Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff7
Date of Response: 07/17/2007
Responding Witness: IIP

Question No. :121
Is the Obsolete Area Substation Transformer Replacement Program a new program? If not, explain why this program is now being implemented compared to previous years. Additionally, provide the following information associated with obsolete area substation transformer replacements during each of the past five years. a) Forecasted budget b) Actual amount spent c)Quantity of transformers replaced including the date and location of each

Response:

See below.

DPS-121
Obsolete Area Substation Transformer Replacement Program

Response:
This program was created in 2005 to address aging and obsolescence issues with the transformers in certain area substations. Please refer to the Company work paper on this program for more detail.

2005

Forecasted preliminary budget:	$5,000,000
Actual amount spent:	$3,043,000
Transformers replaced:	W19th St 3

2006

Forecasted preliminary budget:	$17,000,000
Actual amount spent:	$14,346,000
Transformers replaced:	W19th St 1
	W19th St 2

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff7
Date of Response: 07/24/2007
Responding Witness: IIP

Question No. :123
Is the Miscellaneous Substation Components Program a new program? If not, explain why this program is now being implemented compared to previous years. Additionally, provide the following information associated with each of the programs covered under the miscellaneous substation components programs identified within the Company's testimony, during each of the past five years a) Forecasted budget b) Actual amount spent c) Description of work completed including dates and locations

Response:

See below.

DPS-123
Miscellaneous Substation Components Program

Response:

The Company objects to the timeframe requested. The following responses provide information for the preliminary forecasted budget and actual spending for the years 2004 to 2006:

1. Additional G&T devices:

This is a new program in 2007. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Additional Ground & Test Devices."

2. Area Substation Reliability: See response to Staff 124

3. Battery & Rectifier Replacements:

The following is a list of stations where DC system upgrade work was performed under the Battery and Rectifier Replacement Program for the calendar years 2004 – 2006 including the preliminary forecasted budget and actual amount spent per year.

2004
Forecasted budget: $1,325,000
Actual amount spent: $1,697,000

Location

Astoria East	E 75th St.	Sprain Brook
Brownsville	Eastview	Tremont
Bruckner	Jamaica	W 19th St.
Buchanan	Leonard St.	W 49th St.
Cherry St.	Millwood West	Water St.
Corona	Ramapo	Willowbrook
E 40th St.	Sherman Creek	Buchanan 345

2005
Forecasted budget: $2,300,000
Actual amount spent: $2,414,000

Location

Astoria East	E 13th St.	W 19th St.

Avenue A	E 75th St.	W 49th St.
Brownsville	Eastview	W 50th St.
Bruckner	Elmsford	Washington St.
Buchanan	Leonard St.	Water St.
Cedar St.	Millwood	White Plains
Cherry St.	Parkchester	Willowbrook
Dunwoodie (N)	Ramapo	Woodrow
Dunwoodie (S)	Sprain Brook	Buchanan 345

2006

Forecasted budget:	$1,550,000
Actual amount spent:	$2,883,000

Location

Astoria West	E 75th St.	Sprain Brook
Avenue A	Elmsford	W 19th St.
Brownsville	Farragut	W 49th St.
Buchanan	Glendale	W 50th St.
Buchanan 345	Leonard St.	Water St.
Cherry St.	Millwood	Willowbrook
Dunwoodie (N)	Parkchester	Woodrow
Dunwoodie (S)	Pleasant Valley	
E 13th St.	Ramapo	

4. Capacitor Cable Upgrade Program:

This was a new program as of 2006. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Capacitor Cable Upgrade Program – Various Locations." The following identifies the preliminary forecasted budget, actual amount spent, and the location of the work performed under this program for 2006.

2006

Forecasted budget:	$2,000,000
Actual amount spent:	$ 153,000

Location	**Bank**
W 42nd St.	3, 4, 5, 6

5. Category Alarms

The following identifies the forecasted budget, the actual amount spent, and the locations of the work performed under this program for the calendar years 2004 – 2006.

2004

Forecasted budget: $500,000
Actual amount spent: $ 17,000

Location

Gowanus

2005

Forecasted budget: $1,000,000
Actual amount spent: $ 812,000

Location

Gowanus
Sherman Creek
Sprain Brook
W 49th St.

2006

Forecasted budget: $1,000,000
Actual amount spent: $ 502,000

Location

E 75th St.
Sherman Creek

6. Construct Relay Enclosure Houses

This was a new program as of 2005. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Construct Relay House Enclosures." The following is the forecasted budget, actual amount spent, and location of the work performed for the calendar years 2005 – 2006.

2005
Forecasted budget: $0
Actual amount spent: $409,000

Location
Astoria East

2006
Forecasted budget: $0
Actual amount spent: $111,000

Location
Astoria East

7. Corona Settlement

2004
Forecasted budget: $0
Actual amount spent: $181,000

Work
Subsurface Trenching

2005
Forecasted budget: $1,000,000
Actual amount spent: $ 628,000

Work
Subsurface Trenching
Stabilize Pothead Stand

2006
Forecasted budget: $0
Actual amount spent: $ 326,000

Work
Subsurface Trenching
Stabilize Pothead Stand

8. Diesel/Blackstart Restoration

This program started in 2004.

2004
Forecasted budget: $0
Actual amount spent: $1,861,000

Location
Glendale
Gorona
W 42nd St.

2005
Forecasted budget: $3,000,000
Actual amount spent: $4,401,000

Location

Avenue A	Glendale	W 65th St.
Bensonhurst	Hellgate 128kV	Washington St.
Brownsville	Hellgate 13kV	White Plains
Corona	Sherman Creek	Woodrow
Corona 1	W 19th St.	
E 75th St.	W 42nd St.	

2006
Forecasted budget: $1,500,000
Actual amount spent: $3,403,000

Location

Bensonhurst 1	Woodrow	White Plains
Bensonhurst 2	Eastview	W 65th St.
Brownsville 1	Elmsford	W 110th St.
Cherry St.	Fox Hills	Elmsford
E 75th St.	Trade Center	Hudson Ave. East
W 42nd St.	E 29th St.	
Fox Hills	Avenue A	

9. East River Complex – Install Wall:

This is a new program. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "East River Complex – Install Reinforced Concrete Wall Along the FDR."

10. Facility Upgrade: See response to Staff 125

11. Fire Protection Program

This program started in 2006. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Fire Protection Program." The following information is provided:

2006

Forecasted budget:	$0
Actual amount spent:	$ 658,000

Location

E 13th St.
E 40th St. (2 jobs)
East River
Gowanus
Murray Hill

12. High Voltage Test Sets:

This is a new program. There are 100 fixed and 7 mobile high voltage DC test sets in Substation Operations that are used for distribution feeder processing. Various test sets are over 20 years old and require constant repair. This program will purchase and replace 3 DC test sets per year and is needed in order to provide a minimum of two (2) feeder processing DC test sets per distribution station and to systematically replace existing test sets based on age, corrective maintenance and availability of parts. The replacement program will target the worst performing test sets for replacement.

There are currently 3 mobile A/C VLF (0.1 HZ) test sets for distribution feeder processing on the Con Edison System (one per operating region in Manhattan, Brooklyn/Queens, Westchester/Bronx). Under this program, we will increase the number of mobile sets with the purchase of an additional 3 mobile A/C VLF (0.1 HZ) test sets. We will also purchase and install 3 fixed A/C VLF station test sets per year to expand the number of A/C hi-pots performed on distribution feeders. This program is to support conducting A/C hi-pot testing on EPR and Poly cable.

This program will also fund the purchase of 2 new 345 KV transmission voltage A/C test sets. These units will replace those currently at the W49th St. and Dunwoodie stations. The W49th St. test set is no longer supported by the manufacturer and is approximately 30 years old. This set is used to perform conditioning and proof tests of the indoor equipment after overhauls and repairs and is no longer reliable. Dunwoodie station no longer has an A/C test set. It is no longer functioning and has reached the end of its useful life and cannot be repaired. Replacement of these units will eliminate the need to rent units when required which is not preferred due to cost and vendor availability constraints.

13. Install 138kV Breakers 7 & 8 and Third Cap Bank - Jamaica:

This program was new in 2006. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Jamaica 138kV and 27kV Substations – Reliability Reconfiguration." The following information is provided:

2006 forecasted budget:	$2,000,000
2006 actual amount spent:	$1,018,000

14. New Maximo Upgrade:

This is a new program. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "MAXIMO Upgrade."

15. Rapid Restore Enhancements – Mapping/Modeling System:

See response to Staff 126

16. Reinforced Ground Grid

This is a new program as of 2007. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital.
Project/Program Title: "Astoria East – Reinforced Ground Grid."

17. Revenue Metering Upgrade

This is a new program as of 2007. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital.
Project/Program Title: "Revenue Metering Upgrade."

18. Roof Replacement

2004

Forecasted budget:	$1,000,000
Actual amount spent:	$1,898,000

Location

Buchanan	Dunwoodie	E 179th St.
E 40th St.	East Fishkill	East River
Eastview	Farragut	Greenburgh
Jamaica	Mclean Ave.	Millwood
Pleasant Valley	Pleasantville	Seaport
W 19th St.	Washington St.	Webster Ave.

2005

Forecasted budget:	$1,192,000
Actual amount spent:	$2,800,000

Location

Avenue A	Bruckner	Dunwoodie
E 179th St.	E 75th St.	East River
Eastview	Hellgate	Millwood
Ramapo	Vernon	

2006
Forecasted budget: $3,000,000
Actual amount spent: $1,236,000

Location

Bruckner	Cherry St.	E 29th St.
East River	Fresh Kills	Hellgate
Ramapo		

19. Small Capital: See response to Staff 127

20. SOCCS RTU Replacement

This was a new program as of 2006. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "SOCCS RTU Replacement." The following information is provided:

2006
Forecasted budget: $1,000,000
Actual amount spent: $0

21. Substation Automation (Target Information System)

This was a new program as of 2005. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Substation Automation - Target Information System (TIS)." The following information is provided:

2005
Forecasted budget: $1,305,000
Actual amount spent: $0

2006
Forecasted budget: $2,000,000
Actual amount spent: $1,340,000

Location
Farragut

22. Substation Automation – East River

This was a new program as of 2005. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "East River Station Protection System Upgrade – Automation." The following information is provided:

2005
Forecasted budget: $3,000,000
Actual amount spent: $ 306,000

Location
East River

2006
Forecasted budget: $3,000,000
Actual amount spent: $5,076,000

Location
East River

23. Substation Continuance – Buchanan:
This is a new program. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Buchanan Continuance."

24. Substation Continuance (E 179th Street)

This program started in 2006. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "East 179th Street Substation Continuance." The following information is provided:

2006
Forecasted budget: $1,600,000
Actual amount spent: $1,323,000

Work Performed:
Install Breaker 5W

25. Substation Continuance – E63rd St.:

This is a new program. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "East 63rd St. Substations – Continuance Prog."

26. Substation Continuance (White Plains)

2004

Forecasted budget: $0
Actual amount spent: $ 278,000

Work Performed:

Installation of 138kV Conduit
Installation of L&P System
Construction of a Switchgear Building

2005

Forecasted budget: $ 9,000,000
Actual amount spent: $17,043,000

Work Performed:

Installation of 138kV Conduit
Construction of a Switchgear Building
Installation of Transformers

2006

Forecasted budget: $5,000,000
Actual amount spent: $6,858,000

Work Performed:

Installation of 138kV Conduit
Installation of Transformers
Purchase of Transformer

27. Substation Loss Contingency

This program started in 2004. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Various – Substation Loss Contingency." The following information is provided:

2004
Forecasted budget: $0
Actual amount spent: $ 246,000

Work Performed:
Purchased portable pressurization plant

2005
Forecasted budget: $ 550,000
Actual amount spent: $0

2006
Forecasted budget: $0
Actual amount spent: $0

28. Switchgear Enclosure Upgrade Program

This program started in 2005. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Switchgear Enclosure Upgrade Program." The following information is provided:

2005
Forecasted budget: $ 500,000
Actual amount spent: $0

2006
Forecasted budget: $0
Actual amount spent: $0

29. Technology Improvements – Work Permit System, T1 lines, Phase #1 Substation Central:

See response to Staff 126

30. Upgrade 13kV L&P Transformer - Fresh Kills:

This program was new in 2006. Please refer to the Company work paper for additional detail on this program, refer to section: "Substation Operations – Capital. Project/Program Title: "Fresh Kills 13kV/208V Substation - Replace Two L&P 13kV/208V Substations." The following information is provided:

2006 forecasted budget:	$500,000
2006 actual amount spent:	$0

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff7
Date of Response: 07/17/2007
Responding Witness: IIP

Question No. :124
Is the Enhanced Substation Reliability Program a new program? If not, explain why this program is now being implemented compared to previous years. Additionally, provide the following information associated with each of the four programs covered under the enhanced substation reliability programs identified within the Company's testimony, during each of the past five years. a) Forecasted budget b) Actual amount spent c) Description of work completed including dates and locations

Response:

See below.

DPS-124
Enhanced Substation Reliability Program

Response:
The Enhanced Substation Reliability Program is not a new program. The Company objects to the timeframe requested. Below are the forecasted preliminary budgets, actual amounts spent, and the work completed by station for 2004, 2005, and 2006.

2004

Forecasted budget:	$0
Actual amount spent:	$210,000
Work performed:	
W42nd St No. 1 & 2	Circuit Switch Installation

2005

Forecasted budget:	$4,000,000
Actual amount spent:	$5,545,000
Work Performed:	
W42nd St No. 1 & 2	Circuit Switch Installation
E29th St	Circuit Switch Partial Installation
E36th St	Circuit Switch Partial Installation

2006

Forecasted budget:	$5,000,000
Actual amount spent:	$7,753,000
Work Performed:	
W42nd St No. 1 & 2	Circuit Switch Installation
E29th St	Circuit Switch Partial Installation
E36th St	Circuit Switch Partial Installation
Brownsville	Circuit Switch Installation Equipment Procurement

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff7
Date of Response: 07/17/2007
Responding Witness: IIP

Question No. :125
Is the Substation Structures Upkeep Program a new program? If not, explain why this program is now being implemented compared to previous years. Additionally, provide the following information associated with each of the five specific programs covered under the substation structures upkeep programs identified within the Company's testimony, during each of the past five years. a) Forecasted budget b) Actual amount spent c) Description of work completed including dates and locations

Response:

See below.

DPS-125
Substation Structures Upkeep Program

Response:
The Substation Structures Upkeep Program is not a new program. The Company objects to the timeframe requested. Below are the forecasted preliminary budgets, actual amounts spent, and the work performed related to the program from 2004 to 2006.

2004

Forecasted budget:	$0
Actual amount spent:	$383,000
Work performed:	Replacement of high voltage test sets at various locations

2005

Forecasted budget:	$1,000,000
Actual amount spent:	$1,244,000
Work Performed:	
Astoria	Transformer yard improvements
E13th St	Battery room/office
Sedgwick	Workout location upgrade

2006

Forecasted budget:	$0
Actual amount spent:	$1,018,000
Work Performed:	
Various	Metal enclosures on diesel generators
Buchanan	Drainage piping
Astoria	Yard expansion
Sedgwick	Workout location upgrade
Hellgate	Upgrade lighting
Sherman Creek	Upgrade lighting
Willowbrook	Spare breaker
Cherry St.	Security fence
Woodrow	Spare breaker

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff8
Date of Response: 07/17/2007
Responding Witness: IIP

Question No. :145
Subject: Miscellaneous Programs For the projects/programs listed, provide: 1. A detailed description and justification for why the project/program is needed to meet the company's system miscellaneous programs. 2. A ranking of all projects/programs in priority of importance order. 3. Cash flow requirements for all projects/programs from inception through completion. 4. Backup details and explanation of how the cost figures were derived.

Capital:

A. Area Substation Reliability (IIP-2 page 2 of 4)
B. Facility Upgrade (IIP-2 page 3 of 4)
C. High Voltage Test Sets (IIP-2 page 3 of 4)
D. Small Capital (IIP-2 page 3 of 4)

Response:

See below.

Question No. :145-A

Area Substation Reliability

1. A detailed description and justification for why the project/program is needed to meet the company's system miscellaneous programs.

As a result of the 1990 Seaport incident, a recommendation was made to provide two means of local high side clearing through the installation of a circuit switcher and interrupter with primary supply feeders for each area substation transformer bank. If the vault is space constrained, audiotone transfer trip relay scheme can be installed instead. This design would provide two independent means of high-side clearing with separate and independent relay protection systems for protracted low side faults.

This program also includes the retirement of the Automatic Ground Switch (AGS), which used to provide the provide protection for the low side faults. The AGS system is an antiquated system no longer supported by its manufacturer, its components are obsolete, and its insulating medium is SF6 gas. The AGS retirement program has been combined with this reliability program and where feasible the work will be done simultaneously.

A single-mode failure philosophy was developed to prevent extensive damage and station shutdown from sustained 13kv faults. The philosophy includes the addition of an independent line of protracted fault protection, installation of a 138 kV transformer circuit switcher and interrupter, the provision for control cable system route separation, separate DC supply systems, switchgear compartmentalization, and improved fire rated design. The design philosophy has changed since some older substations were designed and constructed. Upgrading existing area substations to meet present design philosophy will reduce the possibility of loss of the area substation during a protracted fault incident. Also, as part of this program we will look to retire the AGS where feasible.

2. A ranking of all projects/programs in priority of importance order.

The following projects are in progress as part of this program:

- E29th St
- E36th St
- Cherry St
- Brownsville

3. Cash flow requirements for all projects/programs from inception through completion.

This program is not cash-flowed at the project level. The cash flow for this program is projected at $8,500,000 per year.

4. Backup details and explanation of how the cost figures were derived.

Backup details and explanation of cost figures can be found in the workpapers previously submitted.

Question No. : 145-B

Facility Upgrade

1. A detailed description and justification for why the project/program is needed to meet the company's system miscellaneous programs.

This program is required to fund larger scale projects not covered by other capital programs. These projects are necessary to improve and maintain substation facilities. Also, discontinuing use of temporary office facilities will support continued efficient deployment of personnel and will provide employees a safe and professional work environment. This program is necessary to correct and upgrade numerous age related structural and facility issues in order to ensure safe and reliable operation of the substations. Also, continued use of temporary office facilities is not a viable long term option.

2. A ranking of all projects/programs in priority of importance order.

The following table is a list of current candidate projects to be funded under the facility upgrade program. This list is updated on a frequent basis as project requests are received, reviewed, and prioritized. Each project listed below has been assigned a priority of a high (H), medium (M) or low (L).

In addition to the projects listed, there are a number of other candidate projects being considered for inclusion in this program that do not yet have fully developed job scopes and estimates, have not been prioritized, and are therefore not included in the list presented. These projects fall into the categories of drainage, foundation, and wall improvements, HVAC and lighting upgrades.

