

LOUIS L. RANA - ELECTRIC

1 Q. Please state your name and business address.

2 A. Louis L. Rana. My business address is 4 Irving Place,  
3 New York, NY 10003.

4 Q. Mr. Rana, what is your title?

5 A. I am President and Chief Operating Officer of the  
6 Consolidated Edison Company of New York, Inc. ("Con  
7 Edison" or the "Company").

8 Q. Please describe your educational background.

9 A. I have a Bachelor's degree in engineering, with honors,  
10 from Steven's Institute of Technology, a Master's  
11 degree in Electrical Engineering from the New Jersey  
12 Institute of Technology, and a Master's in business  
13 administration from Columbia University.

14 Q. Please describe your work experience.

15 A. I have been with the Company for approximately 39  
16 years. I have held various positions including Senior  
17 Vice President of Electric Operations, Vice President  
18 of Manhattan Electric Operations, Vice President System  
19 and Transmission Planning, and Chief Distribution  
20 Engineer. In September 2005, I was elected to my  
21 current position.

22 Q. Please generally describe your current  
23 responsibilities.

LOUIS L. RANA - ELECTRIC

1 A. As Con Edison's President and Chief Operating Officer,  
2 I have overall responsibility for Con Edison's  
3 electric, gas and steam operations.

4 Q. Do you belong to any professional societies or  
5 organizations?

6 A. Yes, I am a member of the Institute of Electrical and  
7 Electronics Engineers ("IEEE") and a member of the  
8 Research Advisory Committee for the Electric Power  
9 Research Institute ("EPRI"). I am also a member of the  
10 National Academies' Committee on Enhancing the  
11 Robustness and Resilience of Future Electric  
12 Transmission and Distribution in the United States to  
13 Terrorist Attack, and a member of the advisory  
14 committee of New York-Presbyterian Hospital's Allen  
15 Pavilion. I am also a board member of the Association  
16 of Edison Illuminating Companies and the National  
17 Action Council for Minorities in Engineering.

18 Q. What is the purpose of your testimony?

19 A. I will give an overview of the Company's processes  
20 insofar as they relate to overall planning, budgeting  
21 of both capital and operating expenditures, and cost  
22 control strategies used by the Company.

23 Q. What is the Company's mission?

LOUIS L. RANA - ELECTRIC

1 A. Con Edison's mission is to provide energy services to  
2 our customers safely, reliably, efficiently, and in an  
3 environmentally sound manner; to provide a workplace  
4 that allows employees to realize their full potential;  
5 to provide a fair return to our investors; and to  
6 improve the quality of life in the communities we  
7 serve. We strive at all times to be aware that what we  
8 do, and the way we do it, vitally affects the millions  
9 of people who depend on our service.

10 Q. Please describe the importance of the electric  
11 infrastructure to the Company's service territory.

12 A. Nowhere is electric reliability more important than in  
13 the New York metropolitan area. We are acutely aware  
14 of New York City's role as a world financial capital,  
15 and as a center for culture, government and many other  
16 important endeavors. In addition to normal day-to-day  
17 activities, the Con Edison electric system is relied  
18 upon for: 1) transportation systems, including three  
19 major airports and several railway systems; 2)  
20 computers and advanced technology, including those  
21 employed by the New York Stock Exchange; 3) economic  
22 development, including major construction activities  
23 such as the Atlantic Yards and the Hudson Yards

LOUIS L. RANA - ELECTRIC

1 developments; and 4) hospital and health care  
2 facilities. The Company is subject to the strictest  
3 reliability rules in the United States. We pride  
4 ourselves on being the most reliable utility in the  
5 Country; however, we also clearly recognize that there  
6 is always room to improve.

7 Q. Please describe the process that is used to develop  
8 both short term and long term plans for the electrical  
9 system.

10 A. There are several major components of our planning  
11 process. The demand forecast is the starting point to  
12 plan the electrical system that will be necessary to  
13 supply the needs of our customers. The future  
14 projected demands are first addressed by implementation  
15 of energy efficiency and demand side management  
16 programs that can cost-effectively reduce future  
17 projected demands. The electrical system can then be  
18 designed for the net demand.

19 Q. Please describe the process the Company uses for demand  
20 forecasting.

21 A. The demand forecast is an essential input into the  
22 budgeting process. The peak hourly demand is developed

LOUIS L. RANA - ELECTRIC

1 for the electric service area and its networks. We  
2 develop peak demand forecasts for 1, 5, 10 and 30 year  
3 periods. The five year and beyond forecasts serve  
4 predominantly to support the following major  
5 activities: targeted demand side management programs,  
6 transmission and substation siting, substation  
7 expansion and construction, distribution planning, and  
8 providing adequate capacity in the metropolitan New  
9 York area to meet demand requirements.

