires the attention of emergency response personnel.

“Priority 3 Downed Wires: Non-Threatening Electrical Hazard” means an event in which utility equipment creates the need for emergency response personnel and/or apparatus to remain on the scene in order to protect the public from the hazard created by the utility's equipment.

“Problem Circuit” means any electric distribution Circuit or Feeder that possesses a CKAIDI or CKAIFI value(s) for a reporting year that is among the highest (worst) five percent of all of the Company's active Circuits' or Feeders' CKAIDI and CKAIFI values ~~percent of all of the Company's active Circuits' or Feeders' CKAIDI and CKAIFI values~~ for any two consecutive reporting years.

“Restricted Work Day Rate” or “RWD” means the Incidence Rate of Restricted Work cases per 200,000 Employee Hours as defined by the U.S. Department of Labor Bureau of Labor Statistics.

“Service Appointment” means a mutual agreement between a Company and a customer, scheduled at least the day prior, that shall be recorded in the Company's business records in the ordinary course of business as to date, time, and location where Company personnel are scheduled to perform a service activity, whether the appointment is Company-initiated or customer-initiated, and that requires the presence of the customer at the time of service.

“Service Interruption to a High-Profile Customer” means an Interruption that has a reasonable probability of involving a High-Profile Customer, including a hospital, airport, or large manufacturing, commercial, or institutional customer (with a demand of one megawatt or greater).

“Sustained Outage” or “Sustained Interruption” means an Outage or Interruption of electric service that lasts at least one minute and is not classified as a Momentary Outage or Momentary Interruption.

“System Average Interruption Duration Index” or “SAIDI” means the total duration of customer Interruptions in minutes divided by the total number of customers served by the distribution Company, expressed in minutes per year. SAIDI characterizes the average length of time that customers are without electric service during the reporting period.

“System Average Interruption Frequency Index” or “SAIFI” means the total number of customer Interruptions divided by the total number of customers served by the distribution Company, expressed in number of Interruptions per customer per year. SAIFI characterizes the average number of sustained electric service Interruptions for each customer during the reporting period.

“Transmission and Distribution Revenues” means revenues collected through the base rates of a transmission and distribution Company.

“Year” means calendar year unless otherwise noted.

### C. Benchmarking Methods

To establish the benchmarks by which Company performance shall be measured, all metrics shall use one of the following three benchmarking methods: (1) Glide Path Method, (2) Company-specific Method; or (3) Poor Performing Circuits Method. Penalty metrics are assigned a benchmarking method and penalty formula described in Section V.

#### 1. Glide Path Method

The Glide Path Method uses a ten-year Glide Path divided into four time periods: three three-year periods called Glide Path One (“GP1”), Glide Path Two (“GP2”), Glide Path Three (“GP3”); and a final one year period called Glide Path Four (“GP4”). This benchmarking method also requires the calculation of a three-year rolling average (“Rolling Average”) based on a Company’s most recent three years of performance data (performance year plus two preceding years). Failure to meet benchmarks established by this method shall result in a penalty.

~~GP1~~ GP 1 uses the company-specific penalty threshold and penalty maximum benchmarks applicable under D.T.E. 04-116 (i.e. 1996-2005). From the initial level of GP1, incremental improvements in the standard occur, for both the penalty threshold and penalty maximum benchmarks, through the application of calculated Glide Path Improvement Values (“GPIVs”) to determine the benchmarks for GP2, GP3, and GP4. The GPIV required to adjust the lower penalty threshold benchmark (“GPIV-PT”) equals one sixth of the standard deviations established in D.T.E. 04-116. The GPIV required to adjust the upper penalty maximum benchmark (“GPIV-PM”) equals one sixth of the standard deviations established in D.T.E. 04-116. In year ten and thereafter, GP4 will remain as fixed benchmarks, until further reviewed by the Department.

GP1 Penalty Threshold benchmark (“GP1 PT”) is set at ~~each~~the Company’s D.T.E. 04-116 standard, i.e., company-specific mean plus one standard deviation using historical, company-specific data from 1996-2005. The GP1 Penalty Maximum benchmark (“GP1 PM”) is set at ~~each~~the Company’s D.T.E. 04-116 standard, i.e., company-specific mean plus two standard deviations using historical, company-specific data from 1996-2005. No penalty shall apply below the GP1 PT. The Penalty Zone shall commence at GP1 PT and increase to its maximum level at GP1 PM. These benchmarks will remain fixed for the three GP1 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.