STATION	DESCRIPTION	EST. COST($)	PRIORITY
BENSONHURST 2 & WATER ST.	Add heat to switchgear rooms	$575,000.00 $ 575,000.00	H
PARKCHESTER #1	Install a new high voltage test set facilities	$ 500,000.00	H
E63RD ST.	Resolve drainage issues for transformer vaults #3 and #13	$ 2,000,000.00	H
E75TH ST.	Provide measures to prevent hazards to a nearby school in the event of a catastrophic failure of transformer or bushing.	$ 550,000.00	H
PLYMOUTH STREET	Replace obsolete fire protection system	$ 650,000.00	H
DUNWOODIE	Replace F.P. water supply and deteriorated deluge house	$ 1,500,000.00	H
PARKCHESTER #1	Re-grade substation to eliminate need for breaker lifts.	$ 500,000.00	M
HELLGATE 52 STORE ROOM	Renovate Hellgate office facility to provide additional space.	$ 500,000.00	M

WORLD TRADE CENTER	WTC Transformer Vault #1 exit.	$ 500,000.00	M
E29TH ST.	Installation of moat systems in Transformer Vaults #1 and #2.	$ 2,000,000.00	M
W65TH ST.	W65TH Street Substation & ECC- New HVAC.	$ 500,000.00	M
STATION	**DESCRIPTION**	**EST. COST($)**	**PRIORITY**
SPRAIN BROOK	Expansion of control house.	$ 995,741.00	M
BRIARCLIFF WORKOUT	Modify second floor for additional storage and office space.	$ 690,000.00	L
1823 SEDGEWICK AVE.	Sedgewick - Office Area Finish.	$ 500,000.00	L
DUNWOODIE	Convert retired 4kV gallery to office space.	$ 2,000,000.00	L

3. Cash flow requirements for all projects/programs from inception through completion.

The estimated project costs are provided above. Since the work performed under this program is relatively small in nature, cash flow requirements are not developed at the project level.

4. Backup details and explanation of how the cost figures were derived.

The estimated project costs provided are based on the best information available which depends on the current status of each project. Projects in the early stages have order of magnitude estimates while projects farther along will have more detailed Engineering estimates.

Question No. :145-C

High Voltage Test Sets

1. A detailed description and justification for why the project/program is needed to meet the company's system miscellaneous programs.

There are 100 fixed and 7 mobile high voltage DC test sets in Substation Operations that are used for distribution feeder processing. Various test sets are over 20 years old and require constant repair. This program will purchase and replace 3 DC test sets per year and is needed in order to provide a minimum of two (2) feeder processing DC test sets per distribution station and to systematically replace existing test sets based on age, corrective maintenance and availability of parts. The replacement program will target the worst performing test sets for replacement.

There are currently 3 mobile A/C VLF (0.1 HZ) test sets for distribution feeder processing on the Con Edison System (one per operating region in Manhattan, Brooklyn/Queens, Westchester/Bronx). Under this program, we will increase the number of mobile sets with the purchase of an additional 3 mobile A/C VLF (0.1 HZ) test sets. We will also purchase and install 3 fixed A/C VLF station test sets per year to expand the number of A/C hi-pots performed on distribution feeders. This program is to support conducting A/C hi-pot testing on EPR and Poly cable.

This program will also fund the purchase of 2 new 345 KV transmission voltage A/C test sets. These units will replace those currently at the W49th St. and Dunwoodie stations. The W49th St. test set is no longer supported by the manufacturer and is approximately 30 years old. This set is used to perform conditioning and proof tests of the indoor equipment after overhauls and repairs and is no longer reliable. Dunwoodie station no longer has an A/C test set. It is no longer functioning and has reached the end of its useful life and cannot be repaired. Replacement of these units will eliminate the need to rent units when required which is not preferred due to cost and vendor availability constraints.

2. A ranking of all projects/programs in priority of importance order.

The DC test sets will be replaced based on age, reliability, and availability of parts. The replacements currently planned for the following years in order of priority are listed below:

1. Parkchester
2. Bensonhurst BK8
3. Bensonhurst BK9
4. Granite Hill W4
5. Plymouth St. (install second test set)
6. E 179th St. (install second test set)
7. Bruckner (install second test set)
8. Corona Q8

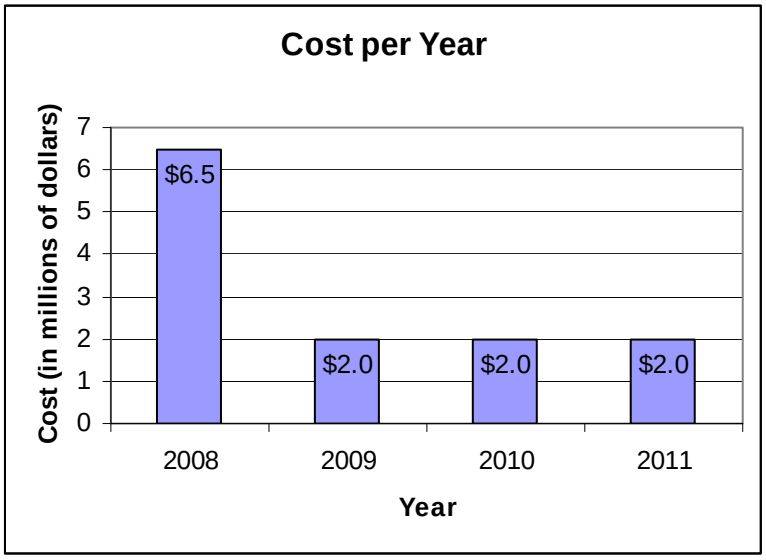
The AC test sets will first be installed at 27 KV stations such as Corona, Bensonhurst, Brownsville, Greenwood, and Jamaica. This program will be expanded in the future to include 13KV stations.

3. Cash flow requirements for all projects/programs from inception through completion.

Cost Breakdown:

Year / Description	2008	2009	2010	2011

3 A/C Test Sets per Yr.	$1.5 M	$1.5 M	$1.5 M	$1.5 M
3 Mobile A/C Test Sets	$1.5 M			
2 New 345kV A/C Tests	$3 M			
3 D/C Test Sets per Yr.	$0.5 M	$0.5 M	$0.5 M	$0.5 M
Total	**$6.5 M**	**$2.0 M**	**$2.0 M**	**$2.0 M**



5. Backup details and explanation of how the cost figures were derived.

Cost figures are based on actual expenditures from previous installations and equipment purchases.

Question No. : 145-D

Small Capital

1. A detailed description and justification for why the project/program is needed to meet the company's system miscellaneous programs.

This program is required to fund small scoped projects that are not covered by other capital programs. These projects are necessary to improve and maintain the infrastructure of substation facilities.

2. A ranking of all projects/programs in priority of importance order.

The following table is a list of current candidate projects to be funded under the small capital program. This list is updated on a frequent basis as project requests are received, reviewed, and prioritized. Each project listed below has been assigned a priority of a high (H), medium (M) or low (L).

In addition to the projects listed, there are a number of other candidate projects being considered for inclusion in this program that do not yet have fully developed job scopes and estimates, have not been prioritized, and are therefore not included in the list presented. These projects fall into the categories of fire detection, paving and fencing, bird netting, lighting, flooring, and HVAC improvements.

STATION	DESCRIPTION	EST COST($)	PRIORITY
QUEENSBRIDGE	Replace obsolete fire detection system.	$ 213,627	H
VERNON	Replace obsolete fire detection system.	$ 250,000	H
GREENWOOD	Replace potential transformers - Bus Sections 1, 2, & 5.	$ 47,000	H
HELLGATE E179TH ST TREMONT PARKCHESTER	Replace Barksdale low pressure switches on feeders.	$ 285,304	H
GREENWOOD	Replace low and high pressure alarm system for feeders 42231, 42232, 23161, 23162, 38B14.	$ 56,265	H
BROWNSVILLE	Replace low and high pressure alarm system on FDRS 38B01, 38B02, 38B03, 38B04 & 38B05.	$ 61,012	H
WEST 65TH STREET	Replace Barksdale switches.	$ 492,000	H
ASTORIA WEST SUBSTATION	Replacement of fire detection system.	$ 200,000	H
FARRAGUT	Update fire pump power supply.	$ 150,000	H
ASTORIA WEST SUBSTATION	Relocate diesel generator fuel tank to comply with FDNY regulations	$ 150,000	H
147TH STREET PURS	147th Street PURS plant wall repairs	$ 263,000	H
CORONA SUBSTATION	Upgrade deteriorated deluge houses.	$ 475,000	H
MILLWOOD SUBSTATION	Footing for lightning arrestor on Bus Section 1W (C Phase) is starting to lean, causing arrestor and bus connection to arrestor to lean.	$ 400,000	H

STATION	DESCRIPTION	EST COST($)	PRIORITY
W65TH ST	Replace Fire Protection water supply	$ 300,000	H
EAST RIVER	Back pressure assembly cabinet	$ 90,000	M
MILLWOOD	Stabilize Disconnect Switch 1W	$ 120,000	M
GREENWOOD	Replace potential transformers - BUS SECTION #4	$ 16,000	M
GREENWOOD	Replace potential transformers - BUS SECTION #3	$ 16,000	M
FARRAGUT	Replace 138KV PT for Transformer #7	$ 45,000	M
DUNWOODIE	Battery room bldg.	$ 235,890	M
QUEENSBRIDGE	Install roof over L & P Transformer	$ 75,000	M
VERNON SUBSTATION	Vernon Substation Control Room HVAC	$ 125,000	M
WATER ST SUBSTATION	Design and install a more secure louver system for all exterior walls at the transformer vaults at Water St. S/S.	$ 100,000	M
RAINEY	Install a mast and antenna to provide wireless communication between Ravenswood Tunnel Head House and Corporate LAN system.	$ 90,000	M
HARRISON SUBSTATION	Install roof gratings on transformer vaults	$ 250,000	M
GREENBURG SERVICE CENTER	Upgrade Storm Water Drainage System	$450,000	M
E179TH ST	Install new water service and new water pump in the station.	$350,000	M
EAST RIVER	Improve drainage system	$300,000	M
WEST110TH ST	Improve drainage in transformer vault #4	$125,000	M
HELL GATE	HVAC for conference room.	$75,000	L
WEST 19TH ST	Exhaust fans in pump rooms.	$184,549	L
HELL GATE	HVAC Improvements.	$76,493	L
LEONARD ST	HVAC Improvements.	$75,000	L
EAST 179TH ST	HVAC Improvements.	$150,000	L
EAST 63RD ST	Replace HVAC system.	$284,318	L
RAINEY	Seal moat floor of Pumphouse # 6.	$125,000	L
EASTVIEW	Modify roadway to prevent water accumulation.	$336,000 Ret. $51,000	L

3. Cash flow requirements for all projects/programs from inception through completion.

The estimated project costs are provided above. Since the work performed under this program is relatively small in nature, cash flow requirements are not developed at the project level.

4. Backup details and explanation of how the cost figures were derived.

The estimated project costs provided are based on the best information available which depends on the scope and current status of each project. Projects in the early stages have order of magnitude estimates while projects farther along may have more detailed Engineering estimates.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff15
Date of Response: 07/31/2007
Responding Witness: IIP

Question No. :292
Subject: System Reliability – Substation – Spare Transformer Program Is the spare transformer program an existing program? If not, please explain why this program is now being implemented rather than in previous years. If this is an existing program, provide the following information associated with the program during each of the past five years. Forecasted budget Actual amount spent Description of work completed including dates and locations

Response:

This is not a new program. Please refer to the Company work paper for additional detail and justification for this program. See section: Substation Operations – Capital - Project/Program Title: "Spare Transformer Program." Budget and cost data provided below:

2004
Forecasted budget: $2,750,000
Actual amount spent: $5,413,000
Work performed:
Farragut 11
W42nd St. 4
Fresh Kills 22E
East River 7W
Seaport 4
Goethals 1
White Plains 7
Progress payment for spare

2005
Forecasted budget: $9,500,000
Actual amount spent: $10,670,000
Work performed:
Farragut 11

Rainey 8E
Fresh Kills 22E
White Plains 7
E13th St. 15
E75th St. 2
Progress payment for spare

2006

Forecasted budget: $6,000,000
Actual amount spent: $12,362,000
Work performed:

Farragut 11
E13th St. 15
E13th St. shunt reactors
Jamaica 4
E75th St. 2 rebuild
Dunwoodie R1
Bruckner 3

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff16
Date of Response: 08/01/2007
Responding Witness: IIP

Question No. :302
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Vented Manhole Cover: 1. Provide an explanation of how it was determined that 80,000 covers are needed. 2. What is the schedule for installation of these covers? 3. How will it be determined where to place these covers? 4. What is the plan for monitoring these covers? Provide the EPRI testing results indicated in the work paper. 6. Once these covers are installed, what are the future plans for these covers and the rest of the system without these covers? 7. Are you installing vented service box covers or manhole covers? 8. What is the basis for requiring all 80,000 covers for the first rate year? 9. Provide the number of covers installed on an annual basis since the inception of this program. 10. What is the total number of vented covers (separate service box and manhole covers) currently installed in the Con Ed system? 11. What is the total number of covers (separate service box and manhole covers) not vented in the Con Ed system? 12. What is the plan for newly constructed manholes/service box? 13. Provide the actual historical cash flow since the inception of this program. 14. Provide the forecasted cash flow created prior to the inception of this program. 15. Provide the data support for "vented manhole structures have performed significantly better than solid structures…" found in the justification section of the work paper. 16. Provide specification for the vented covers.

Response:

1. The total number of manholes on the system according to property records is 80,000. This number was adjusted to 62,505 through surveying and approximately 15,000 manholes were re-classified as service boxes.

2. A total of 40,000 vented manhole covers were replaced since the beginning of the program in 2005. Approximately 12,000 are scheduled for replacement in 2007 and 2008. The remaining 10,000 manholes need non-standard covers, which the Company is working to develop.

3. Manhole covers are being replaced system wide.

4. Manhole events are tracked through ECS (Emergency Control System). Tracking data is being used to analyze behavior and performance of the covers. In addition, annually, every cover is visited and tested for stray voltage.

5. See attached file.

6. See response to 302.3.

7. We are replacing all manhole covers and will be starting a program for service box covers. All service boxes on sidewalks will be retrofitted with non-conductive vented covers, which will help reduce accumulation of gases through the venting process and mitigate stray voltage.

8. The plan for the first rate year is to replace 21,000 service box covers.

9. We have installed:
- 21,125 vented manhole covers in 2005
- 19,554 vented manhole covers in 2006
- 4,936 year to date (through June 30) in 2007

10. 45,615 vented manhole covers thus far
No vented service box covers installed

11. Approximately 17,000 manhole covers remaining
Approximately 177,000 service box structures

12. All newly structured manholes/service boxes will have vented covers installed.

13.

	2007	**2006**	**2005**
Vented Manhole Covers	$5 million (projected)	$7.4 million	$8.6 million

14. When this program began, we forecasted $40 million ($10 million per year) to replace manhole covers only.

15. See attached file.

16. See attached file.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.1
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: An explanation of how it was determined that 150,000 isolation transformers is needed over 4 years.

Response:

The 150,000 estimate is calculated as follows:

Total number of underground fed units	167,000
Minus group control units and traffic lamps*	37,000
Net units to be installed	130,000
Replacement units for DOT/Con Edison	20,000
Total required	150,000

Note: Lamps under group control have loads greater than the capacity of a 600 watt ISO. Lamps with traffic signals require the use of the metal controller boxes as a current return path which makes their use with Isolation Streetlight Transformers impractical.

The four year project duration for installation (1/1/08 to 12/31/11) is based on the manufacturer's ability to build these custom units.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.2
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: How many connectors will be purchased?

Response:

Five (5) connectors per lamp will be purchased.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.3
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: What is the schedule for installation of these transformers?

Response:

32,500 street light isolation transformers per year from 1/1/08 to 12/31/11.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.4
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: What was the schedule for installation of previous transformers?

Response:

There was no specific schedule for the 5000 unit pilot project, other than the goal for Con Edison to install 3000 by 12/31/06 which was achieved. 3,925 units have been installed since the inception of the program in August 2005 through June 2007. We are continuing to install these units until we have reached the pilot amount. The original plan was to install street light isolation transformers in conjunction with regular repair work to minimize labor costs.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.5
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: How will it be determined where to place these transformers?

Response:

They will be installed in all metal, underground fed lamps (except for traffic lamps and lamps under group control as noted in Staff 323.1).

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.6
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Provide the data used to determine that these transformers will eliminate 78% of stray voltage conditions?

Response:

See attached.


DPS-323 Isolation
Transformer Stray Vo

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.7
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: What is the plan for monitoring these transformers and connectors (for Con Ed and DOT)?

Response:

Each new ISO transformer will be assigned a unique identification number and be installed in a lamp identified with a unique bar code. This data will be entered into a database that is currently under development. See response to Staff 323.24.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.8
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: How many of these transformers have been installed on an annual basis since the inception of this program?

Response:

See response to Staff 323.4.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.9
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: What is the total number of streetlamps in the Con Edison system that would work with these isolation transformers?

Response:

The streetlight isolation transformers would work with 130,000 streetlamps in the Con Edison system.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.10
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: What resources are required to install these transformers?

Response:

Labor will be provided by Con Edison employees. The only other cost is for materials (i.e., streetlight isolation transformers, connectors, neutral taps, heat shrinks, etc.).

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.11
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Provide an itemized breakdown (beyond what is provided in the work papers) of how $6,100,000 was derived for each year.

Response:

Please be advised that the Company intends to update its original filing to reflect increased costs for this project during the rate case update phase. The costs below reflect increased costs to the original submitted work-papers.

See itemized unit cost breakdown below:

Materials	
ISO Tranformer	$50
Model 65U Quick Connect	$16.06
Model 20U Quick Connect (3 @ $15.87)	$47.61
OTM-15 Fuse	$0.55
Heat Shrinks (2)	$2.30
Neutral Tap	$5.00
Total Materials	$121.52
Labor	
10 ISOs/8 hour day by two person crew	
($72.60 times 2 people times 8 hours/10)	$116.16
Total Unit Cost	$237.68
Total Annual Project Cost	$8.1 million w/o overheads

Please note that this revised estimate assumes in-house labor and a new connector design.

The new connectors add $47.52 per lamp (+$1.6 million) and the use of in-house labor using 2 person crews adds $57.50 per lamp (+$2.05 million) to the previous estimate of $6.1 million. The installation rate has been reduced from 37,500 to 32,500 units per year.

The net effect of these changes has been to increase the annual project cost from $6.1 to $8.1 million (w/o overheads).

Costs are broken down as follows:

	Direct	Total Direct Annual	Total Annual w/Overheads
Total Labor Cost	$14,392,800	$3,598,000	$4,356,000
Total Material Cost	$18,228,000	$4,557,000	$6,598,125
Total Project Cost	$32,620,800	$8,155,200	$10,954,125

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.12
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Provide the actual historical cash flow since the inception of the program that should be broken down in the same manner where possible as part 11 of this question.

