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New York State Electric & Gas Corporation
Electric System Condition Assessment Report
Case 07-M-0906
December 8, 2008

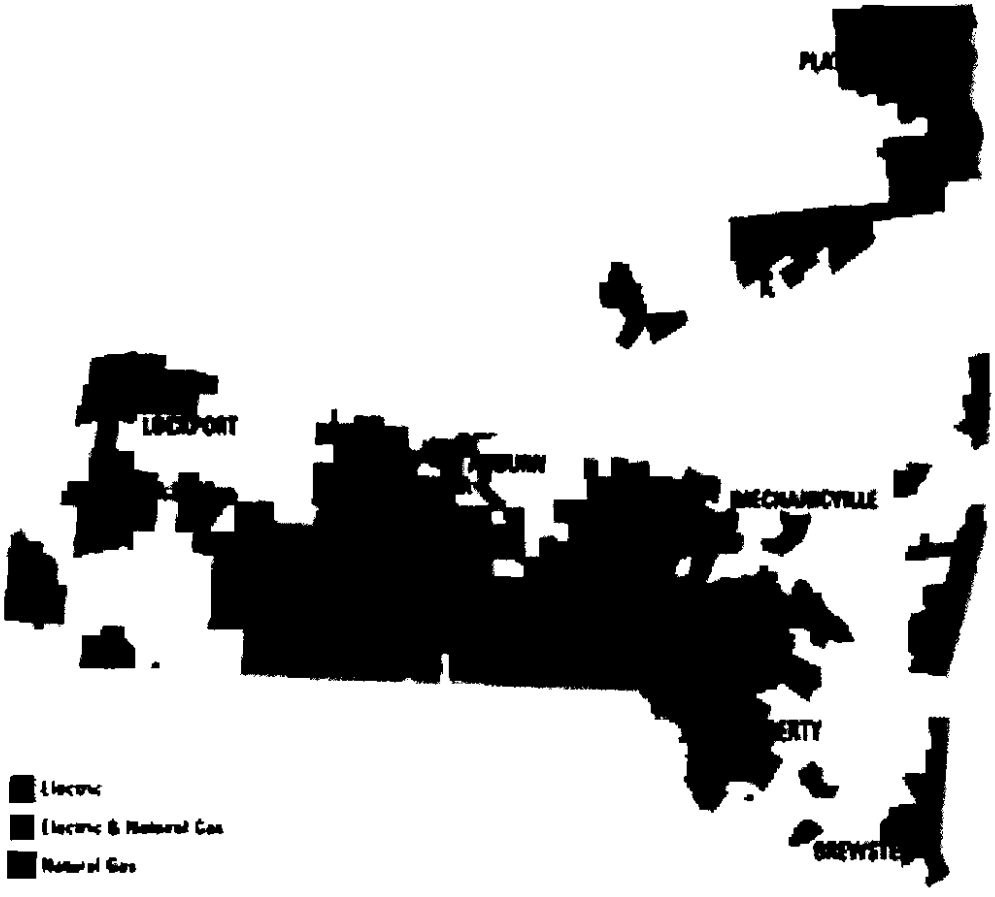


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1. Executive Summary

On September 9, 2008, the New York State Public Service Commission ("Commission") directed New York State Electric & Gas Corporation ("NYSEG") to file within ninety (90) days a report including: "an assessment of the physical conditions of all elements of its electric system; and repair plans, remedial actions, and monitoring programs for correcting problems with facilities found deficient."[1] Accordingly, NYSEG submits this "New York State Electric & Gas Corporation Electric System Condition and Assessment Report December 8, 2008" (the "Report").

In light of the relatively limited time available in which to prepare and submit the Report, the study methodology utilized by NYSEG relies predominantly on existing NYSEG electric system-related data. The data was compiled for the Report through a detailed review of internal documents and equipment operation records, including with respect to electric system equipment age, performance, and reliability.

Overall, the Report confirms that the NYSEG electric system is in sound condition. Like virtually all electric, or combined electric and gas, utilities in the United States, NYSEG confronts numerous challenges associated with its electric system infrastructure, including high equipment and materials costs, labor issues and aging. Notably, while the average age of NYSEG's electric system facilities is increasing, such ages are well within the Commission's rate allowance for these facilities. NYSEG meets the challenges presented to today's utilities by gathering infrastructure information through a number of activities and continuously evaluating the condition of its electric system via ongoing monitoring, maintenance and replacement programs. The Report concludes that the NYSEG electric system as a whole continues to function within expected parameters and in a manner that allows NYSEG to meet its long-standing commitment to reliable electric service. .

2. Introduction

2.1 Goal of the Report

The goal of the Report is to identify the various critical components of NYSEG's electric system, describe NYSEG's electric system monitoring programs, repair plans, remedial actions, and to assess the overall condition of NYSEG's electric system.

2.2 Supplemental Staff Data

In addition its primary goal, the Report includes certain electric system supplemental data requested by the New York State Department of Public Service Staff ("Staff") after

[1] Case 07-M-0906 - Joint Petition of Iberdrola, S.A., Energy East Corporation, RGS Energy Group, Inc., Green Acquisition Capital, Inc., New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation for Approval of the Acquisition of Energy East Corporation by Iberdrola, S.A., Abbreviated Order Authorizing Acquisition Subject to Conditions (Sept. 9, 2008) at Appendix 2 (1)(c) ("Abbreviated Order").

the issuance of the Abbreviated Order regarding NYSEG's substation, transmission, and distribution equipment including:

- Demographic and division statistics;
- Equipment age;
- Equipment classifications;
- Equipment ratings;
- System voltage classifications;
- Circuit inventories; and
- Maintenance project identification processes.

Data in response to Staff's request is being provided by NYSEG in the Report to the extent the information could be developed within the time available. Where the supplemental data provided is identified as interim or pending further research, NYSEG will provide final data as it becomes available.

2.3 NYSEG Electric System Overview

NYSEG serves approximately 865,000 electric customers geographically located across more than 40% of upstate New York. To provide electric service to these customers, NYSEG maintains an infrastructure of approximately 430 electric substations, 4,400 miles of transmission line, and 36,000 line miles of distribution plant. These systems operate at a range of voltages from 4.8 kV through 345 kV and are maintained from a state-wide central Energy Control Center ("ECC") located in Vestal, New York as well as from numerous divisional offices organized into four geographic regions: 1) Central; 2) East; 3) Lakes; and 4) West.

Table 2.1 below provides information regarding: the region; division; customer count; territory mileage; and crew locations for NYSEG's electric system operations.

Table 2.1
NYSEG Electric Facilities

Region	Division	Customer Count[2]	Territory (mi²)[3]	Crew Locations
Central	Binghamton	113,438	1,468	Binghamton, Cincinnatus, Owego
	Elmira	70,145	1,293	Corning, Elmira, Hammondsport, Watkins Glen
	Ithaca	57,683	1,009	Ithaca, Spencer, Interlaken
East	Brewster	85,372	531	Bedford, Brewster, Mahopac, Pawling
	Liberty	50,512	1,015	Liberty, Walden
	Mechanicville	47,000	834	Chatham, Clifton Park, Granville, West Stephentown
	Oneonta	91,526	3,782	Cobleskill, Cooperstown, Deposit, Fleischmanns, Norwich, Oneonta, Sidney, Stamford, Walton, Waterville
	Plattsburgh	40,697	3,544	Chatagauy, Lewis, Long Lake, Plattsburgh
Lakes	Auburn	36,222	499	Auburn
	Geneva	58,066	986	Geneva, Newark, Penn Yan
West	Hornell	37,113	1,402	Dansville, Hornell, Perry
	Lancaster	157,857	1,182	East Aurora, Gowanda, Hamburg, Lancaster
	Lockport	19,376	Included w/Lancaster	Lockport
Statewide – Energy Control Center ("ECC")				

2.4 Staff Requested Load Data

In response to Staff's request for supplemental information on load, Table 2.2 below provides specific load data on a company-wide and operating division basis for NYSEG's electric transmission and distribution system.[4]

---

[2] Current, per NYSEG Technical Services records, as of November 3, 2008.

[3] NYSEG Mapping data.

[4] Forecasted load growth rates are calculated by using a "Least Squares Regression Line Analysis" program. The inputs to the program are the division or system historical peak loads. The output of the "Least Squares Regression Line Analysis" program provides the growth rate, slope, and intercept data needed to calculate forecasted division and/or system loads.

Table 2.2
NYSEG SUMMER HISTORICAL AND FORECASTED DIVISION LOADS

AUBURN

YEAR	MW
2003	141.8
2004	146.5
2005	160.0
2006	162.4
2007	164.1
2008	152.7
2009	167.5
2010	171.1
2011	174.7
2012	178.3
2013	182.1
2014	185.9
2015	189.8
2016	193.8
2017	197.9
2018	202.0

BINGHAMTON

YEAR	MW
2003	330.9
2004	333.1
2005	375.5
2006	380.4
2007	385.7
2008	357.6
2009	394.9
2010	404.4
2011	414.1
2012	424.1
2013	434.3
2014	444.7
2015	455.4
2016	466.3
2017	477.5
2018	488.9

BREWSTER

YEAR	MW
2003	297.5
2004	308.4
2005	325.3
2006	315.2
2007	348.2
2008	327.3
2009	356.2
2010	364.4
2011	372.8
2012	381.4
2013	390.1
2014	399.1
2015	408.3
2016	417.7
2017	427.3
2018	437.1

ELMIRA

YEAR	MW
2003	257.0
2004	261.9
2005	252.2
2006	268.5
2007	273.5
2008	252.4
2009	274.3
2010	275.1
2011	276.0
2012	276.8
2013	277.6
2014	278.5
2015	279.3
2016	280.1
2017	280.9
2018	281.8

GENEVA

YEAR	MW
2003	201.2
2004	201.7
2005	202.9
2006	204.3
2007	204.8
2008	199.6
2009	205.6
2010	206.4
2011	207.3
2012	208.1
2013	208.9
2014	209.8
2015	210.6
2016	211.4
2017	212.3
2018	213.1

HORNELL

YEAR	MW
2003	88.0
2004	90.0
2005	96.1
2006	102.4
2007	104.5
2008	98.6
2009	107.7
2010	111.1
2011	114.5
2012	118.1
2013	121.7
2014	125.5
2015	129.4
2016	133.4
2017	137.5
2018	141.8

ITHACA

YEAR	MW
2003	167.6
2004	164.6
2005	169.5
2006	184.8
2007	190.5
2008	179.1
2009	195.3
2010	200.1
2011	205.1
2012	210.3
2013	215.5
2014	220.9
2015	226.4
2016	232.1
2017	237.9
2018	243.9

LANCASTER

YEAR	MW
2003	487.6
2004	490.9
2005	484.8
2006	502.8
2007	530.6
2008	500.1
2009	537.3
2010	543.5
2011	549.9
2012	556.2
2013	562.8
2014	569.4
2015	575.9
2016	582.6
2017	589.6
2018	596.4

LIBERTY

YEAR	MW
2003	139.5
2004	141.8
2005	146.1
2006	151.3
2007	153.2
2008	148.4
2009	155.8
2010	158.5
2011	161.1
2012	163.9
2013	166.7
2014	169.5
2015	172.4
2016	175.3
2017	178.3
2018	181.3

LOCKPORT

YEAR	MW
2003	66.8
2004	66.2
2005	68.5
2006	68.7
2007	69.5
2008	67.5
2009	69.9
2010	70.3
2011	70.8
2012	71.2
2013	71.6
2014	72.0
2015	72.5
2016	72.9
2017	73.3
2018	73.8

MECHANICVILLE

YEAR	MW
2003	116.2
2004	119.9
2005	133.6
2006	128.7
2007	135.8
2008	129.4
2009	139.2
2010	142.7
2011	146.2
2012	149.9
2013	153.6
2014	157.5
2015	161.4
2016	165.5
2017	169.6
2018	173.8

ONEONTA	
YEAR	**MW**
2003	198.6
2004	194.8
2005	195.3
2006	212.7
2007	214.1
2008	204.8
2009	217.3
2010	220.6
2011	223.9
2012	227.2
2013	230.6
2014	234.1
2015	237.6
2016	241.2
2017	244.8
2018	248.5

PLATTSBURGH	
YEAR	**MW**
2003	105.0
2004	109.5
2005	115.5
2006	116.2
2007	118.5
2008	117.5
2009	121.2
2010	124.0
2011	126.9
2012	129.8
2013	132.8
2014	135.8
2015	138.9
2016	142.1
2017	145.4
2018	148.8

Table 2.2 Continued NYSEG Summer Historical and Forecasted System Loads	
NYSEG	
YEAR	MW
1999	2324
2000	2363
2001	2542
2002	2580
2003	2567
2004	2483
2005	2827
2006	3125
2007	2940
2008	2919
2009	3218
2010	3314
2011	3413
2012	3515
2013	3620
2014	3728
2015	3840
2016	3954
2017	4072
2018	4194

3. Infrastructure Assessment

3.1 Infrastructure Classification and Rating

3.1.1 Substations

For the Report, NYSEG carefully reviewed its asset database, which contains information on equipment classifications and ratings, age profiles, and inspection records. This review was designed with the goal of allowing NYSEG to assess the overall reliability and operational status of its electric system infrastructure. NYSEG maintains 430 substations, with transformers and circuit breakers representing the principal substation equipment. A summary of substation equipment broken out by asset description and quantity is set forth below in Table 3.1.

Table 3.1
NYSEG Substation Transformer and Breaker Summary

Equipment Description	Quantity
Substation Transformers *- Grouped by low-side voltage (kV):*	1273
230 / 345	3
115	16
34.6 / 46	207
< =15	1049
Substation Circuit Breakers *- Grouped by voltage (kV):*	2001
230 / 345	53
115	239
34.6 / 46	649
<=15	1060
Other Equipment:	
Relays	15,000
Instrument Transformers	2,457
Regulators	1,124
Lightning Arrestors	7,508
Load Tap Changers (LTC)	233
Batteries	431

3.1.2 Mobile Substations and Spare Substation Transformers

In addition to the specific substation equipment identified in Table 3.1 above, NYSEG maintains a fleet of mobile substations and an inventory of spare substation transformers to support reliable substation operations. The mobile substation and spare transformer assets are owned by NYSEG to facilitate immediate availability. A description of NYSEG's mobile substation and spare substation transformer equipment is set forth in **Appendix A**.

3.1.3 Substation Transformer Ratings

In response to Staff's supplemental information request, specific information regarding substation transformer ratings is provided in **Appendix B.**

3.1.4 Transmission and Distribution ("T&D") Assets

NYSEG's T&D electric system includes circuits ranging from 4.8 kV through 345 kV. A description of NYSEG's T&D assets and related mileage is forth in Table 3.2 below.

Table 3.2
NYSEG T&D Circuit Cable Data

Circuit Cable (Miles)	4 kV	12 kV	34 kV	46 kV	69 kV	115 kV	230 kV	345 kV
Transmission	--	--	1,749	653	5.7	1,370	232	551
Distribution	31,015*			--	--	--	--	--
* Total distribution figure is for 4 kV through 34 kV.								

3.1.5 Bulk Transmission System

The bulk transmission system owned and maintained by NYSEG consists of 230 kV and 345 kV circuits that feed from Pennsylvania into Western New York, and across the Southern Tier. These lines are the 230 KV and 345kV circuits identified in **Appendix D**. NYSEG also operates transmission (115 kV and below) and distribution in each its 13 divisions.

3.1.6 Principal T&D System Components

The principal T&D system components are structures, conductors, and transformers. Table 3.3 below provides a summary of these components. A complete listing of T&D asset data is provided in **Appendices C and D**. Set forth below in Table 3.3 is a summary of NYSEG's T&D assets by description and quantity.

Table 3.3
NYSEG T&D Asset Data

Equipment Description	Quantity
Transmission Poles and Towers	79,053
Distribution Poles	802,930
Transmission OH Circuit Miles – 345 kV	551
Transmission OH Circuit Miles – 69 to 344 kV	1,692
Transmission OH Circuit Miles – below 69 kV	2,413
Distribution OH Circuit Miles	31,015
Distribution Transformers	306,528
Transmission Breakers (>30kV)	941
Transmission Breakers (<30kV)	1,060
Transmission Breakers (low side >30kV)	228
Transmission Breakers (low side <30kV)	1,050

3.1.7 Mobile Generators

Pursuant to Staff's supplemental data request, the Report addresses in this section the availability of mobile generation. NYSEG owns and maintains a limited number of mobile generators to provide emergency generation during an electrical outage. NYSEG's fleet of twenty-nine mobile generators is stored in Binghamton, New York. All

generators are 120/240 volt units with the following ratings:

- 15 units rated at 5 kW;
- 10 units rated at 7.5 kW; and
- 4 units rated at 8 kW.

In addition, a number of smaller sized mobile generators (typically 1.5 kW or less) are stored and maintained at specific local division offices. These small capacity mobile generating units are used, as needed, to serve critical care customers and other smaller load customers during an outage.

NYSEG has established a process for seeking access to mobile generators from other sources, on an as needed basis, during system emergencies. The decision on whether to procure additional third-party mobile generators is based on the factual circumstances existing during particular contingencies.

For example, mobile generation was included as a part of the Watercure Substation contingency in 2008. Mobile generation sufficient to ensure power for critical water, sewer, communications, and other designated loads was provided. For the Watercure substation contingency, NYSEG utilized its own mobile generation resources and rented 116 mobile generation units ranging in size from 1 KW to 1000 KW. All 116 units sought to be obtained from third-party vendors were available to NYSEG within the contractually mandated time period.

3.2 Age Profiles

3.2.1 Equipment Age

Equipment age is considered as an important component of the electric system assessment. Since relative age may increase the risk that a system element may fail under conditions of stress, age is an important predictor for planning and operational purposes. The average age for NYSEG's substation and T&D equipment and the Commission approved depreciation rate allowances are set forth in Table 3.4 below.[5] Notably, the system average ages set forth in Table 3.4 are well within the life spans and depreciation schedules approved by the Commission for these facilities.

[5] On August 23, 2006, the Commission approved the Staff's depreciation rate adjustments as provided in Staff's testimony of record in Case 05-E-1222 - Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation for Electric Service, Order Adopting Recommended Decision with Modifications, at 68 (Aug. 23, 2006); Prepared Exhibits of Electric Rates Panel Exhibit ___ (ERP-2).

Table 3.4
NYSEG T&D Asset Data

Equipment Description	Average Age (Years)	Commission Approved Depreciation Rates	Identification
Substation Transformers			
Transmission	39	60.0	Transmission Station Equipment
Distribution	43	55.0	Distribution Station Equipment
Substation Circuit Breakers *- Grouped by voltage (kV):*			
230 / 345	33	58	Transmission Station Equipment, Distribution Station Equipment (wtd avg)
15	37	58	Transmission Station Equipment, Distribution Station Equipment (wtd avg)
T&D Equipment			
Transmission Poles and Towers	43	62	Transmission Towers & Fixtures, Transmission Poles & Fixtures (wtd avg)
Distribution Poles	37	58	Distribution Poles & Fixtures
Transmission Overhead	42	72	Transmission Overhead Conductors & Devices
Transmission Underground	30	50	Transmission Underground Conductors & Devices
Distribution Overhead	40	65	Distribution Overhead Conductors & Devices
Distribution Underground	21	55	Distribution Underground Conductors & Devices
Distribution Transformers	26	42	Distribution Line Transformers
Transmission Breakers (>30kV)	33	60	Transmission Station Equipment

3.2.2 Age Distribution Graphs

In accordance with Staff's supplemental information request, age distribution graphs are provided in Figures 3.1 through 3.11.

Figure 3.1
Age Profile For NYSEG Transformers – Distribution

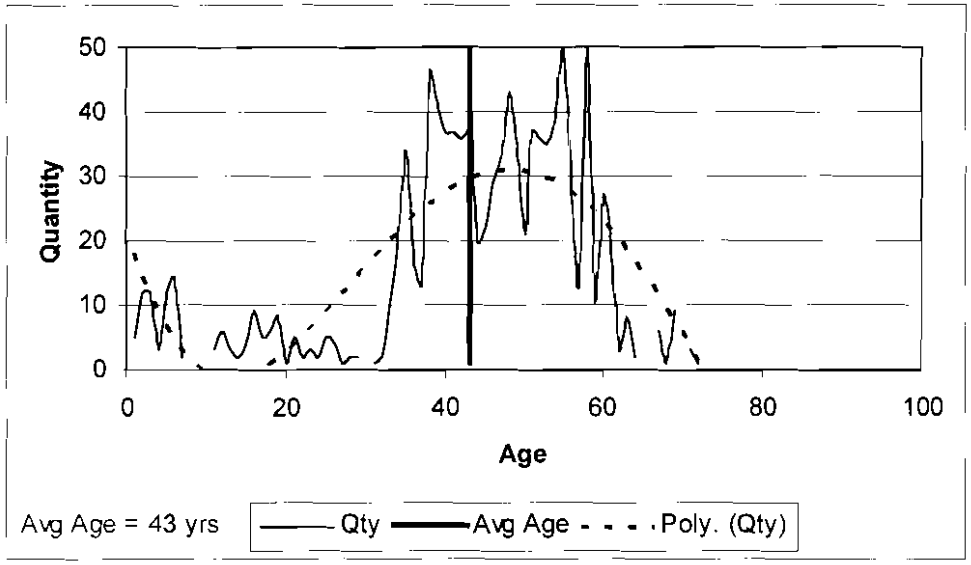


Figure 3.2
Age Profile For NYSEG Transformers – Transmission

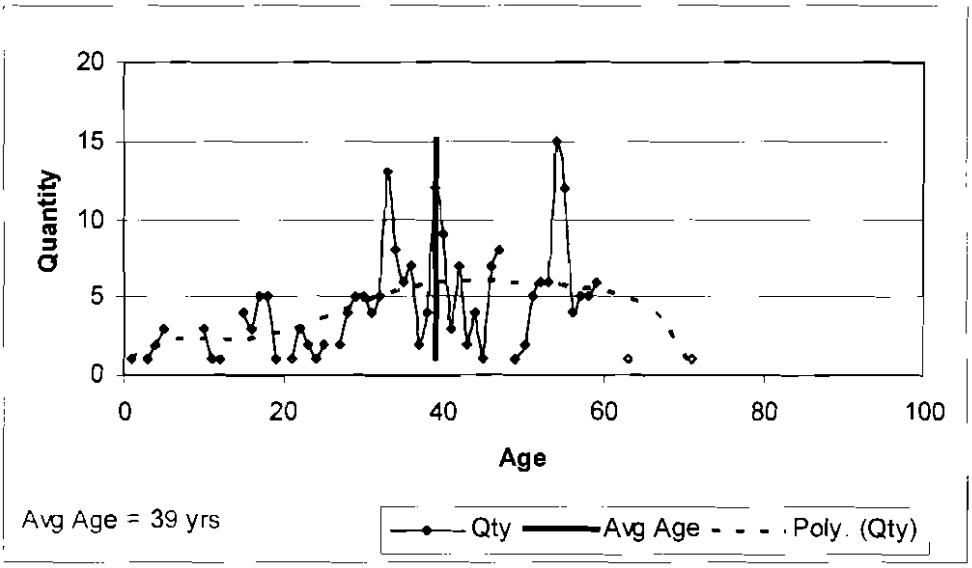


Figure 3.3
Age Profile For NYSEG Breakers – Distribution

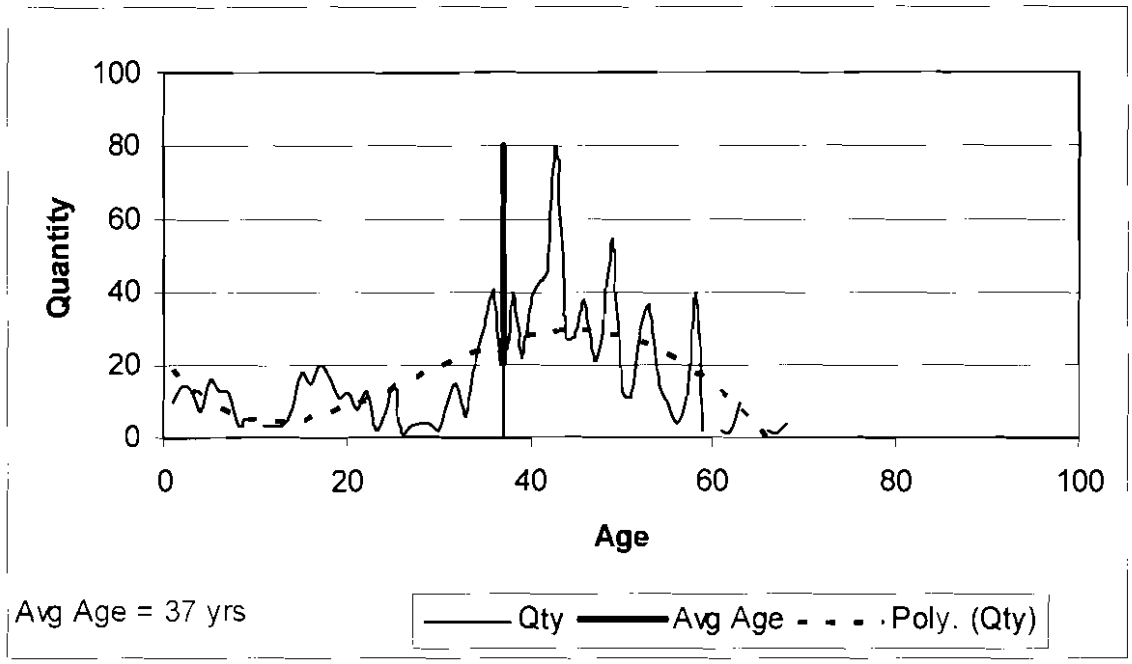


Figure 3.4
Age Profile For NYSEG Breakers – Transmission

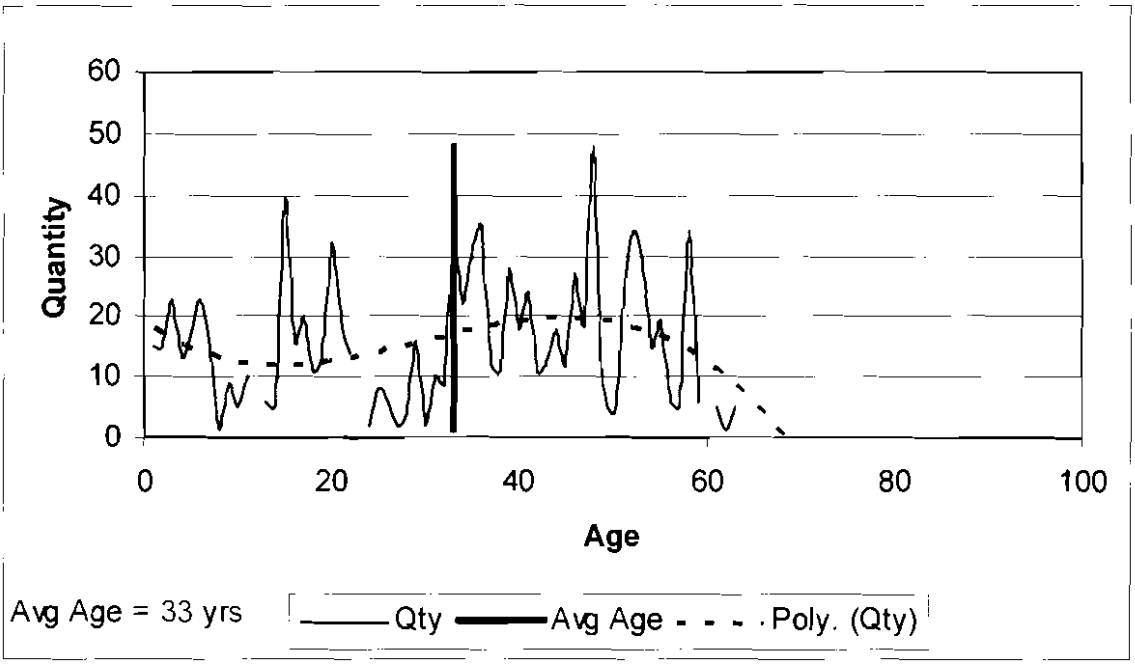
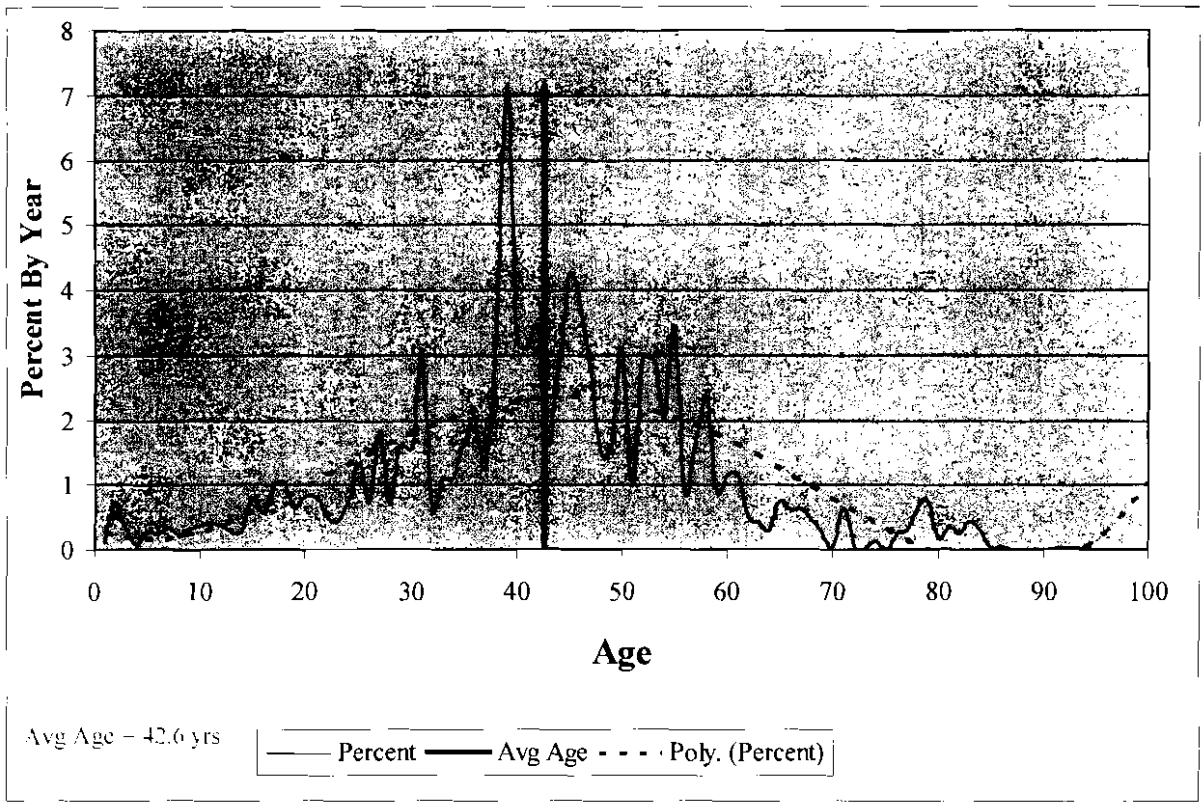


Figure 3.5
Age Profile For NYSEG Transmission Structures



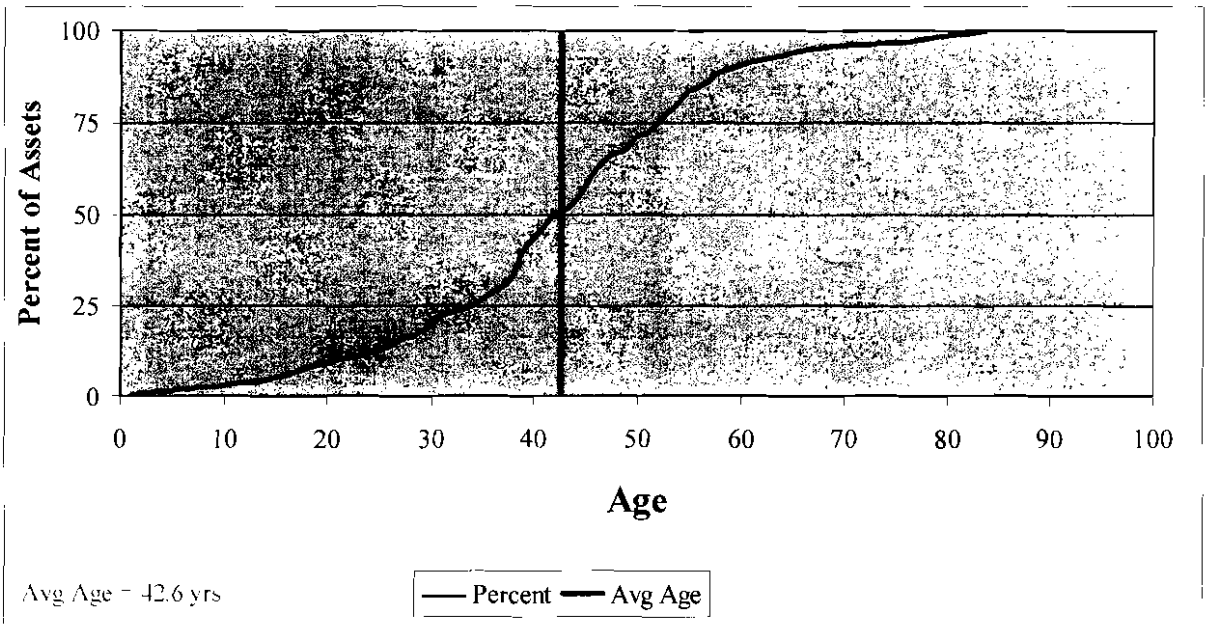
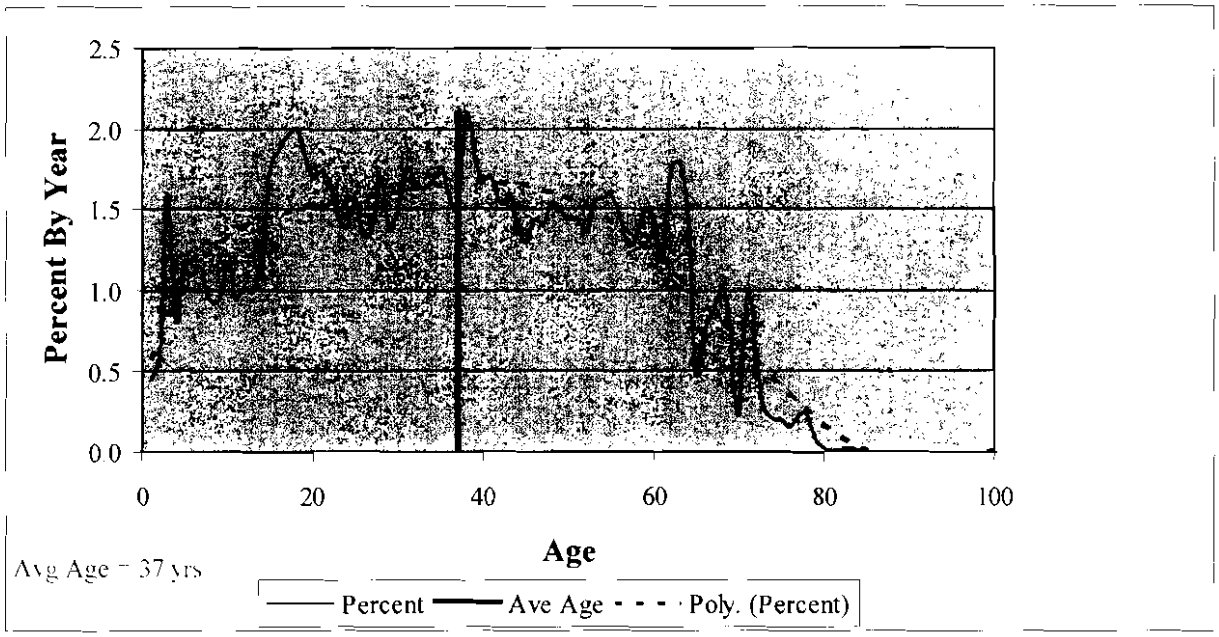


