Staffing Audit Implementation Plan Updated

Consolidated Edison
Company of New York, Inc. and
Orange andRockland Utilities, Inc.
Case 13-M-0449

April 16, 2018

Consolidated Edison Company of New York, Inc. and Orange and Rockland Utilities, Inc.
Case 13-M-0449
Table of Contents

I Executive Summary

Consolidated Edison Company of New York, Inc. ("CECONY") and Orange and Rockland Utilities, Inc. ("O&R") (collectively, "the Company") submit this Implementation Plan in Case 13-M-0449, *In the Matter of Focused Operations Audit of the Internal Staffing Levels and Use of Contractors for Selected Core Utility Functions at Major New York Energy* ("Staffing Audit"). In January 2014, the New York Public Service Commission ("Commission" or "PSC"), in Case13-M-0449, commenced the Staffing Audit to review internal staffing levels and the use of contractors for core utility functions at major New York energy utilities in accordance with Public Service Law §66(19). In June 2014, through a competitive bidding process, the PSC selected Liberty Consulting Group ("Liberty") to perform the audit on behalf of the PSC. Since its start in June 2014, the Company, Staff, and Liberty have worked collaboratively to facilitate this review.

The Staffing Audit concluded and Liberty's Final Audit Report was released on February 21, 2017. The Commission directed the Company at that time to submit an Implementation Plan by March 23, 2017. On March 23, 2017, the Company sumbmitted an Implementation Plan for each recommendation contained in the Final Audit Report in an effort to set forth its plans and responses to the recommendations contained in the final auit report. In accordance with Public Service Law ("PSL") §66(19) the Commission approved the Company's Implementation Plans on December 15, 2017 and instructed the Company to implement the plans.

A. Overall Process

The scope of the Staffing Audit included a focused operations audit of the internal staffing levels and use of contractors for core utility functions at major New York energy utilities, particularly the following functions:

Electric Operations- (Transmission / Substation / Distribution)

- Engineering (e.g., Planning, Design, Delivery, and Asset Management)
- Field Personnel (e.g., Linemen, Mechanics, Technicians, Service Personnel, Construction Services, Power Equipment Operators)
- Supervisors, Managers, Cost Estimators, Schedulers, Crew Dispatchers and Project Managers
- Quality Assurance/Quality Control

Gas Operations- Construction and Distribution:

- Engineers and Construction Personnel (e.g., Planning, Design, Delivery, and Asset Management)
- Cost Estimators, Schedulers, Project Managers
- Power Equipment Operators
- Crew Dispatchers
- Service/Field Personnel
- Quality Assurance/Quality Control

Staff charged Liberty to examine and evaluate whether:

- The utilities are retaining an adequate workforce to perform core functions with respect to engineering and operations.

- The methodologies and corporate procedures employed by the utilities to determine whether external services are retained for a given function are appropriate given the nature of the function and best practices that may prevail in the industry, as applicable to the New York utilities' corporate structures. In conjunction with this analysis, any ongoing internal assessments conducted by the utilities to evaluate whether its program is providing the desired cost savings should be examined.

- External services that are utilized have adequate quality, cost and other performance oversight by the utilities.

- A succession plan or similar protocol has been adopted to address the loss of experienced personnel due to retirements and attrition, which have been prevalent in the industry past several years. Particular emphasis should be placed on assessing any formal training programs that may be a component of their succession plan.

- Staffing levels are adequate and sufficiently flexible to position the utilities to address the five core policy outcomes expressed by the Commission in its December 26, 2013 Order Approving EEPS Program Changes in Case 07-M-0548.

The Company committed senior executives and a full management audit team at both CECONY and O&R to facilitate the audit process and to be responsive to audit inquiries in a timely fashion. The Company embraced the idea of being involved in this collaborative work effort. The process was consistent with the Company's commitment to excellence and seeking continuous improvement in its business processes. Identifying and implementing improvements enables the Company to operate more effectively and efficiently, fosters a culture of customer centric thinking and promotes delivery of the most reliable, safe and quality services to our customers.

Throughout the discovery process, the Company collaborated with Staff and Liberty to work through inquiries and issues through positive and productive discussions, as well as meetings and presentations to ensure that each entity reached a mutual and full understanding of matter(s) at hand. This open and collaborative work practice fostered a smooth and efficient completion of the discovery process, acceptance of the Final Audit Report, and the commencement of the implementation phase. The Company fully supports a collaborative audit approach in future management audits and believes that collaborative efforts lead to better understanding of issues and therefore better solutions.

The Final Audit Report resulted in a total of 40 recommendations across CECONY and O&R. The Company has considered each of these 40 recommendations, engaged the Company's skilled subject matter experts to review and address each recommendation, and developed this Implementation Plan that effectively addresses each recommendation. The Company is fully committed to the success of this Implementation Plan.

B. Recommendations

The 24 CECONY recommendations from the Staffing Audit are distributed across the areas of focus shown in the table below.

Recommendations By Focus Area	Total
Resource Planning	4
Workforce Management and Performance Measurement	8
Internal Staffing	1
Overtime	8
Contractor Use	2
REV	1
Total	**24**

The 16 O&R recommendations from the Staffing Audit are distributed across the areas of focus shown in the table below.

Recommendations By Focus Area	Total
Resource Planning	3
Workforce Management and Performance Measurement	5
Internal Staffing	2
Overtime	4
Contractor Use	1
REV	1
Total	**16**

The Company is taking an integrated and comprehensive approach in addressing these recommendations. The Company has assembled work teams to independently review each recommendation and associated conclusions. As a commitment to the success of the implementation process, each of the work teams has been assigned one or more executive level sponsors. Each work team is also comprised of skilled Company subject matter experts appointed to evaluate, develop and drive the implementation of effective and appropriate solutions.

C. Organization Structure and Process for Implementation

The Company has established a project management approach as described within this Implementation Plan to evaluate and address each of the recommendations. To facilitate this process, each recommendation has been assigned to an implementation work team with at least one executive sponsor assigned to oversee each recommendation's implementation plan development and execution.

Overall responsibility for implementing the plan will be co-led by Milo Blair, Senior Vice President of Central Operations at CECONY and Francis Peverly, Vice President, Operationsof Orange & Rockland Utilities, Inc., who will supervise the Company's efforts to address the Staffing Audit's recommendations in an integrated and comprehensive manner in order to achieve operating efficiency and consistency for the benefit of customers.

In addition to the executive sponsor(s) providing executive-level oversight, the Corporate Leadership Team (CLT) at CECONY and Corporate Policy Committee (CPC) at O&R, will be fully engaged by providing review and guidance at appropriate intervals throughout the implementation process, when appropriate. This engagement will allow all aspects of the implementation plan to be aligned with the Company's strategic goals and vision for the future. The CLT and CPC will also provide support in communicating any resultant policy changes to the Company's employees. The Company's Boards of Directors will receive updates on implementation activities and status, as required and necessary.

D. Goals of Implementation

The implementation of the recommendations is a Company-wide effort that includes active participation and engagement from employees at all levels throughout the Company, with the full support and leadership of both the CECONY and O&R Boards of Directors and executive management. Consistent with the Company's commitment to customer focus, operational excellence, safety and continuous improvement in its business processes, the implementation plan will result in improvements that will allow the Company to operate more effectively and efficiently, continue to build on the Company's culture of inspiring customer centric thinking and engagement, identify and apply best practices, and promote the delivery of the most reliable, safe and quality services to our customers at a reasonable cost. By leveraging this sharing of information, the Company can maximize efficiency and consistency in the way we do business and provide service to our customers.

The Final Audit Report cited the following key areas of recommendations:

- Internal Staffing
- Overtime Use
- Contractor Use
- Work Force Management
- Reforming The Energy Vision
- Resource Planning

The Company acknowledges that all recommendations require thorough review, analysis and consideration so as to facilitate the identification and implementation of best solutions.

II Audit Implementation Plan

The Company recognizes that it needs to routinely re-examine its resources and operating processes to seek increased economic efficiency and to achieve long-term success.

The Company's submission of this implementation plan is the first step toward compliance with PSL §66(19) (b). The Company intends to update this Implementation Plan on a periodic basis and provide those updates to the Commission. The table in Appendix A provides the numbering sequence, chapter reference, recommendation and status regarding the implementation of each recommendation.

