

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

At a session of the Public Service  
Commission held in the City of  
Albany on August 2, 2017

COMMISSIONERS PRESENT:

John B. Rhodes, Chair  
Gregg C. Sayre  
Diane X. Burman  
James S. Alesi

CASE 17-E-0428 - In the Matter of an Investigation into the  
April 21, 2017 Metropolitan Transportation  
Authority Subway Power Outage and Consolidated  
Edison Company of New York, Inc.'s Restoration  
Efforts.

ORDER ON CONSENT DIRECTING STEPS TO SAFEGUARD AND MAINTAIN  
ADEQUATE UTILITY SERVICE TO THE SUBWAY SYSTEM

(Issued and Effective August 16, 2017)

BY THE COMMISSION:

INTRODUCTION

In recent months, increasingly frequent power outages have led to failures of infrastructure throughout the Metropolitan Transportation Authority's (MTA) rail and subway systems. On June 29, 2017, Governor Andrew M. Cuomo declared a disaster emergency in the five boroughs of New York City and seven surrounding counties that incorporate the MTA region in the State.<sup>1</sup> Governor Cuomo also charged the Public Service Commission with conducting a joint review of the electrical

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<sup>1</sup> N.Y. Exec. Order No. 168 (June 29, 2017), <https://www.governor.ny.gov/news/no-168-declaring-disaster-emergency-five-boroughs-new-york-city-and-counties-dutchess-nassau>.

systems of Consolidated Edison Company of New York, Inc. (Con Edison) and the MTA within 90 days.

#### BACKGROUND

The 90-day joint review is a continuation of Department of Public Service (Department or DPS) Staff's investigation into the quality of Con Edison's power supply to the MTA system, which began because of an April 21, 2017 power failure that led to significant delays across MTA's subway system. That investigation also extended to two additional power-related incidents that affected the MTA's service on May 7 and May 9, 2017.

The investigation determined that the April 21 outage at the Seventh Avenue subway station was caused by a failure of Con Edison's electricity supply to the station, which led to a loss of the subway signals. In addition, the investigation showed that one of the secondary services to the MTA facility had been improperly rerouted, and further, was not properly documented by Con Edison. Due to the difference between Con Edison's maps and the actual field conditions, it took crews several additional hours to determine the cause of the outage. The loss of power to the Seventh Avenue station affected multiple subway lines and caused widespread delays across the subway system. Because of this incident, and at the direction of DPS Staff, Con Edison performed inspections on 102 "interlocking"<sup>2</sup> and other high priority MTA stations, and completed necessary repairs to avoid similar outages at other important stations.

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<sup>2</sup> Interlocking is defined as an "arrangement of signals and switches such that they are constrained to be operable only in a safe order." Interlockings are designed such that there is no way the controls can be operated, by mishap, malice, or contrivance, to effect an unsafe situation on the tracks.

The investigation further determined that the May 7 incident was caused by a failure of Transformer 3 at Con Edison's Farragut transmission substation. There was no resulting loss of power related to the event; however, the change in voltage impacted the MTA's system at the DeKalb station. On May 9, the DeKalb station lost signal power; however, the root cause of this event has yet to be determined because there were no defects found on Con Edison's system used to serve that station, no defects identified by MTA on its equipment, and neither Con Edison nor MTA had power quality monitoring equipment at the location at the time of the event.

The Commission has decided to conduct a more comprehensive 90-day review and assessment of the electrical systems and equipment of both Con Edison and the MTA. As part of that review, DPS Staff will identify the electrical equipment owned and operated by Con Edison and that owned and operated by MTA, the condition of the equipment, and the party responsible for maintaining the equipment in a state of good repair. The Department is retaining Electric Power Research Institute (EPRI), a consultant that specializes in power quality issues, to assist in this review. Department Staff, EPRI, Con Edison and the MTA will work together to complete this power quality and equipment review.

By this Order, the Commission directs Con Edison to work with Department Staff and EPRI to facilitate the timely and effective review and assessment of its electric system and related equipment and the quality of its power supplied to the MTA subway system, and to take other specific actions to designate a team of individuals to assist Department Staff and EPRI in their assessment; conduct and provide results of power quality monitoring data analysis; work with the MTA to identify locations with frequent power issues; make readily available for

review system and equipment design drawings, specifications, and operational procedures; continue the priority work identified by the April 21, 2017 incident investigation to improve the reliability of its electric service to the MTA; complete the electric inspections with the MTA and make necessary repairs to its facilities, with signal equipment as a priority, at all remaining MTA sites used to provide low voltage power to the subway system; identify the source of frequent power supply and reliability issues and expeditiously rectify Con Edison conditions causing such issues; replace aluminum and other high failure rate cables serving the MTA subway stations; install redundant power supplies or improve the reliable design of the service to the stations that do not currently have such redundancy; and procure and deploy remote monitoring technology on its low voltage services to the MTA, as described herein.

