

STATE OF NEW YORK  
PUBLIC SERVICE COMMISSION

Proceeding on Motion of the Commission to  
Investigate the Electric Power Outage of  
Consolidated Edison Company of New York,  
Inc.'s Long Island City Electric Network

Case 06-E-0894

PRIMA FACIE STATEMENT OF THE  
NEW YORK STATE CONSUMER PROTECTION BOARD

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The New York State Consumer Protection Board ("CPB") hereby submits its prima facie statement regarding the imprudence of Consolidated Edison Company of New York Inc.'s ("Con Edison" or "Company") actions and omissions before and during the outage in its Long Island City ("LIC") network in July 2006. As demonstrated herein, Con Edison was imprudent in several critical respects relating to the cause, scope and duration of the LIC outage.

The Company contends that the prolonged outage was the result of a perfect storm of three extraordinary events that occurred in a short time interval. First, a short-circuit, low-voltage cable fire in an underground conduit damaged two of the network's 22 primary 27,000 volt supply feeders, causing them to fail. Second, a substation breaker malfunctioned when a third feeder failed, because of a faulty connection, causing the failure of three additional network feeders. Third, a momentary current surge, known as inrush current, occurred when operators attempted to restore feeders to service. This current was as much as six times the normal levels, causing circuit breakers to open and preventing service from being restored.

The CPB does not dispute that those events contributed to the extent and duration of the LIC outage. However, the confluence of these mishaps was possible only because the LIC network had not been properly maintained and operated by Con Edison. The weakened state of that network greatly exacerbated the nature of the outage. In addition, the Company did not appropriately recognize and respond to the cascading network failures, thereby leading to extensive damage of the secondary network and prolonging the outage. Absent Con Edison's imprudence, the three events cited by the Company, if they had occurred at all, would not have resulted in an outage of the magnitude and duration that occurred in July 2006.

Through March 31, 2007, the most recent data available to the CPB, Con Edison spent \$99.079 million as a direct result of the LIC outage.<sup>1</sup> Of that amount, \$48.492 million is for operations and maintenance ("O&M") expenditures, including costs of the Company's initial response, restoration of service and payment of spoiled food claims. Those expenses have been booked and absorbed by the Company.<sup>2</sup>

Capital and retirement expenditures for the removal of damaged equipment and installation of replacement equipment attributable to the LIC outage as of March 31, 2007, totaled \$50.588 million.<sup>3</sup> The Company is treating those expenditures like normal plant additions and is seeking recovery from customers. Thus, ratepayers will fund all of those costs unless the Commission finds that Con Edison was imprudent.

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<sup>1</sup> Case 06-E-0894, Con Edison's LIC 2007 First Quarter Expenditure Report.

<sup>2</sup> The CPB understands that for the year ending March 31, 2007, representing the second year of the Company's rate plan, Con Edison's earnings on its electric operations did not exceed the earnings sharing level in its rate plan, and would not have done so even if the O&M expenses attributable to the LIC outage had not been absorbed by the Company. Thus, through March 31, 2007, ratepayers have not funded, explicitly or implicitly, any portion of the O&M expenses attributable to the outage. A portion of O&M expenditures made after March 31, 2007, could be funded by ratepayers, if the Company exceeds its earnings sharing threshold.

<sup>3</sup> LIC 2007 First Quarter Expenditure Report.

In Part I, we explain that the Company was imprudent in failing to properly monitor, maintain and operate its LIC Network. Ratepayer-financed tools to monitor and assess its network were not operating as designed, and the utility's network maintenance and operational practices were deficient in several key respects.

In Part II, we demonstrate that Con Edison was imprudent in not adequately communicating with ratepayers and public officials. This prolonged and worsened the events' scope and duration as well as its detrimental impact on customers.

We explain in Part III that the Commission has the authority to determine whether there was gross negligence or willful misconduct, a finding that may lead to affected consumers receiving amounts beyond those specified in Con Edison's tariff. The PSC should continue to take evidence on this matter.