Response:

There is no cash flow for historical work. The pilot project spending consisted of a one time purchase of 5000 Isolation Streetlight Transformers at a direct cost of $40.88 each, including shipping. During the pilot phase to date, installation was performed only at locations which were being visited for other reasons, and no special connectors were used during installation.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.13
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Provide the forecasted cash flow created prior to the inception of the program that should be broken down in the same manner where possible as part 11 of this question.

Response:

The annual cash flow is expected to be linear throughout the calendar year. These figures include 35% overheads and 7 ¼% Stores handling charge:

Labor	$4,356,000
Material	$6,598,125
Total	$10,954,125

At the end of the four year installation project; 20,000 units will be purchased and retained as spare parts. This is built into the annual spending plan.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.14
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Provide specification for these transformers and connectors.

Response:

Isolation Transformer Specifications follow:

1. Unit sized for 600 VA continuous use in 60 deg C ambient temperature, down to –10 deg C ambient temperature range.
2. Water proof for a depth of up to 5 ft during continuous operation. The material is to withstand a corrosive environment of rock salt, calcium chloride, oil, and animal waste products for a period of 2 days.
3. All transformer leads are to be #12 gauge copper wire and be 3 feet long. Four different colors shall be used facilitate correct phasing for paralleling the units. Use one of the following wires from the General Cable Company Catalog:
   - On Page 2 - 12 AWG DuraSheath Low-Voltage, Unshielded EPR/HYP (600 Volt): No.14511.411200
   - On page 5 - 12 AWG FREP Control, Unshielded, EPR/CPE (600 Volt): No. 305350
4. Coil windings to lead connector shall be of a crimp-type using tinned copper material. All coil windings are to be of a continuous wire without splices.
5. A flat-strap plastic carrying handle shall be incorporated into or through the potting material of the unit.
6. The unit should be as small as practical given its rated output. It shall not exceed 4 inches in height and 7 inches in diameter.
7. Unit is to be capable to withstand the impact of being dropped onto a concrete surface 5 successive times from a height of 3 ft. After the drop tests, the waterproofing material shall not show any signs of cracking or chipping that could compromise the units insulating and waterproof properties.

8. Leakage current is to comply with standard IEC601-1 of 400 micro amps or less.
9. The waterproofing material is to be FR rated. The unit will be manufactured of materials that will not result in an explosion when on fire for any length of time.
10. 60 Hz service design only.
11. The unit will have only one line set and one load set of leads with the phase and neutral legs clearly labeled.
12. An internal thermal fuse will be installed on the primary side of the unit in series with the primary winding. It will contain an auto resettable fuse to trip at approximately 120 degrees C.
13. Physical identification of Line and Load leads are to be stamped into the potting material. The identification of "LINE" (primary), and "LOAD" (load) are to be used. The location of the Line and Load leads are to be on the same face of the transformer but on opposite diameters of the transformer. Individual leads and the outer potting can must be separated by at least ½" of potting material to help ensure the waterproof integrity of the units.
14. The external surface of the unit is to be colored red (to denote electrical equipment) and clearly labeled as a "Streetlight Isolation Transformer".
15. Waterproof nameplate labels shall be used. It is desirable to have this information stamped into the potting material or embossed into the plastic canister used to pot the units (i.e., manufacturer name, serial number, LINE/LOAD, wire lead colors, date of manufacture).
16. The units shall be hospital-grade isolation transformers complying with IEC601-1 standard and should have UL, FM, or other equivalent testing lab certification subject to Con Edison approval.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.15
Will DOT purchase their supply of connectors?

Response:

Con Edison will supply the connectors for the initial unit installations.

DOT will supply connectors for subsequent unit maintenance.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.16
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Do you plan to distribute these connectors to other parties? If so, provide an estimate of how many?

Response:

No. DOT and their contractors will be responsible for purchasing connectors for maintenance work.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.17
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Provide the responsibilities of each of the participants of this program (i.e. Con Ed, DOT, and manufacturer of IT).

Response:

Con Edison (Central Streetlight Operations) will act as Project Manager. Con Edison will purchase the Isolation Streetlight Transformers and associated connectors.

Installation will be performed Con Edison personnel.

DOT has agreed to accept responsibility for maintaining the units after the initial installation has been completed.

The manufacturer of the Isolation Streetlight Transformers (Bridgeport Magnetics or another competitive awardee) will be responsible for manufacturing 37,500 units per year and delivering them to Con Edison warehouses for storage pending installation.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.18
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Why does Con Edison have to maintain a stock of IT for DOT to purchase? Why not have DOT purchase and maintain a stock of IT from manufacturer?

Response:

Con Edison plans to stock units for repairs to units damaged as the result of car accidents or vandalism. Con Edison has assumed this responsibility as the assets are owned by the Company.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.19
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: How will the DOT purchase of IT from Con Edison be documented for accounting purposes?

Response:

DOT will not be purchasing Isolation Streetlight Transformers from Con Edison.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.20
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: How many IT does Con Edison plan to keep in stock?

Response:

Con Edison plans to have in stock several thousand ITs to cover potential damage from vehicles and vandalism and for the installation of new poles.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.21
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Will this stock come from the 150,000 IT that is planned for purchase for the next 4 years?

Response:

Yes.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.22
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: Has there been a contract created between Con Edison and DOT regarding these ITs? If so, provide.

Response:

No. We have a verbal agreement at this time. We plan to develop a written agreement by October 30, 2007.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff17
Date of Response: 08/02/2007
Responding Witness: IIP

Question No. :323.23
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Street Light Isolation Transformers: How will you ensure that all parties fulfill their responsibilities so that it will not negatively affect the safety of the public and funding from ratepayers?

Response:

The Company objects to the question on the grounds that it is unduly vague.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.1
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): An explanation of how it was determined that 10 additional vehicles were needed.

Response:

It has been observed that shortly after a heavy snow fall when there is considerable snow accumulation and a significant amount of salt spread on the streets and sidewalks, the number of electric shock reports increases. As a result, it was estimated that ten additional vehicles would be required to survey the underground electric system in approximately 1 week.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.2
Subject: Public Safety and Environment Follow-up to IR DPS-146. or the Mobile Stray Voltage Testing (Sarnoff Device): Provide the following in a timeline since the initial use of this type of vehicle: a. vehicles purchased; b. vehicle arrival after purchased; c. trips taken per vehicle; d. mileage per vehicle trip; e. area surveyed per vehicle trip;

Response:

a. vehicles purchased:

March 2005 – 5 prototype Sarnoff vehicles were purchased.

2nd Quarter 2006 – 10 additional Sarnoff vehicles (SVD 2000) were purchased.

b. vehicle arrival after purchased:

March/April 2005 – 5 prototype Sarnoff vehicles were delivered.

April 2006 – 5 upgraded Sarnoff vehicles (SVD 2000) were delivered as replacements for the prototypes.

September/November 2006 – 10 remaining Sarnoff vehicles (SVD 2000) were delivered.

c. trips taken per vehicle:

A routine trip consists of an 8-hour shift. Approximately 1,300 trips have been completed by the 15 vehicles.

d. mileage per vehicle trip:

During an 8-hour trip, approximately 20 miles are traveled per vehicle.

e. area surveyed per vehicle trip:

Please see response to question 2d above.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.3
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Provide an itemized breakdown (beyond what is provided in the work papers) of how the numbers listed for each year was derived.

Response:

	2008 Rate Year
Vehicle Operation	$ 3,000,000.00
Electrician Support	$ 1,116,480.00
Standby Cost	$ 6,944,520.00
Total	$ 11,061,000.00

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.4
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Provide the actual historical cash flow for this program that should be broken down in the same manner as part 3 of this question.

Response:

	2005	2006	2007 (Jan-June)
Vehicle Operation	$ 813,000.00	$ 2,307,408.38	$ 2,136,900.00
Electrician Support	$ 104,000.00	$ 333,720.00	$ 466,091.50
Standby Cost	$ 476,000.00	$ 602,757.80	$ 3,187,000.00
Total	$ 1,395,005.00	$ 3,243,886.18	$ 5,789,991.50

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.5
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Provide the forecasted cash flow created prior to the inception of the program that should be broken down in the same manner as part 3 of this question.

Response:

At inception of the program, the forecasted cash flow was *estimated* to be $3.2 M per annum over the following 3 years.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.6
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Provide an estimated schedule listing when these vehicles will be in use during the future rate years?

Response:

The vehicles will be used to survey the underground electric system 8 times per year. The 8 scans will include increased operation following storms.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.7
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device):Provide a list of the areas with its associated mileage that are surveyed with the Sarnoff device.

Response:

Borough	**Plates**	**Mileage**
Manhattan	586	1,250
Brooklyn	516	1,500
Bronx	534	800
Queens	658	1,090
Total	2,294	4,640

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.8
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device):With your current vehicles, how long does it take to complete one scan?

Response:

With the current plan of conducting 4 routine surveys in 2007, each scan takes approximately 3 months to complete.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.9
Subject: Public Safety and Environment Follow-up to IR DPS-146. or the Mobile Stray Voltage Testing (Sarnoff Device):How many vehicles have you used per scan in the past?

Response:

In the past, 5 to 15 vehicles have been used per scan.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.10
Subject: Public Safety and Environment Follow-up to IR DPS-146 For the Mobile Stray Voltage Testing (Sarnoff Device):Do you keep vehicles on stand-by? If so, how many and why?

Response:

Yes, vehicles are kept on standby. According to our studies, it was determined that 8 surveys in a year would reduce the stray voltage exposure by 90%. In order to prove these studies, it was decided to start off with 4 routine surveys in a year, in addition to storm surveys. Based on historical observations 3 to 4 storms were expected in 2007, so the 3 to 4 storm surveys plus the 4 routine surveys would bring the total number of surveys to 7 or 8. To accomplish the 4 routine surveys for the year, running 5 to 8 vehicles a night would be sufficient. During the storm surveys all vehicles would be deployed.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.11
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Provide proof for the following statement found in the justification section of the work papers: "multiple surveys of the system are estimated to reduce stray voltage exposure by approximately 90%."

Response:

See the attached file "…Stray Voltage Mitigation in Urban Environments.pdf"

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.12
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Is it Con Edison's plan to do the required number of surveys to reduce stray voltage exposure by approximately 90%? If so, how many surveys and when will this commence?

Response:

Currently, the Company does 4 routine scans plus as many scans as may be needed following storms. Commencing January 2008, the Company plans to do 8 surveys a year, irrespective of the number of storms.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.13
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Provide justification for the following statement found on page 117 of Infrastructure Investment Panel testimony: "the mobile vehicle … sense stray voltage from 25 feet away while moving along the roadway at 20 mph."

Response:

See attached Independent Lab Certification "…SVD2000 Stray Voltage Detection System.pdf"

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.14
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): What is the QA system set up for the Sarnoff device?

Response:

a) The testing contractor holds their own internal audits and sends Con Edison the documentation on their findings including any corrective actions that might have been necessary.

b) Con Edison personnel go to the field to verify the voltages found by the contractors, and verify that the site safety personnel are performing his/her duties appropriately.

c) Con Edison personnel ride with the vehicles periodically to ensure that the testing technician is following the appropriate stray voltage testing procedures.

d) Con Edison provides the testing contractor with the M&S plates of the areas they are required to test. When the testing technicians go out testing they take printouts of the plates where they will be testing and as they drive up and down the different streets, they highlight these areas on the M&S Plates. The testing technicians use different color highlighters for the different days of the week they go testing. At the dispatch office, there is a hard copy map for each borough that is tested. At the end of the shift, the testing technicians hand the marked up M&S plates to the data management person and the information from the marked up plates is transferred onto the respective borough grid map.

   In addition to this, each truck is equipped with a Global Positioning System (GPS) unit that connects to a web application which updates the GPS data with the location, speed, direction and time every 15 seconds. As a result, the trajectory of each truck can be tracked real-time through this GPS tool over the internet. This information is also stored for future reference. The GPS trail is used to validate the highlighted paper maps.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.15
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Will the Central Quality Assurance proposal have an impact on this program? If so, how? If not, why?

Response:

No. The Quality Assurance proposal does not have an impact on this program at this time. The Quality Assurance protocol set up for this program is outlined in response to Staff 327.14.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :327.16
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Mobile Stray Voltage Testing (Sarnoff Device): Provide a monthly breakdown of stray voltage cases detected by each Sarnoff device since their initial use.

Response:

	Month											
Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2005	14	45	58	35	37	5				88	313	280
2006	149	144	7	2		16	155	153	265	223	404	451
2007	749	1096	567	355	283							

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :328.1
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Annual Stray Voltage Testing Program: Provide an itemized breakdown (beyond what is provided in the work papers) of how the funding listed for each rate year was derived.

Response:

Please see the following table:

	Rate Year		
	2009	2010	2011
Yearly Goal	736740	736740	736740
Contractor to Perform Stray Voltage Testing	$ 8,561,831	$ 8,904,305	$ 9,260,477
Electrician Contractor to Perform Repair on Streetlight	$ 460,800	$ 479,232	$ 498,401
Repairs	$ 420,091	$ 436,894	$ 454,370
Quality Assurance & Program Oversight	$ 3,079,791	$ 3,202,982	$ 3,331,101
Grand Total	**$ 12,522,513**	**$ 13,023,413**	**$ 13,544,350**

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :328.2
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Annual Stray Voltage Testing Program: Provide the actual historical cash flow for this program that should be broken down in the same manner as part 1 of this question.

Response:

Please see the following table:

	Historical Cash Flow	
	2005	2006
Yearly Goal	725000	736000
Contractor to Perform Stray Voltage Testing	$ 11,956,092	$ 7,628,751
Electrician Contractor to Perform Repair on Streetlight	$ 60,000	$ 75,874
Repairs	$ 626,719	$ 1,564,956
Quality Assurance & Program Oversight (Estimated)	$ 493,320	$ 882,120
Capital Associated Indirect Cost	$ 390,868	$ 486,169
Grand Total	**$ 13,527,000**	**$ 9,167,869**

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :328.3
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the Annual Stray Voltage Testing Program: Provide the forecasted cash flow created prior to the inception of the program that should be broken down in the same manner as part 1 of this question.

Response:

	Forecasted Cash Flow Prior to 2005		
	2005	2006	2007
Yearly Goal	726000	726000	726000
Contractor to Perform Stray Voltage Testing	$ 4,840,000.00	$ 4,840,000.00	$ 4,840,000.00
Electrician Contractor to Perform Repair on Streetlight	0	0	0
Repairs	$ 464,640.00	$ 464,640.00	$ 464,640.00
Program Oversight	$ 1,700,000.00	$ 1,700,000.00	$ 1,700,000.00
Grand Total	**$ 7,004,640.00**	**$ 7,004,640.00**	**$ 7,004,640.00**

Please see the following table:

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :328.4
Subject: Public Safe ty and Environment Follow-up to IR DPS-146. For the Annual Stray Voltage Testing Program: Will the Central Quality Assurance proposal have an impact on this program? If so, how? If not, why?

Response:

No. Central Quality Assurance may take quality assurance responsibility of the Stray Voltage Testing QA from the Central Operations either entirely or partially in the future, but this should not have any impact on the stray voltage testing program itself.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :328.5
Subject: Public Safe ty and Environment Follow-up to IR DPS-146. For the Annual Stray Voltage Testing Program: Provide data to support the following statement from the work papers under justification: "…increased O&M costs for the annual stray voltage testing programs is warranted due to the following reasons: Increased per unit testing cost by contractors Increased detection rate of stray voltage events specifically streetlights that require additional contractor resources for standby and contractor electrician to supplement the control center resources. …All the repairs completed by the contractors and regions associated with stray voltage events have been estimated in this submittal. The initial rate case submittal did not account for these. Increased oversight by Distribution Engineering and Construction Management including quality assurance and quality control mechanisms required by the PSC order. The initial 2005 rate case submittal did not include the estimates on QA/QC and contractor oversight."

Response:

- Increased per unit testing cost by contractors.

  The pricing used for the Rate Year is based on the current 2-Year Contract. The unit prices for Testing, Standby and No Access have doubled compared with the 2005 pricing. We anticipate that the unit prices may even be higher for any future bidding if it is a single year contract or we're to bring on board new contractors.

- Increased detection rate of stray voltage events specifically streetlights that require additional contractor resources for standby and contractor electrician to supplement the control center resources.

  Due to the operations of the Mobile Detection Program, reported stray voltage has been increased from 1214 to 2883 which leads to an increase in average standby hours from approximately 3 hours to approximately 6.5 hours for the Annual Testing Program.

- …All the repairs completed by the contractors and regions associated with stray voltage events have been estimated in this submittal. The initial rate case submittal did not account for these.

  The 2004 rate case requested approximately $465,000 for repairs; refer to the chart in Staff 328.3. However, due to the increasing stray voltage reported by the Mobile Detection Program, the plan in the rate year is to hire contracting electricians to troubleshoot and repair stray voltage streetlights, requesting average of $917,000 per each rate year.

- Increased oversight by Distribution Engineering and Construction Management including quality assurance and quality control mechanisms required by the PSC order. The initial 2005 rate case submittal did not include the estimates on QA/QC and contractor oversight."

  The 2004 rate plan did not include funding for QA related to stray voltage. For the Rate Year, we are requesting approximately $1.3 million to perform field audits for QA/QC and contractor oversight.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.1
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: Provide an itemized breakdown (beyond what is provided in the work papers) of how the funding listed for each rate year was derived.

Response:

Rate Year	**2009**		**2010**		**2011**	
	Goal	**Total Cost**	**Goal**	**Total Cost**	**Goal**	**Total Cost**
Inspections by Con Edison	56,585	$9,512,689	41,286	$7,043,356	41,286	$7,043,356
Inspections by Contractor	18,862	$11,779,324	13,762	$8,594,632	13,762	$8,594,632
Repairs by Con Edison	36,614	$13,709,701	26,715	$10,003,105	26,715	$10,003,105
Total		**$35,001,714**		**$25,641,093**		**$25,641,093**

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.2
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: Provide the actual historical cash flow for this program that should be broken down in the same manner as part 1 of this question.

Response:

Rate Year	**2005**		**2006**	
	Goal	**Total Cost**	**Goal**	**Total Cost**
Inspections by Con Edison	44,434	$4,400,000	53,243	$5,500,000
Inspections by Contractor	N/A	N/A	N/A	N/A
Repairs by Con Edison	12,340	$4,000,000	19,965	$5,500,000
Total		**$8,400,000**		**$11,000,000**

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.3
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: Provide the forecasted cash flow created prior to the inception of the program that should be broken down in the same manner as part 1 of this question.

Response:

Rate Year	**2005**	
	Goal	**Total Cost**
Inspections by Con Edison	44,434	$7,100,000
Inspections by Contractor	N/A	N/A
Repairs by Con Edison	12,340	$4,000,000
Total		**$11,100,000**

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.4
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: Will the Central Quality Assurance proposal have an impact on this program? If so, how? If not, why?