PUBLIC NOTICE

In accordance with SAPA §202(6), the Commission takes this action, effective immediately, as an emergency measure to protect the safety and general welfare of the public who travel on the MTA subway system daily. This measure is particularly important given the current heat and humidity of the summer months and the frequent loss of power and air conditioning that results from these service outages and disruptions. Although this Order takes effect immediately for 90 days, as required by SAPA §202(6), the Department will provide for publication of a Notice of Proposed Rulemaking in the State Register and an opportunity for public comment after issuance of this Order and prior to the Commission's further adoption of the rule.

DISCUSSION AND CONCLUSION

To protect the health, safety and welfare of the public in New York City and the surrounding suburbs, Con Edison is directed to take the specific steps set forth in the ordering clauses below given the increasing frequency of service outages and disruptions on the MTA subway system. It is imperative that Con Edison dedicate additional resources to improve the condition of its equipment and the quality of power it supplies to the MTA system.

Adequate performance of these identified measures does not relieve Con Edison of its obligation to provide safe, reliable and adequate service to the MTA system including adequate power quality. Con Edison understands and acknowledges that the loss of power or surges in power adversely affect the operations of the New York City Transit System, possibly affecting millions of riders. Con Edison also knows that it will be held responsible for any such events and/or actions that would not have occurred if Con Edison had exercised prudence in its operation, which also includes their knowledge of prior failures and malfunctions. In addition, failure of Con Edison or its officers, agents and employees to comply with an order imposing these requirements may subject Con Edison to Court-imposed forfeiture of penalties pursuant to Section 25 of the Public Service law or to Commission-imposed assessment of civil penalties pursuant to Section 25-a of the Public Service Law.

To allow the Commission to evaluate the costs associated with the outage and all its activities related to the MTA system as a result of this Order, Con Edison shall separately identify and account for all costs it has incurred and will incur related to its response to the outage, including, but not limited to, its restoration activities, emergency generators, generator fuel, removal and retirement of damaged

cables and equipment, capital expenditures for replacement of cables and equipment, customer damage claims, and contractor services. The segregated costs should include both direct and indirect costs and overheads of all company employees, contractors and mutual aid crews. Con Edison will also separately identify and account for all costs associated with its activities related to the MTA system because of this Order.

The Commission finds that the immediate adoption of the rule is necessary for the preservation of the public health, safety or general welfare and that compliance with the requirements of SAPA Section 202(1) would be contrary to the public interest. Therefore, the Commission may dispense with all or part of such requirements and adopt this rule on an emergency basis. This Order takes effect immediately and will not remain in effect for longer than 90 days unless the emergency rule is readopted prior to such expiration or the rule is adopted in compliance with SAPA Section 202(5) following the opportunity for public comment under SAPA. The frequent service outages and disruptions have had a detrimental impact on the health and safety of the thousands of individuals daily traveling on the MTA subway systems. These events are particularly harmful to the public during the hot and humid summer months as such events often result in the loss of power and air conditioning on the trains. Therefore, this Order and the directives contained herein are necessary to protect the health, safety and welfare of the public in New York City and surrounding suburbs. Accordingly, the Commission adopts this Order, effective immediately, as an emergency measure under SAPA §202(6).

DPS Staff advises that as its investigation proceeds it is continuing to identify other needs that may affect Con Edison's service to the MTA or the interplay between the Con

Edison and MTA electrical systems. In addition to the specific Con Edison actions the Commission is requiring in this Order, Con Edison should continue to cooperate with DPS Staff and the two should work together to identify by August 31, 2017 whether there are other specific measures Con Edison could take that would effectively improve the combined resiliency of its and MTA's electrical systems and/or to assist DPS Staff in completing the joint review of the Con Edison and MTA electrical systems.

Consolidated Edison Company of New York, Inc. (Con Edison) has reviewed the Ordering Clauses (1-33) set forth below in this order and has informed the Commission that it consents to the Ordering Clauses. This order does not address cost recovery. By consenting to undertake the obligations set forth in the ordering clauses, Con Edison is not waiving any of its rights to recover or seek recovery of any costs that are prudently incurred in furtherance of the activities required by the ordering clauses.