Overall, the CPB strongly recommends that the Commission find that a prima facie case has been established to rule that Con Edison was imprudent regarding its actions and omissions concerning the LIC network before and during the July 2006 outage. The Company's ratepayers should not be required to pay costs that would have been avoided had Con Edison acted appropriately.

I. CON EDISON FAILED TO PROPERLY MONITOR, MAINTAIN AND OPERATE THE LIC NETWORK.

Con Edison is required to provide safe and adequate electric service as a matter of law. The PSC ensures that the Company has the financial resources to do so. Notwithstanding the electric delivery rates paid by its customers as approved by the PSC, Con Edison did not have in place proper tools to monitor and assess its LIC network, nor did the Company properly maintain and operate that network.

## A. Absence of Systems and Tools to Assess its Network

Con Edison did not have adequate systems and tools to assess the conditions of its network. It failed to have a system in place to identify the number of people affected by the outage. The Company could also not access apparatus to accurately ascertain the damage that was occurring to its secondary system. Thus, the outage was longer in duration and greater in magnitude.<sup>4</sup>

### 1. System Modeling

Con Edison's network operators use several tools to monitor the changes within the distribution system and associated equipment. Among the most important tools are:

- Remote Monitoring System ("RMS") - RMS monitors transformer performance including temperature, loading and status.
- World/Class Operations Load Flow Program ("WOLF") - The WOLF program is used for real-time analysis of the system during contingency events. It relies heavily on data and input from tools such as the RMS and provides the condition of all major network elements including feeders and transformers. It also models the next worst-case scenario, to provide decision-makers with important information regarding potential events.

Properly maintained, the RMS should receive reports from a minimum of 95% of the transformers. At the time of the outage, only 79.9% of the RMS units were reporting according to the DPS Staff Report,<sup>5</sup> 77% according to the Company's Report.<sup>6</sup>

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<sup>4</sup> These failures relate to the following issues identified in the Administrative Law Judge's Ruling (Case 06-E-0894, Ruling on Issues, June 15, 2007 ("June 2007 Ruling")): imprudence in not having sufficient information on which to make informed operational decisions, (June 2007 Ruling, Issues List, #1A) failing to have a system in place for accurately identifying the number of people affected by the outage (Id., Issues List #1B), not having in place tools that could accurately ascertain the damage that was occurring to its secondary system (Id., Issues List, #1E), and failing to recognize the severity of the outage, thereby causing them to be longer in duration and extent (Id., Issues List #1H").

<sup>5</sup> Case 06-E-0894, Department of Public Service Staff Report on its Investigation of the July 2006 Equipment Failures and Power Outages in Con Edison's Long Island City Network in Queens County, New York, February 2007 ("DPS Staff Report"), p. 101.

Both measures are well below the design criteria of the system, which ratepayers have paid for and expect to be maintained. With inadequate transformer information, Con Edison's system operators were unable to monitor damage occurring to that equipment in real time.

The WOLF system was also not operating as designed. It suffered from numerous technical problems and was not fully available on July 17 and 18, the first two days of the LIC outage.<sup>7</sup> Information that should have been fed into the WOLF system automatically, could only be transferred manually, thereby limiting the usefulness of the mechanism. The Company had ample notice of the need to improve its ability to model its network system, as evidence by the PSC's Order after the 1999 Washington Heights outage.<sup>8</sup> However, the Company has not complied with that directive.<sup>9</sup>

As a result of these deficiencies, Con Edison did not have necessary and timely information on which to make informed and important decisions. Absent evidence that these deficiencies could not have been avoided with proper maintenance, their existence is prima facie evidence that the Company's efforts were inadequate and imprudent.

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<sup>6</sup> Report, Long Island City Network July 17-25, 2006 Incident Investigation Committee, Submitted by Robert W. Donohue, Wade Malcolm, Edward Neal and Ron Williams, February 12, 2007.

<sup>7</sup> DPS Staff Report, p. 89.