A. Status of Recommendations

Each of the Company's work teams has individually examined the Final Audit Report's statements of relevant findings, conclusions, and the associated recommendation(s). As mentioned above, Appendix A to this Implementation Plan reflects the status regarding the implementation of each recommendation. Each recommendation is included under one of the following four status categories:

In Progress: Concurrence with Final Audit Report's statement of relevant finding(s) and conclusion(s); recommendation is appropriate based on preliminary customer benefit and risk assessment; implementation plan with milestones established and in progress subject to additional cost benefit and risk review.

Under Review: Evaluation of recommendation is in progress and acceptance will be contingent on results of further analysis. A determination will be made whether the recommendation is viable for being accepted, whether an alternative approach will be pursued or whether the recommendation will not be accepted.

Not Accepted: Final Audit Report's identification of relevant finding(s) and conclusion(s) has been reviewed; implementation activity is not warranted at this time.

Completed: The Company's response to this recommendation and its findings are complete; no further action is required or expected

Appendix B provides each recommendation's individual implementation plan. It provides information on each, including but not limited to, project description, objectives and scope as well as a work plan, inclusive of deliverables and milestones with associated dates, and a summary of customer-benefit and risk analysis, where applicable.

B. Customer Benefit and Risk Analysis

The Company is committed to customer-centric thinking and keeping customer value at the forefront of its business decisions. As such, a guiding principal throughout all qualitative and/or quantitative analyses is customer cost, benefit, and risk**.** The Company will evaluate the costs, benefits and risks of implementation actions where appropriate in order to determine whether implementation would be beneficial. These calculations are expected to be preliminary in the initial stages of the evaluation and develop further as efforts progress and more information is available. In addition, for some recommendations, a tangible cost benefit analysis will not be readily quantifiable, and in such cases the Company will require that qualitative measures indicate adequate customer benefits to warrant the implementation action.

Each recommendation will be evaluated by the Company in the context of cost, customer value and feasibility. In cases where the Company's evaluation supports the implementation of a recommendation, the Company will act to implement the recommendation. Similarly, should evaluation of a recommendation show that the identified benefits will not materialize to an extent appropriate to justify actions, the Company will suggest an alternative in accordance with the guidance provided by the Commission in its letter dated February 21, 2017. Furthermore, if analysis shows that further action to address an ongoing initiative will not be beneficial, the Company will modify its Implementation Plan accordingly to avoid negative impacts. These evaluations will be reflected in the Company's implementation plan updates to the PSC every four months.

III Conclusion

The Company recognizes that the findings, observations, and recommendations of the focused Operations audit represent an opportunity for effecting improvements for the benefit of customers. The Company and its executive leadership are committed to collaborating with the PSC and other stakeholders on implementation activities. The Company will provide formal updates to the Commission every four months. The Company will assess each of the recommendations carefully and looks forward to implementing those recommendations that will result in both short-term and long-term benefits to our customers.

IV Appendices

Appendix A: Key of Recommendationsand Status

CECONY Recommendations

#	Chapter	Recommendation	Status
CECONY-1	II-Data and Analysis	CECONY should establish the relationship between (a) declining staff, (b) CAIDI performance data, and (c) increasing overtime, and, if appropriate, balance and optimize them.	C
CECONY-2	II-Data and Analysis	CECONY should determine the reasons why its productivity in distribution and substation work compares unfavorably to the other utilities, and if appropriate, develop a plan to improve productivity.	IP
CECONY-3	II-Data and Analysis	CECONY should reevaluate plans to reduce electric distribution overtime with a specific focus on the conflicting role of decreasing staffing and the possibility of targets more aggressive than the planned 20 percent.	C
CECONY-4	II-Data and Analysis	CECONY should reevaluate its future plans for transmission/substations overtime of 25 percent, with the intent of identifying opportunities for substantial reductions.	
CECONY-5	II-Data and Analysis	In its Gas business, CECONY should provide a logical year-over-year sequence of staffing, assure adequate focus on main replacements, and provide a stable staffing strategy that permits effective workforce planning, including optimization of productivity, overtime, and other key staffing-related factors.	C
CECONY-6	II-Data and Analysis	CECONY should determine the reasons why its productivity in gas work compares unfavorably, to the extreme in some cases, and, if appropriate, develop a plan to improve productivity.	IP

#	Chapter	Recommendation	Status
CECONY-7	II-Data and Analysis	CECONY should examine its use of contractors in gas operations to assure that such high use, compared to others, is optimum.	C
CECONY-8	II-Data and Analysis	CECONY should reevaluate its future plans for Gas overtime of 25 to 30 percent.	C
CECONY-9	III-Process Analysis: Resource Planning	CECONY should expand measures of contractor work load to include FTE- or person-hour based values.	C
CECONY-10	III-Process Analysis: Resource Planning	CECONY resource plans should include data driven analyses that help management evaluate the trade-offs for overtime, contractors, and internal staff at the functional/work group level.	C
CECONY-11	III-Process Analysis: Resource Planning	CECONY should continue to aggressively enhance gas operations' resource planning tools and methods, establishing clear schedules and completing them expeditiously.	C
CECONY-12	III-Process Analysis: Resource Planning	CECONY should confirm that the historical inability to separate overtime and straight time has been eliminated.	C
CECONY-13	III-Process Analysis: Work Force Management and Performance Measurement	CECONY should establish comprehensive detailed plans, and set firm, detailed schedules to complete the upgrade of its Work Management System for Gas Operations.	C
CECONY-14	III-Process Analysis: Work Force Management and Performance Measurement	Gas Operations should also centralize as many scheduling functions as possible, including all capital work.	C
CECONY-15	III-Process Analysis: Work Force Management and Performance Measurement	Gas operations should identify documentation and training needs that match its plans for its new WMS.	C
CECONY-16	III-Process Analysis: Internal Staffing	CECONY should address the availability of sufficient numbers of seasoned gas salaried employees to serve in mentoring and similar roles for an internal staffing complement forecasted to expand greatly.	IP

#	Chapter	Recommendation	Status
CECONY-17	III-Process Analysis: Internal Staffing	CECONY should develop key performance indicators that measure the effectiveness of efforts to achieve staffing targets and accountability should be assigned to the appropriate individual(s).	IP
CECONY-18	III-Process Analysis: Overtime	CECONY should develop analytically supported methods for determining optimum overtime levels.	IP
CECONY-19	III-Process Analysis: Overtime	CECONY should include all relevant factors in its decision-making vis-à-vis overtime.	IP
CECONY-20	III-Process Analysis: Overtime	CECONY should define an optimum level of overtime, presumably well below that projected at the current time, and implement control schemes to manage within that value or range.	IP
CECONY-21	III-Process Analysis: Overtime	CECONY should review its electric distribution plans, whose assumption of substantial decreases in both staffing and overtime do not seem reasonable.	C
CECONY-22	III-Process Analysis: Contractor Use	CECONY should conduct a structured evaluation of the costs and benefits of bringing electric overhead line contractor oversight under the central contractor management organization.	C
CECONY-23	III-Process Analysis: Contractor Use	CECONY should refine and expand plans for increasing internal staffing, the contractor base, or both to meet the needs of the future pipe replacement program.	C
CECONY-24	XI-Reforming the Energy Vision	All of the operations we studied (save NFG) should undertake scenario studies of the impact of REV and other similar type changes, to better prepare for multiple possible eventualities.	C

O&R Recommendations

#	Chapter	Recommendation	Status
OR-1	II-Data Analysis	ORU should analyze its distribution staffing (including engineering), identifying the sources appropriateness of its relatively high levels versus the other state utilities.	C
OR-2	II-Data Analysis	With gas productivity levels somewhat (but not extremely) weak versus the other utilities, ORU should conduct a structured evaluation and report the reasons for such deviations and opportunities for improvement.	C
OR-3	II-Data Analysis	To the extent high overtime issues in distribution have not yet been resolved, ORU should: (a) determine optimal levels, (b) develop plans to achieve those optimal levels, and (c) take steps to manage to those levels.	IP
OR-4	II-Data Analysis	ORU should conduct a structured re-evaluation and report on the role of internal staffing in its long-term plans, particularly as internal staffing will help attain optimal overtime targets.	C
OR-5	III-Process Analysis	ORU should expand measures of contractor work load to include FTE- or person-hour based values.	C
OR-6	III-Process Analysis	ORU resource planning should include the capability to conduct data driven analyses that help management evaluate the trade-offs for overtime, contractors, and internal staff at the functional and work group levels.	C
OR-7	III-Process Analysis	ORU should set a firm completion date for execution of plans to continue to aggressively enhance gas operations' resource planning methods and tools, and aggressively implement them according to that schedule.	C
OR-8	III-Process Analysis	ORU should develop training materials for both its processes and tools, for use by persons new to relevant positions.	C

