

April 9, 2012

VIA ELECTRONIC SERVICE

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

> Re: Cases 09-E-0715, 09-G-0716, 09-E-0717 and 09-G-0718 – Proceeding on Motion of the Commission as to the Rates, Charges, Rules and Regulations of New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation for Electric and Gas Service

Dear Secretary Brilling:

Pursuant to Section XII of the Joint Proposal approved by the New York State Public Service Commission's <u>Order Establishing Rate Plan</u>, issued and effective September 21, 2010, in the above-referenced proceeding, New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation respectfully submit the attached Reliability Audit prepared by Baker Tilly Virchow Krause, LLP.

If you have any questions, please contact me at 607.762.8710.

Respectfully submitted,

Lori A. Cole Manager - Regulatory & Tariffs Rates and Regulatory Economics

Attachment

cc: Mr. Jason Pause, Department of Public Service - Office of Electric, Gas, and Water



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Reliability Audit for New York State Electric & Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RG&E)

> Prepared by: Baker Tilly Virchow Krause, LLP April 9, 2012

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RELIABILITY AUDIT FOR NYSEG AND RG&E

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IBERDROLA USA RELIABILITY AUDIT FOR NYSEG AND RG&E EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

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Project Background, Objective, and Goals

The New York State Electric & Gas Corporation (NYSEG) and Rochester Gas and Electric Corporation (RG&E) (together, the Companies) engaged Baker Tilly Virchow Krause, LLP (Baker Tilly) to conduct an audit¹ of the Companies' System Average Interruption Frequency Index (SAIFI) and Customer Average Interruption Duration Index (CAIDI) performance, including record keeping, methods, and results, for final submission to the New York Department of Public Service Commission staff (NYPSC). NYSEG and RG&E are subsidiaries of Iberdrola USA, serving electricity and natural gas customers throughout the state of New York.

The scope of this engagement includes the review of SAIFI/CAIDI performance, including record keeping, methods, and results.

Project Approach

Baker Tilly designed its workplan procedures to not only understand the current business processes used by NYSEG and RG&E, but also identify areas of risk in the processes that can be improved upon. Detailed procedures are included in each subsequent section of this report and were based on the following guiding activities:

Program Assessment Activities

- 1 Obtained and reviewed NYSEG and RG&E electric interruption process documents
- 2 Identified potential risk areas within the interruption process, and controls that mitigate these risks
- 3 Developed high-level testing matrix; prepared and issued information requests
- 4 Interviewed key NYSEG and RG&E electric interruption process owners to discuss the activities that are used in the day-to-day management of interruptions
- 5 Performed walkthroughs of multiple reports used in the data validation reviews
- 6 Performed detailed review of reports; traced sampled report information to supporting source documentation
- 7 Prepared and issued information requests
- 8 Documented areas where it was determined that controls are lacking, ineffective, or are not designed properly to reach their objective
- 9 Concluded on areas of compliance and non-compliance with NYPSC reporting requirements
- 10 Provided recommendations for improvements in processes to ensure greater accuracy and compliance in the future

The term "audit" used in this report is not an audit per the requirements of the American Institute of Certified Public Accountants (AICPA), rather it is a review of underlying source record documentation and reporting.
 Baker Tilly Virchow Krause, LLP
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 April 9, 2012

IBERDROLA USA RELIABILITY AUDIT FOR NYSEG AND RG&E EXECUTIVE SUMMARY

Key Findings and Observations

Based on the data analyzed by Baker Tilly, the SAIFI and CAIDI metrics are being calculated and reported properly by NYSEG and RG&E.

Based on Baker Tilly's sample-based review of outage reporting, both NYSEG and RG&E appear to be in compliance with the documentation, reporting, and filing requirements set forth in NYPSC Regulation 16 NYCRR Part 97.

Baker Tilly reviewed pertinent documents and supporting details to meet the project objectives as described above and has reached the following conclusions related to process improvement and control enhancement:

1. NYSEG/RG&E Compliance with NYPSC Reporting Regulations

#	Finding/Observation	Company
1	Limited to No Training is Provided on the Appropriate Assignment of Outage Codes	NYSEG/ RG&E
2	Major Storms Qualification Processes are Manual, Partially Subjective and Lack Independent Review	NYSEG/ RG&E
3	Major Storms Assignment Processes Lack Documentation and Rely Heavily on Institutional Knowledge of Key Personnel	NYSEG/ RG&E

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RELIABILITY AUDIT FOR NYSEG AND RG&E EXECUTIVE SUMMARY

2. NYSEG/RG&E Outage Management Systems (OMS) Processes and Reporting Accuracy

#	Finding/Observation	Company
4	NYSEG 2010 Reporting to the NYSPC Did Not Completely Reconcile to Electric Reliability Application (ERA) Data or Corporate Reporting	NYSEG
5	NYSEG – Minor Discrepancies Exist in Sampled Outage Incidents	NYSEG
6	Sampled NYSEG Outage Duration Calculations Contain Minor Errors in ERA	NYSEG
7	NYSEG Samples Based on Report Discrepancies Varied from Source Documentation	NYSEG
8	RG&E Minor Discrepancies Exist in Sampled Outage Incidents	RG&E
9	RG&E Samples Based on Report Discrepancies Varied from Source Documentation; The interruption records in ERA match the Operator Log support, so this issue does not necessarily affect the calculation of reliability metrics. However, RG&E may want to consider the broader implications of ERA records not reconciling to SAP data accumulation.	RG&E
10	Minimal Controls Exist Around ERA User System Access	NYSEG/ RG&E

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RELIABILITY AUDIT FOR NYSEG AND RG&E

EXECUTIVE SUMMARY

3. Review of Internal Controls and other Process Observations

#	Finding/Observation	Company
11	NYSEG and RG&E Internal Control Frameworks to Support Reliability	NYSEG/
	Reporting Need Improvement	RG&E
12	Lack of Written Procedure Documentation Allows for Inconsistent Handling of	NYSEG/
	Interruptions; For 2011 a Standard Operating Procedure (SOP) was established	RG&E
	which documented the necessary steps for data collection related to a reported	
	interruption. Comprehensive written policies and procedures should be developed /	
	finalized for the entire data accumulation and reporting process.	
13	Standardization Opportunities Exist within Divisions and Between the	NYSEG/
	Companies to Allow for Improved Data Collection and Reporting	RG&E
14	Sufficient Audit Trails Do Not Exist to Allow for Effective Audit Reviews	NYSEG/
		RG&E
15	Segregation of Duties Weaknesses Result in Control Inadequacies When	NYSEG/
	Reporting to the NYPSC	RG&E
16	Historically, There Has Been A Lack of Formal Internal Audit Review of	NYSEG/
	Reliability Reporting	RG&E
17	Data Entry Into SAP (common term for the financial system that is also used	NYSEG/
	for outage management purposes) Becomes A Challenge During Storm	RG&E
	Outages and/or Other Busy Periods; Without Review Against a Service	
	Interruption Report (SIR) or Other Forms, Errors May Not Be Detected	
18	Process Efficiency and/or Technology Improvements Must Also Consider	NYSEG/
	Impacts on Internal Controls	RG&E
19	Plans to Centralize Dispatching and Data Scrubbing Will Require Experienced	NYSEG/
	Personnel and Extensive Training In Order to Effectively Achieve An	RG&E
	Acceptable Quality of Reliability Data	
20	RG&E Reliability Reporting Processes Are Highly Manual and Do Not Directly	RG&E
	Reconcile With SAP Processes	

IBERDROLA USA RELIABILITY AUDIT FOR NYSEG AND RG&E PROJECT BACKGROUND AND APPROACH

PROJECT BACKGROUND AND APPROACH

IBERDROLA USA RELIABILITY AUDIT FOR NYSEG AND RG&E PROJECT BACKGROUND AND APPROACH

Project Background, Objective, and Goals

The NYPSC adopted reliability and service standards for electricity provided by the state's electric utility companies, including SAIFI and CAIDI metrics. NYPSC Regulation 16 NYCRR Part 97 defines the tracking, reporting, and data retention requirements for the reliability process at the Companies.

The purpose of this audit is to assess the Companies' adherence to these requirements and the accuracy of data recorded and reported to the NYPSC. Baker Tilly's project efforts were directed and overseen by NYPSC and the Companies.

Background – Reliability Metric Calculation

Utilities record, organize, and report information on reliability events using a variety of metrics. Two prevalent electric industry reliability metrics are the focus of this reliability audit.

1. System Average Interruption Frequency Index (SAIFI) measures the frequency of interruptions experienced in one year by an average customer.

SAIFI - System Average Interruption Frequency Index						
SAIFI = <u>Total Number of Customers Interrupted</u> Total Number of Customers Served						

2. Customer Average Interruption Duration Index (CAIDI) is a measure of the average outage duration for customers during a year.

An interruption is defined in the regulations as the loss of service for five minutes or more, for one or more customers, which is the result of one or more component failures. NYSEG and RG&E report SAIFI and CAIDI reliability metrics excluding outages characterized by Major Storm² events, as defined in NYPSC Regulation 16 NYCRR Part 97.

² A Major Storm is a period of adverse weather during which service interruptions affect at least 10 percent of the customers in an operating area, and/or result in customers being without electric service for durations of at least 24 hours.

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RELIABILITY AUDIT FOR NYSEG AND RG&E PROJECT BACKGROUND AND APPROACH

Background – Documentation, Filing, and Reporting Requirements

Section 2 of NYPSC Regulation 16 NYCRR Part 97 details the data requirements related to outage records. Specifically, the mandate pertains to records and reporting for interruptions of service of five minutes or more.

Each interruption data record must contain the following data points:

- 1. Operating area where the interruption occurred
- 2. Circuit name or number affected and location affected
- 3. Date and time of the interruption
- 4. Date and time service was restored
- 5. Duration of interruption
- 6. Number of customers affected by the interruption
- 7. Cause of the interruption
- 8. Weather conditions at time of interruption
- 9. System component involved

Sections 4 and 5 of NYPSC Regulation 16 NYCRR Part 97 define the requirements for the actual filing of reliability reports. According to these sections, reliability reports "shall be filed with the commission monthly, not later than the 20th of the month following the month for which the report is rendered. Corporations with multiple operating areas shall submit both corporate-wide summary reports and individual operating area summary reports in one combined filing."

NYSEG and RG&E more commonly refer to their operating areas as *divisions*. Appendix A includes a listing of NYSEG and RG&E divisions for which reporting is segmented.

Part 97 of NYPSC Regulation 16 NYCRR requires that submitted reports include the following information:

- 1. Name of the electric corporation
- 2. Name of the operating area for which the report is applicable
- 3. Month for which the report is rendered
- 4. Number of interruptions of service for five minutes or longer to customers during the reporting month
- 5. Total durations in customer-hours of those interruptions
- 6. Approximate total number of such customers affected
- 7. Average number of such customers served

Background – NYPSC Outage Code Definitions

Section 5 of NYPSC Regulation 16 NYCRR Part 97 further requires the Companies to separate outage record statistics based on the cause of interruption. Although the Companies' record detailed outage cause codes for management reporting purposes, per the NYPSC requirements, the outage statistics are aggregated to ten primary causes of interruptions.

The standardized classification of electric interruptions has been included on the following page for reference and an illustrative mapping of detailed company level interruption classifications is included in Appendix B.