<sup>8</sup> Case 99-E-0930, Proceeding on Motion of the Commission to Investigate the July 6, 1999 Power Outage of Con Edison Company of New York Inc.'s Washington Heights Network, Order Concerning Staff Report and Directing Company to Show Cause, March 15, 2000, Attachment, A Report on Consolidated Edison's July 1999 System Outages, March 2000 ("2000 Washington Heights Report"), Recommendation II-1.

<sup>9</sup> DPS Staff Report, p. 90.

## 2. Monitoring the Secondary Network

For much of the period of the LIC outage, Con Edison focused on monitoring and restoring the primary network. It was unable to effectively monitor the secondary network and did not have a high-level view of the status of that network.<sup>10</sup> As a result, the Company did not have accurate information about the number of customers affected by the outage and the damage to its system.

Con Edison had been on notice since the PSC's investigation of the 1999 Washington Heights outage, that its ability to monitor its secondary network required improvement. The DPS Staff Report following that event stated:

The absence of information on the secondary system can result in secondary sections being excessively overloaded. A real-time monitoring system for the secondary system would permit true load readings and provide a more accurate reflection on what portions of the secondary system are in service.<sup>11</sup>

To address that concern, the Commission ordered the Company to evaluate reasonable actions to improve monitoring of its secondary system.<sup>12</sup>

The Company has not yet fully complied with that directive. As explained by DPS Staff,<sup>13</sup> Con Edison stopped work on this initiative in 2004, concluding that cost considerations, and logistics prevented it from addressing this matter fully.

The absence of information regarding the status of the secondary network helps explain why the Company did not begin to provide a full response to the crisis before July 20, the fourth day of the outage, when it finally opened its Corporate

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<sup>10</sup> Id., p. 91.

<sup>11</sup> 2000 Washington Heights Report, p. 25.

<sup>12</sup> Id., Recommendation II-2.

<sup>13</sup> DPS Staff Reply Comments Regarding February 2007 Report, Attachment F.

Emergency Response Center and concluded that it had substantially underestimated the number of customers without service. Had such information been available in a timely fashion, the Company would have been in a much better position to take more immediate action to limit further damage to the secondary system. Accurate information regarding the secondary system would also have enabled load shedding and other conservation measures to be implemented sooner. Finally, it would have underscored the need for additional assistance to reduce the deleterious impact of the outage on customers.

#### B. Deficiencies in the Maintenance and Operation of the LIC Network

Con Edison did not properly maintain or operate the LIC network. The Company was imprudent in failing to maintain transformers,<sup>14</sup> not implementing changes to incorporate the lessons learned from training exercises,<sup>15</sup> neglecting to replace certain stop-joints on paper-insulated lead cable, and ignoring or disregarding the PSC's Order resulting from the 1999 blackout in Washington Heights.<sup>16</sup>

##### 1. Transformer Maintenance

The DPS Report concluded that immediately prior to the LIC outage, 25 transformers in the LIC network were completely out-of-service, thereby increasing the load on remaining transformers and the likelihood that they would overheat.<sup>17</sup> During

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<sup>14</sup> June 2007 Ruling, Issues List, #2D.

<sup>15</sup> Id., Issues List, #2F.

<sup>16</sup> Id., Issues List, #2N.

<sup>17</sup> DPS Staff Report, pp. 93-6.



the event, an additional 13 transformers failed: ten due to overheating, two to corrosion and one to a mechanical failure. The vast majority of these transformer failures affected one of the 22 primary feeders, causing it to go out-of-service.

As a result of the outage, the Company conducted in-depth inspections of the transformers in the LIC network. It found that 81 needed replacement, seven needed repair and 91 should be placed on a watch list. Of the 88 designated for replacement or repair, over half were targeted due to corrosion. DPS Staff characterized the high number of transformers found to have corrosion as “alarming” and concluded that it indicated the Company’s previous inspection procedures were deficient.<sup>18</sup> Con Edison’s failure, prior to the outage, to appropriately inspect and identify transformers needing replacement or repair contributed to the number out-of-service initially and the number that subsequently failed, thereby exacerbating the extent and duration of the outage and the suffering of ratepayers.