GP2 Penalty Threshold benchmark (“GP2 PT”) is set at GP1 PT minus GPIV-PT. GP2 Penalty Maximum benchmark (“GP2 PM”) is set at GP1 PM minus GPIV-PM. No penalty shall apply below GP2 PT. The Penalty Zone shall commence at GP2 PT and increase to its maximum level at GP2 PM. These benchmarks will remain fixed for the three GP2 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean will into the penalty formula as an observed value.

GP3 Penalty Threshold benchmark (“GP3 PT”) is set at GP2 PT minus GPIV-PT. GP3 Penalty Maximum benchmark (“GP3 PM”) is set at GP2 PM minus GPIV-PM. No penalty shall apply below GP3 PT. The Penalty Zone shall commence at GP3 PT and increase to its maximum level at GP3 PM. These benchmarks will remain fixed for the three GP3 years. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

GP4 Penalty Threshold benchmark (“GP4 PT”) is at GP3 PT minus GPIV-PT. GP4 Penalty Maximum benchmark (“GP4 PM”) is set at GP3 PM minus GPIV-PM. No penalty shall apply below GP4 PT. The Penalty Zone shall commence at GP4 PT and increase to its maximum level at GP4 PM. These benchmarks will remain fixed during and after the GP4 year, until further revised by the Department. The Electric Companies may choose to enter the Rolling Average or the reporting year mean into the penalty formula as an observed value.

## 2. Company-specific Method

This benchmarking method requires the calculation of a fixed Company-specific Mean and a Company-specific Standard Deviation. This method requires ~~the~~ Company to meet its reported ~~the~~ average performance. Failure to meet benchmarks established by this method shall result in a penalty.

## ~~3.~~ Poor Performing Circuits Method

This benchmarking method requires ~~each~~the Company to identify its worst performing Circuits and compare performance on those Circuits to its overall Circuit performance, per rules in Section IV.A.2.

# II. CUSTOMER SERVICE AND SATISFACTION PERFORMANCE METRICS

## A. Service Appointments Kept As Scheduled

### 1. D.T.E. 04-116-C

*Applicable through December 31, 2018.*

~~Each~~The Company shall gather data and report statistics regarding the number of service calls met on the same day requested, excluding when a customer misses a mutually--agreed upon time. ~~Each~~The Company shall report the percentage of scheduled Service Appointments met by Company personnel on the same day requested. Service Appointment data shall be compiled and aggregated monthly. Reporting shall occur

annually. The reports shall be submitted in accordance with Section VI below. Service



Appointments Kept As Scheduled shall be a performance measure subject to a revenue penalty.

2. D.P.U. 12-120-D

*For data collection purposes as of January 1, 2016, and penalty purposes as of January ~~1,~~*

~~2019,~~

~~Each~~

The Company shall gather data and report statistics regarding the number of four-hour and all-day Service Appointments, available, scheduled, and kept on-time. ~~Each~~ The Company shall report the percentage of scheduled four-hour and all-day Service Appointments Kept as Scheduled. Service Appointment data shall be compiled and aggregated monthly. ~~Each~~ The Company shall report Service Appointment data annually.

A Service Appointment is kept if the Company representative arrives at the customer's premises within either the four-hour window or the all-day window originally scheduled by the Company and the customer. Same day appointments, emergency work orders, tagalongs, multiple work orders for a single site, and work orders where the Company has not scheduled a Service Appointment with the customer (i.e., cold calls such as collections) shall be excluded from the data reported for this metric. Service Appointments that are rescheduled at least 24 hours prior to the appointment time ~~with the assent of the customer,~~ or by the customer within 24 hours of the appointment time, shall be excluded from the data reported for this metric. For Service Appointments rescheduled due to emergencies, ~~Companies~~ the Company may exclude from their performance calculation appointments missed due to emergencies. ~~Companies~~ The Company must identify each excluded appointment, due to an emergency, and explain the nature of the emergency as part of their annual SQ reports.