IBERDROLA USA RELIABILITY AUDIT FOR NYSEG AND RG&E PROJECT BACKGROUND AND APPROACH

NYPSC Classification	Interruption Description
1. Major Storms:	Interruptions resulting from a major storm. Interruptions occurring at a time of routine adverse weather should not be reported to this classification. See definition for major storm.
2. Tree Contacts:	Interruptions resulting from conductors or energized equipment coming in contact with a tree (or vice versa), except when the tree or a limb is felled by lightning or by an employee, contractor, or customer. An interruption caused by a tree or limb felled by a utility employee or utility contractor shall be reported under Classification 4; if felled by a customer or a nonutility contractor, Classification 6 shall be used; if felled by lightning, Classification 9 shall be used.
3. Overloads:	Under this heading, report interruptions from the blowing of a transformer and/or line fuse through overload. If the interruption is the result of increased or abnormal customer loads or generation for which the customer is required to notify the utility, but failed to do so, Classification 8 should be used instead.
4. Operating or Working Errors:	Under this heading, report interruptions resulting from errors by utility or utility contact personnel (including the improper or substandard installation or design of facilities or the installation of improper equipment; e.g., undersized fuses, improper relay settings, etc.). An interruption caused by a utility's employee or contractor dropping a limb on a conductor shall be reported here. If the limb were dropped by a customer or nonutility contractor, Classification 6 shall be used.
5. Apparatus or Equipment Failures:	Under this heading, report interruptions resulting from the breakdown or failure of otherwise properly selected, installed, and protected equipment and facilities; e.g., transformer failures (not due to external factors), broken poles or cross-arms, faulty protective devices, cracked (not by gun fire) or contaminated insulators, defective cutouts, crossed or broken line and tie wires (not caused by tree contacts or lightning), improper relay operations, substandard conditions that were not present when the facilities were initially installed (e.g., slack conductors, etc.).
6. Accidents or Events Not Under Utility's Control:	Under this heading, report interruptions resulting from events not under the control of the utility or its employees or contractors, such as house fires not caused by the utility's service; gun fire; crane contacts; automobile accidents; squirrel, bird, or other animal contacts; sabotage; customer tree fellings; etc. (Lightning interruptions should be reported under cause Classification 9 even though they may not be under the utility's control. Interruptions caused by failures of apparatus and equipment shall be reported under Classifications 5 and 8 even though the failures may not be the utility's fault. Tree or limb falling interruptions caused by the utility's employees or contractors should be classified under item 4. Those caused by a customer or a nonutility contractor shall be classified here.)
7. Prearranged:	Under this heading, report interruptions resulting from actions deliberately taken by the utility upon advance notice to the customers affected (prearranged). Deliberate interruptions (lasting at least five minutes) without prior notice to the customers affected shall be reported under the classifications most directly related to the reasons the outages were needed. They shall be considered part of a forced interruption when they take place during emergency conditions to facilitate restoration.
8. Customer's Equipment or Failures:	Under this heading, report interruptions resulting from the failure of a customer's equipment or from a failure of the customer to take required action such as failure to notify the utility of an increase in load when required by agreement or tariff to do so. The customer's problem must cause an interruption to other customers or cause a problem on the utility system (e.g., blown fuse) to be reportable.
9. Lightning:	Under this heading, report interruptions caused by lightning, including those resulting from either direct strikes or indirect immediate effects of lightning, on transformers, oil switches, cutouts, etc., so long as the equipment hit or indirectly affected was in proper condition prior to the lightning. An interruption resulting from a lightning strike to a tree limb that then comes in contact with or knocks down conductors should be included here.
10. Causes Unknown or Unclassified:	Under this heading, report interruptions for which the cause is unknown or for which none of the other classifications is appropriate. This classification shall not be used if an investigation could determine the proper cause of an interruption for which one of the other classifications would be more appropriate.

IBERDROLA USA RELIABILITY AUDIT FOR NYSEG AND RG&E PROJECT BACKGROUND AND APPROACH

Project Approach

The approach for this audit consisted of gathering information from management and key process owners, performing walkthroughs of the electric interruption recording and reporting process, and testing of report and data accuracy. Baker Tilly worked with the NYPSC and the Companies to gain a better understanding of how interruptions are identified, communicated to field crews, recorded and documented, trued up between systems, put into NYPSC data reports, and finally submitted. Further, Baker Tilly also performed analytical procedures on specific internal control points.

A more robust description of review, analysis, and testing procedures is included in the detailed sections of this report, but the high level work program is illustrated in the flow chart diagram below.



The Baker Tilly audit team met with subject matter experts from the NYPSC, as well as corporate and division level contacts at both NYSEG and RG&E. However, it was not feasible within Baker Tilly's audit scope to spend time with each NYSEG and RG&E division. Therefore, in order to garner adequate coverage of NYSEG and RG&E division processes, Baker Tilly calculated a weighted average of Total Customer and Total Interruption proportions by division to identify potential "higher impact" areas for review. Baker Tilly then developed a final schedule for fieldwork interviews.

Baker Tilly's list of primary subject matter expert interviewees is included in Appendix C. In person and phone interviews were performed.

FINDINGS AND RECOMMENDATIONS

FINDINGS AND RECOMMENDATIONS

Findings and Recommendations

1. NYSEG/RG&E Compliance with NYPSC Reporting Regulations

In order to provide an opinion on NYSEG and RG&E's compliance with NYPSC reporting regulations, Baker Tilly reviewed the Companies' actual metric calculation and reporting for 2010, tested adherence to documentation requirements, and reviewed outage code assignments for appropriateness.

Baker Tilly reviewed a report provided to Iberdrola from another consulting firm in 2011. In this report, the consultant noted a number of reliability reporting process strengths shared by NYSEG and RG&E. Based on our independent analysis, Baker Tilly agrees with the following strengths identified:

- No apparent direct motivation (or management pressure) for individual employees to manipulate outage numbers.
- Experienced employees at all stages of the outage management and reporting process.
- A culture that is focused on accuracy in recording and reporting of outage statistics.
- Daily checks on the accuracy of initial data collected.
- Use of technology to capture key information about the outage including start time, device, and number of customers affected.

Baker Tilly would also like to point out the additional following strengths that characterize NYSEG and RG&E processes:

- Since the 2011 audit, Iberdrola has made accurate reliability reporting a higher corporate priority.
- Documentation of processes and workflows improved in 2011, including the development of Standard Operating Procedures. Baker Tilly still feels that there is room for improvement on this effort, but recognizes the positive steps taken towards improvement.
- Iberdrola Internal Audit has identified reliability reporting as a focal area in its 2012 annual audit plan based on risk assessment procedures that prioritize high impact and high probability areas of risk.
- Internal Audit's focus on reliability reporting is a direct effect of increased executive management prioritization.
- In 2011, Iberdrola also created Business Transformation Teams to identify and implement best practices for the restoration and repair of trouble among the Iberdrola Companies. This internal effort to improve processes included the following review objectives:
 - Efficient Call Intake Process
 - o Accurate Outage Restoration Process
 - Consistent and Accurate Reliability Reporting Process
 - Establish Accurate Estimated Time of Restoration ("ETR") Process

1.1. Metric Calculation and Reporting

Background

NYSEG and RG&E are required to report electric interruption data to the NYPSC to facilitate the calculation of SAIFI and CAIDI reliability performance metrics³.

Background – SAIFI

System Average Interruption Frequency Index (SAIFI) measures the frequency of interruptions experienced in one year by an average customer.

SAIFI – System Average Interruption Frequency Index						
SAIFI =	Total Number of Customers Interrupted					
	Total Number of Customers Served					

SAIFI Performance – NYSEG

Utilizing ERA system data and reports submitted to the NYPSC, Baker Tilly recalculated NYSEG's 2010 SAIFI metric at 1.14. The following chart illustrates NYSEG's 2010 SAIFI performance compared to corporate⁴ goals.



No issues were noted – based on the data analyzed by Baker Tilly, the SAIFI metric is calculated and reported properly for 2010.

³ SAIFI and CAIDI metric calculations reported are net of Major Storm exclusions as defined in NYPSC Regulation 16 NYCRR Part 97.

⁴ Corporate CAIDI and SAIFI goals were established in past rate proceedings. Division level CAIDI and SAIFI goals were established in Case 02-E-1240 – <u>Standards on Reliability of Electric Service</u>.

SAIFI Performance - RG&E

Utilizing ERA system data and reports submitted to the NYPSC, Baker Tilly recalculated RG&E's 2010 SAIFI metric at 0.71. The following chart illustrates RG&E's 2010 SAIFI performance compared to corporate goals.



No issues were noted – based on the data analyzed by Baker Tilly, the SAIFI metric is calculated and reported properly for 2010.

Background – CAIDI

Customer Average Interruption Duration Index (CAIDI) is a measure of average outage duration for customers during a year.

CAIDI – Customer Average Interruption Duration Index						
CAIDI =	CAIDI = Sum of All Customer Interruption Durations					
	Total Number of Customers Affected					

CAIDI Performance – NYSEG

Utilizing ERA system data and reports submitted to the NYPSC, Baker Tilly recalculated NYSEG's 2010 CAIDI metric at 1.98. The following chart illustrates NYSEG's 2010 CAIDI performance compared to corporate goals.



No issues were noted – based on the data analyzed by Baker Tilly, the CAIDI metric is calculated and reported properly for 2010.

CAIDI Performance - RG&E

Utilizing ERA system data and reports submitted to the NYPSC, Baker Tilly recalculated RG&E's 2010 CAIDI metric at 1.71. The following chart illustrates RG&E's 2010 CAIDI performance compared to corporate goals.



No issues were noted – based on the data analyzed by Baker Tilly, the CAIDI metric is calculated and reported properly for 2010.

Baker Tilly Findings/Conclusions

Based on the data analyzed by Baker Tilly, the SAIFI and CAIDI metrics are being calculated and reported properly by NYSEG and RG&E. No additional issues came to our attention in this area that should be communicated as part of this report.

Procedures Performed in Connection with Baker Tilly Conclusions

- 1. Baker Tilly obtained and reviewed Electric Reliability Application (ERA) system year-end reports maintained by NYSEG and RG&E as source documentation to validate metric calculation data.
- 2. Recalculated actual CAIDI and SAIFI metric performance, based on reports provided.
- 3. Discussed exclusions from metric calculations. (Storms processes reviewed in greater detail in later sections.)
- 4. Discussed manual edits and modifications made to system reports (manual edits to system data are discussed in greater detail in later sections).
- 5. Reviewed the independent report provided to NYSEG and RG&E pertaining to their reliability processes.
- 6. Reviewed Iberdrola Business Transformation efforts and reporting pertaining to reliability reporting.
- 7. Interviewed Iberdrola Internal Audit regarding reliability reporting, including a discussion of past, present, and future risk assessments and audit procedures.
- 8. Reviewed the Iberdrola Internal Audit report responding to the independent report and internal Business Transformation efforts.
- 9. Reviewed draft internal control process narratives pertaining to SAIFI and CAIDI reporting. Note: the draft procedures were created and last updated in 2006.

1.2 Documentation, Reporting, and Filing Requirements

Background

As discussed in detail in the Project Background and Approach section to this report, NYPSC Regulation 16 NYCRR Part 97 details the data documenation, reporting, and filing requirements related to outage records.

In order to review NYSEG and RG&E adherence to NYPSC regulations pertaining to reliability tracking and reporting process accuracy, Baker Tilly selected a statistically-derived sample of 42 electric interruptions occurring in 2010 to validate completeness of documentation. In order to achieve adequate coverage of NYSEG and RG&E processes, Baker Tilly calculated a weighted average of 2010 total customers and total interruption proportions by each Company, thereby deriving sample sizes of 32 and 10 for NYSEG and RG&E, respectively. Baker Tilly then utilized audit software to select random samples for detailed attribute testing.

Baker Tilly's NYSEG and RG&E sample selections are included as Appendix D and Appendix E to this report.

Baker Tilly Findings/Conclusions

Based on Baker Tilly's sample-based review of outage reporting, both NYSEG and RG&E appear to be in compliance with the documentation, reporting, and filing requirements set forth in NYPSC Regulation 16 NYCRR Part 97.

All data requirements are included in NYPSC reporting and such reports are filed in a timely manner, consistent with NYPSC Regulation 16 NYCRR Part 97.

