



David Warner
Associate Counsel

March 31, 2020

Via Electronic Filing
Honorable Michelle L. Phillips
Secretary to the Commission
New York State Public Service Commission
Three Empire State Plaza
Albany, NY 12223

Re: Case 16-E-0060 Con Edison Electric Rates -
Con Edison's Electric Service Reliability Mechanism
Performance for Year ended December 31, 2019

Dear Secretary Burgess:

Attached for electronic filing is Con Edison's "Report on 2019 Performance under Electric Service Reliability Performance Mechanism." This report is filed pursuant to the Electric Service Reliability Performance Mechanism approved by the Public Service Commission in Case 16-E-0060.

Sincerely,

Attachment

- c. Active Parties in Case 16-E-0060, *et al*, (via e-mail)
Tammy Mitchell, DPS Staff (via e-mail)
Christian Bonvin, DPS Staff (via e-mail)
Mary Ferrer, DPS Staff (via e-mail)

**Consolidated Edison Company of New York, Inc.
Report on 2019 Performance under
Electric Service Reliability Performance Mechanism
Case 16-E-0060**

Distribution Engineering Department

**Consolidated Edison Company of New
York, Inc.**

March 31, 2020

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Consolidated Edison Company of New York, Inc.

Report on 2019 Performance under
Electric Service Reliability Performance Mechanism

I. Introduction

The Reliability Performance Mechanism (“RPM”) in Con Edison’s electric rate plan consists of seven “performance metrics” that the Company must measure each year from January 1 through December 31 and report on annually to the Commission:¹

1. Threshold Standards consisting of measures of service outage frequency [System Average Interruption Frequency Index (“SAIFI”)] and duration [Customer Average Interruption Duration Index (“CAIDI”)] on Con Edison’s non-network (“radial”) distribution system, and measures of service outage frequency (number of outages per 1,000 customers and network feeder open-automatics during summertime) and average outage duration (AOD) on Con Edison’s network distribution system
2. Major Outage metric
3. Program Standard for repairs to damaged poles
4. Program Standard for the removal of shunts
5. Program Standard for the repair of no current streetlights and traffic signals
6. Program Standard for the replacement of over-duty circuit breakers
7. Remote Monitoring System metric

As set forth in the RPM, this report: (a) discusses the Company’s 2019 performance

¹ This report covers the RPM for 2019, which was approved by the Commission in Case 16-E-0060, *et al*, Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service, *Order Approving Electric and Gas Rate Plans*, January 25, 2017 (“2017 Rate Order”). The 2019 RPM is set forth in Appendix 14 of the Joint Proposal, dated September 19, 2016, attached to the 2017 Rate Order.

in each area; (b) identifies and provides support for applicable exclusions; and (c) states whether a revenue adjustment is applicable.²

II. Threshold Standards – Network and Radial Systems Performance and Exclusions

A. Threshold Standards Performance

The table below shows Con Edison’s 2019 performance under the Threshold Standards for the network and radial systems mechanism. The first column shows the five performance areas that the mechanism measures. The second column states the “threshold standard” for each performance area against which the Company measures its performance. A score above the threshold standard subjects Con Edison to a revenue adjustment. The third column shows Con Edison’s 2019 performance in each area, adjusted to exclude outages resulting from a major storm, as defined in 16 NYCRR Part 97 (for at least 10% of the customers interrupted within an operating area or customers out of service for at least 24 hours), including secondary underground network interruptions that occur in an operating area during winter snow/ice events that meet the 16 NYCRR Part 97 definition of a major storm (10%/24 hour rule) and interruptions to customers in secondary network areas who are supplied via overhead lines connected to an underground network system.³ Year-end 2019 performance is shown for all five measures except Summertime Feeder Open Automatics, which shows performance for the months of June, July, and August.

² RPM, pp. 5-6.

³ RPM, p. 5.