When a Service Appointment is not kept as scheduled due to customer unavailability, the Company must count it as a missed appointment in the data reported for this metric, unless either (A) a Company representative has made a visit to the customer's premises, found the customer not at home, and left a note that the Company had attempted to attend its scheduled Service Appointment, or (B) a Company representative has attempted to contact the customer by phone twice and has not reached the customer both times.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. This metric will become effective for penalty purposes after a ~~three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.~~ year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

B. Complaints to the Consumer Division

1. D.T.E. 04-116-C Consumer Division Cases

*Applicable through December 31, 2018.*

Customer complaints shall be categorized as a Consumer Division Case where a written record is opened by the Consumer Division using the following criteria:

- (1) the individual making the complaint provides his or her identity to the Consumer Division and is either a (a) current, prospective, or former customer of the Company against which the complaint has been lodged, or (b) designee of the current, prospective, or former customer of the Company;
- (2) the individual or his/her designee has contacted the Company from which the customer receives distribution service prior to lodging a complaint with the Department;
- (3) the Department's investigator cannot resolve the complaint without contacting the Company to obtain more information;
- (4) the matter involves an issue or issues over which the Department typically exercises jurisdiction; and
- ~~(4)~~-(5) the matter involves an issue or issues over which the Company has control.

Consumer Division Case data shall be employed as a SQ performance measure. The Department will compile and aggregate monthly the frequency of Consumer Division Cases per 1,000 residential customers and provide the compilation to the Companies on a monthly basis. Once the data is provided to ~~at~~the Company, it has forty-five (45) days to dispute the classification of a complaint as a Consumer Division Case. The Department will also provide an annual measure, and upon request, offer company-specific meetings to discuss ~~each~~the Company's performance. Consumer Division Cases shall be a performance metric subject to a penalty.

2. D.P.U. 12-120-D Customer Complaints

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

Customer Complaints shall be defined as any residential customer contact with the Department that is categorized as a Customer Complaint by the Department's Consumer Division using the following criteria:

- (1) the customer making the Customer Complaint provides his or her identity and is a current or former customer of the Company against which the Customer Complaint has been lodged;
- (2) the customer has contacted the Company from which the customer receives

distribution service prior to lodging a Customer Complaint with the Department;

~~(4)~~ (3) the matter involves an issue or issues over which the Company has control;

(4) the matter is not a simple customer inquiry;

(5) the matter is not a circumstance wherein the Company correctly applied the applicable law, orders, rules, standards, procedures; and

(6) the matter is not a Customer Credit Case as defined in Section II.B.3.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Complaints per 1,000 residential customers and will provide this data to ~~each~~the Company on a monthly basis. Once the Department provides this data to ~~at~~the Company, the Company has forty-five (45) days to dispute the classification of a complaint as a Customer Complaint.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. It will become effective for penalty purposes after a three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

### 3. D.P.U. 12-120-D Customer Credit Cases

*For data collection purposes as of January 1, 2016, and penalty purposes as of January 1, 2019.*

Customer Credit Cases shall be defined as any residential Customer Complaint relating to the following matters: payment and arrearage management plans, inability to pay, ~~shut-off~~~~shut-off~~ notices, and terminations. Matters relating to failure to issue a credit or a refund will not be categorized as a Customer Credit Case.

The Department will compile and aggregate, on a monthly basis, the frequency of the Customer Credit Cases per 1,000 residential customers, and will provide data to ~~each~~the Company on a monthly basis. Once the data is provided to ~~at~~the Company, the Company has forty-five (45) days to dispute the classification of a matter as a Customer Credit Case.

This metric uses the Company-specific Method and penalty formula as described in Section V.B.3. This metric will become effective for data collection purposes on January 1, 2016. This metric will become effective for penalty purposes after a three-year period of data collection (i.e., 2016-2018) on January 1, 2019. For penalty purposes, the benchmarks set pursuant to D.T.E. 04-116-C, Appendix 2007 will remain in place for 2016 through 2018.

### III.- ASSUMPTIONS FOR CALCULATING ELECTRIC RELIABILITY METRICS

For the purpose of calculating SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, MAIFI, and Downed-Wire Response, the following assumptions and criteria shall be used in accumulating Interruption data:

- A. Customer Equipment Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- B. Planned Outages shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI;
- C. Excludable Major Events shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI, MAIFI, and Downed-Wire Response;
- D. Momentary Interruptions shall be excluded from the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, and CEMI;
- E. The beginning of an Interruption shall be recorded at the earlier of an automatic alarm or the first report of no power;
- F. The end of an Interruption shall be recorded at that point when power to customers is restored;
- G. Interruptions involving primary and secondary distribution Circuits shall be included in the calculation of SAIDI, SAIFI, CAIDI, CKAIDI, CKAIFI, CELID, CEMI, and MAIFI (Interruptions involving electric lines that operate at 69,000 volts and above shall be excluded);
- H. Where only part of a Circuit experiences an Interruption, the number of customers affected shall be estimated, unless an actual count is available. When power is partially restored, the number of customers restored also shall be estimated unless an actual count is available; and
- I. When customers lose power as a result of the process of restoring power (such as switching operations and fault isolation), the duration of these additional Interruptions shall be included in the duration calculation, but the additional number of Interruptions shall not be included in the frequency calculation.