Figure 3.6
Age Profile For NYSEG Distribution Structures



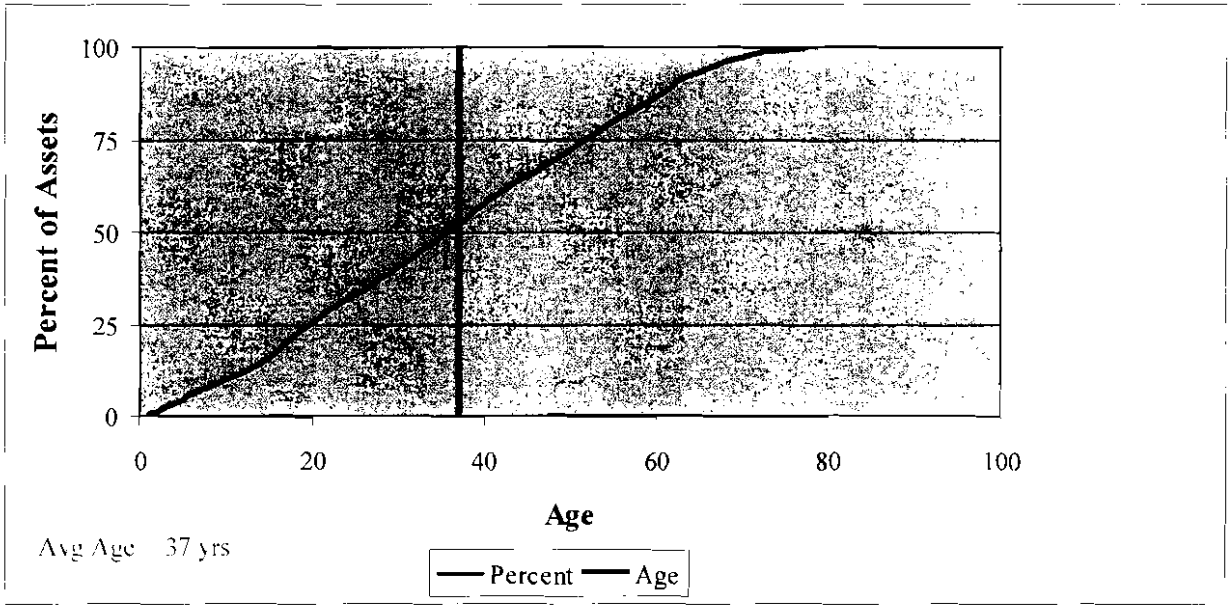
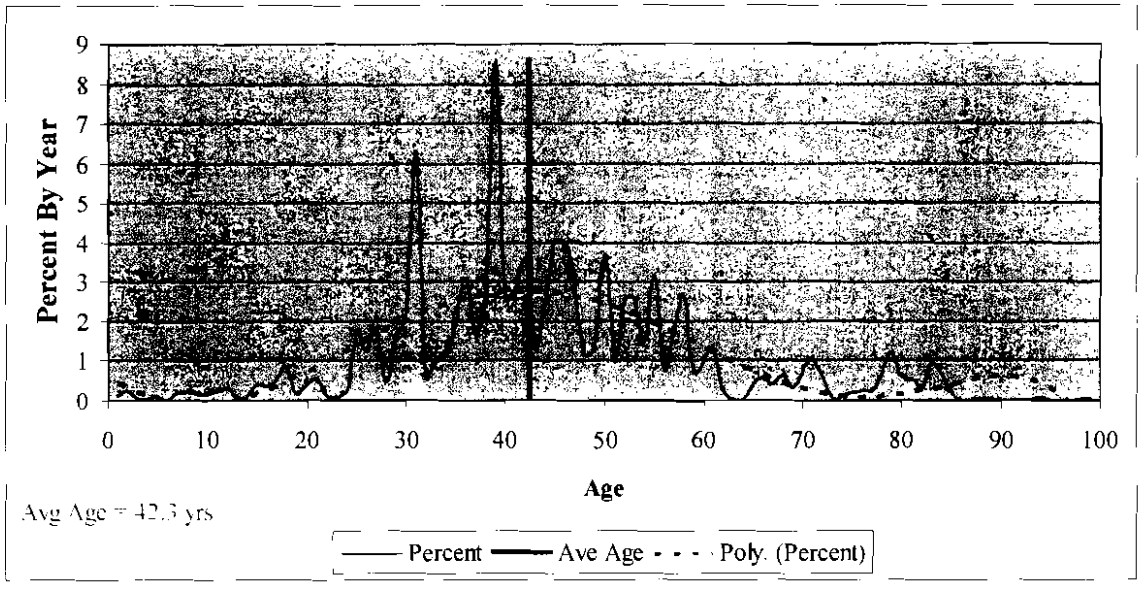


Figure 3.7
Age Profile For NYSEG Transmission Conductor



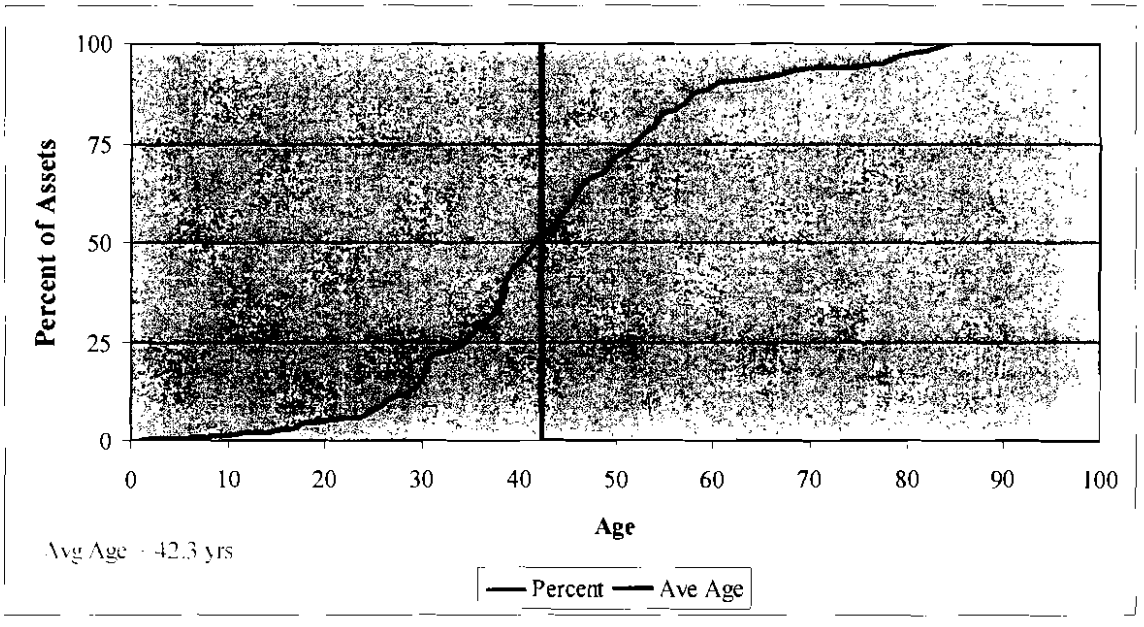
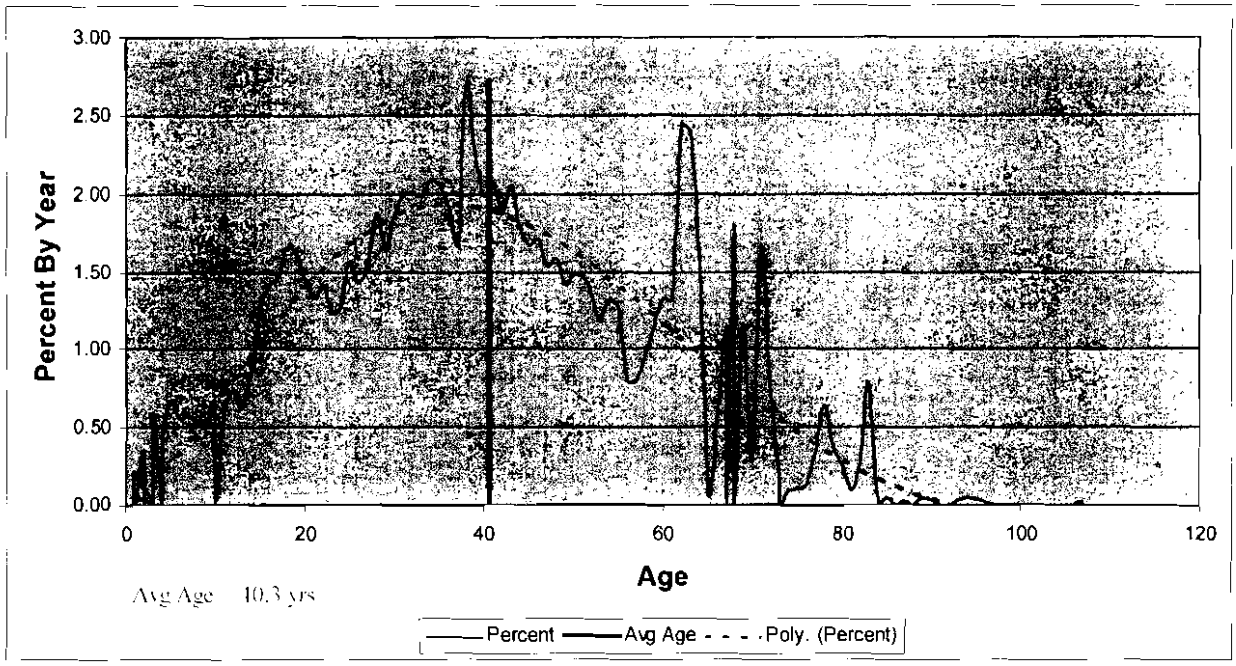


Figure 3.8
Age Profile For NYSEG Distribution Conductor



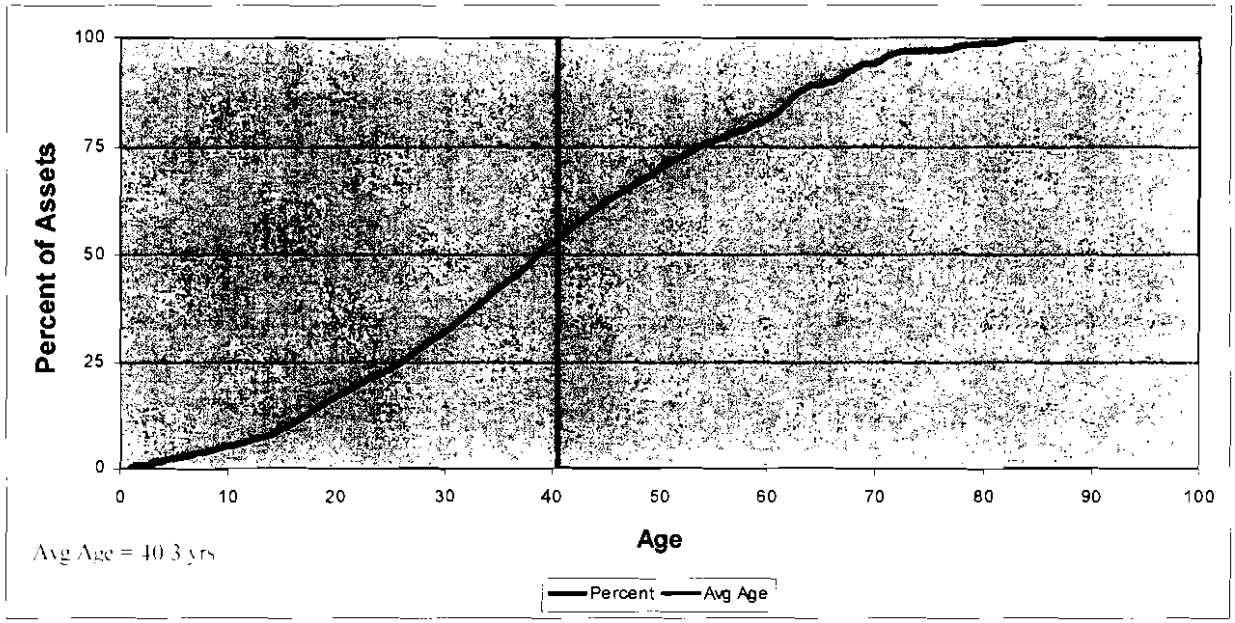
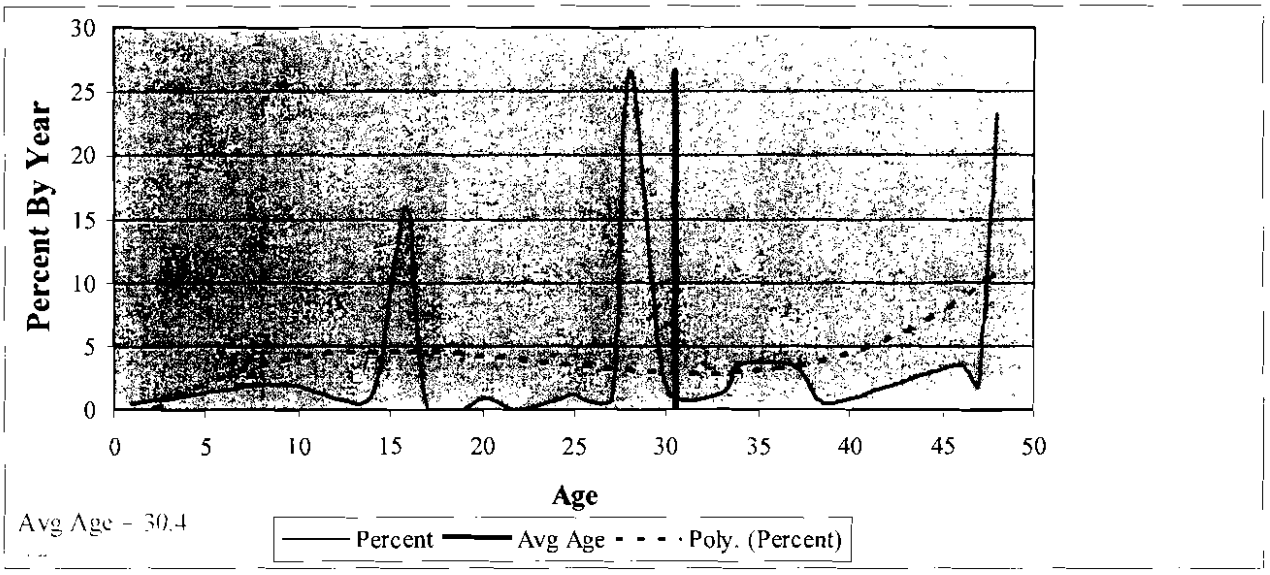


Figure 3.9
Age Profile For NYSEG Transmission Cable



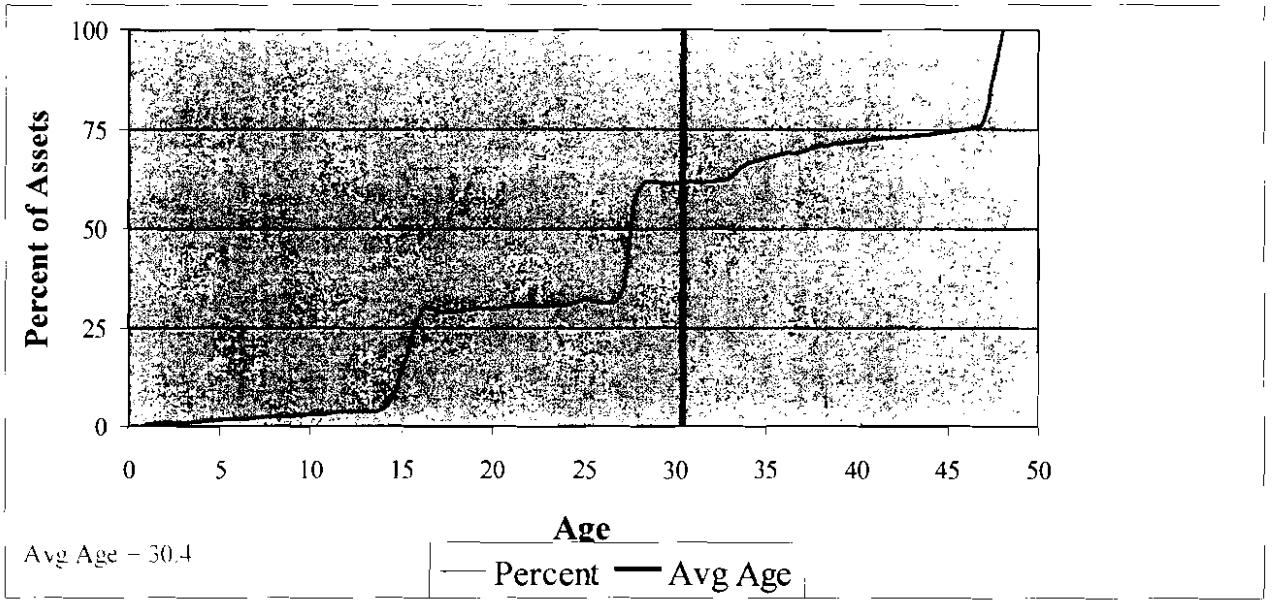
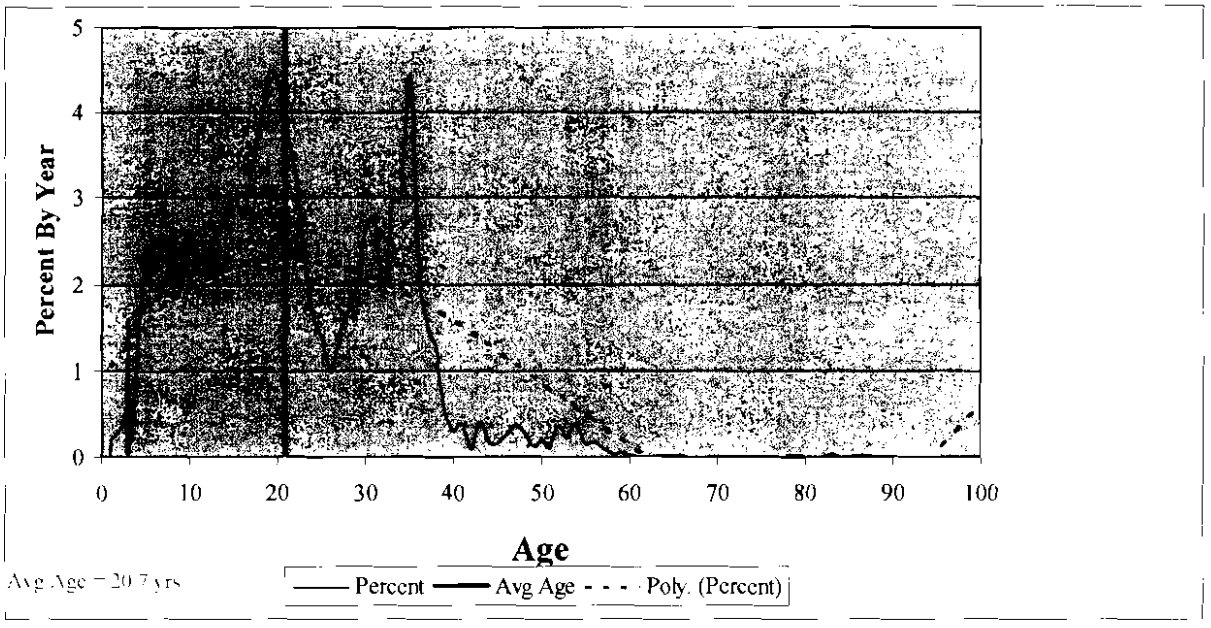


Figure 3.10
Age Profile For NYSEG Distribution Cable



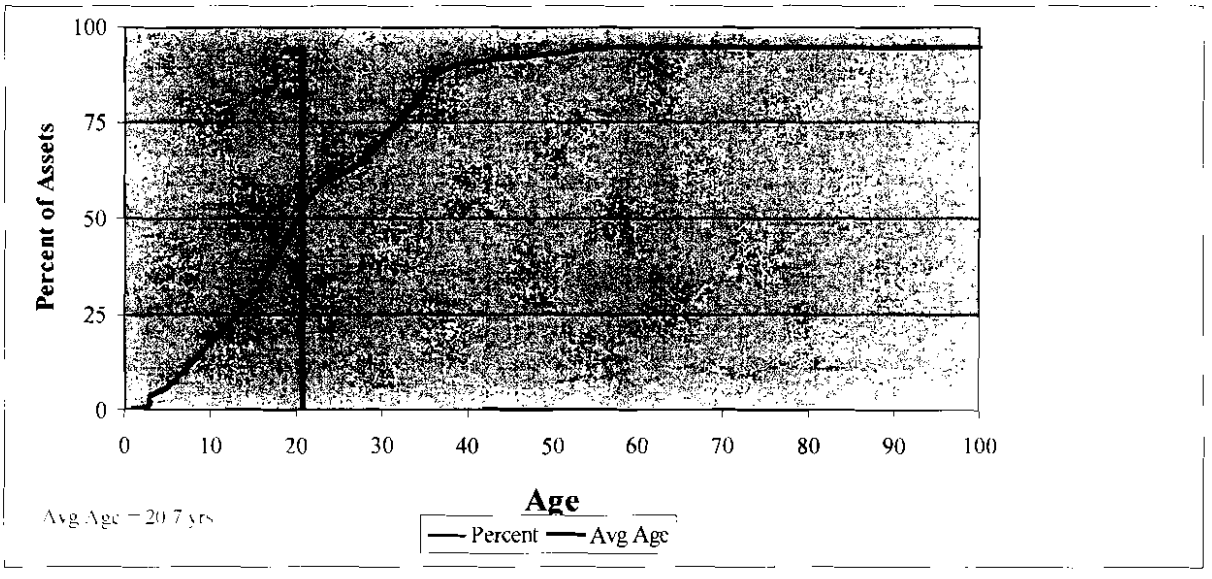
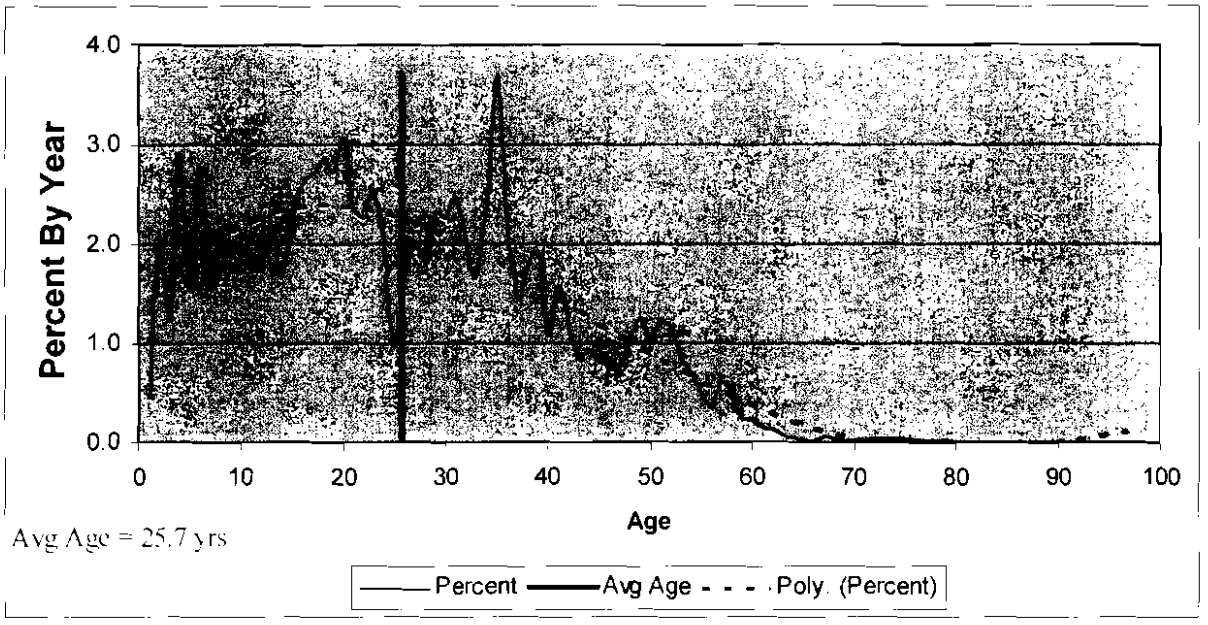
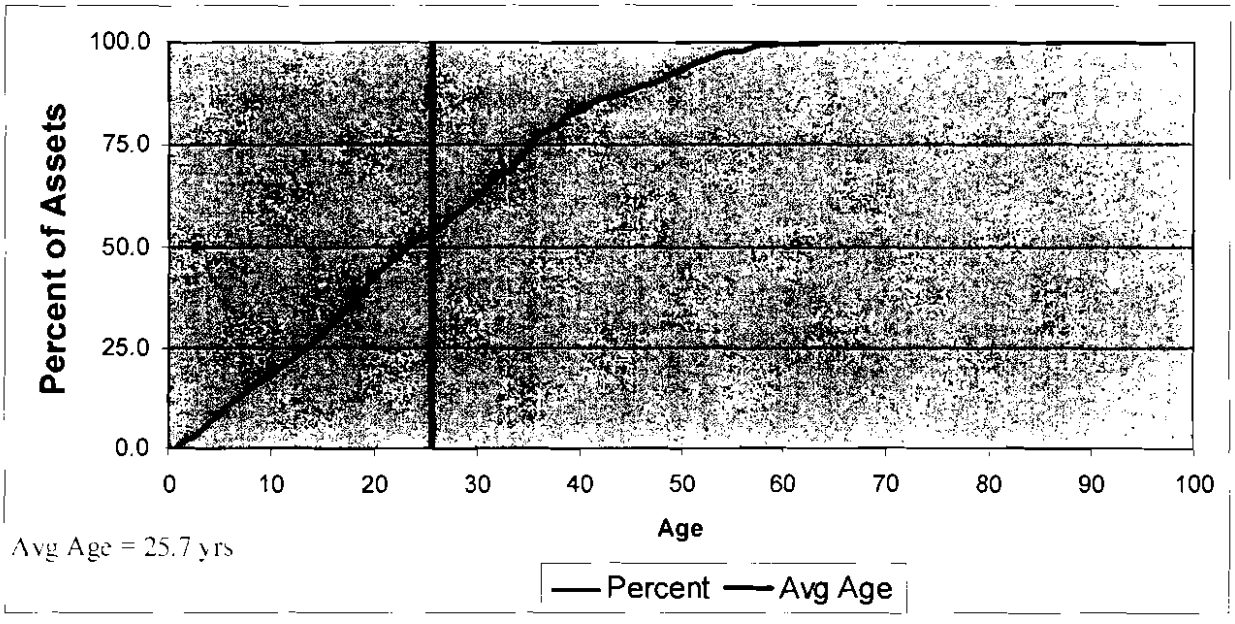


Figure 3.11
Age Profile For NYSEG Distribution Transformers





The graphs set forth above illustrate the average age and age distribution for key components on the NYSEG's substation and T&D systems. For substation equipment, each graph illustrates the number of units purchased in a given year that are active on the electric system. For the T&D assets, a second graph is also provided which illustrates the cumulative number of assets that are at a specific age or younger (*e.g.*, Figure 3.6 illustrates that 50% of distribution structures are 37 years old or younger).

These graphs illustrate the average age of system components and provide historical data regarding the equipment added in a given year.

3.3 Inspection Programs and Records

3.3.1 Inspection Programs

Recognizing the increasing average age of components of its electric system, NYSEG has continued to focus on an inspection regime that is intended to preserve the integrity of NYSEG's energy delivery system and minimize equipment failure. In support of this objective, NYSEG has implemented specific maintenance programs to appropriately test and monitor equipment to ensure adequate performance. The Operations Department performs the majority of equipment testing and monitoring activity. The Technical Services Group creates the appropriate test and inspection procedures and evaluates field results.

3.3.2 Deficiencies Remedied

Any deficiencies that are identified by the Technical Services Group or the Operations Department are documented, and NYSEG prioritizes and completes all necessary repair work. To the extent that any deficiencies are identified, they are prioritized as a Level I, II, or III concern. As described in detail in Section 3.5.3 below, Level I deficiencies are the most severe and they are remedied before Level II or Level III deficiencies. As a result of this prioritization process, NYSEG is able to focus its finite resources on addressing those deficiencies that create the greatest concern for the reliability and safety of the electric system.

3.3.3 Substation Programs

3.3.3.1 Substation Critical Equipment Maintenance Plans

NYSEG's Technical Services Group maintains maintenance plans for each type of substation equipment. The plans specify the inspections and tests appropriate for each equipment classification. The Technical Services Group also specifies, as part of the maintenance plans, a required test or inspection time interval. NYSEG's maintenance programs are designed and based on a proactive philosophy in order to minimize unscheduled interruptions and ensure strong system reliability and performance. Substation monitoring includes a bi-monthly inspection of substations and testing of specific substation equipment. Observations are captured in an electronic database and continuously evaluated by Technical Services Group personnel. A brief description of NYSEG's major substation monitoring programs follows:

Thermographic Inspection Program – The thermographic inspection program consists of a comprehensive scan of substation equipment to identify the existence of heating conditions on components.

Corona Detection Program – The corona detection program is a comprehensive scan of electric substations to identify self-sustained localized ionization of gas surrounding an energized electrode or equipment. By detecting defective components early, unscheduled outages are avoided. This scan also identifies sources of radio frequency ("RF") interference and audio noise.

Substation Battery Maintenance Program – The battery maintenance program for substation batteries includes routine inspections, battery resistance testing, discharge tests, and battery replacement when required.

Substation Voltage Regulator Maintenance Program – The voltage regulator maintenance program replaces obsolete and defective station voltage regulators with new or reconditioned units system-wide and verifies that all controls are operating properly. A thermovision scan may also be performed as a part of this test program.

Substation Transformer Maintenance Program – The substation transformer maintenance program includes inspection of all critical functions to maintain the proper operation of substation transformers. This includes load-tap changer ("LTC") internal maintenance. Transformer maintenance includes a full battery of testing including insulation, winding, and accessories. Elimination of PCB contaminated transformer oil is another major initiative related to this maintenance program.

Substation Circuit Breaker Maintenance Program – The substation circuit breaker maintenance program specifies how to perform required maintenance on substation circuit breakers. Maintenance includes on-line external inspections, off-line internal inspections and oil tests.

System Protection Maintenance Program – The system protection maintenance program maintains the integrity of the electric system's protective relaying components. The maintenance program complies with the Northeast Power Coordinating Council maintenance criteria for transmission relays on bulk power systems. This program includes a comprehensive relay maintenance inspection for proper equipment protection. This program is designed to reduce the likelihood of faulty operation while providing for enhanced personnel safety.

3.4 Less Critical Equipment Schedule

The test interval for the principal substation equipment (transformers and circuit breakers) dictates the overall substation testing schedule. Other less critical equipment, such as lightning arrestors and instrument transformers, is tested at intervals designed to coordinate efficiently with testing of the major equipment.

Set forth below in Table 3.5 is a description of specific substation equipment and relevant information about the nature and timing of its inspection, testing and overhaul.

Table 3.5
Substation Equipment Inspections

Equipment Description	Doble Test (Years)	Oil Test (Years)	Infrared Test (Years)	Inspection	Overhaul
Transformer (LTC)					
34.6 & 46 kV	w/Inspection	1	1	2 months	See Note 1
115 kV	w/Inspection	1	1	2 months	See Note 1
230 & 345 kV	w/Inspection	0.5	1	2 weeks	See Note 1
Transformer (non-LTC)					
15 kV	7-12	2-3.5	1	2 months	N/A
34.6 & 46 kV	7-12	2-3.5	1	2 months	N/A
115 kV	6-8	1-3	1	2 months	N/A
230 & 345 kV	5	0.5-2.5	1	2 weeks	N/A
Circuit Breaker					
15 kV	6-8	2	1	2 months	See Note 2
34.6 & 46 kV	4-8	2	1	2 months	See Note 2
115 kV	4-6	2	1	2 months	See Note 2
230 & 345 kV	4-6	N/A	1	2 weeks	See Note 2
Note 1: LTC inspections are based on the type of LTC and the number of operations **Note 2**: Overhauls are based on the test results and the number of operations					

3.5 Evaluation of Substation Test and Inspection Data

Evaluation of test and inspection data is performed by the Technical Services Group to determine equipment status and to identify necessary corrective maintenance. NYSEG assesses the serviceability of its substation equipment on a continuous basis and applies equipment life-extension practices where appropriate. In general, fact specific cost-benefit analyses are performed to evaluate available repair versus replacement options for major system components.

NYSEG also continuously reviews the effectiveness of its preventative maintenance programs. A proactive approach is utilized to ensure the integrity of the equipment with adjustments, if needed, made on an ongoing basis to NYSEG's maintenance plans to ensure effective infrastructure monitoring.

3.5.1 T&D Inspection and Maintenance Programs

The Technical Services Group maintains a series of maintenance plans that pertain to various T&D equipment classifications. NYSEG has developed maintenance plans for different classifications of T&D equipment. T&D assets are monitored using a series of test and inspection procedures. The results obtained regarding stray voltage arising out of the inspection procedures are reported as set forth in the Commission Order

concerning Stray Voltage (Case 04-M-0159). T&D inspections are based upon the Technical Service Group's maintenance plans and, in general, are conducted on a five-year cycle with 20 percent of the system targeted for inspection each year.

NYSEG's bulk power transmission and critical circuits are inspected annually.

Stray voltage tests are performed on 100 percent of the T&D system each year.

Another benefit of the stray voltage test program is that personnel visit every location each year. Obvious safety or performance issues (*e.g.*, broken down grounds, loose ground rod attachments) are identified during these visits, and any critical issues found during the visits are addressed immediately to ensure safe and reliable system operation.

For inspection purposes, assets are managed via four classifications: streetlights, underground, overhead distribution, and transmission. A brief description of the program for each classification follows:

Streetlights – NYSEG's current street light facilities inspection program was commenced in March 2006. This program provides a comprehensive inspection of metal streetlight poles. It is intended to identify and correct any electric deficiencies. The inspection includes but is not limited to the following items: poles, handholes, cable integrity, connections, pole bases, and fixtures. The streetlight facilities inspection contractor will perform an annual inspection of 25 percent of NYSEG owned metal streetlights annually for the next four years. In 2010, the program will inspect 20 percent of NYSEG's streetlights annually.

Underground – The underground inspection program provides an inspection of NYSEG manholes, handholes, vaults, sub-holes, padmount transformers, padmount switchgear and all equipment, devices and cables present within these structures. The inspection also reviews structural integrity, drainage, electrical integrity, and the mechanical integrity of all equipment and cables (as permissible by visual inspection).

Overhead Distribution – The overhead distribution inspection and maintenance program identifies and corrects electric overhead distribution circuit deficiencies on all poles, equipment, and devices present on all distribution structures. This includes guy wires/anchors, crossarms, switches, conductors, and other accessory equipment.

Transmission – The transmission facility inspection program addresses all overhead transmission towers, poles, and structures with operating voltages at or above 34.5 kV. Transmission poles with distribution underbuild are included in the transmission category. Each division is required to visually inspect 20 percent of all distribution circuits annually within their respective division. On the twenty percent of identified circuits, 100 percent of all overhead assets must be inspected. In addition, bulk power transmission and critical circuits are inspected annually.