Response:

No. The Central Quality Assurance proposal should not affect the 5-Year UG Structure Inspection Program because the Central QA group is presently adequately staffed to meet the anticipated needs of 5-Year UG Structure Inspection Program.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.5
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: In reference to the planning and budgeting section of the work papers, explain what is meant by "unique inspections".

Response:

Unique inspections represent a discrete inspection for a specific structure that does not otherwise require scheduled maintenance or repair work. For example, if a crew is assigned work in a structure and they also complete an inspection for the structure, it is not a 'unique' inspection. However, since not all structures will have scheduled work performed in them (within the required time frame to complete inspections), a crew will have to be sent to some structures for the sole purpose of performing an inspection: this, then, is considered a "unique" inspection. The company has completed over 200,000 underground inspections, of which approximately 100,000 inspections are unique.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.6
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: What was the reason for not meeting the 2006 year end goal?

Response:

In 2006, the internal goal was 53,243 unique inspections. During the program year 2006 the Company completed 88,647 gross inspections and 45,067 unique inspections. The Company has performed increased multiple inspections on same structures which resulted in reduced unique counts/inspections.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.7
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: What plan and resources was set in place in 2005 and 2006 to achieve each end of year goal?

Response:

The goals are based on Case 04-M-0159-Order Instituting Safety Standards. They are based on a percentage of the average number of facilities that must be inspected each year. The specific targets for purposes of the performance mechanism are 85%, 90%, and 95% of the one-fifth amount for calendar years 2005, 2006, and 2007, respectively. Each year thereafter, the performance target will be 95%.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.8
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: How were these year end goals derived?

Response:

See response to Staff 329.7.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff18
Date of Response: 08/06/2007
Responding Witness: IIP

Question No. :329.9
Subject: Public Safety and Environment Follow-up to IR DPS-146. For the 5 Year UG Structure Inspection Program: What are the year end goals for the proposed rate years?

Response:

RYE 2009 – 75,447
RYE 2010 – 55,048
RYE 2011 – 55,048

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :364
Subject: Electric Operations Capital – Distribution Substation ED2 Transformer/Network Protector Purchases – 1. Provide a 5 1/2 year historical annual spending for transformer/network protector purchased and other Equipment (OH, URD, etc.) installed between 2002 and June 2007. For each annual period indicate what the cost was for the equipment. Group the information into a spreadsheet table similar to your workpaper titled "Projected Requirements as forecasted by Regions and Energy Services": 2. In your workpaper titled "Projected Requirements as forecasted by Regions and Energy Services", you listed Equipment as OH, URD, etc… Does this also include padmount transformers and emergency generators?

Response:

1. The Company objects to the timeframe requested. Please see the attached file for ED-2 expenditures for the period 2004 through 2007 year-to-date (June 20, 2007).
2. Yes.

ED-2 Backup: 2004

Brooklyn/Queens

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	89	$2,430	82	$1,476	40	$104	$4,010
New Business	65	$1,775	65	$1,170	81	$211	$3,155
Emergency	377	$10,292	411	$7,398	100	$260	$17,950
	531	$14,496	558	$10,044	221	$575	$26,425

Bronx/Westchester

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	19	$519	19	$342	116	$302	$1,162
New Business	27	$737	27	$486	302	$785	$2,008
Emergency	166	$4,532	210	$3,780	380	$988	$9,300
	212	$5,788	256	$4,608	798	$2,075	$13,736

Manhattan

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	56	$1,529	52	$936		$0	$2,465
New Business	80	$2,184	77	$1,386	9	$23	$3,593
Emergency	264	$7,207	304	$5,472	1	$3	$12,682
	400	$10,920	433	$7,794	10	$26	$19,583

Staten Island

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief		$0		$0	17	$44	$44
New Business	1	$27	1	$18	147	$382	$428
Emergency	8	$218	12	$216	121	$315	$749
	9	$246	13	$234	285	$741	$1,528

Totals

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	164	$4,428	153	$2,754	173	$398	$7,580
New Business	173	$4,671	170	$3,060	539	$1,240	$8,971
Emergency	815	$22,005	937	$16,866	602	$1,385	$40,256
	1,152	$31,104	1,260	$22,680	1314	$3,022	$68,808
						Indirects	$ 1,984
						Total ED2	$ 68,800

ED-2 Backup: 2005

Brooklyn/Queens

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	148	$4,040	149	$3,159	32	$96	$7,295
New Business	61	$1,665	61	$1,293	79	$237	$3,196
Emergency	452	$12,340	496	$10,515	105	$315	$23,170
	661	$18,045	706	$14,967	216	$648	$35,244

Bronx/Westchester

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	32	$874	32	$678	171	$513	$2,065
New Business	12	$328	12	$254	293	$879	$1,461
Emergency	208	$5,678	225	$4,770	454	$1,362	$11,810
	252	$6,880	269	$5,703	918	$2,754	$16,775

Manhattan

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	55	$1,502	49	$1,039	3	$9	$2,549
New Business	76	$2,075	73	$1,548	1	$3	$3,625
Emergency	321	$8,763	371	$7,866	2	$6	$16,635
	452	$12,340	493	$10,452	6	$18	$23,760

Staten Island

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	4	$109	4	$86	127	$381	$575
New Business	4	$109	4	$86	114	$342	$536
Emergency	4	$109	4	$86	187	$561	$756
	12	$328	12	$254	428	$1,284	$2,318

Totals

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	239	$6,525	234	$4,961	333	$999	$12,485
New Business	153	$4,177	150	$3,180	487	$1,461	$8,818
Emergency	985	$26,891	1096	$23,236	748	$2,244	$52,370
	1,377	$37,592	1,480	$31,376	1568	$4,704	$73,672

Indirects	$	4,182
Total ED2	$	77,864

ED-2 Backup: 2006

Brooklyn/Queens

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	121	$4,005	118	$2,667	37	$133	$6,805
New Business	65	$2,152	68	$1,537	79	$284	$3,973
Emergency	511	$16,914	567	$12,814	160	$576	$30,304
	697	$23,071	753	$17,018	276	$994	$42,808

Bronx/Westchester

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	59	$1,953	55	$1,243	254	$914	$4,110
New Business	40	$1,324	40	$904	184	$662	$2,890
Emergency	236	$7,812	262	$5,921	534	$1,922	$15,655
	335	$11,089	357	$8,068	972	$3,499	$24,320

Manhattan

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	63	$2,085	65	$1,469		$0	$3,554
New Business	101	$3,343	102	$2,305		$0	$5,648
Emergency	327	$10,824	377	$8,520		$0	$19,344
	491	$16,252	544	$12,294	0	$0	$29,582

Staten Island

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	8	$265	8	$181	49	$176	$622
New Business	2	$66	2	$45	105	$378	$489
Emergency	7	$232	9	$203	248	$893	$1,328
	17	$563	19	$429	402	$1,447	$2,677

Totals

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	251	$8,308	246	$5,560	340	$1,224	$15,092
New Business	208	$6,885	212	$4,791	368	$1,325	$13,001
Emergency	1081	$35,781	1215	$27,459	942	$3,391	$66,631
	1,540	$50,974	1,673	$37,810	1650	$5,940	$94,724

Indirects	$	5,336
Total ED2		100,060

ED-2 Backup: 2007 YTD June

Brooklyn/Queens

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	207	$7,783	201	$4,543	37	$133	$12,459
New Business	67	$2,519	57	$1,288	79	$284	$4,092
Emergency	356	$13,386	478	$10,803	160	$576	$24,764
	630	$23,688	736	$16,634	276	$994	$42,957

Bronx/Westchester

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	67	$2,519	66	$1,492	254	$914	$4,925
New Business	11	$414	14	$316	184	$662	$1,392
Emergency	97	$3,647	190	$4,294	534	$1,922	$9,864
	175	$6,580	270	$6,102	972	$3,499	$17,598

Manhattan

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	73	$2,745	65	$1,469		$0	$4,214
New Business	90	$3,384	90	$2,034		$0	$5,418
Emergency	187	$7,031	285	$6,441		$0	$13,472
	350	$13,160	440	$9,944	0	$0	$23,894

Staten Island

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	4	$150	2	$45	49	$176	$372
New Business	0	$0	0	$0	105	$378	$378
Emergency	12	$451	13	$294	246	$893	$1,638
	16	$602	15	$339	402	$1,447	$2,621

Totals

	Transformers		Network Protectors		Equipment (OH, URD, etc.)		Totals
	Units	$	Units	$	Units	$	
Load Relief	351	$13,198	334	$7,548	340	$1,224	$21,970
New Business	168	$6,317	161	$3,639	368	$1,325	$11,280
Emergency	652	$24,515	966	$21,832	942	$3,391	$49,738
	1,171	$44,030	1,461	$33,019	1650	$5,940	$82,988

Indirects	$	6,212
Total ED2 YTD		89,200

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.1
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: Provide an itemized breakdown (beyond what is provided in the work papers) of how the numbers listed for each year was derived.

Response:

The work listed per year, covers the cost to reinforce one autoloop per year for the next 7 years. There are 7 System III Auto-Loops (5 reclosure) that will be upgraded and in the process will create an additional 7 Auto-Loops. There are 2 System II Auto-Loops (3 reclosure) that will be upgraded to System III Auto-Loops. This work was spread over 4 years with 1 loop being done every 2 years.

	COST per item	**2008**		**2009**		**2010**	
		qty	**subtotal**	**qty**	**subtotal**	**qty**	**subtotal**
Poles	6,001	42	252,042	60	360,060	48	288,048
OH Pri Sect	869	186	161,634	225	195,525	195	169,455
Conduit	180	4,650	837,000	4,825	868,500	4,975	895,500
Structures	17,390	50	869,500	48	834,720	50	869,500
Primary + Switches	16,907	120	2,028,840	109	1,842,863	110	1,859,770
Trans Install	3,516	34	119,544	34	119,544	20	70,320
New Program Spending			**4,268,560**		**4,221,212**		**4,152,593**

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.2
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: Provide for the past five years, the actual historical cash flow towards autoloop reliability that should be broken down in the same manner as part 2 of this question where possible.

Response:

The Company objects to the timeframe requested. The following summarizes cash flow for the period 2004-2007 (YTD July):

2004 -- $18,122.13
2005 -- $73,106.12
2006 -- $19,499.65
2007 (YTD) -- $95,326.41

The Company does not understand the request that the "actual historical cash flow … should be broken down in the same manner as part 2 of this question where possible."

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.3
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: Provide the ten year load growth forecast for the autoloops in this proposal.

Response:

Autoloops	2008	2009	2010	2011	2012	2013	2014	2015	2016
Dyker	2%	1%	1%	1%	0%	1%	1%	0%	0%
Midwood	0%	0%	0%	0%	0%	0%	0%	0%	0%
Marine Park	1%	0%	1%	1%	0%	4%	0%	0%	0%
Gravesend	1%	0%	1%	1%	0%	4%	0%	0%	0%
Middle Village	1%	1%	1%	0%	1%	1%	1%	1%	0%
Laurel Hill	1%	1%	1%	0%	1%	1%	1%	1%	0%
Douglaston	3%	3%	3%	2%	1%	1%	0%	0%	0%
Whitestone	3%	3%	3%	2%	1%	1%	0%	0%	0%

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.4
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: Provide the past 10 years of load growth for the autoloops in this proposal.

Response:

The Company objects to the timeframe requested. The following table summarizes load growth for the period 2004-2006:

Autoloops	2006	2005	2004
Dyker	1%	-1%	-1%
Midwood	1%	-1%	-1%
Marine Park	2%	-1%	-2%
Gravesend	2%	-1%	-2%
Middle Village	1%	0%	-1%
Laurel Hill	1%	0%	-1%
Douglaston	1%	-1%	-1%
Whitestone	1%	-1%	-1%
Coney Island	1%	-1%	-1%

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.5
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: Provide an electronic copy of specification EO-2066.

Response:

See attached file.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.6
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: What are the current load capacities of the autoloops in this proposal?

Response:

Autoloop	Normal Load	Normal Rating	% Loaded	Emergency Load	Emergency Rating	% Loaded
Dyker	237	330	72%	483	525	92%
Midwood	286	395	72%	501	625	80%
Marine Park	295	395	75%	594	625	95%
Gravesend	241	365	66%	464	465	100%
Coney Island	241	325	74%	361	440	82%
Douglaston	66	180	37%	143	260	55%
Whitestone	86	215	40%	174	270	64%
Middle Village	359	500	72%	715	825	87%
Laurel Hill	359	500	72%	715	825	87%

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.7
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: For the autoloops that will be divided, where will the split occur and how is this location determined?

Response:

The split will occur near the tie recloser, where two 27kv feeders will be extended to pick-up that portion of the loop. The location is chosen based on the normal load on each side of the loop.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.8
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: What is the work schedule for this proposal along with the critical path?

Response:

The work listed per year covers the cost to reinforce one autoloop per year for the next 7 years. There are 7 System III Auto-Loops (5 recloser) that will be upgraded and in the process will create an additional 7 Auto-Loops. There are 2 System II Auto-Loops (3 recloser) that will be upgraded to System III Auto-Loops. This work will be spread over 4 years with 1 loop being done every 2 years.

The critical path will be the extension of the two 27kV feeders to the auto-loop split points.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.9
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: How did you determine the order in which the autoloops will be split and enlarged?

Response:

No priority has been set at this time.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/09/2007
Responding Witness: IIP

Question No. :367.10
Subject: Storm Hardening and Response - Follow-up to IR DPS-149. For the Autoloop Reliability: What work has been done within the past 10 years to extend the load capabilities and improve reliability of the proposed autoloops?

Response:

The Company objects to the timeframe requested. The following work has been completed between 2004 and 2007 (YTD) to extend capabilities and improve reliability:

Loop	UG Sects	Conduit	OH Spans	Risers
Dyker Loop	7			
Marine Park Loop	12			
Gravesend Loop	3	301		
Douglaston Loop	8	2300		2
Whitestone Loop	69	290	62	

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.1
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - Provide an itemized breakdown (beyond what is provided in the work papers) of how the funding listed for each year was derived.

Response:

2007 – Propose to install enhanced monitoring initially in 5 stations. The Company has received vendor quotes of approximately $185,000 to furnish hardware, software and supervise installation. Additional funding is needed for installation labor, overheads and contingency of approximately $65,000, for a total estimated project cost of $250,000.

2008 and beyond – The estimated vendor cost for an additional 235 stations is $26,500 per station plus installation labor, overheads and contingency of approximately $15,000 per station, for a total station cost of approximately $41,850.

	STATIONS		COST	TOTAL
2008	**35**	**X**	**41,850**	**1,465,000**
2009 -	**60**	**X**	**41,850**	**2,511,000**
2010 -	**85**	**X**	**41,850**	**3,557,000**
2011	**55**	**X**	**41,850**	**2,302,000**
TOTALS	**235**			**$10.1 million**

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.2
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - Provide the work schedule for this proposal along with the critical path.

Response:

A. Year 2007 - Begin work 10/1/07 - Procure hardward and develop network screen for 5 stations.
10/07 - Start installation of hardware at 1st station. Complete work at station in 1 day.
10/07 - 10/26/07 - Complete work at remaining 4 stations.
10/07 - Begin testing of stations.
11/07 - Complete testing of all stations.

B. Year 2008 - Prepare Appropriation for approval beginning 1/2/08.
Prepare Purchase Order for procurement of hardware and software for 235 stations beginning 1/2/08.
A detailed work schedule has not yet been prepared at this point in time.
Anticipate beginning work around September 2008, completing 3 stations per week for a total of 35 stations.

C. Year 2009 - Anticipate completing 2 stations per week during Jan, Feb, March, April, May, Oct, Nov & Dec for a total of 60 stations.

D. Year 2010 - Anticipate completing 3 stations per week during Jan, Feb, March, April, May, Oct, Nov & Dec. for a total of 85 stations.

E. Year 2011 - Anticipate completing 2 stations per week during Jan, Feb, March, April, May, Oct & Nov for a total of 55 stations.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.3
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - How was the order of unit substations to be upgrade determined?

Response:

The order of the 4kV unit substations to be upgraded was determined by the 2007 projected network loadings.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.4
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - How many Power Quality intelligent metering and control device and battery monitoring system will be installed by 2011?

Response:

Our goal is to complete all 240 stations.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.5
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - What will the testing of the Power Quality intelligent metering and control device and battery monitoring system entail?

Response:

The intelligent meter will continuously collecting power quality data and establish trends. A review of load and harmonic distortion will be made and compared to industry standards. The battery monitoring system will collect and trend data. Criteria will be established to detect cells that exhibit deterioration.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.6
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - How long do you expect to test these Power Quality intelligent metering and control device and battery monitoring system?

Response:

One year.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.7
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - How was the amount of new Power Quality intelligent metering and control device and battery monitoring system to be install each year determined?

Response:

It was determined by costs, employee availability and scheduling.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.8
Provide an itemized breakdown and Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - justification on how the cost savings discussed in the work papers are derived.

Response:

A. Battery Monitoring

Station batteries are inspected once per month. On average, five stations can be inspected in one day, one man day.
240 stations/ 5 is 48 man days to inspect the batteries for one month X 12 months is 576 man days.
Assuming $800 per man day yields $460,800 per year

B. Power Quality Monitoring

With the assumption that harmonics can cause the replacement of a unit substation transformer every five years, and the costs associated with the replacement of a transformer is $600,000, the cost savings per year will be $120,000.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.9
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - Provide the specification for the proposed Power Quality intelligent metering and control device and battery monitoring system.

Response:

A. Power Quality intelligent metering device - Visit website www.powerlogic.com, enter United States, Site Search ION 7650.

B. Battery Monitoring system - Visit website www.btechinc.com, products, battery monitoring.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.10
Within the past 10 years provide the Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - number of the 4 kV unit substation transformers that have been replaced due to uncontrolled elevated harmonics.

Response:

This is unknown. See response to 368.14.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.11
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - How many 4 kV unit substations currently exist? How many is expected in 2011?

Response:

240

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.12
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - Is the number of expected 4 kV unit substations in 2011 included in the funding forecast for these Power Quality intelligent metering and control devices and battery monitoring system? If not, why? If so, provide an itemized breakdown (similar to part 1 of this question) of forecasted funding until 2011.

Response:

Yes. See response to Staff 368.1.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.13
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - How will these Power Quality intelligent metering and control devices and battery monitoring system be monitored to ensure they are in working order?

Response:

The power quality and battery system will be continuously monitored and trends will be developed. Failures outside of a specified range will be alarmed and monitored in the respective control centers on a daily basis.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.14
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - Discuss the current power quality and battery monitoring system in place?