### IV.- RELIABILITY AND SAFETY PERFORMANCE METRICS

#### A. Electric Reliability

##### 1. System Level Reliability

~~Each Electric~~The Company ~~shall~~will measure SAIDI and SAIFI on an annual basis in accordance with Section III and the Glide Path Benchmarking Method and Penalty Formula in Section V.B.1. SAIDI and SAIFI shall be subject to monetary penalty as specified in Section V.

GP1 for SAIDI and SAIFI is in effect for the first three years following the issuance of these SQ Guidelines (i.e., for performance years 2016-2018). GP2 is in effect for the subsequent three years (i.e., for performance years 2019-2021). GP3 is in effect for the next subsequent three years (i.e., for performance years 2022-2024). GP4 is in effect starting in 2025 and will remain in effect until revised by the Department.

The ~~Electric Companies~~ Company shall continue to collect IEEE reliability data as a reporting metric only. IEEE calculations shall be based on Sustained Interruptions (i.e., Interruptions more than one (1) minute).

## 2. Circuit Level Reliability

To address Poor Circuit Remediation (“PCR”), ~~each Electric~~, the Company ~~shall will~~ identify the five percent of Circuits or Feeders in its service territory with the most Interruptions (i.e., duration and frequency) as measured by CKAIID and CKAIIF. ~~Electric Companies that do~~ If the Company does not incur SAIDI or SAIFI penalties in a given year ~~must, the Company will~~ evaluate whether CKAIID and CKAIIF penalties apply. Data for all Circuits or Feeders (identified for PCR evaluation) that were active at any time during the reporting year shall be included in the PCR calculation for that reporting year.

Any Circuit(s) or Feeder(s) that appears among the worst five percent of all the Company’s active Circuits or Feeders for two consecutive years shall be labeled as a Problem Circuit(s). Any Problem Circuit(s) that appears among the worst five percent of all the Company’s Circuits or Feeders for the third consecutive reporting year shall be labeled a Chronic Circuit. ~~At~~ At the end of the third year, for Chronic Circuits that were not remediated by the end of the third year, if the mean of the CKAIID/CKAIIF values of the Chronic Circuits is greater than Company-specific Mean plus two Company-specific Standard Deviations, the ~~Electric~~ Company ~~shall will~~ be subject to a monetary penalty.

The Company-specific Mean applicable to CKAIID and CKAIIF shall be same as that which is applicable to SAIDI and SAIFI, ~~i.e., using the performance data for these metrics~~ filed by ~~each of the Electric Distribution Companies~~ the Company in ~~their~~ its annual service quality reports from 1996-2005, under the D.T.E. 04-116 guidelines: (i.e., the Company-specific system-wide mean for 1996-2005).

All penalties will be apportioned as provided in Section V.C, below. All penalty calculations will use the following penalty formula:

For any Chronic Circuits, if the mean of the CKAIID/CKAIFI values of the Chronic Circuits is greater than the Company-specific Mean plus two Company-specific Standard Deviations, then the maximum penalty for CKAIID and CKAIFI will apply.

Penalty for CKAIID = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year)

Penalty for CKAIFI = 11.25% \* (2.5% of Company's total Annual Transmission and ~~Distribution Revenue for the applicable year~~.  
Distribution Revenue for the applicable year).

## V. REVENUE PENALTIES

### A. Applicability

Each of the penalty formulas below identify the penalty metrics to which the penalty formula applies.

### B. Penalty Formulas

#### 1. Glide Path Method

This revenue penalty formula is applicable to SAIDI and SAIFI.