3.5.2 T&D Inspection Procedures

Visual inspections are performed on the T&D system to assess the condition of critical components. If problems are found, proper corrective maintenance is scheduled. If visual inspection results are inconclusive, then follow-up testing, such as wood core sampling or thermography may, where appropriate, be conducted. The Technical Services Group determines the specific assets that need to be inspected and forwards inspection work notifications to the Operations Department. Operations personnel then perform the inspections, schedule and perform any Level I work that is required, and return inspection results to the Technical Services Group. The Technical Services Group is responsible for tracking any corrections to identified problems and utilizing the inspection data to evaluate overall system performance. Table 3.6 below sets forth the T&D equipment electronic inspection checklist.

Table 3.6

T&D Equipment Electronic Inspection Checklist

Class	Measure Pnt	Response
STRUCTURE	GUY_ANCHOR	
STRUCTURE	GUY_ANCHOR	10 - No Problems Found
STRUCTURE	GUY_ANCHOR	14 - Corrosion/Rust
STRUCTURE	GUY_ANCHOR	16 - Covered with Earth
STRUCTURE	GUY_ANCHOR	20 - Abrasion/Worn/Damaged
STRUCTURE	GUY_ANCHOR	22 - Earth Disturbed/Washed Out
STRUCTURE	GUY_ANCHOR	36 - Vegetation Overgrown
STRUCTURE	GUY_ANCHOR	37 - Vines
STRUCTURE	GUY_ANCHOR	50 - Disconnected
STRUCTURE	GUY_ANCHOR	51 - Guy Loose
STRUCTURE	GUY_ANCHOR	60 - Tracking/Lightning/Flashover
STRUCTURE	GUY_ANCHOR	65 - Bent/Misaligned/Pulled
STRUCTURE	GUY_ANCHOR	70 - Foreign Object
STRUCTURE	GUY_ANCHOR	B1 - Non-Standard Installation
STRUCTURE	GUY_ANCHOR	C1 - Unable to Inspect
STRUCTURE	GUY_ANCHOR	E1 - Other
STRUCTURE	INSULATOR_SUSPENSION	
STRUCTURE	INSULATOR_SUSPENSION	10 - No Problems Found
STRUCTURE	INSULATOR_SUSPENSION	12 - Contamination
STRUCTURE	INSULATOR_SUSPENSION	18 - Chipped/Cracked
STRUCTURE	INSULATOR_SUSPENSION	20 - Abrasion/Worn/Damaged
STRUCTURE	INSULATOR_SUSPENSION	29 - Bird Droppings
STRUCTURE	INSULATOR_SUSPENSION	60 - Tracking/Lightning/Flashover
STRUCTURE	INSULATOR_SUSPENSION	Mis-aligned/Pulled
STRUCTURE	INSULATOR_SUSPENSION	70 - Foreign Object
STRUCTURE	INSULATOR_SUSPENSION	85 - Gunshot
STRUCTURE	INSULATOR_SUSPENSION	87 - Hardware Backed Out/Off
STRUCTURE	INSULATOR_SUSPENSION	90 - Heat/Corona Damage
STRUCTURE	INSULATOR_SUSPENSION	B1 - Non-Standard Installation
STRUCTURE	INSULATOR_SUSPENSION	C1 - Unable to Inspect
STRUCTURE	INSULATOR_SUSPENSION	E1 - Other
STRUCTURE	RIGHT_OF_WAY	
STRUCTURE	RIGHT_OF_WAY	10 - No Problems Found
STRUCTURE	RIGHT_OF_WAY	12 - Contamination
STRUCTURE	RIGHT_OF_WAY	22 - Earth Disturbed/Washed Out
STRUCTURE	RIGHT_OF_WAY	24 - Encroachment Possible
STRUCTURE	RIGHT_OF_WAY	31 - Danger Timber
STRUCTURE	RIGHT_OF_WAY	32 - Trash/Debris
STRUCTURE	RIGHT_OF_WAY	33 - Trees Too Close
STRUCTURE	RIGHT_OF_WAY	35 - Vandalism
STRUCTURE	RIGHT_OF_WAY	36 - Vegetation Overgrown
STRUCTURE	RIGHT_OF_WAY	37 - Vines
STRUCTURE	RIGHT_OF_WAY	41 - Evidence of Flammable Material Near
STRUCTURE	RIGHT_OF_WAY	42 - Tall Vegetation Under Conductors
STRUCTURE	RIGHT_OF_WAY	43 - Trees Leaning or Encroaching - Side
STRUCTURE	RIGHT_OF_WAY	70 - Foreign Object
STRUCTURE	RIGHT_OF_WAY	C1 - Unable to Inspect
STRUCTURE	RIGHT_OF_WAY	E1 - Other
STRUCTURE	SHIELD_WIRE	
STRUCTURE	SHIELD_WIRE	10 - No Problems Found
STRUCTURE	SHIELD_WIRE	20 - Abrasion/Worn/Damaged
STRUCTURE	SHIELD_WIRE	30 - Birdcaged
STRUCTURE	SHIELD_WIRE	40 - Corrosion/Rust
STRUCTURE	SHIELD_WIRE	50 - Disconnected
STRUCTURE	SHIELD_WIRE	60 - Tracking/Lightning/Flashover
STRUCTURE	SHIELD_WIRE	70 - Foreign Object
STRUCTURE	SHIELD_WIRE	80 - Galloping
STRUCTURE	SHIELD_WIRE	90 - Heat/Corona Damage
STRUCTURE	SHIELD_WIRE	A1 - Improper Sag
STRUCTURE	SHIELD_WIRE	B1 - Non-Standard Installation
STRUCTURE	SHIELD_WIRE	C1 - Unable to Inspect
STRUCTURE	SHIELD_WIRE	D1 - Aerial Marker
STRUCTURE	SHIELD_WIRE	E1 - Other
STRUCTURE	SPACER	
STRUCTURE	SPACER	10 - No Problems Found
STRUCTURE	SPACER	20 - Abrasion/Worn/Damaged
STRUCTURE	SPACER	50 - Disconnected
STRUCTURE	SPACER	60 - Tracking/Lightning/Flashover
STRUCTURE	SPACER	70 - Foreign Object
STRUCTURE	SPACER	80 - Galloping
STRUCTURE	SPACER	90 - Heat/Corona Damage
STRUCTURE	SPACER	B1 - Non-Standard Installation
STRUCTURE	SPACER	C1 - Unable to Inspect
STRUCTURE	SPACER	C2 - Spacer-induced Damage
STRUCTURE	SPACER	D2 - Twisted/Deformed
STRUCTURE	SPACER	E1 - Other
STRUCTURE	STRUCTURE	
STRUCTURE	STRUCTURE	10 - No Problems Found
STRUCTURE	STRUCTURE	12 - Contamination
STRUCTURE	STRUCTURE	18 - Cracked/Damaged
STRUCTURE	STRUCTURE	22 - Earth Disturbed/Washed Out
STRUCTURE	STRUCTURE	34 - Submerged
STRUCTURE	STRUCTURE	35 - Vandalism
STRUCTURE	STRUCTURE	37 - Vines on Structure
STRUCTURE	STRUCTURE	60 - Tracking/Lightning/Flashover
STRUCTURE	STRUCTURE	62 - Crossarm Damage
STRUCTURE	STRUCTURE	64 - Improperly Loaded
STRUCTURE	STRUCTURE	66 - Animal/Insect Damage
STRUCTURE	STRUCTURE	70 - Foreign Object
STRUCTURE	STRUCTURE	72 - Down Ground Damage
STRUCTURE	STRUCTURE	73 - Pole Top Damage/Decay
STRUCTURE	STRUCTURE	74 - Bowed/Twisted Frame
STRUCTURE	STRUCTURE	75 - Rust/Peeling Paint on Steel
STRUCTURE	STRUCTURE	76 - Missing Hardware (nuts, bolts, etc)
STRUCTURE	STRUCTURE	77 - Woodpecker Damage
STRUCTURE	STRUCTURE	90 - Heat/Corona Damage
STRUCTURE	STRUCTURE	B1 - Non-Standard Installation
STRUCTURE	STRUCTURE	C1 - Unable to Inspect
STRUCTURE	STRUCTURE	E1 - Other
STRUCTURE	STRUCTURE_CONDITION	
STRUCTURE	STRUCTURE_CONDITION	No Problems Found
STRUCTURE	STRUCTURE_CONDITION	F1 - Condition 1
STRUCTURE	STRUCTURE_CONDITION	F2 - Condition 2
STRUCTURE	STRUCTURE_CONDITION	F3 - Condition 3
STRUCTURE	STRUCTURE_CONDITION	NA - Not Available
STRUCTURE	STRUCTURE_FOOTER	
STRUCTURE	STRUCTURE_FOOTER	10 - No Problems Found
STRUCTURE	STRUCTURE_FOOTER	12 - Contamination
STRUCTURE	STRUCTURE_FOOTER	16 - Covered with Earth
STRUCTURE	STRUCTURE_FOOTER	18 - Cracked/Damaged
STRUCTURE	STRUCTURE_FOOTER	22 - Earth Disturbed/Washed Out
STRUCTURE	STRUCTURE_FOOTER	24 - Encroachment
STRUCTURE	STRUCTURE_FOOTER	26 - Exposed
STRUCTURE	STRUCTURE_FOOTER	34 - Submerged
STRUCTURE	STRUCTURE_FOOTER	35 - Vandalism
STRUCTURE	STRUCTURE_FOOTER	36 - Vegetation Overgrown
STRUCTURE	STRUCTURE_FOOTER	37 - Vines
STRUCTURE	STRUCTURE_FOOTER	40 - Corrosion/Rust
STRUCTURE	STRUCTURE_FOOTER	70 - Foreign Object
STRUCTURE	STRUCTURE_FOOTER	C1 - Unable to Inspect
STRUCTURE	STRUCTURE_FOOTER	E1 - Other

3.5.3 Inspection Record Levels I to III

When corrective maintenance issues are identified via inspection, they are classified as a Level I, II, or III priority depending upon the factual situation and the specific electric system equipment involved. Level I discrepancies are the most critical and require immediate attention. A description of the various condition levels follows:

Level I Condition – A Level I Condition is a condition where any electrical equipment, device, or structure on an electric transmission or distribution system (overhead or underground) poses a serious and immediate threat to either the safety of the general public or the reliability of the electric transmission or distribution system. Such conditions require an immediate response by the appropriate maintenance and repair personnel to correct the situation. Examples include, but are not limited to, conductors laying on crossarms, holes in padmount transformer cases, floating primary conductors, broken grounds, low hanging or downed conductors, broken poles, and broken crossarms.

Level II Condition – A Level II Condition is a condition where any electrical equipment, device, or structure that, if not corrected for an extended period of time (6 months or more), could develop into a Level I condition. Such conditions require a response within 60 days. Examples include, but are not limited to, damaged poles, damaged crossarms, broken crossarm supports, excessive corrosion, damaged cable, excessively leaking cable joints, and moderate woodpecker damage.

Level III Condition – A Level III Condition is one where any electrical equipment, device, or structure has deficiencies, but those deficiencies do not pose any risk to public safety or to reliability of the system. In this case, corrective maintenance can be scheduled to occur within a 12 to 24 month window. Examples include, but are not limited to, cracked suspension insulators, moderate woodpecker holes, bent insulator pins, leaning poles, and loose pole braces.

Approximately 1.1 million T&D equipment inspections have been performed over the last two years. Table 3.6 above sets forth the specific items inspected. Approximately 840,000 inspections have been conducted on the NYSEG overhead system; 30,000 on the underground system, and 231,000 on the transmission system. Table 3.7 below summarizes the Level I, II or III classification and the overall failure rates identified in NYSEG's last two years of inspections.

Table 3.7
T&D Inspection: Total Inspection Conducted
2005 Through 2007

Level	NYSEG					
Classification	OH	Fail Rate	UG	Fail Rate	TR	Fail Rate
Total	**839,119**	**0.45%**	**30,358**	**6.26%**	**230,935**	**1.06%**
Level I	449	0.05%	108	0.36%	115	0.05%
Level II	1,189	0.14%	124	0.41%	440	0.19%
Level III	2,103	0.25%	1,667	5.49%	1,903	0.82%

The results of NYSEG's inspections, as set forth in Table 3.7 above, supports the Report's conclusion that NYSEG's electric system is in generally sound condition. Only approximately 0.5 percent of the overhead inspections resulted in a failure observation. Similarly, only 1.06 percent of the transmission inspections resulted in failure observations and only 6.26 percent of underground inspections recorded a failure.

Moreover, for those few deficiencies identified the vast majority, as set forth in Table 3.8 below, were classified as Level III issues, which are the least serious and do not pose any risk to public safety or to reliability of the system. Accordingly, corrective maintenance for the identified Level III issues is typically scheduled to occur within a 12 to 24 month window.

Table 3.8
T&D Inspection: Classification of Failures Identified
2005 Through 2007

Level Classification	NYSEG					
	OH	Fail Rate	UG	Fail Rate	TR	Fail Rate
Total	**3,741**		**1,899**		**2,458**	
Level I	449	12.00%	108	5.69%	115	4.68%
Level II	1,189	31.78%	124	6.53%	440	17.90%
Level III	2,103	56.21%	1,667	87.78%	1,903	77.42%

3.6 System Assessment

3.6.1 Overall Assessment

NYSEG only maintains condition records for electric system items in need of correction. Therefore, in addition to such records, other relevant information was used to determine the overall condition of the electric delivery system for purposes of this Report. Among the many other factors evaluated in determining the overall condition of the NYSEG electric system were equipment age, equipment inspection records, and overall system reliability. The factors utilized in making an overall assessment of the condition of the electric system are summarized below:

Equipment Age – The Report data indicates that the average age of NYSEG's substation, transmission, and distribution system infrastructure is increasing. Many of the critical assets in the electric system, while within their specified useful lives, are approaching an average of 40 years old. While increasing age does not translate directly into reliability issues, as demonstrated by the relatively low percentage of infrastructure deficiencies identified via the maintenance, monitoring and testing programs, it is a factor that must be considered when operating the electric system.

Inspection Record Results – The Report data indicates that only 0.74 percent of all inspections conducted over the last two years resulted in identification of any equipment failures and only 0.06 percent of all failures were rated at the most critical level (Level I). The low failure level identified by the Report demonstrates that NYSEG has appropriate processes and procedures in place for maintenance, testing and monitoring its electric system and that necessary system repairs are occurring on a timely basis.

System Reliability – The Report data indicates that NYSEG's system reliability has remained at satisfactory levels over the long term and is expected to continue to perform at that level. Recent reliability performance is provided in Table 3.9 below.

Table 3.9
NYSEG System Reliability Performance

Reliability Index	2002	2003	2004	2005	2006	2007
Total Customers Interrupted	1,445,022	2,063,908	1,163,623	958,153	956,549	1,040,061
Total Hours of Interruption	4,843,303	12,185,811	2,640,027	1,880,702	1,904,738	2,280,860
Equipment-Related Customers Interruptions	247,632	294,362	339,417	283,044	260,890	271,376
Equipment-Related Hours of Interruption	397,173	437,631	658,841	495,971	422,968	488,502
Percent of Customer Interruptions Related To Equipment	17.1%	14.3%	29.2%	29.5%	27.3%	26.1%
Percent of Customer Interruption Hours Related To Equipment	8.2%	3.6%	25.0%	26.4%	22.2%	21.4%

As shown in Table 3.9 above, both the system-wide reliability indices and the equipment-related system performance remains satisfactory.

The Report's assessment, based in part on the three significant assessment factors identified above, is that the general condition of the NYSEG electric system is sound and that the electric system is operating within expected parameters.

4. Facility Deficiencies

4.1 Management of Facility Deficiencies

As NYSEG's facilities mature, proper management of identified deficiencies has been critical to maintenance of overall system reliability. To the extent facility deficiencies are identified, they are managed and funded through a variety of programs. For example, projects below a specified monetary level are funded through routine minor capital budget. More significant deficiencies will be addressed from major capital budgets, which are approved through a NYSEG Reliability Achievement Council ("RAC"). The RAC is an internal committee that makes recommendations and reviews progress for large (typically over $100,000) projects on the electric system. Transmission and distribution projects may also be funded through the Transmission and Distribution Infrastructure Replacement Program ("TDIRP"). TDIRP is the principal funding source for projects that address overall system condition issues. Substation projects are also funded through the TDIRP program.

4.2 TDRIP

NYSEG has a long history of investing in and operating electrical infrastructure to provide safe and reliable service across its service territory. Given its aging infrastructure, NYSEG plans to continue making necessary infrastructure investments through TDIRP. The TDIRP program provides funding for replacement of system components that are of higher average age and/or in poorer condition. The program's goal is to remove components from the electric system that have a higher likelihood of failure so that the reliability of the system is maintained. Historical costs for 2005-2007

and projected costs for 2008 are shown in Table 4.1 below.

Table 4.1
2005-2008 NYSEG TDIRP Funding

Year	NYSEG			
	Substation	Transmission	Distribution	Total
2005	$6,309,407	$3,555,090	$1,345,869	$11,210,366
2006	$17,965,571	$4,574,392	$5,401,693	$27,941,656
2007	$9,909,491	$5,291,965	$5,678,602	$20,880,058
2008 (Projected)	$12,000,000	$6,600,000	$6,000,000	$24,600,000

As shown in Table 4.1, approximately 50 percent of TDIRP funding has historically been used to support substation projects with transmission and distribution each sharing approximately 25 percent of TDIRP funding. However, in any given year, these percentages may shift given specific projects identified and difficulties encountered in getting specific projects ready for construction. The hurdles related to implementation of infrastructure programs are generally the availability of long lead-time materials and equipment, the ability to schedule and coordinate lines out of service, and the availability of resources to engineer, design, and construct a large number of complex projects concurrently.

A general description of the substation, transmission, and distribution projects funded through TDIRP follows:

Substation Projects – Projects for substations have typically employed analytical technique for specific project identification. The NYSEG TDIRP substation projects have generally been one-for-one replacements based on age and condition. To facilitate this process, the NYSEG substation equipment age and condition database is annually ranked highest-to-lowest with the highest ranked having the greatest potential negative impact on reliability. The highest ranked equipment is therefore selected first for remediation pursuant to the TDIRP program, although certain adjustments to reflect operations considerations, such as labor constraints, may impact the priority and timing of specific projects. The prioritization process is repeated annually during the third quarter for the upcoming year. The categories of equipment reviewed are listed below:

- Arresters;
- Batteries;
- Breakers;
- Circuit Switchers;
- EHV Relays;
- Insulators and Switches;
- Lightning Protection;
- RTUs; and
- Transformers.

Transmission Projects – NYSEG TDIRP transmission projects have generally been complex rebuild and re-conductoring projects. All such projects have been identified based on the condition of a specific transmission facility condition based primarily on past operating performance. A list of reliability-based transmission improvements is compiled using historical performance data, equipment records, patrol records, and employee feedback. Critical projects are then selected with some adjustments in prioritization made to accommodate manpower constraints and other operational concerns. The categories of equipment are listed below:

- Conductor;
- Poles;
- Switches; and
- Towers.

Distribution Projects – NYSEG distribution projects vary in size from single pole replacements to complex rebuild and re-conductoring projects. All projects have been based on an analysis of the specific condition of a particular asset. A list of reliability-based distribution improvements is compiled primarily based on division employee feedback. Critical projects are then selected with some adjustments in priority made to accommodate work force and other operational constraints.

A list of completed and ongoing NYSEG TDIRP projects is set forth in Table 4.2 below.

Table 4.2
Completed and Ongoing NYSEG TDIRP Projects

Year	Division	Project Description	Type
2005	Liberty	Walden 69kV transmission line	Structures
	Binghamton	W. Union-Endicott Hill rebuild	Structures and Conductor
	Hornell	Stolle-Myer mid-span structure installation	Structures
	Plattsburgh	Clintonville-Stickney bdg-jay reconductor	Structures and Conductor
	Binghamton	Binghamton 513 transmission line pole replacement	Structures
	Oneonta	Colliers-Richfield Springs wood pole replacement (Phase 1)	Structures
2006	Ithaca	NYSEG transmission hazard pole replacements	Structures
	Auburn	Milliken-Wright Ave ground clearance improvement	Structures
	Brewster	W. Patterson-Pawling rebuild (Phase 1)	Structures and Conductor
	Oneonta	E.Norwich-Jennison wood pole replacement	Structures
	Oneonta	Jennison-Delhi wood pole replacement	Structures
	Oneonta	Oakdale-Delhi wood pole replacement	Structures
	Oneonta	Sidney-Bainbridge wood pole replacement	Structures
	Auburn	In-kind pole replacements on Line 521 Scipio Sub - Milliken	Structures
	Hornell	Replace outdated 34.5 kV transmission group operated	Structures and Equipment
	Hornell	Stolle-Myer replace 2 woodpecker damaged structures	Structures
	Lockport	Replace 1st Span out of Kintigh Sub lines 38 and 39 due to conductor degradation/bird caging	Conductor

Year	Division	Project Description	Type
	Ithaca/Binghamton	Replace 107 CCA treated doug fir poles (str. 103 - Candor)	Structures
	Hornell	Replace Pole & Crossarm on H-frame	Structures
	Elmira	Replace 1 woodpecker damaged pole on each of two 4 pole structures	Structures
	Binghamton	Replace woodpecker damaged poles	Structures
2007	Brewster	Completion of W.Patterson-Pawling rebuild	Structures and Conductor
	Geneva	West Geneva and Haley Road (Circuit 587)	Structures and Conductor
	Liberty	Hilldale tap switch replacement (Replace w/ two 1 way switches & adjacent 2 pole str.)	Structures and Equipment
	Oneonta	Downsville tap switch installation (plus 2 pole DE)	Structures and Equipment
	Hornell	Dansville area from Coffee Hill Rd .to Schmidt Rd. woodpecker damage	Structures
	Mechanicville	Klinekill to Craryville to Churchtown, repair/replace 50 poles, 22.7 miles, 115kv	Structures
	Oneonta	Railroad St. - Unadilla rebuild	Structures and Conductor
	Auburn	521 Line - 17 F-1 pole failures (TENTATIVE)	Structures
	Various Divisions	NYSEG transmission pole inspect and replacement program	Structures
	Various Divisions	Replace misc. defective poles at division request	Structures
	Elmira	Bath - Polly O Tap	Conductor
	Hornell	Wallace - Kanona reconductor tower line (approx. 7.3mi.)	Conductor
	Ithaca	Replace 5 decayed poles	Structures
	Plattsburgh	Norton switch installation	Structures and Equipment
2008	Binghamton	Park St. - Gannett (approx. 1/2 mi)	
	Oneonta	Railroad St. - Unadilla rebuild (2nd Half)	Structures and Conductor
	Plattsburgh	Indian Rapids Sub retirement/switch installation	Structures and Equipment
	Binghamton	Endicott 349/359 transmission line tower replacements	Structures
	Liberty	Monticello - Kiamesha rebuild (approx. 2.1mi.)	Structures and Conductor
	Binghamton	Goudey - Park St. (approx. 0.9 mi.)	Structures and Conductor
	Oneonta	Unadilla - Otego rebuild (approx. 6 - 7mi)	Structures and Conductor
	Geneva	Lyons - Clyde rebuild (approx. 6.8 mi.)	Structures and Conductor
	Various	Replace misc. defective poles at Division request	Structures
	Various	NYSEG transmission pole inspect and replacement program	Structures

The TDIRP project prioritization and selection approach adopted in 2005 has allowed NYSEG to prioritize high-value projects based on a determination of the relative value of each required project. In the future, as the gap in value between possible projects narrows, NYSEG will seek to identify additional quantitative and logistical methods to prioritize and evaluate all potential TDIRP improvement projects.

5. Repair Plans

5.1 Repair Plans

Planning for repair is undertaken on a continuous and complementary basis with NYSEG's monitoring and maintenance plans to achieve enhanced overall performance of the electric energy delivery system. The results of the various monitoring, maintenance and repair programs are recommendations for appropriate repairs or capital enhancements. Section 4.2 above prioritizes repairs and describes the mechanisms (*e.g.*, capital budget and TDRIP) that are utilized to evaluate, select and include repair programs in the budget.

5.2 Planning Directives

The planning directives review reliability load requirements for both the distribution and transmission systems. Past performance (reliability) and load growth are evaluated to ensure that circuits can adequately serve current and projected future load. The evaluation results are prioritized by need and specific enhancement projects are then developed. Details of the planning directives and process are provided in **Appendices E and F**.

5.3 Five Year Capital Forecast

NYSEG continuously evaluates its capital requirements and specific future repair, replacement, or improvement project plans are included as part of NYSEG's 5-year capital forecast.

5.4 Ongoing Repair and Remediation Planning

Repair and remediation planning is conducted on an ongoing basis to identify equipment and circuits most in need of maintenance. As previously identified, Level I inspection failures are repaired and remedied immediately, while Level II and Level III repairs are scheduled and completed within approximately six months and 12-24 months, respectively.

5.5 Special Projects Description

In addition to normal repair of individual system components, in some instances, repair and remediation is required to a few or more pieces of similar equipment. In such instances, repairs may be evaluated on a project rather than individual basis. Projects are typically broader in scope and strive to improve performance to a whole circuit or over a significant area. Identification of best-value projects is a complex task. Many factors are taken into consideration by the Technical Services Group. The input of various departments and divisions are sought when evaluating each specific project. In general, projects are identified and implemented that will improve customer reliability and/or improve system performance. Factors such as age, equipment-operating history, reliability, number of customers served, and voltage classification are

considered when evaluating the merits of a particular special repair project.

5.6 Project Selection: Annual Circuit Analysis

Each year, NYSEG calculates System Average Interruption Frequency Index ("SAIFI") and Customer Average Interruption Duration Index ("CAIDI") indices for each circuit on the system. These circuits are ranked from worst to best on a statewide basis. Next, the worst performing circuits are investigated to determine the cause of any reliability issues and to recommend improvements. Equipment age, maintenance records, and monitoring data are some of the factors considered when conducting annual circuit analysis. Circuits may also be nominated by the respective division for improvement due to other factors such as age, condition, operational issues, equipment obsolescence and maintainability, outage history, and overall performance. Once specific circuits have been identified for improvement, asset records and circuit-specific information are reviewed to identify the most needed and most effective enhancement.

5.7 Project Selection: Typical Substation Special Project Factors

For substation projects, the following factors are typically significant:

- Age;
- Design;
- Obsolescence;
- Condition;
- Electrical load size;
- Customer load type (residential, commercial, or industrial); and
- Operating and maintenance history.

In many instances, substation transformers and circuit breakers are given the highest priority for replacement because the loss of either can have a severe impact on customer service. Both substation transformers and circuit breakers may require a long lead-time to order and are difficult and expensive to transport. Although a fleet of mobile substations is available for backup, there are a limited number of units, and they must be available to provide backup when equipment is taken off-line for testing or emergencies.

In addition to transformers and circuit breakers, the most common types of substation equipment to target for special remediation include: insulators, arrestors, lightning protection, Supervisory Control and Data Acquisition Remote Terminal Units ("SCADA RTUs"), relays, batteries, switches, foundations, control house structural components (*e.g.*, roofs, doors, etc), substation facility fences, and security features.

5.8 Project Selection: T&D Special Factors

For T&D projects, the following factors often prove to be significant:

- Age;
- Pole wood species;
- Structural load;
- Type of wood preservative treatment;
- Customer load type (residential, commercial, or industrial); and
- Location of pole on the circuit.

For T&D projects, structural reinforcement is often a priority. For economic reasons, structural reinforcement and/or treatment are considered before specific poles are identified for replacement. Often, pole treatment is as effective as replacement and at a lower cost. However, if a pole is identified as having less than fifty percent of its original pole strength remaining, that pole will be identified for replacement because such poles can be expected to fail within ten years and, historically, have not responded well to treatment programs.

In addition to structures, the following types of T&D equipment are commonly evaluated for potential remedial projects: conductors, insulators, arrestors, crossarms, switches, sectionalizers, reclosures, fuses, cutouts, regulators, capacitor banks, underground cable, and network-related components.

5.9 Project Selection: Known Equipment Class Failures

In some instances, a particular class of equipment, with a known failure problem may be targeted for corrective maintenance or replacement. Examples of known equipment issues include:

- Replacement of oil filled switches;
- Replacement of live front S&C switchgear;
- Life extension of XLP underground cable;
- Replacement of aluminum base distribution dead-end insulators; and
- Replacement of 34.5 side-post aluminum base insulators.

In general, NYSEG's objective in engaging in special project identification is to identify the next best-value projects to maximize the impact of all reinforcement and improvement projects that are undertaken to maintain the NYSEG system.

Appendix A

NYSEG Mobile Substation & Spare Substation Transformer Inventory

REDACTED

ENTIRE REPORT CONTAINS CONFIDENTIAL TRADE SECRET INFORMATION

Appendix B

NYSEG Substation Transformer Rating Data

REDACTED

ENTIRE REPORT CONTAINS CONFIDENTIAL TRADE SECRET INFORMATION

Appendix C

NYSEG Overhead Distribution Line Assets

Appendix C - NYSEG Overhead Distribution Line Assets

Circuit	Circuit Name	Circuit Voltage	Miles of Overhead	Miles of Underground	Cust Count	Pole Count	Dist Xfmr. Count	Step Xfmr. Count	Reg. Count	Capacitor Count	Fault Detector Count	Fuse Count	Recloser Count	Sectionalizer Count	Switch Count	Street light Count	Secondary Miles (exclusive)
1105002	CROTON FALLS 514	13.2	7.831	3.994	825	363	159	9		1		20			12	6	2.308
1105004	CROTON FALLS 515	13.2	22.252	6.282	1270	996	392	14		6		62			21	108	5.154
1105046	CROTON FALLS 446	13.2	0.091	0.144		2									1		
1105095	CROTON FALLS 516	13.2	12.880	12.855	1289	659	334	12				41			15	22	4.385
1105111	ADAMS CORNERS 411	13.2	28.246	4.845	1945	1347	456	5		4	1	92	1		25	91	7.237
1105113	ADAMS CORNERS 413	13.2	22.077	4.183	693	908	276	6		3		66			11	11	3.134
1105115	ADAMS CORNERS 412	13.2	39.932	2.328	1376	1525	465	1		7		84	2		18	23	6.202
1105249	AMAWALK 449	13.2	8.513	4.038	1269	428	242			3		46			15	69	2.086
1105251	AMAWALK 451	13.2	20.728	8.586	1047	870	337	1			9	85			25	34	3.985
1105253	AMAWALK 453	13.2	32.668	12.841	1802	1355	540	2				106	3		31	51	7.674
1105352	AMENIA 153	4.8	21.984	2.919	500	725	217	7	2	3		35			6	55	1.775
1105354	AMENIA 154	4.8	40.392	9.492	1153	1369	482	11	3	9		76			16	144	3.880
1105425	BEDFORD HILLS 225	4.8	18.393	2.793	1078	834	282	10		3		69			7	78	4.760
1105427	BEDFORD HILLS 227	4.8	12.686	3.092	697	610	214	2	2	6		52	1		6	90	2.566
1105462	BEDFORD HILLS 462	13.2	15.413	1.791	1064	663	249	11		3		68			19	58	2.474
1105463	BEDFORD HILLS 463	13.2	10.135	0.852	1194	619	221	12		4		47			15	167	4.427
1105582	CANTITOE 282	4.8	12.228	3.095	580	575	219	6		1		49			16	39	2.827
1105583	CANTITOE 283	4.8	19.380	6.415	463	826	269	19		7		82	1		11	5	2.277
1105597	CANTITOE 497	13.2	42.302	15.603	1362	1799	662	5		4	4	197	2		30	61	5.897
1105679	KENT CLIFFS 292	4.8	30.809	1.103	525	898	273	2	1	4		123			11	9	3.246
1105691	KENT CLIFFS 291	4.8	26.906	1.201	735	930	308	4		3		49	1		7	2	4.400
1105722	CRAFTS 422	13.2	20.326	7.509	1466	864	355			3		68	2		10	32	4.764
1105723	CRAFTS 423	13.2	31.644	5.281	2443	1460	574	2		12		103	2	1	23	133	8.542
1105724	CRAFTS 424	13.2	33.345	5.893	1264	1450	459	7		9		93	2		19	68	7.758
1105868	CROSS RIVER 468	13.2	16.543	8.325	775	732	294	1		3		63			7	14	5.311
1105869	CROSS RIVER 469	13.2	19.535	6.628	769	827	312	12		6	1	68			17	19	3.891
1105870	CROSS RIVER 470	13.2	33.998	11.060	1211	1376	524	10		7	3	129	1		23	5	5.654
1105977	DINGLE RIDGE 277	4.8	9.440	5.108	343	353	160	6				24			7	9	1.934
1105978	DINGLE RIDGE 278	4.8	10.656	2.364	440	432	190	6		3		29			6	30	2.093
1106094	DOVER PLAINS 494	13.2	43.803	7.273	2073	1535	548	17	4	4		94			22	158	7.453
1106104	GOLDEN BRIDGE 414	13.2	22.239	9.582	978	920	367			4		57	2		25	9	4.552
1106106	GOLDEN BRIDGE 416	13.2		0.358													
1106107	GOLDEN BRIDGE 417	13.2	14.520	2.693	476	557	182					49	1		10	14	2.109
1106108	GOLDEN BRIDGE 418	13.2	22.933	13.364	1015	990	397	3		9	3	60	1		34	17	5.658
1106109	GOLDEN BRIDGE 419	13.2		0.766													
1106115	GOLDEN BRIDGE 415	13.2		0.159													
1106120	GOLDEN BRIDGE 420	13.2	6.663	9.575	1128	378	237			3		16			22	24	2.150
1106121	GOLDEN BRIDGE 421	13.2	22.099	5.866	1134	981	329	4		3		64	1		29	79	6.438
1106275	KENT 175	4.8	18.921	1.173	1246	875	292	5		3		57			6	31	6.289
1106276	KENT 176	4.8	9.748	0.057	875	539	152			3		24			1	5	4.743
1106277	KENT 526	13.2	7.728	4.809	1023	342	184	1		3		43			3	6	0.726
1106340	MOHANSIC 403	13.2	7.820	0.991	617	350	111				1	33			6	64	1.118
1106341	MOHANSIC 402	13.2	0.093														
1106342	MOHANSIC 404	13.2	11.657	2.450	666	470	183					38			12	41	3.061
1106343	MOHANSIC 405	13.2	10.746	4.926	1048	439	175					37			12	44	2.866
1106346	MOHANSIC 406	13.2	7.102	0.930	636	311	111					20			4	3	2.046
1106347	MOHANSIC 407	13.2	0.094														
1106574	WEST PATTERSON 474	13.2	29.036	5.932	879	1024	417	6		3		64	1		14	19	4.729