10 The key short-term output of the Company's forecasting  
11 process is issuance of the Company's demand forecast  
12 for the following year, together with individual demand  
13 forecasts for areas and networks. The demand forecast  
14 is issued soon after the peak summer period.

15 Company departments then finalize their efforts for  
16 identifying and planning for infrastructure upgrades  
17 needed to meet the forecasted demand for the upcoming  
18 summer in the most effective manner.

19 Q. What is the Company's recent demand growth experience?

20 A. Overall peak demand for electricity has risen about 27  
21 percent since 1993, and the Company's peak demand is  
22 projected to rise about 10 percent more in the next ten

LOUIS L. RANA - ELECTRIC

1 years (after reflecting the impact of Con Edison DSM  
2 programs). Our forecasting unit projects installations  
3 of more than 900,000 additional residential air  
4 conditioning units, not including replacements. This  
5 includes about 900,000 room units and about 40,000  
6 central units that will be installed in the next five  
7 years in our service territory. Businesses are also  
8 using more electricity. The typical office building  
9 has increased its electrical consumption per square  
10 foot from 4 to 6 watts per square foot in the mid-  
11 1970's to 7 to 9 watts per square foot today. In  
12 addition, high-technology office buildings, such as  
13 financial brokerage houses, can use as much as 12 watts  
14 per square foot.

15 Q. Are there other considerations involved in the short  
16 term and long term planning process?

17 A. Yes. In addition to planning the system so it that  
18 meets the expected demands, we also analyze other  
19 factors that will affect our construction plans, such  
20 as risk management, system and component performance,  
21 and productivity and process improvement.

LOUIS L. RANA - ELECTRIC

1 Q. Please describe the Company's risk management program.

2 A. The Company currently uses the Enterprise Risk  
3 Management ("ERM") process to identify significant  
4 operating risks that the company faces. Members of a  
5 team of senior level managers, representing every  
6 organization in the Company, identify the most  
7 significant risks from their respective areas of the  
8 Company. These risks are then further assessed and  
9 refined.

10 Q. Please describe some of these risks.

11 A. The risks range from a stray voltage occurring as a  
12 result of a crack in the insulation of a 120V cable to  
13 the loss of an entire substation. The risks would also  
14 include damage from significant storms that can affect  
15 our area.

16 Q. What is Company's process for addressing these risks?

17 A. For operations, Con Edison's emergency management  
18 programs establish a process to deal with these risks.  
19 We: (1) conduct assessments to identify and analyze  
20 risks using various input opportunities, including  
21 external and internal lessons learned; (2) seek  
22 opportunities to mitigate or prevent the risk and

1       implement where practicable; (3) if the risk cannot be  
2       sufficiently mitigated or eliminated, appropriate plans  
3       and resulting preparedness strategies are utilized to  
4       address the identified risks; (4) when a drill or an  
5       event occurs, Con Edison utilizes appropriate response  
6       plans and recovery strategies to address the hazards  
7       and impact that result; and (5) finally, the Company  
8       utilizes lessons-learned opportunities from drills and  
9       events to help refine the risk-assessment process,  
10      mitigation or prevention strategies, plans, and  
11      preparedness, response and recovery strategies.

12    Q.   Turning back to planning, please describe system and  
13       component performance programs that are considered in  
14       the planning process.

15    A.   These programs include all projects and programs that  
16       address the performance of the system and its  
17       components. We trend the performance of the system and  
18       its components. We optimize their performance through  
19       maintenance programs, and where appropriate, capital  
20       replacement programs.

LOUIS L. RANA - ELECTRIC

1 An example of such a program is our systematic approach  
2 to paper insulated lead covered cable ("PILC")  
3 replacement. This component of the distribution system  
4 and its associated splices has a higher failure rate  
5 than newer solid dielectric cable and its associated  
6 splices. By replacing the PILC, we improve reliability  
7 and reduce the probability of an outage to network  
8 customers and reduce the risk of a large and extended  
9 network outage.

10 Q. Please describe your productivity and process  
11 improvement programs.

12 A. In these programs, we pursue methods to improve  
13 efficiencies and better meet the needs of our  
14 customers. These programs would include a  
15 consolidation of functions such as what was done when  
16 our shared services organizations were formed. We will  
17 also outsource work where appropriate. Use of new  
18 technology would also fall into this category.