Penalty = 0.25 \* ~~((Observed value - GPPT) / (GPPM - GPPT))~~<sup>2</sup> \* Maximum Penalty

Where:

Observed Value = current year performance or three year average (i.e., mean of current year performance and preceding two years' performance), whichever is less

GPPT = the applicable Glide Path penalty threshold benchmark (GP1 PT; GP2 ~~PT~~;  
~~GP3 PT; and GP4 PT~~)  
PT; GP3 PT; and GP4 PT)

GPPM= the applicable Glide Path penalty maximum benchmark (GP1 PM; GP2 PM; GP3 PM; and GP4 PM)

GPPM-GPPT= Company-Specific standard deviation

Maximum Penalty = 2.5 percent of Annual Transmission and Distribution Revenues of a Company allocated to the metric, as apportioned by the table in Section V.C.

## 2. Company-Specific Penalty Formula

This revenue penalty formula is applicable to Service Appointments, Customer Complaints, and Customer Credit Cases.

If: (Observed Result – Company-Specific Mean) is a positive value.

$Penalty_M = (0.25 * (((Observed\ Result - Company-Specific\ Mean) / Company-Specific\ Standard\ Deviation)^2) * Maximum\ Penalty$

Observed Result = the average actual performance measure achieved in year<sub>y</sub>, rounded to the applicable decimal place;

Company-Specific Standard Deviation = standard deviation of the historical average result; and

Maximum Penalty =  $(PCL_M) * (AR * 0.025)$

Where:

$PCL_M$  = Performance category liability for the metric expressed as a percentage (derived from Section V.C); and

AR = Annual Transmission and Distribution Revenues of the Company for the applicable year.

## 3. Poor Circuit Remediation Penalty Formula

Penalty for CKAIID = 11.25% \* (2.5% of Company's total Annual Transmission and Distribution Revenue for the applicable year)

Penalty for CKAIIF = 11.25% \* (2.5% of Company's total Annual Transmission and ~~Distribution Revenue for the applicable year.~~  
Distribution Revenue for the applicable year.)



C. Apportionment of Penalty Among Performance Metrics

The following table reflects the percentage of the overall two and one half percent of Transmission/Distribution Revenue specified in G. L. c. 164, § 11 allocable to each penalty metric.

<b>Metric</b>	<b>Penalty Percentage</b>
SAIDI	27.5
SAIFI	27.5
CKAIDI	11.25*
CKAIFI	11.25*
Service Appointments	15
Consumer Division Cases (2016-2018)	30
Customer Complaints (begin 2019)	20
Customer Credit Cases (begin 2019)	10
*Penalty may only be assessed if Electric Company is not subject to SAIDI or SAIFI penalty in a given year.	

VI. DATA REPORTING REQUIREMENTS

A. Reliability, Electric Line Loss, and Safety Indices and Rates

Each

The Company ~~shall~~will report on an annual basis performance data on the following: SAIDI, SAIFI, CKAIFI, CKAIDI, CAIDI, LWTA, RWD, Electric Line Loss, Downed-- Wire Response, Service Appointments, Customer Satisfaction Surveys, Consumer Division Cases, Customer Complaints, and Customer Credit Cases. These reports shall be submitted in accordance with Section VI and Section VII, below.

All calculated performance results of all metrics shall be reported to the 1000<sup>th</sup> decimal place, three places after the decimal point. Similarly, all values entered in the penalty formula shall be rounded to the 1000<sup>th</sup> decimal place. For inputs and outputs of other calculations the Companies conduct, the Companies shall not round values other than what Excel automatically truncates.

Additionally, ~~Electric Companies shall~~the Company will report in their annual SQ reports, their increased capabilities for measuring MAIFI, CEMI, and CELID. For MAIFI, each Electric Company shall (1) submit a status report on its increased ability to measure momentary Interruptions; and (2) report in the annual SQ report any and all MAIFI data that it was able to collect in the reporting year. For CEMI and CELID, ~~each Electric~~the Company shall submit a status report on its ability to accurately determine its CEMI and CELID data, including a status report about its ability to calculate CEMI and CELID as a percentage of the total number of customers served by the Company.

For annual reporting of Electric Line Loss, ~~each Electric~~the Company shall provide and support with sufficient substantiation:

- (1) its electric distribution and transmission line loss value separately for technical losses and non-technical losses,

(2) electric transmission and distribution line loss value in megawatts by voltage class at system peak, and

(3) the parameters, assumptions, and methodological approaches used in the calculations.