Appendix C - NYSEG Overhead Distribution Line Assets

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1106575	WEST PATTERSON 475	13.2	40 050	3.348	150	1565	545	4		7		95	2		6	36	8.303
1106665	PAWLING 165	4.8	0 084														
1106666	PAWLING 166	4 8	8 045	1.198	659	350	142	2		6		23			4	98	1 859
1106667	PAWLING 509	4 8	41.105	4 322	1302	1470	482	19	4	10		120	3		2	100	4.642
1106668	PAWLING 508	13 2	34.802	11 026	1361	1277	507	9		2		94			19	47	5.336
1106749	PEACH LAKE 249	4 8	18 455	5 184	838	807	247	10		7		64			10	62	4 293
1106750	PEACH LAKE 250	4.8	20 656	5.950	523	822	272	12	2	4		65			1	7	2 040
1106855	POUND RIDGE 455	13 2	35 260	13.239	1559	1456	604	1		14	4	142	1		37	6	7.057
1106856	POUND RIDGE 456	13 2	31.463	5 653	977	1244	458	7		7	1	115	1		22	6	5.010
1106857	POUND RIDGE 457	13.2	17.510	8 561	595	759	303	4		3		81			29	2	4 533
1106858	POUND RIDGE 458	13.2	17.695	3 786	564	642	275	1				76			16	27	2.752
1106984	PUTNAM LAKE 484	13.2	22.972	7 914	1020	921	407	1		12		84	1	1	16	36	4.690
1106985	PUTNAM LAKE 485	13.2	9 341	11.350	1062	498	294	1		3		29			9	1	2.277
1106986	PUTNAM LAKE 486	13.2	25 719	1 766	1590	1255	378	2		7		80			12	118	9.520
1107078	SYLVAN LAKE 478	13 2	38 786	9 843	2298	1546	729	17	1	3	1	146	2		45	47	8 908
1107080	SYLVAN LAKE 480	13.2	21 399	7.566	994	834	405	7				59	1		17	4	3 532
1107081	SYLVAN LAKE 481	13 2	20 383	15 016	1559	921	518	1				67	1		34	19	5.321
1107189	TEAKETTLE SPOUT 489	13 2	14.438	5 103	1095	724	271	6		3		40			11	5	4.207
1107190	TEAKETTLE SPOUT 490	13.2	0 934	6.703	865	93	119								3		0.375
1107191	TEAKETTLE SPOUT 491	13.2	12.181	0.195	1066	576	192	8				37			8	91	3.631
1107237	TILLY FOSTER 437	13 2	15.901	4.398	960	625	269			3		56			12	24	2.315
1107238	TILLY FOSTER 438	13.2	13.865	3 555	1757	773	342	3		4		47			19	145	4.901
1107239	TILLY FOSTER 439	13.2	7.695	4 595	933	354	199			3		24			12	26	1 386
1107240	TILLY FOSTER 440	13.2	0 068														
1107241	TILLY FOSTER 441	13 2	23 388	2 680	1453	967	330	1		8		58	1		9	96	4.300
1107242	TILLY FOSTER 442	13.2	13 738	4.779	904	581	283			3	2	42			14	65	2.839
1107433	HAVILAND HOLLOW 426	13.2	19 509	5.778	731	781	311					53	1		16	16	3.081
1107434	HAVILAND HOLLOW 427	13 2	33.670	7 931	1229	1213	523	7		3	4	105	1		17	118	3 981
1107505	HARLEM VALLEY 105	4 8	0.087														
1107615	WASSAIC 115	4 8	0.096														
1107731	UNION VALLEY 431	13.2	14 217	6 573	1492	761	307	4		4	32	55	1		22	164	5.376
1107732	UNION VALLEY 432	13.2	22 860	6.193	1757	959	384	3			5	66	1		16	65	4.077
1107733	UNION VALLEY 433	13 2	30 028	5.035	2284	1488	616	2				94	1		23	344	7.870
1107843	TEN MILE RIVER 443	13 2	22.971	8 196	742	758	329	7		6		48			2	23	2.851
1107844	TEN MILE RIVER 444	13.2	51.290	5 742	1621	1648	592	18		12		92			22	136	5 570
1108401	CHU-TURKEY RUN CHU			0 255	2	1	2										
1108501	CHU-SEPARATE RD CHU	4.8	1 026	0 045	8	18	4					1					0.022
1108601	CHU-PLEASANT RIDGE RD CHU	7 62	0 218	0.139	2	6	2										0 047
1108701	CHU-TOWER HILL RD CHU	7.62	2.465	0.831	25	59	22					1					0.010
1108801	CHU-SYLVAN BEACH CHU	7 62	0.353		4	9	3										0 072
1108901	CHU-WHITE POND RD CHU	7 62	0.434		5	6	3										0 037
1109001	CHU-CHAPMAN RD CHU	4 8	0.344	0 218	5	13	3					1					0 076
1109101	CHU-LONG MTN RD CHU	7.62	0.505		7	8	4					1					0.013
1109201	CHU-LONG HILL RD CHU	7.62	0 236		3	2	2					1					
1109301	CHU-ROUTE 301 CHU	4.8	0 271		2	2	1										
1109648	KATONA 448	13.2	0.077	0 008													
1109650	KATONA 450	13 2	0 104	0 009		6									2		
1109652	KATONA 452	13.2	0 078	0 008		6									1		

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1109701	CARMEL 501	13.2	28.826	7.737	2195	1340	526				1	80	1		3	128	8.063
1109703	CARMEL 503	13.2	20.462	3.783	968	827	325	4		4	1	56	1		1	7	4.326
1109706	CARMEL 502	13.2	25.161	4.251	1479	1063	400	5			2	76	1		14	147	6.395
1109801	STREETLITE_11 ST1	4.8	0.067														
1201101	GRANVILLE 301	12.5	5.192	0.178	366	234	84				1	6			3	69	1.263
1201102	GRANVILLE 302	12.5	7.572	0.310	805	378	130	2		3		19			2	136	2.529
1201201	SALEM 175	4.8	44.459	0.425	547	994	334	2	3	7		34			7	72	3.154
1201202	SALEM 176	4.8	23.231	0.246	382	582	204	1	1	4		30			2	44	1.235
1201301	COMSTOCK-GRANVILLE 626	34.5	77.405	2.158	1338	2061	813	18	3		2	105			32	99	5.532
1201401	GRANVILLE-SALEM TAP 625	34.5	82.059	0.859	926	1895	649	11	7	8	1	89	2		34	46	4.337
1201501	FLIKE RD TAP 605	34.5	8.535	1.110	322	253	123	3			1	16			4	14	0.942
1201601	VANESS RD TAP 604	34.5	31.173	3.580	673	891	381	6	3	3	24	40			11	22	3.198
1201701	SALEM TAP 627	34.5	94.714	1.533	1369	2327	741	15	7	9	3	83	3		31	72	6.285
1201801	TIPLADY RD TAP 628	34.5	16.192	0.265	131	352	101	2	1			20			3	1	0.372
1202110	COONS CROSSING 607	4.8	20.877	17.825	3213	949	528	21		9	38	81	3		83	98	14.730
1202111	COONS CROSSING 211	4.8	10.576	1.099	187	320	93	1	3	3		13			6	4	1.144
1202112	COONS CROSSING 601	34.5	13.078	0.927	340	429	161	4	3	12		3	3		24	27	1.716
1202215	STILLWATER 215	4.8	21.143	1.342	1050	779	284	6	2	7	7	24			1	131	3.962
1202310	MECHANICVILLE 410	12.5	28.608	2.298	2275	1243	501	7	2	6		44	1		22	397	7.837
1202312	MECHANICVILLE 412	12.5	10.029	1.024	1822	604	212	5		3		15			10	304	5.959
1203101	RUTLAND 130	4.8	38.665	2.311	471	953	301	5	2	6		54			5	5	1.917
1203102	RUTLAND 131	4.8	46.086	3.046	601	1075	378	4	4	7		77			8	36	1.781
1203206	STEPHENTOWN 136	4.8	65.568	1.382	1039	1648	623	2	2	8		87	1		10	40	4.157
1203207	STEPHENTOWN 622	34.5	141.129	3.452	1885	3356	1111	22	10	6	5	174	2	3	31	169	9.705
1203301	WYNANTSKILL 140	4.8	10.398	1.158	1026	473	206	3		5	2	28			4	143	2.862
1203302	WYNANTSKILL 141	4.8	16.011	2.799	993	634	260	5		5	5	39			5	108	3.908
1203401	CANAAN 145	4.8	59.380	2.743	866	1548	507	5	3	6		94			9	52	4.413
1203501	MELLONVILLE 150	4.8	25.943	1.538	542	724	265	1	2	3		41	1		10	54	1.693
1203502	MELLONVILLE 151	4.8	41.750	3.898	1077	1116	407	5	2	7	3	71			5	119	2.321
1203605	CHATHAM 155	4.8	14.464	0.513	869	505	211	1		3		101			3	142	2.581
1203606	CHATHAM 156	4.8	17.213	1.802	203	446	129	1	2	5		28				21	0.719
1203702	WEST SAND LAKE 161	4.8	28.394	4.302	1263	925	424	7		6		63			11	165	5.142
1203805	WEST LEBANON 165	4.8	48.863	2.728	1010	1320	511	3	2	7		76	1		10	47	3.030
1203806	WEST LEBANON 166	4.8	47.573	0.876	627	1156	410	1	5	8		65			4	20	3.210
1203901	CROOKED LAKE 170	4.8	32.996	2.765	141	1260	498	7	4	13		7			6	174	6.312
1203902	CROOKED LAKE 613	34.5	47.968	0.498	930	132	502	11	3	9		110			13	86	4.194
1204001	CRARYVILLE 400	12.5	94.402	9.264	1730	2394	932		1	5	1	163	3		6	14	6.351
1204003	CRARYVILLE 611	34.5	61.549	4.284	642	1376	492	9		2	8	109	2	1	29	7	2.785
1204004	CRARYVILLE 610	34.5	119.237	15.107	2103	3074	1087	16		14	3	210	2	2	76	188	6.506
1204101	WYNANTSKILL TAP 416	12.5	7.896	4.816	660	392	205	7	3	1		19	1		7	22	2.613
1204201	WEST SAND LAKE TAP 614	34.5	21.788	4.239	630	615	301	14		4		40	1		8	37	4.341
1205304	SARATOGA AFS PVT	34.5	0.355		4	7	6								1		0.046
1205402	KLINE KILL 630	34.5	126.721	10.566	234	338	1242	43	5	4	13	224	4		88	184	7.950
1205403	KLINE KILL 631	34.5	125.001	8.355	1784	3063	1082	29	5	9	1	205	2		45	71	5.064
1205801	SARATOGA CO SEWER PVT	34.5	0.080														
1205901	RAYLINSKI TAP 606	34.5	24.924	25.593	3880	118	876	5	12	15	44	141	3	3	106	112	17.620
1206002	MULBERRY 602	34.5	30.054	9.369	2302	1138	646	12	6	13	72	119	1	2	71	210	10.350
1206115	CRELLIN 615	34.5	1.663	0.099	32	56	20					2			3	9	0.102

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1206207	EAST LINE TAP 607	34 5	0.038		12												
1208901	SLATEVILLE 620	4.8	24.26	0 236	221	55	189	2		1		25			3	2	1 199
1209017	NM-MECHANICVILLE 917	4.8	0 634		2	19	6										0 101
1209025	NM-MECHANICVILLE 925	4.8	13 253		6	14	4										
1209028	NM-MECHANICVILLE 928	13.2	14 280		1												
1209029	NM-MECHANICVILLE 929	34.5	3 888	0.209	3	4	3					2					
1209115	NM-GRANVILLE 915	4.8	0.803		6	17	5										0 014
1209126	NM-GRANVILLE 626	4.8	5.913		2	1	1										
1209137	NM-GRANVILLE 370	4 8	12.675		4	10	4										
1209138	NM-GRANVILLE 938	4 8	2.719		6	6	2										0.070
1209180	NM-GRANVILLE 580	4.8	2.769		1	5	2										
1209211	NM-CHATHAM 911	34.5	0.603		2	5	1										
1209238	NM-CHATHAM 938	4 8	7 775		7	4											0.026
1209243	NM-CHATHAM 943	4.8	9.423		10	44	7			1							
1209245	NM-CHATHAM 945	4.8	4.517		1	4	1										0 036
1209249	NM-CHATHAM 949	4.8	0 364		2	2	1										
1209251	NM-CHATHAM 951	4 8	13.097		6	4	1										
1209263	NM-CHATHAM 963	4.8	11.587		8	5	3										0.010
1209329	CENT VT-PADDOCK EXT 929	4.16	0 309		5	8	4										0 035
1209556	WESTMASS-TERRACE DR 956	4.16	0.162		4	4	3										
1209788	NM-CHATHAM-ROGERS 988	4.8	0 649		6	13	5										
1209801	STREETLITE_12 ST1		0 120														
1500113	CHATEAUGAY 513	34 5	81.507	0 374	942	1698	599	15	4			68			18	31	5.517
1500114	CHATEAUGAY 514	34.5	170.558	1.287	2034	3866	1157	34	10			165		1	68	292	11.144
1500115	CHATEAUGAY 515	34.5	0.573		1	3	1										
1500517	SCIOTA-FLATROCK 517	34 5	215 828	3.634	3062	4941	1886	61	1	2	6	298	2		66	359	16 363
1500817	HYDE 417	12 5	31 725	2.042	856	949	384	6		2		76			11	165	3 996
1500818	HYDE 418	12.5	6 384	0 054	56	127	29			3		6				13	0.693
1500901	LYON MTN 510	34 5	88.100	0 655	1372	2285	640	17	1			92	1		49	166	10.279
1501001	WEST CHAZY 136	4 8	60.301	1 900	1123	1490	578	7	1	4		70			11	136	5 469
1501137	BANKER RD 437	12 5	37.485	6.673	1441	1148	563	5	1			79			23	211	5.573
1501138	BANKER RD 438	12 5	44.629	6.759	1312	1301	616	9	1			94			18	202	7 34
1501370	LIMESTONE 470	12.5	18.744	3.155	917	634	301	2				30			11	166	4 683
1501371	LIMESTONE 471	12 5	3 946	4.011	245	200	96					38			9	65	1 003
1501401	BEEKMANTOWN 133	4 8	31 766	2 523	949	859	403	9	4	6		45			11	58	3 930
1501501	WOODRUFF POND 460	12.5	35.522	2 214	912	951	393			5		62			8	35	4.100
1501502	WOODRUFF POND 461	12 5	20.421	2.453	1005	828	302	1		3	2	49	1		12	205	3 803
1501601	BLUE MTN LAKE 504	34 5	70.776	6.604	1236	1973	583	27			2	92	2		42	307	8 062
1501766	SOUTH JUNCTION 466	12 5	20.810	3.692	714	711	297	7				45			16	17	2.929
1501767	SOUTH JUNCTION 467	12.5	38 895	8.899	1685	1255	618	1		3		84			43	105	6 474
1501801	CABOT MINE 413	12.5	54 220	3.586	1289	1616	523	16		6		82	1		18	132	7 627
1501802	CABOT MINE 414	12 5	65.254	4 603	922	1536	489	7		6		106	1		19	123	3.670
1501901	MILL C 125	4 8	41 029	1 940	973	1086	477	5	1	5		53			8	199	3 779
1502030	HAMMOND LANE 430	12.5	19 684	5 800	936	741	319	3		3		67	1		30	150	4.698
1502031	HAMMOND LANE 431	12.5	19.117	5.388	672	671	312	2				58			38	121	3 54
1502032	HAMMOND LANE 432	12 5	2.646	2.517	198	159	104					46			24	61	0.93
1502101	CLINTONVILLE 456	12.5	31.521	1 489	296	619	199	5	1	1		33			6	42	1.474
1502244	DANNEMORA 444	12.5	49 118	3 049	1365	1474	524	9	2	3	5	57			12	149	8 978

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1502245	DANNEMORA 445	12.5	0.305	0.098	2	5	1								1		
1502574	HIGH FALLS 474	12.5	100.439	1.893	1237	2166	818	11	1	6	6	108			30	316	5.577
1502601	JAY 502	34.5	30.313	7.135	373	703	251	17		6		54			20	69	1.536
1502602	JAY 411	12.5	80.083	12.374	1555	2087	887			6		139	2		21	214	5.750
1502701	STICKNEY BRIDGE 210	4.8	29.862	1.298	547	692	257	2		8		43	1		6	85	1.604
1503002	KEESEVILLE 153	4.8	12.033	0.474	512	369	144	2				24			7	73	1.509
1503047	KEESEVILLE 447	12.5	79.382	6.576	1944	2184	81	8	3	11		97			24	221	9.271
1503101	NORTON 420	12.5	73.830	4.353	1086	1907	668	1		3		119	3		1	134	4.721
1503201	PERU 426	12.5	53.747	5.406	1195	1372	559	7		6		74	1		28	115	5.536
1503202	PERU 427	12.5	64.730	7.028	1206	1487	639	15	3	4		70			16	50	6.415
1503301	STEAMBOAT LANDING 206	4.8	1.438		4	20	3										0.018
1503401	HARRIS LAKE 424	12.5	33.152	0.618	624	889	286				5	47			12	190	2.801
1503499	HARRIS LAKE 504	34.5	0.103			1											
1503701	BARTON BROOK 403	12.5	51.955	2.752	849	1339	427	9	1			99			17	159	4.724
1503702	BARTON BROOK 404	12.5	73.530	0.802	702	1437	498	2	2	3	3	81			9	41	3.460
1503901	MASON CORNERS 450	12.5	54.736	2.967	1326	1425	586	6	1	3		70			21	114	5.096
1503902	MASON CORNERS 451	12.5	35.324	3.300	796	996	415	3		5		76			15	121	3.614
1504101	PLATTS AFB 001	12.5	0.114														
1504507	ARIZONA AVE 407	12.5	4.429	0.422	48	218	66	1				8			4	55	1.127
1504508	ARIZONA AVE 408	12.5	6.954	1.157	64	278	110					152			4	46	0.406
1508501	NM-WILLIS RD NIM	4.8	0.316		1	6	1										
1508601	NM-CARGIN RD NIM	4.8	1.349		12	25	6					1					0.175
1508701	NM-COONROD RD NIM	4.8	0.463		2	5	2										
1508801	NM-MEGSVILLE RD NIM	4.8	1.382		3	20	3										
1508901	NM-FERRIS RD NIM	4.8	0.175		1	1	1										
1509001	NM-UNCAS RD NIM	4.8	1.016		25	28	8										0.014
1509101	NM-JUDSON RD NIM	4.8	0.301		8	9	6										0.026
1509201	NM-RAQUETTE SHORES NIM	8.32	2.071	0.563	29	54	17					2					0.208
1509301	NM-TAYLOR RD NIM	4.8	3.695		24	38	9					1					0.026
1509401	NM-TROUT RIVER NIM	4.8	1.350		8	17	7					1					0.058
1509606	SARANAC HYDRO H F 001	12.5	0.100														
2300112	SAND ST 012	4.8	1.384	0.049	254	98	26					9			2	45	0.726
2300122	SAND ST 022	4.8	20.048	0.507	666	527	194		2	4		27			5	80	2.228
2300142	SAND ST 042	4.8	3.173	0.650	824	232	125					17			4	138	2.406
2300152	SAND ST 052	4.8	4.943	0.057	1168	326	88			3		19			2	129	2.823
2300162	SAND ST 062	4.8	8.436		609	338	118			1		17			4	89	2.26
2300199	SAND ST SVC	4.8	0.023														
2300212	HENRY ST 150	4.8	6.971	0.272	1071	388	151	4		3		25			5	162	2.210
2300222	HENRY ST 151	4.8	2.346	0.529	759	176	92			3		23			9	66	1.326
2300303	PIERCE AVE 203	12.5	22.734	3.063	804	664	357	7		7	4	59			7	94	2.542
2300304	PIERCE AVE 204	12.5	37.967	1.105	572	852	389	4	1	11		94			11	18	2.093
2300312	PIERCE AVE 012	4.8	3.942	0.084	401	212	80					12			3	70	1.356
2300322	PIERCE AVE 022	4.8	0.264	0.012	1	6											0.006
2300332	PIERCE AVE 032	4.8	18.196	2.318	701	554	251	6	2	3		42	1		4	107	2.420
2300399	PIERCE AVE 022	4.8	0.045														
2300412	SUCO 012	34.5	0.065														
2300512	OTEGO 012	4.8	42.078	0.773	598	828	373	2	3	6		93			3	34	2.506
2300520	OTEGO 200	12.5	96.927	1.302	1136	1948	724	16		4	1	249			17	70	4.591

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2300522	OTEGO 022	4.8	52.023	1.631	1049	1116	514	5	5	1		65			11	104	2.892
2300612	COLLIERS 012	4.8	53.969	1.608	1141	1355	515	5		6		178			12	29	4.613
2300712	BAINBRIDGE 012	4.8	49.270	0.143	1045	1166	473		1	7		74			4	97	4.131
2300722	BAINBRIDGE 022	4.8	35.378	0.126	569	758	328		6	7		42			4	28	2.605
2300732	BAINBRIDGE 032	4.8	3.228	0.180	247	136	63					8			1	53	0.545
2300821	COOPERSTOWN 121	4.8	45.970	1.615	835	1120	366	2	4	6		69			5	67	3.281
2300823	COOPERSTOWN 123	4.8	16.359	1.727	763	614	213	1	4	3		37			6	112	2.780
2300899	COOPERSTOWN SVC	4.8	0.017														
2300912	UNADILLA 012	4.8	40.947	0.619	1181	1078	448	1	2	7		92			4	149	4.916
2300922	UNADILLA 022	4.8	98.620	1.102	1146	2111	746	1	5	7		215			9	46	6.318
2301012	SIDNEY-RAILROAD 012	4.8	40.702	1.713	1500	1157	462	2	1	10		189			15	216	5.156
2301022	SIDNEY-RAILROAD 022	4.8	9.465	0.496	432	373	142	3	2	6		19			2	64	2.156
2301032	SIDNEY-RAILROAD 032	4.8	27.567	0.693	1266	864	367	2	4	4		40			7	114	4.635
2301112	JORDANVILLE 012	2.4	0.117	0.006		4											
2301123	JORDANVILLE 023	4.8	26.115	0.197	245	542	147	3		2		30			4	23	0.804
2301212	GILBERTSVILLE 012	4.8	57.485	0.111	677	1220	403		1	3		71			12	72	3.398
2301327	MILFORD 227	12.5	89.128	1.839	1144	1880	654	6	3	10	3	133			16	76	4.751
2301358	MILFORD 258	12.5	65.870	1.595	1139	1464	519	11	6	8	1	234			2	99	4.467
2301412	MOUNT UPTON 012	4.8	50.220	0.149	684	1142	385	1	2	1		44			5	58	3.673
2301512	EMMONS 012	4.8	6.112	0.931	228	219	106	1	2	3		12			2	23	0.550
2301522	EMMONS 022	4.8	4.132	2.215	206	139	84	5	2			12			4	3	0.731
2301612	MORRIS 012	4.8	25.949	0.211	507	636	218	2		3		38			6	72	1.931
2301614	MORRIS 214	12.5	61.859	0.610	663	1260	448	5	2	2	6	92			14	22	2.648
2301712	WEST ST 012	4.8	7.344	1.028	152	177	63					7			3	92	1.831
2301812	RICHFIELD SPRINGS 012	4.8	75.988	0.612	1598	1976	631		3	10		123			7	159	7.302
2301822	RICHFIELD SPRINGS 022	4.8	19.130	0.104	457	540	184		1	4		30			4	27	2.418
2301899	RICHFIELD SPRINGS SVC	4.8	0.038														
2301970	SPRINGFIELD CENTER 270	12.5	75.200	2.436	1018	1664	552	15	4	3		126			26	50	4.073
2302075	SOUTH COOPERSTOWN 275	12.5	49.409	3.626	1049	1289	504	10	2	6	3	215			18	60	3.787
2302076	SOUTH COOPERSTOWN 276	12.5	2.786	0.187	365	152	65	3				9			6	75	0.779
2302112	WEST DAVENPORT 012	4.8	62.113	0.945	1016	1459	568	2	5	4		80			12	79	3.516
2302124	WEST DAVENPORT 022	4.8	11.030	0.815	518	355	196	3		3		59			3	34	1.177
2302212	SCINTILLA 012	34.5	0.104		1												
2302704	BROTHERTOWNE 504	34.5	56.673	1.028	612	1159	410	9		6		57			6	36	2.875
2302999		4.8	0.102														
2303012	GUILDFORD CENTER 012	4.8	74.315	0.602	857	1478	575		4	7		211			4	47	3.099
2303201	ATAGLANCE PVT	12.5	0.338	0.041													
2303345	AFTON-ONEONTA 245	34.5	13.214	0.080	130	242	96	1				31			1	4	0.535
2303912	SOUTH EDMESTON 012	4.8	53.883	0.451	377	945	305		3	2		52			7	19	1.320
2304022	BIRDSALL 022	4.8	3.039	0.148	566	203	94					13				69	1.821
2304032	BIRDSALL 032	4.8	1.548		397	121	35					4			2	53	1.066
2304042	BIRDSALL 042	4.8	0.835	0.119	137	43	19			1		2			2	11	0.065
2304072	BIRDSALL 072	4.8	4.350	0.065	707	236	72			6		11			2	84	1.318
2304082	BIRDSALL 082	4.8	3.284	0.180	706	213	80			6		16			1	81	2.027
2304112	NEW BERLIN 012	4.8	49.045	0.075	786	1075	376	1	3	7		44			2	61	3.359
2304122	NEW BERLIN 022	4.8	35.450	0.155	545	735	273		3	2		32				55	2.234
2304212	ORISKANY FALLS 140	4.8	1.059		1	2											
2304222	ORISKANY FALLS 141	4.8	23.645	0.379	656	599	200	1	2	11		35			6	109	2.073

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2304232	ORISKANY FALLS 142	4.8	70.199	0 894	997	1519	553		8	9		51			12	61	3.176
2304299	ORISKANY FALLS SVC	4.8	0.180														
2304312	OXFORD 012	4.8	77.047	0 989	1009	1503	549		8	9		58	2		8	50	4.380
2304322	OXFORD 022	4 8	54.026	0.459	910	1128	450		4	5		63			7	100	3.473
2304401	WILLET-ONEONTA 423	34 5	12 764		108	226	90		2			10				3	0.379
2304512	BOUCKVILLE 012	4.8	39 448	0.955	973	1036	372	2	2	10		65	2		6	70	3.118
2304612	BRIDGEWATER 012	4.8	34.341	0 618	64	750	280		3	4		42			3	53	2.016
2304725	EARLVILLE 225	12 5	65.828	0.644	656	1303	452	7	3	5		91			11	44	2 447
2304726	EARLVILLE 226	12 5	69.312	0 788	820	1385	419	9	2	7		52			11	102	2.989
2304727	EARLVILLE 227	12 5	82.648	0 718	1065	1688	600	13	3	4		87	1		10	91	3.656
2304812	EATON 012	4 8	42.352	0 378	703	994	316	1		5		53			4	63	2.717
2304942	EDMESTON 220	12.5	56 398	0 140	800	1200	430	10	3	6		72			16	97	2.688
2305006	MORRISVILLE 106	4.8	2 741	0 179	54	50	23					1				1	0 060
2305065	MORRISVILLE 265	12.5	55.805	0 289	601	1027	398	8	2	2		60			16	56	2.224
2305066	MORRISVILLE 266	12.5	30 003	1.019	837	752	312	12		7		43			11	101	2.877
2305112	NORTH NORWICH 012	4 8	32 114	0.207	440	686	242	1				30			7	37	2.195
2305212	WATERVILLE 012	4.8	19.107	0 436	790	553	208	1		4		31			6	104	1.802
2305222	WATERVILLE 022	4 8	27 141	0 377	388	564	190		5	4		97				30	1 074
2305299	WATERVILLE SVC	4 8	0 009														
2305312	WOODS CORNERS 012	8.32	36 233	1 264	757	799	39	2	1	1		47			8	73	2 823
2305322	WOODS CORNERS 022	8.32	1 378	0 635		6									3	3	0 025
2305399	WOODS CORNER SVC	8 32	0.042														
2305412	SOUTH NEW BERLIN 012	4.8	42.133	0 162	587	93	336	1		2		30	1		8	57	2 429
2305515	EAST NORWICH 515	34.5	140.920	4.590	2867	3199	1335	21	2	10	3	308	2		65	168	11.289
2305516	EAST NORWICH 516	34.5	101 249	1.989	181	2290	914	23	6	5	2	167	1		87	140	7 113
2305612	TEXAS EASTERN PVT	34.5	0 090		1												
2306212	BELL AYRE 212	12 5	78.634	1.286	1115	1923	649	7	1	4		99			16	87	6.409
2306217	BELL AYRE 217	12.5	4 887	0 007	49	132	41	1		3		8			1	1	0 435
2306218	BELL AYRE 218	12.5	15 97	0 77	385	496	155	6		3		30			10	43	2.400
2306299	BELL AYRE SVC	12.5	0.016														
2306330	ARKVILLE 230	12.5	166.252	5 753	2927	3830	1591	22	8	12		207	3	1	40	184	14 157
2306435	ANDES 235	12.5	182.720	6.276	1686	357	1180	4		6	1	225	2		35	81	8 221
2306499	ANDES SVC	12.5	0 016														
2306550	NORWICH PHARMACY 250	34 5	0 109														
2306960	WEST WINFIELD 260	12 5	106 161	0 928	1334	2178	752	16	7	6		279	3		21	136	4.235
2306961	WEST WINFIELD 261	12 5	76 366	2 406	1265	1577	662	13	7	1		89	1		15	91	4.458
2306999	WEST WINFIELD SVC	12 5	0 021														
2307010	AXTELL RD 510	34.5	87.533	2.078	1005	1764	660	10	2	10		116	1		14	74	4 274
2307011	AXTELL RD 511	34.5	118.516	0.564	1252	2407	912	11	4	7	2	138	2		25	57	5.522
2307032	AXTELL RD 032	7.2	26.739	0.959	895	814	313	4	2	3		111			7	130	3 325
2307210	DELHI 210	12.5	91 211	2.777	1248	1905	634	16	5	6		257	2		20	109	3.709
2307211	DELHI 211	12 5	94 799	2.474	918	1940	577	7	3	3		166	3		23	80	4.143
2307212	DELHI 012	4 8	5.432	0 160	733	249	126			3		20			2	116	1 212
2307299	DELHI SVC	12 5	0 014														
2307309	DEPOSIT 109	4 8	118 231	1 127	1419	2300	767	1	11	4		104	2		13	93	5.639
2307310	DEPOSIT 110	4.8	35 055	0.192	51	678	269	1	3	1		27			4	19	1.427
2307390	DEPOSIT 290	12.5	62.587	0.559	1119	1454	537	4	5	6		76	3		14	63	4.559
2307412	DOWNSVILLE 012	4 8	90.300	1.572	1186	1792	687	1	2	4		82	1		14	108	5 321

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2307645	GRAND GORGE 245	12.5	140 436	1.051	1401	2879	1068	11	3	5		179	2		29	45	8.235
2307646	GRAND GORGE 246	12.5	73.582	0.797	978	1599	534	3				7	1		16	97	3.909
2307647	GRAND GORGE 247	12.5	62.086	2.355	884	1354	501	2		9		77	1		13	101	3 096
2307699	GRAND GORGE SVC	12.5	0.034														
2307712	HANCOCK 012	4 8	5 582	0 147	545	272	118			3		17				95	1.908
2307715	HANCOCK 215	12.5	7 602	0.117	113	207	60					13				4	0.926
2307716	HANCOCK 216	12.5	133 914	1 479	1557	2829	943	1	9	5	34	226	2		39	162	8.427
2307799	HANCOCK SVC	12.5	0.020														
2307901	SHANDAKEN 501	34 5	59.756	3.620	1870	2013	658	22	3	7	13	143	2		24	139	11 461
2307912	SHANDAKEN 012	8.32	35.511		610	946	289			3	3	63			8	17	4.519
2307999	SHANDAKEN SVC	34 5	0.022														
2308102	RIVER RD 102	4.8	30.644	0.452	1059	861	313	1	2	1		50			7	121	3 884
2308103	RIVER RD 103	4.8	1 46	0.100	22	41	8		2	6		5			1	2	0 090
2308104	RIVER RD 104	4.8	54.412	0.814	1112	1199	412	1	3	4		62			7	85	4.510
2308105	RIVER RD 105	4.8	69 809	1 030	1023	1405	598	2	5	3		93			4	48	3.903
2308238	WINDHAM 238	12 5	4 818	1 493	96	146	66			12		17			16	3	0.479
2308239	WINDHAM 239	12 5	66.463	4 684	1600	1805	768			6	4	181			21	128	5 412
2308240	WINDHAM 240	12 5	93.980	5.776	1456	2330	946			3		196	3		8	35	6.193
2308241	WINDHAM 241	12.5	5.797	1.924	680	263	147			6		18			4	56	1 138
2308312	FINCH HOLLOW 012	4.8	53.895	0.176	447	992	322		1			78	1		8	17	1 957
2308417	SANDS CREEK 217	12 5	16 908	0 175	100	295	89					11			4		0.32
2308612	BARRETTS 012	34 5	0.090														
2309101	STREETLITE_23 ST1	4 8	0.140		1												
2309305	NM-ONEONTA 105		9 927		1	2	1										0.036
2309323	NM-ONEONTA 023		15.011		3	6	3										
2309332	NM-ONEONTA 032		2 97	0 259	1	26	10										0 051
2309333	NM-ONEONTA 033		30.453		5	15	5										0.104
2309350	NM-ONEONTA 050		12.661		8	11	5										0.050
2309364	NM-ONEONTA 064		12.447		8	24	7										0.098
2309369	NM-ONEONTA 069		8.104		8	18	9										0 044
2309404	CHU-WALTON1 104	13.2	1 250		2	4	2										
2309466	CHU-WALTON1 066	2 4	1 515		3	10	3										0 027
2309470	CHU-WALTON1 070	2.4	1 326		7	10	5										
2309480	CHU-WALTON1 080	7 62	3 857	0 028	3	8	3					1					
2309505	CHU-WALTON2 005	4 8	1.713		5	9	3										0 012
2309511	CHU-WALTON2 011		3.659		5	20	5										
2309558	CHU-WALTON2 058	4 8	2 415		11	26	7										
2309581	CHU-WALTON2 081	7.62	0 689		2	4	2										
2309659	PENN ELEC-WALTON 059	7.2	0 58		2	3	1										0 027
2309663	PENN ELEC-WALTON 063	7.2	2.664		1	2	1										
2309665	PENN ELEC-WALTON 065	7 2	1.230		7	11	5										0.034
2309748	NM-WALTON 048		3.995		3	3											
2309751	NM-WALTON 051	4 8	4 052		20	38	19										0 031
2309774	NM-WALTON 074	4 8	16.564		6	13	5										0.093
2309779	NM-WALTON 079	4.8	13 122		2	2	1										0 025
2309785	NM-WALTON 085	7 62	1 640		2	5	2										0.037
2309789	NM-WALTON 089	4 8	4 222		2	3	2										
2309857	NM-CRUMHORN LAKE 057	4.8	2.547		36	53	15										0 120