19 Q. Please expand on the Company's use of new technology.

20 A. We are always exploring opportunities to employ the  
21 latest technologies in order to streamline processes

LOUIS L. RANA - ELECTRIC

1 and improve performance. We welcome occasions to  
2 partner with educational institutions, utilities and  
3 professional organizations to develop and share  
4 knowledge. Con Edison's 3<sup>rd</sup> generation designs (3G)  
5 for System of the Future ("SoF") program was created to  
6 address the challenges associated with serving a  
7 growing demand for electricity and the need to expand  
8 the system using a new and innovative approach.  
9 Specific program objectives include: increase asset  
10 utilization; improve operating flexibility; reduce  
11 street congestion; maintain customer service and  
12 reliability; and reduce and avoid costs. The project  
13 is the result of international benchmarking of other  
14 reliable electric utilities around the world serving  
15 dense urban centers, including Tokyo, Osaka, Paris,  
16 London, Hong Kong, Shanghai, Australia and Chicago.  
17 The first designs developed for the 3G SoF are based on  
18 system reconfiguration to share assets and maximize  
19 asset utilization. Potential future implementation of  
20 the new design will be in growing demand areas, such as  
21 the west side of Manhattan's Hudson Yards, where new

LOUIS L. RANA - ELECTRIC

1 substations and underground infrastructure will be  
2 required to meet the demand. A near-term application  
3 of asset sharing is the York area substation on the  
4 Upper East Side of Manhattan. The 3G asset sharing  
5 design for York connects two transformers from East  
6 75th Street to York via two underground cable inter-  
7 ties. By sharing the two transformers between the two  
8 substations, York can be established with fewer  
9 transformers than the standard design, while still  
10 serving the same demand and maintaining reliability.  
11 York will also be the location of the superconductor  
12 demonstration project with the Department of Homeland  
13 Security. The superconductor cable has the significant  
14 advantage of being able to carry much larger current  
15 and power than conventional copper cables. This allows  
16 for a compact installation, requiring much less  
17 underground space for installation. This effort is  
18 intended to demonstrate the technical feasibility of  
19 the integrated fault current limiting superconducting  
20 cable as well as a stand alone fault current limiter on

1 our system, which are the state of the art technologies  
2 that can complement our future 3G designs.

3 Q. Is the Company undertaking efforts regarding smart grid  
4 programs?

5 A. Demonstration of new technologies such as  
6 superconductor cables and implementation of 3G  
7 concepts, as they develop, will provide for the gradual  
8 integration of smart grid functions into our system.

9 In addition, Con Edison's operating, engineering, and R&D  
10 organizations are working closely to continue  
11 development of many advanced technologies that will  
12 enable smarter operations of our distribution grid  
13 systems. These projects focus on smart technologies  
14 all along the "smart grid" path - including the  
15 development of advanced visualization techniques for  
16 operations, new and/or improved sensor technologies,  
17 advanced metering, new communication options, advanced  
18 network system simulation and modeling, machine  
19 learning techniques for decision-making and control,  
20 and fast switches that will allow immediate network

1 reconfiguration and move us to systems that becomes  
2 self-healing.

3 Q. Please describe the process used to develop the  
4 budgets.

5 A. The budget cycle begins in early summer. Each  
6 organization reviews its performance for the prior year  
7 and year to date, analyzes its progress on key goals,  
8 and examines new data, including demand forecasts,  
9 planned energy efficiency measures, regulatory changes,  
10 and its system experience. This results in a business  
11 and work plan that contains major goals, objectives,  
12 programs, and preliminary performance indicators.  
13 Examples of the type of work that are included in the  
14 plans include infrastructure enhancements and programs  
15 that address the net of increased customer demand and  
16 energy efficiency/DSM; programs that address risks such  
17 as public and employee safety programs and emergency  
18 management programs; programs that address system  
19 performance and component performance; programs that  
20 address process and productivity improvement; and  
21 programs that address employee development.

LOUIS L. RANA - ELECTRIC

1 Senior officers review and further refine the business  
2 and work plan. They work with their financial  
3 managers, engineering representatives, and general  
4 managers to finalize the plan and its resulting capital  
5 and O&M expense budgets. The capital budget looks  
6 ahead five years, using as a starting point the prior  
7 five-year budget. In a series of review meetings, this  
8 budget is reviewed, revised, and subsequently approved  
9 by senior management. Projects are prioritized  
10 according to criteria established in each major  
11 organization.