Response:

Power quality is not presently measured at any of the 240 stations. The current battery monitoring system measures the rectifier output across the battery. With the new battery measuring system, the impedance of each cell will be monitored in addition to voltage.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :368.15
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Enhanced 4 kV Grid Monitoring: - Provide the pros and cons of the current power quality and battery monitoring system and the new Power Quality intelligent metering and control device and battery monitoring system.

Response:

Since power quality is not being measured at this time, the new system will collect data that was not previously available. The new battery monitoring system will provide more data on the batteries, mainly the impedance of the cell. When the impedance increases and goes above a pre-determined set point, it is a good indication that the cell is deteriorating and must be replaced. The proactive approach will identify potential problems and we expect that it will permit us to schedule repairs, thereby potentially mitigating outages and increasing reliability.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff20
Date of Response: 08/15/2007
Responding Witness: IIP

Question No. :371
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For Accelerated C-Truss program (defective pole replacement): 1. Why was the C-truss installation and pole inspection set up on a 12 year cycle if the industry practice is on a 10 year cycle? 2. Describe what 'C-trussing' entails? 3. Provide an itemized breakdown (beyond what is provided in the work papers) of how the funding listed for each rate year was derived. 4. Provide the 5 year historical cash flow for this program that should be broken down in the same manner as part 3 of this question. 5. Will your program for purchasing stronger wooden poles affect this program? If so, how? If not, why?

Response:

1. An analysis of the wood poles throughout the service territory had been conducted in the past. At that time, it was determined from past inspections and treatments that approximately 40% of the system poles could be on a 10 year cycle, and 60% of the system poles could be on a 15 year cycle. It was therefore decided, at that time, that all poles would be inspected on a 12 year cycle for uniformity. As part of this filing, the Company now believes that the appropriate inspection and treatment program is 10, not 12, years.

2. The C-Truss program addresses the company's requirements for the inspection, groundline treatment, reinforcement, and replacement of standing wood poles as outlined in EO-10345 (please see attached). When a pole is actually C-trussed, a steel brace, in the shape of a 'C'-channel, is driven into the ground adjacent to the reject pole. The depth the C-truss is driven is dependent on the size of the pole being reinforced. Once the C-truss is driven to the proper depth, the C-truss is secured to the pole via metal straps or bands.

3. Please see the following table:

	# of Poles	cost for Inspect&treat (I&T)	reject rate	c-truss cost x # reject poles	Poles replaced	Cost to replace poles	CAPITAL cost for Pole replace	O&M cost for pole replacement
		$40.00	7.00%	$500.00	1.10%	$6,000.00	71%	29%
System wide	203,000	$8,120,000.00	14210	$7,105,000.00	2233	$13,398,000.00	$9,512,580.00	$3,885,420.00
10 yr cycle	21000	$840,000.00	1470	$735,000.00	231	$1,386,000.00	$984,060.00	$401,940.00
							Total CAPITAL C-truss & Replace cost	TOTAL O&M I&T and Replace cost
							16617580	12005420
							1391620	1005380
							1719060	1241940

A. O&M funding consists of:

i) Inspection and Treatment Cost: $840K/yr.

ii) labor for transferring wires when new poles are set = $402K/yr.

iii) TOTAL O&M = $1.24M/yr.

B. Capital consists of:

i) C-Truss cost and installation on rejected poles: 735/yr.

ii) Cost to replace pole that can not be saved via C-Truss: $984/yr.

iii) TOTAL CAPITAL= $1.7M/yr.

4. The Company objects to the timeframe requested. Please see the attached table for 2005-2007 data:

	2005		2006		2007
	Forecast	Actual	Forecast	Actual	Forecast
Osmose (C Truss)	1,500	215	1,452	734	1,417

Prior to 2005, the Company did not separately track this information.

The table below represents O&M Osmose inspection expenditures for 2004-2007.

	2004		2005		2006		2007
	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast
Osmose Inspections	400	581	885	524	846	801	853

5. No. The purchase of ‘stronger’ wooden poles will not affect this program. However, we would note that the new “stronger” wooden poles will also need to be inspected and treated in the same 10 year cycle.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff21
Date of Response: 08/17/2007
Responding Witness: IIP

Question No. :379
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the 4 kV UG Reliability: 1. Provide an itemized breakdown (beyond what is provided in the work papers) of how $14,000 per section was derived. 2. What is the basis for the increase in forecasted cost over the years? 3. Why was 15 years determined as the length of time to replace risers? 4. How is the possible increase in primary risers over the 15 year program taken into account? 5. Provide justification for the following statement found in the work paper, "failure occurs on 62% of feeders." 6. Clarify what is meant by "failure occurs on 62% of feeders." Does this mean this rate occurs on an annual basis? Is it related to older feeders? Is it over the expected life span of the feeders? 7. For the past 5 years, provide me with the cost associated with making repairs/replacements of primary risers. 8. How will you determine the order of replacement of primary risers?

Response:

1. Please see the following:

Material Cost	= $8,000
Labor	= $5,000
Environmental Costs	= $1,000
Total	= $14,000

2. Inflationary increases in material costs and annual increases in labor costs.

3. The 15 year time frame was selected to maximize the replacements and proactively reduce the number of failures while increasing the workload a manageable amount. The plan is to replace 31 risers per year over 15 years.

4. The possible increase in primary risers over the 15 year program is taken into account by anticipating the 23.4 annual riser failure rate will decrease as risers are replaced. The failure rate is 23.4 risers per year (see the answer to #5 below for determination of this rate).

5. Over the last 5 years, 117 of the 743 total in service risers have failed. This provided the basis for the estimate of 23.4 annual riser failure rate. Extrapolating

this over the next 20 years indicates that 468 risers will fail during this period (23.4 x 20 = 468) which represents 62% of the total in service risers (468 / 743 = 62%). The 20 year time frame was selected for this analysis because it represents the approximate time between riser upgrades based on growth.

6. See (5) above.

7. The cost associated with replacing these risers was subsumed within capital burnouts prior to 2006 and was not tracked separately. The actual for 2006 was $146,000 and $978,000 forecast for 2007.

8. Replacement order will be based on age and feeder performance.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff21
Date of Response: 08/21/2007
Responding Witness: IIP

Question No. :381
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the #4, #6 Self Supporting Wire proposal: 1. Provide an itemized breakdown (beyond what is provided in the work papers) of how the funding listed for each rate year was derived. 2. Provide the historical cash flow for this program that should be broken down in the same manner as part 1 of this question where applicable. 3. Besides 1/0 Aluminum wires, what other wires will be used to replace the #4, #6, and SSC? 4. Provide the pros and cons of the current #4, #6, and SSC with the new replacement wires. 5. What is the expected life span of the new replacement wires? 6. Will you use weather-proof outer jackets that are stronger or have a longer life-span? 7. What is the current amount of #4, #6, and SSC? 8. How many have been removed thus far on an annual basis? 9. How is it determined, the order of replacement of these wires? 10. Provide the work schedule that should include expected amount of wire replacement over the entire 20 years of the program. 11. How was 20 years determined for this program? 12. Has the company stopped installing new #4, #6, and SSC wires? If so, when? If not, why? 13. Provide a 5 year history of customer interruptions associated with failures of the #4, #6, and SSC wires.

Response:

1. The funding for the four years is based on the replacement of 3000 spans where a span is 125 feet of three phase conductors. The experienced unit cost per span is $4,300 where $4300 is based on $11.46 per foot x 3 conductors per foot x 125 foot average span length.

Description	2008	2009	2010	2011	Total
Spans of #4,#6 & Self Supporting Wire	792	736	736	736	3000
Cost	$3,410	$3,165	$3,169	$3,175	$12,919

*Note: amounts shown in thousands.

2. See table below.

	2004		2005		2006		2007
	Forecast	Actual	Forecast	Actual	Forecast	Actual	Forecast
# 4 # 6 Self Supporting Wire	0	300	1,150	168	0	352	2,656

3. 2/0 copper and 4/0 Aluminum.

4. The #4 and #6 and SSC conductors are first generation conductors and are generally over 40 years old. The wire is small with limited capacity that is not suitable for the loads and growth experienced today. This aged infrastructure is often mechanically weak due to pitting, elongation and repeated splicing resulting from storm exposure. The SSC or self supporting cable is old outdated insulation technology. It is difficult to troubleshoot and repair. Additionally because of the age and condition of this cable it can not be safely handled energized. Line must be de-energized to handle this cable.

The replacement wire for #4 and #6 conductors is un-insulated, open wire line conductor with a 150 mil black polyethylene covering extruded over the outside diameter. This type of conductor is commonly referred to as tree wire and is used throughout the northeast due to the high density tree conditions encountered in this part of the country.

5. The expected service life of an overhead open wire line conductor is not generally a parameter that is provided by the manufacturers. This type of conductor is proven technology that has been in existence since the 1950's and has been constantly updated and improved since its introduction. It is not uncommon to see wire of this type that has been in service for over 50 years.

6. Con Edison will install conductor with a polyethylene covering that is expected to be both stronger and longer lasting than what was originally installed.

7. There are 3,956,058 feet remaining.

8. 275,314 feet have been replaced in the last 2.5 years which equates to 110,126 feet annually.

9. The following factors are evaluated when determining the order of replacement of these wires.

   - Existing load and future growth
   - PSC worst performing feeder analysis.
   - Proximity to other system reinforcement work on feeder in question.
   - Extent of exposure.
   - Number of customers served by line sections containing this conductor.

10. As per part 8 above, the historical annual amount is 110,126 feet annually or 275,314 feet.

    As shown in part 1 above, the replacement schedule for years 2008 to 2011 is 3,000 spans or 1,125,000 feet.

    The replacement for years 2012 to 2023 is expected to be 694 spans annually or 260,130 feet annually.

11. The 20 year time frame is based on an increase in base work load that can be reasonably absorbed by company crews and available contractors.

12. Yes. These wires have not been installed on the primary distribution system since the late 1950's.

13. The data requested is not readily available. Outage reporting data does not identify cause by conductor size and type.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff21
Date of Response: 08/10/2007
Responding Witness: IIP

Question No. :385
Subject: Electric Operations Capital – Improve Reliability Emergency Primary Cable Replacement 1. Provide in spreadsheet table format all primary feeder opened autos for 2005, 2006, and first six months of 2007. Include the following: 1) Feeder Number b) Number of times each primary feeder opened auto for that year c) For each feeder, indicate whether failed in service or selected for replacement d) Why that feeder failed 2. What are the factors and criteria used in determining which feeders are replaced before failure? 3. What is the unit cost, including labor, to replace a cable section of primary feeder? Describe the work involved for a cable section? How long is a cable section?

Response:

1) Please see the attached file below (DPS-385.xls). Note that for part 1c, all OA (open auto) outages are failures. There are no "selected" OAs. Primary feeders operate at 4kV through 33kv so all outages on feeders at those voltage levels were included. The feeder went out of service (failed) because some component on that feeder failed. These components include: cables, splices, transformers, cable-leads, terminations, unknown and other.

2) General practice is not to replace entire feeders before they experience a failure. Programs do exist to replace certain feeder components before they fail

3) The unit cost of replacing a cable section is typically $18,000. The average length of a primary underground cable section is 250 feet. Please see the attached file (DPS-385 Description of primary cable replacement.doc) for a brief description of the cable section removal and installation process.

						Why Feeder Failed						
Description					**Total**	**TRANSFORMER**	**CABLE**	**CABLE LEAD**	**JOINT**	**OTHER**	**TERMINATION**	**UNKNOWN**
Primary Feeder Open Auto -- 2005					1763	128	504	16	622	208	61	224
Primary Feeder Open Auto -- 2006					1701	98	539	8	463	255	60	278
Primary Feeder Open Auto -- 2007					874	31	280	7	298	120	36	102
Totals					**4338**	**257**	**1323**	**31**	**1383**	**583**	**157**	**604**

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff22
Date of Response: 08/13/2007
Responding Witness: IIP

Question No. :397
Subject: Storm Hardening and Response Follow-up to IR 149. For the Rear-Lot Pole Elimination program: 1. Provide an itemized breakdown beyond what is provided in the work papers of how the funding listed for each year was derived. 2. What will be done with the existing equipments after customers are transferred to the new OH system? 3. Provide an electronic or colored version of the appendix to the work paper. 4. Will this have an impact on new housing development requirements? If so, how? If not, why not? 5. Provide the work schedule.

Response:

1) Capital cost is estimated at $2.4M/ year. The cost is derived from the following major categories:

FUNCTION	COST	EST QTY	SUBTOTAL
Poles	$ 6,001.00	140	$ 840,140.00
OH Pri	$ 1,000.00	104	$ 104,000.00
OH Sec	$ 613.00	158	$ 96,854.00
OH Serv	$ 1,000.00	350	$ 350,000.00
Conduit	$ 161.00	3,850	$ 619,850.00
Structures	$10,592.00	18	$ 190,656.00
UG Serv	$ 2,681.00	88	$ 235,928.00
	ANNUAL TOTAL=		**$2,437,428.00**

The Maintenance cost is estimated: 438 new POE's at approximately $5,000.00 per POE. Additionally, the Maintenance Associated with Capital labor and M&S is based off historic trends using 1% of the capital dollars projected ($97k Labor, $5K M&S).

FUNCTION	COST	EST QTY	SUBTOTAL
NEW POE	$5,000.00	438	$2,190,000.00

2) All existing equipment in the backyards will be retired.

3) See attached file.

4) The program will not have an impact on new housing development requirements. Current construction standards apply and new housing developments will no longer be supplied by rear-lot lines.

5) The 20-year program will commence in 2008 and will complete in 2027. Detailed work schedules have not yet been developed.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff22
Date of Response: 08/13/2007
Responding Witness: IIP

Question No. :400
Subject: Storm Hardening and Response Follow-up to IR 149. For the 3 Phase Gang Switch Replacement: 1. Provide an itemized breakdown beyond what is provided in the work papers of how the funding listed for each rate year was derived. 2. What is the expected life span for these Gang Operated Switches? 3. Provide the cost associated with replacement of defective Gang Operated Switches over the past 5 years. This should be provided in the same manner as part 1 of this question where applicable. 4 What will be used to replace these switches? 5. Were there any operational improvements made to the new switches as compared to the existing Gang Operated Switches? If so, what? If not, why are you replacing the defective switches with these new switches?

Response:

1. The funding listed for each rate year was derived with the estimate that 20 Gang Operated Switches will be replaced each year for five years. At an approximate cost of $20,000 per switch for 20 switches per year, the yearly funding is determined to be $400,000 per year for five years. Please see the table below for an exact cost of a gang switch replacement including the removal of a 45' pole and the installation of a 50' pole as per specifications under ideal conditions. Please note the cost of the new switch is $1745, included in the capital material cost.

	Labor	**Material**	**Indirects**	**Total Cost**
Capital	$4399	$5402	$4757	$14,558
Maintenance	$1253	$153	$14	$1420
Retirement	$2505	$158	$594	$3257

Total Cost: $19,235 (under ideal conditions and nothing additional)

2. The expected life span for the Gang Operated Switches has many factors to be considered. Along with the switch itself, one must also consider the condition and life span of the cross-arms, pole, and other hardware. Warping of cross-arms may lead to the misalignment of the switch blades on the lesser common horizontally mounted switch and the shifting or warping of the pole may lead to the misalignment of the switch blades of the more common vertically mounted switch. Also, the sectionalized extension bar

and handle must be taken into account. Upon repeat operation of the switch, one alters the configuration of the mechanically operated switch bar and handle. With all these variables to consider, it has been estimated that the expected life span of a Gang Operated Switch is approximately 25 years.

3. The Company's work management system does not separately track the replacement of defective Gang Operated Switches. The Company estimates that approximately five Gang Operated Switches were replaced per year for the last five years. Taking this estimate of 25 switch replacements over the past five years and an estimate of $20,000 per job, we estimate that $500,000 was spent. The estimated breakdown would be as follows:

	Labor	**Material**	**Indirects**	**Total Cost**
Capital	$114,349	$140,421	$123,655	$378,425
Maintenance	$32,571	$3977	$364	$36,912
Retirement	$65,115	$4107	$15,441	$84,663

4. The new switch used to replace the existing vertical Gang Operated Switches is the S&C Electric Company OMNI-RUPTER HOG (hotstick operated gang) switch (model # 147832R1-H-B). The existing horizontal Gang Operated Switches are to be replaced with S&C Electric Company OMNI-RUPTER HOG switches (model # 147442R1-H).

5. There have been substantial operational improvements made to the new switches as compared to the existing Gang Operated Switches. The largest improvement is the elimination of the sectionalized switch bar and handle design. Rather than having a multi-sectional bar and hinged handle run down the length of the pole, the new switch merely has a single mechanical channel where a lineman must use a hotstick to open or close the switch. The dysfunctions of the Gang Operated Switches are directly related to a failure or a disorientation of the switch bar and handle (due to usage or the pole warping/leaning). This new design, eliminating a substantial amount of mechanical components, should increase the life span of the switch. Also, the new switches contain arc suppressant shields between phases. These additions will greatly eliminate any possible cross-phase conditions and increase the safety and reliability of the device. Lastly, the new switch is substantially smaller therefore taking up less space on the pole.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff23
Date of Response: 08/21/2007
Responding Witness: IIP

Question No. :404
Subject: Storm Hardening and Response Follow-up to IR DPS-149. For the Overhead Secondary Reliability Program: 1. Provide an itemized breakdown (beyond what is provided in the work papers) of how the funding listed for each year was derived. 2. For the past 5 years, provide the cost associated with replacing old, bare, and undersized overhead secondary wires that should be broken down in the same manner as part 1 of this question where applicable. 3. What is the estimated amount of secondary wires to be replaced over the ten year program? 4. What will be used to replace these secondary wires? 5. What is the plan for identifying old, bare, and undersized overhead secondary wires? 6. How does this program go beyond the regular procedure for replacing OH secondary wires? 7. Provide the work schedule.

Response:

1. See table below.

		2008		2009		2010		2011-2017		Total	
	Unit Measure	Units	$	Units	$	Units	$	Units	$	Units	$
Open Wire	span/leg	250	450,000	250	450,000	250	450,000	1,750	3,150,000	2,500	4,500,000
Poles	ea.	10	54,000	10	54,000	10	54,000	65	351,000	95	513,000
Total			$504,000		$504,000		$504,000		$3,501,000		$ 5,013,000

2. See table below.

		2006		2005		2004		2003		2002		Total	
	Unit of Measure	units	$	units	$	units	$	units	$	units	$	units	$
Open wire	span/leg	1,189	979,293	538	325,375	519	222,174	572	160,222	708	298,102	3,526	1,985,166

3. 2,500 spans or approximately 500,000 feet of secondary wire.
4. 4 /o Aluminum.
5. Reliability indices based on storms, customer complaints, low voltage and office records.
6. This is a new program. In the past, we replaced wires as needed.