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2309903	NM-NORWICH 103	2.4	10.511	0.085	2	2	3										
2309911	NM-NORWICH 011	2.4	18.314		4	6	3										
2309921	NM-NORWICH 021	2.4	5.009		14	20	10										0.064
2309925	NM-NORWICH 025	2.4	4.366	0.257	17	21	11										0.055
2309926	NM-NORWICH 026	2.4	6.254		2	5	2										
2309939	NM-NORWICH 039	2.4	11.830		2	3	2										
2309945	NM-NORWICH 045	2.4	20.723		3	5	2										0.008
2309947	NM-NORWICH 047		36.185		6	19	5										
2309994	NM-NORWICH 094	7.2	32.124	0.039	1	4	1										
2309996	NM-NORWICH 096		22.097		4	4	3										
2400202	SHIELDS RD 002	4.8	13.969	0.991	293	386	181	3				26			4	31	1.324
2400435	COCHECTON CENTER 350	4.8	25.542	0.117	231	534	174	2		2		20			6	4	1.159
2401011	BEAVER BROOK 011	4.8	24.906	0.572	197	603	181			2		30	2			3	1.26
2401196	CONCORD 196	4.8	5.367	0.185	186	191	70			6		15			2	10	0.665
2401197	CONCORD 197	4.8	15.450	2.440	489	492	230	5		4		55			6	69	2.250
2401198	CONCORD 098	4.8	2.511	0.032	14	53	6			6		2			2	2	0.153
2401275	FOSTERDALE 107	4.8	40.080	0.801	540	995	387	1	2	9		43			6	12	2.591
2401276	FOSTERDALE 108	4.8	22.295	0.300	357	592	215	1		3		30			5	30	1.129
2401310	GROSSINGER 210	12.5	45.422	2.252	1108	1524	617	19		4		92	1		27	153	5.536
2401311	GROSSINGER 211	12.5	75.196	5.103	1419	2107	781	20	5	5		114	1		25	184	5.810
2401514	HAZEL 353	34.5	53.079	14.780	376	1003	271	12	1			78			34	1	1.614
2401589	HAZEL 189	4.8	25.337	0.659	606	682	228	1				35			4	71	2.065
2401610	JEFFERSONVILLE 110	7.2	106.541	2.022	1730	2549	1009	1	1	8		129			16	116	6.417
2401611	JEFFERSONVILLE 111	7.2	70.392	2.389	906	1628	580	1	1	5		92	1		9	6	4.167
2401612	JEFFERSONVILLE 112	7.2	40.922	2.486	677	997	388	4	1	7	3	54	1		10	27	3.293
2401760	KIAMESHA 260	12.5	2.410	0.720	139	106	68					13			4	23	0.277
2401761	KIAMESHA 261	12.5	7.178	3.194	370	245	144			3		10			2	44	1.739
2401763	KIAMESHA 263	12.5	15.341	0.127	553	508	239	8				24			13	88	1.631
2401842	LIBERTY 142	4.8	11.143	1.681	436	437	160	6	2			53			10	92	1.762
2401844	LIBERTY 144	4.8	17.442	0.538	1258	669	255	3	1	5		34			7	229	2.640
2401845	LIBERTY 145	4.8	4.366	0.024	505	248	94			6		13			4	109	1.574
2401970	LIVINGSTON MANOR 070	4.8	53.949	3.252	1114	1477	529	8	4	14		78			17	194	5.297
2401971	LIVINGSTON MANOR 071	4.8	21.175	0.287	317	546	207			3		24			1	5	1.638
2402182	LUXTON LAKE 182	4.8	56.667	0.624	927	1529	531	2	1	8		67			7	117	4.295
2402227	MAPLEWOOD 127	4.8	16.452	2.030	507	512	234	6		3		38			7	34	1.169
2402228	MAPLEWOOD 128	4.8	0.036	0.009	1	3											
2402229	MAPLEWOOD 229	12.5	25.829	4.928	1747	1031	500	3		12		87	1		20	240	4.796
2402321	MONTICELLO 136	4.8	10.253	0.991	915	429	183	4		6		33			6	199	2.124
2402322	MONTICELLO 137	4.8	13.047	1.234	629	499	210	6	2	4		28			9	79	2.488
2402323	MONTICELLO 138	4.8	4.908	0.459	600	283	108	2	1	4		39			4	205	2.376
2402324	MONTICELLO 139	4.8	6.042	0.260	235	202	98		2			14			3	85	0.997
2402480	NEVERSINK 080	4.8	48.010	5.073	971	1309	548	4	3	8		92			7	32	4.343
2402583	OLD FALLS 283	12.5	59.408	2.818	1386	1689	686	21	4	20		89	1		22	223	5.357
2402584	OLD FALLS 284	12.5	16.297	1.157	660	582	268	11		9		47	1		11	135	2.237
2402588	OLD FALLS 288	12.5	19.973	6.002	1490	786	449	15		18	3	69			19	216	4.973
2402614	ROCK HILL 114	4.8	1.846	1.394	148	77	41					6			4	40	1.380
2402625	ROCK HILL 125	4.8	53.873	6.299	1688	1679	716	1	1	12	2	107	1		24	276	8.001
2402626	ROCK HILL 126	4.8	11.754	4.893	583	457	226			2		21			10	97	4.631

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2402787	ROSCOE 287	12.5	110 780	1.741	1315	2431	790	2		3	12	105	3		42	87	6 307
2402820	SACKETT LAKE 020	4.8	20 264	3 244	743	684	298	9	2	9		37	1		9	38	3.573
2402821	SACKETT LAKE 121	4.8	12 022	2 060	320	378	172	2		6		23	1		1	39	1.417
2403194	SWAN LAKE 158	4 8	37.264	1.641	742	1075	411	4	3	9		65			14	36	3 061
2403195	SWAN LAKE 157	4 8	27 457	2 229	591	843	314	5	2	7		51	1		9	52	2 77
2403250	WHITE LAKE 150	4.8	46.488	5.946	698	1273	429	9	1	3		70			4	35	4.070
2403251	WHITE LAKE 151	4 8	42.362	3 009	1695	1647	586	6	3	13		68	3		17	75	11 917
2403252	WHITE LAKE 290	12 5	36.654	1 109	769	1120	401	10	3	4		63			10	106	3 306
2403404	YULAN 204	12 5	104 909	2.591	1895	2920	1092	25		9		134	1		32	48	9 827
2403605	WALDEN 705	12 5	18 542	2.425	2259	955	414			6		87			22	340	5 600
2403607	WALDEN 707	12.5	6.720	2.847	895	336	153					18			2	94	2 289
2403658	WALDEN 358	34.5	63.122	7.724	1429	1800	813	10	1	5		186	1		37	26	5.647
2403659	WALDEN 359	34.5	80.856	16.330	3312	2765	131	28	4	4		33	1		65	206	11 582
2403734	MOUNTAINDALE 107	12.5	33.807	7 419	1745	1174	564	5		22		124			15	232	6 144
2403736	MOUNTAINDALE 106	12.5	24 083	0 498	627	759	275	1		5		50			5	144	2.683
2403885	CALLICOON 285	7.2	122 873	3.342	1624	2814	960	19	1	9	1	111	1		45	165	7 733
2403999	HILLDALE 225	12 5	41.185	10 015	1912	1420	685	6		9		96	1		36	384	10 778
2404030	WILLOWEMOC 030	4.8	45.718	0.886	395	838	284	1		1		40			4	4	1 834
2404101	VILLA ROMA 001	34.5	1.630		8	17	5					3	1		3		
2404201	WHITE SULPHER SPRING 001	4.8	24 825	0 883	540	643	273	2		4		38			3	48	2.003
2404301	SHORTCUT RD 349	4.8	5 528	0.431	80	152	55	1				8			3	2	0.264
2404401	FREMONT-ACIDALIA TAP 352	19 9	28.603	0 276	220	530	181	1			6	24			6	3	0.900
2407617	FRENCH WOODS 217	12 5	15.432	0 256	185	313	120	2				15			3	5	0.785
2407716	ROCK VALLEY 216	7 2	20.887	0.048	132	395	122	1				8			4	4	0 626
2408101	PPL-GRASSY SWAMP RD PPL	4.8	0.401		5	8	4										0 042
2408201	PPL-COLONIAL ST PPL	4.8	0 333		1	6	2										
2408301	PPL-COCHECTON MILL PPL	12.5	0 266		2	8	3										0 035
2408401	CHU-BUDD RD CHU	4 8	0.212		2	1	1										
2408501	CHU-BLUE HILL RD CHU	19.9	1 717	0.662	4	3	3										0.028
2408601	CHU-THUNDER HILL RD CHU	19.9	0.597	0.089	6	12	6										
2408701	CHU-POST HILL RD CHU	19 9	0.158		2	3	2										0 021
2408801	ORG-FOX HILL RD ORG	4 8	0.659	0.240	27	23	10	1								1	0 208
2408901	ORG-BARKER RD ORG	4 8	0.580		13	15	8										0 036
2409001	ORG-LAKE DR ORG	4.8	0.106		1												
2409101	ORG-ROWLEY RD ORG	4.8	0 165		8	8	3										0.029
2409501	CUT THRU_24 CUT	4 8	0 064														
2409901	STREETLITE_24 999	4 8	0.022														
2409902	STREETLITE_24 998	4 8	0.028														
3100101	LEGION DR 152	4 8	2.870	0.024	85	122	22			3		6			1	50	0.453
3100102	LEGION DR 153	4.8	7.749	0.248	658	405	153	2		6		16			3	125	2 058
3100103	LEGION DR 154	4.8	32.137	0 552	1272	1250	347		5	9		91			10	240	4.534
3100104	LEGION DR 510	34.5	13.531		188	354	95	4				9			15	11	0 910
3100201	DAYTON 160	4.8	35 883	0.256	436	921	289		1	1		104			5	36	2.740
3100301	ELLINGTON 164	4 8	64 580	0 262	718	1606	434		6	6		50			5	69	3 492
3100302	ELLINGTON 165	4 8	22.356	0 459	194	535	123			12		22			5	20	0.956
3100401	NEW ALBION 168	4 8	38.234	0.177	364	929	253			6		28			3	8	2.34
3100501	RANDOLPH 174	4 8	41 166	0.244	614	1011	303		2	17		39			2	77	2.37
3100502	RANDOLPH 175	4 8	12 329	0 174	602	538	168	1		1		18			1	129	1 640

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3100601	SILVER CREEK 178	4 8	15 203	0 222	112	791	262			9		3			10	300	3.729
3100602	SILVER CREEK 179	4 8	20.616	0.622	1346	1010	302	2	4	4		107			13	267	4 720
3100603	SILVER CREEK 180	4.8	72.127	0.208	1328	2038	676	10	5	12		80	2		18	156	5.87
3100701	FROG VALLEY 184	12.5	58.335	0.063	682	1466	418	7		9		52			9	22	3.966
3100702	FROG VALLEY 185	12.5	13.847	0.018	295	450	128					15			7	50	1.337
3100801	ERIE ST 202	4.8	10.688	0 592	1105	603	170	4		6		2			8	189	2.860
3100802	ERIE ST 203	4 8	8 372	0 117	1390	52	187			9		19			3	169	2.414
3100804	ERIE ST 205	4 8	13.753	1.052	1950	761	215	3	2	9		32			3	239	3.954
3100806	ERIE ST 207	4.8	3.298	1 866	285	170	90	3				4				53	2.054
3100807	ERIE ST 208	4.8	5.438	0 006	868	342	133			6		1			3	111	1 940
3100808	ERIE ST 209	4 8	6.467	0 053	864	398	116		2			12			5	129	2 137
3100809	ERIE ST 515	34 5	28 612	9 591	3491	1675	644	26		26	12	82	2	2	68	491	8.670
3100810	ERIE ST PVT	4 8	0 152														
3100901	GIRDLE RD 554	34 5	24.058	4.20	1078	967	333	19		4	5	62			33	68	3 497
3101001	INDIAN CHURCH RD 223	4 8	8.701	1.20	1085	465	235	6	2	3		25			10	111	1 652
3101002	INDIAN CHURCH RD 224	4.8	3 720	0.281	512	224	53	1		3		6			3	61	1 15
3101003	INDIAN CHURCH RD 225	4.8	3 782	0.448	461	204	62	3				9			6	52	0.688
3101004	INDIAN CHURCH RD 226	4 8	2 109	0 037	281	81	24					4			1	36	0.418
3101101	SLOAN 229	4.8	7 732	1.135	1545	386	118	4		3		40			25	42	0.618
3101102	SLOAN 230	4 8	7.552	0.053	1031	435	129					1				166	2 214
3101103	SLOAN 231	4 8	13 399	0.026	2014	763	226	1	2	9		26			2	250	3 093
3101203	ELLICOTT RD 237	4.8	5 433	0.059	391	310	131			9		6			5	106	2.152
3101204	ELLICOTT RD 238	4.8	3.090	0 176	140	136	71			3		9			1	26	0.362
3101601	ALDEN 262	4 8	17.863	0 380	550	660	201	1		3		19				176	2.098
3101602	ALDEN 263	4.8	17 365	2.143	1376	771	325	8	4	6		32			7	249	3 429
3101603	ALDEN 264	4.8	23 230	1.302	1087	955	320	5	2	10		39			13	193	4 005
3101701	REIN RD 271	4.8	3 953	0.354	119	178	99			3		17			5	62	0 538
3101702	REIN RD 272	4 8	6.191	2 702	940	330	181	8		3		16			4	97	1.283
3101703	REIN RD 270	12 5	1.752	0 785	52	101	42				2	4			5	45	0.655
3101801	JAVA 280	4 8	64.803	0.668	891	1742	515	1	6	11		116	2		6	6	5 166
3101802	JAVA 281	4 8	46.24	0 632	773	1315	449	2	6	10		49	2		14	59	3 235
3101901	ORCHARD PARK 285	4.8	10 292	0.890	845	468	176	4	2			2			5	92	1.734
3101902	ORCHARD PARK 286	4.8	11 864	0.727	927	579	222	6	4	6		27			9	127	2 33
3101903	ORCHARD PARK 287	4.8	4.572	0.904	70	263	134	2		3		14			6	63	1 315
3101904	ORCHARD PARK 526	34 5	4 288	2 536	265	173	106	3		6		29			28	30	0 298
3102001	HAMBURG 292	4 8	12.034	0 017	1337	659	190			9		77			4	187	2.685
3102002	HAMBURG 293	4.8	15.612	0.205	1155	840	259	1		6		29			3	267	4.346
3102003	HAMBURG 294	4 8	9.378	0 086	879	502	181			6		14			1	187	1.913
3102004	HAMBURG 295	4.8	3 735	0 246	318	213	85			3		14				89	1.185
3102005	HAMBURG 296	4.8	3 586		254	163	68		2	6		4			6	7	0 493
3102101	WALDEN AVE 300	12.5	5 74	0.308	485	291	140			3		22			10	79	0.649
3102102	WALDEN AVE 301	12 5	15.234	0.023	2066	894	300			6		31			11	306	4.536
3102103	WALDEN AVE 302	12 5	4 185	0.463	311	240	67			3		26			20	58	1.62
3102104	WALDEN AVE 303	12 5	4 632	0 173	389	240	83			10		9			8	31	0.613
3102105	WALDEN AVE 304	12 5	4.150	0 023	315	202	108	3		6		6			3	37	0 47
3102106	WALDEN AVE 305	12.5	5 813	1 121	752	316	183			6		1			12	141	1 716
3102107	WALDEN AVE 307	12 5	3 965	0.470	261	200	97			6		18			6	44	1.041
3102201	BLOSSOM 312	12 5	23 229	8 366	2556	1241	490			15		49			17	181	4.713

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3102202	BLOSSOM 313	12.5	14.530	3.220	714	636	160			6		29			13	8	2.367
3102205	BLOSSOM 517	34.5	20.964	9.567	2302	1133	512	26	2	15	6	8	2		60	18	4.537
3102301	HOLLAND 320	4.8	60.406	1.418	1035	1808	65		3	8		85			3	87	6.536
3102302	HOLLAND 321	4.8	32.292	2.016	1180	1176	466	4	5	4		49			8	143	4.81
3102303	HOLLAND 520	34.5	76.178	1.705	1098	2142	680	18	2	12	7	91	1		34	105	5.668
3102401	WALES CENTER 325	4.8	36.992	2.640	1065	1217	473	3	4	4		50			6	44	4.238
3102402	WALES CENTER 326	4.8	55.804	2.652	759	1540	564		4	5		73			4	12	3.693
3102501	WEHRLE DR 330	12.5	4.039	0.670	285	177	104			9		11			18	42	0.552
3102502	WEHRLE DR 331	12.5	9.966	3.716	1097	529	281	3		18	2	46			26	138	1.535
3102503	WEHRLE DR 335	12.5	5.942	0.902	352	223	80			15		20			13	45	1.073
3102505	WEHRLE DR 334	12.5	11.663	3.498	947	504	226			21	1	27			19	90	1.759
3102506	WEHRLE DR 332	12.5	11.146	0.339	896	518	205	4		6		31			8	136	4.440
3102601	EAST AURORA 341	4.8	1.388		24	55	11					2				19	0.174
3102602	EAST AURORA 342	4.8	14.314	3.112	1099	637	281	8		5		29			16	119	2.400
3102603	EAST AURORA 343	4.8	24.037	0.792	1097	98	359	1		10		34			4	149	5.577
3102604	EAST AURORA 340	4.8	3.766	0.226	464	206	78	1				12			7	79	0.556
3102605	EAST AURORA 345	4.8	14.573	0.097	1289	734	233			7		30			2	225	2.741
3102606	EAST AURORA 346	4.8	26.355	1.284	955	1071	396	3	2	6		37			6	99	3.348
3102607	EAST AURORA 347	4.8	5.578		338	256	126			9		4			5	75	0.794
3102701	CHERRY CREEK 501	4.8	24.832	0.083	424	658	196	4	3	1		21			3	64	1.508
3102801	EBENEZER 360	4.8	6.603	0.127	854	403	136	1		6		14			2	143	2.017
3102802	EBENEZER 361	4.8	9.904	2.158	1527	616	161	6		9		23			8	155	3.537
3102901	ARMOR 371	12.5	13.504	7.634	2365	847	351	3		10	1	63			25	293	5.860
3102902	ARMOR 372	12.5	18.597	7.787	1986	971	370	6		10	4	89			16	265	4.929
3102903	ARMOR 373	12.5	18.486	5.801	2455	950	362			12	3	50			20	269	4.781
3103001	DAVIS 380	12.5	33.134	1.839	934	1164	394	2			1	52			10	155	4.284
3103002	DAVIS 381	12.5	36.357	5.272	1322	1350	506	5		6		98			19	93	5.041
3103003	DAVIS 382	12.5	31.271	17.875	2351	1503	677	7	6		12	85	1		28	136	5.297
3103004	DAVIS 531	34.5	41.526	12.240	2103	1785	679	37	5	13	6	84			49	288	8.464
3103101	DICK RD 390	4.8	4.800	0.109	56	31	95			3		12			3	103	2.226
3103102	DICK RD 391	4.8	0.692	0.140	27	33	17					6				12	0.084
3103103	DICK RD 392	4.8	12.515	0.227	1810	726	219			6		25			4	145	3.098
3103104	DICK RD 393	4.8	10.671	0.133	1727	571	208		2	1		24			1	207	2.194
3103105	DICK RD 537	34.5	23.852	0.617	2619	1328	323	18		2	16	63		2	40	290	7.140
3103107	DICK RD 396	4.8	10.350	0.042	1607	549	152			3		2			3	89	3.052
3103201	LANGER RD 430	12.5	8.466	1.281	1721	486	147			6		24			10	137	2.846
3103202	LANGER RD 431	12.5	7.269	0.357	811	416	99			12		13			9	72	3.441
3103203	LANGER RD 432	12.5	27.469	6.120	3282	1577	391			9	1	64	2		16	377	7.916
3103204	LANGER RD 433	12.5	15.338	0.848	1863	891	190	3		3		37			7	297	7.120
3103205	LANGER RD 434	12.5	4.124	0.017	483	231	139	3		9		7			3	132	0.962
3103207	LANGER RD 436	12.5	3.079	0.231	231	177	70			3		10			2	68	0.782
3103301	WENDE RD 440	4.8	1.377		1	25										4	0.081
3103302	WENDE RD 441	4.8	15.420	0.370	414	598	178		2	7		19			3	141	2.294
3103303	WENDE RD 442	12.5	26.117	3.902	1390	1232	434	5		17	1	97			24	263	4.966
3103304	WENDE RD 443	12.5	3.383	1.237	2	34						2			1		
3103401	COWLESVILLE 450	4.8	26.217	0.065	341	647	231			1		21			1	7	1.985
3103402	COWLESVILLE 451	4.8	30.383	0.954	752	1021	334			2		36			1	38	4.221
3103501	SOUTH COLDEN 455	8.32	19.519	0.980	462	654	232	2		6		23			7	29	2.456

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3103502	SOUTH COLDEN 456	8.32	7.168	0.141	222	285	97			3		11			1	33	1.143
3103601	LAKE AVE 480		14.640	5.444	1905	788	345			10		47			19	177	3.097
3103603	LAKE AVE 482	12.5	23.530	2.499	2834	1304	373	6		18		153			21	390	7.425
3103604	LAKE AVE 483	12.5	3.239	0.439	134	140	57			2		26			13	29	0.332
3103605	LAKE AVE 484	12.5	12.770	1.739	1317	661	241			12		33			10	139	2.667
3103701	CEMETERY RD 491	12.5	7.507	5.743	740	386	184	2			11	22			22	77	2.091
3103702	CEMETERY RD 490	12.5	26.550	18.275	3244	1562	690	5	6	21	9	75			32	291	6.714
3103703	CEMETERY RD 492		46.963	5.279	2023	1947	650	12	7	7	12	106			38	424	8.546
3103801	TYLER ST 460	4.8	9.669	0.119	1238	500	206			18		34			4	208	2.244
3103802	TYLER ST 461	4.8	9.502	0.488	1349	615	259	1	2	4		14			4	216	3.667
3103803	TYLER ST 462	4.8	9.233		1153	564	124			3	1	16			2	146	3.664
3103804	TYLER ST 463	4.8	5.852	0.252	734	317	113	1		3		10			3	124	1.517
3103901	SOUTH PARK 471	12.5	34.847	3.279	1878	1467	443	6	1	12	2	70	1		21	286	6.432
3103902	SOUTH PARK 472	12.5	25.690	2.260	1420	1066	384			9	5	45			9	16	4.937
3103903	SOUTH PARK 473	12.5	2.662	1.509	250	81	47			3		3			1	19	0.639
3104001	LOSSON RD 404	12.5	8.459	1.268	2155	440	160			12	1	20			7	76	1.723
3104002	LOSSON RD 401	12.5	9.387	4.754	1096	543	260	1		18		28			16	98	2.046
3104003	LOSSON RD 403	12.5	21.324	5.905	3162	1283	379	3		15	2	47			39	197	5.077
3104004	LOSSON RD 402	12.5	22.068	6.468	4002	1282	434			19		65			3	266	4.844
3104005	LOSSON RD 405	12.5	5.526	1.121	774	305	131	4		6		15			10	73	1.953
3104101	STOLLE RD 551	34.5	28.070	6.778	1412	1195	401	19		4	9	43		2	40	92	4.359
3104201	BENNINGTON CTR 445	12.5	41.332	1.145	492	1039	357			3		40			6	1	3.166
3104202	BENNINGTON CTR 446	12.5	39.661	0.674	725	1137	363	4	1	7		38			8	47	3.541
3104301	FISHER PRICE PVT	34.5	0.086														
3104401	BUFFALO CRUSHED STONE PVT	34.5	0.251		1	5											
3104601	QUEBECOR PVT	34.5		0.075													
3104701	KIATONE 001	34.5	0.094		1												
3104801	NORTH BROADWAY 535	34.5	18.955	16.868	3142	1244	553	19		26	8	78	1	5	89	371	6.371
3104802	NORTH BROADWAY 544	34.5	1.704	0.128	19	74	26	3		3		7			5	26	0.226
3104902	NEW GARDENVILLE 536	34.5	15.532	0.338	1065	756	218	9		3	6	28	1		22	171	3.745
3105001	BIG TREE 528	34.5	25.277	5.154	2200	1226	481	27		25	4	83	2		75	314	4.847
3105002	BIG TREE 523	34.5	9.987	1.419	707	468	166	6		18	3	48			53	156	1.752
3105003	BIG TREE 539	34.5	6.408	1.361	796	276	107	6			4	18			22	94	2.166
3105201	ROLL RD 512	34.5	37.019	18.391	2919	1743	928	35		24	15	113		3	77	234	5.700
3105202	ROLL RD 529	34.5	50.841	25.389	3752	2427	1184	49	2	26	20	119	1		80	455	8.792
3105203	ROLL RD 545	34.5	55.094	10.255	2294	2042	896	34	1	16	11	108			39	375	7.693
3105301	COBBLEHILL 530	34.5	102.086	5.162	2308	3240	1121	15	8	10	2	156			37	301	10.701
3105302	COBBLEHILL 548	34.5	94.499	1.063	1276	2603	820	26	3	10	5	89	2		48	50	6.689
3105401	COWENS CORNERS 501	34.5	0.756		1	14	1							1	4	1	
3105501	COUNTRYSIDE SAND GRAVEL PVT	34.5	0.070														
3105701	GILBERT STEEL PVT	4.8	0.059														
3106301	JAMISON RD 518	34.5	3.399	0.305	107	166	37		3	13	4	4		2	11	15	1.008
3106501	LANDFILL PVT	34.5	0.076														
3106601	LANC STEEL PVT	34.5	0.017		1	2	1							1			
3106701	MOTOROLA PVT	34.5	0.065														
3106901	CS INTEG PVT	34.5	0.193		1	1											
3107101	WENDE PRISON 525	4.8	0.028														
3107301	SPRINGBROOK 495	12.5	23.530	6.326	1229	1040	423			15	10	50			19	136	3.895

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3107501	WEST VARYSBURG 355	12.5	32 403	0 456	346	854	245	3		3		39			10	7	2 052
3109401	STREETLITE_31 ST1	4.8	0 152														
3109998	NM-LANCASTER 098	0	1 363		8	1											
3200101	VINE ST 101	4.16	3 435	0 095	513	203	47	1		3		16			3	106	1.314
3200102	VINE ST 102	4.16	4 789	0 228	917	314	101	1		3		13			4	153	1.767
3200103	VINE ST 103	4.16	10 204	0.373	556	488	173	2	3	9		15			4	90	2.481
3200104	VINE ST 104	4 16	2.107	0.104	177	126	66	1		3		6			2	5	0 747
3200199		4 16	0.060														
3200201	TRANSIT 108	4.16	1 985	0.200	207	144	66			3		3			1	65	0.841
3200203	TRANSIT 110	4.16	1.619	0 045	189	108	53					4			1	42	0.537
3200204	TRANSIT 111	4 16	3.22		462	189	48			6		5			6	81	1.069
3200205	TRANSIT 112	4 16	3.923	0 205	830	246	81	1		3		11			3	124	0 930
3200206	TRANSIT 113	4 16	4.294		831	287	67			3		11			4	123	1 578
3200207	TRANSIT 114	4.16	9.095	0.190	525	390	150	1		6		15			10	101	1.348
3200208	TRANSIT 413	12		0.888	68	2	7								5		0.452
3200209	TRANSIT 414	12		0.905	45		3								1	1	0.341
3200210	TRANSIT SVC	12		0 727													
3200211	TRANSIT 416	12		0 589	38	2	3								1	1	0 171
3200299		4.16	0.039														
3200301	PARK AVE 120	4.16	7.132	0.089	1041	443	149		3	5		23			8	193	2.422
3200302	PARK AVE 121	4 16	4 189		540	242	106			6		9			4	108	1.001
3200399		4 16	0 057														
3200401	MILL ST 130	4 16	16 559	1 358	572	648	219	5	1	3		22			8	46	3 188
3200402	MILL ST 131	4 16	5 459		372	287	99			3		9			3	92	1.328
3200403	MILL ST 132	4.16	1 446	0 067	3	2	1		3			2			3		
3200499		4.16	0 067														
3200501	LOCUST ST 152	12.5	14.823	10 384	2198	774	433			6		32			24	45	6 745
3200502	LOCUST ST 153	12 5	12.342	5.791	1987	643	288	8		15		50			23	188	5 570
3200503	LOCUST ST 154	12 5	3.486	0 844	277	187	11			6		18			3	33	0 923
3200504	LOCUST ST 150	12.5	29.401	11 397	3023	1307	746	1	1	15		78			32	97	9.583
3200505	LOCUST ST 151	12.5	10 338	6 992	1262	597	316	1		6		27			14	79	4.166
3200599	LOCUST ST SVC	12.5	0 224														
3200601	CHESTNUT RIDGE 191	12.5	16 366	1.460	821	696	235			9		27			9	96	4.842
3200602	CHESTNUT RIDGE 190	12 5	13 295	4 285	822	599	277	3		3		24			24	26	4 370
3200699	CHESTNUT RIDGE SVC	12 5	0 077														
3200701	REDLAND FRONTIER INC PVT	4.16	0.095		1												
3200801	MILWARD ALLOYS PVT	4 16	0.079														
3201101	INTERNAT MULTIFOODS PVT	4 16	0.066		1												
3201201	BUFFALO PAPERBOARD PVT	4.16	0.073		1												
3201701	SOUTH NIAGARA ST 201	12.5	12 941	0 851	772	559	234		1	3		26	1		2	15	1 967
3201702	SOUTH NIAGARA ST 202	12.5	9 294	2.278	300	360	13	4		3		33	1		9	50	1 778
3201801	GENERAL MOTORS PVT	12.5	0 092														
3202001	ALLVAC PVT	4.16	0.087		1												
3202101	KINTIGH 090	12 5	0.176														
3209401	STREETLITE_32 ST1		0 124														
4200101	MACEDON 601	12.5	27 60	7 075	1397	1093	467					77			15	177	6 685
4200102	MACEDON 602	12.5	28.782	9.619	1454	1114	423	1	3	5	8	68			39	164	10.336
4200103	MACEDON 603	12.5	25 597	1.809	712	755	278	1		2		43			7	6	2 597

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Circuit	Circuit Name	Circuit Voltage	Miles of Overhead	Miles of Underground	Cust Count	Pole Count	Dist Xfmr. Count	Step Xfmr. Count	Reg. Count	Capacitor Count	Fault Detector Count	Fuse Count	Recloser Count	Sectionalizer Count	Switch Count	Street light Count	Secondary Miles (exclusive)
4200201	PALMYRA 201	4.8	16.072	0.878	1407	725	221			7		27			3	309	4.034
4200202	PALMYRA 202	4.8	15.693	1.607	1133	622	258	3		4		24				157	3.560
4200403	VAN BUREN ST 603	12.5	47.794	2.627	2216	1731	588	8		20	24	91			16	337	8.727
4200404	VAN BUREN ST 604	12.5	7.080	1.068	1574	574	174	2		5		25			16	225	4.278
4200405	VAN BUREN ST 605	12.5	29.393	2.940	1254	1021	389			8	14	67			15	180	4.503
4200406	VAN BUREN ST 606	12.5	81.450	2.364	1917	2339	792	4		8	7	130	1		20	204	7.862
4200501	LYONS 601	12.5	3.104	0.447	210	145	53	2		3		10			2	78	0.707
4200502	LYONS 602	12.5	13.690	0.396	202	353	145	1		3		18			4	63	1.086
4200503	LYONS 603	12.5	59.166	0.724	1613	1642	510	12	5	12		68			17	393	5.179
4200601	CLYDE 201	4.8	0.302		3	1	2										
4200602	CLYDE 202	4.8	34.082	0.305	969	1047	318	1		7		33			5	290	4.662
4200603	CLYDE 203	4.8	49.951	0.450	667	1176	389		1	11		53			1	199	3.825
4200801	PHELPS 201	4.8	42.258	0.671	1240	1373	429	1	1	12		58			8	232	5.187
4200901	OAK CORNERS 201	4.8	12.685	0.280	306	421	170	1	2	1		16			2	6	1.706
4200902	OAK CORNERS 202	4.8	13.147	0.197	240	369	129	1	2	3		21			3	9	1.397
4200903	OAK CORNERS 101	2.4	0.541		1	5											
4201001	WEST GENEVA 601	12.5	40.719	3.049	1151	1271	439	5		3	5	63	1		20	190	3.929
4201002	WEST GENEVA 602	12.5	47.000	1.422	670	1281	464			3	6	58	1		10	62	3.209
4201003	WEST GENEVA 603	12.5	9.659	0.472	2313	803	185	10		3	4	29		1	12	61	6.696
4201004	WEST GENEVA 604	12.5	21.699	2.581	2237	1228	396	9				62			20	613	7.782
4201101	LEHIGH ST 601	12.5	18.488	1.599	1463	978	359			9		44			17	473	5.806
4201102	LEHIGH ST 602	12.5	22.182	0.742	986	817	283	3		6	4	24			13	199	3.745
4201501	WATERLOO 201	4.8	36.298	3.081	1545	1296	467	6	1	15		53			6	177	8.042
4201502	WATERLOO 202	4.8	7.146	0.303	859	452	116	2		6	2	12			3	173	3.290
4201503	WATERLOO 203	4.8	5.139	0.113	741	325	74			6		6			4	148	2.421
4201601	GOULDS 201	4.8	6.992		169	229	45					7			2	29	0.921
4201602	GOULDS 202	4.8	5.339	0.764	347	224	137	3	2	7		13			9	52	1.001
4201701	SENECA FALLS 601	12.5	25.047	1.844	1146	966	278	1		7	1	36	1		11	119	5.477
4201702	SENECA FALLS 602	12.5	11.027	1.112	1481	760	211	6	1	6	8	26			13	250	5.517
4201703	SENECA FALLS 603	12.5	44.199	1.958	1769	1382	413	1		9	3	61			13	291	6.923
4201801	MAC DOUGALL 601	12.5	44.455	0.969	706	1164	340	1		8	3	50			4	39	4.351
4201802	MAC DOUGALL 702	7.2	58.836	0.456	948	1581	505			7		86	1		5	11	6.055
4202004	SAMPSON PVT	4.8	0.011		2												
4202006	SAMPSON 206	4.8	3.960		6	113	9					3				3	0.051
4202101	GORHAM 201	4.8	15.191	0.171	354	476	153			5		19			2	74	1.386
4202102	GORHAM 202	4.8	26.171	0.394	338	629	197	1	1	2		20			2	33	1.769
4202201	HALL 201	4.8	12.668	0.062	191	330	107			1		14			3	39	0.484
4202302	RUSHVILLE 202	4.8	40.692	1.483	746	1072	337	2	3	8	2	61			9	88	2.795
4202401	MIDDLESEX 201	4.8	80.081	1.288	1099	1889	625	2	1	10		74			9	48	6.133
4202501	BELLONA 201	4.8	24.684	0.654	411	672	192		1	5		24	1		1	35	2.459
4202601	DRESDEN 201	4.8	34.117	0.432	539	896	253		2	4		36			4	56	2.836
4202602	DRESDEN 601	12.5	0.830		2	11			3								
4202701	ST JOHNS 201	4.8	29.100	0.590	287	700	207		1	3		35				2	1.451
4202901	MILO 201	4.8	38.829	2.177	758	1060	355	3	1	6		69	2		5	5	3.616
4203096	GREENIDGE 596	34.5	127.327	0.917	202	3275	1037	31	7	25		170	1	1	34	96	9.062
4203105	DUNDEE 205	4.8	68.533	1.490	1198	1658	580	4	1	11		92			12	213	4.848
4203201	OBRIEN RD PVT	4.8	0.250		2	8	2										
4203301	BANKERT RD 601	12.5	25.692	1.053	580	751	235	2		9	4	37			8	119	2.617