Procedures Performed in Connection with Baker Tilly Conclusions

- 1. Reviewed NYPSC Regulation 16 NYCRR Part 97 documentation, reporting and filing requirements.
- 2. Created detailed testing matrices for applicable documentation attributes.
- 3. Discussed Companies' adherence to reporting requirements with NYPSC staff.
- 4. Requested and reviewed a population of all 2010 outages from NYSEG and RG&E through the ERA system.
- 5. Selected a statistically valid sample of 42 interruptions for detailed testing, including 32 NYSEG specific samples and 10 samples for RG&E.
- 6. Completed testing by comparing required attributes against NYSEG and RG&E record keeping and reporting to the NYPSC.
- 7. Baker Tilly reviewed the timing of reliability report submittals to the NYPSC and confirmed with NYPSC personnel that such reports are filed on-time and in compliance with required timelines.

1.3 Outage Code Assignment Review

Background – Outage Code Assignment

As discussed in the opening sections of this report, NYPSC Regulation 16 NYCRR Part 97 requires the Companies to separate outage record statistics based on the cause of interruption. Although the Companies record detailed outage cause codes for management reporting purposes, per the NYPSC requirements, the outage statistics are aggregated to ten primary causes of interruptions.

In order to determine if the Companies are assigning outage codes appropriately and consistently, Baker Tilly interviewed NYSEG and RG&E staff about the assignment and use of outage cause codes. Further, Baker Tilly also reviewed 2010 statistics to calculate the comparative use of each outage code as a proportion of the total incidents reported.

Relative Comparison of PSC Outage Cause Codes by Incident (2010 NYSEG - RG&E)

	PSC Cause Code									
	INT01	INT02	INT03	INT04	INT05	INT06	INT07	INT08	INT09	INT10
Compony				OPERATING/				CUSTOMERS		
Company	MAJOR	TREE		WORKING	EQUIPMENT	ACCIDENT	PRE-	EQUIPMENT	LIGHTNING	UNKNOWN/
	STORM	RELATED	OVERLOAD	ERROR	RELATED	RELATED	ARRANGED	FAILURE	RELATED	UNCLASSIFIED
NYSEG	35%	29%	2%	0%	13%	11%	1%	1%	4%	5%
RG&E	7%	23%	3%	0%	26%	14%	18%	1%	4%	4%



The comparative analysis of outage code assignments between NYSEG and RG&E demonstrate significant differences in outage code assignment. For instance, in 2010 RG&E reported that 25% of outages were caused by equipment-related failures, compared to only 13% of outages for NYSEG. Conversely, 35% of NYSEG's outages were characterized as Major Storms, whereas RG&E's Major Storm percentage was reported at 7%.

Although these trends appear to provide directional evidence to support that NYSEG and RG&E divisions are not consistently applying cause code assignment methodologies, additional environmental factors exist that preclude Baker Tilly from making such a statement. One externality, as an example, is that more of NYSEG's customers are located in rural areas, which can lead to longer repair to service times and increased Major Storm event classification.

NYSEG staff has provided support for this justification in the fact that NYSEG's reliability targets are higher (more lenient) based on historical data and that operating area differences lead to the differential in Major Storms reported.

Because Major Storm outages are legitimate exclusions from the Companies' reliability metric reporting, Baker Tilly took a deeper look into the assignment of Major Storms as a testing point for the aforementioned cause code usage variance. Our findings and conclusions in this area are as follows:

Background – Major Storm Events

Outages deemed as to have been caused by Major Storms are excluded from the SAIFI and CAIDI metrics reported by NYSEG and RG&E. The NYPSC defines Major Storms as a period of adverse weather during which service interruptions affect at least 10 percent of the customers in an operating area and/or result in customers being without electric service for durations of at least 24 hours.

In order to review the appropriateness and consistency of NYSEG and RG&E assignment of outages as Major Storm events, Baker Tilly selected a small sample of Major Storm event outages for detailed testing.

Baker Tilly Findings/Conclusions

Storms processes, although highly manual and subjective, appear on a sample basis to be reported properly for NYSEG and RG&E. Baker Tilly did not find any classification errors in a sample of 2010 Major Storm events for both NYSEG and RG&E, but have noted process improvement observations/findings that could be implemented to strengthen this area:

FINDING 1 – LIMITED TO NO TRAINING IS PROVIDED ON THE APPROPRIATE ASSIGNMENT OF OUTAGE CODES

<u>Criteria</u>

Utilization of consistent definitions of cause codes allows for a higher quality of data collection, within each division as well as between NYSEG and RG&E. Training of cause code usage should result in reporting improvements.

Condition

There is no formal training pertaining to the assignment of cause codes (definitions), which could potentially lead to inconsistent usage of the codes between NYSEG and RG&E and between divisions.

Effect/Recommendation

NYSEG and RG&E should consider providing training regarding assignment of cause codes to assure all involved personnel have the same understanding of each cause code. Such training could prove to be especially effective for unusual circumstances and/or circumstances in which more than one cause code may apply.

FINDING 2 – MAJOR STORMS QUALIFICATION PROCESSES ARE MANUAL, PARTIALLY SUBJECTIVE AND LACK INDEPENDENT REVIEW

Criteria

Outages deemed as to have been caused by Major Storms are excluded from the SAIFI and CAIDI metrics reported by NYSEG and RG&E. The NYPSC defines Major Storms as a period of adverse weather during which service interruptions affect at least 10 percent of the customers in an operating area and/or result in customers being without electric service for durations of at least 24 hours.

Condition

NYSEG and RG&E code their own outages as weather events, but the Corporate Lead at NYSEG reviews and makes the final determination of all Major Storms exclusions. The current process and related historical Major Storms qualification processes are very manual and rely heavily on the expertise of one individual. The Corporate Lead looks at weather events at the division level and looks at the timing and customer impacts to qualify an event as a Major Storms. Typically, any outage within a division that occurs on a day that is qualified as a Major Storms event will be recorded as a Major Storms exclusion.

Effect/Recommendation

In order to remove subjectivity from reliability reporting, many utilities automate Major Storms exclusion calculations based on parameters in the Outage Management System. Through this practice, a more independent and defensible identification of Major Storms events occurs, as opposed to the subjective process of including/excluding related outages as part of the Major Storms qualifications process.

If NYSEG and RG&E continue following the current state Major Storms event practices, Baker Tilly recommends that an independent review and approval take place regarding identification and assignment of outages related to Major Storms events. Further, it would be prudent to include Major Storms testing into Iberdrola internal audit plans for reliability reporting testing.

If NYSEG and RG&E consider implementing a more systematic/quantitative approach to qualifying Major Storms event outages, the Companies must also acknowledge an additional complexity related to metric inconsistency. In other words, if Major Storms processes are changed, baseline performance metric standards and targets will need recalculation or calibration to reflect the process change.

FINDING 3 – MAJOR STORMS ASSIGNMENT PROCESSES LACK DOCUMENTATION AND RELY HEAVILY ON INSTITUTIONAL KNOWLEDGE OF KEY PERSONNEL

Criteria

Written procedures allow for consistent processing and reporting of information, within both NYSEG and RG&E, as well as between divisions. Written procedures lead to increased quality of data captured when the same procedures are utilized by all locations.

Condition

The ultimate assignment of an outage as part of a Major Storms event is a highly manual process performed by one key individual, based on years of experience and knowledge. No written policies and procedures exist to ensure that the process would work effectively if performed by another individual.

Effect/Recommendation

With very limited formalized written policies and procedures, there is a substantial risk that the institutional knowledge of key personnel could be lost if the employee changed positions or left the company. Detailed process documentation should be created for NYSEG and RG&E Major Storms processes. Such documentation could include flow charts, process narrative, and key calculations performed. The written policies and procedures should also identify key internal controls that are performed to ensure accurate reporting.

Iberdrola Internal Audit should be involved with acknowledging their approval of the policy and procedure documentation and should identify internal control testing procedures based on the narrative and controls determined with key personnel.

Procedures Performed in Connection with Baker Tilly Conclusions

- 1. Reviewed NYPSC Regulation 16 NYCRR Part 97 for outage cause code definitions.
- 2. Reviewed mapping of NYSEG and RG&E SAP detailed cause codes to higher level NYPSC codes.
- 3. Interviewed NYSEG and RG&E staff about the assignment and use of outage cause codes.
- Reviewed 2010 statistics to calculate the comparative use of each outage code as a proportion of the total incidents reported.
- 5. Compared relative proportional use of cause codes between NYSEG and RG&E.
- 6. Reviewed NYPSC Regulation 16 NYCRR Part 97 for Major Storms definitions.
- 7. Interviewed NYSEG and RG&E personnel on the Major Storms qualification and review process.
- 8. Performed the following attribute testing on a sample of Major Storms events excluded from 2010 NYSEG and RG&E reliability metrics:
 - a. Can the event be qualified on the basis that over 10% of division customers were impacted?
 - b. Can the event be qualified on the basis that the event caused division outages with duration over 24 hours?
 - c. Can event start and end dates be substantiated from outage records?
 - d. Can event interruptions and customers affected be substantiated from outage records?
 - e. Can the customer hours of outage for the event be recalculated from customers affected and duration figures?

2. NYSEG/RG&E Outage Management Systems (OMS) Processes and Reporting Accuracy

The Iberdrola Companies utilize the Electric Reliability Application (ERA) to facilitate electric reliability reporting to the NYPSC. The Outage Management System in SAP tracks reported outages and documents outage details communicated by the field crew. SmartMaps works with SAP to predict which electrical system device is out of service based on the location of customers reporting the outage and SCADA information. Outage information in ERA is extracted from SAP or manually entered. Outage data is reviewed for accuracy within the ERA and then used for the reports provided to the NYPSC.

2.1 System Report Reconciliation and Sample Testing

Background

Baker Tilly reviewed the general process flow for NYSEG and RG&E for reporting electric interruptions. While a more detailed review of the process flow is included in Section 3 of this report, the following illustrates a high-level flow of reliability data reporting for the NYSEG divisions. Although outage information is technically entered into SAP first, the reliability reporting data is accumulated in field paperwork called Service Interruption Records (SIRs) or shop papers by local operations crews. The outage record data is then finalized in SAP, prior to an automated transfer to ERA.

NYSEG High Level Reliability Data Flow



Although RG&E's reliability reporting is also completed through ERA system reports, RG&E manually inputs data into the ERA system based on dispatch logs, as opposed to an automated SAP data interface. Once the outage data is compiled in ERA, NYSEG and RG&E follow similar processes.

RG&E High Level Reliability Data Flow



In 2010, division personnel were primary editors of ERA data. The process was centralized to dispatchers in 2011 and 2012. Once NYSEG and RG&E's data is uploaded into ERA, the Corporate Lead/Engineer also reviews the data and makes corrective edits to ERA records before creating the NYPSC and corporate reliability reports. Baker Tilly interviewed division personnel and dispatchers to understand the process for manually editing ERA data.

In order to review and report on the use of both NYSEG's and RG&E's Outage Management Systems (OMS) pertaining to reliability tracking and reporting process accuracy, Baker Tilly selected a statistically-derived sample of 42 electric interruptions occurring in 2010 to validate completeness of documentation. Baker Tilly utilized the same samples as were tested for documentation requirements, included as Appendix D and Appendix E to this report.

In addition to the 42 outages sampled, Baker Tilly also selected additional samples for testing based on noted discrepancies between system reports, primarily between SAP and ERA. The population of outage records were analytically compared between the systems and a small sample of discrepancies was selected for follow up with NYSEG and RG&E.

The additional report discrepancy samples included the following for both NYSEG and RG&E during 2010:

- Interruptions in SAP reports that do not appear on the ERA reports
- Interruptions in ERA reports that do not appear in the SAP reports
- Interruptions with variances in customers affected in SAP and ERA
- Interruptions with variances in outage durations in SAP and ERA

NYSEG and RG&E provided supporting source documentation and narrative explanations for each sampled discrepancy, with minor findings noted.

Baker Tilly Findings/Conclusions

Through the testing of sampled interruptions and additional analytical review of reporting discrepancies, Baker Tilly has noted a number of findings related to the Companies' use of the OMS in reliability reporting.