#	Chapter	Recommendation	Status
OR-9	III-Process Analysis	As a first priority, ORU should develop performance measures for replacement and installation of pipe.	C
OR-10	III-Process Analysis	ORU should capture work unit measurements using the data capabilities of its existing data systems.	C
OR-11	III-Process Analysis	ORU should develop key performance indicators that measure the effectiveness of its efforts to achieve its staffing targets and accountability should be assigned to the appropriate individual(s).	IP
OR-12	III-Process Analysis	ORU should develop a more analytical process to determine the optimum levels of overtime.	IP
OR-13	III-Process Analysis	ORU should evaluate the degree to which it includes all relevant factors in its decision-making vis-à-vis overtime.	IP
OR-14	III-Process Analysis	ORU should expand the use of functional planning, budgeting, and monitoring in the realm of overtime.	IP
OR-15	III-Process Analysis	ORU should implement plans for increasing internal staffing, contractor base, or both to ensure resources needed to maintain levels of current pipe replacement program.	C
OR-16	XI-Reforming the Energy Vision	All of the operations we studied (save NFG) should undertake scenario studies of the impact of REV and other similar type changes, to better prepare for multiple possible eventualities.	C

Appendix B - Implementation Plans

Recommendation Number: 1 (Chap. II (G), Rec. 1)

Recommendation:

CECONY should establish the relationship between (a) declining staff, (b) CAIDI performance data, and (c) increasing overtime, and, if appropriate, balance and optimize them.

Roles and Responsibilities:

Executive Sponsor(s): Patrick McHugh
Team Lead(s): Thomas Thatcher
Team Member(s): Maria Rodriquez, Charmaine Joseph

Project Purpose, Objectives and Assumptions:

CECONY's higher CAIDI numbers were not the result of changes in staffing levels or overtime, but due to a need for training to refocus crews on faster restoration, process improvements and reporting. Initiatives to address these areas were under development while the Staffing Audit was being conducted.

Every year, the New York State Public Service Commission Staff (Staff) files an assessment of electric reliability performance in New York State. In this report, DPS Staff primarily relies on two metrics commonly used in the industry to measure reliability performance: the System Average Interruption Frequency Index (SAIFI) and the Customer Average Interruption Duration Index (CAIDI). The Staff report filed June 17, 2015 titled "2014 Electric Reliability Performance Report" asked Con Edison to develop corrective action plans to improve network reliability.

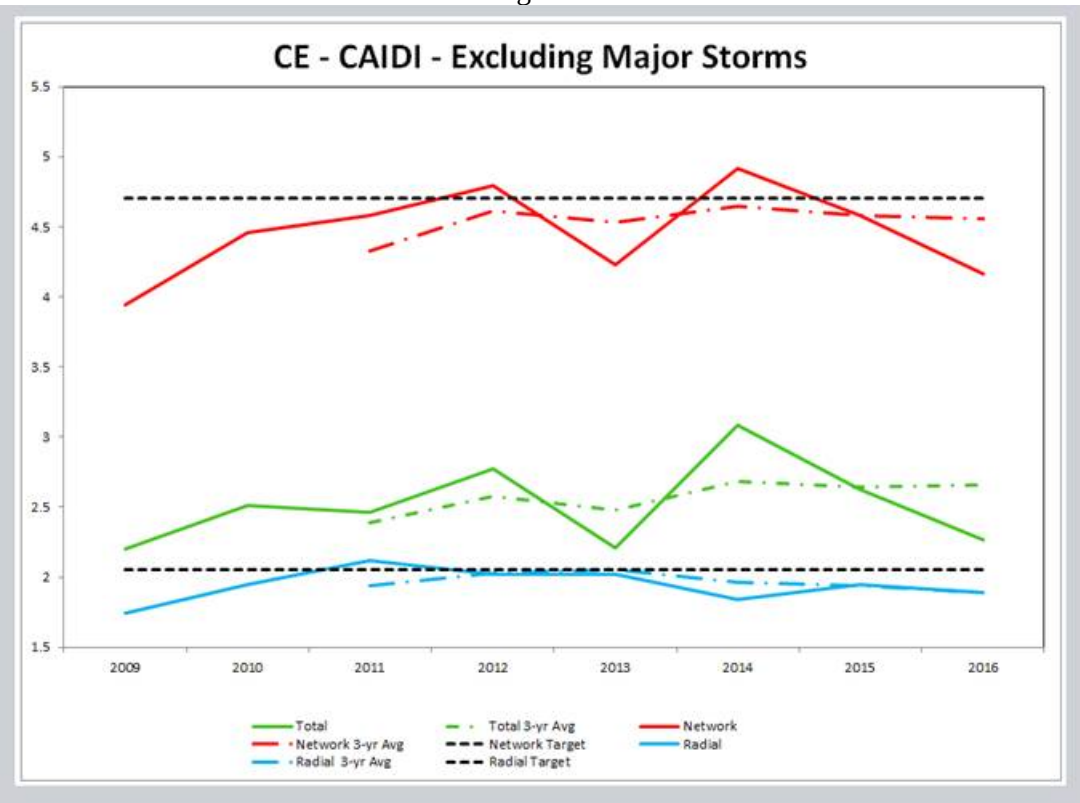
The Company's CAIDI performance has improved from 2015 to 2016. Most of the improvement is attributed to action plans that were implemented in October of 2015. Some of the initiatives were:

- The relocation of crews in Brooklyn/Queens to the Cleveland Street yard to provide support for outage restoration in the southeastern part of Brooklyn/Queens.
- The creation of the metric dashboard, which provides for the tracking of dispatch time and working time. This function allows the Company to take corrective action and reallocate resources to where they are needed most based on actual daily performance.
- Refocusing the work crews' attention to quick and immediate customer restoration through the creation of an On-the-Job Training ("OJT") document which outlined bridging and shunts as quick restoration methods.
- Administrative controls, including the daily review of significant outages by the control centers, weekly status meetings with all the regions in Distribution Engineering, and the

automated emails for any network jobs not dispatched for a certain period of time, helped keep the Company's focus on performance.

All of these efforts resulted in the CAIDI performance included in Figure 1.

Figure 1



Work Plan:

This recommendation is considered complete**.**

Milestones/Deliverables:

This recommendation is considered complete.

Cost Benefit Analysis:

None

Risk Analysis:

None

Success Criteria:

The Network Outages per 1,000 Customers Served, Network Average Outage Duration (AOD) and non-network CAIDI improved from last year, with the Network Average Outage Duration being the best performance in the last five years.

Post Evaluation Process:

None

Status Updates:

April 13, 2018 Update
This recommendation is complete and is pending Staff review and closeout.

Recommendation Number: 2 (Chap. II (G), Rec. 2)

Recommendation:

CECONY should determine the reasons why its productivity in distribution and substation work compares unfavorably to the other utilities, and if appropriate, develop a plan to improve productivity.

Roles and Responsibilities:

Executive Sponsor(s): Patrick McHugh, Hugh Grant
Team Lead(s): Thomas Thatcher, Gina Callender
Team Member(s): Jeff Rutowski, Dan Bromberg, William Lee, Philip Tenenzaph, Lisa Presotto, Peter Leon

---

Project Purpose, Objectives and Assumptions:

This recommendation requires Distribution and Substations to review and re-evaluate productivity.

- Identify the reasons why CECONY's productivity, actual hours per Equivalent Production Unit (EPU), and actual dollars per EPU, in Liberty's report for distribution work was higher than the reference utility by 38% and similarly unfavorable for substation work. We will review the factors associated with the uniqueness of CECONY's service territory and systems that would affect the contractor's costs and calculated hours. We will also evaluate how these factors could impact internal resources. Once this evaluation is complete, we will determine if any additional actions are required.

Work Plan:

- The implementation strategy is to leverage CECONY's cost factors that are used to estimate the cost of construction in CECONY's service territory (e.g., DOT work restrictions, sub-surface conditions, safety requirements, restoration requirements, etc.) to understand the higher hours and dollars per EPU. This information will be submitted to the PSC to explain the factors that drive our productivity levels.