7. See inserted table for #1, anticipated units to be completed during 2nd half of each year.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff26
Date of Response: 08/22/2007
Responding Witness: IIP

Question No. :440
Subject: System Reliability – Substation – Capital – Spare Transformer Program -
Provide a list of the existing spare transformer inventory already in storage along with the incremental or additional spare transformers proposed. Include the voltage, size, date, and cost of each transformer identified.

Response:

The attached documents identify the current list of spares and the additional spares proposed to be added to inventory. The estimated cost for the incremental spares that are being added to the transformer spare inventory is provided. These additional spares are being added to compensate for increasing lead times for the procurement of transformers to ensure spares are available to replace failed units as required to maintain system reliability. The cost of the on-going program to replace failed transformers and replenish spares is based on the current market costs to procure replacement transformers. Cost information for the existing spare inventory is not being provided as this information is not relevant to the cost of the program and it would be unduly burdensome to compile this information.

SPARE TRANSFORMER EQUIPMENT (August 3, 2007)				
Type of Unit	**For Use At The Following Stations**	**On Hand**	**On Order**	**Year of Manufacture**
Transmission				
Autotransformers				
500/345, 1008 MVA	Ramapo	1 phase		1971
345/230, 750 MVA	Goethals, PSEG Hudson Station	1		2001
345/138, 420 MVA	West 49th, Eastview, Mott Haven	1		1998
345/138/138, 327MVA	Farragut	1		1973
345/138, 234MVA	Gowanus, E13th St, Rainey, Tremont,	-1	2	
345/138/13.8, 234MVA	Millwood, Buchanan, (Academy future)			
138/69, 130 MVA	E 13th St, Queens bridge	1		2000
Phase Angle				
Regulators				
345kV, 575 MVA	Farragut, Goethals, Ramapo	1		1981
138kV, 121.6, 179	Dunwoodie S, Dunwoodie N	1		2006
234, 300 MVA	Tremont, Corona, Gowanus, Fresh Kills			
Shunt Reactors				
345, 150 MVAR	Goethals, Gowanus, Rainey,	1		1998
	Sprain Brook			
13.8, 75 MVAR	East 13th St and	3 phases		2006

	Rainey			
Series Reactors				
345kV	Dunwoodie, Sprain Brook	1		2003
Area Substations				
345/13, 65 MVA	Pleasantville	1		1977
138/13, 65 MVA	All 138/13 units except Hell Gate,	2	2	2007, 1987
	Sherman Creek and E 179th St.			
138/13/13, 93 MVA	Hell Gate, Sherman Creek	1		2003
138/27, 93 MVA	All Brooklyn & Queens			
	Area Substations	1	2	2003
138/33, 93 MVA	Fresh Kills, Fox Hills			
69/13, 58 MVA	Cherry St (except bank 2),	1		1965
	W 19th St, Ave. A			
69/13, 41 & 46 MVA	Leonard St., E63rd St	1		2002
33/13, 28 MVA	Fox Hills, Fresh Kills	1		2003
Generator Step-Up				
13/69, 120 MVA	East River Units 6 & 7	1		2003
18/69, 230 MVA	East River GT 1 (ERRP)			
		1		2004
18/138, 230 MVA	East River GT 2 (ERRP)			

Proposed Inventory Additions					
Type of Unit	**Quantity**	**For Use at the Following Stations**	**On Order**	**Spare Unit Cost**	**Total Cost**
65 MVA Spares	2	All 138/13 units except Hell Gate, Sherman Creek and E 179th St.	2	$4,250k	$8,500k
234 MVA Spares	2	Gowanus, E13th St, Rainey, Tremont,	2	$6,370k	$12,740k
300 MVA PAR Spares	2	Dunwoodie S, Dunwoodie N, Tremont, Corona, Gowanus, Fresh Kills	Purchase Requisition I/P (2)	$8,258k	$16,570k
138kV Series Reactor	1	Vernon (4), Astoria East (2), Dunwoodie N (1)	Purchase Requisition I/P (1)	$3,065k	$3,065k

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff28
Date of Response: 08/24/2007
Responding Witness: IIP

Question No. :458
Follow-up to IR DPS-302. For the Vented Manhole Cover: 1. Provide an itemized cost breakdown of the $8,000,000 forecasted for 2008. 2. Provide an itemized cost breakdown of the historical cash flow since the inception of this program. This should be broken down in the same manner as part 1 of this question. 3. Provide an itemized cost breakdown of the forecasted cash flow prior to the inception of this program. This should be broken down in the same manner as part 1 of this question.

Response:

1. In 2008, the Vented Manhole Cover program will be completed as manholes are enlarged or regraded to install new vented covers.

See table below.

	2008
Cover Cost	$1.65 million
Installation Cost	$6.35 million

2. See table below.

Vented Manhole Covers	**2005**	**2006**	**2007 projected**
Cover Cost	$6 million	$5.4 million	$2.75 million
Installation Cost	$2.6million	$2 million	$2.25 million

3. See table below.

Vented Manhole Covers		**2005**	**2006**	**2007**	**2008**
	Cover Cost	$ 5.5 million	$ 5.5 million	$ 5.5 million	$ 5.5 million
	Installation Cost	$ 4.5 million	$ 4.5 million	$ 4.5 million	$ 4.5 million

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff29
Date of Response: 08/30/2007
Responding Witness: IIP

Question No. :466Rev
Subject: Follow-Up to DPS-357 – Historic Transmission, Substation, and Electric Operations Capital Spending Provide a spreadsheet (Excel preferred) of forecasted budgets and actual expenditures for all categories and associated line items within Company Exhibits __ (IIP-2, 3, 4, & 5) from 2003 thru 2007. This should include budgeted amounts for 2007 and actual spending to date for 2007.

Response:

See below.

Consolidated Edison Company of New York, Inc.

Electric T&D Capital Expenditures 2004 -2006 and Projected Forecasts 2008 - 2010

(Millions of $)

	2004		2005		2006		2007			RATE CASE		
	Budget	Actual	Budget	Actual	Budget	Actual	Budget	YTD July Actual		2008	2009	2010
*ELECTRIC										-	-	-
Transmission & Switching Stations	42	27	93	57	126	62	137	20		271	236	244
Substations & Sub-Transmission	151	224	305	290	406	402	478	263		536	462	431
Transmission Subtotal	$ 193	$ 252	$ 398	$ 347	$ 532	$ 464	$ 615	$ 284		$ 807	$ 698	$ 674
**Distribution	461	485	599	671	650	799	723	574		988	973	960
Transmission & Distribution Total	654	737	997	1,018	1,182	1,263	1,337	858		1,795	1,671	1,634
*Excludes August Updates												

Note Interference (exhibit TMG-2) and Coastal Storm Mitigation (EEPP-1) is not included in the IIP-5 exhibit. They are represented on their own exhibits. Distribution also includes Unit Substations.

Consolidated Edison Company of New York, Inc.													
TRANMISSION OPERATIONS CAPITAL PROJECTS													
DOLLARS ($000)													
		2004		**2005**		**2006**		**2007**	**2007**	**Rate Case Submission ($000)**			
Description	**Category**	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**YTD**	**2008**	**2009**	**2010**	**Totals**
ENVIRONMENTAL													
DEC Program Line	Environmental	1,750	1,361	1,750	2,482	1,480	1,355	1,750	319	1,750	1,750	-	3,500
Environmental Enhancements	Environmental	-	-	-	-	-	-	-	-	-	-	1,750	1,750
IMPROVE RELIABILITY													
M-Line Tower Relocation	Interference	-	-	-	-	-	-	3,000	-	1,500	1,500	-	3,000
Feeder M56 (Westside Switching)	Security	-	-	-	-	-	-	-	-	-	10,000	20,000	30,000
Transmission Feeder Failures	Feeder Failures	3,000	1,845	4,000	3,565	4,000	6,544	4,000	1,025	5,000	5,000	5,000	15,000
Reinforcement - Feeder M29	System Reliability	-	-	15,000	10,074	60,000	7,895	86,000	3,185	130,000	68,000	24,000	222,000
Feeder M51	System Reliability	-	-	-	-	-	-	-	-	6,700	6,700	6,700	20,100
Relocate Oil Line for M51/M52	System Reliability	1,400	517	-	-	-	-	-	-	-	-	-	-
Cable System Enhancement - Pothead Alarms	System Reliability	-	-	550	699	500	422	500	126	500	500	500	1,500
Millwood - Replace Wood Poles W/Steel Poles	System Reliability	-	-	1,350	672	2,000	1,819	4,150	361	4,000	-	-	4,000

Replace 69kv Feeders On QBB	System Reliability	-	-	14,000	-	10,000	-	-		-	-	11,300	11,300
Emergent Transmission Reliability	System Reliability	-	-	10,000	-	-	-	-	-	5,000	10,000	10,000	25,000
Feeder 38M72 Upgrade	System Reliability	-	-	-	-	-	-	-	-	4,200	6,300	10,500	21,000
Replace Feeder 69M43/44 With 38M53/54	Feeder Replacement	-	-	9,000	307	11,000	8,150	8,500	2,416	3,700	-	-	3,700
Replace 138kv Feeders 18001 & 18002	Feeder Replacement	-	-	-	-	-	-	-	-	25,000	22,000	6,000	53,000
Replace 38W02, 38W13 & 38W14	Feeder Replacement	8,750	5,561	9,800	7,940	8,100	4,622	-	135	-	-	-	-
Replace Feeder 69M41 & 69M45	Feeder Replacement	-	-	-	-	-	-	-	-	17,800	18,000	2,200	38,000
Re-Conductor Dunwoodie – Sprain Brook Transmission Corridor - Feeders 99941/42	Feeder Replacement	-	-	-	-	-	-	-	-	2,000	4,000	4,000	10,000
Reinforce Hudson River Crossing Towers – Feeders Y88 And Y94	System Reliability	-	-	-	-	-	-	-	-	2,400	5,100	-	7,500
Upgrade Overhead 345kv Transmission Structures	System Reliability	-	-	-	-	-	-	2,000	-	2,100	2,200	2,300	6,600
138kV Replacements 34051/2	System Reliability	-	-	-	-	-	-	-	-	-	-	-	-
Replace Feeders 701 & 702	System Reliability	-	-	-	-	-	-	-	-	-	-	-	-
138kV Replacements 34182/4	System Reliability	-	-	-	-	-	-	-	-	-	-	-	-
Replace Feeder 99032	System			-		-	-	-		-	-	-	-

	Reliability	12,000	6,081		8,794				(17)				
Sprainbrook Bay 6	System Reliability	-	-	-	-	-	2,442	4,000	2,478	-	-	-	-
Various projects	Other	817	183	7,150	2,158	3,100	2,954	1,600	2,491	-	-	-	-
SUPPORT ECONOMIC GROWTH													
Re-Conductor Feeders 38B01 – 38B04	Load Relief	1,000	114	-	1,737	3,900	5,351	4,200	3,649	-	-	-	-
Relocate Feeders 38B12/14	Load Relief	2,332	2,238	-					-	-	-	-	-
Re-Conductor Feeders 69M61 – 69M66	Load Relief	-	-	-	-	-	-	-	-	7,000	8,000	-	15,001
Rainey Cooling Plant	Load Relief	-	-	7,000	(21)	-	-	-	-	-	-	-	-
Replace Limiting Cable & Install Press Plant	Load Relief	-	-	-	7,251	-	-	-	21	-	-	-	-
Relocate Feeders 45/46 at ER	Load Relief	3,400	3,196	-	-	-	-	-	-	-	-	-	-
East 13th Street Load Pocket	Load Relief	-	-	-	-	-	-	-	-	36,400	54,600	91,000	182,000
Mott Haven / East Queens / Gowanus - 2- 345kv Feeders	Load Relief	-	-	-	-	-	-	-	-	-	-	40,000	40,000
Dynamic Feeder Rating	Load Relief	2,300	1,616	500	932	-	229	1,000	(68)	1,000	1,000	1,000	3,000
	TOTAL	$36,749	$22,712	$80,100	$46,590	$104,080	$41,783	$120,700	$16,121	$256,050	$224,650	$236,250	$716,951

Consolidated Edison Company of New York, Inc.

SYSTEM & TRANSMISSION

SYSTEM OPERATIONS CAPITAL PROJECTS

DOLLARS ($000)

Description	**Category**	**2004**		**2005**		**2006**		**2007**		**Rate Case Submission**				
		Budget	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**YTD July Actual**	**2008**	**2009**	**2010**	**Rate Case 2008-2010 Totals**	**5 Yr Total**
Energy Management Systems (EMS)	Advanced Technology	$500	$270	$7,600	$5,718	$10,600	$6,838	$11,800	$2,907	$8,200	$2,000	0	$10,200	$22,000
Work Management Systems	Advanced Technology	1150	1112	100	252	50	48	700	225	700	550	250	1,500	2,500
EMS Continuance	Advanced Technology	200	210	0	25	200	48	100	1			500	500	1,500
Operation Requirements (Online systems)	Advanced Technology	1,300	1,104	1,300	581	475	191	1,700	60	2,000	2,400	2,650	7,050	9,250
District Operations Improvement	Advanced Technology	1175	1248	1700	398	450	500	550	260	900	1,000	1,800	3,700	5,200

	Bulk Power Improvements	Advanced Technology	280	94	500	164	0	0	0	0		500	500	1,000	1,000
	Facilities / Utilities Improvements	Other	670	625	1,700	255	150	-6	1,000	27	3,000	4,850	1,850	9,700	11,200
	Alternate Energy Control Center	Advanced Technology	0	0	0	2,919	10,000	12,317	400	884	0	0	0	0	
		TOTAL	$5,275	$4,663	$12,900	$10,312	$21,925	$19,936	$16,250	$4,364	$14,800	$11,300	$7,550	$33,650	$52,650

Consolidated Edison Company of New York, Inc.
SUBSTATION OPERATIONS CAPITAL PROJECTS

	PROJECT DESCRIPTION	**Project Service Date**	**2004**		**2005**		**2006**		**2007**		**Rate Case**		
											2008	**2009**	**2010**
		DATE	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**YTD July Actual**			
	SUPPORT ECONOMIC GROWTH												
	Astor - Establish New Area Station	2009	20,000	14,815	17,000	11,479	17,300	19,267	59,000	34,379	33,000	6,000	-
	Bensonhurst- Install Fifth Transformer	2006	18,000	17,116	17,750	-	-	1,423	500	776	-	-	-
	Bensonhurst# 2- Install Transformer No.10	2006			-	22,229	2,000	309	5,000	607	-	-	-
	Buchanan- Install New 13KV Swgr & Fdr Positions	2006			-	-	1,500	1,288	2,200	4,904	-	-	-
	Cedar St. - Third Transformer and 138kv Feeder	2008			5,000	260	25,000	12,972	25,100	25,435	2,400	-	-

	Elmsford - Install New Substation	2009			3,000	489	10,000	3,050	9,000	4,536	36,000	28,500	1,000
	Emergent Load Relief Program	Program			-	-	-	-	8,000	95	3,000	3,000	3,000
	Fox Hills - Install Two New Feeder Positions	2008			-	-	-	-	2,500	7	1,600	-	-
	Fresh Kills - Install 30 MVAR Capacitor Bank	2009			-	-	-	-	-		2,000	2,000	-
	Glendale- Install Transfr & 138 KV Feeder	2006			5,500	13,100	5,172	6,451	-		-	-	-
	Gowanus - Establish New Transmission Station	2014			-	-	-	-	-		-	-	5,000
	Grasslands - Establish New Area Station	2005	32,000	33,417	3,500	7,500	-	-	-		-	-	-
	Hillside - Establish New Area Substation	2015			-	-	-	-	-		300	2,700	-
	Hudson Yards - Establish New Area Station	2014			-	-	-	-	-		-	44,000	22,000
	Idlewild - Establish New Area Station	2016			-	-	-	-	-		700	6,300	-
	Land Acquisition for Future New Substations	2011	(30,000)		-	2,500	34,500	37,409	12,400	7,449	5,000	45,000	55,000
	Mohansic- Replace Two Transformers	-			-	-	2,000	-	-		-	-	-
	Mott Haven - Establish 345 kV Switching & Area Station	2007	10,000	17,801	90,000	82,587	135,100	138,045	66,000	52,419	8,000	-	-
	Murray Hill - Establish New Station	2004	32,000	39,419	-	-	-	-	-		-	-	-
	Nevins St. - Establish New Area Station	2016			-	-	-	-	-		3,000	-	-
	Newtown - Establish New Area Station	2011			-	-	-	-	-		20,000	40,000	60,000

	Parkchester- Establish Three New 13KV Feeder Positions	2006			-	-	1,200	1,060	-		-	-	-
	Parkview- Establish New Area Station	2008			30,000	6,243	39,000	33,751	105,000	38,142	49,800	-	-
	Queens - Establish New Transmission Station	2014			-	-	-	-	-		-	-	4,000
	Rockview - Establish New Area Substation	2008			20,000	9,455	12,000	15,222	47,000	27,479	15,400	-	-
	Transformer Cooling	Program			500	-	500	1,007	-		1,000	1,000	500
	Wainwright- 13KV Bus Upgrade	2006			-	-	1,300	511	-		-	-	-
	Water St- Install Fourth Transformer & Asst. Switchgear	2007			1,500	-	5,000	5,720	6,000	5,803	-	-	-
	West Side - Establish New Transmission Switching Station	2013			-	-	-	-	-		135,000	50,000	75,000
	Woodrow - Install 3rd Transformer with 138kV Feeder	2010			4,000	-	5,000	114	15,000	2,716	10,000	10,000	4,800
	York - Establish New Area Substation	2010			-	-	-	-	8,000	422	46,000	60,000	21,000
	Other Projects		9,380	12,452	1,700	7,161	-	1,565	2,330	1,612	-	-	-
	GENERATION INTERCONNECTION												
	Expansion of 49th Street Substation	2009			-	-	-	-	-		10,000	20,000	10,000
	Install Phase Angle Regulator	TBD			-	-	-	-	-		-	2,500	7,000
	Install Series Reactor	TBD	24,430	28,452	4,000	12,116	-	(1,039)	-	(40)	-	2,500	8,000

	TOTAL SUPPORT ECONOMIC GROWTH		**115,810**	**163,472**	**203,450**	**175,119**	**296,572**	**278,125**	**373,030**	**206,741**	**382,200**	**323,500**	**276,300**
	IMPROVE RELIABILITY												
	EQUIPMENT												
	Condition Based Monitoring/Sage Monitoring	Program		231		965	250	28	500	36	250	250	250
	Obsolete 138kV Circuit Breaker Program	Program	2,500	4,528	2,400	3,122	3,800	3,921	7,400	2,691	7,700	7,700	7,700
	Obsolete Circuit Switcher Replacement	Program	700	466		22	800	304			500	500	500
	Replace 345kV Circuit Breaker	Program		5,846	4,500	5,549	6,000	7,045	8,630	4,384	7,000	7,000	7,000
	Replace Disconnect Switches	Program		2,743	1,000	5,283	0	1,211	1,500	2,368	2,900	3,600	3,600
	Replace Obsolete Transformers	Program		302	19,000	23,025	23,600	28,345	10,300	5,928	17,200	13,000	21,000
	Replace Overdutied 13/27kV Circuit Breaker Programs	Program	1,000	7,834	6,530	7,469	8,490	9,204	8,590	2,894	8,800	8,800	8,800
	Spare Equipment Other than Transformer	Program	-	-	1,500	742	1,500	1,621	1,500	880	1,500	1,500	1,500
	Spare Transformer Program	Program	2,750	8,896					5,000	6,620	16,500	12,000	12,000

