

VIA HAND DELIVERY

January 30, 2007

Jaclyn A. Brillling  
Secretary  
New York State Public Service Commission  
Three Empire State Plaza  
Albany, NY 12223-1350

Re: CASE 06-E-0894 – Investigation of Con Edison Electric Power Outages in Long Island City Electric Network

Dear Secretary Brillling:

Please find enclosed an original and 5 copies of the Report of the New York State Assembly Queens Power Outage Task Force (“Report”). Since the extended Long Island City outage of last year, the Assembly Queens Power Outage Task Force has convened experts in the energy arena to examine the long-term and immediate causes of the outage and the adequacy of the response to the outage – as determined through information gathered in Assembly investigative proceedings as well as other sources – and to make recommendations with respect to necessary changes in current management and regulatory procedures and structures to ensure that no other community in a utility service territory experiences the extended outage suffered by Long Island City residents and businesses last summer. The members of the Task Force are noted in the Report and include Assemblymembers Margaret Markey and Catherine Nolan, who along with myself are the members of the Assembly representing the population of Con Edison ratepayers which were directly affected by the extended outage.

This Report is being submitted at this time in conjunction with the “informal comment” period, providing parties the opportunity to respond to the Draft Report of the Department of Public Service Staff, issued on January 17, in the above-captioned proceeding. The members of the Task Force and I, along with Assembly Majority colleagues, have been actively participating in this proceeding, and are concerned that a schedule for party comments and participation beyond the issuance of a Staff Report, either in this proceeding or in any prudence proceeding, has not been formally established as yet.

To ensure that analysis and recommendations beyond the Staff investigation are received by the PSC for consideration, this Report is hereby submitted at this time, so that the PSC may review this Report in conjunction with the Staff Report for consideration and action. Should a formal comment and reply comment period be established for this proceeding at a future date, my Assembly colleagues will comply with those schedules.

Respectfully Submitted,

A handwritten signature in black ink that reads "Michael N. Gianaris". The signature is written in a cursive style with a large initial "M".

Michael N. Gianaris  
Member of Assembly

Enclosures

cc: Hon. Eleanor Stein (via email)  
Active Party List (via email)

# **Report of the New York State Assembly Queens Power Outage Task Force**

**Concerning the July 2006 Power Outage  
in Consolidated Edison's Service Territory**

**January 30, 2007**

**Task Force Members:**

**Hon. Assemblymember Michael Gianaris**

**Hon. Assemblymember Margaret Markey**

**Hon. Assemblymember Catherine Nolan**

**Ms. Karen Burstein, former PSC Commissioner**

**Mr. Frank Murray, former State Energy Commissioner**

**Mr. Gerald Norlander, Public Utility Law Project**

**Mr. Fred Zalcman, Pace Energy Project**

**Ms. Rae Zimmerman, New York University, Wagner School, ICIS**

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## **I. EXECUTIVE SUMMARY**

### **A. Overview**

In the aftermath of the massive July 2006 power outage that affected western Queens, Assembly Speaker Sheldon Silver created this New York State Assembly Queens Power Outage Task Force (the “Task Force”) and charged its members with the responsibility of examining the ways in which New York State laws and regulations governing the electricity distribution system were unable to prevent such a colossal failure from occurring. Other entities, most notably the Staff of the Department of Public Service at the request of the Public Service Commission (“PSC” or the “Commission”), have undertaken their own investigations into this disaster and are analyzing, among other things, the specific equipment failures during the power outage. This Report approaches the issue from a broader, policy perspective. The Task Force endeavored to identify problems with the State’s energy policy over the previous decade that led to an unacceptable lack of accountability on the part of Consolidated Edison (“Con Edison” or the “Company”), as evidenced by their actions before, during and after the summer 2006 Queens power outage. What follows are the findings and recommendations of the Task Force intended to restore confidence in the electricity distribution network and ensure that our utilities are more responsible corporate citizens.

Beginning in the 1990s, New York State embarked on an effort to substantially restructure and deregulate the electric power industry and to rely more heavily on performance-based regulation, resulting in relaxed oversight of everything from electricity production to electricity supply and delivery. The loss of checks and balances brought on by this policy of

light-handed regulation was to be replaced by additional competition in the marketplace, forcing the private entities participating in our power industry to act efficiently and responsibly not because the government was forcing them but because of concern that someone else might be able to do it better.

The utilities responsible for the distribution of electricity through the grid were left to operate as a monopoly, meaning that the dangers of relaxed oversight of this essential function were not forestalled through the addition of vigorous competition. Basic economics and experience tells us that monopolies operating free from stringent regulations are a recipe for disaster. The results of this policy mistake for Queens residents, which are eerily reminiscent of those related to the 1999 Washington Heights-Inwood power outage, are now all too clear.

Throughout this Report, the Task Force will recommend various measures that will remedy this problem by mandating increased PSC oversight of electricity distributors such as Con Edison, as well as injecting competition where that can be achieved consistent with the constraints of reliable electricity distribution.

## B. The Queens Outage

The unprecedented power outage that struck western Queens residents and businesses began in the midst of an expected heat wave on the afternoon of Monday, July 17, 2006, and lasted nine days into the morning of Wednesday, July 26, 2006.<sup>1</sup> It was the longest single power outage in the history of New York City and among the longest in the past decade nationwide.

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<sup>1</sup> See Consolidated Edison's "Initial Report on the Power Outages in Western Queens in July 2006," August 2, 2006, (hereafter "Con Ed Report") at 1-1 to 1-3.

Over the course of the first day of the outage, it was clear that the equipment failures in Con Edison's Long Island City network were spiraling out of the Company's control. During this time, local elected officials pleaded with Con Edison representatives to recognize the severity of the outage and communicate more accurate information to the New York City administration so that an appropriate emergency response could be initiated. Despite this, it was only after three full days of Con Edison's inability to resolve the crisis, on Thursday, July 20<sup>th</sup>, that Con Edison elevated its corporate response by opening a Corporate Emergency Response Center.

Throughout the crisis, and even since its conclusion, one of the most significant obstacles presented to affected residents and businesses was the lack of consideration and responsiveness on the part of Con Edison. The Company's actions reveal that full disclosure about the events of the past summer is a lower priority than avoiding legal liability for the numerous mistakes made by its management.

This is made clear by Con Edison's insistence that it was wise to continue operating the Long Island City network when feeder after feeder was failing in a system designed to withstand only two feeder failures while an unprecedented number of manhole explosions indicated extensive damage to the secondary system throughout western Queens. It is also evidenced by the way the Company dealt with local merchants, some of whom are no longer in business, when asked by local elected officials to properly reimburse businesses for losses incurred as a result of the outage.

It is now clear that Con Edison's failures were not limited to their actions during the outage itself, but extend back to their decisions over the last several years in not anticipating the increased stress on the Long Island City network and investing accordingly in infrastructure

improvement and modernization. Indeed, only after the outage did Con Edison adopt a plan to add two new feeders.<sup>2</sup>

### C. Inquiries Regarding the Queens Outage

In the aftermath of the power outage, numerous inquiries were initiated to examine various aspects of the disaster. The State Assembly and the City Council both held public hearings to elicit testimony from representatives of Con Edison, the PSC and other relevant entities. The PSC is in the midst of an ongoing investigation of the incident, for which a draft report has already been released<sup>3</sup>, and this Task Force is continuing its work to identify flaws in current laws and regulations that had an indirect, but profound influence on the decisions and actions taken by Con Edison's management in creating this crisis.

It is the hope of this Task Force that these various efforts will lead to more than just the usual finger-pointing and blame-assigning, but will actually yield dramatic reforms to reduce the likelihood that any New Yorker will endure the suffering visited upon the residents of western Queens in 2006.

### D. Findings and Recommendations

The Task Force's findings and recommendation, which are more voluminous and specifically stated throughout this Report, are summarized below:

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<sup>2</sup> Con Edison "Comprehensive Report on the Power Outages in Northwest Queens in July 2006," October 12, 2006, p. 6-2 ("Con Ed October 12 Report").

<sup>3</sup> DPS 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, January 2007 ("Draft Staff Report").

## 1. Findings

- *The Certificate of Public Necessity granted to Con Edison by the PSC is of indefinite duration and contributes to the lack of public accountability by the utility.*
- *The PSC is the duly authorized body that regulates public utilities like Con Edison. Many of Con Edison's poor performance practices may be attributed to relaxed oversight by the PSC, including inadequate performance measures and ineffective sanctions for reliability failures. The lax PSC scrutiny impaired the degree to which New Yorkers are able to confidently rely upon the quality and consistency of Con Edison's service.*
- *Con Edison continues to rely upon an aging and inefficiently maintained network grid that was not sufficiently upgraded to meet growing load, and similar power outages will continue to be experienced in its service territory if network upgrades, improved maintenance and new technologies are not quickly incorporated.*
- *Customers in Con Edison's service area would benefit from pilot programs utilizing new technologies to advance energy efficiency and improve real-time monitoring of the electric grid.*
- *Con Edison's methods for determining the number of customers affected by the power outage were fundamentally flawed. Its method of defining "customer" and its heavy reliance upon receiving telephone calls from "customers" to assess the magnitude of the power outage resulted in a gross underestimate of the actual number of people affected by the power outage. Even today, Con Edison's continued assertion that only 25,000 customers were affected by the power outage underestimates the number of people affected.*
- *Con Edison did not effectively implement an emergency response plan for the residents of western Queens. Residents and business owners relied upon word of mouth in many circumstances to determine where to access emergency locations for distribution of water and ice.*
- *Con Edison's compensation to residents and business who suffered losses due to the power outage was woefully inadequate and unrelated to the duration of the power outage. Additionally, the mechanisms for the filing of claims for lost food were not clearly communicated to people in Con Edison's service territory.*
- *The recommendations contained in the Attorney General's report regarding the 1999 power outage in Washington Heights and Inwood have not been fully implemented and, if they had been, may have helped avoid or minimize the effects of the 2006 Queens outage.*

## 2. Recommendations

- *Require the PSC to conduct a periodic review of Con Edison's Certificate of Public Necessity for the Con Edison service area, with an opportunity for competitors to offer proposals for management of all or part of the distribution system.*
- *Examine the extent to which Con Edison reliability has been impaired as a result of relaxed PSC oversight.*
- *Establish clearly defined statutory qualifications for PSC commissioners, which would establish minimum pre-requisites for prospective PSC commissioners to best serve the interests of the public as contemplated by the legislature.*
- *Determine whether PSC "service quality metrics" actually and accurately measure the right things to assure reliability and adequacy of service.*
- *Increase economic consequences to utilities for not attaining existing service quality standard targets set by the PSC.*
- *Amend the Public Service Law to require the PSC to impose prompt, meaningful rate refunds or reductions in response to objectively measured failures to provide reliable needs.*
- *Require that the PSC reconsider the practice of multi-year rate plans and instead require annual rate reviews of Con Edison and the State's other investor-owned utilities.*
- *Encourage the PSC to facilitate open public scrutiny of utility management practices and spending priorities.*
- *Require the PSC to establish an annual or biannual process for public review and comment and Commission approval of Con Edison's infrastructure expenditure plans, especially operation and maintenance of its distribution network.*
- *Require the PSC to mandate that each utility submit annual public expenditure reports that specify discrete capital, operating and maintenance spending levels in specific categories, such as power purchases, distribution facilities, transmission, environmental controls and new/existing generation, and make these reports subject to public scrutiny with an opportunity for public comment.*
- *Enforce the legislatively required schedule for PSC audits of Con Edison.*