For these reasons, the Company was imprudent by failing to properly maintain transformers in the LIC network.

## 2. Procedural Changes Indicated by Training

There is ample evidence that Con Edison’s estimates of the number of customers that were out of service were grossly inaccurate.<sup>19</sup> Con Edison was aware of the importance of accurate estimates of the extent of outage, and of the need to improve its estimates. However, it did not take proper action to do so.

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<sup>18</sup> Id., p. 97.

<sup>19</sup> E.g., DPS Staff Report, p. 2.

The Company is required to hold at least one drill each year simulating a storm or storm-like event. In 2005, the Company conducted a drill that simulated a heat event in Queens County. According to DPS Staff, the drills in 2004, 2005 and 2006 highlighted the need to quickly identify the number of customers that were out-of-service.<sup>20</sup> Con Edison was imprudent by neglecting to properly follow through on these findings and changing its practices to more accurately estimate the number of customers that were out-of-service.

### 3. Stop-Joint Replacement

A sample of cables and joints that failed in the LIC outage was dissected and analyzed to help determine the underlying cause of the outage. Although only 22 specimens were recovered and analyzed, available information indicates that one paper-insulated lead-covered (“PILC”) cable failed, as well as nine joints for that type of cable.<sup>21</sup> The cable was 59 years old, whereas the average age of Con Edison’s entire LIC Network is 19 years. There were five failures of “Elastimold 2W-1W” stop joints, and 4 failures of “Raychem 3W-1W.” The failure rate of these joints from this analysis (9 of the 22 specimens analyzed) is excessive and demonstrates that the joints were a significant factor in the widespread outage.

Failure of these joints is a well-known and recurring problem, as evidenced by the Commission’s finding in the investigation of the 1999 Washington Heights outage.<sup>22</sup> The Company was ordered to develop a program for eliminating stop-joints on PILC

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<sup>20</sup> Id., pp. 61 – 63.

<sup>21</sup> DPS Staff Report, pp. 78-80.

<sup>22</sup> 2000 Washington Heights Report, pp. 30-31.

cables.<sup>23</sup> It was advised to prioritize stop-joint replacement based on the age of the associated PILC cable and the degree to which the components have been subjected to harsh conditions.<sup>24</sup> However, these joints continued to be used in the LIC Network and contributed to the outage. Although Con Edison has targeted them for elimination, its failure to do so in a timely fashion contributed to the cause, extent and duration of the outage.

#### 4. Implementation of PSC Order Resulting from the 1999 Outage of the Washington Heights Network

Con Edison was imprudent in failing to comply with the PSC's Order directing improvements resulting from its investigation into the 1999 blackout in Washington Heights. The Company's failure to implement that PSC Order directly affected the scope and time period of the LIC outage. As discussed above, directives that the Company did not fully implement that have a direct bearing on the LIC outage relate to system modeling,<sup>25</sup> monitoring of the secondary system,<sup>26</sup> and replacement of cable and stop-joints.<sup>27</sup>

The Company also did not complete directives regarding high-potential testing of feeders. Before placing a feeder back into service, the Company typically performs a high potential test, in which high voltage is supplied to identify any additional faults. Such testing stresses the cable above normal operating limits. The PSC ordered Con

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<sup>23</sup> Id., Recommendation II-7.

<sup>24</sup> Id., p. 31.

<sup>25</sup> Infra, Part I.A.1.

<sup>26</sup> Infra, Part I.A.2.

<sup>27</sup> Infra, Part I.B.3.

Edison to accelerate its evaluation of alternatives to high potential testing of its feeders, due to concerns that such testing may be destructive.<sup>28</sup>

Con Edison has not complied with that directive. The Company continues to use hi-potential testing as part of its feeder restoration process. Continued reliance on this technique may have placed additional unnecessary stress on the LIC network and led to a longer and more widespread outage.

II. CON EDISON FAILED TO PROPERLY COMMUNICATE WITH CUSTOMERS, PUBLIC OFFICIALS AND THE PUBLIC AT LARGE REGARDING THE NATURE AND STATUS OF THE OUTAGE.

