



Louis L. Rana
President and
Chief Operating Officer

August 2, 2006
By Hand Delivery

Hon. Jaclyn A. Brillling
Secretary
New York State
Department of Public Service
Three Empire State Plaza
Albany, New York 12223

Re: Case 06-E-0894 – Proceeding on Motion of the Commission
to Investigate Electric Power Outages in Con Edison's
Long Island City Network

Dear Secretary Brillling:

Enclosed for filing are an original and five copies of Consolidated Edison Company of New York, Inc.'s *Report On Planning for the Safe and Reliable Operation of the Electric Distribution System and the Long Island City Network*. This report is filed in response to the Public Service Commission's "Order Instituting Proceeding" issued July 26, 2006 in this proceeding, directing Con Edison to file its plans outlining the steps the Company is taking to preserve electric service reliability and provide for the safe and reliable operation of its electric distribution system and, in particular, the Long Island City network during the balance of the summer 2006.

Very truly yours,

Enclosures

**STATE OF NEW YORK
PUBLIC SERVICE COMMISSION**

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Proceeding on Motion of the Commission :
to Investigate the Electric Power Outages in : Case 06-E-0894
Con Edison's Long Island City Network :
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**CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
REPORT ON PLANNING FOR THE SAFE AND RELIABLE OPERATION OF
THE ELECTRIC DISTRIBUTION SYSTEM AND
THE LONG ISLAND CITY NETWORK**

I. Introduction

The Commission's "Order Instituting Proceeding" issued July 26, 2006 in this proceeding directs Con Edison to file its plans outlining the steps the Company is taking to preserve electric service reliability and provide for the safe and reliable operation of its electric distribution system and, in particular, the Long Island City network during the balance of the summer 2006.

The safe and reliable operation of Con Edison's distribution system has always been a function of the system's design, the Company's ongoing work to maintain, upgrade and reinforce system components, and the Company's day-to-day operation of the system. While no electric distribution system can avoid service outages, Con Edison's history of electric industry-leading reliability demonstrates the Company's strong record in providing reliable electric service in the City of New York and Westchester County.

Most of Con Edison's electric load is served from the Company's network distribution system. The network system has inherent reliability protections in its design. This design provides a very high level of reliability because if a feeder fails or needs maintenance work, customers will continue to be supplied by other feeders. In fact, our networks are designed to allow for the loss of any two primary feeders at forecasted peak summer energy consumption levels without any impact on customers, and the distribution system has proved to be robust enough to operate with minimal or no customer impact when additional feeders are out of service.

This “second contingency” design, plus Con Edison’s ongoing capital investment in the system, its maintenance of the system, and its ongoing day-to-day operation of the system (discussed below), has made Con Edison’s distribution system the most reliable in the nation.

Con Edison focuses on implementation of many measures to reduce the potential for service outages throughout the year, and particularly during summer periods when the high demand for electricity places the greatest stress on the distribution system. Nonetheless, despite the Company’s extensive preparations and readiness, it cannot rule out the potential that some of the hundreds of thousands of mechanical and electrical components on the complex distribution system will fail in combinations that can cause service outages.*

On July 18th, the Company experienced the then second highest customer demand for power in Con Edison’s history. A series of feeder component failures in the Long Island City network over several days resulted in 10 of the 22 primary feeders out of service simultaneously on July 18th, an unprecedented event causing significant stress that damaged secondary mains, which form the grid that supplies homes and businesses in the network. Con Edison continues to document the facts of what happened throughout the outage, and the Company is proceeding with a root cause analysis to determine how to improve its design, operational response, communications, and public outreach efforts. The Company has retained experts to assist in the technical review of the event.

We have restored electric service to our customers in the Long Island City network and continue to work to strengthen the network, particularly the low voltage system, by testing and inspecting system components in the network and repairing or replacing them as necessary. Con Edison will maintain particular vigilance in the Long Island City network for the foreseeable future. We have generators installed in the Long Island City network to de-load the network grid, and we maintain the capability to rapidly deploy additional generators to support the network if the need should arise.