- *Con Edison should establish a working group to develop clear protocols in the event of a power outage. The working group could be composed, initially, of members of Con Edison management, the PSC and elected officials. The protocols developed by the working group should mandate speedy communication by Con Edison to elected officials in the areas affected by power outages.*
- *Con Edison's communications to elected officials should provide clear indication as to the status, extent, projected duration and forecasted time of repair of a given power outage. The protocols should mandate that Con Edison communicate with elected officials on a frequent basis throughout the duration of a power outage, and establish clear procedures for relaying this information to the general public in a clear and regular fashion.*
- *The working group should concentrate its efforts not only on developing clear protocols in the event of a power outage, but also on enhancing its relations with the local communities which it serves. Examples of enhanced community relations might include, as an ongoing business practice, holding meetings between Con Edison officials and members of the public on a semiannual basis.*
- *More forthcoming and accurate representation of the number of people affected must be provided by Con Edison.*
- *Con Edison should establish more effective methods of discovering the scope of an outage. Knowledge of the system by operators and maintenance workers would be greatly enhanced by electronic means rather than manual field surveys.*
- *Con Edison should develop a more effective emergency response plan, including better methods of communicating information internally between field personnel and management.*
- *Con Edison's reimbursement policies should be expanded to include coverage for damaged electrical equipment, computer equipment, air conditioning equipment, and other electronic equipment necessary for maintaining other sophisticated instruments used by commercial establishments or residences. The dollar amounts could be capped with an aggregate dollar maximum, tied to the duration of a power outage, but should provide for compensation to both residential and commercial customers affected by a power outage.*
- *Con Edison's liability provisions should be connected to the duration of a blackout in order to render them meaningful. Accordingly, the Task Force recommends that Con Edison apply its liability provisions to residential and commercial customers*

*proportionately for every 48 hour increment of continued power outage. This would provide more adequate and more fair coverage to Con Edison's customers than Con Edison's currently contemplated and vague "per incident" standard.*

- *Con Edison's liability provisions should expressly indicate that Con Edison will offer compensation to commercial customers who have lost business opportunities as a result of a power outage. One way of formulating the amount to be compensated for lost business opportunities could be based on average amounts of revenue accumulated by the business during previous years when power was available. For a new business, a projected forecast of quarterly earnings could be used as the basis for formulating the amount of dollar compensation due to a power outage, again pro-rated to the length of the duration for every 48 hour period.*
- *Con Edison should earmark additional funds within the Long Island City network to support demand reduction measures, including demand response, permanent demand-side management and customer sited generation. The programs should be designed to include low-income households who may lack resources to invest in these measures.*
- *Con Edison should allocate \$20 million over 3 years to create a "Network of the Future" pilot project within the Long Island City network, creating a test bed for demonstration of state-of-the-art smart grid technologies, modeled on the proposed RECO Smart Grid pilot for Ramsey, New Jersey. Costs of the project should not be passed through to rate-payers.*
- *"Network of the Future" funding should be earmarked for the following specific research, development and deployment purposes:*
  - *"Smart Grid" technologies that are capable of improving the performance and technical efficiency of the grid or that would facilitate the economical interconnection of distributed generation to network systems;*
  - *Targeted area incentives for clean distributed generation to promote reliability and/or relieve congestion;*
  - *Targeted area incentives for advanced metering technology for residential and small commercial and industrial consumers to enable real-time monitoring and enhance the demand responsiveness of electricity consumption;*
  - *Research and development of superconductor and other high efficiency distribution lines in conjunction with national laboratories; and*
  - *High visibility public-private demonstration projects.*

- *The “Network of the Future” program would be developed in consultation with a high-level Advisory Committee including, among others, representatives of NYSERDA, the PSC, elected officials and other community stakeholders.*
- *NYSERDA should allocate to New York City a fair share of program dollars committed to grid modernization through the \$10 million reauthorization of the Energy Smart Program. Con Edison should make every effort to leverage its own resources by securing state and federal funding.*
- *The PSC should institute a formal proceeding on the question of Con Edison’s prudence and gross negligence.*
- *The State Legislature should amend the New York State Public Service Law to remove the tariff bar against suits for damages from outages due to simple negligence.*
- *Ensure that the Con Edison workforce is not adversely affected by any changes made in response to the above recommendations.*

## **II. IMPROVING THE ACCOUNTABILITY OF CON EDISON AND THE PSC**

### **A. Concerns of the Task Force**

An identified area of concern pertains to the integrity of Con Edison's commitment to provide safe and adequate service to the public in satisfaction of its common law and statutory duties to its customers<sup>4</sup>, as well as the duty of the PSC to regulate Con Edison's activities accordingly. Here, the Task Force is sensitive to the need for increased measures to improve the accountability of both Con Edison and the PSC to ensure that both entities operate in the best interests of New York residents whom they are obliged by law to serve. Accordingly, the Task Force proposes a comprehensive review of Con Edison's current franchising structure, the mandate of the PSC to serve as an agent of the public, and Con Edison's own "Findings and Action Plan."

### **B. Reviewing Con Edison's Certificate of Public Necessity**

In conducting its work, the Task Force was surprised to discover that there is apparently no periodic review of the certificate Con Edison holds to distribute electricity within its service area. While the PSC ostensibly reviews Con Edison's performance as part of any rate cases that come before it, there is no process in place to conduct an evaluation of whether Con Edison is actually fulfilling its responsibilities to the public and its customers in the context of a decision to permit or deny the Company the opportunity to continue filling that role. Consequently, there is

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<sup>4</sup> Section 65 of the Public Service Law imposes a statutory duty on Con Edison to provide service that is "safe and adequate and in all respects just and reasonable" and forbids a utility from subjecting "any particular person, corporation, or locality ... to any undue or unreasonable prejudice or disadvantage in any respect whatsoever." PSL §65.1 and §65.3.

never an evaluation of whether Con Edison deserves to continue receiving the greatly valuable business opportunity of a publicly-granted monopoly to provide electric distribution service. Its performance is mainly measured in PSC proceedings concerning the amount Con Edison will be permitted to charge its customers.

The current situation allows Con Edison to operate with an immunity that few, if any, corporate entities ever enjoy. No matter how badly Con Edison performs, it never faces the possibility of being replaced in performing its responsibilities. The only consequence ever visited upon Con Edison for service quality failures or dereliction of duty is a relatively small down-tick in its very profitable bottom line. The public deserves a more competitive process, one where a choice can be made regarding which proposals from competing entities are in the best interests of the state of New York.

Accordingly, the Task Force recommends that the PSC, along with the appropriate local jurisdictions, conduct a periodic review of the certificate granted to Con Edison and provide an opportunity for other companies to offer competing proposals to manage all or part of the electricity distribution network. Such a review should occur over a large enough period of time so that long-term infrastructure investments are encouraged and not deterred. The Task Force recommends that this review occur every 10 years beginning in 2010.

The Task Force acknowledges that there are difficulties associated with implementing any system management changes that such a review may inspire. For example, Con Edison is currently the owner of much of the electricity distribution infrastructure and a method of determining appropriate compensation would need to be arranged if a different entity were to manage such infrastructure instead of Con Edison. In this case, the example of the Long Island

Power Authority (“LIPA”) is illustrative of a possible solution. LIPA is the owner, but not the manager, of the electricity distribution infrastructure on Long Island. Instead, LIPA enters management contracts with other entities, currently KeySpan, to provide this service. Should a review determine that another entity is better suited than Con Edison to manage the distribution grid in the New York City metropolitan area, the PSC can require a similar management contract to be put in place.

Ensuring that any changes do not lead to an adverse effect for the Con Edison workforce, who performed admirably throughout the Queens power outage, is also important to the Task Force. Yet despite these concerns, the Task Force believes that issues like this can and should be resolved appropriately so that Con Edison can be held to account for its successes and failures akin to so many companies in other lines of work.

### C. Reviewing the Mandate and Functioning of the Public Service Commission

“...[T]he Public Service Commission [has] a definitely delegated authority and duty to act as the agent of the public themselves... it is not a mere arbitrator as between the people and the public utilities, but was created for the purpose of seeing that the public utilities do two things: first, give people adequate service; second, charge reasonable rates...In performing this function, it must act as agent of the public...” -- *Governor Franklin Delano Roosevelt*<sup>5</sup>

#### 1. Historical Overview

This summer's extended blackout in Queens certainly raises many questions regarding the actions (and inactions) of Con Edison. But it would be a mistake if the Commission's

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<sup>5</sup> Franklin Delano Roosevelt, “Portland Speech: Public Utilities Hydro-Electric Power” delivered September 21, 1932, Works of Franklin D. Roosevelt, Reprinted in *The Public Papers and Addresses of Franklin D. Roosevelt*, Vol. 1, 1928-32, (New York City: Random House, 1938), p. 727.

investigation of the Queens blackout began and ended with Con Edison's behavior. In the Task Force's view, this outage also raises serious public policy questions about the performance of the Commission itself, the adequacy of its resources, and the effectiveness of its current regulatory policies and philosophy.

In considering the responsibility of the Commission, this Task Force endorses the above referenced point of view articulated over 70 years ago by Governor Franklin Delano Roosevelt. Governor Roosevelt also declared that "the regulating commission ... must be a Tribune of the people, putting its engineering, its accounting and its legal resources into the breach for the purpose of getting the facts and doing justice to both the consumers and investors in public utilities".

For decades the approach to utility regulation in New York was based on the traditional cost-based, regulated rate-of-return model. While certainly not a perfect system, cost-based regulation had the benefits of familiarity, predictability and transparency. The Commission closely reviewed and regulated utility expenditures and management practices. To finance both capital investments and routine maintenance and operations, the utilities would regularly file with the Commission, usually on an annual basis, formal requests for increases in their electric rates. This filing would initiate a formal adjudicatory proceeding by the Commission in which the utility, Commission staff, ratepayers, consumer groups and other interested parties had the opportunity to review, challenge, support and/or oppose a utility's rate request.

The rate proceeding was typically triggered when a utility sought an increase in rates, though it was also possible on motion of the PSC when the Commission sought to examine current rates. During the process, utility costs, operations, and performance could be reviewed.

Investments in new generation, transmission and distribution facilities were also reviewed and approved by the Commission. Utilities were allowed to place prudently incurred capital expenditures in their rate base, recovering over time both these expenditures while also earning a rate of return on these investments.

The 1990s was a period of fundamental change for the electric power industry in New York. In Washington, the Federal Energy Regulatory Commission (FERC) aggressively promoted policies intended to achieve greater competition in the electric industry by easing entry of new wholesale power generation companies and by prohibiting transmission owners from denying access to their interstate systems. In Albany, the Commission enthusiastically embraced this philosophy and even took it one step further by encouraging the investor-owned utilities to voluntarily divest themselves of their generating facilities by providing incentives (including greater levels of allowable return) to facilitate such divestiture. In addition, the Commission's traditional cost-based, regulated rate-of-return model was replaced by a more lightened regulatory approach characterized by performance-based ratemaking for the remaining monopoly distribution function.

In recent years, the PSC preference has been to set utility rates for service several years at a time, using a "macro" approach based on settlements that are the outcome of confidential negotiations and does not specifically review details of utility spending plans. The intent is to focus on "performance" and results, as a perceived alternative to "micro management" of utility decisions. Utilities, including Con Edison, have been given great flexibility by the PSC to allocate resources during long multi-year rate plans.