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4203302	BANKERT RD 602	12.5	34.971	4.082	1559	1247	473			2	4	67			16	241	7.382
4203401	GARLOCKS PVT	4.8	0.083														
4203501	SENECA ORDNANCE PVT	4.8	11.019	0.355	108	57	22		4			6				5	0.878
4203507	SENECA ORDNANCE 207	4.8	21.995	2.900	523	596	198		2	1		28			4	44	2.915
4203701	NYS AGRI EXPSTATION PVT	12.5	0.047														
4203897	FLAT ST 597	34.5	169.909	4.106	2741	4340	1429	30	5	7		201	3		50	107	14.741
4203899	FLAT ST 599	34.5	32.086	0.097	322	761	237	6		2		29			19	6	2.195
4203989	VOAK RD 589	34.5	36.398		264	710	218	2	4	7		35	1		3	4	1.769
4204001	KEUKA 201	4.8	28.207	1.184	770	805	245		2	4		40			2	29	3.044
4204101	GOULD PUMPS PVT	12.5	0.015		1												
4204201	SENECA F SPECIALTY PVT	12.5	0.010		1												
4204389	BLODGETT RD 589	34.5	45.422	2.866	1256	1416	448	13	3	9	1	92	1		16	14	6.789
4204501	PACTIV CORP PVT	12.5	0.280		1												
4204686	HALEY RD 586	34.5	30.563	2.452	545	876	258	10		8		45	2		24	17	4.175
4204789	RUSHVILLE TAP 589	34.5	54.736	0.242	472	1132	374	7	4	2		50	1		7	6	2.206
4206855	PRISON EXPRESS PVT	34.5	0.424			14	1										
4206901	GUARDIAN INDUSTRIES PVT	12.5	0.013														
4207769	HYATT RD 569	34.5	108.800	2.660	1559	2613	955	31	3	14	2	144	3		43	55	8.503
4207946	SLEIGHT RD 546	34.5	103.617	1.419	1615	2553	811	27	1	7		135	2		43	204	7.017
4207947	SLEIGHT RD 547	34.5	33.050	0.081	566	850	321	8		1		28	1		17	29	2.296
4208001	OVID-GENEVA 001	4.8	7.808	0.177	34	132	31					3				1	0.282
4208401	RGE-SAVANNAH 001	12.5	3.821		49	81	28	3				2					0.317
4208501	RGE-GALEN 001	4.8	0.232		3												
4208601	RGE-LYONS 001	4.8	0.350		1	7	2										
4208701	RGE-ARCADIA 001	2.4	0.478		3	5	1										
4208801	RGE-PALMYRA 001	4.16	2.737		5	13	4										
4208901	RGE-MACEDON 001	4.16	0.459	0.084	3	11	2										0.027
4209001	RGE-MARION 001	12.5	0.125		2	4	1										0.019
4209901	STREETLITE_42 ST1	4.8	0.034														
4300101	CAYUGA HEIGHTS 604	12.5	15.391	3.959	1452	767	246	1		6		36	1		29	140	5.464
4300102	CAYUGA HEIGHTS 603	12.5	0.012	0.020	32	2	2					2					
4300103	CAYUGA HEIGHTS 602	12.5	2.377	2.330	508	85	64			6		1			9	10	0.189
4300104	CAYUGA HEIGHTS 601	12.5	16.622	3.479	2050	662	323			6		4	1		26	146	3.987
4300105	CAYUGA HEIGHTS 605	12.5	7.820	4.578	803	328	222	2		9		25			13	2	2.164
4300106		12.5	0.006														
4300201	EAST ITHACA 406	12.5	5.813	0.374	2515	442	132			3		16			14	162	3.230
4300202	EAST ITHACA 405	12.5	37.481	6.419	1368	1073	534	14		13		62	2		28	28	5.564
4300203	EAST ITHACA 401	4.8	8.010	1.684	555	314	97	9		3		14			12	47	1.959
4300205	EAST ITHACA 404	12.5	11.235	3.906	2274	655	229	4		8		28			28	14	6.125
4300206	EAST ITHACA SVC	12.5	0.069		1												
4300302	SOUTH LANSING 720	4.8	28.570	1.574	672	696	349		1	5		32	1		7	9	2.733
4300303	SOUTH LANSING 721	4.8	30.119	1.642	620	723	328	3	1	4		31	1		6	9	3.241
4300402	CAYUGA ROCK SALT 123	2.4	1.426		12	4	14	3	2	6		1	1				0.029
4300403		2.4	0.024														
4300501	LUDLOWVILLE 726	4.8	4.652	0.601	170	163	61	1		3		17			4	13	0.668
4300502	LUDLOWVILLE 727	4.8	18.567	2.185	518	537	230	2	1	5		29	1		2	17	2.292
4300601	MORAVIA 704	4.8	24.664	0.243	697	673	247		1	6		44	1		5	82	2.477
4300602	MORAVIA 746	4.8	8.420	1.096	493	326	131	3		4		11			3	67	1.930

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4300603	MORAVIA 606	12.5	79.541	1.887	1000	1654	635	9		12		109			27	31	5.281
4300604		4.8	0.024														
4300701	LOCKE 718	4.8	45.609	1.016	699	977	404	1	1	6		34			4	45	4.363
4300702		4.8	0.015														
4300802	PERUVILLE 733	4.8	32.709	1.121	577	753	364	2		7		55			3	20	3.180
4300902	ETNA 709	4.8	42.777	2.923	1430	1162	554	5		9		60			9	54	4.817
4300904	ETNA SVC	4.8	0.017														
4301001	DRYDEN 734	4.8	32.875	2.849	827	805	383	6	3	6	1	40			6	23	3.271
4301002	DRYDEN 735	4.8	10.763	1.898	663	361	190	5		7		24			8	76	1.621
4301004		4.8	0.005														
4301101	BROOKTONDALE 531	34.5	86.733	6.445	1690	2003	875	30	3	9	1	135		3	4	90	7.006
4301201	CANDOR 529	34.5	46.597	1.282	1011	1074	493	12	4	9		65			16	36	3.623
4301202	CANDOR 722	34.5	18.155	1.452	510	482	209	1	2	5		25	1		7	6	2.582
4301301	SPENCER 712	4.8	59.384	1.347	1119	1358	613	1	3	11		66	1		6	89	4.469
4301302		4.8	0.007														
4301403	WEST DANBY 530	34.5	70.652	3.464	1446	1676	745	26	3	6	4	99	2	1	38	37	6.737
4301501	WEST HILL 609	12.5	14.864	2.043	514	407	208	4		9		27	1		10	56	2.016
4301502	WEST HILL 610	12.5	17.692	3.752	195	875	38	1		3		34	1		27	285	5.762
4301503		12.5	0.024														
4301601	COUNTY HOSPITAL 736	4.8	19.471	3.510	787	711	257	11		8		38	1	1	13	27	6.576
4301603		4.8	0.055														
4301701	TRUMANSBURG 723	4.8	18.460	1.308	629	519	223	1		5		26	1		5	66	2.201
4301702	TRUMANSBURG 747	4.8	72.512	2.119	1641	1722	738	3	6	15		74			11	113	6.422
4301703	TRUMANSBURG SVC	4.8	0.089														
4301801	INTERLAKEN 705	4.8	82.633	1.755	1403	1759	706	1	2	12		100	1		8	88	6.452
4301802		4.8	0.014														
4301901	OVID 715	4.8	78.960	1.421	1427	1718	651	4	4	16		107	2		22	125	5.464
4301902		4.8	0.029														
4302001	VALOIS 508	34.5	48.756	2.114	758	1069	417	10	2	12	1	63		1	9	40	2.926
4302002	VALOIS 719	4.8	33.381	0.718	710	810	326			8	4	43			2	8	3.348
4302102	BURDETT 702	4.8	38.582	1.712	670	912	350	1		4		38			6	61	3.221
4302103	BURDETT 508	34.5	8.631	0.191	13	31	18	1	1		5	4	1		3		
4302104		4.8	0.019														
4302203	SOUTH HILL 613	12.5	4.397	0.882	1554	311	115	3		6		6			24	108	1.845
4302204	SOUTH HILL 607	12.5	18.802	6.205	1229	707	352	13		9		35	1		23	42	5.128
4302205	SOUTH HILL 614	12.5	4.776	0.011	606	280	86	3		3		8			12	60	2.007
4302206	SOUTH HILL 608	12.5	7.462	0.506	583	348	202			12		19			10	127	2.001
4302207		12.5	0.020														
4302301	FOURTH ST 781	8.32	3.080	0.321	667	229	106	5		6		12			10	110	1.439
4302302	FOURTH ST 782	8.32	3.052		953	223	59			9		6			3	8	1.393
4302303	FOURTH ST 783	8.32	7.512	0.059	336	346	110					7			4	65	1.872
4302304	FOURTH ST 784	8.32	3.336	0.062	670	181	73			3		6			2	73	0.822
4302305	FOURTH ST 785	8.32	4.276	0.032	584	237	58			3		5			6	7	1.418
4302306	FOURTH ST SVC	8.32	0.136														
4302501	HALSEY VALLEY 530	34.5	56.627	0.639	472	1012	372	4	3	2	1	39	1		8	9	2.100
4302601	WALPOLE RD 741	4.8	14.167	0.162	216	311	144	1	1	2		18			3		0.953
4302701	VAN ETTEN 570	34.5	60.635	0.518	776	1214	459	13		6		70	2		16	98	4.080
4302901	BENJAMIN HILL 748	4.8	71.449	3.677	1412	1650	761	5	2	14		65	2		8	116	6.987

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4302902		4.8	0.072														
4303001	DANBY RD 571	34.5	59.557	8.566	1192	1400	688	22	5	9	2	74	1		22	25	5.080
4303101	NORTH LANSING 522	34.5	58.358	1.383	925	1298	506	10	4	9	1	59	1		2	8	5.006
4303301		34.5	0.039														
4303401	BURDETT MECK 508	34.5	118.717	1.704	1213	2285	871	17	4	15	2	107		2	20	16	6.475
4303501	SENECA ORD - ITHACA 001	4.8	2.78	0.522	98	76	32	1				2					0.353
4303601	SOUTH LANSING TAP 522	34.5	15.347	8.179	859	525	273	20	3	6	8	36	1		27	22	4.812
4303701	PERUVILLE TAP 522	34.5	86.052	2.068	1331	1876	774	23	6	9	3	87	1	3	23	32	6.754
4303801	DRYDEN TAP 524	34.5	38.756	5.050	1461	1076	517	31	4	14	2	75	1		36	126	5.769
4304001	HARFORD MILLS 749	4.8	18.295	0.825	298	395	140	1		4		16				19	1.170
4304002		4.8	0.053														
4304101	GROTON MUNI MUN	34.5	0.064														
4304201	HARFORD 524	34.5	12.67		157	259	103	3	1	2		12	1		5	13	1.105
4304301		12.5	0.051														
4304302		4.8	0.047														
4304401	ITHACA COLLEGE PVT	34.5	0.050														
4304501	CORNELL PVT	34.5	0.053														
4304701	MORSECHAIN PVT	34.5	0.043														
4304801	WILLARD 001	34.5	0.05		1												
4304901	WILSEYVILLE 751	4.8	31.582	1.162	477	598	276	4	2	5		26			6	4	2.027
4305001	CARGILL PVT	34.5	0.058		1												
4305101	CASS HILL-ITHACA 743	4.8	2.877		46	56	30	1		1		2			1		0.220
4305201	TOMPKINS CO HOSPITAL	34.5	0.044														
4305301	COUNTY HOSP - TBURG 540	34.5	98.173	3.083	2055	2402	1090	29	6	12	4	133	1	2	36	46	8.706
4305401	SEELY HILL 572	34.5	0.288		2	7	4		3						3		
4305501	KIMBERLY 524	34.5	0.673	0.616	60	25	15	1		1		5			1		0.358
4305601	SOUTHWORTH 524	34.5	9.700	0.875	155	184	77	3	1	2		13			3	1	1.260
4305701	CATPATH 522	34.5	4.839		53	110	48	1	3	1		6			4	1	0.585
4305801	ETNA TAP 523	34.5	1.208	2.783	375	57	45	4		36	1	9			11	1	0.160
4305901	ROUTE 79 746	4.8	10.274	1.089	108	177	76					7				2	0.363
4306001	BLACKMAN HILL 746	4.8	3.817	0.631	29	64	25					7				5	0.075
4306101	WEGMANS 534	34.5	0.043		1												
4306201	CRUM TOWN 530	4.8	18.362	0.841	183	354	143		2	1		20			3	3	1.029
4306301	POZZO 522	34.5	0.152		3	2	4										
4306501	SALT PAD 521	34.5	0.042		1	1	2										
4306601	BEER TAP 534	34.5	5.093	0.870	221	173	90	5	3			5		1	6	16	1.245
4308601	NM-WALKER RD NIM	4.8	0.057		1	3	1										
4308701	NM-GEE HILL RD NIM	4.8	0.380		8	8	4					1					0.025
4308801	NM-BABCOCK HOLLOW RD NIM	4.8	0.246		1	4	1										
4308901	NM-VIRGIL CREEK RD NIM	4.8	0.326		1	5	1										
4309001	NM-GLEN HAVEN RD NIM	4.8	1.861		60	55	28		1								0.267
4309101	STREETLITE_43 ST1	4.8	0.046														
4309102	STREETLITE_43 ST2	4.8	0.051														
4309301	CUT THRU_43 CUT	4.8	0.043														
4400101	CAYUGA 631	4.8	19.746	0.588	527	581	184	1	1	7		30			6	28	2.478
4400102	CAYUGA 632	4.8	25.617	0.570	427	632	208	3		5		23	1		1	36	2.024
4400201	STATE ST 303	4.16	1.975	0.029	49	35	23			3		5			2	19	0.147
4400202	STATE ST 709	12.5	14.743	0.43	257	1056	319			12		54			2	656	5.815

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4400203	STATE ST 710	12.5	53.674	1.396	1912	1782	585	6	3	14		97			24	291	5.547
4400301	WRIGHT AVE 704	12.5	7.284	0.445	105	454	173			6	2	19			19	276	2.036
4400302	WRIGHT AVE 705	12.5	6.129	0.411	793	369	115			6		18			12	150	1.560
4400303	WRIGHT AVE 706	12.5	36.725	0.905	729	1099	320	3		16		51			13	154	3.684
4400304	WRIGHT AVE 520	34.5	50.769	0.893	422	1018	314	11	3	12	6	76			10	2	1.904
4400305	WRIGHT AVE 703	12.5	10.896	2.440	359	352	159			7		46			12	68	1.624
4400401	UNION SPRINGS 609	4.8	26.352	1.787	956	924	292	6	4	3	1	41	1		10	110	3.262
4400501	GRANT AVE 718	12.5	4.648	1.824	791	280	173			6		15			12	85	1.829
4400502	GRANT AVE 719	12.5	18.347	4.037	684	700	257	4		1		46			10	134	2.964
4400503	GRANT AVE 720	12.5	47.290	1.999	770	1263	505	9	1	7	12	64			19	93	3.854
4400601	SWIFT AVE 314	4.16	3.412	0.024	649	248	41			3		16			4	105	1.216
4400602	SWIFT AVE 315	4.16	5.410		857	364	73			6		35			8	132	1.714
4400603	SWIFT AVE 316	4.16	6.457	0.082	1460	479	123			12		23			8	208	2.397
4400701	AURORA 707	12.5	18.569	0.113	402	498	177	4		3		15			9	22	1.641
4400702	AURORA 708	12.5	58.909	1.854	726	1474	401	1		10	11	63	2		19	52	4.476
4400801	CLARK ST 306	4.16	1.407		210	100	28					4			1	162	0.600
4400802	CLARK ST 322	4.16	3.289		696	228	63			3		5			3	98	0.907
4400900	GREEN ST 316	4.16		3.855	468		29										0.473
4400901	GREEN ST 322	4.16	2.509	0.026	43	176	42					8			3	96	0.909
4400902	GREEN ST 323	4.16		0.163													
4400903		4.16		0.182													
4401101	PORT BYRON 611	4.8	45.291	0.303	573	1022	333		2	9		54	1		5	65	2.689
4401102	PORT BYRON 633	4.8	36.430	0.440	1056	1135	397		2	11		48			4	137	5.169
4401201	WEEDSPORT 628	4.8	24.444	0.285	881	826	33	1		6		44			12	131	3.551
4401202	WEEDSPORT 629	4.8	18.429	1.099	573	622	203	1		6		25			5	77	1.960
4401301	JORDAN 613	4.8	32.177	1.709	1070	1049	354	1		15		47			4	177	4.541
4401302	JORDAN 714	12.5	18.944	2.806	1030	695	257	3		11		46			7	166	2.448
4401401	MARCELLUS 626	4.8	16.675	1.618	1177	660	224	3	2	11		49			13	126	3.149
4401402	MARCELLUS 627	4.8	20.353	2.464	886	769	285	5		12		38			9	90	3.454
4401501	OTISCO 701	7.2	31.630	0.612	567	903	289		1	3		82			15	20	3.355
4401503	OTISCO 703	7.2	26.985	0.664	662	871	263	1		5		30			4	49	4.159
4401602	MARIETTA 511	34.5	59.398	2.522	956	1499	471	13	2	4	7	136			16	24	4.966
4401701	GENOA 603	4.8	45.390	0.703	532	1006	343		4	10		43			5	45	2.399
4401702	GENOA 604	4.8	17.823	0.189	173	403	118		3	4		16			2	3	0.685
4401801	SCIPIO 605	4.8	33.598	0.771	399	759	239	1		2		82			6	3	2.414
4401802	SCIPIO 606	4.8	36.009	0.311	378	844	235			6		31			2	8	2.097
4402101	STRYKER AVE 702	12.5	45.536	3.876	2426	1996	563	1	1	10	4	105	3		35	416	9.763
4402102	STRYKER AVE 721	12.5	48.058	6.475	1828	1773	548	6	1	10		107	4		26	274	8.260
4402301	WATER WKS PVT	4.16	0.056														
4402501	EMPIRE SUGAR PVT	4.8	0.075														
4402601	ALCO PVT	4.16	0.052														
4402801	SEWER TREATMENT PVT	12.5	0.087														
4402901	HAMILTON RD 530	34.5	27.519	1.928	872	848	294	14		21	7	93	2		25	86	4.124
4403001	AUBURN STEEL PVT	4.16	0.06														
4403101	MILLER BOTTLING PVT	12.5	0.060														
4403201	KING FERRY 528	4.8	22.169	1.478	460	615	213	5	2	6		24	2		9	26	2.080
4403301	MORAVIA-AUBURN 704	4.8	12.752		129	274	84		1	2		23					0.748
4403401	BRUTON RD 521	4.8	11.024		83	215	66	3	2	1		8			3		0.497

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4403501	CLINTON CORN PVT	4.8	0 077														
4403601	SNYDER GEN PVT	4.8	0 125														
4403801	NORTH LANSING - AUBURN 603	34 5	0.848		4	13	3										0 023
4405001	WHITING RD 526	34 5	58.142	0 775	1128	1675	484	13	2	2	8	166			2	142	5.425
4408501	SAVANNAH 630	4 8	5.031	0.195	29	225	75	1		6		12			1	75	0.830
4408698	ROUTE 31 098	4 8	0.914	0.134	2	17	2	3				1			2		
4409028	HOWLETT HILL NE TLR 028	4.8	2.691	0.036	27	32	4										0 445
4409101	BUCKEYE PIPLINE 507	34.5	0 105														
4409229	NM-GLENHAVEN RD 029	34 5	1.370		45	62	14					1					0 385
4409358	NM-OLCOTT DR 058	4.8	0.067		2	2	2										
4409565	NORTH WEST TOWNLINE RD 065	4.8	2.038		2	2	1										
4409672	NM-COUNTY LINE RD 072	4.8	9 655	0.072	11	21	5					1					0 010
4409777	SE TOWNLINE RD 077	4.8	0 362		7	7	4										0.014
4409878	NM-RIPLEY HILL RD 078		0 203		1	4											
5200102	WEST ELMIRA 102	4 8	1.760		20	126	29					2			2	33	0.66
5200104	WEST ELMIRA 104	4.8	5.142	0 780	403	275	98			3		13			2	113	1.84
5200105	WEST ELMIRA 105	4.8	9.189	0.114	1102	615	148			9		26			6	170	3 527
5200111	WEST ELMIRA 111	4.8	21.842	1.106	1262	988	272	3	2	7		41			8	170	5 102
5200112		4.8	0 018														
5200266	MADISON AVE 066	4.8	3.489		152	227	10			3		1			5	110	1.170
5200270		12 5	0.055														
5200285	MADISON AVE 385	12 5	8.757	0 598	1076	752	199			3		25			20	395	5 405
5200286	MADISON AVE 386	12.5	11.843	1 125	422	453	16			2		17			1	124	1.72
5200290	MADISON AVE 090	4.8	3 379	0.084	447	284	70			6		4			4	170	2 132
5200364	FIRST ST 264	12 5		0 672	84	4	7								2		0 066
5200370	FIRST ST 370	12 5		0 82	117	5	5								4		0 268
5200371	FIRST ST 371	12.5	2 383	0.117	412	237	87		3	3		6			4	130	1 567
5200383	FIRST ST 283	12.5		1 068	29	4	9										0 242
5200399		12 5	0.125														
5200409		12 5	0.054														
5200415	HILLCREST RD 315	12 5	9 84	1.741	267	326	100	2		6		27			14	78	1 900
5200416	HILLCREST RD 316	12.5	22 334	1.986	2283	1226	30	3		8		66			17	46	6 850
5200549	WOODLAWN AVE 349	12.5	4.199	0 171	476	325	86	7				12			1	155	2 147
5200577	WOODLAWN AVE 277	7 2	1 213		5	19	3			3						3	0 059
5200578		4 8	0 023			2											
5200582	WOODLAWN AVE 182	4.8	2.940	0 102	254	190	62					6			6	87	0.972
5200583	WOODLAWN AVE 183	4 8	7 226	0 022	1093	568	116			3		23			10	310	3.655
5200617	14TH ST 117	4 8	9 416	0 247	1049	634	192	3		9		2			16	141	3 762
5200618	14TH ST 118	4.8	14 249	0.487	635	598	206		1	6		70			7	91	2 762
5200619	14TH ST 119	4 8	8.561	0 060	956	513	166			5		23			3	121	3.105
5200693	14TH ST 293	7 2	1.171	0.074	4	23	9									5	
5200694	14TH ST 294	7 2	0 781	0.023	2	11	3										0.005
5200695	14TH ST 295	7.2	1.162		3	44	9									4	0 053
5200697		4 8	0.108														
5200811	RIVERSIDE 311	12 5	5.983		912	422	74			3		8			12	209	2.101
5200812	RIVERSIDE 312	12 5	2 255	0.806	154	134	46	1		3		7			4	51	0.563
5200813	RIVERSIDE 313	12.5	0 105	1.417	3	12	17					5					0.025
5200814	RIVERSIDE 314	12.5	3.448	1 145	565	28	89			3	2	16			11	168	2.158

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5200872		4.8	0.043														
5200925	HAMPTON RD 325	12.5	45.042	1.069	563	1182	355	2		7		85	1		11	22	2.367
5200926	HAMPTON RD 326	12.5	8.417	0.152	1322	624	161			6		19			7	344	4.339
5200927	HAMPTON RD 327	12.5	1.910	0.011	205	164	40					2			4	80	1.384
5200987	HAMPTON RD 087	4.8	0.798		93	64	9								1	22	0.375
5200988		4.8	0.013														
5200989	HAMPTON RD 089	4.8	11.284	0.754	1412	733	174	4		3		34			4	243	5.109
5201021	BULKHEAD 321	12.5	97.852	3.047	1703	2535	833	2	2	11	2	113			28	167	6.220
5201022	BULKHEAD 322	12.5	45.000	1.129	878	1330	461			7		46	4		11	110	3.945
5201023	BULKHEAD 323	12.5	16.058	1.184	156	865	223			6		36			19	264	5.637
5201028	BULKHEAD 128	4.8	9.349		830	530	130			8		17			2	130	3.119
5201029		4.8	0.008														
5201079	BULKHEAD 079	4.8	2.995	0.013	422	200	59			1		7			2	59	1.181
5201141	TUTTLE PLACE 141	4.8	1.548		199	124	36	3				3			6	29	0.759
5201143	TUTTLE PLACE 143	4.8	12.547		837	623	203	2		2		23			3	116	2.673
5201144		4.8	0.043														
5201200	BROAD ST 300	12.5	12.546	1.595	1048	565	232			3		30			27	178	2.293
5201201	BROAD ST 301	12.5	9.090	0.085	727	448	201	3		3		16			12	114	1.960
5201202	BROAD ST 302	12.5	4.320	0.038	516	233	55			3		9			5	97	1.245
5201203	BROAD ST 303	12.5	3.034	1.350	152	130	50			6		16		1	17	7	0.181
5201204	BROAD ST 304	12.5	1.105	0.354	44	46	41								2	8	0.126
5201245		4.8	0.015														
5201418	CHEMUNG 318	12.5	71.220	2.413	985	1863	624	1	2			91		1	20	99	3.461
5201419	CHEMUNG 319	12.5	45.143	0.658	350	945	298	1	1	4		40			10	3	1.887
5201601	RIDGE RD 501	34.5	112.880	3.965	1487	2644	912	18	3	8	1	127	1	1	32	79	6.780
5201605	RIDGE RD 305	12.5	60.429	2.147	1427	1667	624	2		6		81			15	77	4.248
5201606	RIDGE RD 306	12.5	39.256	6.142	1992	1378	585	4		7		154			32	90	3.701
5201607	RIDGE RD 307	12.5	37.898	1.499	649	1050	352	2		3		75			14	60	2.316
5201711	GOSS RD 211	4.8	22.081	2.251	702	744	301	4		7		45			5	29	2.048
5201713		4.8	0.050														
5201798	GOSS RD 398	12.5	3.806	3.081	86	111	48			3		14			1	13	0.098
5202011	MONTOUR FALLS 511	34.5	92.594	3.338	1259	2387	823	13	1	6		117	2	1	42	56	6.025
5202012	MONTOUR FALLS 512	34.5	77.357	2.642	1258	1955	649	20	1	2		89	1		31	90	5.675
5202031	MONTOUR FALLS 231	8.32	7.357	0.351	245	283	94			3		10			2	40	0.948
5202033	MONTOUR FALLS 233	8.32	45.256	0.890	1099	1378	435	1	2	10		62			12	126	4.636
5202035		4.8	0.016														
5202139	CAYUTA 239	8.32	23.914	0.663	355	615	203			4		31			5	17	1.402
5202140		8.32	0.028														
5202201	COASTAL LUMBER CO PVT	34.5	0.094		2												
5202528	WOODHULL - ELMIRA 228	4.8	17.743	0.102	88	303	90		1			13				4	0.151
5203139	BATH 339	12.5	45.012	1.124	923	1190	420	2	1	6		47	1		10	86	3.469
5203140		12.5	0.024														
5203304		12.5	0.049														
5203351	CAMPBELL 351	12.5	21.746	0.260	534	658	232			6		27	1		15	76	2.271
5203352	CAMPBELL 352	12.5	42.095	0.498	555	1023	354	1		10		42	1		14	14	2.766
5203405		34.5	0.031														
5203462	CANADA RD 562	34.5	61.666	4.520	1595	1810	664	19	1	7	3	122	1	3	35	104	7.149
5203464	CANADA RD 564	34.5	18.377	9.821	1833	783	449	22		6		57			40	112	2.290

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5203658		12.5	0.275		4	1											
5203659	FALLBROOK 359	12.5	1.066	0.249	33	40	6					3			1	4	0.174
5203660	FALLBROOK 360	12.5	12.907	0.262	1923	1080	230			3		24			2	244	10.685
5203662	FALLBROOK 362	12.5	4.920	0.522	341	272	96			3		6			9	75	1.395
5203663	FALLBROOK 358	12.5	0.034														
5203721	FULTON ST 221	4.8	7.147	1.149	1289	596	164	1		6		28			11	198	4.535
5203722	FULTON ST 222	4.8	6.299	1.149	1047	509	144			3		13			9	161	4.038
5203723	FULTON ST 223	4.8	22.641	0.933	501	646	246	1	3	4		23			6	55	2.392
5203725		4.8	0.047			1											
5203833	HAMMONDSPORT 333	12.5	36.449	0.648	559	963	388	2		1		45			17	20	2.524
5203834	HAMMONDSPORT 334	12.5	39.383	1.038	771	987	356	1		1		50			11	33	2.640
5203843	HAMMONDSPORT 243	4.8	35.306	0.284	803	1053	337			6		44			12	59	3.996
5203845		4.8	0.041														
5203907	KANE ST 207	4.8	28.356	0.430	969	998	279		2	7		36			5	116	5.199
5203908	KANE ST 208	4.8	18.018	1.107	940	764	220	1		8		23			12	155	5.483
5203909		4.8	0.046														
5204002	KEUKA-ELMIRA 202	4.8	17.440		352	462	148			4		15			3	5	0.970
5204003	KEUKA-ELMIRA 203	4.8	30.581	0.367	853	910	306		2	4		30			4	8	3.859
5204140	PRATTSBURG 240	4.8	54.680	0.082	474	1134	406			2		46			10	7	2.023
5204141	PRATTSBURG 241	4.8	38.345	0.451	607	907	358	1		6		33			3	61	2.316
5204142		4.8	0.077														
5204241	PRESHO 341	12.5	67.367	2.363	787	1504	561	1		4		106			16	28	3.405
5204242	PRESHO 342	12.5	7.379	0.105	138	208	74			3		25			5	10	0.543
5204248		12.5	0.006			1	1										
5204346		34.5	0.052														
5204398	PULTENEY TAP 598	34.5	20.434	0.613	631	626	217	5	1	1		20	1	1	16	33	2.290
5204446	SOUTH ADDISON 346	12.5	53.795	0.589	1334	1593	485	5		11		65	1		25	242	5.437
5204447	SOUTH ADDISON 347	12.5	47.453	0.709	469	972	338			4		46		1	11	23	2.240
5204448		12.5	0.189														
5204544	WHISKEY CREEK 344	12.5	28.273	4.554	806	847	343			3		61	2		11	60	3.727
5204545	WHISKEY CREEK 345	12.5	68.314	2.229	802	1551	593			6		85	1		16	25	3.201
5204549		12.5	0.031														
5204636	KANONA 336	12.5	10.773		125	252	83	1				14			4	2	0.658
5204637	KANONA 337	12.5	13.330	0.213	261	362	140	1		4		17			4	46	0.929
5204650		12.5	0.064														
5204781	HICKLING 381	12.5	50.796	1.875	1563	1558	631	1		6		71	1		17	58	3.757
5204782	HICKLING 382	12.5	37.905	1.805	966	1100	423	1	1	4		103			13	66	3.934
5204901	ATLANTIC PIPE PVT	12.5	0.083		1												
5205001	ANN PAGE PVT	4.16	0.060														
5205101	WESTINGHOUSE PVT	4.16	0.045		1												
5205201	AMERICAN LAFRANCE PVT	34.5	0.056														
5205435	DINEHARTS 535	4.8	15.880		180	383	129	3	2	3		14			3	4	0.644
5205590	NEW CORNING 390	12.5		1.947	278	14	22								2		0.416
5205591	NEW CORNING 391	12.5	6.932	0.236	862	367	136	3				22			3	127	4.983
5205592	NEW CORNING SVC	12.5	0.044		1												
5205601	DIKE SVC	12.5	0.053														
5205701		34.5	0.045														
5205801	KENNEDY VALVE PVT	12.5	0.132														

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5205902	BATH MUNICIPLE SVC	12.5	0.179														
5206004	ERWIN SVC	34.5	0.203														
5206101		34.5		0.149													
5206177	SCIENCE PARK 001	34.5		0.248													
5206201		34.5	0.054														
5206335	NORTH URBANA 535	34.5	103.637	1.326	1425	2322	777	13	8	7		114		1	18	54	5.142
5206401	INGERSOLL RAND PVT	4.16	0.066														
5206528	PHILO RD 328	12.5	4.531	2.800	141	158	91			3		61			22	10	0.395
5206529	PHILO RD 329	12.5	51.417	11.409	1623	1491	670			12		80		1	24	62	7.304
5206530	PHILO RD 330	12.5	15.027	1.298	690	629	216	2		3		34			14	123	2.867
5206631	BATH TAP 531	34.5	19.136	0.752	144	269	94	4				13			4	3	0.718
5206898	PRATTSBURG TAP 598	4.8	27.526	0.376	180	494	157	1	1			28			3	1	0.665
5206901	MONTOUR ODESSA TAP 501	34.5	53.070	1.265	874	1286	451	8	3	2		65		1	12	75	3.258
5207001	ELMIRA STAMPING PVT	12.5	0.059														
5207101	TEXAS EASTERN PIPE PVT	34.5	0.036														
5207201	POLLY-O DAIRY SVC	34.5	0.041		1	1											
5207301	PENN ELEC-ELMIRA PE1	12.5	0.101	0.046	1	4	1					1					0.035
5209401	MILLER HOLLOW INECT PVT	12.5	0.412		2	6	2					1					
5209531	WATERCURE HILL 031	12.5	0.038														
5209801	STREETLITE_52 ST1	12.5	0.109														
5300170	HILL ST 270	4.8	4.203	0.752	816	307	105	1		3		15			11	100	2.209
5300171	HILL ST 271	4.8	7.670	0.021	419	359	89	3		6		11			7	53	1.999
5300172	HILL ST 272	4.8	0.008	0.016	9	1	1										
5300173	HILL ST 273	4.8	3.514	0.493	638	248	68	1		3		10			8	62	1.739
5300175	HILL ST 275	4.8	6.413	0.190	572	375	98	1		6		15			13	103	2.571
5300176	HILL ST 276	4.8	0.659	0.731	113	54	15					2			12	16	0.503
5300199		4.8	0.016														
5300260	WEBB CROSSING 360	12.5	4.259	0.537	115	134	52					11			4	3	0.541
5300280	WEBB CROSSING 280	4.8	13.900	0.402	119	295	89			2		12			6	6	0.555
5300281	WEBB CROSSING 281	4.8	26.316	0.582	623	769	308	2	4	10		31			3	41	2.544
5300299		4.8	0.042														
5300320	ARKPORT 220	4.8	66.735	2.016	1026	1596	533	4	4	7		76	2		16	116	5.015
5300399		4.8	0.044														
5300458	ATLANTA 258	4.8	36.769	1.028	461	919	262		2	2		38			3	47	2.418
5300468	ATLANTA 568	34.5	83.508	0.234	896	1889	538	10	2	6	1	105			31	47	5.025
5300499		4.8	0.051														
5300600	BENNETT 300	12.5	16.749	1.384	974	665	201			1		34			18	123	3.148
5300601	BENNETT 301	12.5	12.842	0.972	1197	660	178	1		3	1	37			12	12	4.424
5300637	BENNETT 537	34.5	0.941		2	12	1					1			1	1	0.021
5300641	BENNETT 541	34.5	116.921	0.461	1300	2710	714	17	4	2	3	215		1	53	134	6.662
5300699		12.5	0.173														
5300719	CANASERAGA 219	4.8	34.573	0.222	456	814	243		1	2		48			4	72	2.317
5300799		4.8	0.061														
5300816	CANISTEO 216	4.8	8.340	0.071	634	399	96			3		10			3	68	2.464
5300817	CANISTEO 217	4.8	17.095		444	484	161		1	1		13				53	2.084
5300899		4.8	0.042														
5300946	COHOCTON 246	4.8	30.544	0.432	519	832	242	1	1	6	1	31			8	67	3.069
5300999		4.8	0.063														