*The Public Service Commission and its Staff have long recognized that Con Edison cannot guarantee that there will be no service outages. The Commission has established reliability performance standards for Con Edison and the other New York State electric utilities. In its most recent order resetting these standards, the Commission set a very high performance requirement for Con Edison’s distribution system, but nonetheless does not require perfect reliability performance. (“The service standards, however, are designed to establish a baseline for acceptable performance.” Case 02-E-1240, Proceeding to Examine Electric Service Standards and Methodologies, “Order Adopting Changes to Standards on Reliability of Electric Service.”) In a 1961 investigation of an electric service outage in midtown Manhattan, the Commission adopted the findings and conclusions of Staff’s report that stated, “no electrical system, no matter how costly, can be guaranteed to be entirely free from interruptions ... there could be no complete assurance that interruptions would not occur.” See Staff Memorandum “Consolidated Edison Company of New York, Inc. – Interruption of June 13, 1961,” dated July 17, 1961, approved by Commission order dated July 19, 1961. Con Edison strives continuously to provide very high reliability, and in this filing, the Company is demonstrating the actions that it takes to reduce the likelihood of service interruptions on its distribution system.

Pending the conclusions and recommendations arising from this event, Con Edison will continue to operate its distribution system with enhanced caution and vigilance during times of high electric demand. Outlined below are the procedures that we follow during such periods in order to maintain the reliability of the distribution system.

II. Electric Distribution System Reliability

A. Annual Reinforcement of the Distribution System to Meet Summer Peak Loads

Every year Con Edison conducts a comprehensive program to prepare its distribution system for reliable operation during the upcoming summer peak load period. Con Edison conducts load flow studies that model the flow of electricity through its primary feeders to determine if each feeder is adequately sized to carry maximum predicted electric loads under normal conditions (all feeders in service) and under contingency conditions (one or two feeders out of service). Cable sections that have projected overloads are identified and reinforced by measures such as installing higher capacity feeder cable, upgrading or installing additional transformers, or transferring load to other equipment with available capacity.

In addition, Con Edison improves system reliability through enhancements of system components based on tracking of performance and failure rates. Con Edison's current reliability programs include cable/stop joint replacements, transformer inspection and monitoring, high potential testing, and manhole inspection.

Con Edison has increased its electric distribution system capital investment from \$416 million in 2002 to over \$650 million in 2006 (forecast) in order to meet growing demand. In 2005, Con Edison spent \$651 million in capital investments for its distribution system. This included \$193 million for upgrades to feeder cables and transformers. The Company installed 175 new transformers and replaced 88 miles of underground and aerial cable. In 2006, Con Edison will spend about \$657 million in capital investments for its distribution system. This includes \$260 million to install 310 transformers and upgrade 153 miles of underground and aerial cables reinforcing 220 13 kV, 27 kV, and 33 kV primary feeders.

B. Distribution System Operations During Periods of High Electric Demand

Con Edison's distribution system is operated as four separate regions, and each region is managed from a separate Control Center. The Control Centers

are outfitted with state-of-the-art monitoring equipment and analytical tools that keeps the operating managers aware of distribution system feeder and transformer status.

The Control Centers utilize the following real-time monitoring systems:

- Distribution Information System (DIS) – provides the loading status of all area substations and all primary feeders, network load, geographical area, number of customers, instantaneous feeder load, forecasted peak load, and feeder normal/emergency ratings.
- Feeder Board – provides status and estimated restoration time.
- Remote Monitoring System – shows the status of each network protector and the loading on each network transformer.
- Rapid Restore System – tracks each step in the process of locating and repairing feeder faults. The system also expedites the hand-offs between operators who prepare the feeder for work and those who perform the repairs.
- Feeder Management System Online – provides status of feeder processing at the area substation.
- Outage Manager, ECS, and STAR Systems – track customer outages and repair status.
- NetRMS – real-time and historical data that provides voltage, load, temperature and network protector status of distribution transformers.
- SOCCS-X – real-time data that provides voltage, load, and status of area substation transformers and feeders.
- Quickwolf – contingency analysis program to predict loading conditions.
- Alarm Monitor – a detailed alarm screen for transformer overloads.
- Unit Substation Automation – provides loading, voltage and status of station bank secondary breakers and feeder breakers for 4kV Unit substations and their associated feeders.
- Distribution Overhead System (DOS) – for 4kV, 13kV, and 27kV autoloop loading, voltage, and VRS status (overhead distribution system).
- WeatherBank – provides the weather forecast.

During feeder contingency events, the Control Centers use the following systems:

- WOLF – identifies current and projected distribution equipment overloads for present and contingency conditions.
- Visual Wolf – provides a visual presentation of the wolf loadflow report.
- Net Reports – identifies what locations are affected by the contingency.
- EMOPSYS – identifies critical customers and “life sustaining equipment” customers affected by the current contingency and the loss of the next feeder. Provides customer peak load information, contact information,

account number, service information, emergency generation status, and load reduction status.