As a result, performance-based ratemaking creates strong incentives for the utility to

reduce expenditures during the term of the rate plan because any cost savings may be retained by the utility as profit.

Under this lightened PSC regulation, Con Edison reduced its preventive maintenance budgets. A Department of Public Service report on the 1999 Washington Heights outage noted that maintenance budgets had been reduced in the years preceding the outage. In 2004, the PSC recognized that public safety may have been compromised under its regulatory policies that rely more on utility choices:

*"Over the past 10 to 15 years, we and other regulatory commissions across the nation have moved from traditional one-year litigated rate cases to multi-year performance-based rate plans. The purpose of these plans is to allow for rate stability while allowing the utilities greater flexibility in managing their operations. Staff's investigation into this matter suggests that the utilities may not have been placing enough attention and emphasis on safety matters."*

A 2004 Public Utility Law Project report based on data provided to the PSC by Con Edison after the Washington Heights-Inwood outage indicates that for several years during multi-year rate plans, Con Edison set lower budgets each year for certain preventive maintenance programs, and then each year underspent those budgets.<sup>6</sup> For example, maintenance budgets and expenses significantly declined from 1999 - 2003 in the Brooklyn-Queens division, which includes the areas that experienced lengthy outages in the summer of 2006.

Another consequence of "deregulation" has been a significant reduction in the number of actual rate cases that the Commission adjudicates. This is significant because adjudicatory rate making proceedings have traditionally provided the forum for the Commission staff, ratepayers, consumer groups, and other interested parties to examine in great detail a utility's management

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<sup>6</sup> Con Edison Maintenance Program Budgets & Expenses 2000 - 2003, [http://www.pulp.tc/ConEdMB\\_E2-26-04final.pdf](http://www.pulp.tc/ConEdMB_E2-26-04final.pdf)

practices, spending priorities and investment strategies through the filing of discovery motions and interrogatories, the submission of testimony and the direct questioning of expert witnesses and utility senior management. While certainly not a perfect mechanism, ratemaking proceedings did have the distinct advantage of opening up the regulatory process and shedding more light on a utility's practices and policies. The regularized pattern of these proceedings made utilities and utility management more accountable.

Still another consequence of "deregulation" has been reduced regulatory scrutiny. The Commission no longer reviews the specific details of utility spending plans, certainly not with the same degree of scrutiny that had characterized its review in adjudicated rate cases. Annual rate cases have been largely replaced by multi-year performance-based rate plans. While this approach may have the advantage of providing utility management with more flexibility, not necessarily a bad idea, it has come with a price. As noted above, the Commission itself has acknowledged that on at least one occasion, coincidentally an incident also involving Con Edison, performance-based regulation may have compromised public safety.

This Task Force is concerned that performance-based regulation as conducted by the PSC might also be contributing to a reduction in the overall reliability of Con Edison's distribution system. The nature of the Queens blackout does not appear to have been an isolated, "once-in-a-lifetime" event, certainly not within the Con Edison service territory. Only seven years ago, hundreds of thousands of people in New York City and Westchester County also lost their power during a summer heat wave with the most widespread blackout occurring in the Washington Heights-Inwood area of Manhattan. That blackout was not caused by a failure either in the power supply or in the transmission of that power to Con Edison's distribution system. The 1999

blackout and its associated outages were caused by failures of equipment within Con Edison's electricity distribution system. As a result of the several investigations underway and the information available at this time, it appears that the physical causes of the Queens' blackout were also operational failures and failures of equipment in Con Edison's electricity distribution system. The timing and nature of these outages might only be only coincidental, but a reasonable person might ask whether these outages could have been prevented had the Commission not relaxed its regulatory scrutiny of Con Edison as a result of its changed approach to utility regulation.

The Commission must reassert its mission as "a Tribune of the people" committed to its responsibility for assuring adequate electric service at reasonable rates. Under the best of circumstances, this is a formidable challenge.

This task will be complicated by the fact that the Commission confronts major personnel issues, in particular the retention of qualified staff and the availability of adequate resources. When Governor Pataki took office, the Commission had approximately 800 staff. Today the Commission staff numbers around 550, a decrease of more than 30% in twelve years. This reduction was more than quantitative. It was also qualitative. Many of these staff departures were very experienced and knowledgeable men and women who had begun their careers at the Commission under the tutelage of such regulatory visionaries as Joseph Swidler and Alfred Kahn. But as stark as these numbers are, the situation is potentially much worse. Nearly 40% of the current Commission staff is 55 or older and may be eligible to retire soon. This raises another question by this Task Force, namely will the Commission have the leadership, the

capability, and sufficient resources, both qualitatively and quantitatively, to fulfill its regulatory responsibilities?

## 2. Performance Measures and Incentives

To guard against cost cutting that would adversely affect service quality, safety and reliability, the New York PSC relies upon statistical service quality "metrics." A utility's performance is reported by the utility to the PSC and measured against an administratively determined standard. The PSC uses incentives - negative or positive financial adjustments - so that, ostensibly, utilities will have the incentive to meet the standards as a mechanism to meet the Public Service Law requirements to provide safe, reliable and adequate service.

### a. What the PSC Measures

One of the risks of reduced oversight and reliance upon performance regulation is that the yardsticks used by the regulator for measuring performance may be inaccurate or insufficient to test utility performance of its duty to provide safe, adequate, and continuous service.<sup>7</sup> For example:

- The service quality standards used by the PSC for measurement of the number of customer outages are based on the number of customers whose continuity of service is interrupted (SAIFI)<sup>8</sup> and the duration of the interruption (CAIDI).<sup>9</sup> Con Edison, however, has large customers who submeter electricity to many separate households in apartment buildings, co-ops and condominiums. Discovery in the current DPS

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<sup>7</sup> The Home Energy Fair Practices Act (HEFPA) declares it "to be the policy of this state that the continued provision of all or any part of such gas, electric and steam service to all residential customers without unreasonable qualifications or lengthy delays is necessary for the preservation of the health and general welfare and is in the public interest." Public Service Law § 30. The PSC has established no performance standards to measure and discourage dangerous and unnecessary reliance on deliberate interruption of utility service as a bill collection tactic. See "Candle Fires: A Symptom of "Rolling Blackouts" Affecting Low-Income Households," <http://pulpnetwork.blogspot.com/2006/09/candle-fires-symptom-of-rolling.html> ; "Tragic Con Ed Twist for Harlem Candle Girl," NY Post, Dec 7, 2005 [http://www.pulp.tc/html/tragic\\_con\\_ed\\_twist\\_for\\_harlem.html](http://www.pulp.tc/html/tragic_con_ed_twist_for_harlem.html)

<sup>8</sup> The System Average Interruption Frequency Index, SAIFI = number of customer interruptions/number of customers served.

<sup>9</sup> The Customer Average Interruption Duration Index CAIDI = number of customer hours of interruption/number of customers served.

investigation of the Long Island City outage indicates that there are 45 submetering customers in that network, and they submeter to 12,057 residential households. If those 45 customers had lost service, and if one assumes four persons per household, more than 48,000 persons would be affected by a lack of service to their apartments. Nonetheless, the PSC SAIFI index would count these as 45 interruptions of service. Similarly, many landlords of commercial property in New York City are master metered by Con Edison, and they include the cost of electricity in the rent for their business tenants. Again, the PSC index would understate the number of companies (and workers) affected by an outage. For example, a master metered building with twenty commercial tenants would count as only one outage in calculating the SAIFI index. The result is that the SAIFI standard used by the PSC systematically undercounts of the number of households and businesses affected by a Con Edison power outage.<sup>10</sup>

- There is no service quality standard for Con Edison voltage reductions because a voltage reduction is not classified as an “outage” in calculating the SAIFI numbers. Voltage was reduced by 8% in the Long Island City network from the evening of July 17 until July 25. In addition, while the Long Island City outage was occurring, Con Edison reduced voltage for the entire Jamaica, Queens, network by 8 per cent for more than 12 hours and the voltage reduction in the Jamaica network was not communicated to customers.<sup>11</sup> The Jamaica network customers and the Long Island City customers experienced voltage reductions which could be considered service that fails to meet the statutory standard of “adequate” service contained in Section 65 of the Public Service Law.<sup>12</sup> It also could be considered load shedding that is a symptom of major system risks or deficiencies. Yet there is no discrete PSC performance standard for measuring voltage stability or power quality or power adequacy, other than whether service is on or off. The PSC has no metric for voltage reductions.<sup>13</sup>
- Con Edison attributes six of the Long Island City feeder failures to unexplained fires in the secondary system. There is no PSC performance standard for the number of Con Edison “manhole events” such as fires and explosions or performance sanctions if the

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<sup>10</sup> Upstate utilities typically do not have substantial numbers of submetered residential customers and typically have fewer and smaller commercial buildings that may be master metered. As a result, Con Edison appears to have a lower SAIFI number and appears to have greater reliability. While this may be due in part to the engineering differences of underground networks and their resilience to storms, it may also be due to bias introduced by the way service interruptions are measured.

<sup>11</sup> See Con Edison response to PULP Information Request #51 in PSC Case 06-E-0894, *Investigation of Electric Power Outages in Con Edison’s Long Island City Network*, [http://www.pulp.tc/Response\\_to\\_PULP\\_19.pdf](http://www.pulp.tc/Response_to_PULP_19.pdf)

<sup>12</sup> A Con Edison witness at a PSC Technical Conference in Case 06-E-0894 indicated that the Long Island City voltage reductions were serious enough to impair functioning of air conditioning:

“Q. Would it be reasonable to expect that in that one area or couple of those areas that the customers, that their air conditioners wouldn’t work at the volts they were receiving?”

A.... Yes, it would be.”

*Technical Conference Transcript*, p. 965. [http://www.dps.state.ny.us/06E0894\\_TTC\\_10\\_27\\_06.pdf](http://www.dps.state.ny.us/06E0894_TTC_10_27_06.pdf)

<sup>13</sup> Indeed, there is no mention of the July 18 - 19 Jamaica network voltage reduction in the more than 600 page “comprehensive” report filed by Con Edison with the PSC on October 12, 2006, which portrays the Long Island City outage as an unprecedented and unforeseeable fluke occurrence. Discovery responses in Case 06-E-0894 also indicate that on July 26, 2005, a hot day, Con Edison reduced voltage by 8% in the Williamsburg network.

number of events is not reduced.<sup>14</sup>

b. PSC Sanctions Are Not Timely and Meaningful

The basic bargain of performance based regulation is that the regulator allows the utility great flexibility in operations and investment, but holds the company to performance standards through sanctions that are timely and significant enough to induce the desired service reliability and quality performance levels. Under Con Edison's rate plans, however, negative rate adjustments when Con Edison fails to meet performance standards have not been swiftly implemented by the PSC. Instead of a prompt downward rate adjustment or prompt refund to customers when performance standards are not met, rate reductions due to reliability performance failures are "deferred," to be taken into account years later in a future rate case when rate levels for future years are negotiated.