FINDING 4 – NYSEG 2010 REPORTING TO THE NYSPC DID NOT COMPLETELY RECONCILE TO ERA DATA OR CORPORATE REPORTING

Criteria

The outage records in the ERA system are the final source of record for all NYSEG and RG&E outages and are the basis for the Companies' metric reporting.

The total number of customers connected used in the metric calculations is based on the actively metered customers in SAP. SAP contains a listing of the actively metered customers, which loads into Smart Map. At the beginning of each month, the Smart Map customers connected per circuit data is loaded into ERA.

<u>Condition</u>

NYSEG's reliability reports for 2010 do not fully reconcile. In particular, total customer numbers vary between NYPSC reporting and corporate reporting. Other differences are very minor and none of the discrepancies had a material impact on 2010 CAIDI or SAIFI reporting.

Reporting Parameter	ERA Data⁵	NYPSC Reporting	Corporate Reporting
TOTAL CUSTOMERS	856,474	856,474	858,269
TOTAL INTERRUPTIONS	14,979	14,976	14,979
TOTAL CUSTOMER HOURS	6,445,597	6,445,599	6,445,598
TOTAL CUSTOMERS AFFECTED	1,576,109	1,576,105	1,576,109
TOTAL INTS W/O STORMS	9,770	9,766	9,770
TOTAL CUST HRS W/O STORMS	1,934,746	1,934,096	1,934,746
TOTAL CUSTS AFFECTED W/O STORMS	975,379	975,375	975,379
CAIDI W/O STORMS	1.98358	1.98293	1.98358
SAIFI W/O STORMS	1.13883	1.13883	1.13645

⁵ Total Customer Count Data not included in ERA. As such, this figure was taken from the PSC reported values.

Effect/Recommendation

There is no apparent reason that NYSEG's reliability reporting should differ between what is provided to the NYPSC and the internal Iberdrola Corporate reports. Further, all reliability data should be reconciled against ERA source system data. NYSEG may want to formalize and document a monthly reconciliation of NYPSC and corporate reports against source ERA data and SAP source data for customer counts.

FINDING 5 – NYSEG – MINOR DISCREPANCIES EXIST IN SAMPLED OUTAGE INCIDENTS

Criteria

NYSEG uses the Service Interruption Report as the source of record for interruption statistics. NYSEG ERA records should reconcile to Service Interruption Report documentation.

Condition

Out of a sample of 32 NYSEG interruptions randomly selected by Baker Tilly, five incidents contained inconsistent interruption durations compared to SIR support. The duration variances resulted from inconsistent start or end times in ERA. Most, but not all, discrepancies were less than an hour.

			ERA Repo	ort	Documentation			
OPCO	Incident	Outage Start Time	Outage End Time	Duration (hours)	Outage Start Time	Outage End Time	Duration (hours)	
NYSEG	200000151896	9:36	12:30	2.900	9:53	12:30	2.617	
NYSEG	200000152144	13:39	16:00	2.350	14:01	16:00	1.983	
NYSEG	200000152192	23:57	1:01	1.067	23:59	1:00	1.026	
NYSEG	200000152550	23:19	2:16	2.950	20:35	2:15	5.667	
NYSEG	200000168439	14:44	15:36	0.867	14:49	15:36	0.783	

Two samples from ERA had counts of customers affected which did not match SIR support. In both cases, the SIR showed a number crossed out for customers interrupted and another one written over it. The records in ERA match the crossed out number, but it appears as though the intent of the SIR correction was not reflected in ERA.

		ERA Report	Documentation
OPCO	Incident	Customers Affected	Customers Affected
NYSEG	200000152550	68	44
NYSEG	200000168439	1550	1472

Effect/Recommendation

ERA interruption customer counts and interruption times should match source documents to guarantee the accuracy of reported reliability metrics. NYSEG should review process and system improvement opportunities to address these inconsistencies.

FINDING 6 – SAMPLED NYSEG OUTAGE DURATION CALCULATIONS CONTAIN MINOR ERRORS IN ERA

Criteria

Interruption durations calculated by the ERA system are the final source of record for calculating NYSEG reliability metrics. ERA rounds interruption start and end times to the nearest minute, then takes the difference to be interruption duration.

Condition

Baker Tilly recalculated interruption duration from the start and end times shown in ERA. In ten of the 32 NYSEG interruptions sampled, Baker Tilly calculated slightly different durations than ERA reported. Recalculated values ranged from 0.0663 hours (about 4 minutes) shorter than the reported time to 0.0170 hours (about 1 minute) longer than the reported time.

Effect/Recommendation

Because Baker Tilly recalculated durations from the same start and end times used by ERA, there is no known reason the durations should not reconcile exactly. Although the variances are small, NYSEG may want to complete additional testing to validate the accuracy of interruption durations calculated by ERA.

FINDING 7 – NYSEG SAMPLES BASED ON REPORT DISCREPANCIES VARIED FROM SOURCE DOCUMENTATION

<u>Criteria</u>

As mentioned in the above finding, at times ERA records must be manually edited or manually created to correctly show interruption duration and the number of customers interrupted. Since NYSEG interruptions are created in ERA through an SAP extract, an audit trail should exist for ERA data.

Condition

Baker Tilly identified manual edits to NYSEG interruption records for testing based on differences between the ERA and SAP interruption records. Of the explanations provided by NYSEG for the manual edits, most of the differences could be successfully reconciled. However, a sample of the records remained questionable/missing from ERA. For example, SAP interruptions which NYSEG stated were included in the ERA reports could not be found in the ERA reports provided to Baker Tilly. A table of the SAP interruptions that appear to be missing from the ERA record is included in Appendix F.

Effect/Recommendation

Failing to include legitimate interruptions in the ERA report could make NYSEG reliability metrics appear more favorable. From the documentation provided and lack of sufficient audit trail, it appears possible that a number of interruptions from SAP may have been left off the ERA report without supporting document justification. NYSEG has indicated that this is not the case and that the interruptions either changed numbers or went through another legitimate change, but documentation was not provided to sufficiently substantiate these claims.

FINDING 8 – RG&E MINOR DISCREPANCIES EXIST IN SAMPLED OUTAGE INCIDENTS

Criteria

For RG&E, the Distribution Operator's Report is the source of record for interruption statistics. RG&E ERA reporting records should reconcile accurately against the Distribution Operator's Report.

Condition

Out of a sample of ten RG&E ERA incidents randomly selected by Baker Tilly, two incidents contained inconsistent weather codes and one was characterized by an inconsistent device code (as compared to supporting documentation provided).

	ERA R	eports	Documentation		
OPCO	Incident	Device	Weather	Device	Weather
UPCO	Incluent	Code	Code	Code	Code
RG&E	300000302795	23	2	20	5
RG&E	200000152440	23	5	23	0

Effect/Recommendation

This is a very minor finding with no impact on RG&E's reliability metric results. No recommendation is made in this area. Other discrepancies related to RG&E sampled outages include no incident number being recorded in the ERA system, which means there is no direct tie to SAP data.

FINDING 9 – RG&E SAMPLES BASED ON REPORT DISCREPANCIES VARIED FROM SOURCE DOCUMENTATION

Criteria

SAP interruption records can be inaccurate for a number of reasons. Inaccuracies in Smartmaps may cause it to convict the wrong device, SAP records may not accurately show a sectionalized interruption, or an interruption may be found by a line crew during an electric trouble job. In these situations, ERA records must be manually edited or manually created to correctly show interruption duration and the number of customers interrupted.

Condition

Baker Tilly identified manual edits to RG&E interruption records for testing based on differences between the ERA and SAP interruption records. RG&E provided explanations and Operator Log support for the manual edits. Baker Tilly notes that a number of interruptions were recorded with one incident number in SAP and a different incident number in ERA. In some cases, interruptions were manually entered into ERA without incident numbers or with incorrect incident numbers. In other cases, multiple incident numbers were created in ERA, then consolidated. A table of the SAP interruptions that appear to be missing from the ERA record is included in Appendix G.

Effect/Recommendation

The interruption records in ERA match the Operator Log support, so this issue does not necessarily affect the calculation of reliability metrics. However, RG&E may want to consider the broader implications of ERA records not reconciling to SAP data accumulation.

Procedures Performed in Connection with Baker Tilly Conclusions

- 1. Baker Tilly attempted to reconcile 2010 NYSEG and RG&E SAP system reports to 2010 ERA system reports.
 - a. Focus was on reconciling reliability reporting inputs, including: total interruptions; customers affected; and recalculation of total customer hours (*customers impacted x outage duration*)
 - b. Reviewed discrepancies between NYSEG and RG&E SAP and ERA reports and selected a sample for additional review.
- 2. Baker Tilly reconciled 2010 ERA reports for NYSEG and RG&E to the actual spreadsheet reports provided to the NYPSC.
- 3. Reconciled NYSEG and RG&E corporate reports for 2010 against source data reports in ERA.
- 4. Reconciled ERA interruption records for NYSEG and RG&E to supporting documents on a sample basis using the sample of 42 interruptions tested for compliance requirements in Section 1. The sampling procedure was also explained in the prior section.
 - a. For NYSEG, primary source documentation reviewed to validate ERA data included shop papers, work orders, Service Interruption Records (SIRs), and SAP Electric Incident Notification documentation.
 - b. For RG&E, primary source documentation reviewed to validate ERA data included shop papers, work orders, SAP Electric Incident Notification documentation and the Distribution Operator Log.
 - c. ERA parameters verified against source data include the following, as mandated for record keeping in Section 2 of NYPSC Regulation 16 NYCRR Part 97:
 - 1. Operating area where the interruption occurred
 - 2. Circuit name or number affected and location affected
 - 3. Date and time of the interruption
 - 4. Date and time service was restored
 - 5. Duration of interruption
 - 6. Number of customers affected by the interruption
 - 7. Cause of the interruption
 - 8. Weather conditions at time of interruption
 - 9. System component involved
- 5. Outage duration values and customer counts were also recalculated based on source documentation inputs.
- 6. Baker Tilly tested manually edited and manually created ERA interruption records on a sample basis and tied ERA records to supporting documentation.
 - a. Baker Tilly selected additional samples to test manual edits based on noted discrepancies between system SAP and ERA system reports. The population of outage records in ERA and SAP were analytically compared to identify differences. A small sample of the discrepancies was tested against the source documentation.
 - b. Baker Tilly also interviewed a number of clerks making manual edits to ERA records to understand the manual edit process. Clerks were chosen for interviews based on the number of final edits he or she made in 2010. A small number of edited interruptions were selected, and the clerk explained the reasoning for the edit and provided supporting documentation.

2.2 IT Control Testing

Background

The primary IT controls considered in relation to this audit relate to *User Access*, *Data Backup*, and *Change Management*, as further discussed through the remainder of this section.

User Access

Effective controls around user access are important for reliability reporting to mitigate the risk of unauthorized users gaining access, or a user having more access to a system than is required for their job role, and making uncontrolled changes which could lead to inaccurate reporting data.

- All users have unique user IDs and passwords for the network and SAP. No password is required for ERA, but users must be authenticated to the network and previously granted access based on their network login.
- There is a formal process for adding users to the network and SAP which is facilitated and tracked by the Courion tool through an automated workflow. This process includes a review against segregation of duties rules and manager, data owner, and organization approvals. For ERA, adding users is only facilitated and tracked by the Courion tool if the request is submitted through an IT request form. Most new user access is granted informally by directly asking a super-user.
- The IT Risk department performs a user access review of the network and SAP on an annual basis. A review of privileged users that have broad access to data and/or administrative capabilities is performed for the network. Managers of privileged users are sent a list and required to verify if access is appropriate. For SAP, complete user access lists are sent to data owners for review and verification of assigned SAP roles. Any requested changes are communicated and made by the IT Risk department. There is currently no formal user access review performed for ERA.

Data Backup

The performance of and procedures around backing up data is crucial for reliability reporting to ensure that data is not lost or incomplete/inaccurate and can be restored if needed.