	Threshold Standard	2019 Performance
Network Number of outages per 1,000 customers.	2.5	2.4
Network Summertime Feeder Open Automatics⁴	330	321
Radial SAIFI	0.495	0.526
Network Average Outage Duration	4.70	4.53
Radial CAIDI	2.04	2.73

B. Revenue Adjustment for 2019 Threshold Standards Performance

Con Edison did not meet the Threshold Standard in two performance areas, Radial SAIFI and Radial CAIDI, which results in a \$10 million revenue adjustment. In December 2019, the Company recorded a \$10 million charge against earnings for the benefit of customers.

The primary reason that Con Edison did not meet the Radial SAIFI and CAIDI standards were outages that occurred during July 2019. On July 21, 2019, several days into a summer heat wave, the electric system that serves the Flatbush network in Southeast Brooklyn experienced a series of events that pushed the system into an emergency condition with six 27kV feeders out of service. These conditions severely overloaded the 4kV grid in the Flatbush network and Con Edison's operators de-energized the 4kV grid to prevent prolonged network-wide outages and significant damage to system equipment. The de-energization, combined with other customer outages in the Flatbush area, resulted in over 34,000 customer outages. The Company restored service to all Flatbush 4kV grid customers by 3:00 am on July 23.

Con Edison has identified several recommendations that it plans to implement to reduce the likelihood of a similar event and to enhance its system:

- Invest approximately \$15 million in incremental risk reduction work for the

⁴ Measures the total number of network-area network feeder open automatics during June, July and August.

Flatbush 4kV grid and the 27 kV feeders that supply the Flatbush network

- Replace cable (approximately 220 sections of paper insulated lead cable, 100 sections of Aluminum aerial cable and 40 sections of 4kV vintage rubber cable);
 - Targeted replacement of Raychem 3W-1W joints;
 - Installation of four switches on several 4kV grid feeders to automatically isolate faults and reduce customer impact;
 - Installation of two interrupter switches to provide dynamic isolation of faults and limit system impact.
- Enhance and develop operational tools and advanced human machine interfaces.
 - Feeder fault analysis and heads up display notification;
 - Targeted 4kV feeder load management application;
 - New underground sectionalizing switches.
 - Accelerate deployment of smart meters in the Flatbush network and its 4kV grid to improve outage reporting and inform system design;
 - Replace all phase imbalance relays in the Bensonhurst No. 2 Area substation, which serves the Flatbush network followed by system-wide replacement.

C. Exclusions for Major Storms

The RPM excludes from the Company's operating performance:

Any outages resulting from a major storm, as defined in 16 NYCRR Part 97 (for at least 10% of the customers interrupted within an operating area or customers out of service for at least 24 hours), except as otherwise noted; this includes secondary underground network interruptions that occur in an operating area during winter snow/ice events that meet the 16 NYCRR Part 97 definition (10%/24 hour rule) and includes interruptions to customers in secondary network areas who are supplied via overhead lines connected to an underground network system.⁵

The Company has excluded two categories of major storm events from its

⁵ RPM, p. 4.

2019 performance calculations:

- Major storms affecting the overhead non-network (radial) system.
- Snow/ice event affecting the underground network system, and customers impacted by a storm who are served via overhead lines connected to the underground network system.

1. **Major Storm Exclusions – Radial (Overhead Non-Network System) SAIFI and CAIDI Threshold Standards**

During 2019, the following major storms interrupted service to radial system customers for over 24 hours in the following non-network operating areas:

- On March 1st - 5th, wind/rainstorm and winter snowstorm affected 2,762 customers in Brooklyn for an average duration of 3.11 hours.
- On March 1st - 5th, wind/rainstorm and winter snowstorm affected 825 customers in Queens for an average duration of 9.38 hours.
- On March 6th - 7th, wind/rainstorms affected 167 customers in Queens for an average duration of 3.62 hours.
- On July 17th - 18th, rain/thunderstorms affected 5,512 customers in Westchester for an average duration of 4.07 hours.
- On July 21st (from 5 PM) - 23rd, rain/thunderstorms affected 2,583 customers in Brooklyn for an average duration of 5.21 hours.
- On July 21st - 23rd, rain/thunderstorms affected 20,094 customers in Queens for an average duration of 8.15 hours.
- On July 21st - 23rd, rain/thunderstorms affected 11,090 customers in Westchester for an average duration of 2.78 hours.
- On August 18th – 19th, rain/thunderstorms affected 4,233 customers in Westchester for an average duration of 2.43 hours.
- On October 16th – 18th, wind/rainstorms affected 11,796 customers in Westchester for an average duration of 6.07 hours.
- On December 1st – 3rd, wind/rainstorms and winter snowstorms affected 4,552 customers in Brooklyn for an average duration of 1.76 hours.