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Gather, inventory and assess CECONY's data that was submitted to Liberty.	4/1/17	6/1/17	4/1/17	6/15/17	Complete
Evaluate the uniqueness of CECONY's service territory as it relates to construction costs.	5/1/17	9/1/17	5/1/17	9/8/17	Complete
Project the impact of CECONY's contractor cost on the reported hours and dollars per EPU and determine if additional actions are necessary.	8/1/17	11/15/17	8/1/17	1/10/18	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Submittal 1: CECONY documentation of the information that was provided to Liberty and indication of how contractor costs were used to calculate hours.	7/1/17	7/6/17	Complete
Submittal 2: CECONY documentation on the uniqueness of our service territory and system, and the associated factors that are included in our construction costs.	10/1/17	11/30/17	Complete
Submittal 3: CECONY assessment of how the factors in submittals 1 and 2 impact the data submitted to Liberty and recommendation for future action.	12/15/17	1/10/18	Complete
Submittal 4: CECONY finalized assessment and recommendation.	5/31/18		

Cost Benefit Analysis:

Management's time to be spent in the execution of the work plans and submission of the deliverables defines the extent of the cost for this response. The benefit of completing the work plans is to identify the factors to compare CECONY's productivity to other utilities.

Risk Analysis:

There is minimal risk associated with performing the tasks outlined in this plan. Not following through with the work plan outlined herein or doing nothing presents a larger risk where CECONY does not address the productivity findings for distribution and substation work.

Success Criteria:

The implementation of this plan will be deemed successful if improvements in productivity can be identified.

Post Evaluation Process: None

Status Updates:

April 13, 2018 Update

Submittal 1: CECONY was asked by the Liberty Consulting Group (Liberty) in 2014 to assess our contractor direct costs for our Capital, Retirement, and Maintenance programs in Electric Distribution, Gas Distribution, and Substation work by converting these costs to man-hours. CECONY provided this information to Liberty as requested. These contractor man-hours, in conjunction with CECONY reported internal workforce man-hours, were then used by Liberty to calculate Equivalent Production Units (EPUs). An EPU is the number of hours the Reference Utility expended to produce one unit of work. This is the foundation of Liberty's assessment of CECONY's productivity. The data that CECONY furnished to Liberty was located, copied and placed in a new project file.

Submittal 2: Upon review of Liberty's audit report, it became evident to CECONY that the methodology used by Liberty in calculating contractor man-hours in the state-wide utility audit did not allow for a fair and accurate comparison of CECONY's service territory to other in-state utilities. The model to develop functional costs and work hours, as stated in Liberty's White Paper (Template 4), does not provide parity, where all things are equal between CECONY and other utilities participating in the audit.

The disparity in construction costs and productivity between New York City (NYC) and other NY State regions is due to a host of local factors. These factors include, but are not limited to:

- Extensive local regulations and government policies that generate more work
- Added Contractor project administration costs and risk
- Compliance with extensive union work rules
- Logistical issues, such as street congestion and the insufficient number and size of staging areas
- Stringent environmental and safety mitigation requirements

There are various sources of published information, such as RS Means, that can be used to determine construction costs for many of the utility companies that operate in the state.

CECONY's assessment of available published data indicates that NYC is among the most expensive locations in New York State to purchase and install materials.

The following table lists the utilities and cities that CECONY assessed when comparing construction cost data.

Utility	City
National Grid	Albany
National Grid	Buffalo
National Grid	Syracuse
NYS Electric & Gas Corp	Binghamton
Rochester Gas & Electric	Rochester

Categorically, the NYC Metropolitan area has the highest labor union wages, real estate costs, and material pricing in the state. Concurrently, local logistics impact productivity due to congested roads and access to work locations in public areas that require a high level of coordination. Extensive local government requirements increase the amount of work to be performed to restore roadways. The proximity to disposal facilities and material vendors increases costs. It is important to note that there is a labor cost component to each of these construction activities.

There are additional tasks and factors that CECONY feels are unique to our service territory.

The density of underground facilities in CECONY's service territory complicates our subsurface distribution construction work. The presence of trolley tracks, energized or abandoned utility infrastructure, cobblestone, and rock directly affects productivity. Due to the underground congestion described above, offsets for Electric and Gas are frequently required to clear obstructions. When this occurs, additional labor hours and materials are required. Additionally, the size of CECONY's underground distribution systems requires an extensive amount work from firms who are used in the coordination of public work area locations and specialize in the cleaning of underground structures.

The NYC DOT and local municipalities in Westchester issue road-opening permits to utility facility owners. These permits stipulate the days and times work can occur. Contractors receive compensation for restrictive hours based on stipulation factors in their contracts. NYC DOT and local municipalities in Westchester also dictate how roadways are to be restored. These regulations include materials to be used, the use of roadway plates and countersinking during winter months. Roadway restoration regulations includes curb-to-curb paving, additional cutbacks, full lane restorations, etc. All of these items result in additional material and labor.

Contractor Commercial General Liability (CGL) premiums are calculated from a percentage of a contractor's receivables, which includes a labor component. This equates to a higher cost of the work, thus a higher corresponding premium to cover the work. The current CGL premises rate for electric and gas construction are nearly double the surrounding areas in NY State.

Work permits are written permission from the Electric District Operator, which grants authorized personnel to perform specific work within the Substation. Contract documents typically state, "Access to substations may be delayed each morning due to system needs." These delays increase costs and slow productivity. CECONY also compensates contractors who are directed to expedite their work based on a premium time basis and/or through the direction to add. Expediting work can increase costs and corresponding man-hours.

CECONY has a solid understanding of the cost drivers of our construction work as well as productivity in our service territory. Some of these factors are cited herein. CECONY is confident that these factors must be taken into consideration to ensure parity between CECONY and other NY State Utilities when assessing productivity.

Submittal 3: CECONY has substantiated that the uniqueness of our service territory and systems affect contractor's costs and therefore the amount of calculated hours used in Liberty's productivity model. CECONY's actual productivity is better than stated in the statewide staffing study. CECONY is finalizing the assessment on how the data and factors cited in submittals 1 and 2 influenced Liberty's assessment of CECONY's productivity. This finalized assessment is expected to be complete on May 31, 2018.

Recommendation Number(s): 3 (Chap. II (G), Rec. 3) and 21 (Chap. III (D), Rec. 4)

Recommendation(s):

CECONY should reevaluate plans to reduce electric distribution overtime with a specific focus on the conflicting role of decreasing staffing and the possibility of targets more aggressive than the planned 20 percent. [#3]

CECONY should review its electric distribution plans, whose assumption of substantial decreases in both staffing and overtime do not seem reasonable. [#21]

Roles and Responsibilities:

Executive Sponsor(s): Patrick McHugh
Team Lead(s): Thomas Thatcher
Team Member(s): Brandon Bobe, Jacob Schlusselberg, Charmaine Joseph

---

Project Purpose, Objectives and Assumptions:

Detail the current Capability Model used in forecasting required resources and estimated overtime required by the Work Plan. Summarize the 2016 results and current 2017-2021 analysis using the Capability Model described below.

Capability Planning Summary
Engineering Prioritized Work Plan:

Using Hyperion Workspace, budgeted hours are calculated based off historical trending and program managers/Engineering input. Hours are allotted by cost category at the section level to account for work-on-hand and Engineering layouts.

Staffing Level (Current Capability):

Utilizing current headcount by section and calculated available hours (productive hours based on historical trending), we generate projected company straight time capability.

Contractor Capability:

Projected contractor completed units are converted into company hours as an offset to company capability requirements. Adding this to the staffing levels calculates the total straight time capability (company & contractor).

Determining Staffing Deficits/Surplus:

The model allows the Company to compare capability vs. the work plan and defining excess/shortfall capability by section. Any section having a shortfall in capability is automatically adjusted to the appropriate level of overtime to balance the work plan. Any section having an excess in capability will have crews repurposed intra/inter regionally. As a final measure, a staffing level adjustment will be recommended to balance total capability with the work plan.

<u>Process Improvements to Plan Capability</u>

There have been several process improvements that have been implemented and continue to evolve and mature. For example, Electric Operations implemented a new 'Work Management System' in 2012 and established a Work and Resource Management organization to improve its capability by providing a centralized work planning and management platform to schedule crews, vehicles and equipment. This was implemented as part of the Company's continuous improvement processes, therefore, enhancing the Company's resource analytical capability, with respect to its internal and external workforce. Additionally, we have been able to leverage VEMO to provide the number of available employees, taking into account attrition and other factors.

Workforce planning is a comprehensive process that is conducted for business sections as part of the annual budget process (and then again during the year) to determine if needs have changed or adjustments have to be made and includes consideration of near term and longer term work, resulting resource needs, and options to meet those needs. This process assesses the planned work at a high level and whether there are sufficient internal resources to meet the need. If internal resources are insufficient to meet the expected resource need, then alternatives including external resources in the form of contractors are considered. Factors considered when developing the capability plan include the need to maintain employees with core skills and expertise, stability, experience and in-depth

knowledge of the Company's energy systems (core operations), the strategic value of a mix of resources (diverse work pool), and the flexibility to respond to fluctuating workload. Because projects are fact-specific and require different staffing solutions, the process to determine staffing resources is dynamic and considers a myriad of inputs (**Exhibit 1)**.