• Databases are backed up and reviewed on a daily basis. Daily incremental backups are also performed for SAP and ERA. SAP is considered a tier one disaster recovery (DR) application so the media is stored off site, backup media is tested periodically and database information tested for restoration.

Change Management

Proper controls and a formal process around change management is important for reliability reporting to mitigate the risk of uncontrolled development cycles or major changes that may cause issues leading to inaccurate reporting data.

- EEQIPS is tool used to facilitate the change management process for SAP, ERA, and the network. Changes are handled by the Windows Distributed Team. A change request is submitted online within EEQIPS then sent to the business unit owner and manager and/or VP or director for approval. Once approved, the affected parties are notified and the change goes through user client testing. When testing is complete, a separate IT representative puts the change into production. For emergency changes, Senior Manager approval is obtained before or after change is implemented. Changes are performed after hours so as not to interfere with daily operations.
- Any updates that need to be made within SmartMaps follow a standard documented process and are facilitated by the Master Data Group (MDG) and updated by Mapping. For as-builts the MDG receives the corresponding work orders, paperwork, and maps and updates SmartMaps accordingly. For discrepancies that are found in SmartMaps master data change requests are communicated and tracked within SharePoint. Requests are monitored daily and work is assigned by the MDG. Mapping receives a list of transactions for structure adds on a daily basis which they update/add into Circuit Map Editor.

Baker Tilly Findings/Conclusions

FINDING 10 – MINIMAL CONTROLS EXIST AROUND ERA USER SYSTEM ACCESS

<u>Criteria</u>

In dealing with controls around ERA user access, there must be assurance that each user is authenticated to the network and application(s). If accounts are generic, it may not be possible to distinguish who made a modification to the production system. In addition, it is possible that unauthorized users will be able to access the system and ERA. A control, such as a password, must require users to authenticate to both the network and applications.

Furthermore, the client must follow a consistent process for adding and deleting users from the system. This includes demonstrating a standard process for changing access levels to current employee accounts due to changes such as promotions or department transfers. The client must follow a formal process to request and approve access for new users, modified users, and terminated users.

Finally, confirmation detailing the client's ability to review who has access to their system and at what levels should be available. This information should be documented and backup procedures should be performed. Confirmation that all critical data is being backed up allows for restoring of any data needed at a future time.

<u>Condition</u>

Iberdrola currently has user login required for access to the network and to SAP. Access to ERA does not require a password login, as access is granted based on user authentication to the network. The network requires passwords to contain three out of the four character sets (uppercase, lowercase, number, and special), and does not allow passwords to use more than 70% of a username.

In relation to the process of adding, deleting, or changing user access levels from the system, Iberdrola uses a Courion tool to facilitate the user access process through automated workflow. New employees, changes in access level, and employee or contractor terminations are all handled using this tool, done by Information Technology (IT) security.

Backup procedures are completed and reviewed on a daily basis. SAP is considered a tier one disaster recovery (DR) application, so the media is stored off site and tested periodically for restoration. All backup procedures are documented by the Windows Distribution Team. A change request is submitted online within EEQIPS, sent to business unit owner for approval, and then sent to a manager and/or vice president or director for proposal. If a change gets approved, the affected parties are notified, and the change is performed after hours so as not to interfere with daily operations.

Effect/Recommendation

Baker Tilly determined that the controls around ERA user access process are weak, with a few mitigating factors, as follows:

- 1. ERA is administrated by the business process owners who are also in a supervisory/manager role; therefore, those granting users access are the same individuals required to approve access.
- 2. When user access is removed from the network, that individual also no longer has access to the ERA.

Baker Tilly recommends improving the controls around adding new employees, modifying existing access, and removing access for terminated employees within ERA. Baker Tilly also recommends that ERA administrators perform a review of user access levels on an annual basis. This review should consist of ensuring that access levels for each user is reasonable and based on least privilege and remove any identified unused user IDs from the system.

Procedures Performed in Connection with Baker Tilly Conclusions

- 1. Conducted interviews with NYSEG and RG&E IT specialists to obtain information around IT processes and controls for ERA, SAP, SmartMaps, and the network.
- 2. Submitted IT data requests.
- 3. Reviewed controls around User Access, Data Backup, and Change Management.
- 4. Obtained requested data and performed testing.
- 5. Identified areas where controls are weak or lacking.
- 6. Documented review, testing, and recommendations in audit work papers.
- 7. Detailed IT testing areas included the following:
 - a. User Access
 - 1. Authentication to Network and Applications
 - 2. Password Settings
 - 3. Adding and Deleting Users
 - b. Data Backups
 - 1.SAP and ERA Backup Procedures
 - c. Change Management
 - 1.SAP and ERA Network and Application Changes
 - 2.SmartMaps Updates

3. Review of Internal Controls and Other Process Observations

Background

Baker Tilly reviewed process documentation provided by the Companies, performed process walkthroughs, and also interviewed corporate and division level contacts at both NYSEG and RG&E.

NYSEG Processes and Controls

NYSEG provided the following process flow chart to illustrate its reliability reporting processes, from initial customer contact to report an interruption, through actual reliability reporting to the NYPSC.



Baker Tilly performed a high level review of key internal controls in place at NYSEG, as well as controls that are not formally in place, but based on the interest of establishing sound controls, should be. The NYSEG high level internal control review is included in Appendix H.

RG&E Processes and Controls

RG&E provided the following process flow chart to illustrate its reliability reporting processes, from initial customer contact to report an interruption, through actual reliability reporting to the NYPSC.



Baker Tilly performed a high level review of key internal controls in place at RG&E as well as controls that are not formally in place, but based on the interest of establishing sound controls should be. The RG&E high level internal control review is included in Appendix I.

Baker Tilly Findings/Conclusions

FINDING 11 – NYSEG AND RG&E INTERNAL CONTROL FRAMEWORKS TO SUPPORT RELIABILITY REPORTING NEED IMPROVEMENT

Criteria

In accounting and auditing, internal controls are defined as a process affected by an organization's structure, work and authority flows, people and management information systems, designed to help the organization accomplish specific goals or objectives⁶. These principles apply to business and compliance-driven processes, such as the Companies' reliability reporting.

⁶ Committee of Sponsoring Organizations of the Treadway Commission (COSO) Definition of Internal Controls. www.coso.org.

While the scope of this audit did not entail a comprehensive review of the five COSO components of effective internal controls (Control Environment, Risk Management, Control Activities, Information/Communication, and Monitoring), Baker Tilly did perform a high level risk assessment and control analysis related to NYSEG and RG&E's reliability reporting processes.

Condition

NYSEG and RG&E internal controls that support reliability reporting are lacking and could be improved by formalizing key control points in the reporting process. Internal control improvements should be designed to systematically improve reliability reporting accuracy and efficiency.

Effect/Recommendation

Baker Tilly recommends bolstering NYSEG and RG&E's reliability reporting internal control framework with the assistance of Iberdrola Internal Audit. Specific control recommendations for NYSEG and RG&E have been included as part of Baker Tilly's internal control testing matrix in Appendices F and G, respectively.

FINDING 12 – LACK OF WRITTEN PROCEDURE DOCUMENTATION ALLOWS FOR INCONSISTENT HANDLING OF INTERRUPTIONS

Criteria

Written procedures allow for consistent processing and reporting of information, within each division as well as between divisions. Written procedures lead to increased quality of data captured when best practice procedures are utilized by all locations.

Condition

Baker Tilly noted several conditions related to this process improvement finding, including the following:

- 1. Written processing and reporting procedures were absent for the 2010 period.
- 2. No written procedures exist for documentation of outage notifications.
- 3. No written procedures exist for report generation, reviews, edits, approvals, etc. This condition can result in inconsistent handling of data and risk of jobs not being performed correctly should employees leave the Company prior to training replacements.
- 4. Written procedures do exist in PowerPoint format for data accumulation and reporting; however, there is no organized document that encompasses all of the processes.

Effect/Recommendation

For 2010, there was no standardization of process for collection of reliability related data. For 2011 a Standard Operating Procedure (SOP) was established which documented the necessary steps for data collection related to a reported interruption.

Comprehensive written policies and procedures should be developed/finalized for the entire data accumulation and reporting process.

FINDING 13 – STANDARDIZATION OPPORTUNITIES EXIST WITHIN DIVISIONS AND BETWEEN THE COMPANIES TO ALLOW FOR IMPROVED DATA COLLECTION AND REPORTING

Criteria

Standardized processes and procedures allow for consistent collection of data and improved report information. Standard methods can lead to improved quality of data captured and reported when best practice procedures are utilized by all locations.

Condition

Baker Tilly noted several conditions related to this process improvement finding, including the following:

- 1. Quality data collection and reporting is dependent on assuring data keyed into the system is reliable. Consistent review and verification of data is critical in achieving high quality. The various divisions perform reviews of information contained on SIRs (and other field papers) at varying levels. Scrubbing of data with different levels of effort can lead to inconsistent reporting between the divisions, and differing qualities of data.
- 2. There is no standardized process between NYSEG and RG&E for documenting field conditions, repair details, and other notes by the field crew. (For example, OD35 forms and SIRs are only used by some divisions and are sometimes used inconsistently.)
- 3. There is no formal "time clock" utilized for determining the time of day stamp for restorations.

Effect/Recommendation

- 1. Assure an appropriate level of data review takes place to achieve an acceptable level of data quality, whether moving to centralized data scrubbing or remaining at the division level.
- 2. Standardize procedures and documentation across divisions for recording field conditions, repair details, and other items of significance.
- 3. Identify a standard timing device and methodology to use for consistency in recording restoration times. This action should be coordinated with the SAP system utilized for assigning the start time of the event to allow for highest quality data. Integrity of data is compromised by not utilizing standard and consistent restoration time identification.

FINDING 14 – SUFFICIENT AUDIT TRAILS DO NOT EXIST TO ALLOW FOR EFFECTIVE AUDIT REVIEWS

<u>Criteria</u>

Processes and procedures should be adequately documented and related systems controls should be sufficient to allow for effective process audit-ability.

Condition

Baker Tilly noted several conditions related to this process improvement finding, including the following:

- 1. Field personnel have the ability to make changes to Electric Interruption (EI) without documentation/support. There is no documented tool used for changes made to customer outage count nor a source of determining those changes.
- 2. There is no supervisory review after the fact regarding correction of discovered errors to assure appropriate updates are actually entered as required.

- 3. An incentive exists to modify data to meet corporate goals for each division (although not significant). Lack of documentation for changes, access by multiple system users with the trail only pointing to the latest edit made could lead to a process where a number of changes are made in sequence, and then a final legitimate change is made, and is the only documented edit.
- 4. Division staff forward reliability data changes needed in the ERA system to a Lead Coordinator (or other personnel) to update reliability data based on data scrubbing performed at the division level. There is no formal process to report the changes actually entered into the system.
- 5. Data changes made at the corporate level (or by other individuals) do not require approval by the affected divisions. Divisional areas should review changes for appropriateness, and to assure inadvertent changes (e.g., updates to wrong incident) or data entry keying errors have not occurred. Daily reliability reports are currently distributed with summary reliability data presented by division, but the noted changes to individual incidents are not discernable.
- 6. There is no standard source system in which changes are made for reliability corrections with updates sometimes entered in SAP, while other times entered in ERA. The SAP system is not designed to handle each type of transaction, thus requiring changes to be entered only in ERA for various circumstances. At times, neither electronic nor paper audit trails exist for these types of transactions.
- 7. Audit type information is collected in ERA which identifies a time/date stamp for the last user making a change in the system and is intended for aid in auditing the information. However, no action is taken to review the changes made in the ERA system, and the system does not track the actual related data changes.
- 8. General ability to adequately audit the ERA Outage Management System is questionable due to multiple manual processes in place, along with inadequate controls, lack of documentation, and insufficient audit trails. BT performed follow up data requests on various records edited in the ERA system and found no significant issues. However, the sample size was relatively small in comparison to the large population of records edited.

