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Inc.

194 Washing e, Suite 420
Albany, New 10
Website: ww

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Mail: info

Hon. Jaclyn A. Brilling
Secretary
N York State Department of
P rvice
Th ire State Plaza
A 12223

Re: Cas
Power Outages in Consolidate
Electric Network.

Brill

of New York's motion for filing the original and five (5)
copies of its Proposed *Prima Facia* Statement in the above-captioned proceeding. A copy of the motion has been served on by e-mail on all active parties.

Yours

G r, Esq.
Ex

nc. (Original and f

: Judge Jeffrey Stockholm
All Active Parties by E-mail

STATE OF NEW YORK
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission to Investigate the Electric Power Outages in Consolidated Edison Company of New York, Inc.'s Long Island City Electric Network.	CASE 06-E-0894

PROPOSED *PRIMA FACIA* STATEMENT
OF
PUBLIC UTILITY LAW PROJECT OF NEW YORK, INC.

Pursuant to the *Procedural Ruling* issued May 9, 2007 and the *Ruling on Issues* issued June 15, 2007, the Public Utility Law Project of New York, Inc. ("PULP") submits the following statements and documents to support a requirement that Consolidated Edison Company of New York ("Con Edison") bear the burden to produce evidence regarding prudence of its acts or omissions with respect to the issues listed in the *Ruling on Issues.*[1]

1. *Con Edison was imprudent in failing to have in place adequate operational protocols, information systems, and contingency assessment tools to effectively assess distribution system conditions in a timely manner. This failure extended the outage and resulted in greater damage to the system.*

informed, operational decisions before, during and after the Long Island City outage.

1. Con Edison lacked information and the ability to assess LIC Network status because the "Auto WOLF" system, which, *inter alia*, monitors network load flows and system conditions, and predicts feeder failures ("contingencies"), was not operating on July 17, 2007.[2]
2. Con Edison reported at the Technical Conference (Transcript p. 732, line 23) that Auto WOLF failed July 12, 2006, the same day state and federal officials warned in congressional testimony of impending blackouts.
3. In discovery responses, Con Edison stated that flawed AUTO WOLF software updates had been installed prior to July 12, between May 15 and June 15, 2006, that AUTO WOLF was not in use between July 12 and July 17.
4. The software was repaired only after 11 PM July 17, well after the event had begun, when multiple feeder outages impaired the usefulness of Auto WOLF for predicting contingencies.

voltages and thermal conditions in its Long Island City network due to a large number of non functioning RMS sensors.

6. The RMS sensor nearest the unexplained secondary fire that began the outage at 3:50 PM July 17, 2006 was malfunctioning, and reported normal voltage even though the transformer to which it was attached had been disconnected from the system in the week prior to the outage events.[3]

7. The malfunctioning of the Auto WOLF system and RMS sensors reduced Con Edison's situational awareness regarding network conditions, reduced Con Edison's ability to forecast feeder failures, and reduced Con Edison's ability to take preventive actions, unnecessarily placing customers at higher risk of service loss.

B. Con Edison was imprudent in failing to have in place a system for accurately identifying the number of people affected by the outage.

1. **Con Edison lacked information regarding the number of people** in submetered residential apartment buildings in the LIC Network. Con

Edison's Response to PULP IR #16.4 states "We do not have an accurate number of customers receiving sub-metered electric service."[4] Con Edison also indicated that 45 multiple dwelling redistribution SC8/12 customers in the LIC network serve 12,057 dwelling units.[5]

2. Con Edison lacked information regarding the special needs customers residing in submetered residential apartment buildings whose medical condition would be worsened by an extended outage.[6]

3. Con Edison lacked information regarding the low income customers affected by the outage and whether those customers obtained allowable compensation.[7]

4. Con Edison failed to educate the public and customers regarding Con Edison's inability to assess the extent of outages and the importance of reporting all outages to Con Edison.

5. Con Edison lacked the ability to identify customers affected by voltage reductions beyond the 8% general voltage reduction implemented on

July 18, 2006.

C. Con Edison was imprudent in failing to undertake a rigorous evaluation of whether it should shut down the network during the cascading events in the outage.

1. Con Edison could not identify objective standards for determining whether to shut down the network, even at ten or eleven contingencies.[8]

D. Con Edison was imprudent in not knowing the Long Island City network well enough that it could reasonably estimate when and how it could be brought back into service after an outage.

E. Con Edison was imprudent in not having in place a system that could accurately ascertain the damage that was occurring to its secondary system after a second contingency.

1. Many RMS sensors which measure voltage at points in the secondary system were not in operation on July 17, 2006.[9]
2. Con Edison relied on anecdotal customer reports of low voltage rather than analysis of real time voltage data from RMS data to identify areas within the LIC Network where voltage was low and wires could be

overheating.[10]

3. Con Edison RMS data is transmitted approximately every 3 minutes, but that data is sampled and voltage data is archived as "snapshots" every 15 minutes "in order to reduce storage space" with the result that full records of incidents involving low voltage or transient electrical disturbances cannot be reconstructed.[11]

4. Reports from WOLF and Auto WOLF are not archived to enable reconstruction of situations and screen reports where these programs may have predicted feeder failures.

F. Con Edison was imprudent in not having in place the ability to receive near real-time information about the extent of the damage being done to the system, such that a decision could be made to shut down the system to prevent further damage.

G. Con Edison was imprudent in not having adequate crews available to address and repair secondary system failures.

1. **A transformer (V9426) nearest to the unexplained secondary fire that** began the event failed July 12, 2006. The V9426 transformer was not replaced but instead was isolated from the system, despite an

been fed by V9426, already been overloaded due to non replacement of another transformer,[12] were further overloaded during the hot weather and the heavy load conditions on July 17, 2006.[13]

H. Con Edison was imprudent in failing to recognize the severity of the July outages thereby causing the outages to be longer in duration and extent, thereby causing greater damage to the system and harm to consumers.

1. Con Edison did not take sufficient action to reduce customer demand and LIC Network load when the network was operating at its reliability limit after the second feeder failed at 16:20 on July 17, 2006.
2. Con Edison did not reduce voltage until after the fifth contingency.
3. Con Edison did not ask the NYISO to implement its demand reduction program until 9:10 AM on Tuesday, July 18, 2006.[14]
4. Con Edison "does not generally notify Staff when 1 or 2 feeders in a

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[12] "This transformer failed on July 11th. It is estimated that the load on the transformer in V 9426 was picked-up by V 7813 (19%) and by V 7914 (39%) with others seeing a slight increase in loading. The loss of this transformer caused highly loaded secondary mains in the vicinity. The area of highly loaded secondary mains created by the June 29th loss of VS 5447 was expanded when V 9426 failed." *Report of Incident Investigation Committee*, p. 47 This Con Edison report is available at

network are out of service. . . ."[15]

5. Con Edison did not attempt to ask Astoria generators voluntarily to reduce load by shifting to station power until after the fifth contingency, and could not timely communicate with some of them.[16]

6. Con Edison's operation of the system while the LIC Network was operating at its reliability limit was so obviously flawed the Connecticut Public Utilities Commission has made a comparison and indicated that Con Edison's reaction to a looming crisis when the system was operating at the limits of its reliability design was inadequate:

> Consolidated Edison appears to have been slow in recognizing and managing a similar developing problem on its system, resulting in catastrophic damage to its system.[17]

2. Con Edison was imprudent in failing to upgrade, maintain, and operate its Long Island City distribution system in the years and months leading up to the outage such that the entire event, and resulting damage to the system, should have been avoided.

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[15] Con Edison Response to PULP IR # 20 (notification of Staff).

1. Since 1995, Con Edison reliability performance, as measured by SAIFI and CAIDI indices has deteriorated.[18]

2. SAIFI and CAIDI indices understate the effect of outages with respect to submetered buildings because interruption of a submetered building counts as only one interruption of service even though hundreds of electric consumers may be affected. Con Edison's performance worsened since 1995 even as the practice of submetering increased.

A. Imprudent maintenance and installation practices are reflected in the poor installation of the substation rack-out type feeder breaker that caused three feeder failures on Monday, July 16, 2006.

B. Con Edison was imprudent in routinely operating its secondary main sections above emergency ratings.

1. On twelve occasions in the 30 days prior to the outages that began July 17, 2006, Con Edison operated its LIC Network at feeder contingency levels of 2 or more.[19]

C. Con Edison was imprudent in failing to validate and respond to the increasing actual load on the Long Island City network over the last number of years.

2. Con Edison postponed adding a new substation to relieve the heavily loaded North Queens substation serving the LIC network.

3. Con Edison did not acquire and utilize sufficient mobile generators to temporarily meed growing load requirements and provide supplemental reactive power to support voltage sags within the LIC Network.

4. After the event, Con Edison took action to increase the number of LIC network feeders, accelerated planning for a new substation, and acquired an additional emergency generator.[20]

D. Con Edison was imprudent in failing to maintain the transformers in the Long Island City network.

1. Con Edison did not promptly replace failed transformers in the vicinity of the unexplained secondary system fire that caused the first feeder outages on July 17, 2006.

2. The unreplaced transformers created additional stress in certain load pockets within the LIC Network and the overloads caused by the unreplaced transformers played a role in subsequent outage events.

E. Con Edison was imprudent in failing to replace network protection switches that were

F. Con Edison was imprudent in failing to implement changes and practices demonstrated as necessary after various training exercises and drills.

G. Con Edison was imprudent in not having adequate plans for dispatching emergency crews that could address and repair secondary system failures.

H. Con Edison was imprudent in failing to use adequate arc-proofing and flame retardant in the Long Island City network.

I. Con Edison was imprudent in failing to replace paper insulated lead cable and ray-chem stop-joints in the Long Island City network.

J. The Company was imprudent in not adequately addressing manhole congestion which extended the outage and reflects the inadequate maintenance which gave rise to the outage.

L. Con Edison was imprudent in using overcapacity fuses to protect Long Island City network transformers.

M. Con Edison was imprudent in failing to study and adopt a recommendation to split the Long Island City network, especially after the onset of significant levels of increased load.

1. Feeders from the North Queens substation also supply power to major electric generation stations, a transmission line cooling station, La Guardia Airport, Rikers Island, a waste waster treatment plant, railroad

risk.[21]

N. Con Edison was imprudent in failing to comply with all of the 44 recommendations made by the Commission, Staff and the Attorney General in the investigation into the 1999 blackout in Washington Heights, and that failure contributed to the July outages.

3. Ratepayers should be held harmless for the costs incurred by Con Edison due to its imprudence.

4. Con Edison was imprudent in failing to have available reasonable emergency preparedness plans and protocols which contributed to the length and/or cost of the July outages.

5. Con Edison failed to take reasonable steps to reduce load before and/or during the July outage and such failure contributed to the existence and duration of the outage.

1. Con Edison did not take adequate measures to encourage all customers to reduce usage during the hot weather.
2. Con Edison lacked a reasonable plan for achieving prompt voluntary load reductions after the second feeder contingency.
3. Con Edison lacked a reasonable plan for achieving prompt mandatory load reductions when the LIC Network was functioning at its second contingency reliability limit.

A. Con Edison imprudently failed to recognize which and how many customers were

addition to lowering voltage by 8% on July 17, "[L]ess than 2000 customers outages have been reported throughout the period from 07-17-06 to 07-20-06 (present)."[22]

2. In a final report to DOE, Con Edison reported that approximately 25,000 customers were affected.[23]

B. Con Edison imprudently failed to communicate with customers, public officials, and the public at large regarding the nature and status of the outage, particularly regarding requests for customers to reduce loads.

C. Con Edison's imprudence lead to expenses and capital expenditures which should be borne by shareholders rather than ratepayers.

6. Con Edison was imprudent in using outside contract labor to perform work during the outage. As a result, the outage was extended and rendered more expensive.

7. Con Edison was imprudent in allowing mutual assistance workers to perform underground repairs with no requirement for following Con Edison's policies, procedures and specifications.

8. Con Edison was imprudent in allowing inadequate reactive power supply prior to the secondary cable fire and in failing to correct reactive power deficiencies and related voltage deficiencies prior to the onset of the fire.

New York City customers from upstate was limited due to transmission line outages, including the outage of a Con Edison transmission line from Westchester to Queens, number 72.[24] Line72 was not repaired until the last day of the LIC Network event, July 25. This outage made Con Edison more dependent upon local generation for both energy (MW) and reactive power (MVAR).

2. FERC[25] and NYISO[26] official s testified to Congress on July 12, 2006,

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[24] See Con Edison Response to PULP IR # 58 (transmission line outages)

[25] FERC Chairman Kelliher in his testimony on July 12, 2006 before the Committee on Government Reform, Subcommittee on Energy and Resources, United States House of Representatives, stated:

> "During the last two weeks, two of four major transmission lines into New York City from upstate New York have failed. They will be for some time [sic]. Our Division of Reliability is consulting closely with the affected transmission owner to ensure that the outages have no reliability effects. Nonetheless, the loss of these two lines means that *New York City as well as Long Island will be tested during any periods of sustained hot weather.*" (*Emphasis added*).

The Kelliher testimony is available at http://www.ferc.gov/EventCalendar/Files/20060712145318-kelliher-test-07-12-06.pdf

[26] NYISO CEO Mark Lynch in his testimony on July 12, 2006 before the Committee on Government Reform, Subcommittee on Energy and Resources, United States House of Representatives, stated:

> It is important to note that, notwithstanding an overall positive outlook for the summer, recent unplanned outages on two major subterranean transmission cables into New York City occurred following the issuance of the Summer Assessment. These outages, which are expected to continue until early to mid-August, have added to the challenges of dealing with summer demand in New York City. The NYISO has worked with Con Edison, the local utility that owns the cables, to implement plans to address this situation

five days before the LIC Network event, that New York City was at increased risk of load shedding in the event of further outages and impending hot weather.

3. Increased air conditioning load in hot weather increases reactive power requirements.

3. The LIC network event occurred in very hot weather, and began approximately one half hour after two power plants tripped offline.[27]

4. Although there may have been sufficient energy (MW), Con Edison has not demonstrated that it had sufficient reactive power (MVARs) at all times prior to and during the event.

5. A large number of LIC network RMS sensors (193) showed slightly lowered voltage in the secondary system at 3:25 PM, just after power plant outages.

6. Voltage drops and over heating can be symptoms of reactive power deficiency.

7. Prior to the outage, Con Edison had removed two transformers from the

the area where the unexplained fire started, and this overload situation existed at the time the power plants tripped, when there was an additional, brief generalized voltage decline measured at RMS sensors throughout the LIC Network.

8. Con Edison has not provided detailed minute by minute information regarding load and MVARs and voltage for the hour preceding the unexplained secondary fire at 3:50 PM on July 17, 2007.