For example, Con Edison failed to meet reliability standards in 2002. A 2003 PSC order said the Company was "directed to defer \$7.5 million in shareholder funds on its books for the benefit of ratepayers, use of such deferral to be determined at a later date."<sup>15</sup> Ultimately, the \$7.5 million credit for ratepayers arising from the 2002 performance standard failures was amortized, along with other credits, and netted against debits in favor of the Company, over three years beginning in 2005. The impact of the delayed reliability performance adjustment for 2002 is only now being amortized during the 2005-2008 rate plan. This adjustment, however, is

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<sup>14</sup> After the electrocution of a pedestrian in 2004, the PSC created a performance standard for periodic inspection of facilities to check for stray voltage, but rejected recommendations to adopt performance standards that would count the number of fires, manhole explosions, and shocks and impose financial consequences if the number is not reduced.

<sup>15</sup> Case 00-M-0095, Joint Petition of Consolidated Edison Company of New York, Inc. and Northeast Utilities for Approval of a Certificate of Merger with All Assets being Owned by a Single Holding Company; Case 96-E-0897, In the Matter of Consolidated Edison Company of New York, Inc.'s Plan for (1) Electric Rate Restructuring Pursuant to Opinion No. 96-12 and (2) the Formation of a Holding Company Pursuant to PSL, Section 70, 108, and 110, and Certain Related Transactions; and Case 01-M-1263, In the Matter of Emergency Restoration of Utility Service to New York City, ORDER CONCERNING RELIABILITY PERFORMANCE MECHANISM, (Issued October 22, 2003), available at

insignificant in the context of the 2005-2008 rate plan agreement, where sums far larger than the deferred rate adjustments for poor reliability performance were adopted in the final joint proposal for settlement of the case that was approved by the PSC. There is no way under this system for a current failure of performance criteria to materially affect the utility's next quarterly earnings reports.

The amount of the financial adjustment for failure to satisfy reliability performance criteria in 2002, \$7.5 million, may at first seem significant to most people, but this amount must be viewed in the context of total Con Edison revenues, in which the impact is slight. For example, in 2001, Con Edison under collected revenues due to an arithmetic mistake in calculation of rates, at the rate of \$6 million per month, for ten months - a loss of \$60 million - before it was noticed and corrected only prospectively.<sup>16</sup> In this context, the reliability performance adjustments for failing to satisfy standards are insignificant.<sup>17</sup>

All the performance standards and all the sanctions for not meeting them were agreed to by Con Edison in the context of a rate case settlement. This raises questions whether the standards are so limited and so weak that there is little risk of failing to meet them, or, in the event the performance levels are not met, whether the financial consequences are so weak that it is economic for the utility to breach the standards rather than bear the expense of compliance.

c. The PSC Only Establishes Performance Standards and Sanctions Agreed Upon by Utilities

Why would the PSC allow the performance standards and penalties to be subject to utility

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[http://www.pulp.tc/PSC\\_Reliability\\_Performance10-22-03.pdf](http://www.pulp.tc/PSC_Reliability_Performance10-22-03.pdf)

<sup>16</sup> "Con Edison to Raise Its Rates To Correct an Error in Billing," NY Times, April 28, 2001, <http://select.nytimes.com/search/restricted/article?res=F3081EFF3A5D0C7B8EDDAD0894D9404482>

<sup>17</sup> On the other hand, the current plan creates a new \$10 million ratepayer credit when a network is shut down. Where a single decision results in a \$10 million loss, those who, according to the Draft Staff Report, should have shut down the network briefly to permit its repair and stabilization without further damaging the network may have understandably lacked fortitude to make a reasonable decision.

agreement, and allow the financial impact of performance failures to be disconnected from the time of performance failure, delayed, and then diffused over years in the next Con Edison rate case? The PSC may be reluctant to impose thorough standards with strong sanctions because some utilities have argued that the PSC cannot impose performance based rate reductions without hearings and without following statutory procedures for the imposition of penalties under Section 25 of the Public Service Law.

Section 25, which was enacted in an era before modern administrative procedural due process standards evolved, generally requires court proceedings for the PSC to impose any financial penalties for failure to obey a law, rule, or PSC order. So, if the PSC were to prescribe new performance standards outside the context of a settled rate case, those standards would need to be adopted as rules or orders. If a utility failed to adhere to the rule or order, it might argue that the only remedy for the PSC is to follow the cumbersome statutory penalty procedures. It is at best unclear whether the PSC could, without enabling legislation and outside of rate plan agreements, impose adverse financial consequences upon utilities for failure to satisfy reliability performance incentives without following the antiquated and cumbersome procedures of Section 25.

This lack of legislative clarity may be a factor in the PSC having adopted its performance standards by agreement with utilities in the context of settled rate cases. The result is a limited set of performance measures that do not measure enough attributes of safe, adequate, reliable service. A lack of real teeth in the form of prompt and significant financial consequences when a utility fails to provide safe, reliable and adequate service is not unsurprising.

#### D. Reviewing Con Edison's "Findings and Action Plan"

In Part 6 of its October 12, 2006 "Comprehensive Report," Con Edison sets out sixteen

findings and lists particular actions it plans to take in response to each of the findings.<sup>18</sup> The Task Force believes Con Edison's findings are incomplete. Although the actions now being taken or proposed are generally positive steps, they are still an inadequate response to the outage. More needs to be done to understand the root causes of the extended outage, to improve Con Edison's situational awareness of the conditions of its system and customer impacts of outages, to improve Con Edison's reaction to outage situations, and to prevent future outages.

The first two Con Edison "findings" begin with the identification of certain failures of substation breakers and relay systems. Con Edison focuses on events beginning at 6:48 PM on July 17. At that time, however, two 27 kV network feeders (1Q17 and 1Q16) were already out of service, having failed nearly three hours earlier, at 3:50 and 4:22 PM respectively.

There are no adequate findings, however, regarding the root cause or causes of the failures of feeders 1Q17 and 1Q16. The first two feeders failed after a fire in the secondary (low voltage) system burned into the feeders at 3:50 PM on July 17. According to Con Edison, "[t]he ultimate cause of the secondary fire [leading to the outage of 1Q17 and 1Q16] is undetermined." Also, "[a]t the time of the first feeder failure on July 17, 2006, there were reports of manhole and service box fires in the area...." Thus the question remains unanswered, why were secondary system wires burning?

The secondary system wire that burned into 1Q17 was rated as a 600-volt cable. Con Edison states that "the sections of secondary cable involved in the electrical fire in [service box] 1345 were marginally over the cable ratings at the time of failure. . . . [and] may have exceeded their rating for some period before the failure. "<sup>19</sup> Con Edison states, however, that "the high load alone was not sufficient to have caused a catastrophic cable failure. The cable most likely

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<sup>18</sup> The "Findings and Action Plan" section of the report is available at <http://www.coned.com/messages/LICReport/Findings.pdf>

had a preexisting condition that contributed to the failure.”<sup>20</sup> No other condition is identified.

Con Edison also notes that a 1000 kV transformer near the fire “was off the system due to defect.”<sup>21</sup> There is no adequate explanation why that transformer had failed, and why it was dropped from the system and capped on July 12 instead of being replaced, or whether, prior to the outage, a schedule had been established for its replacement. In Finding 6, Con Edison states that “[i]n six instances, secondary cable fires caused 27 kV feeders to fail.” The action steps are merely to investigate methods to improve computer models of the secondary circuits to provide a better estimate of cable loading, and to investigate ways to protect primary feeders from external fires.<sup>22</sup>

At 6:48 PM on July 17, a third feeder, 1Q21, went out of service, and then malfunctioning circuit breakers caused additional feeders (1Q07, 1Q15, and radial feeder 1Q8), also to de-energize.<sup>23</sup> With five feeders now out of service, and at a time when total LIC network demand operating at approximately 90% of peak limits, Con Edison began to shed load by reducing network voltage by 8%. Subsequently, problems compounded and feeder outages increased as equipment overloaded due to the prior multiple outages began to fail, and due to

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<sup>19</sup> Con Ed October 12 Report at 5-75.

<sup>20</sup> Id.

<sup>21</sup> Id.

<sup>22</sup> There is no analysis whether there was a possible high voltage grid disturbance or deficiency of reactive power that could have overloaded secondary lines and cause them to burn, even though there are indications that at 3:25 PM on July 17, 25 minutes prior to the failure of 1Q17 due to the unexplained secondary wire fire, there was an abrupt reduction of load, an NYISO declaration of a “large event” and call for spinning reserves, an increase of voltage taps at the substation, followed by a major price spike for energy and ancillary services. On July 12, 2006, FERC and NYISO officials warned, in their testimony to Congress, that due to outages of two major transmission lines, New York City was vulnerable to blackouts or the need to shed load in the event of further outages or extreme hot weather. It appears that additional outages may have occurred during the heat wave. Con Edison’s Report does not address whether there were grid disturbances or reactive power deficiencies just prior to the event, and starts its timeline of events with the unexplained burning of a secondary cable. See, *The Queens Blackout*, at <http://pulpnetwork.blogspot.com/2006/08/queens-blackout.html>

<sup>23</sup> The actions Con Edison proposes to take in response to Finding 1 are to improve the design of the circuit breaker contacts to prevent mismatching and to improve the system of sensors for monitoring whether breakers are functioning properly.

current intrushes as repair efforts failed.

The Con Edison system is designed to withstand simultaneous outage of two feeders,<sup>24</sup> and so had been at risk and on the edge for several hours as temperatures rose on the afternoon of July 17. During that crucial time, Con Edison did not take adequate measures to reduce load. Instead some large customers were called up and asked to reduce their load, but there was no urgent effort to inform customers generally of the risk of blackout and the need to reduce load until after the fifth contingency and voltage reduction in the evening. Also, there was no request to the NYISO to implement its demand reduction measures until the next day. In similar circumstances, the Connecticut Department of Public Utility Control investigated outages of last summer, and commented as follows on how another utility reacted when their system was operating at its reliability design limits:

The Department believes that CL&P performed rapidly to mitigate the deteriorating situation in Stamford. *Because the system is designed to operate safely with one circuit out of service, but not more, it was seriously compromised when the circuit 1G03 locked out at 1121 hours on August 2. CL&P dispatched additional technical and management personnel to the area soon after this was recognized, which was the appropriate response given the escalating seriousness of the threat to the system. CL&P was very active in managing the situation in Stamford, especially on August 3 as the extreme heat and high loads threatened the system. The most critical activity during this time was monitoring and managing loads, which CL&P accomplished very effectively. If not for the inopportune contractor dig-up on Summer Street on August 3, it may not have been necessary to de-energize the system. This event is in stark contrast to the Long Island Network outages in late July, where 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.*<sup>25</sup>

Con Edison finding 10 acknowledges that “[c]ustomer response to requests for demand reductions is an important operational tool during contingencies [e.g., feeder outages]. However,

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<sup>24</sup> “The LIC network has an “N-2” contingency design (also known as second contingency), which means that the network can supply customers’ peak electric demand with any two network feeders out of service without stressing network components beyond design limits.” Con Ed October 12 Report at 5-8.

operators have limited ability to quantify the extent of demand reduction response on the system.”<sup>26</sup> The “action” proposed is to develop unspecified “information systems to better determine the results of demand response actions on a real time basis. . . . by summer of 2007”<sup>27</sup> Also, a new demand response position is to be created.