Effect/Recommendation

- 1. Develop a report which allows for documentation of changes that includes approval signoff by supervisory personnel and support staff. Additional possibilities to achieve this recommendation:
 - a. Electronic workflow with adequate documentation notes.
 - b. Disallow this practice for making system edits.
 - c. Create a central clearinghouse with supervisory review and approvals for all changes.
- 2. Develop a report which documents errors to be corrected as discovered via management reviews. A corresponding procedure is required to assure corrections have been entered as required, and the processor of data is noted appropriately.
- 3. Develop an audit trail which documents edits/changes throughout the process. Strengthen access levels controls for reporting systems and require supervisory approval of changes.
- 4. Require approval by the respective divisions for reliability data changes (regardless of who is making the change). This entails creation of a "data change audit report" which lists activity occurring within the ERA system. The report should be segregated by area and forwarded to the division supervisor for approval.
- 5. Develop an exception report which identifies the differences between the SAP and ERA systems to allow for review of discrepancies between the systems. Develop a process which provides documentation/adequate audit trail for circumstances in which SAP is updated without a corresponding change to ERA.

- 6. Select a sample of ERA data changes as noted via the "last change" field at least annually to assure that changes in ERA contain appropriate documentation. Explore a more robust change tracking mechanism which tracks all edits to reliability records, rather than just the last change made.
- 7. Consider additional system based and process based controls around the Outage Management System. Audit trail controls should also be a consideration in the review of potential new OMS implementations.

FINDING 15 – SEGREGATION OF DUTIES WEAKNESSES RESULT IN CONTROL INADEQUACIES WHEN REPORTING TO THE NYPSC

<u>Criteria</u>

Appropriate segregation of duties is critical in assuring both the appearance and application of prudent reliability reporting practices.

Condition

Baker Tilly noted the following conditions related to this finding:

- 1. Review of ERA reports is performed, but no action is required for approval of reports. Procedures vary between the various divisions, thus there is no assurance that reports are reviewed, potentially lessening the quality of information.
- 2. There is no second level review of NYPSC data tables before their submission to the NYPSC.

Effect/Recommendation

- 1. Develop a process in which each division acknowledges and approves (at least on a monthly basis) the information contained in ERA. This will assure accountability for review of the reports, as well as allow each division to better understand and agree to changes made to the ERA system prior to the data being submitted to the NYPSC.
- 2. Create a second level review of the NYPSC data tables to provide a greater level of assurance that accurate data is being submitted. There should also be a documented sign off on reviews as evidence of performance. This recommendation could encompass the following points:
 - a. Delegate to Corporate Lead the tasks of compiling and reviewing data tables.
 - b. Assign someone other than Corporate Lead to review data tables once they have been compiled and reviewed by the Corporate Lead.

FINDING 16 – HISTORICALLY, THERE HAS BEEN A LACK OF FORMAL INTERNAL AUDIT REVIEW OF RELIABILITY REPORTING

<u>Criteria</u>

Iberdrola Internal Audit has the capability to add significant value to the reliability reporting processes for NYSEG and RG&E.

Condition

Although reliability reporting has not historically been a high priority focus area of Iberdrola Internal Audit, the team does review the process at a high level each year and is in the process of creating more detailed audit testing plans for the current and future years. The draft historical process narrative documentation and control points are well crafted, but need more complete implementation and more robust linkage to actual internal control testing.

Key areas of improvement by the Companies that have occurred in 2011 and 2012 include the following:

- Iberdrola Internal Audit has identified reliability reporting as a focal area in its 2012 annual audit plan based on risk assessment procedures that prioritize high impact and high probability areas of risk.
- Iberdrola Internal Audit's focus on reliability reporting is a direct effect of increased executive management prioritization.

Effect/Recommendation

As part of the increased Internal Audit focus on reliability reporting, Baker Tilly recommends that Iberdrola Internal Audit update process narratives and control documentation with reliability reporting process owners. The process narrative should include updated flow charts and identification of key controls in the process. These key controls should be formalized and tested as part of Iberdrola's 2012 audit plan. Please refer to Appendices F and G for Baker Tilly internal control recommendations.

FINDING 17 – DATA ENTRY INTO SAP BECOMES A CHALLENGE DURING STORM OUTAGES AND/OR OTHER BUSY PERIODS; WITHOUT REVIEW AGAINST SIR OR OTHER FORMS, ERRORS MAY NOT BE DETECTED

Criteria

Restoring outages is typically the main priority for field crews, with data collection sometimes becoming a secondary priority during storm outages and other busy events.

Condition

During storm outages, a focus is placed on restoration with entry of information into the system sometimes noted as secondary in priority. Follow-up work to update many records can result in wrong incident numbers being updated, thus reducing the quality of reported data.

Effect/Recommendation

Modified control and review procedures need development to address post-storm practices.

FINDING 18 – PROCESS EFFICIENCY AND/OR TECHNOLOGY IMPROVEMENTS MUST ALSO CONSIDER IMPACTS ON INTERNAL CONTROLS

Criteria

Reliable data capture is essential in achieving effective and reliable information. At times, paper-based forms can help facilitate this process, so any deviation from current paper-based or manual processes should include risk mitigation strategies to ensure data reliability.

Condition

Current procedures for various divisions include utilizing paper documents, such as SIRS, which are subsequently reviewed to confirm reliability data and to assure information provided is accurate. The forms also capture additional information which assists in electric system improvements.

Management has expressed an interest in electronic outage information accumulation and reporting, thereby eliminating the use of paper forms. Some divisions have expressed a concern that elimination of certain forms will increase the risk of compromising data accuracy.

Effect/Recommendation

Division supervisors should be involved in assuring that Standard Operating Procedures are updated to include critical processes necessary to achieve an acceptable level of data quality if the SIR form or other paper forms are eliminated. An employee capturing the reliability data in SAP/ERA must be trained to assure a high quality of data is gathered from the field.

FINDING 19 – PLANS TO CENTRALIZE DISPATCHING AND DATA SCRUBBING WILL REQUIRE EXPERIENCED PERSONNEL AND EXTENSIVE TRAINING IN ORDER TO EFFECTIVELY ACHIEVE AN ACCEPTABLE QUALITY OF RELIABILITY DATA

<u>Criteria</u>

Reliable data capture and reporting requires experienced personnel knowledgeable of the respective electric systems. Division employees expressed that scrubbing data at the division level allows for greatest data quality as local personnel know their systems well and can more easily identify questionable data than a centralized data scrubber not familiar with each/all of the systems.

Condition

General discussions with divisions currently performing data scrubbing indicate two primary concerns:

- Discontinuance of SIR and other paper forms will lower the quality of data due to loss of information available for review.
- Division supervisors and clerks are usually experts with regard to their local systems, and can better analyze the data and perform reasonableness checks.

Effect/Recommendation

The Companies must make sure that centralized data scrubbers are provided adequate reliability data and related operating information when/if centralized data scrubbing takes place in the future. Division supervisors should be involved in developing requirements to satisfy these needs. Internal Auditing or an outside party could facilitate discussions between division personnel and corporate level personnel to assure all concerns are addressed adequately. Division supervisors should be involved in the creation of training materials for centralized data scrubbers (should this organizational change take place) to assure adequate reviews are accomplished by the centralized group.

FINDING 20 – RG&E RELIABILITY REPORTING PROCESSES ARE HIGHLY MANUAL AND DO NOT DIRECTLY RECONCILE WITH SAP PROCESSES

<u>Criteria</u>

Outage Management System (OMS) best practices typically indicate movement towards automation of processes to support accurate and complete data is included in required reporting.

Condition

For NYSEG, SAP contains an extract designed to move all completed outage records from SAP to ERA and many manual edits are required within ERA by NYSEG, which is not ideal. However, RG&E processes differ as there is no direct extract or interface from SAP to ERA. RG&E accumulates outage records through the Distribution Operator's report, which is a log of manually entered outage information. This outage log is subsequently punch-keyed into the ERA system.

RG&E field personnel also record outage information through handheld devices, or MAUs. The MAU data recorded updates the outage records in SAP. However, with a parallel manual process, the data analysis and correction process is not well documented with a sufficient audit trail. The result is that RG&E ERA data cannot readily be reconciled against the SAP system of origin, as many times there is not even a reconciling incident number.

Effect/Recommendation

Although RG&E's processes are sound, automation opportunities should be considered. There are noted difficulties for both Companies in utilizing the current SAP-based outage management system. For example, SAP does not allow for appropriate "sectionalizing" of outages to the appropriate customer set based on related infrastructure in ERA.

Baker Tilly recommends that as future OMS investments are considered, manual processes are reviewed for automation opportunity. This means that a new OMS should be more fully integrated with ERA reporting and data flow.

Procedures Performed in Connection with Baker Tilly Conclusions

- 1. Reviewed process flow documentation and interviewed key NYSEG and RG&E electric interruption process owners to discuss the activities that are used in the day-to-day management of interruptions.
- 2. Performed detailed review of reports; traced sampled report information to supporting source documentation.
- 3. Documented areas where it is determined that controls are lacking, ineffective, or are not designed properly to reach their objective.
- 4. Interviewed Iberdrola Internal Audit regarding reliability reporting, including a discussion of past, present, and future risk assessments and audit procedures.
- 5. Reviewed the Iberdrola Internal Audit report responding to another reliability process review report and internal Business Transformation efforts.
- 6. Reviewed draft internal control process narratives pertaining to SAIFI and CAIDI reporting. Note: the draft procedures were created and last updated in 2006.

APPENDICES

IBERDROLA USA

RELIABILITY AUDIT FOR NYSEG AND RG&E

APPENDICES

Appendix A: Summary of NYSEG and RG&E Divisions

The following summary of NYSEG and RG&E divisions includes the Regional Structure Group (RSG) designation, which is a common naming convention shared between the SAP and ERA systems.

SAP and ERA Regional Structure Groups/Divisions

NYSEG	
RSG Code	RSG Description
70	Auburn
71	Binghamton
26	Brewster
57	Elmira
65	Geneva
61	Hornell
68	Ithaca
51	Lancaster
48	Liberty
55	Lockport
30	Mechanicville
38	Oneonta
34	Plattsburgh

RG&E

RSG Code	RSG Description
13	Canadaigua
15	Genesee Valley
18	Lakeshore
14	Rochester

Appendix B: Outage Code Mapping to NYPSC Requirements

SAP/ERA CAUSE CODE	SAP/ERA CAUSE CODE DESCRIPTION	INTERRUPTION ROOT CAUSE (PSC CLASS)
N/A	Major Storms are Manually Assigned	Major Storm (class 1)
201	Pole Damage/Failure - Tree Inside ROW	Tree Caused
202	Cross Arm Damage/Failure - Tree Inside ROW	(class 2)
203	Pole Equip. Damage/Failure Other - Tree Inside ROW	
204	Conductor Down - Tree Inside ROW	
205	Tree/Branch on Conductor Inside ROW	
206	XFMR Damage/Failure-Tree Inside ROW	
207	Other - Tree Inside ROW	
210	Pole Damage/Failure - Tree Outside ROW	
211	Cross Arm Damage/Failure - Tree Outside ROW	
212	Pole Equip. Damage/Failure Other -Tree Outside ROW	
213	Conductor Down - Tree Outside ROW	
214	Tree/Branch on Conductor Outside ROW	
215	XFMR Damage/Failure-Tree Outside ROW	
216	Other - Tree Outside ROW	
301	Reset Fuse/Breaker Weather Related - Overload	Overload
302	Replace Transformer Weather Related - Overload	(class 3)
303	Other - Overload	
401	Company Switching Error	Operating Error
402	Company Tree Crew Operating Error	(class 4)
403	Company Tree Contractor Crew Error	
404	Company Crew Operating Error - Other	
405	Company Contractor Crew Error - Other	