9. Con Edison does not measure reactive power load and supply within its LIC network and does not provide for additional supply of reactive power within the LIC Network.[28]

10. Con Edison assumes that total MVAR supply flowing into the LIC network at the substation equals total MVAR demand in the entire LIC Network.[29]

11. Subsequent to the outage, FERC issued a NOPR which proposed that distribution companies measure reactive power within their systems and obtain sufficient supply.

generator capable of providing supplemental reactive power within the LIC Network, for "research" purposes.[30]

13. Prior to the time of the fire that led to the first feeder failure on July 17, 2006, there were sustained low voltage readings in some areas of the LIC Network, and a widespread slight dip in voltage at approximately 3:25 PM, at the same time as a power plant outage.[31]

4. Con Edison has not provided detailed load data for the LIC Network for the period 15:00 - 16:00 on July 17, 2006.[32]

5. Con Edison has not explained an apparent abrupt reduction in New York City load at approximately 3:25 PM on July 17, 2006.[33]

6. Con Edison prepared no report or study of pre-outage voltage spikes or low voltage conditions in the LIC network, or any parts of the LIC network.[34] Con Edison's "Comprehensive" report mentions anecdotal customer reports of low voltage and the generalized 8% reduction

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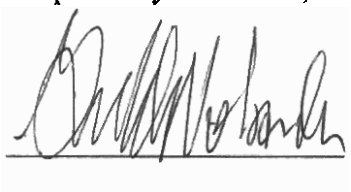
[30] See Con Edison Revised Response to PULP IR # 35 (mobile 1.5 MW generator with reactive power production capability).

made after the fifth contingency, but contains no analysis of RMS voltage data prior to or during the outage.

WHEREFORE, it is respectfully requested that Con Edison be required to demonstrate, at a hearing, its prudence with respect to the foregoing matters.

July 10, 2007

Respectfully submitted,



Gerald Norlander
Public Utility Law Project
194 Washington Avenue, Suite 420
Albany, NY 12210
(518) 449-3375

Appendix

Con Edison Responses to PULP IR #48 and PULP IR #56

Con Edison Response to PULP IR # 16 (submetered customers)

Con Edison Response to PULP IR # 31 (SC8/12 redistribution customers).

Con Edison Response to PULP IR # 50 ("the Company cannot provide the number of the persons who require Life sustaining Equipment")

Con Edison Response to PULP IR # 14, 15, and 18 (low income rate customers)

Con Edison Response to PULP IR # 32 (operation at tenth contingency).

Con Edison Response to PULP IR # 41 (customer low voltage complaints).

Con Edison response to PULP IR # 60 (sampling and archiving of RMS data)

Con Edison Responses to PULP IR #7 (NYISO Request) and PULP IR # 17 (Reliability Design)

Con Edison Response to PULP IR # 20 (notification of Staff)

Con Edison Response to PULP IR #26 (attempted communications with Astoria generators).

Con Edison Response to PULP IR # 19 (LIC multiple contingency history)

Con Edison Response to PULP IR #35 (emergency generator to supply reactive power, etc).

Con Edison Response to PULP IR #78 (erroneous voltage reading).

Con Edison Response to PULP IR #89 (Con Edison letter to FERC).

Con Edison Response to PULP IR #46 (2000 customer outages reported to DOE).

Con Edison Response to PULP IR #52 (25,000 customers affected in final report).

Con Edison Response to PULP IR #72 (power plant outages).

Con Edison Response to PULP IR #73 (hourly load given instead of 5 minute load report)

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP2
Date of Response: 09/06/2006

Question No. :7
Please provide copies of all documents, correspondence, email communications, etc. provided by Con Edison to the New York Independent System Operator (ôNYISOö) regarding the Queens outage which began July 17, 2006. Please consider this a continuing request.

Response:

At 9:10 am on Tuesday, July 18th, the Company requested that the NYISO institute EDRP/SCR for the in-city load zone (J) to reduce load in the Long Island City network.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP6
Date of Response: 09/19/2006

Question No. :14
On August 3, 2006, at the request of Consolidated Edison Company of New York, Inc. ("Con Edison" or "Company"), the Public Service Commission issued an Order in this proceeding which waived certain tariffs of the Company regarding compensation for food spoilage caused by the July 17, 2006 outage. More than one month has passed since that Order was issued and effective. (1) With respect to the outage which is the subject of this investigation, how many Con Edison customers taking electric service pursuant to the Con Edison low income reduced customer charge program requested compensation for food spoiled as a result of the outage? (2) With respect to the outage which is the subject of this investigation, how many Con Edison customers taking electric service pursuant to the Con Edison low income reduced customer charge program received compensation for food spoiled as a result of the outage? (3) With respect to the response to #14.2, how many of the customers taking electric service pursuant to the Con Edison low income reduced customer charge program who received compensation for food spoiled as a result of the outage were awarded the full amount of their requested reimbursement? (4) With respect to the outage which is the subject of this investigation, what was the average compensation paid by the Company to Con Edison customers taking electric service pursuant to the Con Edison low income reduced customer charge program who received compensation for food spoiled as a result of the outage?

Response:

The Company does not separately identify requests for compensation by customers who receive reduced customer charges under the low income program.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP6
Date of Response: 09/19/2006

Question No. :15
On August 3, 2006, at the request of Consolidated Edison Company of New York, Inc. ("Con Edison" or "Company"), the Public Service Commission issued an Order in this proceeding which waived certain tariffs of the Company regarding compensation for food spoilage caused by the July 17, 2006 outage. More than one month has passed since that Order was issued and effective. (1) With respect to the outage which is the subject of this investigation, how many Con Edison residential customers requested compensation for food spoiled as a result of the outage? (2) With respect to the outage which is the subject of this investigation, how many Con Edison residential customers taking electric service pursuant to the Con Edison low income reduced customer charge program received compensation for food spoiled as a result of the outage? (3) With respect to the response to #14.2, how many of the residential customers taking electric service pursuant to the Con Edison low income reduced customer charge program who received compensation for food spoiled as a result of the outage were awarded the full amount of their requested reimbursement? (4) With respect to the outage which is the subject of this investigation, what was the average compensation paid by the Company to Con Edison residential customers taking electric service pursuant to the Con Edison low income reduced customer charge program who received compensation for food spoiled as a result of the outage?

Response:

1) Approximately 32,000 residential customers served under SC 1 and SC 7 requested compensation for food spoilage as of September 16, 2006.

2-3) See response to PULP 14.

4) See response to PULP 14. We would note however that all residential customers

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP6
Date of Response: 09/19/2006

Question No. :16
(1) For the outage which is the subject of this investigation and proceeding, please list by United States Postal Service ZIP code all the geographic areas affected by the outage between July 17, 2006 and the return of service to all affected areas. (2) For each United States Postal Service ZIP code listed in the response to IR # 16.1, please indicate the total number of residential and/or small commercial electric customers affected by the outage. (3) For each United States Postal Service ZIP code listed in the response to IR # 16.1, please indicate the total number of residential electric customers taking service pursuant to Con Edison's low income reduced customer charge program affected by the outage. (4) For each United States Postal Service ZIP code listed in the response to IR 16.1, please indicate the number (or estimate the number) of residential households receiving electric service from Con Edison through submetered electric service approved by the Public Service Commission pursuant to 16 NYCRR Part 96. (5) For each response to IR # 16.4, please indicate the number (or estimate the number) of residential households receiving electric service from Con Edison through submetered electric service approved by the Public Service Commission pursuant to 16 NYCRR Part 96 who have a household member(s) with medical emergencies and/or life sustaining equipment.

Response:

1) See response to Staff 113 and 117.
2) We can provide the total number of customers by zip code but we cannot ascertain how many customers were actually affected by the outage.
3) See response to 2 above.
4) We do not have an accurate number of customers receiving sub-metered electric service.
5) See response to 4 above.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP6
Date of Response: 09/19/2006

Question No. :17
(1) Please provide a description of the reliability design utilized by the Consolidated Edison Company of New York, Inc. for the Queens electric distribution system (Long Island City Network) affected by the outage commencing July 17, 2006. (2) In the initial Consolidated Edison Company of New York, Inc. Report to the Public Service Commission on Planning for the Safe and Reliable Operation of the Electric Distribution System and the Long Island City Network dated August 2, 2006, the Company indicated on page 3 that your network systems utilize a "secondary contingency" design. Please describe the nature of this design and exactly how the design is intended to operate. (3) On page 1 of the Report noted in IR # 17.2, Con Edison indicated that "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...." Why did the Long Island City Network not close down when the third feeder failed" (3a) Why did Con Edison wait until 10 feeders had failed to shut down the system? (3b) Please provide any reports or analyses, either internal to the Company or relied upon by the Company, demonstrating the adequacy of this "secondary contingency" design for a system of 22 feeders. (4) Please provide any reports or analyses, either internal to the Company or relied upon by the Company, addressing the issue of the time required, subsequent to the completions of repairs to the system, to restore the Long Island City Network in the event of an outage similar to the outage of July 17, 2006. (5) Please provide any reports or analyses, either internal to the Company or relied upon by the Company, addressing the issue of whether the Long Island City Network should be (or should have been) two or more smaller networks.

Response:

1). The Long Island City network is served by an underground secondary network system. A Secondary network is designed such that multiple paths for the 120/208-voltage electricity are available to any customer. This design provides for a high degree

of maintaining all feeders in service at all times. When feeders do fail, they are repaired and restored to service as expeditiously as possible. However, occasions with more than two feeders failing does not necessitate the network be taken out of service. The event can be managed by monitoring demands on equipment (such as transformers), the remaining in service feeders, voltage reduction efforts and curtailment of electric usage in the area. These efforts allow the remaining feeders and equipment to operate until the failed feeders are restored to service.

3). While the Con Edison system is designed to allow for the loss of any two primary feeders at forecasted peak load, it is not designed to automatically shutdown if three or more feeders fail. See response to 2 above.

3.1) Con Edison did not shut down the LIC network.

3.2) We do not have such reports or analysis.

4). The question is unclear however the Company does not believe it has any such reports or analysis to respond to this question.

5). See response to Staff 147.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP7
Date of Response: 11/15/2006

Question No. :18

18.1 With respect to the Long Island City Network affected by the outage commencing July 17, 2006, please indicate the total number of customers taking electric service pursuant to the Con Edison low income reduced customer charge. 18.2 The Con Edison reply to PULP IR # 16(2) stated: "We can provide the total number of customers by zip code but we cannot ascertain how many customers were actually affected by the outage." Accordingly, for each United States Postal Service ZIP code indicated by Con Edison response to Staff 113 and 117, as referenced in Con Edison's response to PULP IR # 16(1), please indicate the total number of residential and/or small commercial electric customers. 18.3 The Con Edison response to PULP IR # 15(1) stated: "Approximately 32,000 residential customers served under SC 1 and SC 7 requested compensation for food spoilage as of September 16, 2006." 18.3.1 Since September 16, 2006, how many additional Con Edison customers, served under SC 1 and SC 7, have requested and received compensation for food spoilage? 18.3.2 How many of the approximately 32,000 plus residential customers served under SC 1 and SC 7 who have requested and received compensation for food spoilage also received a pro rate reduction of the customer charge? 18.3.3 How many of the approximately 32,000 plus residential customers served under SC 1 and SC 7 who have requested and received compensation for food spoilage also received pro rate customer credit for loss of service? 18.3.4 How many of the approximately 32,000 plus residential customers served under SC 1 and SC 7 who have requested and received compensation for food spoilage, a pro rata reduction of the customer charge, or pro rate customer credit for loss of service were also classified as eligible for and receiving service pursuant to Con Edison's low income reduced customer charge program 18.3.4.a If the Company is unable to provide a response to IR #18.3.4, please explain why Con Edison is unable to identify customer-recipients of the Company's low income reduced customer charge program.

18.3.2 We have no reason to believe that any customer requesting and receiving compensation who is a direct customer of Con Edison did not receive the customer charge reduction.

18.3.3 See 18.3.2.

18.3.4 The requested information is not readily available. The Company is not obligated to conduct the analysis required to provide a response.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP7
Date of Response: 10/11/2006

Question No. :19

On pages 3-1 and 3-15 of the Company's August 2, 2006, Initial Report on the Power Outages in Northwest Queens in July 2006, the first event (1Q17 deenergizing) occurred on July 17 at 15:50 19.1 Why was this event selected as the start of the time line? 19.2 Were there any other feeder outages or contingencies in the Northwest Queens network in the 30 days preceding the July 17 at 15:50? 19.3 If the answer to IR # 19.2 is yes, please provide a summary description of each feeder outage or contingency, similar to the summary descriptions contained in the August 2, 2006 report, including the date, time, and number of the feeder. 19.4 If the answer to IR #19.2 is yes, please provide a "Long Island City Network Contingency Level" chart covering the thirty days preceding the feeder outage which occurred at 15:50 on July 17, 2006, in a format similar to the format of Chart 6 at page 3-39 of the Company's August 2, 2006 Initial Report on the Power Outages in Northwest Queens.

Response:

1) 1Q17 was the first feeder to go out of service in the LIC network during the July heat wave.
2) Yes

3-4) See Attached

Feeder	Date/Time Out	Date/Time In	Contingency	Outage Type
1Q01*	6/16/2006 6:28	6/17/2006 0:18	1	Schedule
1Q01*	6/16/2006 6:28	6/17/2006 0:18		Schedule
1Q09	6/16/2006 21:01	6/18/2006 2:43	2	Open auto
1Q09	6/16/2006 21:01	6/18/2006 2:43	1	Open Auto
1Q20	6/20/2006 18:36	6/21/2006 11:41	1	Off on Emergency
1Q12	6/21/2006 19:50	6/22/2006 4:19	1	Off on Emergency
1Q11*	6/23/2006 19:24	6/25/2006 3:05	1	Schedule
1Q11*	6/23/2006 19:24	6/25/2006 3:05		Schedule
1Q09	6/24/2006 11:34	6/25/2006 4:35	2	Off on Emergency
1Q11*	6/23/2006 19:24	6/25/2006 3:05		Schedule
1Q09	6/24/2006 11:34	6/25/2006 4:35		Off on Emergency
1Q18	6/24/2006 14:42	6/24/2006 22:25	3	Open auto
1Q11*	6/23/2006 19:24	6/25/2006 3:05		Schedule
1Q09	6/24/2006 11:34	6/25/2006 4:35	2	Off on Emergency
1Q11*	6/23/2006 19:24	6/25/2006 3:05		Schedule
1Q09	6/24/2006 11:34	6/25/2006 4:35		Off on Emergency
1Q18	6/24/2006 22:26	6/26/2006 2:17	3	CIOA
1Q09	6/24/2006 11:34	6/25/2006 4:35		Off on Emergency
1Q18	6/24/2006 22:26	6/26/2006 2:17	2	CIOA
1Q09	6/24/2006 11:34	6/25/2006 4:35		Off on Emergency
1Q18	6/24/2006 22:26	6/26/2006 2:17		CIOA
1Q11	6/25/2006 3:07	6/26/2006 1:16	3	CIOA
1Q18	6/24/2006 22:26	6/26/2006 2:17		CIOA
1Q11	6/25/2006 3:07	6/26/2006 1:16	2	CIOA
1Q18	6/24/2006 22:26	6/26/2006 2:17	1	CIOA
1Q01*	6/29/2006 21:44	6/30/2006 10:21	1	Schedule

1Q13*	7/8/2006 0:50	7/9/2006 4:54	2	Schedule
1Q09*	7/7/2006 23:54	7/10/2006 2:42		Schedule
1Q13*	7/8/2006 0:50	7/9/2006 4:54		Schedule
1Q19*	7/8/2006 1:24	7/9/2006 6:13	3	Schedule
1Q09*	7/7/2006 23:54	7/10/2006 2:42		Schedule
1Q19*	7/8/2006 1:24	7/9/2006 6:13	2	Schedule
1Q09*	7/7/2006 23:54	7/10/2006 2:42	1	Schedule
1Q09*	7/7/2006 23:54	7/10/2006 2:42		Schedule
1Q19	7/9/2006 6:15	7/10/2006 12:21	2	CIOA
1Q19	7/9/2006 6:15	7/10/2006 12:21	1	CIOA
1Q19	7/10/2006 12:35	7/11/2006 17:08	1	Open Auto
1Q17	7/11/2006 22:18	7/12/2006 15:36	1	Open Auto
1Q22	7/13/2006 19:12	7/14/2006 1:52	1	Off on Emergency

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP7
Date of Response: 10/11/2006

Question No. :20
At Appendix page A-2 of Con Edison's Section 105 Report the first communication to DPS staff on July 17 regarding Queens listed is an email at 20:37 regarding a fifth contingency and 8% voltage reduction. 20. Why was no notice given to DPS regarding the events beginning at 15:50 on July 17, listed in Con Edison's 8/2/06 report to the Mayor at page 3-1.