Con Edison’s Finding 4 is that seven overloaded transformers shortcircuited, and Finding 5 is that four heat-sensitive splices failed. The transformer action steps proposed are basically to improve transformer cooling measures and to improve remote monitoring systems which measure indicators such as voltage and temperature at transformer locations. The Company proposes to address other heat sensitive splices in its system “by the end of 2008.” The transformer and splice failures, coupled with the failures of breakers and relays, and inoperable remote sensors, suggest a larger problem: a lack of scheduled maintenance and replacements. Regarding system maintenance, the Connecticut DPUC made the following observations about the LIC outage, again comparing the inferior performance of Con Edison:

The potential impact of faulty underground equipment is well-illustrated by the Stamford and Meriden outages, and even more so by Consolidated Edison’s well-publicized experience in July, 2006 on its Long Island City Network, in which many customers were without power for more than a week due to difficulties in repairing faults in the underground system.

It is interesting to note that the average age of the failed cables in the Consolidated Edison outages was only 16 years, which is a fairly young age for such facilities. . . . *Therefore, it is likely that material condition and maintenance issues, separate and distinct from aging, were more important contributors to the catastrophic outages in New York. . . .* The Department believes an important lesson can be learned from this; namely, that properly formulated and executed maintenance plans are essential to maintain the electric infrastructure. The Department believes that vigorous, ongoing condition assessment efforts on the underground systems, combined with commitment of funds to maintain them and replace degraded facilities, are essential to maintain underground system

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<sup>25</sup> DPUC Report to the Governor on Electric System Infrastructure and Policies, Conn. DPUC Docket No. 06-08-20, Sept. 15, 2006, p. 15.

<sup>26</sup> Con Ed October 12 Report, p. 6-6.

<sup>27</sup> Id.

reliability, regardless of age.<sup>28</sup>

The Con Edison report tends to focus on material failures and design rather than possible failures of maintenance and operation.<sup>29</sup> Of the voltage sensors deployed at the time, only 79.5% were functioning and reporting. Con Edison says it has improved that percentage, but this suggests a failure to maintain the information system upon which necessary situational awareness is dependent. Con Edison's Finding 9, relating to integration of information from various operational systems was performed by operators, apparently manually. It omits to mention that a load flow program which assesses real time conditions and predicts contingencies, known as Auto WOLF, was out of service during the outage period. Discovery in the PSC investigation proceeding indicates there was a software problem with Auto WOLF that occurred in May 2006 and which was not corrected until July 18.

Customer outage assessment, outage reporting, and customer information are identified in Finding 12 as deficiencies. The action steps are to improve this by summer 2007. Although Con Edison portrays the outage as a convergence of unusual events in a system that was not overloaded, major action steps are proposed to decrease feeder loading by the addition of two feeders. These may be steps that should have been taken long ago and a reasonable person might again ask whether the Queens outage could have been prevented altogether had Con Edison taken these measures before the summer of 2006.

#### E. Recommendations

- ***Require the PSC to conduct a periodic review of Con Edison's Certificate of Public***

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<sup>28</sup> DPUC Report to the Governor on Electric System Infrastructure and Policies, Conn. DPUC Docket No. 06-08-20, Sept. 15, 2006, p. 8 - 9.

<sup>29</sup> In prior outages, Con Edison has been faulted for inadequate maintenance and operation of breakers and relays.

*Necessity for the Con Edison service area, with an opportunity for competitors to offer proposals for management of all or part of the distribution system.*

- *Examine the extent to which Con Edison reliability has been impaired as a result of relaxed PSC oversight.*
- *Establish clearly defined statutory qualifications for PSC commissioners, which would establish minimum pre-requisites for prospective PSC commissioners to best serve the interests of the public as contemplated by the legislature.<sup>30</sup>*
- *Determine whether PSC "service quality metrics" actually and accurately measure the right things to assure reliability and adequacy of service.*
- *Increase economic consequences to utilities for not attaining existing service quality standard targets set by the PSC.*
- *Amend the Public Service Law to require the PSC to impose prompt, meaningful rate refunds or reductions in response to objectively measured failures to provide reliable needs.*
- *Require that the PSC reconsider the practice of multi-year rate plans and instead require annual rate reviews of Con Edison and the State's other investor-owned utilities.*
- *Encourage the PSC to facilitate open public scrutiny of utility management practices and spending priorities.*
- *Require the PSC to establish an annual or biannual process for public review and comment and Commission approval of Con Edison's infrastructure expenditure plans, especially operation and maintenance of its distribution network.*
- *Require the PSC to mandate that each utility submit annual public expenditure reports that specify discrete capital, operating and maintenance spending levels in specific categories, such as power purchases, distribution facilities, transmission, environmental controls and new/existing generation, and make these reports subject to public scrutiny with an opportunity for public comment.*
- *Enforce the legislatively required schedule for PSC audits of Con Edison.*

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<sup>30</sup> See PSL Article 1 § 9.

### **III. CON EDISON'S PUBLIC COMMUNICATIONS DURING THE POWER OUTAGE**

#### **A. Concerns of the Task Force**

One of the more painful experiences consistently related by affected residents of Western Queens was the lack of effective communication and substantive responsiveness by Con Edison throughout the duration of the July power outage. The Task Force recognizes this as a continuing deficit on the part of Con Edison, hearkening back to similarly inefficient communications policies and procedures experienced by residents of Washington Heights and Inwood during the July 1999 power outage that ultimately resulted in Con Edison shutting down the entire Washington Heights-Inwood Network. In that instance, then-Attorney General Eliot Spitzer's report noted that statements by Con Edison were somewhat contradictory in regard to its communication with public officials, critical care facilities, and the general public.<sup>31</sup> According to the AG 1999 Report, Con Edison asserted that it contacted the New York City Office of Emergency Management (OEM) before the onset of that crisis. OEM, however, stated that Con Edison failed to indicate the gravity of the situation in northern Manhattan and provided inconsistent information to OEM's staff relating to the seriousness of the deterioration in the Washington Heights – Inwood Network.<sup>32</sup>

Despite the Attorney General's recommendations to Con Edison to improve its policies and procedures for communication to the public in response to crisis,<sup>33</sup> (which are examined in greater detail in Section VI of this Report) and particularly in view of the amount of time which has elapsed between the July 1999 and July 2006 power outages, the Task Force observes disturbing similarities in the breakdown of Con Edison's communications policies and

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<sup>31</sup> See Attorney General Eliot Spitzer "Con Edison's July 1999 Electric Service Outages -- Report to the People of the State of New York" [hereafter AG 1999 Report] at 58, March 9, 2000, (available at <http://www.oag.state.ny.us/telecommunications/blackout/coned.pdf>)

<sup>32</sup> See id. at 58-59.

procedures, as illustrated by the voluminous testimony offered by Con Edison officials and others affected by the power outage during the public hearing of August 2006.<sup>34</sup> In addition, numerous anecdotal accounts from those in the affected area reveal that residents, workers, and business owners received a troubling lack of information from Con Edison as to the severity of the power outage. Similarly, these accounts reveal a serious deficiency regarding the methods employed by Con Edison to identify the scope of crises such as this. For example, the automated telephone response service that Con Edison relies upon in such events does not account for the loss of telephone service typical during a power outage in the age of cordless telephones. The lack of alternative efforts that Con Edison has made to implement a successful emergency response plan not reliant upon receiving telephone calls from customers to report power outages is a serious shortcoming.<sup>35</sup>

Communications between Con Edison and its customers are necessary for several reasons. First, Con Edison needs to know from customers where outages occur in order to deploy emergency equipment (such as temporary generators) and to diagnose the extent and nature of the problem. This supplements Company information about outages. Second, Con Edison also should communicate to customers when they adopt demand reduction strategies in order to prevent more outages while system repair was underway, so customers may reduce usage. In addition, both officials and customers need accurate, complete and reliable information from Con Edison and other agencies with emergency functions. In particular, information about the extent and duration of the problem is essential in order for the City to know where to dedicate resources and for customers to decide whether a temporary relocation would be necessary. Also important was communication regarding the priorities Con Edison had placed on reestablishing

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<sup>33</sup> See *id.* at 73.

<sup>34</sup> See Transcript of the Public Hearing at 69-82.

service and where; how to protect home and business equipment from damage; and the location of emergency and cooling shelters, food, alternate transportation, and temporary shelters. In the long-term residents needed to know whether this would happen again, and what remuneration would be put in place to compensate them for damages.

Customers outside the service area also had concerns – would it happen again and to them? These questions in turn hinged upon their overall confidence in the system and the ability of Con Edison to maintain it and communicate these issues honestly. Finally, numerous gaps existed in worker knowledge in general and operator knowledge in particular of the location and extent of the problem and the approach to restoration. In the Con Edison report, operators were repeatedly cited as not understanding certain phenomenon and system behavior.

#### B. Toward Implementing a More Effective Emergency Response System

Electric power outages constitute critical events that require effective communication of risks among those managing the systems and the user populations. The outage in western Queens beginning during the week of July 17, 2006, and extending a number of days, in some cases with effects lingering weeks thereafter, constituted an event in which communications played a central role in the well-being of the users and at the very least in maintaining the confidence of the users affected. The existence of a pre-existing, ongoing communication plan prior to any catastrophe occurring is critical for a number of reasons. First, it creates mechanisms to communicate quickly that include pre-established messengers and routes of communication that avoids creating such mechanisms at the time the event occurs. It also establishes trust in the messengers and the message through familiarity to enhance the effectiveness of communication.

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<sup>35</sup> See id.

Con Edison routinely communicated the extent of the problem in terms of the customers affected. The overarching use of the term “customer” rather than individual or household corresponds to the way in which Con Edison is required to report its performance to the Commission. This method, however, gives a distinct impression that fewer people are affected than is actually the case, despite the fact that estimates of population are readily available from Census data at the unit of the Census Tract, Census Block Group and Census Block.

In terms of customers, the initial estimate of 1,600 was disturbingly low. According to Con Edison, the estimate was based on call records “from Monday, July 17 through Thursday, July 20.”<sup>36</sup> This was later withdrawn when field checks were performed in response to continuing protestation of local officials. A new estimate was announced thereafter of 25,000 customers.<sup>37</sup>

The feeders out constituted a much higher proportion – 10 out of 22 27-kV primary network feeders were out simultaneously<sup>38</sup> or about 45% and at some point in time, 13 out of 22 were out<sup>39</sup> or about 60% of the feeders. Con Edison indicated 37 outages occurred on these feeders over the course of the outage.<sup>40</sup> Con Edison communicated selective information to the public, further minimizing the public perception of the problem. For example, the public was not notified of voltage drops, only outages. Many voltage drops were so severe that only one appliance in an entire home was functioning at all. Yet none of these cases were included in the 25,000 customer estimate.

An important dimension of credibility is the certainty of the information regarding where uncertainties exist and what process is in place to reduce uncertainties. The extent of the problem

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<sup>36</sup> Con Ed October 12 Report, at 1-8.

<sup>37</sup> Id. at 1-5.

<sup>38</sup> Id.

<sup>39</sup> Id.

in terms of duration is noteworthy, even more so than frequency. Of the outages occurring nationwide between 1990 and 2004, the western Queens outage ranked within the top 5% of events in duration.<sup>41</sup> The Long Island City network has been known to have a record number of failures. For example, in 2005 alone, it had the highest number – 71 failures leading to 3,039 hours of outage.<sup>42</sup>

During and immediately following a blackout, some of the more commonplace modes of communication are often dysfunctional. Cellular phones rely on electric power driven cell towers to receive signals and electric charges all of which are deeply affected by outages. Landlines were largely useless given the prevalence of cordless telephones that rely on electric power. A critical part of information technology is information about the system itself. The age and extent of the system and the fact that most of it is underground means that many of the investigations have to occur manually, manhole by manhole, rather than relying on some of the more sophisticated sensor or SCADA technology.