SAP/ERA CAUSE CODE	SAP/ERA CAUSE CODE DESCRIPTION	INTERRUPTION ROOT CAUSE (PSC CLASS)
502	Defective Recloser/Sectionalizer	Equipment
503	Defective/Loose Connections	Failure
504	Defective Hot Line Clamp	(class 5)
505	Defective Insulator	
506	Conductor Down - Snow/Ice Load	
507	Conductor Sag - Snow/Ice Load	
508	Conductor Sag - Heat/High Load	
509	Conductors Crossed - Wind	
510	OH Transformer Failure	
511	OH Transformer Breaker Failure	
512	OH Transformer CLF Failure	
513	OH Transformer Fuse/Cutout Link Failure	
514	Other - OH Equipment Failure	
515	PM Transformer Failure	
516	PM Transformer Fuse/Breaker Failure	
517	PM Transformer Elbows Failure	
518	PM Transformer Bushings Failure	
519	UG Cable Failure	
520	D&W Failure	
521	Other - UG Equipment Failure	

SAP/ERA CAUSE CODE	SAP/ERA CAUSE CODE DESCRIPTION	INTERRUPTION ROOT CAUSE (PSC CLASS)
523	Substation Breaker Failure	Equipment
524	Substation Regulator Failure	Failure
525	Substation Insulator Failure	(class 5)
526	Substation Instrument Transformer Failure	
527	Substation Switches Failure	
528	Substation Capacitor Failure	
529	Other - Substation Equipment Failure	
601	Pole Damage/Failure - Accident/Non-Utility	Accident or
602	Pole Equipment Damage/Failure - Accident/Non-Utility	Non-Utility
603	Transformer Damage/Failure - Accident/Non-Utility	(class 6)
604	Conductor Down - Accident/Non-Utility	
605	Foreign Object	
606	Equipment Damage - Gun Fire	
607	Equipment Damage - Vandalism	
608	Fire - House/Building	
609	Cable Dig-In	
610	Animal - Squirrel Contact	
611	Animal - Bird Contact	
612	Animal - Beaver Damage	
613	Other - Animal Contact	
614	Loss of Supply - Foreign Utility	
615	Emergency/Public Authority Request	
616	Other - Accident/Non-Utility	

SAP/ERA CAUSE CODE	SAP/ERA CAUSE CODE DESCRIPTION	INTERRUPTION ROOT CAUSE (PSC CLASS)
701	Equipment Change - Pre Arranged	Pre Arranged
702	Voltage Conversion - Pre Arranged	(class 7)
703	Customer Request - Pre Arranged	
704	Public Authority - Pre Arranged	
705	Public Authority - Pre Arranged	
801	New/Added Customer Load - Reset Breaker/Fuse	Customer
802	New/Added Customer Load - New Transformer	Equipment
803	Customer Owned Transformer Failure	Caused
804	Customer Owned Primary/Secondary Failure	(class 8)
805	Other - Customer Owned Equipment Failure	
901	Pole Damage/Failure - Lightning	Lightning
902	Pole Equipment Damage/Failure - Lightning	Caused
903	Pole Fire - Lightning	(class 9)
904	Conductor Down - Lightning	
905	Fuse Blown - Lightning	
906	Transformer Damage/Failure Lightning	
907	Transformer CLF Blown - Lightning	
908	Lightning Arrestor Failure - Lightning	
909	Other - Equipment Operation/Failure - Lightning	
100	Cause Unknown/Undetermined	Unknown (class 10)

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Appendix C: Primary Audit Contacts

Subject Matter Expert	Company/Division	Audit Area of Expertise
Electric Distribution Systems - Chief	NYPSC	Project Kickoff
Utility Supervisor	NYPSC	Project Kickoff
Power System Operations Specialist IV	NYPSC	Project Oversight
Utility Engineer II	NYPSC	Project Oversight
Power System Operations Specialist IV	NYPSC	Project Oversight
Analyst – Electric Maintenance Engineering	NYSEG/Overall	Project Oversight and Coordination
Supervisor – Electric Maintenance Engineering	NYSEG/Overall	Project Oversight and NYSEG/Overall SME
Manager – T&D Operations	NYSEG/Overall	Project Oversight
Vice President – Electric Operations	Iberdrola	Project Oversight
Vice President – Controller & Treasurer	RG&E	Project Oversight
Lead Analyst – Dispatch & ECC	RG&E	RG&E SME
Lead Analyst – Internal Audit	Iberdrola	Internal Audit
Internal Audit	Iberdrola	Internal Audit
Director – Internal Audit	Iberdrola	Internal Audit
Lead Analyst - Applications	RG&E	IT Testing
Analyst – NERC Compliance	NYSEG	IT Testing
Supervisor – Master Data	NYSEG	IT Testing
Lead Analyst - Applications	NYSEG/Oneonta	Division specific knowledge
Manager – Regional Operations	NYSEG/Oneonta	Division specific knowledge
Construction Department Clerk	NYSEG/Oneonta	Division specific knowledge
Supervisor – Construction & Maintenance	NYSEG/Binghamton	Division specific knowledge
Construction Department Clerk	NYSEG/Binghamton	Division specific knowledge
System Operator – Dispatch & ECC	NYSEG/Binghamton	Dispatching / Division specific knowledge
Manager – Dispatch & ECC	NYSEG/Binghamton	Dispatching / Division specific knowledge
Supervisor – Construction & Maintenance	NYSEG/Binghamton	Dispatching / Division specific knowledge
Lead Analyst – Dispatch & ECC	NYSEG/Binghamton	Division specific knowledge
Manager – Regional Operations	NYSEG/Auburn	Division specific knowledge
Construction Department Clerk	NYSEG/Auburn	Division specific knowledge
Supervisor – Construction & Maintenance	NYSEG/Auburn	Division specific knowledge
Supervisor – Construction & Maintenance	NYSEG/Auburn	Division specific knowledge
Manager – Regional Operations	NYSEG/Lancaster	Division specific knowledge
Operating Reports Clerk	NYSEG/Lancaster	Division specific knowledge
Construction Department Clerk	NYSEG/Brewster	Division specific knowledge
Manager – Regional Operations	NYSEG/Brewster	Division specific knowledge
Supervisor – Construction & Maintenance	NYSEG/Mechanicville	Division specific knowledge
Construction Department Clerk	NYSEG/Mechanicville	Division specific knowledge
Supervisor – Construction & Maintenance	NYSEG/Plattsburgh	Division specific knowledge
Construction Department Clerk	NYSEG/Plattsburgh	Division specific knowledge
Construction Department Clerk	NYSEG/Ithaca	Division specific knowledge
Construction Department Clerk	NYSEG/Elmira	Division specific knowledge
Construction Department Clerk	NYSEG/Liberty	Division specific knowledge
Distribution Operator	RG&E	Division specific knowledge
Supervisor – Dispatch & ECC	RG&E	Division specific knowledge
System Operator – Dispatch & ECC	RG&E	Division specific knowledge
Distribution Operator	RG&E	Division specific knowledge

Baker Tilly Virchow Krause, LLP

Appendix D: 2010 NYSEG Outage Sample Tested

Sample	OPCO	Incident	MalfStartDate	MalfStartTime	MalfEndDate	MalfEndTime	Duration	Outage Cnt	Circuit	PSC_code
1	NYSEG	200000151713	6/4/2010	21:46:00	6/5/2010	0:55:00	3.15	1	2307011	5
2	NYSEG	200000150335	6/6/2010	17:14:00	6/6/2010	19:48:00	2.55	1	1106575	1
3	NYSEG	200000152092	6/6/2010	17:56:00	6/7/2010	0:53:00	6.933	5	1107732	1
4	NYSEG	200000150900	6/6/2010	13:34:00	6/6/2010	18:20:00	4.767	2	1203901	2
5	NYSEG	200000150708	6/6/2010	12:22:00	6/6/2010	15:00:00	2.633	17	4301501	2
6	NYSEG	200000151896	6/6/2010	9:36:00	6/6/2010	12:30:00	2.9	73	5204241	5
7	NYSEG	200000152144	6/8/2010	13:39:00	6/8/2010	16:00:00	2.35	2	1204001	6
8	NYSEG	200000152192	6/9/2010	23:57:00	6/10/2010	1:01:00	1.067	3	4303001	5
9	NYSEG	200000152194	6/10/2010	2:47:00	6/10/2010	6:30:00	3.717	19	3103104	2
10	NYSEG	200000152452	6/16/2010	12:03:00	6/16/2010	14:30:00	2.45	49	2301327	2
11	NYSEG	200000152550	6/16/2010	23:19:00	6/17/2010	2:16:00	2.95	68	5301955	9
12	NYSEG	200000152879	6/18/2010	10:34:00	6/18/2010	17:30:00	6.933	1	4201004	2
13	NYSEG	200000153070	6/21/2010	8:15:00	6/21/2010	10:10:00	1.917	64	1503901	6
14	NYSEG	200000153670	6/26/2010	11:55:00	6/26/2010	15:10:00	3.233	178	1105111	1
15	NYSEG	200000153760	6/28/2010	17:47:00	6/28/2010	18:45:00	0.967	1	3102103	10
16	NYSEG	200000153875	6/29/2010	16:45:00	6/30/2010	2:00:00	9.25	19	4202401	2
17	NYSEG	200000167494	11/30/2010	19:11:00	12/1/2010	0:30:00	5.317	12	2308312	2
18	NYSEG	200000167597	12/1/2010	8:45:00	12/1/2010	11:28:00	2.7	89	1105870	1
19	NYSEG	200000166708	12/1/2010	12:40:00	12/1/2010	17:02:00	4.433	14	1107844	1
20	NYSEG	200000166725	12/1/2010	17:08:00	12/2/2010	6:39:00	13.517	58	1500901	1
21	NYSEG	200000166539	12/1/2010	20:27:00	12/2/2010	16:55:00	20.467	15	1502574	1
22	NYSEG	200000166411	12/1/2010	14:53:00	12/2/2010	9:35:00	18.683	19	1502602	1
23	NYSEG	200000167819	12/1/2010	9:21:00	12/1/2010	16:05:00	6.733	24	2308102	5
24	NYSEG	200000167542	12/1/2010	7:23:00	12/1/2010	9:40:00	2.267	26	8104401	2
25	NYSEG	200000167922	12/2/2010	7:43:00	12/2/2010	12:28:00	4.75	2	1107078	1
26	NYSEG	200000167976	12/6/2010	15:54:00	12/7/2010	1:48:00	9.883	3	1105462	5
27	NYSEG	200000168407	12/7/2010	13:50:00	12/7/2010	15:00:00	1.15	1	2403404	7
28	NYSEG	200000168447	12/11/2010	7:37:00	12/11/2010	9:47:00	2.15	3	1105352	7
29	NYSEG	200000168594	12/13/2010	11:38:00	12/13/2010	13:24:00	1.767	80	1106667	2

Sample	OPCO	Incident	MalfStartDate	MalfStartTime	MalfEndDate	MalfEndTime	Duration	Outage Cnt	Circuit	PSC_code
30	NYSEG	200000169663	12/27/2010	9:30:00	12/28/2010	15:10:00	29.667	3	1109701	1
31	NYSEG	200000152230	6/11/2010	17:14:00	6/11/2010	18:32:00	1.3	1638	3103603	5
31	NYSEG	200000152230	6/11/2010	17:14:00	6/11/2010	17:40:00	0.433	818	3103603	5
31	NYSEG	200000152230	6/11/2010	17:14:00	6/11/2010	21:00:00	3.767	30	3103603	5
31	NYSEG	200000152230	6/11/2010	17:14:00	6/11/2010	21:15:00	4.017	227	3103603	5
32	NYSEG	200000168439	12/10/2010	14:44:00	12/10/2010	15:36:00	0.867	1550	4207769	6
32	NYSEG	200000168439	12/10/2010	14:49:00	12/10/2010	17:32:00	2.717	78	4207769	6