It is incumbent upon Con Edison to communicate accurate and timely information regarding outages to customers, public officials and the public at large. The Company was imprudent in failing to do so during the LIC event.<sup>29</sup>

Company witnesses have indicated on the record that during the early stages of the event they failed to accurately perceive the scope of the outage.<sup>30</sup> Although Con Edison observed reduced demand, most Company witnesses attributed this, incorrectly, to its load reduction measures. Company witnesses also stated that they did not realize the magnitude of the outage until the fourth day of the event, when as a result of a direction relayed from Company executives, personnel were sent out onto the streets to conduct a door-to-door survey.

There is ample evidence that many ratepayers and public officials were not notified of the extent of the outage in a timely fashion or were ignored by Con Edison

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<sup>28</sup> Id., Recommendation II-10.

<sup>29</sup> June 2007 Ruling, Issues List #5.

<sup>30</sup> Case 06-E-0894, Technical Conference, October 27, 2006, Transcript p. 963.

representatives when requesting information.<sup>31</sup> If the public and community leaders had been provided timely and accurate information regarding the scope and anticipated duration of the outage, customers would have at least been able to make an informed decision as to whether to temporarily relocate, move their perishables and/or take other actions that would have reduced the impact of the event.

More effective communication with customers, the general public and elected officials may also have led the Company to gain critical information regarding the scope of the event. Further, such information would have enabled New York City officials to dispatch emergency measures sooner. According to the New York City Office of Emergency Management, the LIC outage qualified as a “Phase II power disruption,” since it impacted more than 3,000 customers for longer than 24 hours. Unfortunately, the agency was unable to make such a designation and therefore did not initiate an appropriately scaled response until the fifth day of the event, when Con Edison finally raised its affected-customer estimates from 1,800 to 25,000.<sup>32</sup> According to that same report “from Monday July 17 to Thursday, July 20, many New Yorkers suffered needlessly without the benefit of critical City services.”<sup>33</sup>

A better understanding of the scope of the event, coupled with appropriate communication with customers, would also have permitted customers with service to reduce electricity demand. This would have reduced stress on the system, potentially leading to more rapid network restoration.

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<sup>31</sup> Public Statement Hearings; DPS Staff Report pp. 35-39.

<sup>32</sup> NYC City Council Report of the Governmental Affairs Division, Committee on Consumer Affairs, Committee on Public Safety, August 22, 2006 “Emergency Response to the Queens Blackout,” p. 10.

<sup>33</sup> Id.

III. THIS PROCEEDING SHOULD INCLUDE AN ASSESSMENT OF THE APPROPRIATENESS OF COMPENSATION TO CONSUMERS BEYOND AMOUNTS SPECIFIED IN THE TARIFF.

In his June 15, 2007 Ruling, Administrative Law Judge Jeffrey Stockholm repeated a concern he identified at the prehearing conference as to whether the Commission can require Con Edison to pay amounts to consumers for damages beyond levels specified in the Company's tariffs.<sup>34</sup> Although the PSC cannot order the Company to pay consumers more than levels prescribed in the tariff, it has the authority to determine whether there was gross negligence or willful misconduct under the tariff.<sup>35</sup> The Commission should continue to seek, receive and review evidence that would enable it to make an informed decision on this important issue for consumers. A finding of gross negligence, if warranted, can be used by a court of competent jurisdiction to determine whether the Company should pay customers for damages beyond those identified in the Company's tariffs.

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<sup>34</sup> Case 06-E-0894, Ruling on Issues, June 15, 2007, p. 5.

<sup>35</sup> New York Telephone vs. Public Service Commission, 271 AD 2<sup>nd</sup> 35, 3<sup>rd</sup> Department (2000), Appeal Denied 95 NY 2<sup>nd</sup> 762 (2000).

## CONCLUSION

For the reasons set forth herein, the CPB recommends that the Commission find that a prima facie case has been made to find that Con Edison was imprudent regarding its actions and omissions before and during the outage in the Long Island City network in July 2006.

Respectfully submitted,

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