### C. Recommendations

- ***Con Edison should establish a working group to develop clear protocols in the event of a power outage. The working group could be composed, initially, of members of Con Edison management, the PSC and elected officials. The protocols developed by the working group should mandate speedy communication by Con Edison to elected officials in the areas affected by power outages.***
- ***Con Edison’s communications to elected officials should provide clear indication as to the status, extent, projected duration and forecasted time of repair of a given power outage. The protocols should mandate that Con Edison communicate with elected officials on a frequent basis throughout the duration of a power outage, and establish***

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<sup>40</sup> Con Edison. Electric Operations. 2006 Consolidated Emergency Response Plan. New York, NY: Con Edison, April 1, 2006.

<sup>41</sup> Institute for Civil Infrastructure Systems, New York University, Wagner Graduate School of Public Service, “Fact Sheet on National Electric Power Outages and Duration of Outages,” August 4, 2006.

<sup>42</sup> New York Times, “A Troubled Record in Queens,” July 26, 2006, p. B5.

*clear procedures for relaying this information to the general public in a clear and regular fashion.*

- *The working group should concentrate its efforts not only on developing clear protocols in the event of a power outage, but also on enhancing its relations with the local communities which it serves. Examples of enhanced community relations might include, as an ongoing business practice, holding meetings between Con Edison officials and members of the public on a semiannual basis.*
- *More forthcoming and accurate representation of the number of people affected must be provided by Con Edison.*
- *Con Edison should establish more effective methods of discovering the scope of an outage. Knowledge of the system by operators and maintenance workers would be greatly enhanced by electronic means rather than manual field surveys.*
- *Con Edison should develop a more effective emergency response plan, including better methods of communicating information internally between field personnel and management.*

#### **IV. CON EDISON'S REIMBURSEMENT POLICIES**

##### **A. Concerns of the Task Force**

Under New York Public Service Law Article 4 § 66 (12)(a) the PSC is empowered to require every utility, including Con Edison, to file and keep open to the public for inspection the schedules of rates, charges, and services uses. These files are provided by Con Edison to the PSC in documents called “tariffs.” New York Public Service Law Article 1 § 26 empowers the PSC to enforce violations of these tariffs. Currently, Con Edison’s tariff document entitled “P.S.C. No. 9 – Electricity, Leaf Nos. 62-A, 63, 63-A, and 64” outlines the general rules, regulations, terms and conditions under which electric service will be supplied. Leaf No. 63 outlines the liability provisions to residential customers up to a maximum of \$350.00 per incident and to commercial customers up to a maximum of \$7,000.00 per incident.<sup>43</sup> Leaf No. 63, effective as of March 2, 2001, seems to take into consideration the recommendations made by the Attorney General to increase the maximum compensation amounts as urged in his March 9, 2000, report by raising the amounts to the current level that exist today, after having stagnated from 1973 at a maximum limit of \$100.00 per residential customer per incident and \$2,000 per commercial customer per incident, although as described more fully below, this tariff still fails to provide a basis for adequately redressing Con Edison customers in the event of an outage.<sup>44</sup>

A concern that continues to surface in the wake of a power outage is the adequacy of the compensation that Con Edison is obliged to provide to its customers who sustain losses as a result of a power outage. This concern was also expressed by the PSC in its Draft Staff Report

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<sup>43</sup> See Tariff Leaf Nos. 62-A, 63, 63-A, and 64, available at <http://www.coned.com/documents/elec/062A-064.pdf>

<sup>44</sup> See AG 1999 Report, at 65.

of January 17, 2007.<sup>45</sup> The Task force shares the concern of the PSC that the liability provisions continue to be restricted arbitrarily to perishable food items, and do not comprehensively embrace the full spectrum of losses incurred by residents or businesses, including, but not limited to, damaged electronic equipment. This concern was raised also by Attorney General Eliot Spitzer in his 1999 report.<sup>46</sup> The Task Force, however, suggests an additional remedy to promote a more complete compensation which the current liability provisions of Con Edison's tariffs, and PSC recommendations do not contemplate. Specifically, the Task Force proposes that Con Edison provide to its customers a proportional rate of compensation in connection with the duration of a power outage, rather than the currently used "per incident" basis, a basis which disregards the effects rendered by a blackout of excessive duration, such as the one affecting the Long Island City Network. Like the PSC Draft Staff Report, the Task Force is also concerned that Con Edison's current liability provisions do not contemplate damages from power outages which have resulted in lost business opportunities for commercial establishments, which business owners related anecdotally within the community and directly to officials throughout Western Queens during the power outage. For these reasons, and to the same degree that Con Edison's compensation policies were neither substantive nor comprehensive in 1999, they are likewise lacking in their substance and comprehensiveness today.

## B. Recommendations

- *Con Edison's reimbursement policies should be expanded to include coverage for damaged electrical equipment, computer equipment, air conditioning equipment, and other electronic equipment necessary for maintaining other sophisticated instruments used by commercial establishments or residences. The dollar amounts*

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<sup>45</sup> See Section 5.6 of the Draft Staff Report entitled "Claims", with examples of reimbursement claims by residents and business, the responses by Con Edison to these claims, and the PSC recommendations to Con Edison to reassess its current reimbursement policies.

<sup>46</sup> See *id.*

*could be capped with an aggregate dollar maximum, tied to the duration of a power outage, but should provide for compensation to both residential and commercial customers affected by a power outage.*

- *Con Edison's liability provisions should be connected to the duration of a blackout in order to render them meaningful. Accordingly, the Task Force recommends that Con Edison apply its liability provisions to residential and commercial customers proportionately for every 48 hour increment of continued power outage. This would provide more adequate and more fair coverage to Con Edison's customers than Con Edison's currently contemplated and vague "per incident" standard.*
- *Con Edison's liability provisions should expressly indicate that Con Edison will offer compensation to commercial customers who have lost business opportunities as a result of a power outage. One way of formulating the amount to be compensated for lost business opportunities could be based on average amounts of revenue accumulated by the business during previous years when power was available. For a new business, a projected forecast of quarterly earnings could be used as the basis for formulating the amount of dollar compensation due to a power outage, again pro-rated to the length of the duration for every 48 hour period.*

## **V. SUSTAINABLE SOLUTIONS FOR THE LONG TERM**

### **A. Concerns of the Task Force**

Since the release of then-Attorney General Eliot Spitzer’s report to the people of New York detailing Con Edison’s response to the 1999 failure of the Washington Heights – Inwood Network, particularly in view of the July 2006 Western Queens blackout of even greater magnitude and duration, it has become painfully apparent that efforts by Con Edison to implement procedures for preventing future power outages have manifested themselves in a piecemeal approach to “patching-up” current systems rather than in a long-term, sustainable, and genuine commitment to investing in a modern grid to meet the needs of reliable energy distribution for the 21<sup>st</sup> century. The Task Force is concerned that if Con Edison continues along its present vein of responding in piecemeal fashion to massive power failures for which it is responsible, the development of a long-term solution to the problem of reliable energy distribution will be forestalled; consequently, the risk of similar power outages such as those in 1999 and 2006 will remain and possibly increase throughout Con Edison’s service areas during future heat waves.

The Task Force emphasizes that the greater deployment of energy efficiency measures and long term investment in state-of-the-art technology for a modern grid, in conjunction with the recommendations contained in other sections of this report, are the only meaningful solutions which will rectify current problems and ensure that massive power outages such as those recently experienced in western Queens remain instances of the past, instead of inevitabilities of the future.

## B. Providing Load Relief and Modernizing the Long Island City Network

The Task Force finds that Con Edison's investment in the Long Island City distribution network has not kept pace with the current and forecasted area demand. Further, the Task Force finds that Con Edison's capital expenditures do not appear to be part of a longer-term and well-conceived plan for transitioning to "smart grid" techniques and equipment supportive of enhanced reliability and quality of service. The Task Force recommendations related to distribution system investment encompass a transitional strategy that: 1) calls for greater investment in energy efficiency in the short term as a means of providing essential load relief; and 2) establishes the Long Island City network as a test bed for demonstration and deployment of various smart grid technologies.

The August 2006 blackout in Queens dramatically highlights the vulnerability of the existing Consolidated Edison distribution network and the customers it serves to long-term service disruption and its attendant social and economic costs. Unfortunately, the Long Island City network may be all too typical of the growing mismatch between an aging, brittle and unresponsive distribution system on the one hand, and New Yorkers' justifiable expectation for high quality electricity service to meet both growing demands and the power quality needs of increasingly more sophisticated consumer equipment.

### 1. Greater Energy Efficiency to Meet Growing Demand

The City's changing demographic is putting increasing pressure on the Consolidated Edison electric grid. A resurgent post-9/11 downstate economy, and improved quality of life have contributed to a steady, albeit uneven, increase in New York City's population. Certain areas of the City, such as the Greenpoint/Williamsburg community in Brooklyn, and the Long

Island City neighborhoods of Queens have experienced explosive growth. Over the longer term, the City's population is expected to grow by 1 million people by 2030,

At the same time, new “plug load” (i.e., computers, rechargeable cell phones, and other consumer electronics) and the greater market saturation of mature technologies (i.e., through-the-wall air conditioning units) continue to place upward pressure on electricity demand. This growth in electric demand, particularly growth coincident with summer peak periods, place a concomitant stress on the distribution grid which can lead to the premature aging and failure of equipment, power quality problems and other system anomalies, and create a need for additional grid investment for load relief.

The Task Force finds that energy efficiency can be one of the most economical, practical and effective investments New York can make to improve the reliability of the distribution grid. By relieving load stresses on the system – whether for short durations during peak conditions through demand reduction measures, or preferably, through more permanent efficiency measures that provide energy savings on a continual basis – energy efficiency can be strategically deployed to dampen the energy demand that creates stress on the distribution network.

This is the rationale behind the “targeted area” efficiency program, established pursuant to the most recent Consolidated Edison three-year electric rate case.<sup>47</sup> This program requires Con Edison to issue an RFP or other offerings seeking up to 150 MW of targeted energy efficiency and distributed generation initiatives to reduce load demands in selected constrained networks, as well as funding for NYSERDA to procure at least 150 MW of system-wide load reductions (up to 300 MW to the extent the targeted programs fall short). The targeted area program is

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<sup>47</sup> CASE 04-E-0572 – Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of Consolidated Edison Company of New York, Inc. for Electric Service, ORDER ADOPTING THREE-YEAR RATE PLAN, Issued and Effective: March 24, 2005.

explicitly designed to cost-effectively defer or avoid distribution system upgrades that would otherwise be required.

To date, Con Ed has contracted for 45 MW of targeted demand management activities.<sup>48</sup> Additionally, on December 20, 2006 Con Ed issued a second RFP for 109 MW of targeted demand reductions.<sup>49</sup> Unfortunately, neither the initial RFP, nor the most recent RFP, identify the Long Island City network as an area for which Con Ed is seeking load relief.<sup>50</sup>

It should be pointed out that despite significant public benefit funding support for energy efficiency measures in New York State over the past decade, there remains a considerable untapped reservoir of efficiency potential across the state generally, and in New York City in particular. For example, a 2003 NYSERDA study of the scope of the efficiency resource in New York found, *inter alia*, over 20,000 GWh of “economical” efficiency potential (e.g., cheaper than generating the electricity) in New York City by 2012, corresponding to roughly 12% of in-City energy requirements. Moreover, the study found that cost-effective efficiency measures could offset more than 7000 MW of summer generation requirements – the equivalent of several large generating plants - within this same time frame.