#### B. Excludable Major Events

~~Each Electric~~The Company shall identify and report on an annual basis any Interruptions that are considered Excludable Major Events. For each Excludable Major Event, ~~each Electric~~the Company shall report the total number of customers affected, the service area affected, the number of customers without service at periodic intervals, the time frame of longest customer Interruption, and the number of crews used to restore service on a per shift basis. These reports shall be submitted in accordance with Section VII, below.

#### C. Poor Circuit Remediation

~~Each Electric~~The Company shall identify and report on an annual basis its performance data on its poor performing Circuits. The report on PCR shall include the following information for the most recent three years (in an active Excel spreadsheet):

~~(1)~~(1) the Feeder or Circuit identification number;

(2) the Feeder or Circuit location;

~~(2)~~(3) the reason(s) why the Circuits performed poorly during the reporting year;

(4) the number of years that the Circuit(s) performed poorly;

(5) the steps that are being considered and/or have been implemented to improve the reliability of these Circuits;

(6) the CKAIID or CKAIIF value for the specific Circuit(s) whether mitigated or not mitigated. In addition, the ~~Companies~~Company shall continue to provide the detailed Circuit data, filed in an active Excel format. In this data, active Circuits and the top worst performing Circuits in each year must be clearly identified; and

(7) a listing of the dedicated/assigned Circuits/Feeders feeding a customer or group of customers that will be used for PCR evaluation purposes.

The reports shall be submitted in accordance with Section VII, below.

#### D. IEEE Reporting Requirement

~~Each Electric~~The Company shall compile its SAIDI and SAIFI measures in accordance with these Guidelines. In addition, ~~each Electric~~the Company shall compile and calculate its SAIDI and SAIFI performances using IEEE standards and shall report these measures to the Department annually in accordance with Section VII, below.

E. Department's Outage and Accident Reporting Procedures

1. Reporting Electric Service Interruptions

~~Each Electric~~The Company shall continue to maintain and update its distribution and transmission Interruption data consistent with the Department's Outage and Accident Reporting Procedures.

~~Each Electric~~The Company shall include every sustained distribution and transmission Interruption that occurs within or impacts its service territory. ~~Each Electric~~The Company shall update within a one-hour period, from the beginning of the Interruption, every Interruption that results in 500 or more customer-Interruption hours or that results in a service Interruption to a High-Profile Customer or Critical Facility. All other Interruptions shall be updated within a 24-hour period from the beginning of the Interruption. Data shall be revised to reflect updated/analyzed Interruption information within seven (7) days of the initial Interruption reporting.

All Interruption reports shall include the following information:

1.      Date filed
2.      Company name (i.e., Nantucket Electric Company d/b/a National Grid)
3.      District/Division name
4.      Location of Interruption (City/town where fault occurred)
5.      Street name
6.      Substation name and ID
7.      Circuit number ID
8.      Circuit branch ID
9.      Voltage level, such as to the nearest: transmission, 35kV, 25kV, 12kV, 5kV, Secondary, etc.
10.     Circuit type (OH/UG/Customer owned)
11.     Original number of customers affected
12.     Current number of customers affected (show zero if restoration is completed)
13.     Actual duration (in hours)
14.     Total customer Interruption hours
15.     Date and time service out
16.     Date and time service in
17.     Reason for Interruption (nature/cause of Interruption)
18.     Failed or damaged device/equipment
19.     Indicate if the Interruption was planned/unplanned/intentional
20.     Weather condition
21.     Primarily affected load type (Residential/Industrial/Commercial/mix)
22.     Whether the Interruption affected a Critical Facility/ High Profile customer (yes/no)
23.     Whether the Interruption is an Excludable Major Event (yes/no)
24.     Whether an injury occurred as a result of the event (yes/no)
25.     Name of the person responsible for filling out the report
26.     Time restoration commenced
27.     Expected duration
28.     Town/City Official notification (yes/no)

29. Name of notified/contacted person

30. Telephone number of notified/contacted person(s)

~~Each Electric~~The Company shall file annually, with its Annual SQ Report, a compact disc that contains a compilation of all Interruptions for the filing year, in working Microsoft Excel spreadsheet format. ~~Each~~ The Company shall submit these reports in accordance with Section VIII.

## 2. Reporting Accidents

In compliance with the requirements of G.L. c. 164, § 95, ~~each Electric~~the Company shall (1) maintain accident data in the Outage and Accident Reporting Protocol (“ORP”) maintained by the Company, and (2) report to the Department within a 24-hour period of an accident the following information (including downed wires incidents that result in electrical shock, injury or fatality):

(1) time and date of accident;

~~(1)~~ (2) time and date of the notice to the Department;

(3) location of the accident;

(4) a detailed description of the accident including information about fatalities, injuries, facilities and third-party property damage; and

(5) the name and telephone number of a Company employee who may be contacted about the accident.