Appendix E: 2010 RG&E Outage Sample Tested

Sample	OPCO	Incident	MalfStartDate	MalfStartTime	MalfEndDate	MalfEndTime	Duration	Outage Cnt	Circuit	PSC_code
1	RG&E		6/1/2010	7:50:00	6/1/2010	9:33:00	1.717	6	0056RO5179	2
2	RG&E	200000152236	6/12/2010	6:54:00	6/12/2010	9:05:00	2.183	2	0217LS5238	9
3	RG&E	200000151589	6/1/2010	7:51:00	6/1/2010	11:22:00	3.517	11	0091RO2152	2
3	RG&E	200000151589	6/1/2010	10:22:00	6/1/2010	11:22:00	1	15	0091RO2152	2
4	RG&E	300000302795	6/16/2010	8:14:00	6/16/2010	10:00:00	1.767	4	0418RO5201	9
5	RG&E		6/2/2010	10:08:00	6/2/2010	10:13:00	0.083	103	0124RO5127	5
5	RG&E		6/2/2010	9:51:00	6/2/2010	10:06:00	0.25	124	0124RO5127	7
5	RG&E		6/2/2010	9:17:00	6/2/2010	9:27:00	0.167	92	0124RO5173	7
6	RG&E		6/30/2010	10:30:00	6/30/2010	11:22:00	0.867	1	0106RO5166	7
7	RG&E	200000152440	6/16/2010	6:39:00	6/16/2010	9:08:00	2.483	6	0109RO5195	5
8	RG&E		12/28/2010	9:24:00	12/28/2010	9:50:00	0.433	12	0069RO5160	7
8	RG&E		12/28/2010	10:30:00	12/28/2010	11:05:00	0.583	13	0069RO5160	7
8	RG&E		12/28/2010	11:44:00	12/28/2010	12:10:00	0.433	15	0069RO5160	7
9	RG&E	200000150218	6/6/2010	12:28:00	6/6/2010	12:55:00	0.45	102	0118RO2128	2
9	RG&E	200000150218	6/6/2010	12:28:00	6/6/2010	19:00:00	6.533	208	0118RO2128	2
10	RG&E		12/12/2010	11:53:00	12/12/2010	12:42:00	0.817	43	0174GV1212	5
10	RG&E		12/12/2010	11:53:00	12/12/2010	12:42:00	0.817	351	0174GV1224	5
10	RG&E		12/12/2010	11:53:00	12/12/2010	12:42:00	0.817	403	0174GV1245	5
10	RG&E		12/12/2010	11:53:00	12/12/2010	12:42:00	0.817	325	0176GV1217	5
10	RG&E		12/12/2010	11:53:00	12/12/2010	12:42:00	0.817	241	0176GV1246	5
10	RG&E		12/12/2010	11:53:00	12/12/2010	12:42:00	0.817	121	0176GV1247	5
10	RG&E		12/12/2010	11:53:00	12/12/2010	12:42:00	0.817	1	0249GV0760	5
10	RG&E		12/12/2010	11:53:00	12/12/2010	12:42:00	0.817	1010	8333GV7702	5
10	RG&E		12/12/2010	11:53:00	12/12/2010	13:27:00	1.567	591	8379GV7709	5

Appendix F: NYSEG Discrepancies Noted from Additional Outage Sampling

	SAP Record	ERA Record
	Incident	
OPCO	Number	Explanation
NYSEG	200000160708	Record could not be substantiated in ERA report
NYSEG	200000158151	Record could not be substantiated in ERA report
NYSEG	200000155346	Record could not be substantiated in ERA report
NYSEG	200000143565	Record could not be substantiated in ERA report
NYSEG	200000141007	Record could not be substantiated in ERA report

Appendix G: RG&E Discrepancies Noted from Additional Outage Sampling

	SAP Record	ERA Record	
OBCO	Incident		
UPCO	Number	Explanation	
RG&E	200000157531	Record could not be substantiated in ERA report	
RG&E	200000156737	Record could not be substantiated in ERA report	
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Appendix H: NYSEG Internal Control Testing Matrix

Process Reference / Control #	Purpose	Major Control Category/Objectives	Is the Design and Implementation of this Control Effective? (Test Results)	
NYSEG Initia	NYSEG Initial Customer Contact and Field Data Entry (See Division Level Reporting for Validation of Field Data Entry.)			
Division Leve	Division Level Reporting (Transfer Field Data to ERA and True-Up/Validation Efforts)			
NY-C1	SAP Outage Time Report (OTR) is validated against SIRs to verify interruption records were accurately input into SAP. <u>Process Flow References</u> W1 - Local Operations/Clerical Collects completed SIR from line crew; Tracks submitted SIRs to data from SAP OTR. Daily	 Is the Outage Time Report validated against the SIRs? Is the trued up data accurate? Was the true up reviewed and approved by someone other than the preparer? Is there evidence of the review and approval? 	Baker Tilly obtained SIRs and ensured they tied out to Outage Time Reports. However, not all NYSEG divisions utilize SIRs and there is no evidence that this review was performed. In order to increase the effectiveness of this control, NYSEG would have to consider standardization opportunities and formal documentation of SIR/OTR reviews.	
Corporate Le	Corporate Level Reporting (Reviews, ERA edit processes and justification)			
NY-C2	Ensure SAP Outage Time Report is validated against ERA data. <u>Process Flow References</u> W2 - Local Operations/Clerical Transfers interruption records from SAP to ERA utilizing the OTR extract functionality. Weekly W3 - Local Operations/Clerical Trues up ERA records with SIR information. Reviews interruption data by printing ERA reports.	 Is the Outage Time Report validated against the ERA data? Is the trued up data accurate? Was the true up reviewed and approved by someone other than the preparer? Is there evidence of the review and approval? 	Obtained ERA interruption report and ensured tie out to Outage Time Report. In order to increase the effectiveness of this control, NYSEG should consider saving evidence documentation that the review took place.	

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NY-C3a	Ensure all discrepancies in the ERA data records are addressed and corrected. Performed by Local and Corporate. <u>Process Flow References</u> M1 - Corporate Lead/Coordinator Extracts ERA data records into spreadsheet for review and validation. Monthly M2 - Corporate Lead/Coordinator Works with local Division to correct error, discrepancies, etc. Verifies corrections made to ERA records. Monthly	 Are all discrepancies in the ERA data records addressed and corrected? Are discrepancies reviewed on a monthly basis? Are discrepancies corrected on ERA records? 	Baker Tilly tested the accuracy of ERA records through sample transaction testing. With the exception of minor discrepancies, this control appears to be designed and implemented effectively. However, there is room for improvement in formalizing the control efforts through documented review and sign-off.
NY-C3b	Ensure ERA exception reports are reviewed on a monthly basis for parameters and signed off by the reviewer. <u>Process Flow References</u> M2 - Corporate Lead/Coordinator Works with local Division to correct error, discrepancies, etc. Verifies corrections made to ERA records. Monthly	 Are exception reports reviewed and signed off on? Is there evidence that the exception reports are created and reviewed? 	NYSEG provided screen shots showing how the exception reports are run from the system, but the actual exception reports for the dates selected are not available. Baker Tilly was unable to test this control as exception report documentation is not maintained by NYSEG. In order to increase the effectiveness of this control design, NYSEG may consider formalizing the control by maintaining exception reports and documenting review and approval through a signature.
NY-C4	Ensure that the monthly NYPSC interruption data tables are reviewed and approved by someone other than the preparer before being submitted to the NYPSC. <u>Process Flow References</u> M4.1 - Corporate Lead/Coordinator creates NYPSC interruption data tables and submits to NYPSC. Monthly	 Is there appropriate segregation of duties in the compilation of NYPSC reporting? Were the monthly and annual NYPSC interruption data tables reviewed and approved by someone other than the preparer? Is there evidence of the review and approval? 	No one performs a secondary review of reliability data reports before they are sent to the NYPSC. This is a control deficiency and Baker Tilly recommends that an independent review of the data is performed and documented before monthly and annual reports are sent to the NYPSC to ensure the data submitted is accurate.

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NY-C5	Ensure that the reports are submitted to the NYPSC on time.	Were the monthly and yearly reports submitted by the deadline?	Baker Tilly confirmed that the reliability reports were submitted on time.
	Process Flow References M4.1 - Corporate Lead/Coordinator Creates NYPSC interruption data tables & submits to NYPSC. Monthly		

Appendix I: RG&E Internal Control Testing Matrix

Process Reference / Control #	Purpose	Major Control Category/Objectives	Is the Design and Implementation of this Control Effective? (Test Results)
RG&E Initial	Customer Contact and Field Data Entry (See Divi	sion Level Reporting for Validation of Field Dat	a Entry.)
Division Leve	el Reporting (Transfer Field Data to ERA and Tru	e-Up / Validation Efforts)	
RG&E-C1	Ensure ERA interruption data (Electric Service Interruption detail report) is validated against Distribution Operators Report. <u>Process Flow References</u> D8 - Distribution Operator Creates interruption in ERA; Transfer interruption data from switching log into ERA. Daily D9 - 2nd DO and Lead Analyst Reviews and validates ERA interruption record versus switching log. Daily	 Is the ERA interruption data validated against Distribution Operators Report? Is the validated data accurate? Is there evidence of the review and approval? 	On a sample basis, Baker Tilly obtained ERA interruption reports and ensured interruption start and end time and number of customers affected reconciled to Distribution Operators report. Baker Tilly also reviewed evidence that this control was performed (Performance Measure Log Sheet). Control appears to be designed and implemented effectively.
Corporate Le	vel Reporting (Reviews, ERA edit processes and	l justification)	
RG&E-C2a	Ensure all discrepancies in the ERA data records are addressed and corrected. <u>Process Flow References</u> M1 - Corporate Lead/Coordinator Extracts ERA data records into spreadsheet for review and validation. Mmonthly M2 - Corporate Lead/Coordinator Works with Lead Analyst to correct errors, discrepancies, etc. Verifies corrections made to ERA records. Monthly	 Are all discrepancies in the ERA data records addressed and corrected? Are discrepancies reviewed on a monthly basis? Are discrepancies corrected on ERA records? 	 When discrepancies are found during the ERA/Distribution Operators Report true up, the Lead Analyst investigates to obtain correct data and then updates ERA. With the exception of minor discrepancies, this control appears to be designed and implemented effectively. However, there is room for improvement in formalizing the control efforts through documented review and sign-off.

RG&E-C2b	Ensure ERA exception reports are reviewed on a monthly basis and signed off by the reviewer. <u>Process Flow References</u> M2 - Corporate Lead/Coordinator works with Lead Analyst to correct errors, discrepancies, etc. Verifies corrections made to ERA records, Monthly	 Are exception reports reviewed and signed off on? Is there evidence that the (1) Duration exception report was reviewed? Is there evidence that the (2) Circuit info/table exception report was reviewed? Is there evidence that the (3) Circuit customer count exception report was reviewed? 	Baker Tilly verbally confirmed that these exception reports are reviewed daily and on a monthly basis before ERA reports are compiled into the NYPSC reporting. Baker Tilly was unable to test this control as exception report documentation is not maintained by RG&E. In order to increase the effectiveness of this control design, RG&E may consider formalizing the control by maintaining exception reports and documenting review and approval through a signature.
RG&E-C3	Ensure that the monthly and annual NYPSC interruption data tables are reviewed and approved by someone other than the preparer before being submitted to the NYPSC. <u>Process Flow References</u> Y1 - Corporate Lead/Coordinator creates NYPSC interruption data tables and submits to NYPSC. Monthly and Annually	 Is there appropriate segregation of duties in the compilation of NYPSC reporting? Were the monthly and annual NYPSC interruption data tables reviewed and approved by someone other than the preparer? Is there evidence of the review and approval? 	No one performs a secondary review of reliability data reports before they are sent to the NYPSC. This is a control deficiency and Baker Tilly recommends that an independent review of the data is performed and documented before monthly and annual reports are sent to the NYPSC to ensure the data submitted is accurate.
RG&E-C4	Ensure that the reports are submitted to the NYPSC on time. <u>Process Flow References:</u> Y1 - Corporate Lead/Coordinator creates NYPSC interruption data tables and submits to NYPSC. Monthly and Annually	Were the monthly and yearly reports submitted by the deadline?	Baker Tilly confirmed that the reliability reports were submitted on time.