That flexibility inherent in the use of contractors is an important element for the Company as it manages its dynamic and shifting workload. Contractors or the "external workforce," allow the Company the flexibility to supplement its internal workforce with skilled technicians and handle overflow while affording it the flexibility to reduce those resources when workload decreases. The use of overtime and the ability to re-deploy Company employees to perform other work are additional tools the Company uses to manage its work load. The Company's use of contractors allows it to meet its needs by an appropriately-sized internal workforce to meet normal operating requirements. In other words, it allows the Company the flexibility to handle work surges without hiring additional full-time employees. In this manner, the Company can meet its work requirements without incurring the costs of additional full-time employees to fill a temporary need. Moreover, should the Company determine that additional internal workforce is needed because work levels are changing on a longer term basis, contract resources can provide a short term solution while the Company engages in efforts to increase its workforce, including necessary hiring and training. As a result, the Company utilizes a mixture of Company employees and contractor resources to meet the needs of its customers. While there may be times when a particular resource is more economically advantageous than another, the dynamic nature of the demands of the business make that only one consideration. Paramount to the Company is the ability to meet the needs and expectations of its customers, and provide safe and reliable service, in the most cost-effective manner over the short and longer term.

The workforce planning process comprises the following steps:

- An initial budget and work plan is established based on mandated work, operating needs and other requirements
- The budget is based on high level estimates and elements of expense based on historic rates for various types of programs
- The budget and work plan are used to determine the work-hours required to complete projects and programs and to create the high level budgeted staffing plan
- An analysis, also referred to as a capability analysis, is conducted to determine if there are sufficient internal resources to meet the required work scope (required number of work-hours), and the skills required.
- A resource plan is developed to execute the work that encompasses strategic assumptions for hiring, use of overtime and use of contractors.
- Continuous review, monitoring and adjusting of the work plan and staffing plan is undertaken on an ongoing basis involving Engineering, Cost Management, Work and Resource Management and the Construction Departments.

2016 Capability Planning & Results

The capability model shown in **Exhibit 2** was utilized in the development of the 2016 budget. As described above, budgeted hours for the Work Plan are calculated based off historical trending and program managers/Engineering input. Hours are allotted by cost category at the section level to account for work-on-hand and Engineering layouts. We then calculated the current capability to define excess/shortfall capability by section and made adjustments in staffing levels to account for this. This model assumed a 12.5% level of overtime as the target for field organizations.

In 2016, Electric Distribution met the O&M and Capital budgets within a 0.5% variation. The overtime percent of straight time for 2016 was 16.0% for field organizations. The higher rate overtime was the strategic result of utilizing company resources to satisfy the temporary increase in necessary staffing, as required in the final year of the company's Storm Hardening program. Subsequent budgets will see a decrease of $90 million and a reduction of overtime levels (**Exhibit 3).**

Summary of Electric Distribution 2016 Business Results

Employee and Public Safety

- Over the last 5 years, 37% reduction in employee injuries
- Over 60% of groups have been accident free in 2016
- Over the last 10 years, cover displacement exceeding one foot has been reduced from 35% to 7%
- Over the last 8 years, nearly 20% of the network transformers have been changed to be more resistant to rupture
- Venting of service boxes has reduced service box explosions by 50%

Customer Experience

- Over 150,000 outages avoided from Storm Hardening investments
- Over the last two years:
    - 6% improvement in Energy Services customer satisfaction surveys
    - 7% improvement in Electric Emergency customer satisfaction surveys
    - 39% fewer follow-up attempts from Customer Service Reps to the Electric Skills group
    - 44% fewer follow-up attempts from Customer Service Reps to Energy Services Skills group
    - 28% improvement in first visit resolution
    - 33% improvement in meeting customer service dates
    - 20% reduction in Network Average Outage Duration

Operational Excellence

- Since 2005, 85% reduction in transformer failures
- Since 2007, 85% improvement in Network Reliability Index

- Since 2010, 9% improvement in QA compliance
- Over the last two years, with no significant changes in human resources:
    - Candidate for Replacement Transformers driven down by 68%
    - Cut average cycle time for OOE2 transformers (Transformers that need to be de-energized within 30 days) by half
    - 49% reduction in Banks Off Pending Count
- All networks brought below Network Reliability Index target
- Fewer feeders Opened Auto compared to historic averages

Continuous Improvement to capability models

We are continuing to evolve capability planning to determine appropriate levels of staffing and overtime. For the 2017 budget planning process, the Capability Model was updated (**Exhibit 4**) to include contractor capability and the impact of flexing the workforce to work inter/intra regionally. Additionally, overtime requirements are now a calculated result in the model instead of an input. Using the model to compare capability vs. the work plan, we defined excess/shortfall capability by section. Any section having a shortfall in capability was automatically adjusted to the appropriate level of overtime to balance the work plan. Any section having an excess in capability will have crews repurposed intra/inter regionally. As a final measure, a staffing level adjustment was recommended to balance total capability with the work plan. Throughout 2017 we plan to continuously review, monitor and adjust the work plan and staffing plan with the involvement of Engineering, Cost Management, Work and Resource Management and the Construction Departments. In the spirit of continuous improvement, we will look to refine our calculations as we strive to build a more robust forecasting model of capability and look to leverage the insight provided in the audit report and recommendations.

Work Plan:

This recommendation is considered complete.

Milestones/Deliverables:

This recommendation is considered complete.

Cost Benefit Analysis:

None

Risk Analysis: None

Success Criteria:

Meeting the O&M budget, Capital budget, HR Budget, and OT Targets

Post Evaluation Process:

To continuously monitor expended hours (straight time and overtime) for all cost categories against budget, while maintaining staffing projections for company and contractor forces. Successfully meeting these targets will ensure the work plan and budget targets are met.

Status Updates:

April 13, 2018 Update
This recommendation is complete and is pending Staff review and closeout.