These standards supersede previous Interruption and Accident Reporting Procedures. ~~Each~~The Company shall submit these reports in accordance with Section VIII.

## F. Reporting Emergency Response Times

~~Each~~The Company shall compile and report an annual average of its response times to formal emergency incidents reported by official emergency personnel. The ~~Companies~~Company will calculate the total duration of time between notification of a system incident and an arrival response by the Company. ~~Companies~~ The Company shall also report the location (street address) and nature of each incident. Such data shall be compiled by city and town, and reported monthly, with an annual average duration calculated and reported to the Department, and shall be submitted in accordance with Section VII. The ~~Companies must~~Company will provide information per this section only if that information is not already provided based on Downed-Wire Response reported per Section VI.F.1.

### 1. Reporting Requirements for Downed-Wire Response

~~Each Electric~~The Company shall measure and report its response to Priority 1, 2, and 3 downed-wire calls. ~~Each~~ The Company shall measure its Downed-Wire Response time from the time of notification to the time a Company representative arrives on site. The

Downed-Wire Response metric is for reporting purposes only. For purposes of reporting information and calculating performance percentages related to Downed-Wire Response, ~~each Electric~~the Company shall complete the template in Attachment B, Emergency Response Time Reporting to be filed with its annual SQ Report. With respect to performance percentages, for each Priority 1, 2, and 3 downed-wire call, ~~each~~the Company shall calculate average response times for 100 percent of downed wire calls, 98 percent of downed wire calls (excluding the worst 2%), and 95 percent of downed wire calls (excluding the worst 5%). In calculating average response times, ~~each company may~~the Company will exclude from the calculation data relating to: (1) emergency calls received from individuals other than ~~the~~ municipal officials; (2) emergency calls involving a facility not belonging to the ~~Electric~~ Company and the ~~Electric~~ Company has coordinated a response through the telephone or cable companies; and (3) instances in which ~~an Electric~~ Company has dispatched personnel to respond to a Priority call in a timely manner, but emergency response is hindered/delayed due to circumstances beyond the Company's control.

In responding to Downed-Wire calls, the ~~Electric Companies~~Company shall follow the protocols approved in Investigation by the Department of Public Utilities regarding the development of Emergency Response Time Protocols for Investor Owned Distribution Companies, D.P.U. 08-112, Letter Order at 1-2 (December 23, 2010).

#### GH. Reporting Requirements for Lost Work Time Accident Rate and Restricted Work

##### Day Rate

##### 1. Lost Work Time Accident Rate

~~Each~~The Company shall measure its Lost Work Time Accident Rate. The Lost Work Time Accident Rate shall be reported annually and data will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

##### 2. Restricted Work Day Rate

~~Each~~The Company shall measure its Restricted Work Day Rate. The Restricted Work Day Rate shall be reported annually and data will be provided for reporting purposes only. No benchmarks shall be calculated for this metric, and no penalty mechanism has been assigned to this metric.

#### HI. Reporting Requirements for Customer Satisfaction Surveys

~~Each~~The Company shall report the results of two surveys to the Department: (1) a customer satisfaction survey of a statistically representative sample of residential customers within the Company's service territory; and (2) a survey of customers randomly selected from those customers who have contacted the Company's customer service department within the year in which service is being measured. The latter representative sample shall be newly drawn from customers contacting the Company's customer service area in the year previous and shall be conducted with a sample of respondents who are redialed after having concluded a contact with the Company's customer service department. The surveys, if conducted internally, shall be pre-approved

by the Department regarding the method and customer questions.

For the residential customer satisfaction survey, the following question shall be asked: “Using a scale where 1 = very dissatisfied and 7 = very satisfied; how satisfied are you with the service, excluding price, that you are receiving from Company Name National Grid?”

For the customer-specific survey, the following question shall be asked: “Using a scale where 1 = not at all courteous, and 7 = very courteous; how courteous was the customer service department of Company Name National Grid?”

For the customer-specific survey, the following question shall be asked: “Using a scale where 1 = not at all responsive, and 7 = very responsive; how well did the customer service department of Company Name National Grid respond to your call?”