- Vision Feeder Maps – electronic map of all distribution feeders. Identifies the underground route that the feeder travels and identifies distribution transformers that are supplied.
- RTF - PQ Nodes – The most recent addition to the operator’s arsenal, this system uses sensors in the substations to speed feeder fault locating time.
- DPVS Distribution Primary Visual System – determines feeder proximity.
- Visual Wolf – visualizes feeder and transformer loading during contingencies on land base map

Each region has a full complement of field crews that maintain the distribution system equipment and respond to equipment problems.

Con Edison follows detailed guidelines for planning and conducting scheduled network feeder outages throughout the year to provide that feeder work is performed efficiently. These guidelines ensure that feeder outages will not violate applicable thermal and voltage criteria or affect customers. This process includes an engineering review and plan for service adequacy during the scheduled outage and a plan for the potential next worst event.

The Company also employs criteria restricting the removal of feeders from service during periods of high electric demand. These guidelines are intended to maximize the availability of feeders going into and during a period of high electric demand on the distribution system.

Since 1999, we have reduced primary feeder restoration time during heat wave periods. Reducing feeder processing time is one of the most significant reliability improvements Con Edison has made, and we continue to look for ways to reduce feeder processing and restoration time. During network contingencies occurring in peak demand periods, the Company follows guidelines for expedited feeder restoration. These guidelines provide for the following:

- Pre-positioning of substation operators, switching personnel, field operators, splicers, and other groups participating in feeder processing as well as resources such as vector trucks, tankers, and trenching contractors.
- Increasing staffing at all splicing locations where appropriate.
- Assigning managers in the field to promote efficient operations.
- Increasing staffing at our Energy Control Centers, Regional Control Centers, and Substations.
- Implementing practices that restore feeders to service as quickly as possible.

The Company’s system improvements (Rapid Restore System), guidelines, and practices have reduced primary feeder-processing time by about

50% during the summer and by about 65% during heat waves, and significantly contribute to reducing the number and duration of multiple contingency events.

The Company's guidelines also establish actions to be taken during a "heat alert state" including cancellation of scheduled feeder work, expedited return of feeders to service, and increased staffing levels to support continuous operations including extended work schedules, vacation cancellation, and procuring contractor crews. These actions buttress the Company's resources available to resolve distribution system conditions occurring during high demand periods. Con Edison's procedures now call for suspension of all excavation work during high load periods

C. Distribution System Heat Wave Readiness Measures

For the peak load conditions for summer 2006, the Company is taking the following distribution system readiness measures:

- Maximize system capacity prior to peak demands including curtailment of scheduled feeder outages.
- Monitor feeder failures and restore feeders to service as soon as possible. The objective is to minimize the number of feeders that are out of service at the start of the heat wave period.
- Pre-cool transformers before the units' temperature reaches high levels
- Run fans and water spray (where available) at 4 kV unit substations to ensure maximum cooling, as needed.
- Conduct targeted feeder patrols and infrared surveys to identify potential equipment problems on the overhead system.
- Stage mobile generators and pre-identify locations for connecting mobile generators to supplement the 4 kV grids in the event of the loss of a supply feeder.
- Increase staffing and organize each Electric Operations area into an Incident Command Structure to support regional operations. Assign a Substation Operations representative to each Control Center to enhance communication.
- Increase staffing of all operations and electric construction organizations using 12 hours shifts and balance crewing for night shift availability.
- Pre-stage mobile generators in all regions for expedited deployment and keep operators and drivers on standby.
- Increase staffing at customer call centers and 24/7 staffing by regional energy service representatives to communicate with large-use and sensitive customers.
- Issue appeals as needed urging customers to reduce non-essential load and coordinate these appeals with NYC OEM and NYC Mayor's Office.
- Request large-use customers systemwide to reduce demand and reduce load at Con Edison's facilities as needed.