Response:

As noted in the Section 105 report, at pages 6-1 through 6-6, the Company and Staff were communicating via various different methods throughout the event, including Monday, July 17. The DECP spoke with Staff over the telephone and the second contingency in LIC may have been mentioned in these phone conversations. The DECP does not generally notify Staff when 1 or 2 feeders in a network are out of service unless requested to do so by Staff. In addition, Staff received the 2 hour reports from CNG as provided in response to Staff 56, which provides, among other items, feeder outage information.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP9
Date of Response: 10/11/2006

Question No. :26
Page A-8 of the Company's September 25, 2006 Part 105 Compliance Filing by Consolidated Edison Company of New York, Inc. indicated, in part, in setting out a timeline for Monday, July 17, 2006, as follows: 20:48 – Called Astoria Energy, LLC to request shedding of nonessential load. No answer. 21:18 – Called Astoria Generating Company to request shedding of nonessential load. No answer. 26.1 Are Astoria Energy, LLC and Astoria Generating Company different entities or are they the same? 26.2 With respect to Astoria Energy LLC (and Astoria Generating Company if they are not the same entity), how much load would this customer shed if it could shed load? 26.3 With respect to Astoria Energy LLC (and Astoria Generating Company if they are not the same entity), did this customer eventually shed load and, if so, how much load did the customer shed? 26.4 With respect to Astoria Energy LLC (and Astoria Generating Company if they are not the sam4e entity), did the Company request nonessential load shedding pursuant to an agreement with the customer? 26.4.1 If said agreement is in writing, please provide a copy of the agreement, appropriately redacted, if necessary. 26.4.2 If said agreement is verbal, please provide a narrative containing the terms and requirements, of said agreement.

Response:

26.1 Astoria Energy, LLC and the Astoria Generating Company are different entities.

26.2 One is 186KW and the other is approximately 24KW.

26.3 We do not know.

26.4 There is no agreement in place. The request was made for voluntary load reduction.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP10
Date of Response: 11/02/2006

Question No. :31
Consolidated Edison Company of New York, Inc. Has indicated in a prior response that there are 45 "multiple dwelling redistribution SC8/12" customers in the Long Island City network. Approximately how many households are served by those 45 customers?

Response:

The 45 SC8/12 accounts serve 12,057 dwelling units.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP11
Date of Response: 11/07/2006

Question No. :32
On page 4-20 of The Consolidated Edison Company of New York, Inc.'s Comprehensive Report on the Power Outages in Northwest Queens in July 2006, issued on October 12, 2006, the Company stated: Due to concerns about feeder and transformer loading, a complete network shutdown was considered but deemed not necessary at the time. The operators concluded that if the network went into an eleventh contingency, or if they did not get at least one additional feeder restored to service, the network might be shutdown. An analysis was performed and it was determined that if the network was shut down the operators would need a minimum of 18 energized feeders to restore the network. However, the contingency level never exceeded ten and one of the two feeders (IQ01) that was pending restoration was successfully restored to service thus reducing the loads on the in-service feeders and alleviating the concerns operators had during the tenth contingency. Please explain what was meant by "concerns about feeder and transformer loading" as set forth in the paragraph set forth above from the Comprehensive Report. Would the Company have shut down the network if the "eleventh contingency" noted above had occurred? 32.3. Would the Company have shut down the network if it had remained at the tenth contingency? 32.4. If the system had remained at the tenth contingency level (i.e., the eleventh contingency did not occur and the IQ01 feeder had not be restored to service) what items, measurements, or indicia would the Company have monitored and what standards would the Company have utilized in order to determine whether and when to shut down the system?

Response:

32.1 As the contingency level in Long Island City network escalated from a sixth contingency to a tenth contingency on July 17th from approximately 20:00 to 20:40, operators observed that the loading on various network feeders was approaching their emergency ratings. Operators also observed high loads on some network transformers.

32.3-32.4 If the network had remained in a tenth contingency operators would have continued to evaluate feeder loads, transformer loads, and secondary system events to determine if the network could be safely maintained in service or should be shutdown.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP11
Date of Response: 11/07/2006

Question No. :34
Please confirm that the attached documents were provided by Con Edison counsel by letter dated July 25, 2000 as part of Con Edison's response to PULP IR # 8 in Case 96-E-0897, which had requested reliability performance data including SAIFI (interruption rate per 1,000 customers served) and CAIDI (average outage duration per customer served) data. 34.2. Please confirm that these reports show the following: A. In 1995, Con Edison attained PSC both SAIFI and CAIDI standards in the Queens operating area. B. In 1996, 1997, 1998 and 1999 Con Edison failed to attain CAIDI standards in the Queens operating area. C. In 1996, Con Edison failed to attain SAIFI standards in the Queens operating area. D. In 1999, Con Edison failed to attain SAIFI standards for non-network feeders.

Response:

The documents provided speak for themselves.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP12
Date of Response: 11/07/2006

Question No. :35
An October 19, 2006 Press Release issued by Distributed Energy Systems Corp. states that its subsidiary, Northern Power, entered into a contract with Con Edison to provide a new mobile 1.5MW generator. This equipment is described as "an ideal solution for utilities who need short term supplemental or emergency power generation. Designed to support distribution systems and other portions of the grid, the MPI1800 can help utilities avoid expensive substation expansion, provide greater power quality, and even be implemented during planned maintenance, or in advance of grid expansion to serve new customers before the establishment of permanent service." The Press Release states that this "system is capable of providing supplemental reactive power to support voltage sags" and that Con Edison will ensure that the final product supports their specific needs...." The Press Release is at 35. Please provide a copy of the following: 1. The contract mentioned in the press release. 2. Any Con Edison request for proposals or bids for this equipment. 3. Engineering reports identifying Con Edison's specific needs for this equipment. 4. Engineering reports discussing voltage sags and any need for mobile supplemental reactive power to support Consolidated Edison's distribution system or other portions of the grid.

Response:

35.1. See attached.

2. There were no RFPs for this project.

3. This is part of a research and development project.

4. We are not aware of any.

FILENAME: PMS-PO #627308

PURCHASE ORDER PAGE 1

CURRENT DATE 08/28/06

PURCHASE ORDER NUMBER 627308
PURCHASE ORDER DATE 08/15/06
PURCHASE REQ. NUMBER 019-6-0008
VENDOR CODE N7672
AUTHORIZED DOLLARS
FUNDING ORDER
ACCOUNT NUMBER 10011
STATISTICS 1/2

TO: NORTHERN POWER
182 MAD RIVER PARK
WAITSFIELD VT 05673

SHIP TO:
ASTORIA T&S 136
31-01 20TH AVENUE 627308
L.I.C. NY 11105
BOB ANDERSON

MAIL ORIGINAL INVOICES TO
CON EDISON ACCOUNTS PAYABLE
P.O. BOX 799
COOPER STATION
NEW YORK N.Y. 10276
(212) 460-3510

FOR INVOICE STATUS, CLICK ON "VENDOR INFORMATION" AT WWW.CONED.COM

BUYER: KENNETH C. AFONSO 212-460-4362 85690

ITEM	QUANTITY	DELIVERY DATE	UNIT PRICE	UNIT	INSP CODE
1	1	03/31/07	$0.00000	EA	

THIS PURCHASE ORDER AUTHORIZES NORTHERN POWER ("SELLER") TO FURNISH AND DELIVER A TWO TRAILER CONFIGURATION FOR A DC LINK UTILIZING A XQ1500 MOBILE GENERATOR AND MPI 1800 IN ACCORDANCE WITH THE SCOPE OF WORK, DATED AUGUST 21, 2006, WHICH IS INCORPORATED HEREIN BY REFERENCE.

THE EQUIPMENT AND SERVICES PROVIDED BY SELLER SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, THE FOLLOWING:

- ONE MOBILE POWER INTERFACE (MPI 1800) INCLUDING TWO (2) POWERDISTRIBUTOR 900KVA CONVERTERS (PD900'S), SWITCHGEAR, 15 KV CIRCUIT BREAKER, RELAYS, BATTERY CHARGER, HVAC, 13.8 KV TRANSFORMER, AND SMARTVIEW CONTROLS IN ONE MOBILE TRAILER
- ONE CATEPILLAR XQ1500 MOBILE GENERATOR
- COMPREHENSIVE ONE (1) YEAR MAINTENANCE PLAN AND WARRANTY FOR BOTH HE MPI 1800 AND XQ1500 GENERATOR
- FOUR (4) SETS OF ALL REQUIRED DOCUMENTS, DRAWINGS, AND SCHEMATIC DIAGRAMS.
- ALL ENGINEERING AND PROJECT MANAGEMENT REQUIRED TO SUPPORT EQUIPMENT DESIGN, TECHNINAL COORDINATION, DESIGN REVIEW, IN-HOUSE TESTING, AND FINAL ACCEPTANCE TESTING AT ITS BARRE, VERMONT FACILITY.
-ENGINEERING AND TECHNCIAL SUPPORT DURING THE FIELD VALIDATION PHASE OF THE PROJECT.

THE TOTAL CONTRACT PRICE FOR THE ENTIRE SCOPE OF WORK AS DETAILED HEREIN

PURCHASE ORDER NUMBER 627308 CURRENT DATE 08/28/06

ITEM	QUANTITY	DELIVERY DATE	UNIT PRICE	UNIT	INSP CODE

THE MPI 1800 WILL CONFORM TO THE EQUIPMENT SPECIFICATIONS INCLUDED IN THE SCOPE OF WORK REFERENCED ABOVE.

TOTAL NUMBER OF LINE ITEMS ARE 1

SHIPPING TERMS:
FOB SHIPPING POINT / FREIGHT COLLECT - SEE ROUTING GUIDE

PAYMENT TERMS:
PROGRESS PAYMENTS ***PAYMENT TO ABOVE VENDOR ONLY***

ADDITIONAL REMARKS

THIS PURCHASE ORDER AUTHORIZES NORTHERN POWER ("SELLER") TO PROVIDE A MOBILE, TWO TRAILER, DC LINK GENERALLY COMPRISED OF ONE MOBILE POWER INTERFACE (MPI 1800) AND ONE CATEPILLAR XQ1500 MOBILE GENERATOR AS DETAILED ABOVE.

SELLER SHALL DELIVER THE TWO TRAILERS TO CON EDISON FOR FIELD TESTING PURPOSES ON OR ABOUT MARCH 1, 2007. THE FINAL EQUIPMENT DELIVERY SCHEDULE SHALL BE MUTUALLY DETERMINED BETWEEN CON EDISON AND SELLER. THE SCHEDULE FOR FIELD TESTING SHALL SIMILARLY BE MUTUALLY DEVELOPED BETWEEN SELLER AND CON EDISON.

THE TOTAL CONTRACT PRICE OF $ XX SHALL BE INVOICED TO CON EDISON IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

TEN PERCENT (10%) INVOICED UPON ACCEPTANCE OF PURCHASE ORDER BY SELLER

TEN PERCENT (10%) INVOICED UPON COMPLETION OF THE TECHNICAL COORDINATION MEETING

FIFTY-FIVE PERCENT (55%) INVOICED UPON COMPLETION OF THE PRELIMINARY DESIGN REVIEW

TEN PERCENT (10%) INVOICED UPON EXECUTION OF THE FINAL ACCEPTANCE TEST CERTIFICATE

TEN PERCENT (10%) INVOICED UPON EXECUTION OF THE COMMISSIONING CERTIFICATE

FIVE PERCENT (5%) INVOICED UPON COMPLETION OF THE FIELD VALIDATION

PURCHASE ORDER NUMBER 627308 CURRENT DATE 08/28/06

ADDITIONAL REMARKS

CON EDISON CORPORATE INTERNET SITE, WWW.CONED.COM. A LINK TO THE "PURCHASING ONLINE" FUNCTION IS CONTAINED IN THE QUICK LINKS WINDOW ON THE WEBSITE HOMEPAGE. THE CON EDISON STANDARD TERMS AND CONDITIONS INCORPORATED ABOVE ARE MODIFIED AS SHOWN IN EXHIBIT "G" OF THE SCOPE OF WORK, DATED AUGUST 21, 2006, INCORPORATED INTO THIS PURCHASE ORDER AS DETAILED ABOVE.

THIS CONTRACT IS SUBJECT TO APPENDIX A, REQUIRED CLAUSES AND CERTIFICATIONS, DATED JULY 2005, AND ANY APPLICABLE STANDARD TERMS AND CONDITIONS DOCUMENT WHICH INCORPORATES A DIFFERENT APPENDIX A IS HEREBY AMENDED TO INCORPORATE THE ABOVE-DESCRIBED APPENDIX A INSTEAD.

APPENDIX A CAN BE FOUND ON THE COMPANY'S WEBSITE.

GIFT POLICY: SELLER IS INFORMED THAT IT IS A STRICT CON EDISON POLICY THAT NEITHER EMPLOYEES OF CON EDISON NOR MEMBERS OF THEIR FAMILIES SHALL ACCEPT GIFTS FROM SELLERS OR OTHERS TRANSACTING OR SEEKING TO TRANSACT ANY BUSINESS WITH CON EDISON. THE OFFERING OR GIVING OF SUCH GIFTS BY SELLER, WHETHER OR NOT MADE WITH INTENT TO OBTAIN SPECIAL CONSIDERATION, SHALL BE DEEMED TO BE A MATERIAL BREACH OF CONTRACT ENTITLING CON EDISON TO CANCEL THE CONTRACT AND REMOVE SELLER FROM ITS LIST OF QUALIFIED BIDDERS IF IT ELECTS TO DO SO.