The Commission orders:

INSPECTIONS

1. Consolidated Edison Company of New York, Inc. (Con Edison) will complete by September 30, 2017, all inspections of Con Edison manholes that provide a direct connection to the 470 Metropolitan Transportation Authority (MTA) passenger/signaling facilities. To the extent that the MTA identifies priority inspections, Con Edison should tailor its order of work to accomplish higher priority inspections first.
2. Con Edison will dedicate as many personnel as necessary to complete the inspections.
3. The inspections will include evaluations of overall condition, indications of potential electrical failures,

the identification of aluminum conductors, and the verification of the accuracy of design drawings.

4. All design drawings deficiencies identified during the inspections shall be corrected by Con Edison within five days following each inspection.

5. By August 31, 2017, Con Edison, Staff of the Department of Public Service (DPS) and MTA will come to an agreement on the scope of inspections and roles of the parties for the inspection of MTA Property Line Boxes and Electric Distribution Rooms. Con Edison's role will be to jointly inspect with the MTA elements Con Edison is capable by its expertise of inspecting, but not having to inspect equipment that Con Edison would not ordinarily be capable of inspecting. Con Edison will participate in the joint inspections with the MTA, and Con Edison and the MTA will inspect the elements for which Con Edison has expertise, by a date certain to be established in the agreement, subject to the MTA providing Con Edison access to MTA's facilities as required. Any disagreement regarding the "date certain" shall be brought to the Commission for its determination.

6. Con Edison will dedicate as many personnel as necessary to the joint inspection of property line boxes and electric distribution rooms.

7. By August 31, 2017, Con Edison, DPS and MTA will come to an agreement on the scope of inspections and roles of the parties for the inspection of MTA's interlocking station electric equipment. Con Edison's role will be to jointly inspect with the MTA elements Con Edison is capable by its expertise of inspecting, but not having to inspect equipment that Con Edison would not ordinarily be capable of inspecting. Con Edison will participate in the joint inspections with the MTA and an MTA contractor for the elements for which Con Edison



has expertise by a date certain to be established in the agreement, subject to the MTA providing Con Edison access to MTA's facilities as required. Any disagreement regarding the "date certain" shall be brought to the Commission for its determination.

8. Con Edison and DPS will come to an agreement on what Con Edison's inspection history indicates about the need for additional inspections of Con Edison's area substation equipment serving MTA's high voltage substations. Con Edison will inspect its area substation equipment serving MTA's high voltage substations where indicated by the agreement by June 1, 2018. The inspected equipment shall include but not be limited to area station transformers, circuit breakers, and relays. Further, by August 31, 2017, Con Edison, DPS and MTA will come to an agreement on the scope of inspections and roles of the parties for the inspection of MTA's 221 high voltage substations. Con Edison's role will be to inspect with the MTA, the MTA's maintenance and inspection records and to visually inspect with the MTA its equipment in the field without taking it out of service, and to provide recommendations to MTA by a date certain established in the agreement, subject to the MTA providing Con Edison access to MTA's records and facilities as required. Any disagreement regarding the "date certain" shall be brought to the Commission for its determination. The inspected equipment shall include but not be limited to circuit breakers, disconnect switches, circuit terminations and transformers and rectifiers.

#### SENSORS AND COMMUNICATIONS

9. Con Edison will install by September 30, 2017, sensors and monitoring equipment capable of detecting carbon monoxide, water level, and arcing in all of the Con Edison manholes that provide a direct connection to the 470 MTA

passenger/signaling facilities except in a very limited number of conditions where unusual water or other conditions would make the use of the sensors and monitoring equipment infeasible.

10. AMI meters and communications equipment associated with MTA signaling services shall be installed and operable by Con Edison in Manhattan and Brooklyn by January 31, 2018, and in the Bronx and Queens by March 31, 2018, subject to the MTA providing Con Edison access to MTA's facilities as required.

11. Con Edison will work with the MTA to jointly develop by December 31, 2017 both Con Edison and MTA procedures and protocols for communications regarding power and equipment issues, including but not limited to AMI issues. Con Edison's procedures and protocols will be developed and fully implemented by January 31, 2018 in Manhattan and Brooklyn and by March 31, 2018 in the Bronx and Queens.

#### REMEDICATION AND REPLACEMENTS

12. Any conditions on Con Edison facilities or equipment that it identifies during its inspections required by Ordering Clause 1 that need repair or replacement will be promptly remediated in accordance with Con Edison standards.