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5301061	FEDERAL ST 161	2.4	1.557		164	92	20					2				24	0.619
5301062	FEDERAL ST 162	2.4	2.543		448	174	59					3			3	55	0.934
5301099		4.8	0.051														
5301110	HOWARD 310	12.5	24.213	0.107	155	466	120	2	1	1		24			2	4	1.050
5301111	HOWARD 311	12.5	34.625	0.080	367	748	218	6	1	1	2	33	1		12	23	2.012
5301199		12.5	0.063														
5301220	LEICESTER 320	12.5	42.592	0.504	786	1180	328	5		5	2	51	1		13	99	3.595
5301266	LEICESTER 266	4.8	15.410	0.128	233	421	140		1	1		18			3	16	1.207
5301299		4.8	0.058														
5301343	MEYER 243	4.8	3.866		575	258	75			6	1	5			7	61	1.747
5301350	MEYER 350	12.5	90.180	1.320	1880	2425	796	16	5	11	2	147	1		23	185	8.812
5301351	MEYER 351	12.5	128.288	2.808	1400	3010	963	9	3	11	3	114	4		51	66	7.808
5301352	MEYER 352	12.5	31.357	2.450	108	965	355	1		7	4	57	1		13	127	5.089
5301399		4.8	0.012														
5301430	NAPLES 330	12.5	16.672	0.081	439	548	151	3		2	2	22			6	66	2.451
5301431	NAPLES 331	12.5	35.319	2.323	542	874	277	5		3	6	54			8	41	2.508
5301466	NAPLES 566	34.5	76.901	1.391	914	1788	605	9	1	14	5	113	1		28	24	4.606
5301499		12.5	0.059														
5301570	PALMITER RD 370	12.5	90.235	1.494	748	1843	547	6	2	7		88	2		18	6	4.026
5301571	PALMITER RD 371	12.5	5.357	0.791	397	207	77					15			7	46	0.989
5301572	PALMITER RD 372	12.5	58.034	1.440	650	1292	376	6	1			47			21	58	3.257
5301573	PALMITER RD 373	12.5	45.186	1.198	910	1203	423	6	1		2	51			17	63	4.930
5301599		12.5	0.015														
5301614	PERRY CENTER 214	4.8	41.610	0.072	403	998	304		1	2		35	1		1	7	2.580
5301615	PERRY CENTER 215	4.8	19.061	0.098	219	534	119		1	2		18			2	14	1.243
5301699		4.8	0.045														
5301752	PORTAGEVILLE 252	4.8	18.468	0.097	235	516	124	1	1	2	1	14			4	43	1.596
5301799		4.8	0.040														
5301861	SILVER SPRINGS 261	4.8	55.735	0.195	908	1556	417		3	8		54			6	21	4.726
5301867	SILVER SPRINGS 267	4.8	0.468		1	11				3							
5301899		4.8	0.066														
5301955	SPRING WATER 255	4.8	82.099	0.673	1065	1929	691		5	8		90			10	87	5.950
5301999		4.8	0.036														
5302067	STANTON AVE 367	12.5	13.787		125	329	73	1	1	1		10			3	10	0.355
5302068	STANTON AVE 368	12.5	31.077	0.995	1668	1347	376	8		1		69			20	220	6.812
5302099		4.8	0.021														
5302163	TROUPSBURG 563	34.5	65.291	0.069	401	1277	289	10		4	2	55			10	38	2.398
5302199		4.8	0.059														
5302240	WALLACE 340	12.5	81.486	0.392	1127	1950	559	11	1	6	3	76	1		26	164	5.616
5302360	WARSAW 260	4.8	3.201	0.020	492	226	76	1				5			3	52	1.440
5302380	WARSAW 380	12.5	64.514	0.741	1203	1834	549	7	1	4	1	69	1		22	93	5.357
5302381	WARSAW 381	12.5	48.334	1.467	1478	1617	511	4	6	9		79	1	1	16	109	4.938
5302399		4.8	0.016														
5302430	WAYLAND 230	4.8	15.119	0.367	783	568	203	3	2	4	2	29			9	123	3.327
5302431	WAYLAND 231	4.8	49.995	1.406	1023	1337	458	4	4	8	2	61			16	105	4.502
5302499	WAYLAND SVC	4.8	0.069														
5302528	WOODHULL 228	4.8	62.408	0.394	557	1276	375		4	3		125			5	5	2.509
5302599		4.8	0.069														

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5302601	ARCO PVT	34.5	0.053		1												
5303199		4.8	0.052														
5303399	EELPOT ROAD 567	4.8	0.040														
5303401	FOSTER WHEELER PVT	34.5	0.050		1												
5303639	JASPER 539	34.5	48.006	0.318	372	1009	243	7	3	1		40	1		16	48	2.044
5303794	GAINESVILLE 594	34.5	39.207	0.093	40	1005	254	5	2	5		37	1		12	53	1.850
5303894	ROBESON 594	34.5	12.573		72	303	70	2		1		11	1		4	2	0.286
5303981	AVOCA 581	34.5	3.927	0.040	1	88	5					5					
5307043	MORAINE RD 543	34.5	86.786	0.627	755	1810	520	14		7		9	1		27	23	5.487
5307080	MORAINE RD 580	34.5	70.258	1.402	685	1532	455	8	1	3	1	8	1		24	50	4.150
5307099		34.5	0.018														
5307140	CROWLEYS 540	34.5	0.245		2	11	2						1		3	2	0.103
5307201	GUNLOCKE PVT	4.8	0.091		1	1	1										
5307301	NM-TOWN LINE RD NIM	4.8	0.420		1	7	1					2					0.013
5307401	NM-MARROW BACK RD NIM	4.8	0.811		2	10	3										
5307501	NM-LAGRANGE RD NIM	4.8	0.558		9	6	2										0.012
5307601	NM-VERNAL RD NIM	4.8	7.702		28	34	21									1	0.060
5307701	NM-WAUGHBROOK RD NIM	4.8	3.053	0.179	18	53	19										0.071
5307801	NM-ROUTE 21 NIM	4.8	0.362		1	8	2										0.035
5307901	NM-BOYD RD NIM	4.8	0.536			10											
5308001	RGE-BAKER VALLEY RD RGE	4.8	0.193		1	3	1										
5308101	RGE-TOWNLINE RD RGE	4.8	1.854		17	36	12					1					0.149
5308201	RGE-HOCHANDLE RD RGE	4.8	0.374		3	9	3										0.020
5308301	RGE-TENAFLY RD RGE	4.8	3.720		8	13	4					1					0.042
5308401	RGE-DUDLEY RD RGE	4.8	0.833		3	12	3					1					
5308501	RGE-DALTON RD RGE	4.8	3.632	0.044	15	37	15	1				3					0.034
5308601	RGE-PORTER RD RGE	4.8	0.207		1	1											
5308701	NM-RIVER RD NIM	4.8	0.400		2	5	2										
5308801	RGE-PLUMBOTTOM RGE	4.8	0.095		2	1	1										
5309001	STREETLITE_53 ST1	4.8	0.171														
5309501	CUT THRU_53 CUT	4.8	0.043														
8100101	MORRIS ST 657	4.8	9.785	0.581	1970	702	183	4		5		28	1		8	29	5.190
8100102	MORRIS ST 658	4.8	4.980	0.386	786	354	76	1		8		14			9	35	2.520
8100103	MORRIS ST 659	4.8	22.825	0.593	1235	925	287			11		43			2	40	4.879
8100104		4.8	0.016														
8100201	BURR AVE 708	4.8	4.030	0.076	763	304	66		2	3		15			3	77	2.353
8100203	BURR AVE 710	4.8	21.466	0.996	418	613	236			5		37			3	2	2.469
8100204	BURR AVE 711	4.8	5.742	0.266	796	336	99	1	2	3		13			7	117	2.410
8100205		4.8	0.023														
8100206	BURR AVE 612	12.5	12.754	0.491	1035	729	215	4		9	3	37			16	186	6.493
8100301	HARPUR 668	4.8	3.720	0.237	305	188	48			7		4			1	25	1.403
8100302	HARPUR 669	4.8	1.838	0.173	71	172	55	1				5			2	47	3.441
8100303	HARPUR 670	4.8	2.805	0.217	391	124	66			6		1			4	34	0.605
8100304	HARPUR 671	4.8	6.328	0.094	1252	513	95	1	3	3		16			7	229	3.842
8100305	HARPUR SVC	4.8	0.030		2												
8100400	NOYES ISLAND NET	12.5		3.745	586	18	7									5	0.738
8100401	NOYES ISLAND 101	8.32	1.490	0.541	447	129	49			3		13			6	12	0.762
8100402	NOYES ISLAND 103	8.32	1.864	0.478	467	128	29			3		8			5	17	0.712

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8100404	NOYES ISLAND 108	8.32	0.693	0 595	104	40	11			3		3			6	9	0 315
8100405	NOYES ISLAND 111	8.32	4.016	0.318	1255	324	121	2		3		16			10	34	1.995
8100406	NOYES ISLAND 118	8.32	0 655	0.027	43	36	28			3		2			4	1	0.155
8100407	NOYES ISLAND 121	8.32	5 277	0.052	1152	405	96			3		27			4	24	2.693
8100408	NOYES ISLAND 107	8 32	3 754	0.246	854	274	134	1		3		15			6	153	1.298
8100411	NOYES ISLAND 271	12.5		0 039	1	1	1					1					
8100412	NOYES ISLAND SVC	8.32	0 029		1												
8100415	NOYES ISLAND 276	12 5		0 088	2	1	3										
8100417	NOYES ISLAND 277	12.5	0 196	1 376	52	29	20									6	0 240
8100418	NOYES ISLAND 278	12 5	1 090	1 296	625	107	62			6		13			1	53	0 812
8100419	NOYES ISLAND 279	12 5		0 830	4	2	4								2		
8100501	GOUDEY 721	4.8	2.626	0 365	345	194	89		1	6		9			4	35	1.197
8100502	GOUDEY 722	4 8	6.561	0.152	1852	540	120			9		19			6	295	4.634
8100503	GOUDEY 723	4 8	3.665	0.210	757	298	87			3		14			4	105	1.871
8100504	GOUDEY 724	4.8	2 793	0.235	125	146	29			3		6			1	9	1.267
8100602	GLENWOOD 681	4.8	5 73	0.039	1091	417	99			4		11			2	88	3 135
8100603	GLENWOOD 682	4 8	5.938		1005	405	157		2	7		11			4	181	2 827
8100605	GLENWOOD 684	4 8	5.794	0 135	1727	511	135			10		11			9	235	3.813
8100606	GLENWOOD 685	4 8	2.105	0.146	290	131	66			12		10			4	50	0 766
8100607	GLENWOOD 686	4.8	21.547	1.137	1825	940	323	2		13		40			4	279	6.005
8100608		4.8	0 023														
8100701	JARVIS ST 687	4.8	6.642	0 233	1128	448	128	4				17			5	53	3.378
8100703	JARVIS ST 689	4 8	7.029	0 279	1964	622	119	1		9		43			9	217	4.410
8100704	JARVIS ST 690	4.8	1.079	0 366	353	120	32					8			3	55	1 032
8100705	JARVIS ST 691	4 8	0 195	0.298	29	14	12					4			3	1	0.069
8100706	JARVIS ST 692	4 8	6 375	0.185	1780	546	117			9		16			9	226	4.195
8100707		4.8	0 032														
8100801	HOOPER RD 701	4.8	7 436		1011	411	90			5		13			2	2	2.698
8100802	HOOPER RD 702	4 8	5.385	0 050	628	359	116			6		12			1	14	2 834
8100803	HOOPER RD 703	4 8	5.619	0 197	716	258	91	1		4		9			1	1	1.270
8100804	HOOPER RD 704	4 8	8.696	0.563	896	445	143	1		7		17			2	11	4.019
8100805		4 8	0.037														
8100901	ENDICOTT CLARK ST 735	4 8	4 035	0.117	653	275	85			9		8			5	7	2.138
8100902	ENDICOTT CLARK ST 734	4.8	4 354	0.120	715	329	129			6		11			2	10	2 331
8100903	ENDICOTT CLARK ST 629	12 5	18 035	6 866	2904	1067	420	4		6	2	54			16	200	13 182
8100904		4 8	0.013														0.061
8101001	ENDICOTT RAILWAY 187	4.8	2.283	0 135	651	205	99		2	3		8			1	72	1.209
8101002	ENDICOTT RAILWAY 188	4.8	4 467	0.057	946	367	128			9		11			1	143	2 704
8101003	ENDICOTT RAILWAY 190	4 8	1.728	0 244	181	87	30	1		6		2			2	19	0 303
8101004	ENDICOTT RAILWAY SVC	4 8	0 01		2												
8101101	ENDICOTT HILL 181	4 8	8 36	0.130	1370	482	138	1		6		11			8	183	3.551
8101102	ENDICOTT HILL 183	4.8	13 623	0.171	1165	771	168			7		18			9	23	7 650
8101103		4.8	0 045														
8101201	RANO 693	12 5	7.022	0 924	218	269	223	8		3	2	29			12	97	0 669
8101203	RANO 718	4 8	11.046	0.342	1247	531	204	1		13		23			1	263	4 080
8101204	RANO 719	4 8	2.764	0.149	303	120	73		1	3		12				43	0.658
8101205		4 8	0 016														
8101301	WEST UNION 660	12 5	8 742	2 143	1384	479	156				1	29			7	29	4 285

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8101302	WEST UNION 661	12.5	17.742	2.198	1129	656	279	3		6	2	43			6	185	3.600
8101303		4.8	0.019														
8101401	VESTAL 623	12.5	27.715	2.213	1015	877	340	7		6	2	55			12	175	4.642
8101402	VESTAL 715	4.8	10.134	0.359	545	424	166			6		19			3	129	2.800
8101403	VESTAL 714	4.8	17.501	0.772	1200	695	244	2		7		33			5	223	4.332
8101404		4.8	0.007														
8101501	NOWLAN RD 226	4.8	9.690	0.064	1089	508	163			6		22			5	238	2.686
8101502	NOWLAN RD 227	4.8	8.248	0.523	356	315	118			5		12			4	43	1.34
8101503	NOWLAN RD 228	4.8	5.095	0.095	580	310	73			3		10			2	91	1.769
8101504		4.8	0.006														
8101601	WHITNEY AVE 651	4.8	2.322	0.173	216	136	89			3		11			5	55	0.568
8101602	WHITNEY AVE 652	4.8	1.034	0.062	17	35	25					3				6	0.105
8101603	WHITNEY AVE 653	4.8	3.609	0.035	485	278	112			3		11			3	157	1.897
8101604	WHITNEY AVE 654	4.8	3.180	0.041	542	245	119			6		9			2	76	2.419
8101605	WHITNEY AVE 655	4.8	1.967	0.062	483	157	52					4			3	56	1.035
8101606	WHITNEY AVE 656	4.8	10.674	0.251	1545	773	176	1	2	7	4	27			6	321	6.653
8101607		4.8	0.102														
8101701	CHENANGO BRIDGE 741	4.8	10.733	1.610	1006	539	187	2		6		22			7	262	3.71
8101702	CHENANGO BRIDGE 742	4.8	19.37	1.832	1071	720	281	2	2	10		55			5	135	3.738
8101703	CHENANGO BRIDGE 743	4.8	1.250	0.139	74	67	13					2			2	9	0.245
8101704		4.8	0.019						2								
8101705	CHENANGO BRIDGE 428	34.5	68.561	2.443	2027	2140	913	28	5	13		135		2	72	167	9.302
8101801	CONKLIN 229	4.8	33.321	2.466	1074	1060	392	5	2	10		44			11	159	4.749
8101803	CONKLIN 263	4.8	31.215	1.263	614	810	344	2	2	5		48			3	29	2.592
8101804		4.8	0.007														
8101901	APALACHIN 176	4.8	39.304	1.087	811	1014	439		2	12		52			9	16	3.244
8101903		4.8	0.005														
8102001	BODLE HILL 645	4.8	11.592	0.371	338	358	183	2		8		22			6	20	0.950
8102002	BODLE HILL 646	4.8	19.185	1.022	970	699	263	2	2	8		31			2	108	3.85
8102004		4.8	0.005														
8102101	OWEGO 144	4.8	4.968	0.038	849	390	163			8		11			10	127	2.933
8102103		4.8	0.019														
8102201	WHIG ST 783	4.8	44.944	1.783	1035	1166	444	2	1	1		50			11	157	3.814
8102202		4.8	0.000														
8102301	GENEGANTSLET CORNERS 422	34.5	95.001	2.699	1490	2183	800	14	8	7		134		2	23	125	7.689
8102401	FLEMINGVILLE 173	4.8	36.877	1.264	708	956	395	2	1	6		49			4	23	4.244
8102402		4.8	0.044														
8102501	MAINE 266	4.8	19.270	1.254	577	518	178	2	1	5		36			3	42	2.360
8102502	MAINE 267	4.8	15.558	0.230	379	397	166			3		19			2	72	1.471
8102503	MAINE 268	4.8	13.975	0.216	227	354	148	1		1		17			2	21	1.344
8102504		4.8	0.087														
8102602	WHITNEY POINT 780	4.8	13.072	1.598	383	389	161	2		3		24			6	45	2.338
8102603	WHITNEY POINT 781	4.8	29.220	1.683	532	707	293	2	2	9		32			4	48	2.398
8102604	WHITNEY POINT 782	4.8	23.806	0.717	404	635	214	1		4		31			4	54	2.793
8102605		4.8	0.025														
8102701	LANGDON 610	12.5	37.139	3.298	1404	1308	564	3		14		78			8	139	7.167
8102702	LANGDON 427	34.5	34.173	1.473	1048	1169	422	20	1	10		72		2	36	122	4.705
8102703	LANGDON 608	12.5	6.086	0.888	260	209	90			18		21			9	42	0.655

Appendix C - NYSEG Overhead Distribution Line Assets

Circuit	Circuit Name	Circuit Voltage	Miles of Overhead	Miles of Underground	Cust Count	Pole Count	Dist Xfmr. Count	Step Xfmr. Count	Reg. Count	Capacitor Count	Fault Detector Count	Fuse Count	Recloser Count	Sectionalizer Count	Switch Count	Street light Count	Secondary Miles (exclusive)
8102704	LANGDON 609	12.5	14.394	0.542	703	562	203	1		3		31			8	182	2.729
8102705		12.5	0.005														
8102801	LOUNSBERRY 178	12.5	72.850	1.188	1011	1626	568	17	4	5		68	1		11	48	5.693
8102802	LOUNSBERRY 179	12.5	60.922	1.611	969	1437	539	6	1	5		65	1		12	72	4.897
8102803		12.5	0.130														
8102901	AFTON 429	34.5	141.539	1.818	2076	3180	1196	26	4	17		206	3		36	181	10.267
8102902		35.5	0.009														
8103002	CENTER VILLAGE 248	4.8	63.815	1.784	999	1464	551	1	5	11		89			7	107	4.941
8103101	CHENANGO FORKS 206	4.8	14.628	0.424	246	364	139		2	4		24			2	48	1.093
8103104		4.8	0.025														
8103203	CINCINNATUS 761	4.8	69.548	0.754	756	1439	429		3	9		65			11	93	4.605
8103205		4.8	0.037														
8103301	GREENE 425	34.5	71.666	1.500	764	1504	556	15	1	5		91	1		16	26	3.665
8103302	GREENE 607	4.8	48.009	0.759	474	988	327		2	15		49			4	6	2.920
8103303		4.8	0.118														
8103401	MARATHON 434	34.5	58.800	1.201	558	1176	388	15	1	9		83			9	13	2.685
8103403		34.5	0.012														
8103501	SOUTH OTSELIC 427	34.5	51.984	0.249	496	1016	292	9	1	6		40			4	53	2.283
8103502		34.5	0.008														
8103602	TARBELL 602	4.8	42.749	0.310	547	915	306		3	4		46			4	31	3.177
8103603		4.8	0.164														
8103702	VINCENT CORNERS 269	4.8	28.186	0.914	493	762	292		5	9	6	35			8	12	3.428
8103703		4.8	0.023														
8103801	WINDSOR 757	8.32	34.152	0.630	906	962	326		1	3		57	1		5	168	5.272
8103802		8.32	0.012														
8103803	WINDSOR 758	8.32	47.540	0.904	622	1015	373		2	4		48	3		5	10	3.074
8103901	BERKSHIRE 746	4.8	65.596	1.397	815	1437	457		3	8		67	1		3	67	4.035
8103902		4.8	0.000														
8104001	GLEN AUBREY 417	4.8	10.340	1.268	265	296	119	2	1	3		16	1		5	2	1.331
8104101	CASTLE GARDEN 621	12.5	13.641	0.705	121	655	241			9	4	27			9	247	4.722
8104102	CASTLE GARDEN 622	12.5	54.075	6.096	2575	1743	725	2	1	14	5	90	1		20	261	10.355
8104103		12.5	0.043														
8104201	MORNINGSIDE HEIGHTS 674	4.8	6.159	0.647	513	310	102	1		10		22			7	119	1.557
8104202	MORNINGSIDE HEIGHTS 675	4.8	11.722	0.983	603	455	148	1		8		24			2	125	2.189
8104203		4.8	0.004														
8104204	MORNINGSIDE HEIGHTS 458	34.5	0.536	0.029	3	9	1					3			1	1	0.015
8104301	OAKDALE 625	12.5	3.358	3.395	305	156	73	1		6	1	27			16	40	0.640
8104302	OAKDALE 626	12.5	25.737	4.918	1753	884	409	5	1	11	3	48			13	26	6.695
8104303	OAKDALE 627	12.5	12.933	2.384	883	436	192	1	1	4	1	23			8	89	2.982
8104304	OAKDALE 628	12.5	5.723	1.114	630	326	100	6		3	5	24			20	125	2.155
8104305		12.5	0.093														
8104401	WILLET 423	34.5	118.219	0.833	1125	2380	723	13	4	5		107	2		25	76	5.976
8104402	WILLET 421	34.5	47.713	0.108	412	982	294	8	2	6		34	1		22	23	2.297
8104403		34.5	0.135														
8104404	WILLET 418	34.5	75.824	0.467	635	1479	480	11	2	18		78	1		2	13	3.447
8104501	NORTHSIDE 457	34.5	0.721	0.250	2	15	1					2			1		
8104502	NORTHSIDE 456	34.5	1.579	1.732	516	95	33	2				8			4	12	1.732
8104503		34.5	0.044														

Appendix C - NYSEG Overhead Distribution Line Assets

Circuit	Circuit Name	Circuit Voltage	Miles of Overhead	Miles of Underground	Cust Count	Pole Count	Dist Xfmr. Count	Step Xfmr. Count	Reg. Count	Capacitor Count	Fault Detector Count	Fuse Count	Recloser Count	Sectionalizer Count	Switch Count	Street light Count	Secondary Miles (exclusive)
8104601	KATTLEVILLE 422	34.5	83 110	7 050	2831	2424	1061	42	3	8		210		2	57	178	9 95
8104602	KATTLEVILLE 426	34.5	52.343	0 790	854	1266	476	16	3	12		81			27	30	4.793
8104901	SANATARIA SPRINGS 211	4.8	28.293	1.469	661	766	343	3	1	5		38				5	3.448
8104902	SANATARIA SPRINGS 212	4 8	34 823	0.483	584	816	330		1	8		56			2	42	3.17
8104903		4 8	0 104														
8105001	FULLER HOLLOW 615	12 5	16.965	5.534	1323	672	284	2		4	5	45			13	189	5.479
8105002	FULLER HOLLOW 616	12 5	9.482	1.106	564	424	191	6		3	3	33			9	129	2.440
8105003	FULLER HOLLOW 617	12 5	24.807	5 352	1597	886	370	4		15	3	78	1		16	287	5.316
8105004		12.5	0.097														
8105101	CASS HILL 743	4.8	18.091		146	319	117		1	2		14				1	0 693
8105201	KINGSMAN RD 422	4.8	8.745		103	179	65	1	1			13	1		3	2	0 410
8105301	LOURDES 665	4 8	0.267	0 395	37	19	3					7			5	1	0 03
8105303		4 8	0.086														
8105501	HOADLEY HILL 430	34.5	48 639	0.835	67	1123	398	4	2	6		53	1		11	23	3.644
8105601	OUAQUAGA WEST 430	8.32	18 230	0.389	208	379	162	1	1	2		18			3	3	1 179
8105701	MARTIN HILL 430	34 5	31.427	1 362	401	636	235	6	2	2		37	1		5	8	1 841
8105801	BODLE HILL TAP 515	34.5	69.330	2 266	1836	1911	750	26	5	12		102	2		37	95	8.193
8105901	CHERRY HILL 417	4.8	18 876	0.224	207	365	129	1	2	3		18	2		3	1	0 77
8106001	ANSCO PVT	34 5	0 090														1 558
8106501	RICHFORD 524	4 8	23 327	0.371	192	460	142	3	3	2		24			2	2	1.191
8106701	GE PVT	34 5	0.060														
8106901	RANGE HILL PVT	34 5	0.109														
8107101	SUNY PVT	34.5	0.097														
8107303	IBM OWEGO PVT	34.5	0.091														
8107401		34.5	0 102														
8107402	SOUTH OWEGO 540	34 5	44.984	1 165	741	1043	389	10	3	5		59	2		20	50	3 752
8107501	WILSON PVT	34.5	0.308	0.668	1	3									1	2	0 019
8107601	OUAQUAGA EAST 430	8 32	21 627	0 589	277	493	176	3	3	2		21	1		4	1	1.992
8107701	WEST CREEK RD 513	34.5	45 801	1 219	455	904	344	6	7	13		72	1		11	13	2.323
8107801	CHENANGO VALLEY 455	34.5	0 809	0 138	28	23	6					1	1		2	1	0.035
8107901	LISLE 417	34 5	41.851	0 010	494	847	349	4	5	6		43	1		8	17	2.537
8108001	INGRAHAM HILL 433	34 5	27.118	1.313	479	713	285	8	4	5	1	37	1		17	4	3.194
8108101	ROBBLE AVE SVC	34 5	0 078														
8108102		34 5	0 052														
8108201	ROUTE 38 513	34 5	12.417	0.514	192	327	110	2	3	1		19	1		7	5	1 109
8108301	BEVIER ST 664	12.5	6.794	0 058	558	328	120	1		5		13			3	86	2.142
8108401	HADCO 515	34.5	0 456	0 096	1	15	2		2			2	1		8		0.01
8108501	CATATONK STEP 587	34.5	9 360	0 347	80	163	64	1	1			9			2	3	0 214
8108701	WEITSMAN PVT	34.5	0 103														
8109001	NM-BINGHAMTON 001	4.8	1 236		3	7	4										
8109101	PENN ELEC-BING 001	4.8	4 71		13	30	11										0.120
8109201	CLAVERACK-BING 001	4 8	18.138	0.081	20	69	18									1	0 056
8109501	CUT THRU_81 CUT	4 8	0.067														
8109601	CANAL ST TAP 513	34 5	70.696	2 815	1906	1972	757	17	9	8		108	4		30	96	8.557
8109806	NORTH ENDICOTT 361	34 5	50 876	1 849	1606	1378	562	12	4	3	2	73	1		23	32	5.576
8109807		34 5	0 067														
8109901	STREETLITE_81 ST1	4 8	0.147														

Appendix D

NYSEG Transmission Asset Data

Appendix D - NYSEG Transmission Asset Data

NYSEG Transmission Lines 345kv and 230kv

Circuit Line #	From	To	Voltage (Kv)	Circuit Miles
32	Oakdale	Fraser	345	56.90
33	Fraser	Coopers Corners	345	46.64
31	Watercure Road	Oakdale	345	42.50
30	Homer City	Watercure Road	345	177.00
37	Homer City	Stolle Rd	345	166.64
36	Oakdale	Lafayette	345	25.21
38	Somerset	Dysinger	345	17.60
39	Somerset	Dysinger	345	17.60
71	Watercure	Oakdale	230	42.50
70	Hillside	State Line (E. Towanda)	230	11.85
69	Hillside	Watercure Road	230	1.27
68	Meyer	Avoca	230	16.46
68	Avoca	Hillside	230	46.75
67	Stolle Road	Meyer	230	53.50
66	Gardenville	Stolle Road	230	12.44
64	Robinson Road	Lewiston	230	17.96
65	Robinson Road	Stolle Road	230	30.52

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Auburn	931	115	0.24
Auburn	972	115	4.08
Auburn	976	115	3.47
Auburn	983	115	0.34
Binghamton	102	115	2.61
Binghamton	915	115	14.34
Binghamton	919	115	60.10
Binghamton	920	115	2.70
Binghamton	936	115	4.55
Binghamton	936	115	10.03
Binghamton	937	115	4.41
Binghamton	937	115	7.00
Binghamton	937	115	4.82
Binghamton	938	115	7.57

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Binghamton	939	115	1.51
Binghamton	940	115	4.26
Binghamton	944	115	4.13
Binghamton	948	115	1.17
Binghamton	952	115	8.24
Binghamton	961	115	18.10
Binghamton	962	115	10.90
Binghamton	962	115	16.35
Binghamton	962	115	7.29
Brewster	990	115	8.50
Brewster	990	115	0.80
Brewster	991	115	6.87
Brewster	991	115	7.65
Brewster	992	115	1.34
Brewster	994	115	24.61
Brewster	995	115	2.25
Brewster	995	115	5.76
Brewster	996	115	2.25
Brewster	996	115	5.74
Elmira	704	115	5.49
Elmira	935	115	8.62
Elmira	953	115	20.41
Elmira	956	115	2.92
Elmira	958	115	16.71
Elmira	960	115	4.94
Elmira	963	115	9.45
Elmira	963	115	6.71
Elmira	964	115	10.69
Elmira	965	115	22.00
Elmira	978	115	9.45
Elmira	978	115	6.71
Geneva	930	115	2.63
Geneva	967	115	26.61
Geneva	967	115	0.55
Geneva	969	115	11.24
Geneva	969	115	7.68
Geneva	969	115	0.99
Geneva	970	115	26.61
Geneva	971	115	4.05

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Geneva	971	115	0.29
Geneva	971	115	4.11
Geneva	977	115	4.27
Geneva	979	115	1.12
Geneva	979	115	4.27
Geneva	980	115	0.29
Hornell	932	115	7.31
Hornell	932	115	5.76
Hornell	934	115	19.60
Hornell	966	115	11.83
Hornell	966	115	7.61
Hornell	968	115	15.10
Hornell	968	115	23.20
Hornell	968	115	5.32
Ithaca	945	115	14.95
Ithaca	945	115	21.80
Ithaca	945	115	10.30
Ithaca	947	115	14.82
Ithaca	947	115	2.67
Ithaca	973	115	27.61
Ithaca	974	115	16.87
Ithaca	975	115	16.34
Ithaca	981	115	5.37
Ithaca	981	115	5.37
Ithaca	982	115	20.79
Ithaca	998	115	8.07
Lancaster	615	115	0.32
Lancaster	705	115	18.53
Lancaster	706	115	2.83
Lancaster	902	115	0.71
Lancaster	903	115	7.55
Lancaster	904	115	11.84
Lancaster	905	115	4.92
Lancaster	906	115	0.71
Lancaster	921	115	2.50
Lancaster	922	115	3.79
Lancaster	922	115	2.95
Lancaster	926	115	2.53
Lancaster	926	115	8.19

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Lancaster	927	115	14.44
Lancaster	928	115	20.27
Liberty	950	115	10.45
Liberty	957	115	22.98
Liberty	959	115	7.18
Liberty	997	115	14.02
Lockport	907	115	3.49
Lockport	908	115	0.11
Lockport	908	115	2.31
Mechanicville	984	115	14.00
Mechanicville	984	115	8.48
Mechanicville	985	115	4.18
Mechanicville	986	115	4.18
Mechanicville	989	115	17.67
Oneonta	916	115	20.77
Oneonta	916	115	10.50
Oneonta	916	115	19.57
Oneonta	916	115	7.90
Oneonta	917	115	7.42
Oneonta	917	115	7.52
Oneonta	917	115	7.46
Oneonta	917	115	11.49
Oneonta	918	115	30.78
Oneonta	929	115	29.39
Oneonta	942	115	12.08
Oneonta	943	115	8.95
Oneonta	943	115	21.00
Oneonta	946	115	20.06
Oneonta	949	115	29.73
Oneonta	949	115	2.71
Oneonta	951	115	17.37
Oneonta	954	115	27.22
Oneonta	955	115	42.40
Plattsburgh	700	115	4.16
Plattsburgh	701	115	3.55
Plattsburgh	702	115	5.00
Plattsburgh	909	115	16.80
Plattsburgh	909	115	13.80
Plattsburgh	910	115	20.06

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Plattsburgh	910	115	11.07
Plattsburgh	911	115	19.08
Plattsburgh	911	115	0.04
Plattsburgh	911	115	20.50
Plattsburgh	911	115	2.71
Plattsburgh	912	115	14.60
Plattsburgh	913	115	13.83
Plattsburgh	914	115	14.00
Brewster	825	69	4.8
Liberty	860	69	3.24
Liberty	861	69	3.24
Brewster	802	46	8.01
Brewster	803	46	17.88
Brewster	805	46	20.86
Brewster	806	46	2.7
Brewster	807	46	16.46
Brewster	810	46	23.15
Brewster	812	46	37.7
Brewster	813	46	25
Oneonta	801	46	15.83
Oneonta	802	46	22.08
Oneonta	803	46	13.33
Oneonta	804	46	10.1
Oneonta	805	46	21.07
Oneonta	806	46	27.67
Oneonta	807	46	36.36
Oneonta	808	46	4.6
Oneonta	809	46	2.86
Oneonta	810	46	18.89
Oneonta	811	46	9.06
Oneonta	812	46	29.02
Oneonta	813	46	3.86
Oneonta	814	46	5.64
Oneonta	815	46	5.44
Oneonta	816	46	34.48
Oneonta	817	46	7.78
Oneonta	818	46	7.39
Oneonta	819	46	21.93
Oneonta	820	46	9.46

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Oneonta	821	46	4.65
Oneonta	822	46	12.9
Oneonta	823	46	5.43
Oneonta	824	46	16.26
Oneonta	825	46	5.81
Oneonta	827	46	2.6
Oneonta	829	46	0.2
Oneonta	831	46	1.6
Plattsburgh	504	46	13.21
Plattsburgh	870	46	13.79
Plattsburgh	871	46	9.91
Plattsburgh	872	46	9.91
Plattsburgh	877	46	9.31
Plattsburgh	878	46	18.38
Plattsburgh	879	46	24.01
Plattsburgh	880	46	38.59
Plattsburgh	881	46	2.86
Plattsburgh	884	46	37.98
Plattsburgh	885	46	2.45
Plattsburgh	885	46	0.43
Plattsburgh	887	46	5.76
Auburn	503	35	2.84
Auburn	504	35	2.82
Auburn	505	35	1.34
Auburn	506	35	3.83
Auburn	507	35	2.11
Auburn	508	35	7.39
Auburn	509	35	9.692
Auburn	510	35	5.1
Auburn	511	35	4.28
Auburn	512	35	0.13
Auburn	520	35	10.35
Auburn	521	35	22.08
Auburn	525	35	6.35
Auburn	526	35	7.57
Auburn	527	35	12.34
Auburn	528	35	14.11
Auburn	530	35	2.95
Auburn	563	35	8.26

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Binghamton	349	35	0.2
Binghamton	350	35	1.73
Binghamton	352	35	1.64
Binghamton	353	35	5.58
Binghamton	355	35	3.03
Binghamton	356	35	5.47
Binghamton	357	35	2.05
Binghamton	359	35	1.67
Binghamton	361	35	1.94
Binghamton	367	35	0.18
Binghamton	407	35	2.26
Binghamton	408	35	2.27
Binghamton	410	35	5.82
Binghamton	411	35	2.07
Binghamton	412	35	2.08
Binghamton	413	35	1.62
Binghamton	414	35	2.63
Binghamton	415	35	2.75
Binghamton	416	35	2.45
Binghamton	417	35	31.3
Binghamton	418	35	7.49
Binghamton	419	35	4.9
Binghamton	421	35	6.26
Binghamton	422	35	23.35
Binghamton	426	35	14.28
Binghamton	430	35	31.11
Binghamton	431	35	5.43
Binghamton	432	35	5.22
Binghamton	433	35	2.1
Binghamton	441	35	4.67
Binghamton	442	35	1.42
Binghamton	443	35	2.54
Binghamton	444	35	1.94
Binghamton	451	35	1.1
Binghamton	452	35	2.03
Binghamton	453	35	3.41
Binghamton	455	35	8.9
Binghamton	510	35	4.08
Binghamton	511	35	2.89

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Binghamton	512	35	10.24
Binghamton	513	35	15.46
Binghamton	515	35	7.68
Binghamton	516	35	2.85
Binghamton	524	35	22.87
Elmira	501	35	22.79
Elmira	508	35	4.66
Elmira	515	35	8.09
Elmira	516	35	6.84
Elmira	517	35	3.61
Elmira	521	35	1.61
Elmira	522	35	1.55
Elmira	523	35	1.47
Elmira	524	35	1.58
Elmira	525	35	1.32
Elmira	526	35	2.45
Elmira	527	35	1.61
Elmira	528	35	2.45
Elmira	529	35	5.29
Elmira	530	35	2.74
Elmira	531	35	14.9
Elmira	532	35	13.7
Elmira	535	35	36.14
Elmira	545	35	0.1
Elmira	546	35	27.13
Elmira	548	35	1.71
Elmira	550	35	6.13
Elmira	551	35	2.88
Elmira	552	35	0.54
Elmira	553	35	1.36
Elmira	554	35	5.07
Elmira	555	35	0.05
Elmira	556	35	3.65
Elmira	557	35	0.4
Elmira	558	35	2.19
Elmira	559	35	6.89
Elmira	560	35	0.35
Elmira	561	35	2.81
Elmira	571	35	2.65