BY _____

FOR CON EDISON

TOTAL PAGES 3

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP14
Date of Response: 11/07/2006

Question No. :39
In the article "Reactive Load and Reserve Calculation in Real-Time Computer Control System," by Feinstein, J.; Tscherne, J.; and Koenig, M., published in Computer Applications in Power, Volume: 1 / Issue 3, IEEE Page number(s): 22-26, July 1988, the authors state: "Con Edison has about 3200 MVAR of shunt reactors distributed on the bulk transmission system and about 1,450 MVAR of shunt capacitors located at various distribution substations." 39.1 Please update the number of MVAR of shunt capacitors at the various distribution substations. 39.2 Please state whether there are shunt capacitors at the North Queens substation, and if so, the number of MVAR of shunt capacitors. 39.3 Please state the total amount of shunt capacitors in or available to the LIC network. 39.4 The attached 1988 article states that MVAR capacitors located at distribution substations "are switched in and out of service using a variety of switching equipment, only some of which is actually telemetered to SOCCS. The remaining switching devices are represented symbolically as "manual" devices, which must be updated by the operators to follow changing conditions in the power system." 39.4.1 Identify any MVAR capacitors in the North Queens substation or LIC network telemetered to SOCCS in July 2006. 39. 39.4.2. Identify any MVAR capacitors in the North Queens substation or LIC network that were not telemetered to SOCCS in July 2006. 39.5 Were the LIC network feeder outages in the week preceding the outage that began July 17, 2006, identified in PULP IR 38, related in any way to operation, charging, or discharging of any MVAR shunt capacitor banks? 39.6. Please provide Con Edison's projected MVAR load and actual MVAR loads for the LIC network for the period July 9, 2006 through July 21, 2006. 39.7. Does Con Edison maintain records of MVAR load on individual feeder cables?

Response:

Manhattan

Avenue "A"	60
Cherry St.	40
East 29th St.	60
East 36th St.	60
East 40th St. No. 1	60
East 40th St. No. 2	60
East 63rd St. No. 1	40
East 63rd St. No. 2	40
East 75th St.	60
Leonard St. No. 1	40
Leonard St. No. 2	40
Murray Hill	20
Seaport No. 1	60
Seaport No. 2	60
Sherman Creek	80
Trade Center No. 1	60
West 19th St.	60
West 42nd St. No .1	60
West 42nd St. No. 2	60
West 50th St.	60
West 65th St. No. 1	40
West 65th St. No. 2	40
West 110th St. No. 1	60
West 110th St. No. 2	60
Manhattan Total	**1280**

Bronx

Bruckner	60
East 179th Street	60
Hell Gate	80
Parkchester No. 1	60
Parkchester No. 2	40
Bronx Total	**300**

Brooklyn

Bensonhurst No. 1	90
Bensonhurst No. 2	90
Brownsville No. 1	90
Brownsville No. 2	90
Greenwood	90
Plymouth	90
Water Street	90
Brooklyn Total	**630**

Queens

Corona No. 1	90
Corona No. 2	90
Glendale	90
Jamaica	60
North Queens No. 1	90
Queens Total	**420**

Staten Island

Fox Hills	
Fresh Kills	
Wainwright	
Willowbrook	
Woodrow	40
Staten Island Total	**120**

Westchester

Buchanan	40
Cedar St.	40
Elmsford No. 2	60
Granite Hill	60
Grasslands	0
Harrison	60
Millwood West	20
Ossining West	20
Pleasantville	40
Washington St.	40
White Plains	60
Westchester Total	**440**

System Total	**3190**

PULP-39.2

There are 90 MVAR of capacitors (three 30-MVAR banks) available at the North Queens area substation.

PULP-39.3

The total amount of shunt capacitors in or available to the LIC network would be the same as total shunt capacitors at North Queens Area station. There are no capacitors installed in the LIC network.

PULP-39.4

PULP-39.4.1

All three 30-MVAR capacitor banks installed at North Queens substation (CAP1, CAP2 and CAP3) were telemetered to SOCCSX in July 2006. There are no capacitors installed in the LIC network.

PULP-39.4.2

As per answer to PULP-39.4.1, all three 30-MVAR capacitor banks installed at North Queens substation were telemetered to SOCCSX in July 2006. There are no capacitors installed in the LIC network.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP16
Date of Response: 11/14/2006

Question No. :41
Con Edison's October 12, 2006 "Comprehensive Report" at 3-13 indicates, regarding the status of the secondary system, that after the second contingency at 16:22 on July 17, 2006,"There were four customer reports of low voltage and two reports of flickering lights." 41.1 Why are all references to secondary system voltage in the "Secondary System Status" sections of Con Edison's "Comprehensive Report" limited to customer reports of low voltage? 41.2 During the period of time between the second contingency at 16:22 and the fifth contingency at 18:48, did Con Edison have any information from any source indicating low voltage in the secondary system, in addition to the customer reports mentioned in the "Comprehensive Report"? 41.3 For the periods covered in each "Secondary System Status" section of the "Sequence of Events" part of the Con Edison "Comprehensive Report" (Part 3) which mentions customer reports of low voltage, please provide any Company information regarding any low voltage obtained from sources other than customers

Response:

This question is very unclear. Customer low voltage complaints are indicators of localized pocket problems.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP17
Date of Response: 11/15/2006

Question No. :46
The U.S. Department of Energy, Energy Information Agency (EIA), Electric Power Monthly, Table B1 Report of "Major Disturbances and Unusual Occurrences Year-to-Date through July 2006" lists the Con Edison LIC network outage as having begun at 6:50 PM on July 17, and, under the heading "Type of Disturbance", the report states "Severe Weather/Public Appeals Made/Voltage Reduction." A copy of this EIA report is attached. 46.1. Did Con Edison report to EIA that the LIC network outage was due to "severe weather"? 46.2. Please provide a copy of Con Edison's reports to DOE/EIA regarding the Queens LIC Outage event, excluding reports already made a part of the record of this proceeding at the technical conference.

Response:

46.1 Yes.

46.2 See attached.

U.S. Department of Energy Energy Information Administration Form EIA-417 (2004)	*EMERGENCY INCIDENT AND DISTURBANCE REPORT*	Form Approved OMB No. 1901-0288 Approval Expires 08/31/05

NOTICE: The timely submission of Form EIA-417 by those required to report is mandatory under Section 13(b) of the Federal Energy Administration Act of 1974 (FEAA) (Public Law 93-275), as amended. Failure to respond may result in a penalty of not more than $2,750 per day for each civil violation, or a fine of not more than $5,000 per day for each criminal violation. The government may bring a civil action to prohibit reporting violations, which may result in a temporary restraining order or a preliminary or permanent injunction without bond. In such civil action, the court may also issue mandatory injunctions commanding any person to comply with these reporting requirements. **Title 18 U.S.C. 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.** A person is not required to respond to collection of information unless the form displays a valid OMB number. Data reported on Form EIA-417 in Schedule 1, lines 4, 5, 6, 7, and 8 are considered to be confidential. Schedule 2 is considered confidential. **All other data are not confidential.** (See form instructions for a full list of legal citations covering data collection authorization.)

RESPONSE DUE: Submit a completed Schedule 1 as an initial report within 60 minutes of the incident. A final report (completed copy of the Form EIA-417, Schedule 1 and 2) is due within 48 hours of the event. Electronic submission by facsimile or e-mail is the preferred method of notification.

SCHEDULE 1. -- EMERGENCY ALERT NOTICE

LINE NO.				
	ORGANIZATION FILLING			
1.	Alert Status (check one)	Preliminary Alert [x]	Update Notice [ ]	Final Report [ ]
2.	Organization Name	Consolidated Edison Co. of NY		
3.	Address of Principal Business Office	4 Irving Place New York, NY 10003		
	NAME OF OFFICIAL THAT NEEDS TO BE CONTACTED FOR FOLLOW-UP AND ANY ADDITIONAL INFORMATION			
4.	Name	[redacted]		
5.	Title	[redacted]		
6.	Telephone Number	[redacted]		
7.	FAX Number	[redacted]		
8.	E-mail Address	[redacted]		
	INCIDENT AND DISTURBANCE DATA			
9.	Geographic Area(s) Affected	Northwest Queens, New York The affected area is bounded by the East River on the west and north, the Brooklyn-Queens Expwy on the east and Newtown Creek on the south		Unknown at this time [ ]
10.	Date/Time Incident Began (mm-dd-yy/hh:mm) using 24-hour clock	07-17-06/18:50		
11.	Estimated Date/Time of Restoration (mm-dd-yy/ hh:mm) using 24-hour clock			Unknown at this time [x]
12.	Date/Time Incident Ended (mm-dd-yy/ hh:mm) using 24-hour clock	Still Ongoing		
13.	Did the incident/disturbance originate in your system/area? (check one response)	Yes [x]	No [ ]	Unknown [ ]
14.	Estimate of Amount of Demand Involved (megawatts)	N/A		Unknown at this time [ ]
15.	Estimate of Number of Customers Affected	Approx 114,500		Unknown at this time [ ]
16.	Internal Organizational Tracking Number			

17. Type of Emergency Check all that apply (a)		18. Cause of Incident Check if known or suspected (b)		19. Actions Taken Check all that apply (c)	
Major Transmission System Interruption	[ ]	Weather or Natural Disaster	[x]	Implemented a Warning, Alert, or Contingency Plan	[ ]
Major Generation Inadequacy	[ ]	Transmission Equipment	[ ]	Made Public Appeals	[x]

U.S. Department of Energy Energy Information Administration Form EIA-417 (2004)	*EMERGENCY INCIDENT AND DISTURBANCE REPORT*	Form Approved OMB No. 1901-0288 Approval Expires 08/31/05

SCHEDULE 2. -- NARRATIVE DESCRIPTION

Provide a description of the event and actions taken to resolve it. Include as appropriate, the cause of the incident/disturbance, equipment damaged, critical infrastructures interrupted and effects on other systems. If necessary, copy and attach additional sheets. Equivalent documents, containing this information can be supplied to meet the requirement; these include the NERC Disturbance Report and the voluntary National Critical Infrastructure Protection System Form. **Along with the filing of Schedule 2, an updated Schedule 1 needs to be filed. This is to be done no later than 48 hours after the event.**

20. Narrative:

At 18:50 hours on July 17th, 2006, 5 of 22 distribution feeders in the Long Island City network were out of service. Due to the weather and subsequent high loads, public appeals to reduce power usage in the Northwest area of Queens were made. The network was also placed on a reduced voltage of 8% as a means of Peak Load Voltage Optimization. Less than 2000 customer outages have been reported throughout the period from 07-17-06 to 07-20-06 (present). Public appeals to reduce electric power usage are still in effect. Repairs to the primary and secondary distribution system are in progress and the company's Corporate Emergency Response Center has been activated.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP18
Date of Response: 11/15/2006

Question No. :47
Slide 37 introduced by the Consolidated Edison Company of New York, Inc. during the October 26th-27th Technical Conference held at the New York City offices of the Public Service Commission (90 Church Street, New York, NY) and entitled "LIC Network Contingency Level Duration & Demand," juxtaposes graphs showing the number of feeder outages over time and total MW (megawatt) demand in the LIC network. 47.1. Does the graph of total MW in Slide 37 show peak MW during hourly or other time intervals or average MW during the interval? 47.1.1. If the time interval shown in Slide 37 reflects the average MW in each time interval, please provide a version of Slide 37 showing peak MW during each time interval. 47.2 Using peak MVAR (megavolt amperes reactive), please provide a chart similar to Slide 37 adding a line for MVAR demand to show total reactive power demand in the LIC network over the same time period covered by Slide 37. 47.3. Is reactive power flow in the LIC network measured on the high voltage side of the substation transformer? 47.4. Are reactive power flows measured at points within the LIC network? 47.5. Please provide data showing the power factor at the North Queens substation for the same time period as covered in Slide 37. 47.6. Please provide the maximum and minimum power factor readings within each hourly interval covered by the response to #47.5.

Response:

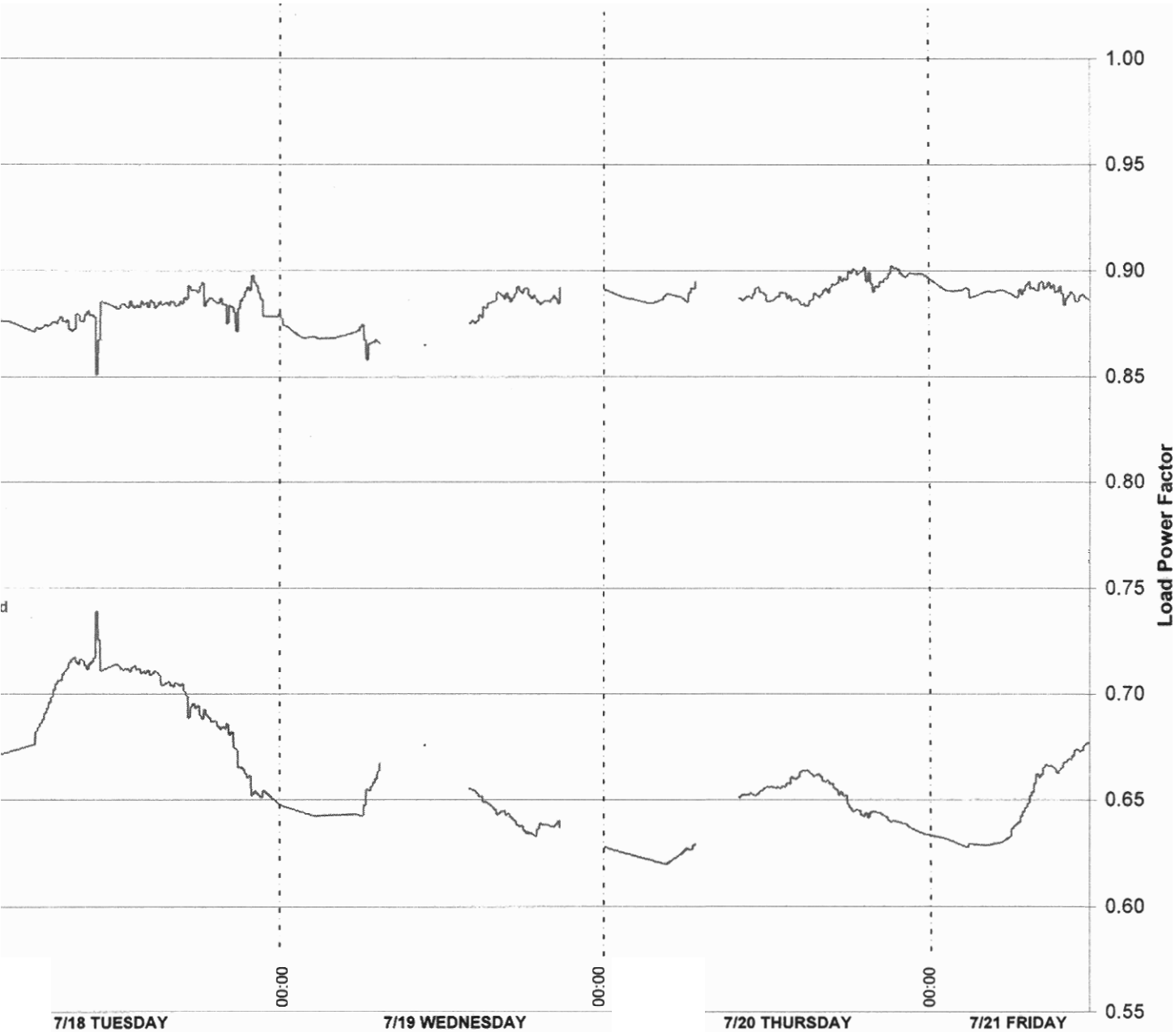
PULP-47.1 The graph does not show the peak or the average MWs. The graph was created using the instantaneous demand at one-minute intervals that were then held for 10-minute intervals in order to make the line aesthetically smooth. In addition, for time prior to the first contingency and after the restoration of all the feeders, the MW was held for one hour.