## 2. Smart Grid Solutions for the Long Island City Network

Technologies currently exist that would dramatically improve the performance of the Consolidated Edison distribution grid, providing a range of economic, environmental, and energy security benefits. The Task Force recognizes that the modernization of the grid to 21<sup>st</sup> century standards is a massive undertaking, requiring careful planning and major commitment of

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<sup>48</sup> A 10% contingency brings the total demand reduction to 49.5 MW. Email communication from Rich Miller, Consolidated Edison Company, dated December 22, 2006.

<sup>49</sup> <http://www.coned.com/sales/business/targetedRFP2006-P3.asp>

<sup>50</sup> See “Request for Proposals to Provide Demand Side Management to Provide Transmission and Distribution Load Relief and Reduce Generation Capacity Requirements to Consolidated Edison Company, Inc.”, dated December 20, 2006, available at <<http://www.coned.com/sales/forms/DSM%20RFP%20Targeted%202006%20Phase%203.pdf>> at Appendix A.

resources. Nonetheless, the magnitude of effort can no longer serve as a justification for inaction, or for Con Edison's continued piecemeal "patching up" of the current system.

New York, as the birthplace of electricity transmission and distribution and a critical hub for much of the nation's economic activity, should take a significant step towards the transformation of the grid. As described more fully below, the Task Force recommends that Con Edison launch a \$20 million "Network of the Future" pilot program for the Long Island City network to demonstrate the advantages of "smart grid" technologies on both the customer and utility side of the meter, and that the costs of such a pilot program not be passed through to the rate-payers. Such a program would restore sagging public confidence and re-establish lost goodwill among affected Queens customers in Con Edison as their local service provider, while serving as a national model for the development of a more modern, robust, and resilient delivery system. If successful, the results of this pilot program would serve as a basis for more widespread deployment of state-of-the-art grid technologies throughout the greater Con Edison service territory. The Task Force is not alone in recognizing the necessity for Con Edison to employ state-of-the-art grid technologies. In its January 17, 2007 Draft Staff Report, the PSC itself acknowledged that such technologies were already in existence and could be improved upon.<sup>51</sup> Toward this end, the Task Force proposes that the Company commit to sustained and orderly development of "smart grid" solutions for use in Con Edison's Long Island City Network.

a. The Smart Grid

The "smart grid" enhances the traditional elements of the grid with cutting-edge power engineering including distributed generation, sophisticated sensing and monitoring technology,

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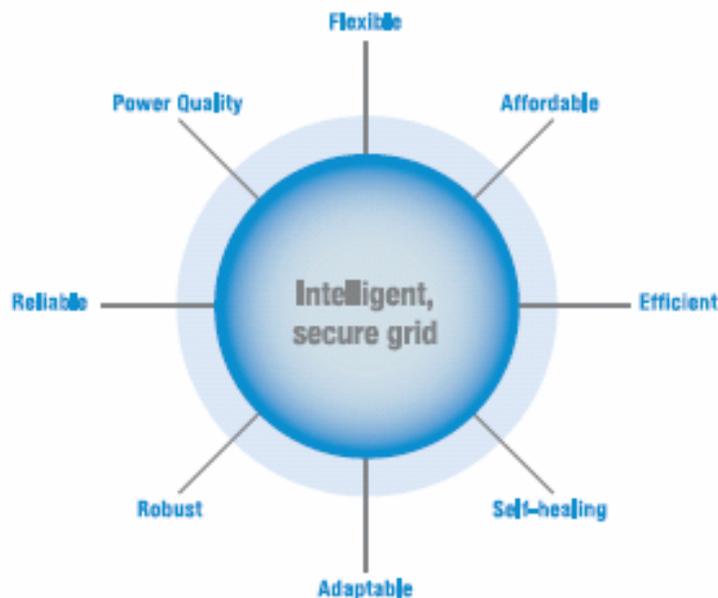
<sup>51</sup> See Section 4.2 of the Draft Staff Report, entitled, "Con Edison's Identification of Customer Outages" for a description of some of these advanced technologies.

information technology, and communications in order to provide better grid performance, enhanced security and seamless integration of additional services to consumers. Real-time information, delivered through high-speed networks, provides the critical linkage:

...[T]he integration of communications and information with the electric grid will facilitate competitive, efficient markets for power, enable each participant to actively manage its own production and consumption decisions, help the system balance supply and demand under both normal and stressful conditions, and in general provide diagnostic information and tools to better manage both system operations and end-user applications.<sup>52</sup>

Similar to the nervous system in a living organism, the Smart Grid enables devices at all levels within the grid – from utility to consumer – to independently sense, anticipate, and respond to real-time conditions by accessing, sharing and acting on real-time information.

The smart grid is defined as much by its capabilities as by the technologies it incorporates.



*Powering Our 21<sup>st</sup> Century Economy, GridWise Alliance, March 2005*

<sup>52</sup> Estimating the Benefits of the GridWise Initiative, Phase I Report, Rand Corporation (2004) at xi.

The Energy Future Coalition has identified several principle attributes and advantages of the smart grid. The smart grid will:

- *Be self-healing* –Sophisticated grid monitors and controls will anticipate and rapidly respond to system anomalies in order to avoid or minimize power outages and power quality problems. By collecting diagnostic information about the grid in real time and enabling automated controls to isolate the problem area, both the number of customers affected by grid problems and the time they are out of service will be dramatically reduced.
- *Be more secure from physical and cyber threats* – The use of real time monitors, power flow technology, and sophisticated communications and information technology, will allow grid controllers to rapidly identify and respond to grid problems caused by intentional damage to facilities or natural forces.
- *Support widespread use of distributed generation* – Clean distributed generation and combined heat and power technologies such as fuel cells, microturbines and renewable systems for homes, offices and factories are important components of the smart grid. These on-site generation systems can:
  - lower the host’s total energy costs;
  - enhance reliability by providing continuous power supply during a grid outage and allowing a more rapid restoration of service after a grid outage;
  - provide high value output during system peaks; and
  - improve environmental quality by displacing grid emissions.

Better standardization of interconnection protocols will lower the cost, time, and uncertainty associated with integrating these systems with the grid.

- *Enable consumers to control the appliances and equipment in their homes and businesses* – The smart grid will consist of smart buildings, motors, appliances and other “smart loads” that can be programmed by customers who choose time of use service to run during off-peak periods when prices are low, or temporarily shut down when there are disturbances on the system.<sup>53</sup> These provide consumers with better capability to respond to high prices and reduce their energy costs.
- *Achieve greater throughput, thus lowering costs* – Providing more effective power flow control will increase throughput, reduce line losses and improve access to lower cost generation. More efficient utilization of the existing infrastructure, by shifting load from peak to off-peak periods will defer costly system upgrades.<sup>54</sup>

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<sup>53</sup> The Pacific Northwest National Lab (PNNL) has designed computer chips that can be integrated into common household appliances to continuously monitor grid status. Rand Corporation, Estimating the Benefits of the GridWise Initiative, Phase I Report (May 2004).

<sup>54</sup> Energy Future Coalition, Challenge and Opportunity: Charting a New Energy Future. Appendix A.4: Working Group Reports: Smart Grid. The Energy Future Coalition is an independent initiative, funded by private foundations

The Rand Corporation has developed a lengthy taxonomy of the potential benefits of a Smart Grid approach to the local utility, the host site, and to society at large.

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**Potential Benefits to Utilities and Other Electricity Suppliers**

- Generation and storage
- Reduced peak loads; flatter load-duration curve
- Deferred capital costs of new generating plants
- Lower cost of capital
- Reduced generating reserve margins
- Increased cash flows and profits from higher capacity factors, increased market transactions, and other factors
- Improved monitoring and control of operations
- Greater system stability
- Lower, more predictable operation and maintenance (O&M) costs
- Lower, more stable fuel costs
- Reduced cost of emission controls or marketable permits
- Reduced risk and uncertainty
- Elimination or moderation of boom-bust construction cycles
- Transmission and distribution (T&D)
- Reduced peak loads
- Deferred capital costs of new T&D infrastructure
- Lower cost of capital
- Increased cash flows and profits from higher capacity factors, market transactions, decreased congestion and other factors
- Improved monitoring and control of operations
- Lower costs of outages
- Lower T&D line losses
- Lower, more predictable O&M costs
- Lower costs of ancillary services
- Reduced risk and uncertainty
- Other industry stakeholders
- More opportunities for distributed generation (DG) and related distributed energy resources (DER)
- More opportunities for demand-side management (DSM) products and services

**Potential Benefits to Electricity End-Users**

- Improved ability to actively manage loads (peak and off-peak)
- Improved diagnostics, monitoring, and control of internal processes and operations
- Lower expenditures for power through lower demand charges, reduced power use at high-cost peak periods
- Reduced losses from power outages and disturbances
- Avoided cost of backup power and power conditioning systems
- Lower costs of interconnecting on-site generation with the grid
- Increased revenue from sales of on-site generated power or ancillary services
- More efficient use of energy through combined heat and power (CHP) and advanced energy management systems (EMSs)
- Better matching of power quality and reliability to end-user needs

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and guided by a bipartisan Advisory Council, that seeks to bring about change in U.S. policy to address the challenges related to the production and use of energy.

- Productivity gains from improved or redesigned business processes
- Reduced risk and uncertainty

**Potential Benefits to Society**

- Greater energy security, robustness, and resilience
- Reduced emissions and other environmental costs
- Better accommodation of renewables and other intermittent power sources with the grid
- Facilitation of electricity industry restructuring
- Fewer opportunities to manipulate the system and make windfall gains
- Greater public confidence in the electricity system

*Source: Rand Corporation, Estimating the Benefit of the GridWise Initiative, Phase I Report, May 2004*

**b. Recent Utility Experience in Developing a Smart Grid System**

Although the Task Force’s ultimate vision for a fully functioning Smart Grid for New York City may take decades to realize, it is equally clear that concrete actions can be taken now to begin the transformation towards a more modern distribution network incorporating state-of-the-art communications and control features and distributed generation. A growing number of the Nation’s more progressive utilities are already moving in this direction:

- Pacific Gas and Electric recently won approval from the California Public Utilities Commission to spend \$1.2 billion on the deployment of advanced metering capability throughout its service territory. Southern California Edison’s petition for a comparable initiative is pending.
- Public Service Electric and Gas of New Jersey has been implementing *myPower*, a pilot program to test “smart” thermostats and two-way communication to enable curtailment of central air conditioning load during peak demand periods.<sup>55</sup> PSE&G is now considering the viability of a large-scale expenditure in advanced metering infrastructure as part of its rate-base.<sup>56</sup>
- Rockland Electric, the New Jersey-based, wholly owned subsidiary of Con Edison, has proposed a Smart Grid pilot project for the Darlington substation in the borough of Ramsey. This \$5 million, three-year pilot project would “couple state of the art equipment design with cutting-edge technological advances in computer analysis,

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<sup>55</sup> “PSE&G Pursues New Technologies to Give Consumers Greater Control Over Energy Use, Bills”, Transmission and Distribution World, April 7, 2005.  
available at < [http://tdworld.com/info\\_systems/highlights/PSEG-new-technologies/](http://tdworld.com/info_systems/highlights/PSEG-new-technologies/)>