13. Con Edison aluminum conductors identified in the inspections required by Ordering Clause 1 will be replaced with copper cable. The 102 locations prioritized "highest" by the MTA as interlocking stations shall be completed by December 31, 2017. Con Edison shall complete the other locations by a date certain established in consultation with the MTA and DPS following the completion of the inspections required by Ordering Clause 1 above. Any disagreement regarding the "date certain" shall be brought to the Commission for its determination.

14. Con Edison will dedicate as many personnel as necessary to the replacement of aluminum conductors.

15. Con Edison will work with the MTA to jointly develop work plans by September 30, 2017 for the 17 high priority locations already identified as opportunities for improved redundancy with respect to Con Edison electric service. Con Edison shall complete the work for its improved electric service by December 31, 2017 for these 17 high priority locations.

16. Con Edison will work with the MTA to jointly develop work plans by December 31, 2017 to improve the redundancy of Con Edison's electric service and/or install additional redundant Con Edison electric supply options for the rest of MTA's signaling services. Con Edison shall complete the work for the remaining signaling services by a date certain to be established to implement these work plans in consultation with the MTA and DPS. Any disagreement regarding the "date certain" shall be brought to the Commission for its determination.

17. Con Edison will work with the MTA, Electric Power Research Institute (EPRI) and DPS to agree on operational settings for the modernization of Automatic Transfer Panels or related equipment across 88 MTA Stations.

BACK-UP GENERATORS

18. Con Edison will establish an inventory of generators such that Con Edison can respond on the scene to restore service with generators on demand. Con Edison will support the MTA's installation of quick connects and other equipment needed to deploy the generators in accordance with the MTA's schedule. The staging locations for the generators shall be determined by Con Edison, DPS and MTA by December 31, 2017 with the goal that the staging locations are within a radius of 30 minutes for ground transportation from all MTA stations, and

they will also consider alternatives to the staging of generators.

POWER ANALYSIS

19. Con Edison will work with the MTA to jointly perform by December 31, 2017 an analysis of power supply and power quality events affecting MTA's signaling services from 2015 to date. The analysis will include the identification of root causes and solutions to avoid or minimize future events.

OPERATIONS RESPONSE

20. Con Edison will demonstrate by August 31, 2017, that it has response personnel to provide priority response for power failure issues/impacts affecting the MTA system.

21. By August 31, 2017, if deemed appropriate in consultation with DPS and MTA, Con Edison will coordinate with the MTA to provide a key operating employee as a "virtual presence" on site at the MTA using dedicated secure communications equipment. The consultation with the DPS and MTA will also consider Con Edison designating and assigning a key operating employee to be on site at the MTA as a part of the critical management team 24 hours a day/7 days a week or as requested by the MTA.

22. Con Edison will work with the MTA and participate in a joint response drill on August 10, 2017.

POWER ASSESSMENT

23. Con Edison is directed to within five business days designate a specific team of individuals to assist DPS and EPRI in their assessment. This team is to include a specific liaison, an executive sponsor, a technical person with working knowledge of the design and power quality performance of the electrical equipment connected to MTA sites, and personnel to provide access to Con Edison's facilities and perform necessary equipment testing.

24. Con Edison will work with the MTA and EPRI to assist EPRI in the completion of the power quality assessment, including supporting the field inspections, assessing automatic transfer panels and other equipment affecting power quality, and providing any long-term support needed thereafter.

COOPERATION AND ACCOUNTABILITY

25. Con Edison will cooperate with DPS on the DPS Verification Process to ensure that field work is being performed correctly and on time.

26. Con Edison is directed to respond to all DPS correspondence and requests within three business days (in hand or by electronic communication).

27. Con Edison will add to its workforce dedicated to this MTA work, to levels satisfactory to DPS.

28. Con Edison will prepare by August 31, 2017, a Project Management Plan to coordinate all its activities related to the MTA system.

29. Con Edison will file with the Secretary a monthly report on all its activities related to the MTA system including performance metrics, progress against targets, and project milestones.

OTHER

30. Nothing in these Ordering Clauses obligates Con Edison, or should be interpreted as obligating Con Edison, to repair, replace or maintain any MTA facilities.

31. In the Secretary's sole discretion, the deadlines set forth may be extended. Any request for an extension must be in writing, must include a justification for the extension, and must be filed at least one day prior to the affected deadline.

32. This Order is adopted on an emergency basis in accordance with State Administrative Procedure Act §202(6).

33. This proceeding is continued.

(SIGNED)

KATHLEEN H. BURGESS  
Secretary