PULP-47.1.1. The graph did not reflect average MWs.

PULP-47.5 See 47.2.

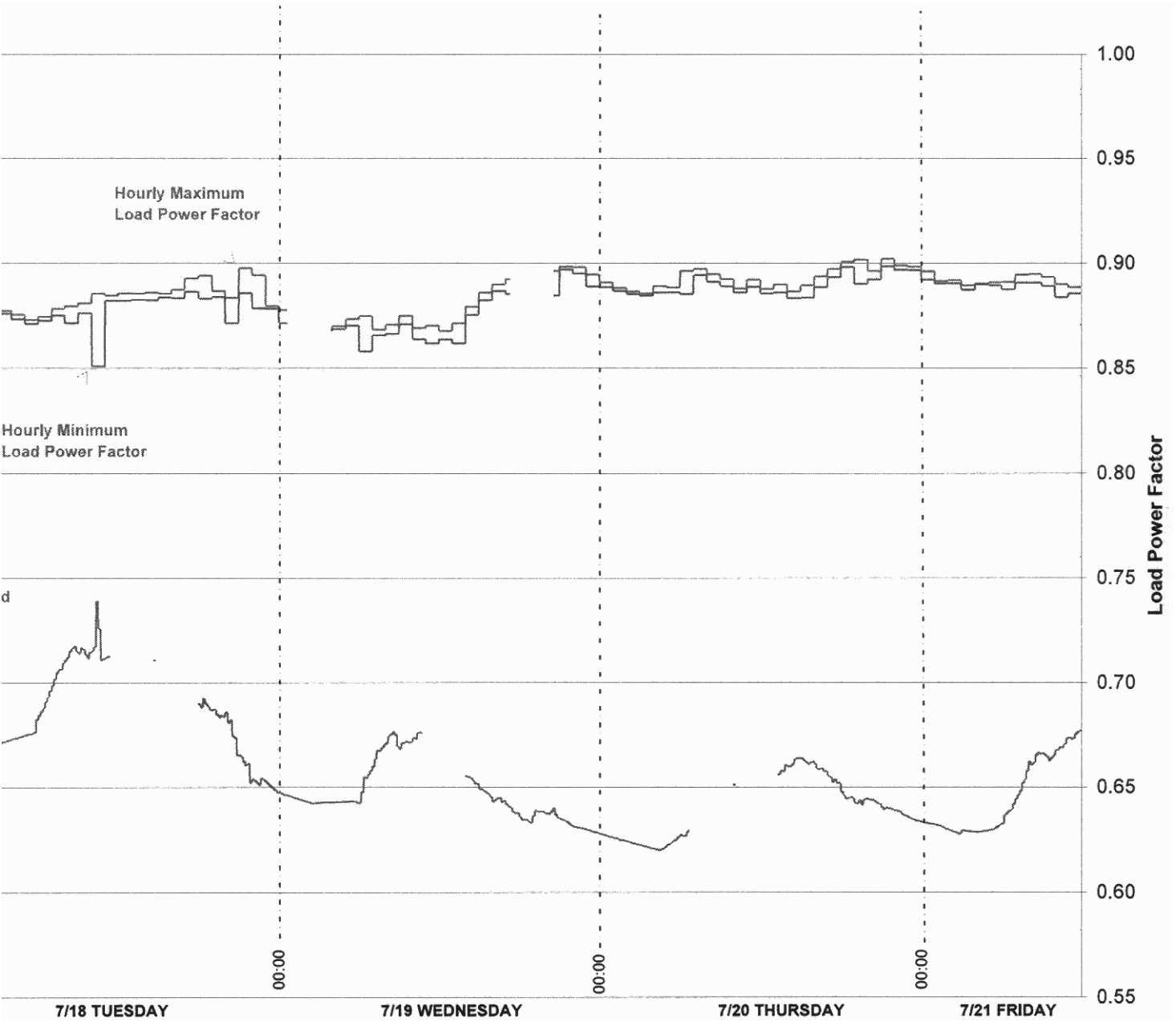
PULP-47.6 See attached.

LIC Network MVAR Demand & Load Power Factor



11/15/06 - LIC - PULP-47 MVAR-pf-Chart.xls

LIC Network MVAR Demand & Load Power Factor



11/15/06 - LIC - PULP-47 MVAR-pf-Chart.xls

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP18
Date of Response: 11/15/2006

Question No. :48
At the October 26th-27th Technical Conference held at the New York City offices of the Public Service Commission (90 Church Street, New York, NY), Consolidated Edison company of New York, Inc. mentioned that there was an "Auto WOLF" malfunction on July 12, 2006, the same day that federal and NYISO officials testified to a Congressional committee that New York City was at risk of load shedding and blackouts in hot weather. 48.1. Please provide a report or analysis of the July 12, 2006 "Auto WOLF" malfunction including an explanation as to why "Auto Wolf" stopped operating on July 12, 2006. 48.2. 48.2. How many times, during the twelve month period immediately preceeding July 12, 2006, did "Auto WOLF" malfunction and require that a "Manual WOLF" program be utilized? 48.3. Provide all documents regarding the July 12, 2006 malfunction of "Auto WOLF" and the progress of repair and restoration of the "AutoWOLF" program between July 12, 2006 and the time it was restored to operation. 48.4. When was "Auto WOLF" restored to operation? 48.5. Does the "Auto WOLF" load flow program take into account real time data on reactive power load and supply in the LIC network? 48.6. Does the "Manual WOLF" program used on Monday, July 17 take into account real time data on reactive power load and supply in the LIC network?

Response:

1. See response to Staff 259.

2. No log is maintained.

3. The Company objects to this question on the ground that it was overly broad.

4. See response to Staff 259.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP18
Date of Response: 11/14/2006

Question No. :50
Consolidated Edison Company of New York, Inc.'s response to PULP IR #31 indicates that the 45 "multiple dwelling redistribution SC8/12" customers in the Long Island City network "serve 12,057 dwelling units." 50.1. Please provide an estimate of the number of persons reside in these dwelling units. 50.2. How many persons in these 12,057 dwelling units require Life Support Equipment?

Response:

50.1 The Company does not have this information.
51.2 The Company cannot provide the number of the persons who require Life Sustaining Equipment.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP20
Date of Response: 12/08/2006

Question No. :52
In response to PULP IR #46.1 which asked: "Did Con Edison report to EIA that the LIC network outage was due to 'severe weather'"?, Consolidated Edison Company of New York, Inc. answered "Yes". and attached a copy of an "Emergency Incident and Disturbance Report" to EIA (Form EIA-417) a copy of which PULP has attached to this IR. In response to PULP IR #46.2 which requested: "Please provide a copy of Con Edison's reports to DOE/EIA regarding the Queens LIC Outage event, excluding reports already made a part of the record of this proceeding at the technical conference." Con Edison attached one copy of an "Emergency Incident and Disturbance Report" to EIA (Form EIA-417 Schedules 1 and 2) a copy of which PULP has attached to this IR. On pages 3-1 and 3-15 of the Company's August 2, 2006, Initial Report [to the Public Service Commission] on the Power Outages in Northwest Queens in July 2006, the first event (1Q17 deenergizing) occurred on July 17 at 15:50. 52.1 Schedule 1 of Form EIA-417, provided in response to PULP IR # 46.2, indicates that the event began on 07-17-06/18:50. Please explain the three (3) hour difference in the times of occurrence between the Company's August 2, 2006 Initial Report and the Form EIA-417 Report to the EIA. 52.2. How soon after the event began (07-17-06/18:50) was Schedule 1 of Form EIA-417, provided in response to PULP IR # 46.2, provided to the EIA? 52.3. When was Schedule 2 of Form EIA-417, provided in response to PULP IR # 46.2, submitted by Con Edison to the EIA? 52.4. Schedule 2 of Form EIA-417, provided in response to PULP IR # 46.2, states in the Narrative that "[l]ess that 2000 customer outages have been reported throughout the period from 07-17-06 to 07-20-06 (present)." Schedule 1 of Form EIA-417, provided in response to PULP IR # 46.2, states at line 15 that approximately 114,500 customers were affected by the incident. Please reconcile these two numbers. 52.5. The October, 2006 Energy Information Agency publication Electric Power Monthly at page 131 contains Table B.1 which indicates the estimated number of customers affected by the Con Edison 07-17-06 Queens/LIC outage/incident to be 25,000. A copy of Electric Power Monthly, page 131 is attached for your convenience. 52.5.1. Did Con Edison provide the Energy Information Agency with the estimate of 25,000 customers affected by the 07-17-06 Queens/LIC outage/incident

Response:

52.1. Form EIA-417 must be submitted to the Operations Center if one of the following apply:

1. Uncontrolled loss of 300 MW or more of firm system loads for more than 15 minutes from a single incident
2. Load shedding of 100 MW or more implemented under emergency operational policy
3. System-wide voltage reductions of 3 percent or more
4. **Public appeal to reduce the use of electricity for purposes of maintaining the continuity of the electric power system**
5. Actual or suspected physical attacks that could impact electric power system adequacy or reliability; or vandalism which target components of any security systems
6. Actual or suspected cyber or communications attacks that could impact electric power system adequacy or vulnerability
7. Fuel supply emergencies that could impact electric power system adequacy or reliability
8. Loss of electric service to more than 50,000 customers for 1 hour or more

Complete operational failure or shut-down of the transmission and/or distribution electrical system

52.2. This was not considered a reportable event until 18:50 on July 17th, when five feeders were out of service and the Company decided to make public appeals to reduce load.

52.3. Schedule 2 was submitted at the same time as Schedule 1

52.4. The EIA-417 form was required to be filed only because of the customer appeals for reducing load in the network, which affected approximately 114,000 customers. At the time the report was filed, Con Edison estimated that less than 2000 customer outages had been reported.

52.5.1. Yes.

52.5.2. An updated report was sent to EIA on 9/8/2006.

Table B.1. Major Disturbances and Unusual Occurrences, Year-to-Date through July 2006

Date	Utility/Power Pool (NERC Region)	Time	Area Affected	Type of Disturbance	Loss (megawatts)	Number of Customers Affected [1]	Restoration Date/Time
May							
05/03/06	Pacific Gas and Electric Company (WECC)	3:30 p.m.	City of Bakersfield area	Transmission Equipment Failure/Fire	300	55,655	05/03/06, 9:35 p.m.
05/04/06	Puerto Rico Electric Power Authority (PR)	2:12 p.m.	Island of Puerto Rico	Load Shed	140	94,639	05/04/06, 2:45 p.m.
05/19/06	Crockett Cogeneration (WECC)	3:13 p.m.	San Francisco Bay area, California	Lightning Strike	133	-	05/19/06, 10:30 p.m.
05/25/06	Duke Energy - Ohio, Kentucky, Indiana (RFC)	7:50 p.m.	Southwest Ohio, Northern Kentucky, Central Indiana	Severe Weather	800	210,000	05/27/06, 9:00 a.m.
June							
06/01/06	Hawaiian Electric Company Inc. (HECO)	2:12 p.m.	Island of Oahu	Load Shed	120	29,300	06/01/06, 6:09 p.m.
06/01/06	PECO Energy (RFC)	6:00 p.m.	Chester, Montgomery, Delaware, Philadelphia and Bucks Counties, Pennsylvania	Severe Weather	N/A	111,555	06/03/06, 9:00 a.m.
06/01/06	Baltimore Gas and Electric (RFC)	6:30 p.m.	Central Maryland	Severe Thunderstorms	335	70,000	06/03/06, 2:00 p.m.
06/11/06	Duke Energy Carolinas (SERC)	6:00 p.m.	Charlotte, North Carolina Metropolitan area	Severe Thunderstorm	70	72,000	06/11/06, 9:00 p.m.
06/22/06	American Electric Power (RFC)	2:00 p.m.	Ohio and Indiana	Severe Thunderstorms	750	195,000	06/27/06, 11:00 p.m.
July							
07/02/06	Dominion - Virginia Power/North Carolina (RFC)	6:39 p.m.	Northern Virginia	Severe Thunderstorms	300	75,000	07/03/06, 12:31 a.m.
07/04/06	Dominion - Virginia Power/North Carolina (RFC) Dominion - Virginia Power/North Carolina	5:30 p.m.	Northern Virginia	Severe Thunderstorms	335	67,000	07/04/06, 8:18 p.m.
07/16/06	Consumers Energy (RFC)	2:00 p.m.	Middle 1/3 of Michigan Lower Peninsula	Severe Lightning Storms	150	315,000	07/21/06, 12:00 a.m.
07/17/06	Consolidated Edison Company of NY (NPCC)	6:50 p.m.	Northwest Queens, New York City	Severe Weather/Public Appeals Made/Voltage Reduction	N/A	25,000	07/25/06, 3:06 a.m.
07/17/06	Exelon Corporation West ComEd (MRO)	9:00 p.m.	Northern Counties of Illinois	Severe Lightning Storms	N/A	170,519	07/18/06, 9:00 a.m.
07/18/06	PECO Energy (RFC)	6:36 p.m.	Chester, Montgomery, Delaware, Philadelphia and Bucks Counties, Pennsylvania	Severe Lightning Storms	N/A	492,955	07/23/06, 11:59 p.m.
07/18/06	ISO New England (NPCC)	8:07 p.m.	MMany Norwalk, Stamford, Connecticut	Lightning Storms/Tripped Lines	0	0	07/18/06, 10:32 p.m.
07/19/06	Entergy Services Inc. (SERC)	11:00 a.m.	Greater Little Rock, Arkansas	Load Reduction/Public Appeals Made	40	8,000	07/19/06, 5:54 p.m.
07/19/06	Ameren Corporation (MRO)	6:00 p.m.	Greater St. Louis Metropolitan area (Missouri and Illinois)	Severe Storms (3) (Many customers experienced multiple outages.)	1,500	700,000 (peak) 2,500,000 (actual)	07/31/06, 8:00 a.m.
07/22/06	Pacific Gas and Electric Company (WECC)	1:09 p.m.	California	Widespread Heat Wave/Public Appeals Made	200	1,271,893	07/27/06, 4:00 p.m.
07/24/06	Southern California Edison Company (WECC)	2:33 p.m.	California	Widespread Heat Wave/CAISO Implementation of Stage 2 Electrical Emergency Plan	414	Interruptible Tariff 1-6 customers	07/24/06, 5:33 p.m.
07/24/06	California ISO (WECC)	2:33 p.m.	California	Widespread Heat Wave/CAISO Implementation of Stage 2 Electrical Emergency Plan	695	N/A	07/24/06, 5:33 p.m.
07/27/06	PECO Energy (RFC)	6:38 p.m.	Chester, Montgomery, Delaware, Philadelphia and	Severe Thunderstorms		167,564	07/29/06, 9:36 p.m.