- On December 1st – 3rd, wind/rainstorms and winter snowstorms affected 280 customers in the Bronx for an average duration of 1.82 hours.
- On December 13th – 15th, wind/rainstorms affected 392 customers in Brooklyn for an average duration of 4.87 hours.
- On December 17th – 19th, wind/rainstorms and winter snowstorms affected 4,519 customers in Westchester for an average duration of 4.68 hours.

Pursuant to the RPM, the Company excluded outage performance data related to these storms from its 2019 Radial SAIFI and Radial CAIDI calculations.

2. Snow / Ice Event and Overhead lines connected to an underground network system Exclusions –Network Outages per 1,000 Customers and Average Outage Duration Threshold Standards

During 2019, the following winter snow/ice events that interrupted service to network customers for over 24 hours and the storms that affected overhead lines connected to the underground network system that interrupted service to network customers for over 24 hours by operating area are:

- February 9th - 26th in Brooklyn.
- March 1st – 11th in Brooklyn.
- March 1st - 9th in Queens.
- July 21st – 23rd in Queens.
- December 2nd - 20th in Brooklyn.
- December 1st - 4th in Queens.
- December 17th - 18th in Bronx.

Appendix A-1 (*2019 Snow /Ice Event and overhead lines connected to an underground network system Exclusions*) identifies the specific dates and the

affected secondary network operating areas where excluded outages occurred. During these periods, ice and snowfall, together with salt spreading and subsequent water runoff, resulted in an upsurge of customer interruptions caused by cable burnouts and manhole events on the Company's secondary network systems. In addition, underground network systems supplied via overhead lines during major storms was included in the exclusion.

The performance data for the specified dates in these operating areas (Appendix A-1) exclude these secondary network outages in determining the 2019 Threshold Standards performance for Network Number of Outages per 1,000 Customers and Network Average Outage Duration.

Appendix A-2 identifies the number of interruptions, the number of customers interrupted and the duration of the outages that occurred during the excluded secondary network outages identified in Appendix A-1.

III. Major Outage Metric

For purposes of this metric, a "major outage" event in a network system is defined as the interruption of service to 15 percent or more of the customers in any network for a period of three hours or more. A radial system interruption event is defined as one event that results in the sustained interruption of service to 70,000 customers for three hours or more.

On Saturday July 13, 2019, beginning at 6:47 p.m., approximately 72,000 Con Edison customers in Manhattan lost electric service. The outage event

impacted Con Edison customers in six electric networks.⁶ In three of those networks,⁷ 15 percent or more of the customers had their service interrupted for more than three hours, which requires a revenue adjustment under the Major Outage Metric criteria.⁸

Con Edison has determined that the event began when distribution feeder 35,261 experienced an electrical fault in a manhole near the West 65th Street Area Substation. The relays on distribution feeder 35261 operated as designed to isolate the electrical fault to the distribution feeder. However, at West 65th Street No. 1 Substation, three protective relays on Transformers 1, 2, and 4 (specifically, the ground differential or 87N relays) simultaneously misoperated in response to the fault on distribution feeder 35261, which caused the loss of networks and customers described above.

During the July 13, 2019 Manhattan Outage, more than 15 percent of customers in three networks lost electric service for more than three hours. One revenue adjustment is applicable because the event resulted from a single occurrence that caused multiple network interruptions. The applicable revenue adjustment is \$5 million for a three to six-hour outage duration.

In July 2019, the Company accrued a \$5 million charge against earnings for the benefit of customers. The \$5 million was applied as a credit to customers in the Company's current Rate Plan in Case 19-E-0065.

In order to prevent a similar misoperation, immediately following the outage event, the Company isolated and removed from service 211 87N relays

⁶ Lincoln Square, Rockefeller Center, Plaza, Hudson, Columbus Circle and Pennsylvania networks.