12 Following the preparation of the work plan and approval at  
13 the Senior Vice President level, budgets are  
14 consolidated and then reviewed by the Company's COO and  
15 President. After reviewing and discussing the  
16 rationale for prioritization, including costs and  
17 benefits of the various projects, a final set of  
18 capital projects is presented to the CEO and CFO for  
19 their final review. The final one-year O&M and capital  
20 budget is then presented to the Board of Trustees. The  
21 Board also receives an overview of the five-year plan.

LOUIS L. RANA - ELECTRIC

1 Q. Please discuss the capital budget implementation  
2 process.

3 A. The capital budget implementation process is composed  
4 of several steps, including project authorization,  
5 appropriation, funding, and status reports.

6 The initial step is review and approval of the capital  
7 budget by the Board of Trustees. This authorizes the  
8 officers of the Company to implement the projects for  
9 which they are responsible. Before funds can be  
10 expended for Capital Projects, however, an  
11 Appropriation Request must be approved. After approval  
12 of the Appropriation Request, a project proceeds toward  
13 implementation. Records of project obligations are  
14 maintained to track costs for the project vs. the  
15 approved appropriation amount. The appropriation step  
16 requires specific approval of dollars to be spent, and  
17 provides controls for project costs. Projects are not  
18 to exceed levels of authorization and appropriation  
19 without further discussion and approval.

20 Q. What is Con Edison's methodology for optimizing its  
21 projects/programs?

LOUIS L. RANA - ELECTRIC

1 A. Key areas of focus for the optimization process include  
2 the evaluation of relative benefit that each  
3 project/program provides to customers with respect to  
4 public safety, environmental, operational, regulatory  
5 and cost benefits. Judgment and various models are  
6 used to analyze and prioritize the projects/programs.  
7 Risk assessment and mitigation is also factored into  
8 the process.

9 Q. After approval of the budgets, does the Company seek to  
10 track and further control its expenditures?

11 A. Yes. There are extensive efforts to control costs, as  
12 discussed more fully by the Infrastructure Panel. We  
13 use numerous approaches to improve efficiencies and  
14 better meet the needs of our customers. These programs  
15 include a consolidation of functions such as what was  
16 done when our shared services organizations were  
17 formed. We will also outsource work where appropriate.

18 Q. How are O&M expenses and capital expenditures managed  
19 and controlled?

20 A. Operating and finance managers throughout the Company  
21 monitor both the O&M expenses and Capital expenditures

LOUIS L. RANA - ELECTRIC

1 within their departments. They also analyze the  
2 results in comparison to the budget. The Company has  
3 developed comprehensive budgeting systems for both O&M  
4 and capital expenditures, such as monthly financial  
5 reports that are compiled to show the O&M actual  
6 expenses and variance to budget.

7 Q. Does the Company consider alternatives when developing  
8 its construction plans?

9 A. The Company seeks to identify the most cost effective  
10 solutions to meet identified needs. For example, once  
11 an overload is identified in the substation or  
12 transmission system, several potential solutions are  
13 developed to minimize the cost required to resolve the  
14 overload and maintain system reliability. In addition  
15 to consideration of additional targeted DSM programs,  
16 potential solutions may include operating solutions,  
17 existing equipment upgrade, new distribution system  
18 equipment installation, or new substation equipment  
19 installation.

20 As indicated, the Company incorporates energy  
21 efficiency and demand response potential in its

1 infrastructure planning with the goal of reducing the  
2 peak independent demand as seen by the area stations.  
3 Special emphasis is put on networks supplied by area  
4 stations where reduction of the independent summer peak  
5 demand can defer expensive demand relief projects up to  
6 and including distribution assets.

7 Q. What about employee performance, do you believe  
8 employee performance affect costs?

9 A. Yes, and employee development is a major focus for our  
10 Company. Employee development programs focus on skill  
11 training, leadership, and management training for new  
12 and existing employees. The programs make use of  
13 modern learning techniques such as online educating  
14 training modes. Well-trained employees are efficient,  
15 productive and motivated employees. In addition, as  
16 discussed by Company witness Tai and Joseph Lee  
17 McCullough of Hewitt Associates, components of the  
18 Company's compensation packages for officers and  
19 management employees are designed to tie the actual  
20 levels of compensation awarded to their higher  
21 performance in meeting various qualitative goals (e.g.,

LOUIS L. RANA - ELECTRIC

1 re safety and reliability) and in performing more  
2 efficiently.

3 Q. Does this conclude your testimony?

4 A. Yes, it does.