Exhibit 1: Workforce Planning Inputs and Analysis

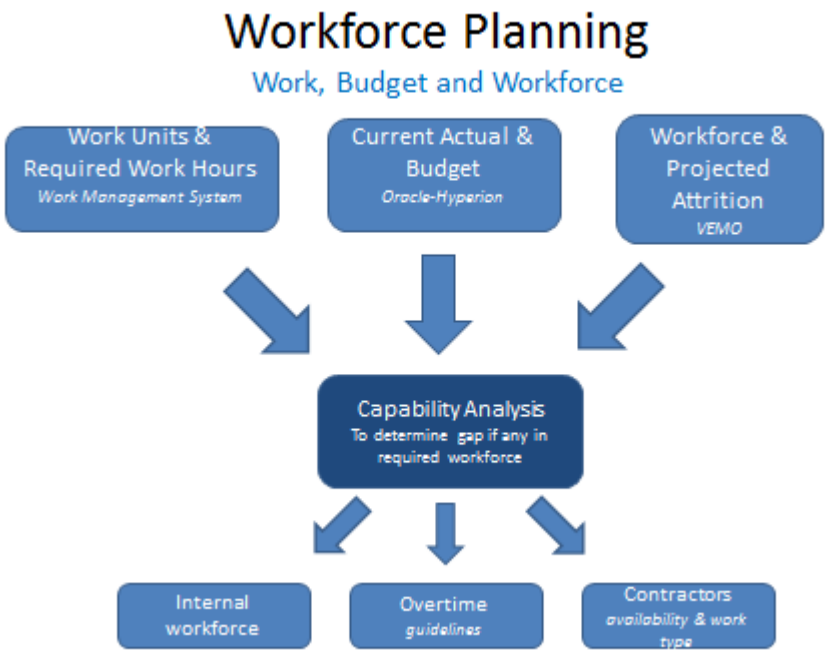


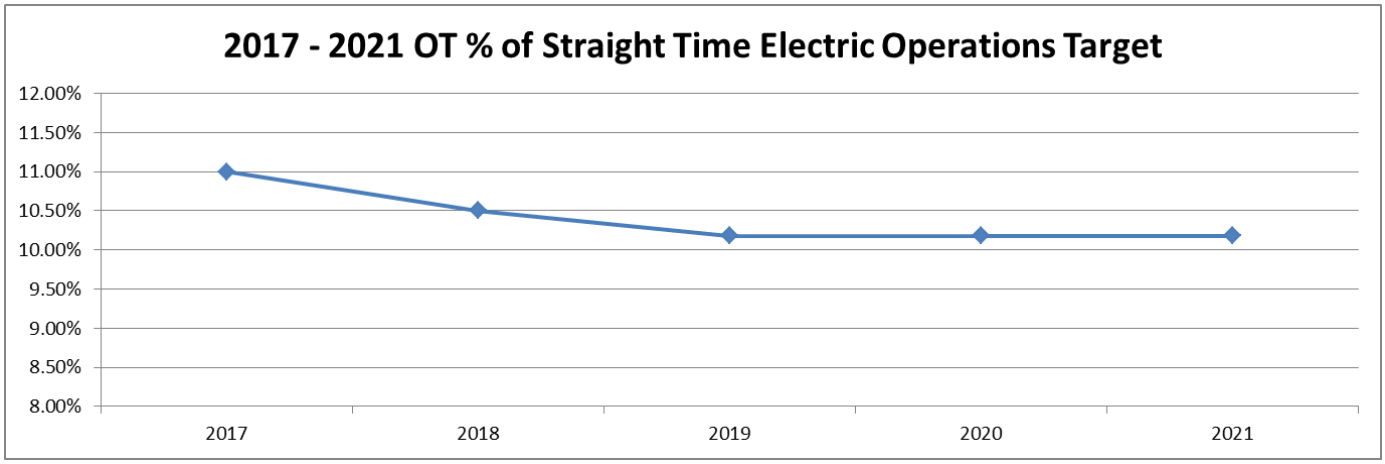
Exhibit 2: Example of Capability Model used for 2016 budget planning

Electric Operations Resource Planning - Capability Analysis Summary

Summary 2016

	Work Plan						Capability					
	Capital Hrs	O&M Hrs	Retirement Hrs	PI Hrs	WFO Hrs	Total Hrs	Available Hrs per Employee	No of Employees	Productive ST Hrs	OT Hrs at % to ST (12.5%) *	Total Capability	(Short) or Excess Capability
Section 1	33,495	40,039	9,252	1,003	579	**84,368**	1,613	46	74,198	9,943	**84,141**	(227)
Section 2	42,551	37,041	8,951	942	1042	**90,527**	1,598	48	76,704	10,278	**86,982**	(3,544)
Section 3	35,304	28,034	8,948	990	1580	**74,856**	1,627	40	65,080	6,768	**71,848**	(3,007)
Total Group 1	133,929	97,761	32,143	3,944	3,201	270,978	1,612	134	215,982	26,989	242,971	(28,007)
Section 4	56,616	20,165	13,387	20,489	562	**111,219**	1,550	67	103,850	10,385	**114,235**	3,016
Section 5	51,638	20,530	14,303	9,066	504	**96,041**	1,595	56	89,320	8,932	**98,252**	2,211
Section 6	59,891	22,353	14,000	10,548	506	**107,298**	1,628	66	107,448	10,745	**118,193**	10,895
Total Group 2	188,594	46,186	37,719	44,784	1,572	318,855	1,591	189	300,618	30,062	330,680	11,825
Section 7	29,747	16,374	15,724	1,023	388	**63,256**	1,605	36	57,780	10,400	**68,180**	4,924
Section 8	56,494	1,000	15,299	19,704	551	**93,048**	1,628	52	84,656	10,667	**95,323**	2,275
Section 9	28,262	18,841	25,364		433	**72,900**	1,697	39	66,183	8,141	**74,324**	1,424
Section 10	2,386	62,511	41,800	50	228	**106,975**	1,617	55	88,935	22,767	**111,702**	4,727
Section 11	33,936	20,207	30,335	5,547	15,000	**105,025**	1,659	56	92,904	18,674	**111,578**	6,553
Total Organization	**445,086**	**244,039**	**173,020**	**75,052**	**21,373**	1,031,037	**1,620**	**561**	**907,058**	**127,700**	1,034,758	**3,720**
Other						-						
Grand Total	**445,086**	**244,039**	**173,020**			**862,145**						
Target Hours:	**440,000**	**250,000**	**190,000**	**0**	**0**	**880,000**						
(Short) or Excess Budgeted hours	**(5,086)**	**5,961**	**16,980**	**0**	**0**	**17,855**						