U.S. Department of Energy Energy Information Administration Form EIA-417 (2004)	*EMERGENCY INCIDENT AND DISTURBANCE REPORT*	Form Approved OMB No. 1901-0288 Approval Expires 08/31/05

NOTICE: The timely submission of Form EIA-417 by those required to report is mandatory under Section 13(b) of the Federal Energy Administration Act of 1974 (FEAA) (Public Law 93-275), as amended. Failure to respond may result in a penalty of not more than $2,750 per day for each civil violation, or a fine of not more than $5,000 per day for each criminal violation. The government may bring a civil action to prohibit reporting violations, which may result in a temporary restraining order or a preliminary or permanent injunction without bond. In such civil action, the court may also issue mandatory injunctions commanding any person to comply with these reporting requirements. **Title 18 U.S.C. 1001 makes it a criminal offense for any person knowingly and willingly to make to any Agency or Department of the United States any false, fictitious, or fraudulent statements as to any matter within its jurisdiction.** A person is not required to respond to collection of information unless the form displays a valid OMB number. Data reported on Form EIA-417 in Schedule 1, lines 4, 5, 6, 7, and 8 are considered to be confidential. Schedule 2 is considered confidential. **All other data are not confidential.** (See form instructions for a full list of legal citations covering data collection authorization.)

RESPONSE DUE: Submit a completed Schedule 1 as an initial report within 60 minutes of the incident. A final report (completed copy of the Form EIA-417, Schedule 1 and 2) is due within 48 hours of the event. Electronic submission by facsimile or e-mail is the preferred method of notification.

SCHEDULE 1. -- EMERGENCY ALERT NOTICE

LINE NO.				
	ORGANIZATION FILING			
1.	**Alert Status (check one)**	**Preliminary Alert [ ]**	**Update Notice [ ]**	**Final Report [x]**
2.	**Organization Name**	Consolidated Edison Co. of NY		
3.	**Address of Principal Business Office**	4 Irving Place New York, NY 10003		
	NAME OF OFFICIAL THAT NEEDS TO BE CONTACTED FOR FOLLOW-UP AND ANY ADDITIONAL INFORMATION			
4.	**Name**	[redacted]		
5.	**Title**	[redacted]		
6.	**Telephone Number**	[redacted]		
7.	**FAX Number**	[redacted]		
8.	**E-mail Address**	[redacted]		
	INCIDENT AND DISTURBANCE DATA			
9.	**Geographic Area(s) Affected**	Northwest Queens, New York The affected area is bounded by the East River on the west and north, the Brooklyn-Queens Expwy on the east and Newtown Creek on the south	**Unknown at this time [ ]**	
10.	**Date/Time Incident Began (mm-dd-yy/hh:mm) using 24-hour clock**	07-17-06/18:50		
11.	**Estimated Date/Time of Restoration (mm-dd-yy/ hh:mm) using 24-hour clock**	07-25-06/03:06	**Unknown at this time [ ]**	
12.	**Date/Time Incident Ended (mm-dd-yy/ hh:mm) using 24-hour clock**	07-25-06/03:06		
13.	**Did the incident/disturbance originate in your system/area? (check one response)**	**Yes [x]** **No [ ]** **Unknown [ ]**		
14.	**Estimate of Amount of Demand Involved (megawatts)**	N/A	**Unknown at this time [ ]**	
15.	**Estimate of Number of Customers Affected**	Approx 25,000	**Unknown at this time [ ]**	
16.	**Internal Organizational Tracking Number**			

17. Type of Emergency Check all that apply (a)	18. Cause of Incident Check if known or suspected (b)	19. Actions Taken Check all that apply (c)
Major Transmission System Interruption [ ]	**Weather or Natural Disaster [x]**	**Implemented a Warning, Alert, or Contingency Plan [ ]**
Major Generation Inadequacy [ ]	**Transmission Equipment [ ]**	**Made Public Appeals [x]**

20. Narrative:

INITIAL REPORT

At 18:50 hours on July 17th, 2006, 5 of 22 distribution feeders in the Long Island City network were out of service. Due to the weather and subsequent high loads, public appeals to reduce power usage in the Northwest area of Queens were made. The network was also placed on a reduced voltage of 8% as a means of Peak Load Voltage Optimization. Less than 2000 customer outages have been reported throughout the period from 07-17-06 to 07-20-06 (present). Public appeals to reduce electric power usage are still in effect. Repairs to the primary and secondary distribution system are in progress and the company's Corporate Emergency Response Center has been activated.

FINAL REPORT

This report focuses on the power outages that recently took place in the Long Island City (LIC) network, the process used to determine customer outages, and the factors evaluated in deciding to keep the network operating. Con Edison is proceeding with an analysis of the facts and based upon that analysis will reach conclusions as to the factors contributing to the cause of the outage.

The final report will contain recommendations for actions needed as a result of the conclusions and a schedule for implementation.

On Monday, July 17, 2006, at 15:50, the LIC network experienced the loss of one of its 22 primary feeders. Over the next several hours, the network experienced the loss of five additional feeders, putting the network into a sixth contingency. Our system operator reduced the voltage in the LIC network by 8% at 18:54 in order to reduce electric demand. Representatives from our Emergency Management Group contacted the New York City Office of Emergency Management (NYCOEM) and provided frequent updates on significant changes to the condition of the LIC network. We called critical customers, including those on Life-Sustaining Equipment (LSE), beginning at 19:30 to apprise them of the system's status.

On Tuesday, July 18, as repairs were completed and feeders restored, additional primary feeders failed, and at 20:38 the network had 10 of its 22 feeders out of service at one time. Con Edison worked closely with NYCOEM and with customers to further reduce electric usage in the area.

We used demand side management programs, worked with large customers [2], and maintained the 8% voltage reduction. We estimated these steps reduced electric demand by 43 megawatts (MW) on Tuesday, July 18, and 67 MW on Wednesday, July 19. Partly because of these demand reduction measures, operating personnel decided to maintain the network in service and avoided an outage to all of the approximately 115,000 customers in LIC network. Between midnight Tuesday and noon Wednesday, we repaired and restored one feeder but subsequently two additional feeders went out of service. For 97 minutes, between 11:33 and 13:10, 10 of the 22 feeders were out of service. We made repairs through the afternoon and evening, restoring three feeders by midnight.

On Wednesday night, as crews continued to repair and restore the primary feeders, the number of feeders out of service declined to seven shortly after midnight Thursday morning and to three feeders out of service at 13:48 on Thursday. The primary feeder system was restored to its design condition at 06:38 Friday when a feeder was restored to service. By 08:01 Friday morning, all feeders were returned to service. Nonetheless, the series of feeders out of service caused damage to the 120/208 volt secondary grid, which resulted in outages to approximately 25,000 customers. In the case of these outages, the customer counts initially provided by the company were clearly a poor estimate of the actual customers out of service. Through the end of the day on Wednesday, July 19, our call center received 1,977 calls reporting electrical problems in the LIC network. Our customer outage system provides operating personnel with the total number of customers interrupted based on these calls. Based upon field observations, there was a concern that this system was significantly underestimating the extent of the outage.

[2] Large customers typically receive electric service directly from several feeders (rather than the secondary network) making them more susceptible to losing power as a result of feeder outages. In addition, their large size makes contacting them the most efficient way of obtaining voluntary load reduction that benefits all customers.

On Thursday evening, July 20, we conducted a survey in order to estimate the number of customers affected, and as a result estimated that 25,000 customers were out of service. These events have demonstrated that we need a better system to provide an early estimate of how many customers are without power on network systems.

On Thursday, July 20, we continued to identify and restore the damaged sections of the secondary grid. Our assessment indicated open switches, blown fuses, and open secondary cable and connections throughout the

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP23
Date of Response: 12/19/2006

Question No. :55
Con Edison's response to PULP IR # 47 included a graph entitled LIC Network MVAR Demand & Load Power Factor ("Graph") illustrating MVAR Demand and minimum and maximum Load Power Factor commencing at 12:00:00 on July 17, 2006 and ending at 11:59:59 on July 21, 2006 during the Long Island City outage. 55.1 Does the line labeled "MVAR Demand" reflect measurement of total MVARs flowing into the LIC network from the bulk power system plus reactive power from capacitors at the North Queens substation? 55.1.1. If the answer to IR # 55.1. is yes, does Con Edison assume that total MVARs flowing into the LIC network at the substation equals total MVAR demand in the entire LIC network? 55.2. In the late morning of July 18, 2006, according to the Graph, there was an abrupt spike in "MVAR Demand" and an abrupt decline in the power factor. Does Con Edison have an opinion as to why this occurred? 55.2.1. If the answer to IR # 55.2 is yes, please provide a narrative expressing that opinion and explaining the basis for the opinion. 55.3. Please provide a spreadsheet with MVAR Demand and Load Power Factor data supporting the Graph. Please commence the timeline for the MVAR Demand and Load Power Factor data in the spreadsheet at 00:00:00 on Monday, July 17, 2006 and end it at 23:59:59 July 23, 2006. 55.4 Does Con Edison operate or control operation of any capacitors or other reactive power resources which were available to the LIC network at any time during the outage which are not located at the North Queens substation? If yes, 55.4.1. If the answer to IR # 55.4. is yes, please describe each resource, its location, its capacity, and provide records of its service during the period July 17 – 23, 2006.

Response:

55.1. Yes

MVAR flow until 10:35 hours, which is about 11 minutes later. Based on these data from PI, we are unable to explain this 11 minute delay in transformer MVAR adjustment (decrease) in reaction to the switching in of Capacitor Bank C2.

55.3. See attached file showing the LIC network's MW and MVAR demand, and the calculated load power factor. The MW and MVAR demand as well as the capacitor status information at the North Queens substation were obtained from the Plant Information (PI) system.

The MW demand consists of the sum of the MW contributions at the 27 kV side of all five transformers at the North Queens substation (four transformers in service and one on standby).

The MVAR demand consists of the sum of the MVAR contributions at the 27 kV side of all five transformers at the North Queens substation, plus the contribution of any of the three 30 MVAR capacitor banks that may be switched in at the substation. We used the capacitor bank status information obtained from PI ("open" or "closed") to determine whether there was any contribution from the capacitor banks. For example, If only one capacitor bank was "closed", we added 30 MVAR to the transformers' MVAR contribution, etc.

The LIC network load power factor was subsequently calculated using the MW and MVAR demand obtained as described above.

55.4. No. Other than the existing three 30 MVAR capacitor banks at the North Queens 27 kV substation, there are no other reactive power resources that Con Edison operates or controls.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP24
Date of Response: 12/21/2006

Question No. :56
With reference to the statement of Con Edison's witness at the Technical Conference held October 26, 2006, beginning at transcript page 732, line 23 and ending at transcript page 733, line 15: that during sometime just prior to the incident, actually July the 12th, our engineers realized that there was something malfunctioning with auto WOLF. Our people, our technicians worked throughout the weekend to try to correct that problem and later discovered that on a new release of configuration files and loading files this program had been pointing pointers to incorrect or outdated file[s] and that was providing unreliable information, and we recognized that July the 12th. On Monday [July 17], we began to use manual WOLF, which is basically the same software but operated manually, as we became--as we continued into the increased contingency situation. Now, in the increased contingency situation, manual WOLF did not function properly after the fifth contingency. (Transcript available at http://www.dps.state.ny.us/06E0894_TTC_10_26_06.pdf) 56.1. When did Con Edison install the "new release of configuration files and loading files" for the Auto WOLF program that pointed to incorrect files? 56.2. For how long had Auto WOLF been used by Con Edison after installation of the new files? 56.3. What are the symptoms of the software configuration problems and what led to the discovery of the defect? 56.4. What efforts were made by Con Edison to fix the Auto WOLF program on the days prior to the weekend before the Long Island City outage, i.e., on July 12, 13, and 14, 2006? 56.5. Was Auto WOLF utilized by Con Edison between the time the problem was noticed on July 12, 2006 and July 17, 2006? 56.6. Please describe how the Auto WOLF program was fixed. 56.7. Was Manual WOLF utilized between July 12, 2006 and July 17, 2006? 56.8 At what time on Monday, July 17, 2006 did Con Edison "begin to use Manual WOLF"? 56.9. On Monday, July 17, 2006 did the Manual WOLF system incorporate, on a real time basis, the secondary system voltage data from the RMS system which Con Edison provided to PULP in its answer to PULP IR # 44? 56.10. Please describe the reports generated by the Manual WOLF program on July 17, 2006 from the time it began to be used until the fifth contingency, and the times when the reports were generated. 56.11 Please provide a copy of the Manual WOLF reports for the hours it was used

Response:

1. Before the summer (sometime between May 15 and June 15).
2. BQ Electric Operations did not utilize Auto WOLF after the installation of the new files.
3. The updates did not seem to be transferring. Sections were shown as overloaded even after they were updated in the models.
4. During that period, the problem was being diagnosed and a solution fashioned.
5. No, Auto WOLF was not used. BQ Engineering utilizes WOLF and does not use Auto WOLF. The BQ Control Center utilizes Auto WOLF except in the event that BQ Engineering is not available to use WOLF.
6. A script was changed sometime between July 17 11:05 PM and July 18 11:06 AM that allowed the model updates to use the file with the appropriate specifications.
7. Yes.
8. Approximately 9:50 AM.
9. No, WOLF uses live load data only.
10. The report is a text based document summarizing, itemizing and detailing infrastructure overloads.
11. New reports over-write the previous reports and reports are not archived.
12. See response to 9.
13. RMS does not provide secondary system thermal data.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP25
Date of Response: 01/09/2007

Question No. :58

58.1. Please confirm that each of the highlighted items on the above list of transmission line outages refers (a) to the two Con Edison transmission line outages mentioned by FERC Chairman Kelligher and NYISO CEO Lynch on July 12, 2006 in their testimony to a Congressional committee (See PULP IRs # 3 and # 4) and (b) to other transmission line outages in Con Edison service territory which occurred subsequent to their testimony. 58.2. Please confirm that each of the highlighted items on the above list of transmission line outages refers to transmission lines owned and maintained by Con Edison. If any line is not owned or maintained by Con Edison please state the name of the owner or operator. 58.3. Please confirm that each of the highlighted items on the above list of transmission line outages refers to a transmission line that was not in service at the time of the first Long Island City network feeder outages which occurred on July 17, 2006 at 15:50. 58.4. Please confirm that the item listed below as "HELLGT_W" refers to a transmission line which terminates at the Astoria generation complex. 58.5. Please provide a narrative description of the transmission line outages highlighted above, including, at a minimum: (a) the location, the end points, and facilities directly connected by each line; (b) the nature of the outage; (c) the reason for the outage; (d) the effect of the outage on system reliability; and (e) the date and time when the line was restored to service, and what was done to effectuate the restoration of service. 58.6. Please provide a copy of any report or memorandum or correspondence or email or other document prepared by Con Edison which assesses the effect of the transmission line outages highlighted above.

Response:

58.1 (a) The first six highlighted lines in the above list refer to the two Con Edison transmission line outages mentioned by FERC Chairman Kelligher and NYISO

58.2 Without waiving Con Edison's right to object to similar questions in the future, all of the facilities referred to in the first six highlighted lines are owned and maintained by Con Edison. The equipment referred to in the seventh through the eleventh highlighted lines, inclusive, are owned by U.S. Power Gen. The equipment referred to in the twelfth and thirteenth highlighted lines are owned and maintained by Con Edison. The equipment referred to in the fourteenth and last highlighted line is owned and operated by Public Service Electric and Gas Company in New Jersey.