Each

The Company shall report the arithmetic mean of the responses to the three survey questions, as well as the arithmetic mean of each question, in ~~each~~the Company’s annual service quality report. ~~Each~~ The Company shall include the results from all available previous years of the survey up to a maximum of ten years. This metric will be used for reporting purposes only.

## VII. SUBMITTING ANNUAL REPORTS TO THE DEPARTMENT

The annual SQ reports shall be submitted to the Department by March 1 of each year reflecting the data from the previous calendar year(s) and shall be submitted in the following manner:

A. the original to the Secretary;

B. one (1) copy to the Electric Power Division Director;

C. one (1) copy to the Rates and Revenue Requirements Division Director;

and

D. one (1) copy to the Consumer Division Director; and

A copy of the report should also be submitted to the Department in electronic format using one of the following methods: (1) by e-mail attachment to dpu.efiling@state.ma.us, dpu.efiling@state.ma.us, or (2) on a CD-ROM. The text of the e-mail or CD-ROM must specify: (1) the docket number of the proceeding (if known); (2) the name of the person or Company submitting the filing; and (3) a brief descriptive title of the document (e.g., annual service quality report). The electronic filing should also include the name, title, and telephone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. All data must be reported in active spreadsheets using Microsoft Excel. All documents submitted in electronic format will be posted on the Department’s website: http://www.mass.gov/dpu; http://www.mass.gov/dpu.

VIII. SUBMITTING INTERRUPTION AND ACCIDENT REPORTS TO THE DEPARTMENT

The Interruption and Accident reports required by these standards shall be submitted to the Department in the following manner:

A. Consistent with the Department's Outage Reporting Protocol ("ORP"), on-line through ORP databases maintained by the Electric Companies. If website access is not available, an electronic copy of the report shall be submitted to the Department, using one of the following methods: by e-mail attachment to [dpu.efiling@state.ma.us](mailto:dpu.efiling@state.ma.us); [dpu.efiling@state.ma.us](mailto:dpu.efiling@state.ma.us); or compact disc, to the Director of Electric Power Division, Department of Public Utilities, One South Station, Boston Massachusetts 02110. The text of the e-mail or disc label must specify: (1) an easily identifiable case caption; (2) docket number; (3) name of person or Company submitting the filing; and (4) a brief descriptive title of document (e.g., Company Name Outage or Interruption report). The electronic filing should also include the name, title and phone number of a person to contact in the event of questions about the filing. Text responses should be written in Microsoft Word. Data or spreadsheet responses should be compatible with Microsoft Excel; and

B. One (1) copy of each report submitted to the Consumer Division Director, Department of Public Utilities, One South Station, Boston Massachusetts 02110.

For electric service Interruptions that are required to be reported within a one-hour period as described in Section ~~V.F., each Electric~~ VI.E.1, the Company ~~shall~~ will, in addition to submitting a written report, contact by telephone the Electric Power Division Director, Consumer Division Director, Executive Director, or one of the Commissioners of the Department to convey the information surrounding the Interruption.

IX. DEPARTMENT CONTACT INFORMATION ON CUSTOMER BILLS

~~Each~~ The Company ~~is directed to~~ will include language placed on the back side of customer bills, which notifies customers of (a) their ability to contact the Department regarding service quality complaints or questions, and (b) the Department's website address: [www.mass.gov/dpu](http://www.mass.gov/dpu). ~~(www.mass.gov/dpu).~~

X. CUSTOMER SERVICE GUARANTEE

If ~~the~~ the Company fails to keep a Service Appointment as defined in Section II or to notify customers of planned service Interruptions, the Company shall pay \$100 directly to those customers affected. The Company shall automatically credit the payment to the affected customer's account. The Company shall provide to the Department on a monthly basis information regarding the number of Customer Service Guarantee payments made to customers ~~and~~ for a missed notification of a planned service interruption or a missed service appointment, including the reason for each missed service appointment. The information shall be reported to Director,



Consumer Division, Department of Public Utilities, One South Station, Boston  
Massachusetts 02110.

XI. COMPANY EXEMPTION REQUESTS

AThe Company may request that the Department grant an exemption from a particular portion of the SQ Guidelines for that reporting year. The Company must file the request for exemption 60 days from the date of the event to be exempted.

XII. GENERAL RESERVATION

~~The~~The Company acknowledges that the Department retains the discretion to waive or depart from any provision of the ~~SQ~~ Guidelines.