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Elmira	572	35	0.23
Elmira	573	35	0.95
Elmira	574	35	4.84
Elmira	576	35	4.77
Geneva	541	35	12.14
Geneva	542	35	9.05
Geneva	543	35	7.36
Geneva	544	35	5.45
Geneva	545	35	1.84
Geneva	555	35	14.96
Geneva	556	35	1.67
Geneva	560	35	5.59
Geneva	561	35	5.26
Geneva	562	35	11.77
Geneva	563	35	3.2
Geneva	565	35	3.66
Geneva	566	35	0.26
Geneva	567	35	2.21
Geneva	568	35	18.18
Geneva	572	35	6.79
Geneva	573	35	2.7
Geneva	574	35	3.2
Geneva	579	35	3.55
Geneva	580	35	12.52
Geneva	582	35	0.29
Geneva	583	35	4.01
Geneva	586	35	2.87
Geneva	587	35	9.67
Geneva	588	35	6.29
Geneva	589	35	24.39
Geneva	590	35	11.72
Geneva	593	35	14.27
Geneva	594	35	3.7
Geneva	595	35	4.86
Geneva	596	35	4.9
Geneva	597	35	6.1
Geneva	598	35	1.14
Geneva	599	35	5.27
Gowanda	500	35	12.98

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Gowanda	501	35	19.4
Gowanda	504	35	0.22
Gowanda	505	35	1.8
Gowanda	510	35	7.43
Gowanda	511	35	5.47
Hornell	533	35	7.33
Hornell	534	35	13.4
Hornell	536	35	14.77
Hornell	537	35	3.31
Hornell	538	35	2.09
Hornell	539	35	27.66
Hornell	540	35	12.76
Hornell	542	35	6.35
Hornell	543	35	2.18
Hornell	544	35	6.06
Hornell	549	35	1.53
Hornell	565	35	8.07
Hornell	567	35	2.59
Hornell	589	35	3.78
Hornell	590	35	12.96
Hornell	591	35	17.78
Hornell	592	35	1.3
Hornell	593	35	1.37
Hornell	594	35	8.85
Hornell	595	35	3.32
Ithaca	508	35	15.62
Ithaca	521	35	19.02
Ithaca	522	35	34.65
Ithaca	523	35	3.42
Ithaca	524	35	14.3
Ithaca	526	35	2.71
Ithaca	527	35	7.45
Ithaca	530	35	30.02
Ithaca	531	35	14.71
Ithaca	532	35	7.35
Ithaca	534	35	9.11
Ithaca	545	35	5.98
Ithaca	555	35	26.06
Ithaca	565	35	3.53

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Lancaster	513	35	1.04
Lancaster	514	35	8.77
Lancaster	515	35	2.92
Lancaster	516	35	7.69
Lancaster	517	35	8.41
Lancaster	518	35	3.42
Lancaster	519	35	13.38
Lancaster	520	35	31.65
Lancaster	521	35	2.78
Lancaster	522	35	4.63
Lancaster	525	35	10.28
Lancaster	526	35	1.56
Lancaster	527	35	2.56
Lancaster	528	35	1.56
Lancaster	531	35	9.14
Lancaster	532	35	3.81
Lancaster	533	35	7.73
Lancaster	534	35	2.59
Lancaster	538	35	9
Lancaster	540	35	8.65
Lancaster	541	35	5.09
Lancaster	542	35	4.67
Lancaster	547	35	3.58
Lancaster	550	35	7.02
Lancaster	552	35	26.057
Lancaster	555	35	8.51
Liberty	340	35	13.12
Liberty	341	35	9.56
Liberty	342	35	10.36
Liberty	343	35	8.83
Liberty	344	35	9.91
Liberty	346	35	12.32
Liberty	347	35	5.85
Liberty	348	35	3.5
Liberty	349	35	20.57
Liberty	350	35	30.67
Liberty	352	35	23.14
Lockport	501	35	0.23
Lockport	502	35	6.57

NYSEG Transmission Lines 35kv through 115kv

Division	Circuit Line #	Voltage (Kv)	Circuit Miles
Lockport	503	35	0.52
Lockport	505	35	3.29
Lockport	506	35	2.51
Lockport	508	35	2.22
Lockport	510	35	10.43
Mechanicville	600	35	1.1
Mechanicville	601	35	5.04
Mechanicville	602	35	1.65
Mechanicville	603	35	1.56
Mechanicville	604	35	8.35
Mechanicville	611	35	6.94
Mechanicville	613	35	1.2
Mechanicville	614	35	3.35
Mechanicville	615	35	2.3
Mechanicville	616	35	11.29
Mechanicville	617	35	1.43
Mechanicville	620	35	17.76
Mechanicville	622	35	17.02
Mechanicville	625	35	21.84
Mechanicville	626	35	3.266
Plattsburgh	890	35	13.09

Appendix E

Integration of Distribution Planning Criteria

Integration of Distribution Planning Criteria
NYSEG & RG&E Recommended Consistent Approach

Assigned Areas: Reliability Engineering
Maximum loading on distribution circuits by voltage

- Loading of two transformer stations
- Contingency capacity vs mobile sub

Reliability Engineering – NYSEG / RG&E

These guidelines are intended to ensure that enhancements to the distribution system consider peak loading levels and normal system configuration compared to the Normal rating[1] capacity limit of any substation or distribution circuit equipment. Peak loading periods are typically defined as Summer (several days of peak 90 degree temperatures with high humidity) or Winter (several days of below zero temperatures). First contingency loading following the failure of a system component and the reconfiguration to restore interrupted customers should be below the appropriate Long Term Emergency (LTE)[2] rating.

Under first contingency conditions, it may be desirable, when circuit ties are available, to reconfigure the system to allow restoration of service to all customers affected by the equipment failure, with the exception of those located such that they cannot be sectionalized from the faulted equipment. The risk of failure for some contingencies may be weighed against the cost of corrective action. For example, a risk factor that allows exceeding the peak contingency loading criteria may be considered for situations where the exposure occurs for only brief periods during the year and where corrective action involves costly upgrades.

The specified loading in the criteria detailed below may be adjusted by the affects of available Distribution Automation, contracted Distributed Generation, and Load Reduction Schemes. (For example, the amount of load that can be transferred to adjacent stations via SCADA may be subtracted from the specified loading criteria.).

Two transformer stations with auto-throwover (same distribution voltage)

- Total station loading should not exceed the calculated LTE rating of the smallest transformer.
- Normal loading on either transformer should not exceed the calculated Normal rating of the transformer.

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1 Normal rating (or Planned Loading Beyond Nameplate PLBN) is a predefined rating that includes the affects of preloading, ambient temperatures, and loading cycles. Transformer would experience no additional loss of life. (1.1 times the Continuous or top nameplate rating [CNR] if a calculated rating is unavailable.)

2 LTE rating is a predefined rating that may exceed the normal rating and includes the affects of preloading, ambient temperatures, and loading cycles. Transformers would experience an additional 2% loss of life. (1.47 times the CNR if a calculated value is not available.)

Two transformer stations without or with blocked auto-throwover (same distribution voltage)

- Total station loading should not exceed the Normal rating of the smallest transformer plus the largest available division mobile substation or spare transformer.
- Normal loading on either transformer should not exceed the calculated Normal rating of the transformer.

Single transformer stations

- Transformer loading should not exceed the Normal rating. This value may be adjusted based on adjacent tie capacity, available spares, and mobile substations.

Individual distribution circuits (all voltages)

- Projected peak loading should be below 100% of the Normal Rating of the limiting equipment such as: voltage regulators, CT's, switches, seasonal conductor ampacity or maximum circuit breaker relay pickup settings. Reliability issues associated with circuit length should be addressed with adequate fusing, reclosers, and/or sectionalizers to limit exposure to faults downstream from the substation. Voltage performance should be maintained within our distribution voltage regulation practices (ANSI C84.1 Standard). Maximum circuit loading should be held within established rating levels.

Contingency capacity / Mobile substations / Spare transformers

- Distribution substation transformers and their circuits should be operated within their LTE rating during first contingency operations.
- Distribution circuits with adequate tie points and manual sectionalizing points available offer flexibility during first contingency operation. This provides the ability to restore as many customers as possible and isolate faulted line sections.
- For the loss of a single radial distribution circuit at the substation, appropriate manual or automatic ties may be available so that all the load of the faulted circuit can be transferred to other area circuits without exceeding their LTE ratings. Many existing circuits are currently too heavily loaded or are in rural areas with no available ties, making this criteria not possible. However, planning for this contingency during non-peak loading periods or minimizing the affected area is desirable.
- Certain factors should be considered when determining how much tie capacity is available on distribution circuits. These factors include:
  - Amount of main line underground cable, where restoration is typically longer than on overhead circuits.
  - Locations where historical reliability, based on the existing system configurations, has been at levels consistent with CAIDI and SAIFI goals.
  - Constraints on utilizing mobile substation for scheduled maintenance. Some of the older stations in the city of Rochester are space constrained and a mobile sub cannot be used. Available tie capacity to off load circuits during off peak months should be considered.
- For the loss of the transformer in a single transformer substation, provisions for connecting a mobile or spare transformer within an agreed upon time frame should exist. When possible, radial circuits may be designed with tie capabilities to permit manual or automatic switching of all affected load to other area substations until a suitable mobile our spare transformer is installed. In cases where this is not possible, the outage will be minimized by the effective placement and use of tie and sectionalizing points.
- For the loss of a transformer in a two transformer station, provisions for connecting a mobile or spare transformer within an agreed upon time frame should exist. Substations with an automatic throwover and loaded within the planning criteria, should have adequate capacity

until a mobile or spare transformer is installed. In cases where this is not possible, the outage should be minimized by the effective placement and use of tie and sectionalizing points.

RG&E's mobile and spare transformers

Mobile and spare transformers are used in the event of a transformer failure. There are presently three transformers that are classified as mobile. Combined, they cover all voltage levels on the RG&E system. The largest MVA mobile transformer rating is 30 MVA, the medium size mobile is 10.5 MVA and the smallest is 5 MVA. These are intended to be readily available for emergency use.

Spare transformers are located at strategic locations around the franchise to minimize any long-term commitments of a mobile transformer. The criteria for these locations recognize the greatest risk of difficulty for picking up load after the loss of a station transformer.

It is presumed that service can be restored within 24 hours, using a mobile transformer, if required. Depending on the extent of damage to the transformer, a spare transformer may be required.

NYSEG's mobile and spare transformers

Mobile and spare transformers are used in the event of a transformer failure. Details are provided in SOP 29-97 Mobile and Spare Transformer Utilization Procedures. NYSEG has 18 mobile substations, 6 corporate assigned and the rest in the divisions. The procedure calls for a mobile to be installed and service restored in 12 hours. If a spare transformer is available and needed it will be installed in 3-5 days. At present NYSEG has very few spares and some are only seasonally available. Three classes of transformers have no mobile backup, these are ground banks (zig-zag and 1:1), 46-35 KV units and 115-46 KV wye-delta-wye banks.

Integration of the use of mobile and spare transformers

It is recommended that RG&E and NYSEG integrate the use of mobile and spare transformer within our service territories. Objectives and benefits of this recommendation that affect our planning criteria include:

- Decreasing the time of installation of a mobile transformer from 24 to 12 hours. This may involve making various substations more "user friendly" for mobile substation hook-ups.
- The 12-hour availability of mobile and/or spare transformers allows the loading criteria to be modified at various substation locations within the RG&E service territory. This may allow increased loading on specific two transformer substations during predefined peak periods.
- Planned maintenance that requires taking a substation transformer out of service will be facilitated by providing easier hook-ups for mobile substations. This will allow more effective loading of substation, when there is not enough tie capacity to off load the station.
- More effective use of mobile substations will allow scheduling planned maintenance to occur during more periods throughout the year, rather than during lightly loaded times.

EE NY Distribution Voltage Regulation Practices

General:

We strive to keep voltage at the customer service point between 114 Volts and 126 Volts, nominal, under 'normal' system conditions. This is compliant with ANSI standard C84.1 Range A for normal operation. Where it can be done with a minimum of extra expense, we will attempt to keep the upper limit at 123 volts in compliance with the PSC "Conservation Voltage Reduction" order. This limit can be difficult to maintain on rural circuits or heavily loaded circuits without extreme measures, so many have been exempted. Along with this, we assume an average voltage drop in the transformer and service, which varies in relation to the circuit characteristics. Our service area includes circuits in very rural areas which are lightly loaded, relatively long and winter peaking, to circuits in urban and suburban areas which are densely loaded, relatively short and summer peaking. This makes for a great range of characteristics but in general we can assume 2-4 volt drop in the transformer and service under peak load conditions, decreasing with decreasing load.

This leads to the target of maintaining minimum circuit voltage in the range of 116 to 118 Volts for peak loading conditions. Maximum circuit voltage will be limited to 126 volts at peak, decreasing to 123 volts for light load conditions, where circuit conditions allow. Load Tap Changing (LTC) transformers, line voltage regulators and fixed and switched capacitors are used to keep circuit voltage profiles within these limits. All distribution circuits are generally controlled by voltage regulators at the supply substation. Economics dictates the use of LTC transformers or individual regulators regulating the substation bus in most cases. Capacitors are applied to flatten the circuit voltage profile and improve power factor. In general, circuit length and loading is such that this is sufficient for most circuits. Line regulators are applied to longer or more heavily loaded circuits where the other methods have been exhausted. At the point where these methods are no longer sufficient to maintain adequate voltage, circuit reconfiguration or conversion to a higher voltage level should be considered.

Voltage Regulation Settings at the Substation Bus:

For LTC regulation, most of the older controls use the compensation method for voltage regulation. They simulate the voltage drop to a point on a circuit using the local voltage and current values. These are combined with settings simulating the resistive and reactive voltage drop to that point on the circuit, to estimate the voltage at any point in time and regulate it to a constant value within a bandwidth. Since a substation bus typically supplies two or more circuits, which are not necessarily similar, this method does not apply directly to the LTC settings. Instead the R and X (voltage drop) settings are made such that the voltage held ranges from 123 to 126 volts during peak loading periods, with a base voltage of 120 volts. The voltage held will be determined on a case-by-case basis depending on the voltage profile of the circuit. For shorter circuits, 123V may be sufficient. For longer circuits, up to 126V may be required. The X/R ratio is generally set in the range of .5 - 1.0 giving satisfactory results over the typical range of power factors. Typical time delay is 30 seconds with a 2 volt bandwidth. This has given good results in most instances, but may need to be adjusted if excessive operations result.

For Individual wye connected regulators on the station bus, the settings are made the same as for LTC's. For individual phase units, all 3 phases would be set the same.

For individual open delta connected regulators on the station bus, settings are made similar to those above, accounting for the current magnitude difference and phase shift caused by the delta connection. Separate settings are necessary for the lead and lag regulators. As the operation of the controls in this connection can be problematic, some field "tweaking" may be necessary for best voltage response. In some cases where adequate results are not achieved, the line compensation may be set to zero.

There are three tools available to assist in determining the settings. In all cases, they model the affect of the compensator and allow the Planner to experiment with different settings and loadings to achieve the results outlined above.

They are:

1. The ROSCOE program, located on the NYSEG mainframe computer
2. The regulator setting Excel spreadsheet, in use on PC's and handheld computers at RG&E
3. SynerGee Distribution analysis software on PC's (this is applicable only when all the circuits and loading is modeled for the station bus)

The new Beckwith digital controls are available with what they call the Z compensation method, for which a voltage setting is made for desired voltage at a given loading level. We have limited experience with it at present but will be moving toward that method as the controls become more widely available.

In all cases, higher than planned loading levels may be supplied by regulators when extra load is added to the substation transformer during maintenance or contingency switching operations. For newer regulator controls, high and low limit settings are used to keep this from causing undue voltage problems. A high limit of 128 volts is used with a low limit of 118 volts. If load is to be kept higher than normal for an extended period, we can consider lowering the base setting a volt or two for the duration or making other temporary setting changes.

Capacitors:

Capacitors are added to flatten the circuit voltage profile, improve power factor and reduce losses. Fixed capacitors are applied first to provide a "normal" loading power factor of ~.97 and where they do not cause light load voltage to exceed the desired limits. Three phase capacitor banks are generally available in 400kVAR increments. A first cut for placement is to place a standard size capacitor at a point on a circuit segment representing 1/2 the maximum kVAR loading on the segment. The position would then be adjusted to provide the best voltage profile. The Planner should also keep track of associated changes in line losses with the emphasis on minimizing them. The final location should be checked under light loading conditions to be sure there are no problems with high voltage.

Tools to simulate the affects of the capacitor placement are:

1. EDaPT - for RG&E circuits only - EDaPT will show voltage performance under different loading conditions and line losses for various scenarios.
2. PCA (Primary Circuit Analysis) – for NYSEG circuits only – This is a mainframe program that will also compute the voltage profile and line losses based on different capacitor placement scenarios.
3. SynerGee - which will has the same capabilities as EDaPT and PCA with the addition of the ability to optimize the capacitor position for either voltage performance and/or minimum losses.

A minor limitation to locating a capacitor is the affect of harmonic currents generated by customer nonlinear loads. These can cause excessive current flow and voltage distortions in some conditions. These situations are generally not known in advance of installing the capacitor and are generally found by power quality investigations. This may require relocating a capacitor. We have had only a handful of instances of this problem.

Switched capacitors are added when conditions of limited duration require additional kVAR on the circuit which would cause high voltage if left energized during lighter loading periods. Location and sizing must take into account the voltage step caused when the capacitors switch. The Planner should

try to keep this generally within the same flicker limits imposed on motor starts. Possible control options are; time clock, voltage, kvar and temperature switching points as well as combinations of these parameters. The choice is based on the individual situation. Switched capacitor banks are located at least a couple of pole spans away from other capacitor banks to avoid excessive inrush. There have been limited cases of interaction between a switched bank and an unusual customer load. These are difficult to predict in advance and so are handled on a case-by-case basis.

Line Regulators:

Line regulators are added when regulation at the station and the application of capacitors is not sufficient to keep the circuit voltage profile within the prescribed limits. This is especially prevalent with lengthy circuits serving rural/suburban areas. They have also been used in instances where adjacent circuit ties are used often and voltage regulation when tied is a problem. Location of the regulators is based on the point at which the peak load voltage starts to fall below the minimum allowed. Settings and methods are similar to those for LTC transformers except that R and X settings may now be used appropriately since the regulator is controlling a single circuit To avoid the line regulator "fighting" the LTC or station regulation and causing excessive operations, time delay is set to 15 seconds longer than next source side regulation. The newer Beckwith digital controls support regulation in both directions. In some cases it has been advantageous to provide different settings for each direction. Higher than normal loading is handled similar to LTC's when the newer controls are used.

EdaPT or SynerGee may be used with some experimentation to determine the best location. Either analysis tool also simulate the response of the compensation controls.

Appendix F

Transmission Planning Criteria

NYSEG and RG&E TRANSMISSION PLANNING CRITERIA

Prepared and
Recommended by: R.J. King
Approved by: J.L. McKinney

Transmission Services & Regulatory Matters

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NYSEG and RG&E
Transmission Planning Criteria

1). Introduction

The assignment of the System Planning department is to determine what, where, and when additional transmission system facilities are required to ensure adequate electric service to all NYSEG and RG&E customers. The ultimate goal is to design a safe, reliable, and economical transmission system that works predictably and effectively to meet customer needs. This document establishes the planning criteria and guidelines for an effective transmission network, and the basis to identify cost effective and competitive transmission system reinforcements.

2). Definition of the Transmission System

The transmission system consists of Bulk Power, Local transmission (non Bulk Power), and within the City of Rochester, 11 kV Network facilities.

Bulk Power facilities are defined as those facilities whose performance affects the reliability of supply to other utilities and customers beyond the local area. The Bulk Power System consists primarily of generating plants usually greater than 300 MW and transmission facilities operating at 230 kV, and above. Smaller generating plants and lower voltage transmission may also be considered part of the Bulk Power System if the loss of such facilities may result in a measurable negative impact on the reliability outside of the local area. The Bulk Power System is designed and operated to specifications contained in the New York State Reliability Council (NYSRC) Reliability Rules for Planning and Operating the New York State Power System, dated January 9, 2003, the Northeast Power Coordinating Council (NPCC) Basic Criteria for Design and Operation of Interconnected Power Systems, dated August 9, 1995, and the North American Electric Reliability Council (NERC) Planning Standards, dated September 1997.

Local transmission facilities are defined as those facilities that are primarily used to supply local area load or large industrial customers. The Local transmission system generally consists of facilities that operate between 115 kV and 34.5 kV. However, some 34.5 kV is dedicated to serving customers. Facilities like these are referred to as 'Grounded Distribution' and are not considered part of the transmission system.

RG&E supplies a portion of the City of Rochester from Network facilities that are operated at distribution-level voltages (11 kV). However, since these Network facilities are operated in parallel with the 115 and 34.5 kV transmission systems, they are considered an extension of the transmission system.

3). Transmission System Conditions

Since the reliability of the transmission system is susceptible to outside influences such as equipment failure, weather, and accidents, it must be designed to perform reliably under many conditions and operating scenarios. While a system cannot be reasonably built to withstand every possible combination of unplanned events, it must be designed to operate under system normal and single contingency conditions.

System Normal

System normal refers to the state of the transmission system under which all existing transmission network elements are available for service. Under system normal conditions, the transmission system shall be designed to ensure:

1) Adequate voltage is provided to all customers, as defined within ANSI standard C84.1-1989 (Range A) and any subsequent revisions.
2) All transmission lines operating between 345 kV and 69 kV do not exceed their respective seasonal Normal ratings according to the most recent NYSEG and RG&E respective "Tie Line Rating" sheets.
3) All transmission lines operated at 46 kV or 34.5 kV do not exceed their respective seasonal Normal ratings according to the NYSEG "Conductor Safe Ampere Rating" sheet dated July 25, 1978.
4) All transmission system transformers (34.5 kV and above on the low side or 11 kV on the low side for all Network transformers located within the City of Rochester) are within their respective zero percent loss of life, twenty-four hour continuous ratings.

An extended outage of a single generating plant or unit or a single Bulk Power transformer (115 kV and above on the low side) is also considered to be a system normal condition. Whenever a generating plant or unit or Bulk Power transformer is going to be out of service for an extended period of time, System Planning will determine what impact the next contingency would have on the transmission system and recommend the optimal solution to any system problems that may be identified. Potential solutions could be either a project to reinforce the transmission system or a specific operating instruction(s), which may include voltage reduction, load transfers, interruptible load curtailment, public appeals, voluntary load curtailment, and/or load shedding.

Single Contingency

Single contingency refers to the state of the transmission system when one element is removed from service. A transmission element can consist of a transmission line, a transformer, a generator, a double circuit transmission tower, a bus, a circuit breaker, a capacitor bank, or a static VAR compensator. A double circuit transmission tower outage should be considered as a single contingency if the multiple circuit towers are used for more than station entrance and/or exit

purposes and exceed more than five towers in length. Bus and stuck circuit breaker outages are considered to be design contingencies and are included among the single contingencies that are typically used to justify transmission system reinforcements. Multiple contingency outages that could result in the widespread loss of load may also be considered for the primary purpose of identifying their impact on the transmission system.

Under single contingency conditions, the transmission system shall be designed to ensure:

1) Adequate voltage is provided to all customers, as defined in ANSI standard C84.1-1989 (Range B).
2) All transmission lines operating between 345 kV and 69 kV do not exceed their respective seasonal Long Term Emergency (LTE) or Short Term Emergency (STE) ratings according to the most recent NYSEG and RG&E "Tie Line Rating" sheets.
3) All transmission lines operating at 46 kV or 34.5 kV shall not exceed their respective seasonal LTE or STE ratings according to the NYSEG "Conductor Safe Ampere Rating" sheet dated July 25, 1978.
4) All transmission system transformers (34.5 kV and above on the low side or 11 kV on the low side for all Network transformers located within the City of Rochester) shall not exceed their respective seasonal LTE or STE ratings.

It should be noted that all LTE ratings are based on a duration of 4 hours and STE ratings are based on a duration of 15 minutes.

4). Voltage

When analyzing the transmission system, voltage is one of the most critical parameters that must be considered. Submarginal voltages can result in damage to utility and customer equipment, and decrease the reactive power supply capability of switched capacitors. The transmission system shall be designed to maintain steady state voltages between 105% and 90% of nominal for service to regulated distribution facilities and between 105% and 95% of nominal for service to unregulated distribution facilities during system normal and single contingency conditions. Transmission system voltages may be allowed to deviate outside the above ranges if it can be determined that the voltage provided to affected customers is acceptable.

5). Equipment Ratings

To maintain a reliable and enduring transmission system, equipment must be sized and operated according to manufacturer's specifications, industry and national standards, and Company guidelines. These guidelines specify everything from maximum operating temperatures, to energy dissipation, to mechanical operation times.

Substation equipment and transmission lines are designed to accommodate specific ratings when operating under normal or emergency conditions. A transformer's

"Normal" rating is intended to protect the unit from premature aging caused by excessive heating. The seasonal LTE rating specifies the amount of load the transformer can potentially carry for up to 4 hours while suffering no more than a 0.25% loss of life. The seasonal STE rating allows the transformer to operate at two times its nameplate rating for no longer than 15 minutes. Most overhead transmission lines and substation equipment also have seasonal normal, LTE, and STE ratings.

The Transmission Engineering group of the System Engineering Department is responsible for providing thermal ratings for overhead transmission lines and cables.

Overhead Transmission Lines

Thermal ratings for all of the Bulk Power System overhead transmission lines are based on the 1995 report entitled "Tie-Line Ratings Task Force Final Report on Tie-Line Ratings" from the New York Power Pool and IEEE Standard 738-1993. The following criteria and assumptions are used to establish the ratings for Bulk Power System overhead transmission lines:

A) A 40-year life is assumed for each line.

B) A maximum ambient temperature of 35°C, with an average daily maximum temperature of 30°C is used for summer.

C) A maximum ambient temperature of 10°C, with an average daily maximum temperature of 5°C is used for winter.

D) An ambient wind speed of 3 ft/sec is used for summer and winter.

E) All LTE ratings are established assuming a maximum time period of 4 hours but totaling not more than 300 hours over the life of the line.

F) All STE ratings are established assuming a maximum time period of 15 minutes but totaling not more than 12.5 hours over the life of the line. A normal preload is also used in establishing the STE rating.

Thermal ratings for all of the Local system overhead transmission lines are based on three New York Power Pool Tie-Line Ratings Task Force reports on ratings for electric transmission lines 115 kV and above from 1970, 1982, and 1995. All Local system transmission lines built before 1982 are rated using the 1970 ratings. If a transmission line was built between 1982 and 1995, the line is rated using the 1982 ratings. If a line was built before 1982 and has been checked against the 1982 criteria and passed, then it is rated using the 1982 ratings. Finally, all lines built after 1995 are rated using the 1995 ratings.

Transmission Cables

Underground, aerial, and submarine cables are rated per manufacturer's specifications and recommendations.

The Substation Engineering and Design group of the System Engineering Department is responsible for providing the thermal ratings for transformers, circuit breakers, air disconnect switches, substation bus facilities, line traps, series reactors, and series capacitors.

Transformers

Transformer ratings are specified according to ANSI Standard No. C57.91-1995, "IEEE Guide for Loading Mineral Oil-Immersed Transformers". The chart below describes the system conditions used to determine loading capability. When available, actual daily load curves and ambient temperatures should be used instead of the listed standard values. The Planned Loading Beyond Nameplate rating can be applied when the pre-load of the transformer is less than 70% and the peak load duration does not exceed 8 hours. The maximum Top Oil Temperature and Hotspot Temperature, as recommended in ANSI C57.91 for each system condition, limit the loading capability of each transformer.

Transformer Overload Criteria

Standard System Conditions

Description	Normal		Planned Loading Beyond Nameplate		Long Term Emergency		Short Term Emergency	
	Summer	Winter	Summer	Winter	Summer	Winter	Summer	Winter
Ambient Temperature In Degrees C	30	5	30	5	35	10	35	10
Pre-Load % Of Top Nameplate	100%	100%	70%	70%	100%	100%	100%	100%
Load Duration	24 hrs	24 hrs	8 hrs	8 hrs	4 hrs	4 hrs	15 min	15 min

Circuit Breakers

The rating for circuit breakers is based on ANSI standard C37.010-1979, "Application Guide for AC High Voltage Circuit Breakers" and its supplement C37.010b-1985 on "Emergency Load Current – Carrying Capability which covers the LTE and STE conditions.

Air Disconnect Switches

The standard requirements for high voltage air disconnect switches are covered in ANSI Standards C37.30 to C37.37. These standards specify, in addition to other requirements, the rated current, the conditions under which the rated current is determined and the maximum allowable temperature rise limitations of the various components in the switch. A formula is provided in ANSI Standard

C37.30 for the calculation of the allowable continuous current at ambient temperature at which the switch can operate without exceeding its temperature rise limitations.

Substation Bus Facilities

Ampacity rating factors for rigid bus conductors are based on information provided in ANSI/IEEE Standard 605-1987 (Reference #1). Ampacity rating factors for bare cable bus conductors are determined using the rating factors for transmission line conductors, except that for the substation bus conductors ampacity calculations, a wind velocity of 2 ft/sec must be considered.

Line Traps

A line trap usually consists of an air-core inductance coil in series with a power line conductor. It is tuned to parallel resonance by means of a tuning pack. The ANSI Standard for line traps is titled "Requirement for Power Line Carrier Line Traps" ANSI C93.3-1981, dated September 12, 1980. Prior to 1981, the line trap requirements were specified in NEMA Standard SG-11-1955.

Series Reactors

The standard covering the use of series reactors is the American Standard Requirement, Terminology, and Test Code for Current-Limiting Reactors, C57.16-1958. The ANSI's Appendix C57.99, The Guide for Loading Dry-Type and Oil-Immersed Current-Limiting Reactor published in 1965 is currently being used by the industry.

Series Capacitors

The standard requirements for series capacitors are covered in ANSI Standards 824-1985. This standard applies to capacitors and assemblies of capacitors, insulation means, switching and protective equipment, and control accessories that form a complete installation for inserting in series with a transmission or distribution line.

Current Transformers/Relays

Current transformers and relays are rated per manufacturer specifications and design recommendations. The System Protection and Control group of the System Engineering Department is responsible for providing these ratings.

6). Voltage Flicker

The maximum allowable flicker on the transmission system (Bulk Power and Local transmission facilities) caused by the starting of large motors, the switching of capacitor banks, etc., is defined by the standard entitled "Flicker Chart - Border Line of Visibility and Irritation Due to Voltage Fluctuations." The "Borderline of Visibility" curve, which is used as the design criteria for the transmission system, shows that when large reactive loads (capacitor banks, electric motors, etc.) are switched, steady-state bus voltages

must not change by more than 3% and the number of switching events must be limited to no more than one per hour. The "Borderline of Irritation" curve, which is not part of the design criteria for the transmission system, shows that when large reactive loads are switched, steady-state bus voltages must not change by more than 4% and the switching events must be limited to no more than one per hour. Additionally, voltage flicker in the frequency range of 2 to 8 cycles per second (characteristics of an arc furnace) shall not exceed 0.5%.

7). Capacitor Sizing and Switching

A) The voltage flicker on transmission facilities caused by the normal operat ion of an automatically controlled switched capacitor bank shall not exceed the "Borderline of Visibility". When a capacitor bank is switched under normal system conditions, steady state bus voltages shall not change by more than 3% and the maximum number of switching events shall not exceed more than one per hour.

B) To ensure the best possible voltages to all customers during contingency conditions, voltage flicker on transmission facilities caused by the operation of an automatically or a manually controlled switched capacitor bank may be allowed to exceed 3%.

C) Whenever possible, switched capacitor banks shall be sized and operated in a manner that will minimize system losses and/or optimize the area power factor.

D) In most design situations, switched capacitor banks shall be equipped with automatic controls, typically with "CAP ON", "CAP OFF", Time Clock, Voltage Override, and time delay controls.

E) Switched capacitor bank control settings should be calculated to ensure proper operation under normal and first contingency conditions to minimize the need for intervention by operating personnel.

F) Whenever possible, switched capacitor banks shall be sized to avoid potential harmonic resonance during normal system operation, particularly at the 3^{rd}, 5^{th}, 7^{th}, and 11^{th} harmonics. This requirement does not usually apply to capacitor banks that are only used to provide voltage during first contingency conditions.

8). Harmonics

Harmonic distortion caused by customer load characteristics and capacitor banks shall be limited such that harmonic voltage distortion on the system shall not cause any applicable ANSI standards for equipment connected to the system to be exceeded,

shall not exceed 3% for any single frequency or 5% total harmonic distortion, and shall not injuriously affect equipment or its service to others. However, it is recognized that reasonable engineering judgment must be used in the application of these limits to balance compliance costs against adverse consequences of excess harmonic distortion.

9). Stability

Steady State Conditions

Transmission system studies shall be conducted such that system voltages and transmission line and equipment loadings shall be within normal limits during all predisturbance conditions and within applicable emergency limits during all system load and generation conditions that exist following the disturbances discussed below.

System/Unit Stability

Stability of the Bulk Power and Local transmission systems shall be maintained during and after the most severe contingencies stated below.

A) A permanent 3-phase fault on any generator, transmission line, transformer, or bus section with normal fault clearing.

B) A permanent phase to ground fault on a circuit breaker with normal fault clearing.

C) Simultaneous permanent phase to ground faults on different phases of each of two adjacent transmission lines on a multiple circuit tower with normal fault clearing. If multiple circuit towers are used only for station entrance and/or exit purposes, and they do not exceed five towers at each station, this condition can be considered as an acceptable risk.

D) A permanent phase to ground fault on any transmission line, transformer, or bus section with delayed fault clearing.

E) Loss of any single system element without a fault.

NOTE: Our criteria are to not consider extreme contingencies in any stability analysis. Extreme contingencies include the following: 1) a permanent 3-phase fault on any generator, transmission line, transformer, or bus section with delayed fault clearing, 2) the loss of right of way, 3) the loss of a transmission substation, or 4) the loss of all of the units at a generating plant.

10). System Frequency

Since the transmission network in the northeastern United States and Canada is well interconnected, frequency deviation is not a significant concern. The interconnected transmission systems of eastern North America typically have a frequency variation of a fraction of 1%. The Bulk Power transmission system is designed to comply with NERC/NPCC criteria for under-frequency load-shedding and generator frequency or speed protection. These criteria are designed to help survive 'islanding' and stabilize system frequency at 60 Hz. The under-frequency load-shedding plan is a joint effort between the System Planning and System Operations Departments

A Normal Operating State exists when the frequency is not less than 59.95 Hz or not greater than 60.05 Hz. An Alert State exists when the frequency is between 60.05 Hz and 60.10 Hz or between 59.90 Hz and 59.95 Hz. Finally, a Major Emergency exists when the frequency is increases to 60.10 Hz and is sustained at that level or continues to increase or declines to 59.90 Hz and is sustained at that level or continues to decline. New York Independent System Operator (NYISO) is responsible for informing all New York utilities when Alert States and Major Emergencies are being experienced on the Bulk Power transmission system.

11). Risk Assessment

Ideally, it is desirable to meet all of the previously mentioned planning criteria to provide an adequate continuous supply to all customers. However, the benefit to cost analyses to achieve this may not be justified. Therefore, situations may arise under which customer loads cannot be adequately served during certain contingencies. When these situations are identified, selected areas of impact will be evaluated and available resources will be allocated in a manner that will maximize the benefit to Team NY and its customers. The variables to be evaluated include, but are not limited to the following:

1) The probability of the event occurring and its associated risk
2) The frequency and duration of the outage
3) The number of customers and amount of customer value affected
4) Lost revenue
5) Damage claims
6) The cost of transmission system upgrades

While no single variable can usually justify an upgrade on its own, the effective combination of all the variables can provide important insights into assessing system problems and determining the solutions.