Exhibit 3: 2017-2021 Electric Operations OT % of ST and HR Targets



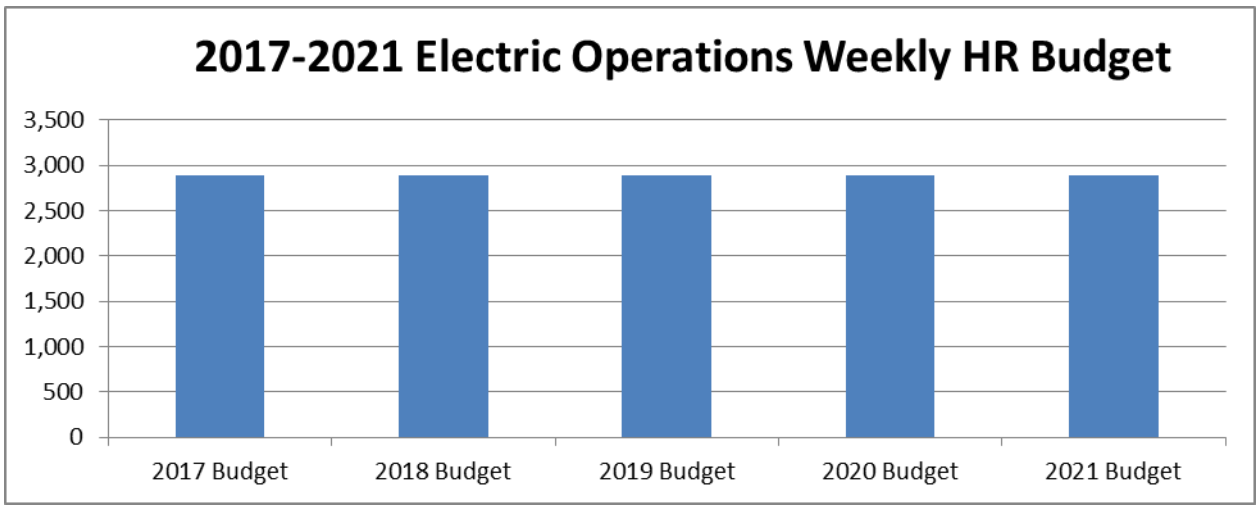


Exhibit 4: Example of Capability Model used for 2017 budget planning

Electric Operations Resource Planning - Capability Analysis Summary

2017

	Work Plan*						Capability (Company Crews)					Contractor Capability	Total ST Capability	Total Capability	Excess Capability
	Capital Hrs	O&M Hrs	Retirement Hrs	PI Hrs	WFO Hrs	Total Hrs	Available Hrs per Employee	No of Employees	OT Hrs**	OT % Productive ST	Total Capability (Company Crews)	Contractor Hrs	Total ST Capability (Incl. Company crews ST & Contractors)	Total Capability (Incl. Company crews (ST and OT) & Contractors)	Excess Capability
Section 1	28,972	40,734	10,146	133	4,005	**83,990**	1,534	53	-	0%	**81,302**	1,750	89,617	89,617	5,627
Section 2	628	19,803	553	6	800	**21,789**	1,595	11	2,007	11%	**19,552**		19,783	21,789	-
Section 3	26,753	5,590	9,356	799	1,404	**43,901**	1,623	27	-	0%	**43,821**		49,657	49,657	5,756
Section 4	15,882	3,140	5,545	799	1,404	**26,771**	1,623	16	-	0%	**25,968**		31,804	31,804	5,033
Section 5	54,076	8,259	13,952	2,520	3,954	**82,761**	1,603	44	9,120	13%	**79,652**		73,641	82,761	-
Section 6	30,758	4,611	7,935	2,520	3,954	**49,778**	1,603	25	6,594	16%	**46,669**		43,184	49,778	-
Total Group 1	157,068	82,137	47,487	6,778	15,521	308,991	1,587	176	17,721	6%	296,964	1,750	307,686	325,407	16,416
Section 7	1,179	5,750	115	3	258	**7,304**	1,655	9	-	0%	**14,895**		15,049	15,049	7,745
Section 8	34,172	24,483	12,199	642	5,511	**77,007**	1,576	44	74	0%	**69,418**		76,933	77,007	-
Section 9	38,938	19,853	11,207	2,729	3,146	**75,873**	1,470	44	-	0%	**64,680**	6,933	76,084	76,084	211
Section 10	23,278	13,620	8,156	1,613	2,253	**48,919**	1,620	28	-	0%	**45,360**	6,933	56,423	56,423	7,504
Section 11	17,268	9,766	6,018	1,439	1,670	**36,160**	1,615	21	-	0%	**33,915**	6,933	43,361	43,361	7,200
Total Group 2	114,835	73,471	37,695	6,425	12,839	245,264	1,563	146	74	0%	228,268	20,799	267,850	267,924	22,660
Total Work Scheduled by WRM	271,902	155,609	85,182	13,202	28,359	554,255	1,576	322	17,795	4%	525,232	22,549	575,535	593,330	39,076
WRM Scheduled Budgeted Hours	224,019	162,618	120,387	13,202	28,359	**548,586**									
(Short) or Excess Budgeted Hours	(47,884)	7,009	35,206	(0)	-	**(5,669)**									
Section 12	28,476	15,829	13,853	229	917	**59,305**	1,677	33	814	1%	**56,155**	2,368	58,491	59,305	-
Section 13	31,890	21,779	29,824	1,461	3,407	**88,361**	1,585	57	-	0%	**90,345**		95,591	95,591	7,230
Section 14	7,917	60,166	8,392	88	996	**77,558**	1,729	37	11,471	18%	**75,444**		66,087	77,558	-
Section 15	8,617	59,820	7,679	246	1,326	**77,687**	1,726	36	11,866	19%	**74,002**		65,821	77,687	-
Total Non Scheduled Work by WRM	76,899	157,594	59,748	2,024	6,646	302,911	1,667	163	24,151	9%	295,946	2,368	285,990	310,141	7,230
Non WRM Scheduled Budgeted Hours	66,642	136,350	28,650	2,024	6,646	**240,312**									
(Short) or Excess Budgeted Hours	(10,258)	(21,244)	(31,098)	0	-	**(62,600)**									
All Org	**348,802**	**313,203**	**144,930**	**15,226**	**35,005**	**857,166**	**1,607**	**485**	**41,946**	**5%**	**821,178**	**24,917**	**861,525**	**903,471**	**46,305**
Other	950	4,747	301			5,999							5,999	5,999	0
Grand Total	**349,752**	**317,950**	**145,232**	**15,226**	**35,005**	**863,165**						**24,917**	**867,524**	**909,470**	**46,306**
Total Org Budgeted Hours	**290,661**	**298,968**	**149,038**	**15,226**	**35,005**	**788,897**									
Apportioned Contingency ($2M)		**16,666**				**16,666**									
(Short) or Excess to Budgeted hours	**(59,091)**	**(2,316)**	**3,806**	**(0)**	**0**	**(57,601)**									

Recommendation Number: 4 (Chap. II (G), Rec. 4)

Recommendation:

CECONY should re-evaluate its future plans for transmission/substations overtime of 25 percent, with the intent of identifying opportunities for substantial reductions.

Roles and Responsibilities:

Executive Sponsor(s): Walter Alvarado, Hugh Grant
Team Lead(s): Tracy Cureton, Gina Callender
Team Member(s): Matthew Walther, Howard L. Sheard, Carlos Vega, Susana Valette, Valerie Sigal, Mike Rajapakse, Joe Daly

---

Project Purpose, Objectives and Assumptions:

This recommendation requires Transmission and Substations to review and re-evaluate current and past overtime utilization.

- Transmission and Substations will review the factors associated with the uniqueness of CECONY's service territory and system that would affect the overtime distribution and identify the reasons why CECONY past overtime utilization is at 25% in the Liberty report for Transmission and Substations. Once the evaluation is complete, we will identify if any additional actions are required.

Work Plan:

- Transmission and Substations will review current overtime projections to evaluate potential opportunities to reduce overtime. Transmission and Substations will identify overtime drivers utilizing work management and financial systems. In addition, Transmission and Substations will identify opportunities to drive financial cost and performance improvements by developing a capability analysis as discussed in the implementation plan for recommendation 10. The capability analysis will provide the opportunity to address the potential for overtime reduction.

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Collect and analyze overtime data previously submitted to Liberty	4/1/17	6/1/17	7/19/17	8/2/17	Complete
Collect overtime usage data for the timeframe listed	4/1/17	10/31/17	10/16/17	11/7/17	Complete
Identify drivers of overtime usage	5/1/17	10/31/17	10/16/17	11/7/17	Complete
Develop a position paper summarizing data analytics of overtime usage	10/1/17	11/30/17	1/10/18	1/31/18	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Documentation of overtime usage	6/1/17	8/2/17	Complete
Identification of overtime drivers	10/31/17	11/7/17	Complete
Development of a position paper for review	11/30/17	1/31/18	Complete

Cost Benefit Analysis:

There is no incremental cost associated with this implementation plan because CECONY regularly monitors overtime levels.

Risk Analysis:

There is no risk associated with implementing this recommendation. However, the expected risk of not implementing this recommendation would be the missed opportunity to potentially reduce overtime.

Success Criteria:

The implementation of this recommendation will be deemed successful if the Transmission/Substation capability model enables the reduction of future overtime levels.

Post Evaluation Process:
Overtime levels will be monitored and evaluated. Corrective action will be taken if overtime levels begin to trend higher than expected.

Status Updates:

April 13, 2018 Update
This recommendation is complete.

The team embarked on an external benchmarking effort to gain more insight into overtime management practices at other companies. A Request for Proposal was issued on June 29, 2016. After careful consideration, a bid from Ernst & Young was selected and a contract was awarded to them on November 7, 2016. Ernst & Young completed the overtime usage benchmarking report in May 2017. They used a combination of external surveys and internal interviews to compare CECONY to 12 peer utilities. The key observations from this benchmarking study were as follows:

- CECONY overtime usage, the drivers for tracking and calculation method all lie close to industry averages

- Overtime is an indirect measure of work performance
- The most prevalent driver for tracking overtime is for economic (cost) reasons.
- Historical trending of overtime is a commonly used method of developing targets.
- All companies surveyed use a base-40 method of calculating overtime. CECONY's overtime calculation method is aligned with industry norms. As part of the benchmarking survey, no utilities were found to calculate overtime by discounting vacation or training.

The benchmarking study had the following recommendations:

- Continue setting targets and tracking overtime using current methods near term
- Leverage improvements in the resource planning process and associated metrics as a basis for improving overtime target setting

Transmission and Substations will utilize the capability analysis (discussed in Recommendation #10) and the control bands (discussed in Recommendations #18, 19 and 20) as an analytical method for setting overtime targets within an acceptable range. The capability analysis is conducted to determine if there are sufficient internal resources to meet the required work plan (required number of work-hours). If the required work load is significantly higher than the available company forces then a mix of contractors and overtime hours will be used (within acceptable levels). The capability models will help Transmission and Substations to determine appropriate staffing levels to support the work plan within a given budget.

In summary, the Company has met all key deliverable requirements.

Recommendation Number(s): 5 (Chap. II (G), Rec. 5), 7 (Chap. II (G), Rec. 7), 8 (Chap. II (G), Rec. 8), 23 (Chap. III (E), Rec. 2)

Recommendation(s):

Recommendation #5**:** In its Gas business, CECONY should provide a logical year-over-year sequence of staffing, assure adequate focus on main replacements, and provide a stable staffing strategy that permits effective workforce planning, including optimization of productivity, overtime, and other key staffing-related factors**.**

Recommendation #7: CECONY should examine its use of contractors in gas operations to assure that such high use, compared to others, is optimum.

Recommendation #8: CECONY should reevaluate its future plans for Gas overtime of 25 to 30 percent.

Recommendation #23: CECONY should refine and expand plans for increasing internal staffing, the contractor base, or both to meet the needs of the future pipe replacement program.

Roles and Responsibilities:

Executive Sponsor(s): Kathy Boden
Team Lead(s): Amr Hassan
Team Member(s): Matt Bracconeri, Brian Yee-Chan, Lindsey Fitzgerald

---

Project Purpose, Objectives and Assumptions:

As mentioned in the Liberty Audit final report[1], Gas Operations has embarked on the development of a five-year resource plan. In 2014, Gas Operations developed a comprehensive workforce planning strategy through the resource plan to address the forecasted increase in work volumes. The resource plan balances internal company resources, contractor resources, and use of overtime to meet our Main Replacement Program (MRP) goals and resource requirements. The result of the plan includes a long term staffing strategy for company, contractor workforces, and overtime, to meet the needs of future pipe replacement programs. Now, in its third cycle, this resource plan has addressed four overlapping recommendations: #5, #7, #8, and #23.