58.3 The feeder and its associated circuit breakers referred to in the first five highlighted lines was restored to service and carrying load at 07:57 hours on the morning of July 17, 2006. The feeder referred to in the sixth highlighted line was not carrying load at 15:50 hours on July 17, 2006. Without waiving Con Edison's right to object to similar questions in the future, see response to PULP 58.1 as to the status of the equipment referred to in the seventh through fourteenth highlighted line.

58.4 Without waiving Con Edison's right to object to similar questions in the future, the item listed as "HELLGT_W" appears to refer to a Con Edison transformer at the Hell Gate distribution area substation.

58.5 Feeder 72 is an underground 345 kV cable feeder that runs between Dunwoodie substation in Yonkers and Rainey substation in Queens. It tripped out automatically at 14:55 hours on June 24, 2006 due to a cable fault. The faulted portion was repaired and the feeder was restored to service at 09:22 hours on July 25, 2006.

Feeder M51 is an underground 345 kV cable feeder that runs between Sprain Brook substation in Yonkers and West 49th Street substation in Manhattan. It tripped out automatically at 09:08 hours on June 28, 2006 due to a cable fault. The faulted portion was repaired and the feeder was restored to service at 07:57 hours on July 17, 2006.

Repair work on both feeders 72 and M51 was conducted on an accelerated basis that included around the clock staffing seven days a week for both the work crews and the managers who oversaw their efforts.

58.6 See response to PULP 4.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP26
Date of Response: 01/09/2007

Question No. :60

60.1. Please confirm that the attached 24 page document graphically represents RMS voltage data for July 17, 2006 provided by Con Edison in response to PULP IR # 44, showing the number of sensors reporting voltage below 126 V, with each page representing an hour of that day. 60.2. The RMS voltage data provided by Con Edison in response to PULP IR #44 has many time intervals with no data reported. For example, as illustrated by the graph of data for Hour 1 of 7/17/06, between 00:20 and 00:40 no sensors reported voltage below 126 V. Please explain. 60.3. Do RMS voltage sensors continuously transmit data? 60.4.Do RMS voltage sensors intermittently transmit data? If yes, w parameters. 60.6. Does Con Edison record RMS voltage data reported from the RMS sensors continuously? 60.7. Does Con Edison record RMS voltage data periodically, e.g., every few minutes? 60.8. Please describe the spreadsheet data fields on the spreadsheet used to prepare the Crystal Reports provided in response to PULP IR # 44. 60.9. Does the data saved in the Crystal Reports provided in response to PULP IR # 44 represent the complete data from the database that was used to generate the Crystal Reports? If not, please provide the complete data base used to generate the Crystal Reports. 60.10. On the graph for Hour 2 on July 17, 2006, what is the cause of or explanation for the increase in the number of sensors showing voltage below 126 V increasing from 27 at approximately 1:10 AM to 94 at approximately 2:00 AM? 60.11. On the graph for Hour 2 on July 17, 2006, what is the reason or explanation for the apparent fluctuations in the number of sensors showing voltage below 126 V between approximately 1:35 AM, when the number is zero, and approximately 2:00 AM when the number is 93? 60.12. On the graph for Hour 16 on July 17, 2006, what is the reason for the increase in the number of sensors showing voltage below 126 V between approximately 3:08 PM, when the number of such sensors was 105, and approximately 3:25 PM when the number was 193? 60.13. What accounts for the number of sensors showing voltage less than 126 V on July 17, 2006 decreasing from 193 at 3:25 PM to 75 approximately 15 minutes later, at 3:40? 60.14. Did Con Edison take actions between 3:25 PM and 3:40 PM which had the effect of reducing the number of sensors showing

60.2 The 15 minute interval is not a constant. The timing is affected by many factors. We have two means of communications; the LIC network has a received rate of between 8 and 15 minutes depending on the mode of communications. Other computer related time delays are also a contributing factor.

60.3 No

60.4 Yes, each transmitter randomly transmits data approximately every 3 minutes.

60.5 No.

60.6 No.

60.7 In order to reduce storage space, archived RMS data including voltage was saved as snap-shots every 15 minutes.

60.8

Receiver Received	Voltage Phase		
Date & Time	A	B	C
2006-07-16 00:14:36	000	126	000
2006-07-16 01:18:49	126	126	126

60.9 Our response to PULP 44 included the complete data that was archived.

60.10 Transformer output voltage is directly related and affected by load or upstream transmission/substation voltage variations. The slight voltage variation to less than 126 V is normal and can be due to either load or transmission/substation voltage variation.

60.11 See the response to PULP 60.10.

60.12 See the response to PULP 60.10.

60.13 See the response to PULP 60.10

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP29
Date of Response: 01/10/2007

Question No. :68
Please explain the abrupt New York City load reduction of approximately 85 MW at about 15:25 on July 17, 2006 according to the following real time load data: A graph illustrating the drop in load, is attached. 68.1. The 85 MW drop in load at about 3:25 PM on July 17 appears to have been preceded by an increase in the number of RMS sensors in the Long Island City network showing voltages lower than 126 V. The attached graph indicates a subsequent reduction in the number of low-voltage sensor readings, after the NYISO declared a "reserve pickup" at 15:25. Are these events consistent with unmet MVAR requirements in the LIC network prior to the dispatch of reserves? 68.2. Is an abrupt 85 MW drop in N.Y.C. load on a hot afternoon when load was rising in adjacent Long Island and Dunwoodie zones consistent with the unscheduled tripping of a generator that had been producing approximately 85 MW, and a corresponding temporary decrease in MW output available to meet New York City load? 68.3. If the load data above indicate an actual reduction of load, rather than a reduction of MW available in the N.Y.C. zone, please reconcile this with the NYISO operator message on July 17, 2006 which declared a "large event reserve pickup" at 15:25:14 – approximately the same time as the 85 MW load reduction in the N.Y.C. zone.

Response:

Con Edison objects on the grounds of relevancy of these questions to the proceeding and in any event, Con Edison cannot speculate on the various scenarios conjectured by PULP.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP29
Date of Response: 05/25/2007

Question No. :72Rev
Was there an electrical outage or disturbance or other event relating to load, available MW, available MVARs, or voltage at or about 15:25 on July 17, 2006?

Response:

In accordance with the Judge Stockholm's Discovery Ruling, dated May 18, 2007, Con Edison is providing PULP with the following information in response to PULP 72:

At approximately 15:25 on July 17, 2006, a generation unit located in ISO Zone J, but in a borough other than Queens (and not directly connected to any substation in Queens) tripped out of service. Also, at approximately 15:18 on July 17, 2006, a generation unit connected to the Astoria East substation tripped out of service.[1] However, as can be seen on Attachment A, there were no significant changes in the MVARs supplied by the generators to the Astoria East 138kV bus. In fact, the VAR flow out of the Astoria East bus throughout this period indicates that there were more than adequate reactive resources for the North Queens substation, and that the Astoria East Substation provided reactive power to neighboring substations. In addition, during this time period, the bus voltages at the North Queens substation, which supplies the LIC network, was at or above the nominal 27kV (see, e.g., response to NYC-133 and TGE-4).

Reactive Supply to Astoria East 138kV Bus

Date/Time	Sum of Generators	Sum of Lines *
7/17/06 3:00 PM	419	-162
7/17/06 3:05 PM	406	-161
7/17/06 3:10 PM	409	-160
7/17/06 3:15 PM	415	-161
7/17/06 3:20 PM	402	-165
7/17/06 3:25 PM	410	-170
7/17/06 3:30 PM	413	-174
7/17/06 3:35 PM	401	-178
7/17/06 3:40 PM	400	-180
7/17/06 3:45 PM	397	-181
7/17/06 3:50 PM	393	-180
7/17/06 3:55 PM	387	-179
7/17/06 4:00 PM	374	-178

* (-) indicates VAR flow direction is out of Astoria East Bus

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP30
Date of Response: 02/14/2007

Question No. :73
Figure 4-8 of Con Edison's October 12, 2006 report, at p. 4-55 provides forecast and actual LIC network MW load data for July 17, 2006 beginning at approximately 16:00 hours. PULP IR # 61 asked for forecast and actual load data prior to that time, at 5 minute intervals. Con Edison's response to PULP IR # 61 provides hourly forecast and actual MW load data up to 15:00. No actual load data for the LIC network has been provided for the time between 15:00 and 16:00. Please answer the following questions regarding actual load data for July 17, 2006. Does Con Edison have records of the actual MW load in the LIC network between 15:00 and 16:00 on July 17, 2006? 73.1. If yes, please provide actual load data for the LIC network for July 17, 2006 between 15:00 and 16:00.

Response:

The actual MW load for the LIC network between 15:00 to 16:00 on July 17, 2006 was 376 MW.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP30
Date of Response: 02/14/2007

Question No. :78
In its response to PULP IR # 45.2, Con Edison states "The nearest transformer [to the cable that burned] reporting voltage was V9426. The closest reading at 15:39 reported the following transformer secondary voltage: A=126V, B=126V, C=126V" . Con Edison's October 12, 2006 report states at page 5-73 that transformer V9426 "was off the system due to defect" and was "removed from the system on July 12," five days prior to the outage. Was the sensor number V9426 reporting voltage at transformer V9426 when that transformer was "off the system" and not serving any load?

Response:

There was a duplicate chip ID that was causing cross talk. This was later identified and corrected.

Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

Response to PULP Interrogatories – Set PULP33
Date of Response: 05/07/2007

Question No. :89
Please provide a copy of all of Con Edison's communications, e-mails, memoranda, and any other written documentation with FERC regarding PULP's FOIA request to FERC (FERC No. FY06-95), including, but not limited to Con Edison's specific response to FERC's letter of February 9, 2007.

Response:

See attached.

Martin F. Heslin
Assistant General Counsel
Consolidated Edison Company of New York, Inc.
4 Irving Place, Room 1815-S, New York NY 10003
212-460-4705 Fax: 212-677-5850
Email: Heslinm@coned.com

February 16, 2007

Via Email and U.S. Mail

Mr. Andrew J. Black
Director
Office of External Affairs
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426

Re: FOIA No. FY06-95

Dear Mr. Black:

Your letter dated February 9, 2007 to Messrs. Forte and Sasson of Consolidated Edison Company of New York, Inc. ("Con Edison") gave notice that the Commission had received a request from the Public Utility Law Project, Inc. ("PULP Request") under the Freedom of Information Act for the disclosure of certain documents related to the reliability effect of transmission line outages in the New York City area during June and July 2006. In response to that notice and in accordance with the Commission's regulations at 18 CFR §388.112(d), Con Edison submits these comments urging that the PULP Request be denied, in part, because certain of the documents sought constitute Critical Energy Infrastructure Information ("CEII"), whose disclosure could jeopardize the public health and safety.[1] The portion of the requested documents that constitutes CEII ("Protected Material") is included in the enclosure to these comments and highlighted in yellow. Con Edison does not object to the disclosure of the requested material other than the Protected Material.

The Commission determined in Order No. 630 that information constituting CEII is exempt from disclosure under FOIA.[2] Given the safety issues arising out of the September 11, 2001 terrorist attacks, the Commission determined that the responsible course of action is to protect CEII from disclosure.[3] Order No. 630 concluded that the need to know has never been absolute under FOIA and that the general public's need for information does not warrant the risk of disclosure of CEII.[4] The Order reasoned that the

more people who have access to information, the greater the likelihood that it may find its way into the wrong hands.[5]

Accordingly, Order No. 630 concluded that access to CEII should be limited to entities and individuals that have a need for the information. The Order required that requests for disclosure of CEII include "a detailed statement explaining the particular need for and intended use of the information."[6] That statement of need provides the basis for a risk-benefit assessment: "[o]ne factor that the Coordinator should factor into a decision is whether the requester's need for the information outweighs the potential harm from the release of the information."[7]

"Critical infrastructure" includes "existing and proposed systems and assets, whether physical or virtual, the incapacity or destruction of which would negatively affect security, economic security, public health or safety, or any combination of those matters."[8] CEII is defined as

> information about proposed or existing critical infrastructure that:
> (i) Relates to the production, generation, transportation, transmission, or distribution of energy;
> (ii) Could be useful to a person in planning an attack on critical infrastructure;
> (iii) Is exempt from mandatory disclosure under the Freedom of Information Act; and
> (iv) Does not simply give the location of the critical infrastructure.[9]

Under Order No. 630 and the Commission's regulations, the PULP Request must be denied as to the Protected Material. The Protected Material is CEII and, as such, is governed by the risk-benefit assessment prescribed by Order No. 630. The PULP Request fails to satisfy that assessment, or even to address its essential elements.

The Protected Material consists of (1) a one-line electrical diagram of Con Edison's North Queens Area Substation ("North Queens Substation Diagram" or "NQSD") and (2) text descriptions of the critical facilities that are supplied from Con Edison's North Queens Substation. The portions of the Protected Material containing the one-line diagram and these descriptions are highlighted in yellow.

Con Edison's North Queens Substation provides electric power to Con Edison's Long Island City ("LIC") network that is the electric distribution system supplying power in northwest Queens County in New York City. The NQSD contains information about (1) the structure and design of the North Queens Substation, including the transmission feeders supplying the substation and the 27kV primary distribution feeders ("feeders") that emanate from the substation to supply the LIC network, and (2) a variety of critical infrastructure facilities that these feeders directly supply.

The feeders emanating from North Queens Substation supply electric power to a variety of facilities in northwest Queens that are critical to the health, the physical security, and/or the economic security of the citizens of New York City. These critical facilities include major electric generation stations supplying electric power within New York City, a major steam generation facility supplying steam in Manhattan, cooling plant for Con Edison's 345 kV cable transmission system supplying New York City, La Guardia Airport, Rikers Island Correctional Facility (housing over 10,000 prison inmates in 10 separate prison facilities), Bowery Bay Waste Water Treatment Plant, and Amtrak, Long Island Railroad and New York City Subway lines. In addition, the LIC network supplies electricity several hundred thousand people residing in northwest Queens.

The North Queens Substation is "critical infrastructure." Disabling all or portions of the substation would interrupt electric power to the critical facilities described above and force each to rely on back-up power capabilities that may or may nor be adequate for the period of an extended power outage. In addition, loss of the substation would interrupt power supply to several hundred thousand residents of the northwest Queens area – certainly with negative societal impacts. Thus the "incapacity or destruction [of the North Queens Substation] would negatively affect security, economic security, public health or safety, or any combination of those matters."[10]

The NQSD provides information about critical energy infrastructure that could be useful to a person in planning an attack on critical infrastructure[11]. The NQSD identifies not only the North Queens Substation primary feeders but also states the particular critical facilities (generating stations, transportation facilities, water treatment plant, prison) supplied by the particular feeders. Thus, the NQSD could provide very useful information about the potential societal impact of an attack on the North Queens Substation – information that could induce a person planning an attack on critical infrastructure to target the North Queens Substation as a method to disrupt the critical facilities that it supplies and the lives of the residents who use the power on a daily basis. Such an attack could disrupt power generation, interrupt air and railway travel, and

The text descriptions contain Critical Energy Infrastructure Information. Each of these text descriptions identify some of the critical facilities supplied from the North Queens Substation. For example:

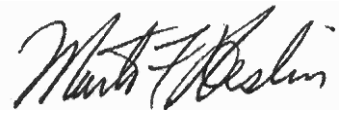
> The network supplies energy to 114,929 customers in the Astoria and LIC areas of the Borough of Queens representing 395 MW at peak, including LaGuardia Airport, subways and commuter railroads, Rikers Island correctional facility, and other essential services. The contingency also can potentially affect over 2000 MW of steam generation and 500 MW of gas turbine generation in the Astoria complex, which has startup and auxiliary power supplies that are fed from the North Queens substation. The North Queens substation also supplies cable cooling plants, which support the 345-kv underground transmission system.