	RELAY												
	Control Cable Upgrade Program	Program		698	1,000	485	0	768			1,000	1,000	1,000
	Modify Auto Underfrequency Loadshedding	Program			1,500	1,211	1,500	2,610	1,500	1,405	1,385	-	-
	Reduce Fault Clearing Time	2008					0	1,188	7,500	1,698	5,200	-	-
	Relay Modifications	Program	2,465	1,208	3,250	1,591	2,250	3,353	1,500	2,310	2,500	2,500	2,500
	Upgrade Analog Circuits To Digital Fiber	Program	2,500	2,262	2,500	1,683	2,000	1,201	1,025	914	2,000	2,000	2,000
	MISCELLANEOUS COMPONENTS												
	Additional G&T Devices	Program				(30)			1,000	400	1,000	1,000	1,000
	Area Substation Reliability	Program			4,000	3,756	0	3,679	5,000	3,174	8,500	8,500	8,500
	Battery & Rectifier Replacement	Program	1,325	3,341	2,300	105	1,550	2,883	1,702	769	3,500	3,500	3,500
	Capacitor Cable Upgrade Program	Program	1,000			796	2,000	153	1,000	538	3,000	3,000	3,000
	Category Alarms	Program	500	18	1,000	813	1,000	502			2,250	2,250	2,250
	Construct Relay Enclosure Houses	Program									1,500	1,500	1,500
	Corona Settlement	2010		181	1,000	43	0	326			1,000	1,000	1,000
	Diesels/Blackstart Restoration (Phase 2) - Upgrade Station L&P	Program	1,000		3,000	4,335	1,500	3,403	-	-	600	1,200	1,000

	DFR/SER Upgrades	Program	-	1,710	-	-	-	-	-	-	-	-	-
	East River Complex - Install Wall	2010	-	-	-	-	-	-	-	-	-	2,500	2,500
	Facility Upgrade	Program		2,598	5,000	3,967	-	1,393	1,000	1,243	6,000	6,000	6,000
	Fire Protection Program	Program			1,500			658	2,000	2,594	500	500	500
	Goethals- Replace 345KV Par#1	2006					10,000	12,280					
	High Voltage Test Sets	Program		383							6,500	2,000	2,000
	Install 138kV Breakers 7 & 8 and Third Cap Bank - Jamaica	2008					2,000	1,018	5,000	2,586	3,000	-	-
	New Maximo Upgrade	2009				830	0	86			400	400	-
	Rapid Restore Enhancements-Mapping/Modeling System	Program				477		52	500	254	200	200	200
	Reinforced Ground Grid	Program					3,500	4,074	1,000	-	500	500	500
	Replace Auto Ground DSW w/Circ Switchers	Program			2,500	3,338							
	Revenue Metering Upgrade	Program							500	-	500	500	500
	Roof Replacement	Program	4,000	2,160	1,867	3,927	3,000	1,236	3,500	7	3,000	3,000	3,000
	Small Capital	Program	2,500	3,108	5,000	5,055	4,325	5,061	4,000	1,820	6,000	6,000	6,000
	SOCCS - RTU Replacement	Program			150	52	1,000	0	1,000	507	3,000	4,000	4,000
	Substation Automation	2011			1,305		2,000	1,340			2,000	2,000	2,000

	Substation Automation - East River	2010			3,000	306	3,000	5,094	3,000	3,323	3,000	3,000	3,000
	Substation Continuance - Buchanan	Program									-	-	5,000
	Substation Continuance - E179th Street	Program					1,600	1,323			-	-	2,500
	Substation Continuance - E75th Street	Program					1,400	1,430			-	-	-
	Substation Continuance - E63rd Street	Program			500		2,500	-			2,500	5,000	5,000
	Substation Continuance - White Plains	2009		278	9,000	17,043	5,000	7,138			-	550	-
	Substation Loss Contingency	2010			550	148	-	360			2,000	2,000	2,000
	Switchgear Enclosure Upgrade Program	Program			500	3	500	111			500	500	500
	Technology Improvements- Work Permit System, T1 Lines, Phase #1 Substation Central	Program							975	-	310	705	500
	Upgrade 13kV L&P Transformer - Fresh Kills	2008			4,000	1,052	-	-	2,500	-	600	-	-
	Other		200	445	1,248	2,988	1,500	2,068	3,998	3,620	-	-	-
	TOTAL IMPROVE RELIABILITY	**-**	**22,440**	**49,236**	**90,600**	**100,151**	**97,565**	**116,467**	**92,620**	**52,963**	**136,295**	**121,155**	**135,300**
	ENVIRONMENTAL												
	SPCC Plan for Transmission Cable System	2008	7,750	6,808	1,500	6,206	1,000	237	1,000	223	500	-	-

	Environmental Risk	Program	2,000	1,230	6,000	1,387	3,900	781	5,100	1,372	3,500	3,500	3,500
	Pumping Plant Improvement	Program	2,900	3,472	-	3,197	3,845	2,985	3,400	1,839	8,500	8,500	8,500
	PURS Supervisory Control & Data Acquisition	Program	100	-	3,000	4,291	2,700	3,374	2,000	-	1,000	1,000	3,000
	TOTAL ENVIRONMENTAL		**12,750**	**11,510**	**10,500**	**15,081**	**11,445**	**7,377**	**11,500**	**3,434**	**13,500**	**13,000**	**15,000**
	SECURITY												
	Security Enhancements	Program	-	-	450	-	-	-	500	12	4,100	4,100	4,000
	TOTAL SECURITY		**-**	**-**	**450**	**-**	**-**	**-**	**500**	**12**	**4,100**	**4,100**	**4,000**
			151,000	**224,218**	**305,000**	**290,351**	**405,582**	**401,969**	**477,650**	**263,150**	**536,095**	**461,755**	**430,600**

	2004		2005		2006		2007		Rate Case		
DESCRIPTION	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**Actual**	**Budget**	**July YTD Actual**	**2008**	**2009**	**2010**
Support Economic Growth	**220,208**	**221,403**	**254,830**	**274,086**	**299,123**	**371,142**	**334,804**	**286,981**	**337,459**	**325,373**	**312,466**
New Business											
- ED1 costs	87,192	87,862	101,794	100,894	101,629	124,512	102,091	82,153	125,000	125,000	125,000
- Meter Installation	9,838	10,213	11,224	16,600	12,105	17,701	14,624	11,073	19,320	17,721	17,771
Sub-Total	**97,030**	**98,075**	**113,018**	**117,494**	**113,734**	**142,213**	**116,715**	**93,226**	**144,320**	**142,721**	**142,771**
System Reinforcement Area SS Load Relief											
Bruckner 2008 8MX NY Post							260		200	0	0
179th Mott Haven 25 MW									5,000	5,000	0
Cedar Street 3rd Bank							2,539		500	0	0
Elmsford Refurbishment 2008							201		1,300	2,000	0
White Plains to Rockview S/S									4,000	0	0

Granite Hill to Rockview							5,635	238	4,000	0	0
Newtown									3,945	4,339	4,273
Astor (Herald Sq. Transfer)							2,206		5,000	3,000	0
Penn/Waterside							1,500		2,400	0	0
Parkview (East Harlem Network)							12,000		10,000	0	0
York Substation (Hunter Transfer 88MW)									2,000	8,000	5,000
Fresh Kills Load Transfer Capability							500		0	3,000	6,000
Willowbrook									0	1,200	0
Wainwright									0	0	1,200
Rockefeller Center to Astor									5,000	8,000	0
Randall's Island									3,000	2,500	0
Roosevelt (30MW)									0	0	500

Madison (30MW)									0	0	4,000
Lenox Hill to York Substation									0	0	5,500
Various Load Transfers (2004-2009)	22,064	21,279	20,317	15,551	40,222	43,861	23,865	33,060			
Sub-Total	**22,064**	**21,279**	**20,317**	**15,551**	**40,222**	**43,861**	**48,706**	**33,298**	**46,345**	**37,039**	**26,473**
Base Growth / Relief											
Primary Feeder Relief	20,196	22,099	24,179	32,571	38,487	51,679	39,192	47,401	40,497	41,003	41,523
NonNetwork Fdr Relief (Open Wire)			1,761	1,854	4,101	3,851	1,108	974	3,000	1,800	1,800
4 kV Feeder & Wire Relief	3,876	3,671	5,374	8,303	7,101	5,761	11,592	13,254	10,605	9,736	9,872
Overhead Transformer Relief							130	293	3,150	3,150	3,150
Secondary Main Relief	3,942	2,009	2,000	3,300	0	2,418	2,936	969	2,150	2,150	1,650
Sub-Total	**28,014**	**27,779**	**33,314**	**46,028**	**49,689**	**63,709**	**54,958**	**62,891**	**59,402**	**57,839**	**57,995**
Distribution Substation											
Distribution Substation Load Relief	8,200	7,010	5,550	6,191	9,400	9,955	8,425	3,652	6,400	6,400	6,400
Sub-Total	**8,200**	**7,010**	**5,550**	**6,191**	**9,400**	**9,955**	**8,425**	**3,652**	**6,400**	**6,400**	**6,400**
Meter Purchase	**8,300**	**8,455**	**10,715**	**10,968**	**12,078**	**10,800**	**12,000**	**7,067**	**11,967**	**12,349**	**9,802**

Transformer Purchase	**56,600**	**58,805**	**71,916**	**77,854**	**74,000**	**100,604**	**94,000**	**86,847**	**69,025**	**69,025**	**69,025**
Improve Reliability	**240,193**	**263,261**	**283,706**	**327,270**	**319,660**	**392,885**	**350,748**	**277,417**	**544,775**	**539,883**	**544,468**
Emergency Primary Cable Replacement	63,050	68,092	31,336	41,557	34,752	47,925	33,522	36,448	35,536	35,206	34,206
Overhead	6,627	8,388	6,181	9,421	8,049	20,151	7,282	9,770	8,267	8,267	8,267
- Secondary Open Mains (incl. conduit)	57,295	63,688	47,858	104,918	76,227	118,841	85,255	87,774	92,327	85,363	81,359
- Temporary Services (incl. conduit)	15,198	13,934	13,615	19,301	16,478	19,895	15,743	13,078	16,053	16,053	16,053
- Street Lights (incl. conduit)	22,678	24,449	11,006	18,547	10,387	16,926	14,657	8,585	15,253	15,253	15,003
- Transformer Installation	37,640	43,034	27,994	25,173	21,885	17,524	21,575	14,615	23,279	21,594	21,594
(Primary) Cable Crossings									8,833	9,033	14,329
HiPot	5,050	3,232	6,930	2,124	5,250	4,069	6,836	3,350	6,303	6,399	6,498
PILC	3,500	3,979	23,430	21,969	23,903	23,818	23,011	9,202	39,200	39,200	39,200
Transformer Remote Monitoring System	5,945	9,325	8,032	11,611	11,959	15,503	23,732	7,934	31,525	30,416	29,728
Network/Non Network Transformers >125%	21,980	19,314	24,425	25,652	11,161	23,774	17,124	30,922	15,525	14,901	15,288
Network transformer replacements >115% <125%			6,743	13,265	30,573	22,091	30,155	19,705	25,913	25,120	19,402
Network Transformer								1	51,466	51,463	58,184

Replacements >100% <115%											
SF_6 Switches			0	1,357	721	2,077	1,297	1,539	3,468	4,243	4,356
Underground Secondary Reliability Program			67,706	28,884	68,315	59,414	63,859	33,085	71,296	73,137	77,804
Grounding Transformers								239	2,519	2,519	2,519
Shunt reactors							1,267	47	2,727	2,752	2,761
Network Reliability									18,909	25,206	25,723
House Isolation Transformers									1,760	240	0
Telecom			3,000	49	0	28	758		2,013	1,176	1,176
Other Reliability	480	4,889	0	79	0	6	1,300	1,148			
Transformer Purchase									66,063	66,063	66,063
Sub-Total	**239,443**	**262,324**	**278,256**	**323,907**	**319,660**	**392,042**	**347,373**	**277,442**	**538,235**	**533,604**	**539,513**
Distribution Substation Modernization											
Trip Coil Monitor			450						235	235	235
USS Automation			150	127		87		-111	150	150	150
Facility Improvement Program									725	425	0
Tap Changer Position Indicator System			200	44		6	250	-40	250	250	250
Temperature Gauges			100			3	100		100	100	100
USS Transformer Replacement									600	600	600

4Kv USS Switchgear Replacement							2,200		2,200	2,200	2,200
USS Life Extension Program			1,000	819					1,000	1,000	425
4 Kv Disaster Recovery									300	300	0
4 Kv Breaker Replacement									730	769	745
Auto Reclose On Bank Breakers								-2	250	250	250
Other Modernization (2004-2007)	750	937	3,550	2,373		747	825	128			
Sub-Total	**750**	**937**	**5,450**	**3,363**	**0**	**843**	**3,375**	**-25**	**6,540**	**6,279**	**4,955**
Public Safety and Environmental	**994**	**243**	**10,500**	**9,423**	**8,729**	**7,855**	**8,400**	**2,761**	**16,689**	**7,567**	**7,300**
Oil Minders	494	240	700	759	724	475	400	29	600	600	600
Vented Manhole Cover	500	3	9,800	8,664	8,005	7,380	8,000	2,732	8,000	0	0
Tank Rupture Mitigation									900	0	0
Network Transformer Natural Ester (FR3) program									600	600	600
Street Light Isolation Transformers									6,100	6,100	6,100
NWT Failure Analysis - Polytechnic									489	267	0
Total	**994**	**243**	**10,500**	**9,423**	**8,729**	**7,855**	**8,400**	**2,761**	**16,689**	**7,567**	**7,300**
Storm Hardening and Response	**58**	**300**	**7,930**	**13,212**	**6,651**	**12,390**	**16,579**	**1,847**	**44,205**	**46,762**	**49,083**

Osmose (C Truss)			1,500	215	1,452	734	1,419	280	1,729	1,746	1,763
Anderson Switch Replacement						0	50	1	100	100	100
Autoloop Reliability			1,990	496		482	3,944	301	7,974	7,376	7,359
Aerial (Okonite) Cable Replacement			1,119	758		823	1,847	25	1,760	2,521	2,532
#4,#6 Self Supporting Wire		300	1,150	168		352	2,657	737	3,410	3,165	3,169
ESCO Switch Replacement (Kyle)			770	355	196	1,906	1,368	368	2,485	2,509	2,333
33 kV Interruptible Switches									160	435	335
3 Phase Gang Switch Replacement									400	400	400
4 kV Feeder Sectionalizing									450	450	450
13 kV Feeder Sectionalizing									142	135	21
Automated Emergency Ties									750	750	750
Overhead Feeder Reliability									450	750	750
Rear-Lot Pole Elimination									2,437	2,437	2,437
Enhanced 4 kV Grid Monitoring									1,500	2,500	3,500
4 kV Substations - Reliability	58		201	37	1,953	2,137	856	88	111	111	1,774
4 kV UG Reliability					0	146	980		1,268	1,300	1,333
Overhead Secondary Reliability Program									500	500	500
Intelligent OH DAS Autoloop System									2,500	2,500	2,500
4 kV Cable							200		4,461	4,461	4,461

Replacement											
Targeted Primary DBC Replacement			1,200	11,183	3,050	5,810	3,258	47	800	800	800
URD Cable Rejuvenation/Fault Indicator									608	806	806
Emergency Equipment Management System									600	-	-
ATS Installation USS Reliability XW									1,050	2,450	2,450
Transformer Purchase									8,560	8,560	8,560
Total	**58**	**300**	**7,930**	**13,212**	**6,651**	**12,390**	**16,579**	**1,847**	**44,205**	**46,762**	**49,083**
Advanced Technology	**0**	**0**	**550**	**15,550**	**10,142**	**12,038**	**10,290**	**4,353**	**41,150**	**37,470**	**34,170**
Distribution Simulator									0	0	2,000
Secondary Visualization Model								537	5,200	4,000	1,900
Secondary Monitoring (Secondary Model Validation)				1,571	4,000	7,413			10,400	10,200	10,200
System Trouble Analysis and Response (STAR)				2,014	1,700	2,287	1,550	542	500	0	0
Pole Attachment Project							680	797	1,400	0	0
Grid Optimization (CALM)							810	252	1,800	1,800	1,800

Integrated System Model									3,000	2,500	3,000
Decision Aids									1,500	1,500	1,500
Area Profile System								280	100	0	0
Joint Pole Use Software									450	0	0
High Tension Monitoring Data Acquisition System									500	650	500
Meter Shop ADAMS									1,250	1,250	0
Integrated Route Sheet (Work Management)				494			500	271	1,000	3,000	3,000
Transformer Asset Mgmt.							1,000		1,000	500	0
4kV Load Shedding System			250	318	300	212		39	150	150	150
ATS Automation			300		142	107			150	150	100
Power Quality (PQNodes) System Upgrade									1,650	1,650	1,650
Rapid Restore - Overhead						17		7	0	0	650
SCADA Systems Consolidation									1,500	800	600

Equipment Analysis Group (IT Initiative)									600	320	120
Electric Distribution Control Center Upgrades									5,000	2,500	500
Mapping System Upgrades									4,000	6,500	6,500
Other IT Projects (2005-2007)				11,153	4,000	2,002	5,750	1,628			
Total	**0**	**0**	**550**	**15,550**	**10,142**	**12,038**	**10,290**	**4,353**	**41,150**	**37,470**	**34,170**
Process Improvement	**0**	**0**	**41,930**	**31,121**	**6,100**	**3,076**	**2,000**	**741**	**3,519**	**16,000**	**12,500**
Work Management Project Tracking									0	13,000	10,000
Accounting by Network									350	1,500	1,500
Commercial Service Representative Automation									600	500	0
Electric Mobile Dispatch & Extend to Construction			3,000	1,104	3,000	998	700	658	1,700	1,000	1,000
Wireless Support for Electric Operations									869	0	0

All other Common projects (2005-2009)			38,930	30,017	3,100	2,078	1,300	83			
Total	**0**	**0**	**41,930**	**31,121**	**6,100**	**3,076**	**2,000**	**741**	**3,519**	**16,000**	**12,500**
Sub - Total Distribution (Excluding Interference)	**461,453**	**485,207**	**599,446**	**670,662**	**650,405**	**799,386**	**722,821**	**574,100**	**987,797**	**973,055**	**959,987**
Interference	**20,843**	**19,442**	**23,000**	**20,764**	**21,900**	**27,385**	**31,300**	**16,412**	**0**	**0**	**0**
Total Distribution (Including Interference)	**482,296**	**504,649**	**622,446**	**691,426**	**672,305**	**826,771**	**754,121**	**590,512**	**987,797**	**973,055**	**959,987**
*** Note Interference (exhibit TMG-2) and Coastal Storm Mitigation (EEPP-1) is not included in the IIP-5 exhibit. They are represented on their own exhibits.**											

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/29/2007
Responding Witness: IIP

Question No. :490
Subject: Advanced Technology – In-depth Cost Breakdowns - Provide a more in-depth cost breakdown of how the future expenditures proposed by the Company in the exhibits and work papers were derived for the following programs: - µRTU Secondary Monitoring ($10.4M for 2008, $30.8M total) - Mapping System Upgrade ($4M for 2008, $19M total)

Response:

For µRTU Secondary Monitoring, please see the following table:

	2008	**2009**	**2010**
Number of Units	3400	3400	3400
Cost Breakdown			
Material	$3,910,000	$3,910,000	$3,910,000
Communication	$3,400,000	$3,400,000	$3,400,000
Labor	$2,890,000	$2,890,000	$2,890,000
	$10,200,000	$10,200,000	$10,200,000

For the Mapping System upgrade:
Please note amounts are subject to change.