⁷ Lincoln Square, Rockefeller Center and Plaza networks.

⁸ 100% of customers in all six networks lost electric service. Only the customers in the Lincoln Square, Rockefeller Center and Plaza networks lost service for more than three hours.

throughout the system in New York City and Westchester County. In addition, 45 87N relays were evaluated and the Company determined that these relays did not need to be isolated and removed from service.

In addition, Con Edison has identified several recommendations that it plans to implement to reduce the likelihood of a similar event in the future and to enhance its system:

- Verify the integrity and restore the 87N relay circuits, system wide;
- Improve the project design process;
- Standardize commissioning testing, and;
- Develop a process for feedback throughout the affected organization when anomalies in design drawings and processes are discovered.

IV. Pole Repair Metric

The pole repair metric provides that Con Edison will repair within 30 days 90% of “Damaged Poles” and “Double Damaged Poles” that come into existence during calendar year 2019.⁹

A total of 181 “Damaged Poles” and “Double Damaged Poles” came into existence during 2019. Con Edison repaired 175 (96.7%) of these poles within 30 days of learning of the damage. Accordingly, a revenue adjustment is not applicable for this metric. Con Edison repaired 181 (100%) of these poles within 6 months of learning of the damage.

Appendix B (2019 Damaged Poles) contains a listing of the above damaged pole locations, the date Con Edison became aware of the problem at

⁹ RPM, pp. 9-11. The 30-day period is measured from the date the Company became aware of the “Damaged Pole” or “Double Damaged Pole.”

that location, and the date of the repair.

V. Shunt Removal Metric

The shunt removal metric provides that, for publicly accessible shunts that come into existence during calendar year 2019, Con Edison will make permanent repairs within 90 days for at least 90% of shunts installed during the winter months (January, February, March, April, November, and December) and within 60 days for at least 90% of shunts installed during the summer months (May through October).¹⁰ The Company installed 1,569 street, sidewalk, or overhead shunts during winter months in 2019. A total of 144 shunts are still open and tolled pending completion. As a result, the total number of shunts for the performance calculation is 1,425. The Company made permanent repairs and removed the shunts within 90 days for 1,417 (99.44%) of these shunts. Of the 8 shunts not repaired within 90 days, 1 shunt is closed, and 7 shunts remain open. Accordingly, a revenue adjustment is not applicable for this metric.

The Company installed 1,289 street, sidewalk, or overhead shunts during summer months in 2019. A total of 145 shunts are still open and tolled pending completion. As a result, the total number of shunts for the performance calculation is 1,144. The Company made permanent repairs and removed the shunts within 60 days for 1,124 (98.25%) of these shunts. Of the 20 shunts not repaired within 60 days, 17 shunts are closed and 3 of those shunts remain open. Accordingly, a revenue adjustment is not applicable for this metric.

A total of 2,858 street, sidewalk, or overhead shunts came into existence

¹⁰ RPM, pp. 11-13.

during 2019. A total of 289 shunts remain open and tolled pending completion. Of the remaining 2,569 shunts, Con Edison made permanent repairs and removed 2,554 (99.42%) of these shunts within six months of the shunt installation date. Of the remaining 15 shunts, 5 shunts are closed and have exceeded six months and 4 shunts remain open and have exceeded six months and 6 shunts remain open but have not yet exceeded 6 months

Con Edison's 2018 RPM Report identified 240 street, sidewalk or overhead shunt locations installed in 2018 that were not yet repaired. Of those 240 shunts, 175 have been repaired. The remaining 65 shunts and their status are identified in Appendix C-6, *(2018 Status of Open Shunts)*.

Con Edison's 2018 RPM Report identified 169 street, sidewalk or overhead shunt locations installed in 2017 that were not yet repaired. Of those 169 shunts, 126 have been repaired. The remaining 43 shunts and their status are identified in Appendix C-7, *(2017 Status of Open Shunts)*.