The PULP Request fails to specify the reason why the Protected Material is needed much less demonstrate that the need for disclosure outweighs the potential public harm from disclosure.

Accordingly the text descriptions contain Critical Energy Infrastructure Information and should be withheld from public disclosure.

For these reasons, Con Edison respectfully submits that the PULP Request should be denied with respect to the Protected Material.

Respectfully submitted,



Enclosure

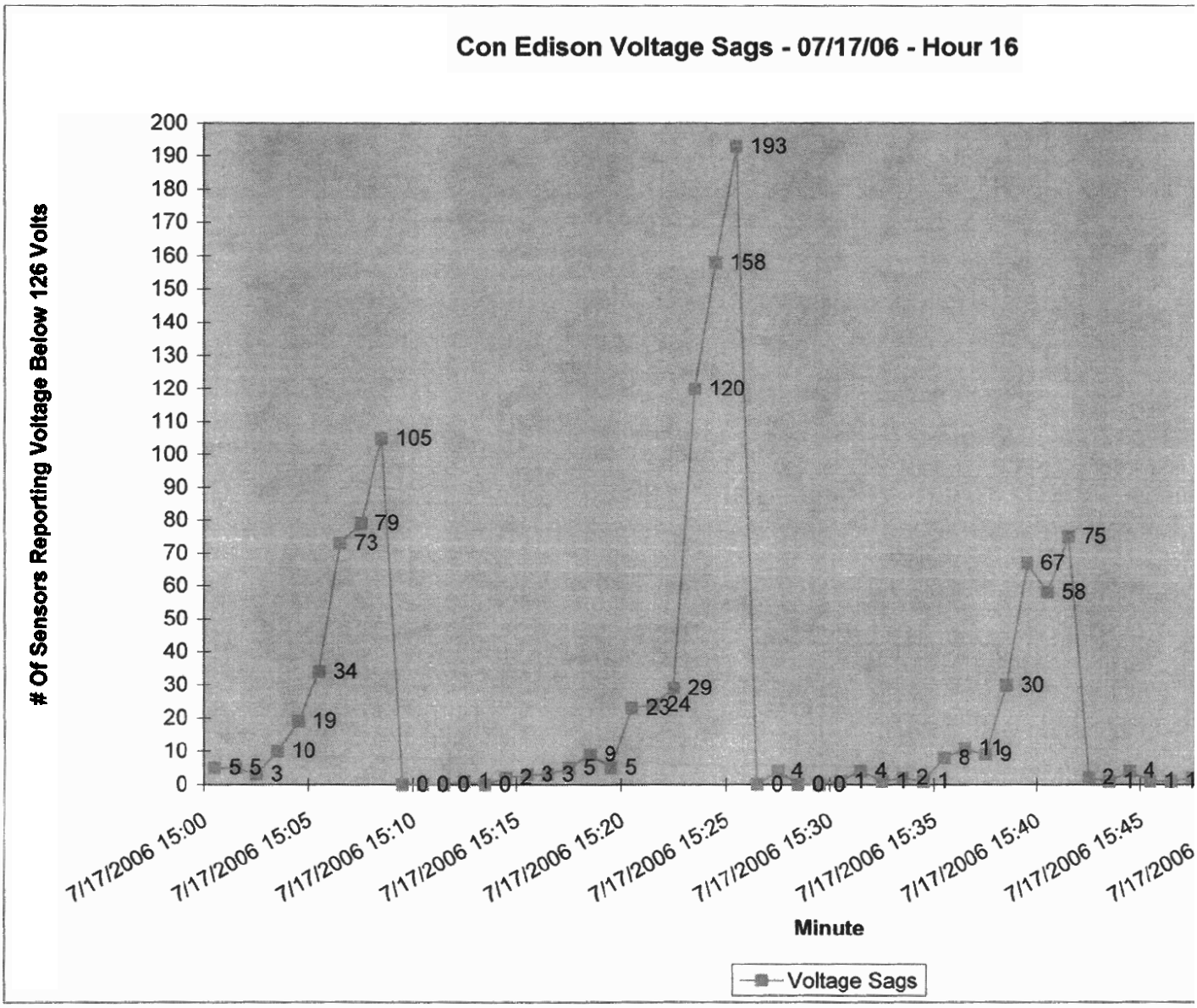
Company Name: Con Edison
Case Description: PSC Investigation of the Electric Power Outages in LIC
Case: 06-E-0894

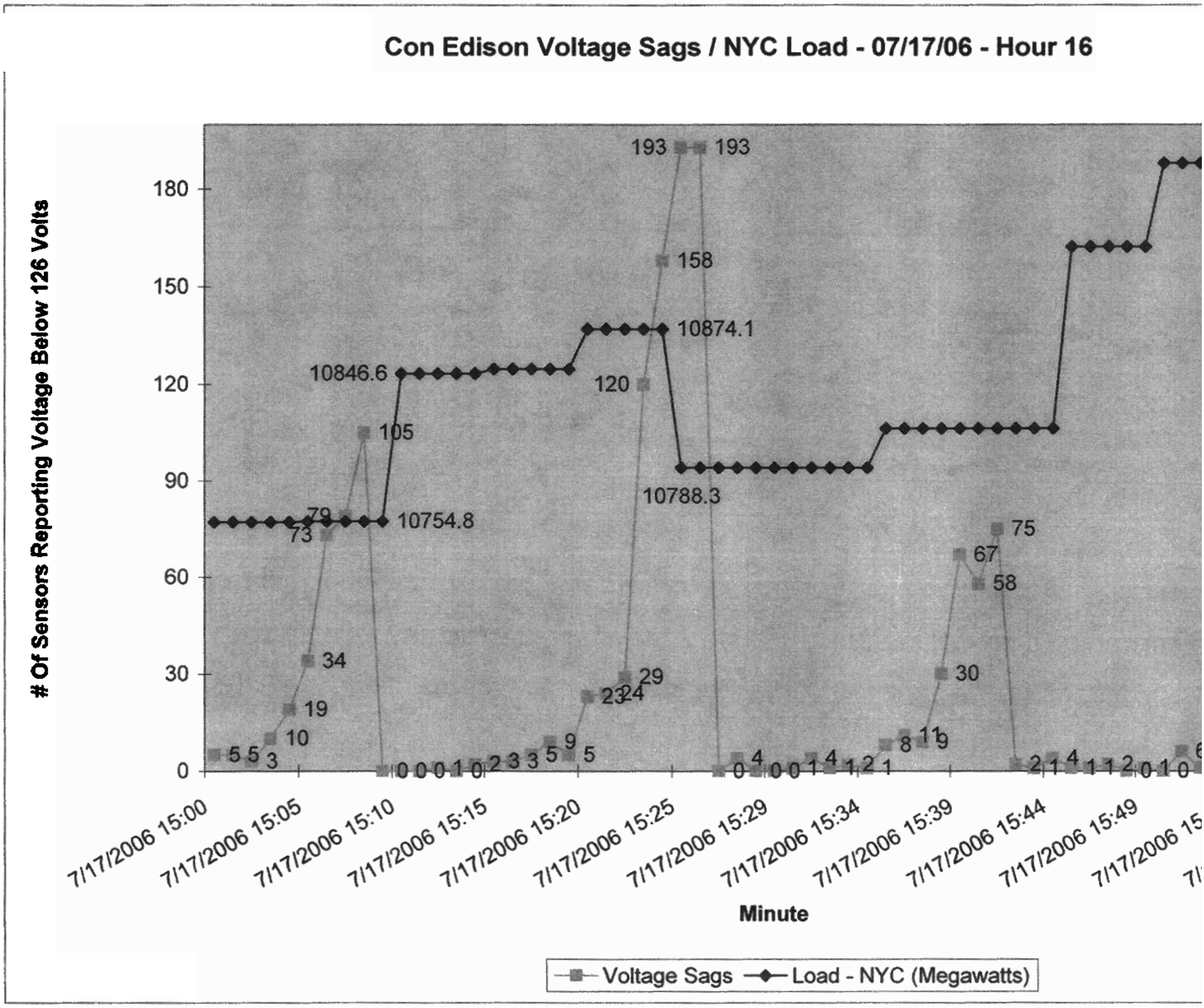
Response to PULP Interrogatories – Set PULP33
Date of Response: 05/07/2007

Question No. :93
Has Con Edison prepared any report or study of pre-outage voltage spikes or low voltage in the LIC network, or any parts of the LIC network, prior to the outage that began on July 17, 2006? If yes, please provide a copy of such report or study.

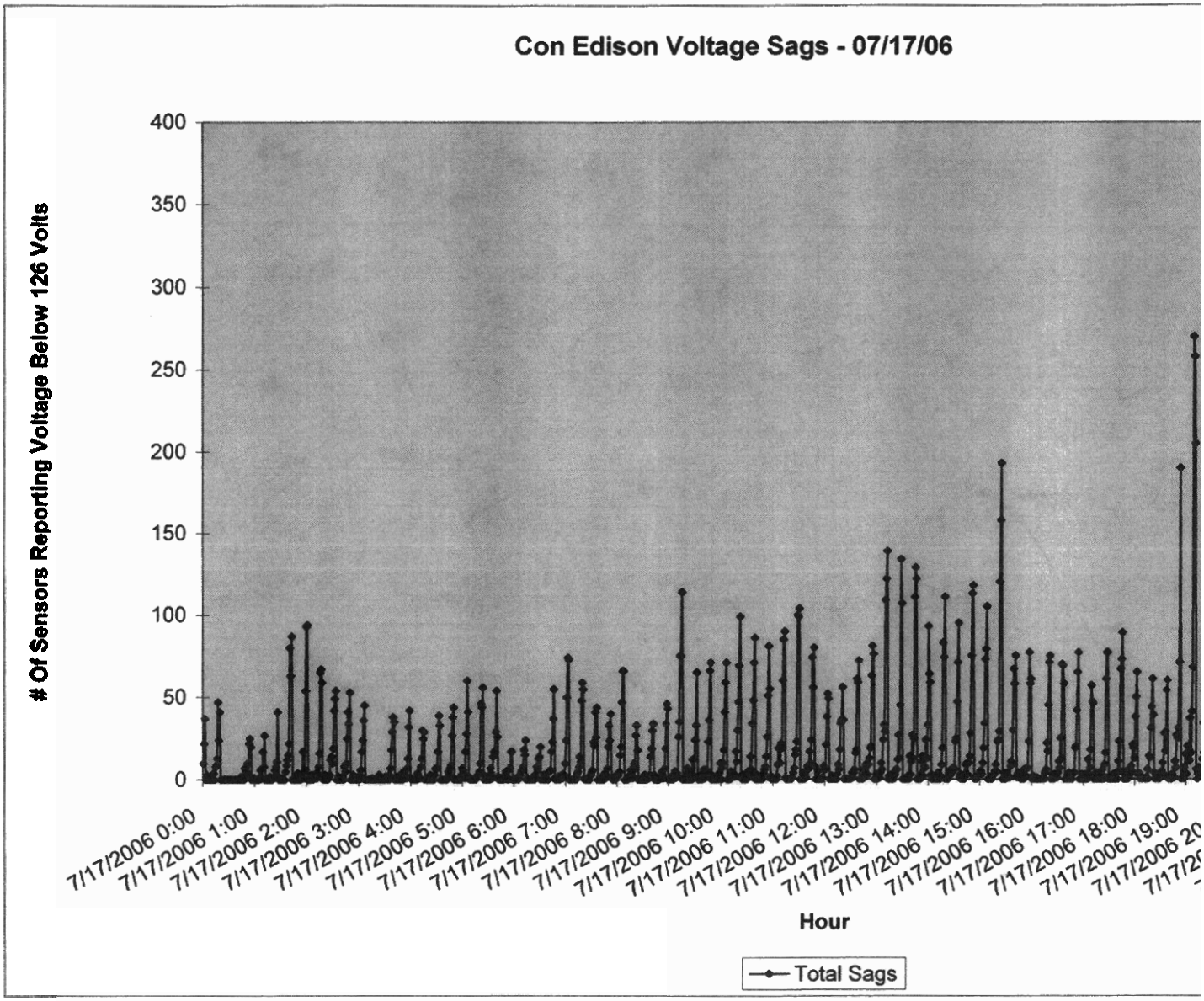
Response:

We are not aware of any.


Con Edison Voltage Sags - 07/17/06 - Hour 16
Of Sensors Reporting Voltage Below 126 Volts
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
30
20
10
0
5 5 3 10 19 34 73 79 105 0 0 0 0 1 0 2 3 3 5 9 5 23 24 29 120 158 193 0 4 0 0 0 1 4 1 1 2 1 8 11 9 30 67 58 75 2 1 4 1
7/17/2006 15:00
7/17/2006 15:05
7/17/2006 15:10
7/17/2006 15:15
7/17/2006 15:20
7/17/2006 15:25
7/17/2006 15:30
7/17/2006 15:35
7/17/2006 15:40
7/17/2006 15:45
7/17/2006
Minute
Voltage Sags



Con Edison Voltage Sags / NYC Load - 07/17/06 - Hour 16
Of Sensors Reporting Voltage Below 126 Volts
0
30
60
90
120
150
180
10846.6
10754.8
10874.1
10788.3
193
193
158
120
105
79
73
75
67
58
34
30
29
23
24
19
10
11
9
8
5
5
3
7/17/2006 15:00
7/17/2006 15:05
7/17/2006 15:10
7/17/2006 15:15
7/17/2006 15:20
7/17/2006 15:25
7/17/2006 15:29
7/17/2006 15:34
7/17/2006 15:39
7/17/2006 15:44
7/17/2006 15:49
Minute
Voltage Sags
Load - NYC (Megawatts)


Con Edison Voltage Sags - 07/17/06
Of Sensors Reporting Voltage Below 126 Volts
400
350
300
250
200
150
100
50
0
7/17/2006 0:00
7/17/2006 1:00
7/17/2006 2:00
7/17/2006 3:00
7/17/2006 4:00
7/17/2006 5:00
7/17/2006 6:00
7/17/2006 7:00
7/17/2006 8:00
7/17/2006 9:00
7/17/2006 10:00
7/17/2006 11:00
7/17/2006 12:00
7/17/2006 13:00
7/17/2006 14:00
7/17/2006 15:00
7/17/2006 16:00
7/17/2006 17:00
7/17/2006 18:00
7/17/2006 19:00
Hour
Total Sags