2008 cash flow breakdown:

- Consultants - $3.0 million
- Company Labor - $ .75 million
- Hardware and Software - $ .25 million

2009 cash flow breakdown:

- Consultants - $3.0 million
- Company Labor - $ 1.0 million
- Hardware and Software - $ 2.0 million
- Software maintenance - $ 0.5 million

2010 cash flow breakdown:

- Consultants - $3.0 million
- Company Labor - $ 1.0 million
- Hardware and Software - $ 2.0 million
- Software maintenance - $ 0.5 million

2011 cash flow breakdown:

- Consultants - $1.5 million
- Company Labor - $ 0.3 million
- Software maintenance - $ 0.2 million

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.1
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - What was used to determine that 20,000 should be purchased as replacement units?

Response:

According to NYCDOT staff, approximately 2,000 to 3,000 streetlights are damaged by vehicle accidents and vandalism per year. In addition, several hundred new streetlights are installed each year. Using the midpoint estimate of 2,500 units, approximately 10,000 units would be required during the four year installation project to support replacements and new installations. In addition, 10,000 units would be placed into stock as spare parts for future replacement of these custom constructed units which have a six month lead time.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.2
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - Which internal manpower resources will be used to complete the installation of Isolation Transformers?

Response:

Con Edison Maintenance Services personnel from the Contruction Department.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.3
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - Does the LED light installed by NYCDOT on streetlights have an impact on this program? Why?

Response:

No. "LED lamps" are high pressure sodium lamps that include a LED low voltage warning indicator. LED equipped lamp heads are installed at the top of lamps under live conditions. No entry to lamps bases is typically required.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.4
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - Provide the schedule of installation of NYCDOT LED lights.

Response:

NYCDOT plans to install 68,000 new luminaires in various boroughs over an 18 month period that began on May 1, 2007.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.5
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - In what order (i.e. by network, M&S, etc.) will the Isolation Transformers be installed in the Con Ed system?

Response:

We plan to install the transformers by M&S plates to minimize crew lamp-to-lamp transit times.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.6
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - What information will be stored in the database currently under development?

Response:

We expect to record streetlight bar code, location using the DOT directional system, the Con Edison 'in-front-of' address, the Isolation Transformer barcoded serial number, and installation/removal dates.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.8
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - After all transformers are installed, will Con Edison QA 10% of the total population of transformers on an annual basis or 10% of the population not checked as yet through the QA process? Why?

Response:

10% of the population installed in each respective year will be inspected to assure that installation work practices continue to adhere to our high standards throughout the entire four year installation project.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.9
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - What will be checked as part of the QA process?

Response:

Fuse type, connector type/location, power to lamp, stray voltage, heat shrink properly applied, and correct recording of streetlight data.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :493.10
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. - What is Con Edison reason for not installing these transformers in service box?

Response:

See response to Staff 494.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff32
Date of Response: 08/28/2007
Responding Witness: IIP

Question No. :494
Subject: Public Safety and Environment - Follow-up to IR DPS-323 for Streetlight Isolation Transformer. 1. What would be the incremental cost of installing transformers in the service box assuming Con Edison purchases and maintains these transformers? 2. What are the advantages and disadvantages of installing the transformer in the service box versus the base of the streetlight assuming Con Edison purchases and maintains these transformers (i.e. specific crew type, time, procedural change, safety, design, space, etc.)?

Response:

1) We have no plans to install Isolation Transformers in service boxes. We estimate that the labor portion of the installation cost would double for the following reasons:
    a. Work in service boxes would require the use of more costly Underground Splicers ($38.15 per hour) vs. Mechanic A's ($36.36 per hour).
    b. An estimated four installations per day could be visited for service boxes vs. 10 per day for Isolation Transformers located in lamp bases requiring 2.25 times more workers to complete the project; or doubling the length of the project if staff is not added.

2) Disadvantages:
    a. Accessibility for initial installation and maintenance
    b. Complicates use of lamps for temporary power due to 600 watt limit
    c. Harsh environment may shorten ISO life
    d. Increased risk to crews due to need to work in traffic
    e. Con Edison policy prohibits non-Con Edison forces from entering our structures, for example, if the DOT had to determine the source of a problem, the Company would not allow DOT to look in the service box to look at the ISO connection, if it is in the lamp base, DOT would be able to access without any reservation from Con Edison
    f. DOT opposition to the location
    g. See also 1 above

    Advantages:

a. Might possibly provide a slightly higher protection factor for phase failures located in the lamp service duct; however, the difference is small as the lamp bonding strap is being removed as part of the installation project.

Company Name: Con Edison
Case Description: Electric Rate Filing
Case: 07-E-0523

Response to DPS Interrogatories – Set Staff33
Date of Response: 08/29/2007
Responding Witness: IIP

Question No. :498
Subject: Central Operations & Electrical Operations Incremental Changes in Capital and O&M Submittals - Provide a detailed written description and reasoning for all the Central Operations & Electrical Operations incremental changes in capital and O&M submittals proposed by the Company. Also include a detailed cost breakdown for each item.

Response:

See below.

Project/Program Title	Elmsford – Install New Substation
Status	Engineering & Contract Procurement
Estimated Service Date	2011

ADDENDUM

As described in our earlier submittal, this Project will enhance the reliability of the Elmsford Substation. There are options under consideration including installing new switchgear and associated infrastructure; or the installation of a new substation. Both options would include installation of modern switchgear controlled by state-of-the art relay protection and automation. The new substation will consists of 4 new transformers, which will result in a higher substation load capability, with a new control room, new standardized controls, and load management systems. Technology available today will be used in lieu of the obsolete technology. Several underground 138kV feeders also require relocation.

The Elmsford substation, located in Westchester County, is over 46 years old and nearing the end of its useful life. The existing substation consists of 4 transformers, 8 sections of switchgear and 2-20 MVar capacitor banks. The switchgear utilizes obsolete circuit breakers. The equipment enclosures have deteriorated resulting in leaks and resultant equipment outages due to water damage. The equipment supporting structures are corroding and switchgear components have also been susceptible to water damage. As the structural components age, manual operation of the old heavy circuit breakers has become increasingly difficult and requires more time and resources. This project will vastly improve the feeder processing durations of Elmsford electric distribution system.

Cost Breakdown:
Since our May 4, 2007 filing, we have faced delays with the Town of Elmsford permit applications resulting in moving the cash flow ($16m) from 2008 out to 2010 without increasing the level of funding. The new substation is scheduled to be placed in-service in February 2010. Total completion of this project is scheduled for October 2011 due to construction requirements after the demolition of the old substation.

Rate Case Funding ($000s):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
36,000	28,500	1,000	65,500

Revised Rate Case Funding: ($000s)

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
20,000	28,500	17,000	65,500

Project/Program Title	Newtown – New Area Substation
Status	Planning and Engineering
Estimated Service Date	2011

ADDENDUM

As described in our earlier submittal, this new Area Substation in the Long Island City part of Queens will be designed for up to five 138/27KV 93.3 MVA transformers, five complete switchgear sections supplying the 27KV distribution system, and 60 MVAR of capacitors. The substation will be supplied by tapping the existing Vernon to Glendale 138 kV feeders.

Based on the current 2007 – 2016 Area Substation and Subtransmission Feeder Ten-Year Load Relief Program load projections, North Queens area station will require load relief in 2013. The station cannot be expanded and load relief must be obtained through load transfers. To further improve the reliability of the Queens Load area, the substation is being advanced to 2011 with efforts underway to further advance it to 2010(under review).

Cost Breakdown:
Since our May 4, 2007 filing, we have accelerated the schedule and brought the concept scope/estimate to an Order of Magnitude estimates. This resulted in increased costs for: equipment, construction contracts, transmission and overheads/contingencies/escalation; and a decrease costs in labor and other directs, for a net increase in the Rate Case Forecast Total of $56,000,000.

Original Rate Case Funding ($000s):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
20,000	40,000	60,000	120,000

Revised Rate Case Funding ($000s):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
59,000	72,000	45,000	176,000

Project/Program Title	Parkview New Area Substation
Priority Number	97
Budget Reference	3ES2501
Project Number	21136-04
Status	Construction
Estimated Service Date	May 2008

ADDENDUM

As described in our earlier submittal, this new Area Substation in upper Manhattan area will be supplied from the Mott Haven Switching Station, and will be placed in service May 2008.

The electrical needs of the upper Manhattan area, extending from 110th St. to 163rd St. and from the East River to the Hudson River are supplied from the West 110th St. No. 1 area substation. Based on the current ten-year load forecast, the West 110th St. No. 1 area substation is projected to experience overloads beginning in the summer of 2008. The new substation to be built on this property will relieve this projected overload and provide sufficient capacity for long-term growth in the area. The supply to this new area substation will be provided by the new Mott Haven Switching station.

The new facility will maintain reliability in the face of increased load demand.

Cost Breakdown:
Since our May 4, 2007 filing, we have realized increases in our easements / permit costs, additional above ground electrical work and an increase in the cost of cable and overheads raising the Rate Case Forecast Total by $15,064,000.

Original Rate Case Funding ($000)

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
49,800	-	-	49,800

Revised Rate Case Funding ($000):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast TotalForecast Total
64,864	-	-	49,80064,864

Project /Program Title	Woodrow Substation - Install Third Transformer and 138kV Feeder
Status	Engineering
Estimated Service Date	March 2010

ADDENDUM

As described in our earlier submittal, to meet the Woodrow substation forecasted load demand for 2008 and beyond it is recommended to install a 3rd transformer, a 138 kV supply feeder from the Fresh Kills substation, and 8-13 kV feeder positions. This expansion will increase the substation capability from 104 MW to 203 MW. In addition, this project will include the construction of a new control room at the Fresh Kills Substation.

Based on the 2005-2014 Area Substation and Subtransmission Load Relief Program, the Woodrow substation rated capability of 104 MW will be exceeded in 2008. As a result of Demand Side Management (DSM) initiatives, the service date has been deferred to 2010. To meet this expected increase in load as well as future load growth in the area, a third transformer and a 138 kV supply feeder will be installed by March 2010. While the substation was originally established with two transformers, its design and layout will accommodate a five transformer area station.

Cost Breakdown:

Since our May 4, 2007 filing a significant portion of the original 2007 scope for Woodrow has slipped into 2008. This was due to delays associated with placing the contract to start the control room work, delays associated with approval of the Federal Highway NEPA filing and priority compared to other 2007 projects due to Woodrow's 2010 service date. Also as a result the delayed service date, escalation costs for the equipment and labor especially the transmission cable has increased. Overheads and interest also increased and an additional breaker and disconnect switch were added to the scope of work at Fresh Kills. The Rate Case Forecast Total has increased by $18,200,000.

Original Rate Cash Funding ($000):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
10,000	10,000	4,800	24,800

Revised Rate Case Funding ($000):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
15,000	22,000	6,000	43,000

Project /Program Title	York – Establish New Area Substation
Status	Design and Engineering
Estimated Service Date	2010

ADDENDUM

As described in our earlier submittal, the continuing demand growth on both the East 63rd Street No.1 and East 75th Street area substations dictate the need for a new area substation in the North midtown Manhattan area. Based on the latest load projections, under 2nd contingency conditions, both East 63rd Street and East 75th Street will be overloaded by 2010.

Since our May 4, 2007 filing we have brought the Concept scope/estimate to an Order of Magnitude scope/estimate that includes: a new standard double syn bus area substation with three (3) 138/13KV 65 MVA transformers and associated switchgear sections with distribution feeders, 1-20 MVAR capacitor bank and a computer based substation automation system for control, indication and monitoring of substation functions.

Since the filing we received the approval of the NYC Department of Buildings to build in the existing East 74th Street generating station in the space vacated from the retirement of the turbine generator set.

The substation will be supplied from 138kV feeders which will emanate from Parkview Area Substation which is (in-turn) supplied from Mott Haven Switching Station. Part of Lenox Hill network (154 MW) will be transferred from East 75th Street to York to form the new Lexington Network, thereby achieving the required load relief for East 75th Street Substation. Thereafter, load relief for East 63rd St. No. 1 Area Substation will be possible by transferring the Hunter network (88 MW) to 75th Street, also in 2010 after York Substation has been established. This station also includes a "3G" design which would share two existing transformers at East 75th Street Substation via 13 kV connections to the York bus. The "3G" design results in the deferral of the 4th transformer and associated cable from 2010 to 2028 and the elimination of the 5th transformer and the 5th transmission line, as compared to the conventional design.

Cost Breakdown:
The $83M increase is the project cost is due to increases: in Construction Contracts; Transmission; Overheads, AFDC and Escalation; Contingency; and Adjustments in Miscellaneous Labor and Materials.

Original Rate Case Funding ($000):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
46,000	60,000	21,000	127,000

Revised Rate Case Funding ($000):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
79,000	97,000	34,000	210,000

Project / Program Title	West 49th St Substation Expansion
Status	Planning
Service Date	2011

ADDENDUM

As described in our earlier submittal, the expansion of the substation will utilize new 3000 Amps bus sections, disconnect switches and circuit breakers. Future projects will be configured such that the alternating load/source design criteria can be preserved. In the event that future projects consist of multiple new generations, the relocation of an existing load feeder would be necessary to create the load/source diversity.

Several developers have shown an interest in interconnecting to the W49th Street Substation, along with Con Edison's planned Manhattan Switching Station (M56) interconnection. Since no firm commitment on either project has yet been established, funding for this project has been delayed by one year.

Rate Case Funding ($000s):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
10,000	20,000	10,000	40,000

Revised Rate Case Funding: ($000s)

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
-	10,000	20,000	30,000

Project/Program Title	Generation Interconnection: Astoria (PAR) & Corona (Reactor)
Status	On Hold Pending NYISO Go Ahead Response
Estimated Service Date	2011

ADDENDUM

As described in our earlier submittal, in order to allow the interconnection and operation of additional generating resources within New York City, circuit breakers have been replaced and fault current limiting equipment is being installed at various substations. As part of the NYISO *Fault Current Mitigation Plan* for Class Year 2001 developers, a bus tie series reactor at the Corona 138-kV Substation and a bus tie phase angle regulator at the Astoria East Substation were identified as needed to mitigate incremental fault currents caused by the NYISO analysis for the Class Year 2001 developers.

Cost Breakdown:

The original estimate had a different scope and an unknown target date. Total funding for this project during the three year rate case has increased from $20 million, shown above, to approximately $60 million. The increase in funding reflects the current scope, equipment cost, current corporate overheads, and current man-hour labor rates. The above cash flows assume a 2011 service date.

Rate Case Funding ($000s):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
-	5,000	15,000	20,000

Revised Rate Case Funding:

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
5,000	20,000	35,000	60,000

Project/Program Title	Spare Transformer Program
Status	Engineering
Estimated Service Date	On-going

ADDENDUM

As described in our earlier submittal, this on-going program provides funding for the restoration work required to replace transformers in area and transmission substations as well as generating stations on an emergency basis, whenever they unexpectedly fail.

Cost Breakdown:
Since our May 4, 2007 filing, we have completed our reevaluation of our recent transformer failure activity and the increased transformer manufacturing lead times which resulted in amending our spare retention policy to insure reasonable probability of spare availability in the event of a transformer failure. This has resulted in a need to increase our spare transformer inventory as well as to purchase replacements for spares actually used. There have been recent cost increases in the basic materials required to manufacture transformers. This has had a dramatic impact on transformer costs increasing the Rate Case Forecast Total by $36,945,000 (see Page 2 for summary).

Rate Case Funding ($000s):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
16,500	12,000	12,000	40,500

Revised Rate Case Funding ($000):

Forecast 2008	Forecast 2009	Forecast 2010	Rate Case Forecast Total
21,200	33,960	22,285	77,445

Spare Transformer Inventory Increase Summary ($000s):

Additional Spare Units	Direct Cost	Loaded Cost	P.O. Placed	2008 Cash Flow	2009 Cash Flow	2010 Cash Flow	2011 Cash Flow	Total Cash Flow 2008 - 2010	Total Cash Flow 2008 - 2011
65 MVA Spare Unit	$2,750	$4,250	P.O. Placed w/ ABB	$1,100	$3,175	-	-	$4,275	$4,275
65 MVA Spare Unit	$2,750	$4,250	P.O. Placed w/ EBG	$1,100	$3,175	-	-	$4,275	$4,275
300 MVA PAR Spare Unit	$5,300	$8,285	Purchase Requisition Written – no P.O.		-	$8,285	-	$8,285	$8,285
300 MVA PAR Spare Unit	$5,300	$8,285	Purchase Requisition Written – no P.O.		-	-	$8,285	$0	$8,285
234 MVA Spare Unit	$4,300	$6,370	P.O. Placed with Siemens	$667	$5,037	-	-	$5,704	$5,704
234 MVA Spare Unit	$4,300	$6,370	P.O. Placed with Siemens	$666	$5,036	-	-	$5,702	$5,702
138 kV Series Reactor Spare Unit	$2,000	$3,065	Purchase Requisition Written – no P.O.	$500	$500	$2,000	-	$3,000	$3,000
Spare Unit Sub Total				$4,033	$16,923	$10,285	$8,285	**$31,241**	$39,499
234 MVA Rainey 7W Replacement	$4,300	$6,370	P.O. Placed with	$667	$5,037			**$5,704**	$5,704

Unit			Siemens						
Totals				$4,700	$21,960	$10,285	$8,285	**$36,945**	$45,230

Additional Spares Cost: **$31,241k**

2nd Rainey Failure Replacement Cost: **$5,704k**

Total Rate Case Impact: **$36,945k**