Con Edison's 2018 RPM Report identified 50 street, sidewalk or overhead shunt locations installed in 2016 that were not yet repaired. Of those 50 shunts, 36 have been repaired. The remaining 14 shunts and their status are identified in Appendix C-8, *(2016 Status of Open Shunts)*.

Con Edison's 2018 RPM Report identified 15 street, sidewalk or overhead shunt locations installed in 2015 that were not yet repaired. Of those 15 shunts, 10 have been repaired. The remaining 5 shunts and their status are identified in Appendix C-9, *(2015 Status of Open Shunts)*.

The Company's 2019 shunt removal performance is detailed in Appendix C-1, *Shunts Received: All Regions (Jan-April, Nov-Dec 2019)* and Appendix C-2,

Shunts Received: All Regions (May-Oct 2019) which contain a listing of the above shunt locations, the date the shunt was installed, and the date of the permanent repair and shunt removal. The shunt locations that were not permanently repaired within the 90-day winter period and the 60-day summer period are identified in Appendix C-3, (*Greater than 90 days*) and Appendix C-4, (*Greater than 60 days*). The shunts that have exceeded 6 months and their status are identified in Appendix C-5, (*Over 180 Days*). The shunts from the 2018 Report and their status are identified in Appendix C-6, (*2018 Status of Open Shunts*). The shunts from the 2017 Report and their status are identified in Appendix C-7, (*2017 Status of Open Shunts*). The shunts from the 2016 Report and their status are identified in Appendix C-8, (*2016 Status of Open Shunts*). The shunts from the 2015 Report and their status are identified in Appendix C-9, (*2015 Status of Open Shunts*).

VI. No-Current Streetlight Metric

The no-current streetlight metric provides that, for no-current streetlights that come into existence during calendar year 2019, Con Edison will make permanent repairs within 90 days for at least 90% of no-current streetlights installed during the winter months (January, February, March, April, November, and December) and within 45 days for at least 80% of no-current streetlights installed during the summer months (May through October).¹¹

A total of 3,367 no-current streetlights occurred during winter months in 2019. A total of 38 no-current streetlights are still open and tolled pending completion. As a result, the total number of no-current streetlights for the

¹¹ RPM, pp. 14-15.

performance calculation is 3,329. Con Edison made permanent repairs within 90 days for 3,028 (91%). 167 no-current streetlights were completed and exceeded 90 days. 134 no-current streetlights are open and pending repair. Accordingly, a revenue adjustment is not applicable for this metric.

A total of 2,891 no-current streetlights occurred during summer months in 2019. A total of 51 no-current streetlights are still open and tolled pending completion. As a result, the total number of no-current streetlights for the performance calculation is 2,840. Con Edison made permanent repairs within 45 days for 2,458 (87%) summer no-current streetlights. 320 no-current streetlights exceeded 45 days. 62 no-current streetlights are open and pending repair. Accordingly, a revenue adjustment is not applicable for this metric.

A total of 6,258 no-current streetlights occurred during 2019. A total of 89 no-current streetlights remain open and tolled pending completion. Of the remaining 6,169 no-current streetlights, Con Edison made permanent repairs to 5,973 (97%) of these no-current streetlights within six months. Of the remaining 196 no-current streetlights, all are still pending, but have not yet exceeded six-months.

The Company's 2019 no-current streetlight repair performance is detailed in Appendix D. Appendix D-1 (Winter Streetlights less than 90 days) and Appendix D-2 (Summer Streetlights less than 45 days) contain a listing of the no-current streetlight locations where repairs were made within 90 days for winter period occurrences and 45 days for summer period occurrences, the date the Company became aware of the problem at each location, and the date of the permanent repair at each location. Winter period no-current streetlight locations that were

repaired in more than 90 days are identified in Appendix D-3 (Winter Streetlights greater than 90 days). The summer period no-current streetlight locations that were repaired in more than 45 days are identified in Appendix D-4 (Summer Streetlights greater than 45 days).

The jobs that were created in 2018 and 2017 and remain open & or tolled can be found in Appendix D-5 (*Pre-2018/17 Streetlights – Open*). Of those 44 jobs, all remain open and or tolled.