<sup>56</sup> EPRI, Business Models and Regulatory Templates to Engage Regulated Utilities in Distributed Energy Resource Activities, September 2006 (background paper).

monitoring and control to enhance electric system reliability and service.”<sup>57</sup> Additionally, advanced meters would be installed for all 6,128 customers served from the Darlington substation. According to RECO, “this advanced system would be capable of providing a premium level of electric service reliability by restoring customers’ electric service automatically when disturbances occur and minimizing the extent of outages through expanded distribution system automation.”<sup>58</sup>

### C. Recommendations

- *Con Edison should earmark additional funds within the Long Island City network to support demand reduction measures, including demand response, permanent demand-side management and customer sited generation. The programs should be designed to include low-income households who may lack resources to invest in these measures.*
- *Con Edison should allocate \$20 million over 3 years to create a “Network of the Future” pilot project within the Long Island City network, creating a test bed for demonstration of state-of-the-art smart grid technologies, modeled on the proposed RECO Smart Grid pilot for Ramsey, New Jersey. Costs of the project should not be passed through to rate-payers.*
- *“Network of the Future” funding should be earmarked for the following specific research, development and deployment purposes:*
  - *“Smart Grid” technologies that are capable of improving the performance and technical efficiency of the grid or that would facilitate the economical interconnection of distributed generation to network systems;*
  - *Targeted area incentives for clean distributed generation to promote reliability and/or relieve congestion;*
  - *Targeted area incentives for advanced metering technology for residential and small commercial and industrial consumers to enable real-time monitoring and enhance the demand responsiveness of electricity consumption;*
  - *Research and development of superconductor and other high efficiency distribution lines in conjunction with national laboratories; and*
  - *High visibility public-private demonstration projects.*

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<sup>57</sup> ORU Press release, “Building to Meet Rising Demand Prompts RECO Rate Request, <<http://www.oru.com/aboutoru/news/2006070501.html>>

<sup>58</sup> Id.

- *The “Network of the Future” program would be developed in consultation with a high-level Advisory Committee including, among others, representatives of NYSERDA, the PSC, elected officials and other community stakeholders.*
- *NYSERDA should allocate to New York City a fair share of program dollars committed to grid modernization through the \$10 million reauthorization of the Energy Smart Program. Con Edison should make every effort to leverage its own resources by securing state and federal funding.*

## **VI. THE A.G. REPORT ON THE 1999 WASHINGTON HEIGHTS-INWOOD OUTAGE**

### **A. Concerns of the Task Force**

In 1999, then-Attorney General Eliot Spitzer investigated the power outage that affected Washington Heights and Inwood for 19 hours during that summer. That report contained a number of findings identifying the problems leading to that power outage and recommendations to prevent such an outage from reoccurring in the future. Seven years after the Washington Heights-Inwood incident, the Task Force is concerned that many of the recommendations in the Attorney General's report went unheeded by Con Edison and that such failure may have contributed to the 2006 Queens power outage.<sup>59</sup> The Task Force is further concerned with the implications that may be inferred by Con Edison's failure to implement the Attorney General's recommendations, particularly if such failure was willful. Such conduct by Con Edison may satisfy gross negligence standards in view of the fact that Con Edison had this knowledge for seven years prior to the July 2006 power outage and did not act sufficiently.

### **B. Evaluation of the 1999 A.G. Report and Recommendations Unheeded by Con Edison**

“access to electricity is a necessary ... requirement for economic and social development. ...lack of electricity ..... (is a) hallmark of poverty in developing nations. (Its absence) exacerbates poverty and contributes to its perpetuation.”  
-- *IEA, World Energy Report, Chapter 13*

In this country, we take electricity for granted, generally noticing it only when it fails. Since all human creations are imperfect, we accept that breakdowns will inevitably occur. Still, in a great and rich city like New York, we reasonably expect failure to end somewhere short of disaster. It is reasonable to expect a utility to have knowledge of the severity of an outage within

its own system, as it is reasonable to expect a utility to reassure customers that, in the event of a problem, it has the problem under control, will make repairs quickly and restore service efficiently. It is clear that Con Edison did not meet these expectations in Queens last summer.

For people who were without power for as many as eight days, it was a disheartening, disorienting and frightening experience. For others who watched as the disaster unfolded, it was evidence of massive failure at the highest levels of Con Edison management and the PSC. Now that the immediate emergency has passed, we must guard against the belief that a bit of tweaking is all that is needed to ensure that a similar power outage does not reoccur in the future. Such a belief would be inviting disaster to repeat itself for the third time.

Having reviewed the Attorney General's 1999 Report, the various 2006 reports filed by Con Edison and the PSC, and the transcripts of recent hearings held by the State Assembly and the City Council, the Task Force believes it is fair to conclude that:

1. the vulnerabilities identified in Con Edison's underground distribution system which precipitated the power outages in 1999 have not been fully addressed;
2. Con Edison knew or should have known that there was a substantial possibility that it would again experience a similar if not greater disruption of electricity distribution in New York City;
3. this problem will intensify over time, as the network ages further and the Earth gets warmer;
4. Con Edison makes investments and repair decisions on a borough basis, not disaggregated by network. As a result, neither Con Edison nor the PSC can know the actual resources devoted to each underground network, nor can Con Edison adequately monitor their operations on a real time basis. This has both short and long term negative consequences for reliability;
5. in the 21<sup>st</sup> century, Con Edison must adapt to modern demands on the electricity grid, and not continue to run a 20<sup>th</sup> century system into the ground.

In July 1999, hundreds of thousands of Westchester and New York City Con Edison customers lost their electric power during a heat wave. Pointing out it would be unacceptable for

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<sup>59</sup> See AG 1999 report at 69-74, entitled "Conclusions and Recommendations".

Con Edison to “run the risk of another (such) major outage” the Office of Attorney General Eliot Spitzer examined the provenance, nature, and effects of the events of July 1999, and offered recommendations to prevent their reoccurrence. Among other things, the AG Report found that:

1. though peak demand in the affected area was at historic highs in July 1999, Con Edison had sufficient power supply and transmission capacity;
2. the outages occurred because Con Edison entered the summer with a distribution system containing numerous defective or inadequate components unable to withstand the high temperatures produced by the combination of outside weather and the internal heat generated by the volume of electric current demanded by customer usage; and
3. while the distribution system equipment failures revealed themselves most starkly in Washington Heights and Inwood, the “weaknesses were not unique to that load area but are apparently endemic to much of Con Ed’s entire distribution system.”

As specified by the AG, those weaknesses existed because:

1. Con Edison’s distribution system was designed with insufficient attention to mitigating the stress of heat on underground components, including assuring that cables are not placed too close to one another;
2. Con Edison did not take into account, in its maintenance of the system, how the cooler than usual summer temperatures of the three prior years would mask the weakened ability of a great number of components to withstand a heat wave like the one of July 1999;
3. Con Edison did not have adequate means of identifying components susceptible of failing when heated to the levels reached by their environment in a heat wave; and
4. Con Edison never established a mechanism for identifying those components most likely to fail so they could be timely replaced.

To sum up, the AG concluded that, in 1999, Con Edison was without the analytic tools, the monitoring systems, access to real time data and maintenance protocols that would have allowed Con Edison to anticipate and remediate the vulnerability of feeder lines and other equipment to heat generated by the large volume of electric current that customers demanded when the temperature soared.

The AG also found that Con Edison did not and apparently could not communicate necessary information and advice clearly and quickly to consumers, press and public officials in order to effectuate demand management and emergency response. Finally, because gross negligence is required for full damages to be recovered, the AG reviewed the arbitrary limits on reimbursements contained in Con Edison's tariffs. In every instance, the Attorney General concluded that significant improvement was necessary. Based on the above findings, the AG recommended, *inter alia*, the following:

1. Con Edison should fully implement **all sixteen elements** of the AG's Action Plan to improve reliability of its system;
2. to the extent Con Edison found an element impractical or unsusceptible to prompt improvement, it should publicly disclose its conclusions and offer an alternative means to the same end;
3. Con Edison should begin redesigning the distribution system to diminish overcrowding in limited space, exacerbating the effects of heat. Con Edison should also better shield components from excessive heat to allow successful carriage of expected load during heat waves;
4. Con Edison should develop a test to identify distribution equipment with impaired heat resistance;
5. if Con Edison determines that no such test was practically achievable in the near future, it should publicly state this and propose some alternative ways of locating and removing defective equipment;
6. Con Edison should improve its capacity to make quick repairs whenever there is any indication a network or an appreciable number of customers are at risk of losing service;
7. Con Edison should aggregate by network, in a readily retrievable form, records on capital improvement and maintenance expenditures, and make such data publicly available on an annual basis;
8. Con Edison should aggregate data involving the dispatching of work crews by network in easily retrievable format so that it can be publicly and readily accessible;
9. Con Edison should improve policies and procedures for alerting the press, government, customers and the public during actual outages and where there is a serious risk of an outage;
10. Con Edison should submit an amended and expanded tariff for outage reimbursement and streamline claim submission policies and claim processing; and

11. The PSC should review its distribution quality of service standards to see if upgrading them would improve the reliability of Con Edison's electric service.

Except for the submission and approval of amendments to its reimbursement tariff that raised levels and coverage, though not as high as the AG suggested, Con Edison substantially failed to take all the remediation steps identified above or propose effective alternatives for them. The PSC also did not adequately mandate implementation of these steps and actually accepted as satisfactory Con Edison's claimed audit of its failed Washington Heights communications protocols while conceding that new and effective procedures were put in their place. Indeed, by 2002, the PSC reduced the frequency of Con Edison reporting obligations related both to the 2000 action plan, the 1999 outages, and the overall distribution system.

After the 1999 outage, the PSC relaxed its oversight of Con Edison, specifically adopting Con Edison's argument that disaggregating planning and investment activity on other than a borough basis would be too onerous, as would charting repair activity by specific network. Moreover, following the 1999 outage, Con Edison not only failed to upgrade the technology allowing it to measure and monitor equipment vulnerability, but the PSC itself was apparently not distressed that the data reporting system and computer programs in place deteriorated and became less reliable, ostensibly because Con Edison could not convince the patent holder to improve its proprietary software or find an alternative solution.

In the aftermath of the 2006 Queens power outage, many have suggested that the recommendations contained in the AG Report, if implemented, would have decreased the likelihood that the 2006 outage would have occurred. The remarkable similarity of the two events, both caused by numerous feeder failures during a heat wave and followed by catastrophic communications failures, creates a compelling circumstantial case that the 2006

outage was history repeating itself. Such history brings to mind the old adage: “fool me once, shame on you; fool me twice, shame on ME.” The saying does not provide for the contingency of a third repeat occurrence, but that is what is likely to visit New York City if dramatic action is not taken soon.

The truth is that New York needs new regulatory and legislative policies establishing standards of reliability for a 21<sup>st</sup> century public utility, as well as the creation of incentives and penalties to assure that utilities meet these standards in measurable ways. In the long run, this will likely involve government partnering with utilities to build model state-of-the-art distribution networks, provide coherent, consistent and continuous conservation and demand management information in our schools and community institutions, and sponsor the installation of more dispersed, less centralized, alternative energy structures to provide more reliable and less damaging power than what we presently produce and transmit from conventional sources.

### C. Recommendations

- *The PSC should institute a formal proceeding on the question of Con Edison’s prudence and gross negligence.*
- *The State Legislature should amend the New York State Public Service Law to remove the tariff bar against suits for damages from outages due to simple negligence.*