- Exercise the Con Edison demand reduction programs systemwide, including Demand Load Reduction Program and the remote air conditioning control program.
- Coordinate with NYC OEM to issue order limiting street excavations to hand digging to reduce potential for damage to electric facilities.
- Implement processes to minimize feeder restoration time:
 - Use computerized feeder fault finding (RTF)
 - Double team work where possible
 - Have crews standing by to eliminate hand-off time
 - Anticipate/coordinate steps between organizations
 - Increase staffing of District Operators
 - Feeder Boss in place around the clock
 - Substations staffed around the clock
 - PST technicians coverage 24x7
 - Substation Maintenance coverage 24x7
 - Auxiliary System Maintenance coverage 24x7 for repair of test sets
 - White hats on every feeder
 - Up to the minute feeder board status

The Company's organizations with communication responsibilities (Customer Operations, Public Affairs, Energy Services, Emergency Management, Central Information Group) are prepared for communications with customers, the public, municipal organizations, and elected officials during a distribution system event.

Con Edison will establish its Corporate Emergency Response Center to support and provide overall coordination for field operations when the system load is projected to reach 12,500 MW this summer.

III. Long Island City Network Reliability

A. Long Island City Network Recovery Team

Con Edison has created a new organization, the Long Island City (LIC) Network Recovery Team, to carry out the stabilization and strengthening of the Long Island City network and to enhance community outreach efforts. The Team will provide dedicated resources to focus solely on this effort. A Vice President directs the Recovery Team full time. The Team organization includes full-time managers and staffing for planning/engineering, logistics, government liaison, EH&S, substation operation liaison, administration and finance, customer operations, and public affairs. A complement of field forces dedicated to LIC Network reconstruction will be assigned to the Team to handle all aspects of the restoration effort. The LIC Network Recovery Team has organized a project team to operate in the northern portion of the network and a project team to operate in

the southern part of the network. Project management team offices will be located in the Astoria area and the Sunnyside/Woodside areas, respectively. These offices will also house Customer Outreach and Customer Operations personnel as a convenience to customers who may have inquiries about the status of the stabilization and strengthening effort.

The LIC Network Recovery Team is assigned to assess, repair and rebuild the network in order to restore it to its normal high level of performance. The transition from the immediate restoration work to the Team's operations commenced over the weekend on July 29th. The management team met as a full unit on July 31st and will be utilizing mutual aid and contractor crews through the forecasted heat wave during the week of July 31, 2006. Full field staffing in the group will be accomplished thereafter.

B. Heat Wave Readiness Measures for Long Island City

The Team is providing enhanced staffing by utilizing mutual aid and contractor resource during this week as the forecasted temperature and loads exceed our design criteria. For the week beginning July 31, 2006, the LIC Network Recovery Team has taken the following LIC network readiness measures:

- Maintain contractor and mutual aid crews for LIC network operations (see below) through the summer.
- Continue to shore up the secondary system.
 - Replace damaged secondary mains and remove secondary shunts.
 - Perform network protector switch checks to ensure proper operation.
 - Continue to check and replace blown underground limiters (fuses).
- Secure equipment and material required to support repairs and continued restoration of LIC through the week.
- Maintain generators in service to de-load grid and ensure they are fueled and kept safe.
- Dispatch additional generation as required.
- Increased operations and maintenance staffing in North Queens substation – two operating crews and two maintenance crews around the clock.
- Continue to inspect secondary shunts several times per watch to provide adequate safety for the public.
- Request load reduction and transfer to self-generation from large-use network customers.
- Close Con Edison Learning Center for the week:
 - Reduce load in LIC network (.7MW).
 - Allow trainees to respond to heat storm in their home organizations.
 - Allow instructors to be placed in their area of expertise to respond to heat storm.

C. Generators for Long Island City Network Load Support

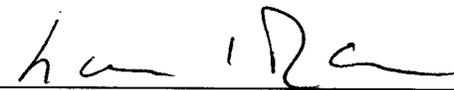
The generators installed during the service restoration to provide support to local load pockets in the LIC network will be maintained on site until the Company has determined that the secondary system is adequate to sustain peak load in the area. The Company also will maintain a supply of generators locally at its Astoria Yard and available for rapid deployment on the network. In addition, the Company will maintain a list of generator vendors who can rapidly deploy additional generators in the network. These generators would be used in the LIC network for primary or secondary system support or to provide supply to specific localities as may be necessary during high load periods or in response to equipment failure.

Con Edison's Corporate Emergency Response Center (CERC) will remain active for the current heat wave to ensure that all of the Company's resources are available to respond to any event on the system.

Dated: August 2, 2006

Respectfully submitted,

CONSOLIDATED EDISON COMPANY
OF NEW YORK, INC.

By 
President and Chief Operating Officer

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