VII. Over-Duty Circuit Breakers Metric

The over-duty circuit-breaker metric provides that Con Edison will replace at least 50 over-duty circuit breakers during the calendar year (the annual target level) and at least 180 over-duty circuit breakers during each three year period (the triannual target level), except upon the occurrence of extraordinary system conditions.¹² The current three-year period consists of the years 2017, 2018 and 2019.¹³ During 2019, Con Edison replaced 53 over-duty circuit breakers and met the annual target level. Accordingly, a revenue adjustment is not applicable for this metric. The over-duty circuit breakers replaced during 2019 are provided in Appendix E-1.

In 2018, Con Edison replaced 74 over-duty circuit breakers¹⁴ and in 2017 Con Edison replaced 53 over-duty circuit breakers.¹⁵ From 2017 through 2019

¹² RPM, pp. 15-17.

¹³ At the beginning of calendar year 2019, Con Edison identified 722 over-duty 13 kV and 27 kV circuit breakers on its distribution system. At the beginning of calendar year 2020, Con Edison identified 710 over-duty 13 kV and 27 kV circuit breakers on its distribution system.

¹⁴ Consolidated Edison Company of New York, Inc. Report on 2018 Performance under Electric Service Reliability Performance Mechanism, Case 16-E-0060, April 1, 2019, at Appendix E.

¹⁵ Consolidated Edison Company of New York, Inc. Report on 2017 Performance under Electric Service Reliability Performance Mechanism, Case 16-E-0060, March 31, 2018, at Appendix E.

Con Edison replaced 180 over-duty circuit breakers and met the triannual target level. Accordingly, a revenue adjustment is not applicable for this metric. The over-duty circuit breakers replaced during 2018 are provided in Appendix E-2 and the over-duty circuit breakers replaced during 2017 are provided in Appendix E-3.

VIII. Remote Monitoring System Metric

The remote monitoring system (“RMS”) metric provides that the Company will maintain a 90% RMS reporting rate in each second-contingency network measured at quarterly intervals. The network’s monthly reporting percentage for the third month of each quarter, *i.e.*, for March, June, September, and December, is used to measure quarterly performance under the remote monitoring system metric.¹⁶ The Company reports RMS performance to the Department of Public Service Staff following each quarter. The Company measures RMS reporting performance as the monthly percentage of the available RMS transmitters in a network that report during the month, *e.g.*, 94.9% of the available RMS transmitters in the Grand Central network reported in the month of June.¹⁷

During 2019, each of Con Edison’s 65 networks met or exceeded the 90% target in each quarter. Accordingly, a revenue adjustment is not applicable for this metric.

The 2019 quarterly performance for each network is provided in Appendix F as follows: Appendix F-1 (First Quarter), F-2 (Second Quarter), F-3 (Third Quarter), and F-4 (Fourth Quarter).

¹⁶ RPM, p. 9.

¹⁷ An RMS transformer is unavailable if its associated transformer is not in service or is scheduled for a feeder contingency during the month.

For the First Quarter 2019:

28 networks were reporting at or above 95%,
37 networks were reporting between 90%-95%, and
0 networks reported below 90%.

For the Second Quarter 2019:

28 networks were reporting at or above 95%,
37 networks were reporting between 90%-95%, and
0 networks reported below 90%.

For the Third Quarter 2019:

33 networks were reporting at or above 95%,
32 networks were reporting between 90%-95%, and
0 networks reported below 90%.

For the Fourth Quarter 2019:

25 networks were reporting at or above 95%,
40 networks were reporting between 90%-95%, and
0 networks reported below 90%.

IX. Conclusion

During 2019, Con Edison did not meet the targets established in the Reliability Performance Mechanism for Radial SAIFI and Radial CAIDI. As a result, the Company incurred a negative revenue adjustment of \$10 million. During 2019, Con Edison had one customer outage event that exceeded the Reliability Performance Mechanism thresholds for Major Outages. As a result, the Company incurred a negative revenue adjustment of \$5 million. During 2019, Con Edison met all other targets applicable to the Company's performance under the Reliability Performance Mechanism.

New York, NY
March 31, 2020

Distribution Engineering Department
Consolidated Edison Company of
New York, Inc.