The Gas Operations resource plan aligns with the planned increase in the MRP. From 2017 to 2021, both work and staffing levels see a comparable increase. The resources dedicated to the MRP have increased to keep up with the targeted main replacement increases from 86 miles to 100 miles. Since 2014, Gas Operations has added approximately 500 FTE's, of which 170 are internal company hires.

Contractors play an important part of the resource plan. The use of contractors is evaluated as per the CECONY Human Resources Guidance Memo. The flexibility inherent in the use of contractors is one of the tools that the Company uses to manage its dynamic and shifting workload. Contractors or the "external workforce," allow the Company the flexibility to supplement its internal workforce with skilled technicians and handle overflow without the need to contract or pay for their services when workload decreases. The Company's use of contractors allows it to "right size" its internal workforce to the level that is required to meet normal operating requirements. In this manner, the Company can meet its work requirements without incurring the costs associated with additional full-time employees such as health insurance, pension, training, and vacation time. The Company utilizes a mixture of Company employees and contractor resources to meet the energy needs of its customers. While there may be times when a particular resource is more

[1] "In recognition of the tightening of the contractor market and associated increasing costs, CECONY had embarked on a five-year plan to increase its internal work force" [page 84]

economically advantageous than another, the changing nature of the demands of the utility business make that only one consideration of many.

Overtime is another tool used to manage available resources, and part of Gas Operations' resource plan is to balance the resources. Increases in leak-related work volumes following recent gas distribution events and increased odor awareness campaigns caused the overtime to peak at 24% in 2015. Despite an increase in overall work volume in 2016 driven by increased main replacement, overtime levels decreased to 19%. This can be attributed to the success of following our resource plan, where over 500 FTE's have been added since the plan started in 2014. While our commitment to public safety will drive our use of overtime for leak response and repair, Gas Operations will continue to bring on additional resources to further decrease overtime levels, particularly in the execution of planned work.

The development of a guidance document will help us mature our process in developing a staffing plan. It will align all stakeholders in the process and also serve as a transition document for new employees performing this function.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Kick off meeting with stakeholders to begin development of guidance document	4/1/17	4/1/17	3/23/17	3/23/17	Complete
Develop draft guidance document	4/1/17	6/30/17	4/1/17	5/8/17	Complete
Circulate draft document for comments	7/1/17	7/31/17	7/10/17	7/31/17	Complete
Receive necessary approvals	8/1/17	8/31/17	8/1/17	9/12/17	Complete
Finalize guidance document	9/1/17	9/15/17	9/12/17	10/2/17	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Draft guidance document	6/30/17	5/8/17	Complete
Final guidance document	9/15/17	10/2/17	Complete

Cost Benefit Analysis:

No incremental costs identified for implementation of this recommendation. Con Edison believes that the existing plan is feasible and needs no further alteration. Should the program plan be revised at a later date, a cost benefit analysis will be performed at that time.

Risk Analysis:

No additional risk has been identified for implementation of this recommendation. Con Edison believes that the existing plan is feasible and needs no further alteration. Should the program plan be revised at a later date, a risk analysis will be performed at that time.

Success Criteria:

Meeting the annual commitment to our main replacement program will improve public safety as well as reduce methane emissions. The reduction in incoming leaks on the gas distribution system will indicate the effectiveness of the gas distribution main replacement program in the medium to long term.

Post Evaluation Process:

Con Edison believes that the existing plan related to project costs and timeline is feasible and needs no further alteration.

Resource requirements are reviewed each quarter by Program and Project Planners in Work Resource Management (WRM)[2]. These resource requirements are reviewed and subject to consensus, are incorporated into the annual work plan and budget.

With guidance from WRM, Gas Operations and Cost Management continually evaluate the "right mix" of company and contractor resources.

Status Updates:

April 13, 2018 Update

This recommendation is complete.

Gas Operations' existing resource planning practices are based on a five-year resource plan utilized as part of annual business planning activities. Gas Operations has developed a comprehensive workforce planning strategy through the formal processes around resource capability analysis and the five-year resource plan to address the forecasted increase in work volumes. Resource capability analysis is completed quarterly and the five-year resource plan is updated annually. The quarterly analysis establishes a formal process for

[2] Resource requirements are reviewed in detail each quarter through the quarterly resource capability analysis and regional meetings. Recommendation #11 reviews this process in detail.

managing resources for near term work and the five-year resource plan allows for longer term resource planning. Resource capability is a comprehensive resource model that converts forecasted work (in units) to man-hours to analyze whether the organization has resources to achieve the forecast. The result of the five year resource plan includes a long term staffing strategy for Company and contractor workforces to meet the needs of future capital and O&M programs. To enhance this new resource planning model, a guidance document was issued on October 4, 2017 to memorialize the process. The issuance of the guidance document satisfies this recommendation.

Recommendation Number: 6 (Chap. II (G), Rec. 6)

Recommendation:

CECONY should determine the reasons why its productivity in gas work compares unfavorably, to the extreme in some cases, and if appropriate, develop a plan to improve productivity.

Roles and Responsibilities:

Executive Sponsor(s): Katherine Boden
Team Lead(s): Amr Hassan
Team Member(s): Jeff Rutowski, William Lee, Matthew Bracconeri, Lindsey Fitzgerald, Peter Carmona, Dan Bromberg, Lisa Presotto, Philip Tenenzaph, Peter Leon

---

Project Purpose, Objectives and Assumptions:

This recommendation requires Gas Operations to review and re-evaluate productivity.

- Identify the reasons why CECONY's productivity, actual hours per Equivalent Production Unit (EPU), and actual dollars per EPU, in Liberty's report for gas work were higher than the reference utility by 95%. We will review the factors associated with the uniqueness of CECONY's service territory and systems that would affect the contractor's costs and calculated hours. We will also evaluate how these factors could impact internal resources. Once this evaluation is complete, we will identify if any additional actions are required.

Work Plan:

- The implementation strategy is to leverage CECONY's cost factors that are used to estimate the cost of construction in CECONY's service territory (e.g. DOT work restrictions, sub-surface conditions, safety requirements, restoration requirements, etc.) to understand the higher hours and dollars per EPU. This information will be submitted to the PSC to explain the factors that drive our productivity levels.

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Gather, inventory and assess CECONY's data that was submitted to Liberty.	4/1/17	6/1/17	4/1/17	6/15/17	Complete
Evaluate the uniqueness of CECONY's service territory as it relates to construction costs.	5/1/17	9/1/17	5/1/17	9/8/17	Complete
Project the impact of CECONY's contractor cost on the reported hours and dollars per EPU and determine if additional actions are necessary.	8/1/17	11/15/17	8/1/17	1/10/18	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Submittal 1: CECONY documentation of the information that was provided to Liberty and indication of how contractor costs were used to calculate hours.	7/1/17	7/6/17	Complete
Submittal 2: CECONY documentation on the uniqueness of our service territory and system, and the associated factors that are included in our construction costs.	10/1/17	11/30/17	Complete
Submittal 3: CECONY assessment of how the factors in submittals 1 and 2 impact the data submitted to Liberty and recommendation for future action.	12/15/17	1/10/18	Complete
Submittal 4: CECONY finalized assessment and recommendation.	5/31/18		

Cost Benefit Analysis:

Management's time to be spent in the execution of the work plans and submission of the deliverables defines the extent of the cost for this response. The benefit of completing the work plans is to identify the factors to compare CECONY's productivity to other utilities.

Risk Analysis:

There is minimal risk associated with performing the tasks outlined in this plan. The risk of not implementing this recommendation would be the missed opportunity to potentially increase productivity and lower costs.

Success Criteria:

The implementation of this plan will be deemed successful if improvements in productivity can be identified.

Post Evaluation Process:

None

Status Updates:

April 13, 2018 Update
See the implementation plan for recommendation 2.

Recommendation Number(s): 7 (Chap. II (G), Rec. 7)

Recommendation(s):

CECONY should examine its use of contractors in gas operations to assure that such high use, compared to others, is optimum.

Roles and Responsibilities:

Executive Sponsor(s): Kathy Boden
Team Lead(s): Amr Hassan
Team Member(s): Matt Bracconeri, Brian Yee-Chan, Lindsey Fitzgerald

---

See the Implementation Plan for Recommendation 5.

Recommendation Number(s): 8 (Chap. II (G), Rec. 8)

Recommendation(s):

CECONY should reevaluate its future plans for Gas overtime of 25 to 30 percent.

Roles and Responsibilities:

Executive Sponsor(s): Kathy Boden
Team Lead(s): Amr Hassan
Team Member(s): Matt Bracconeri, Brian Yee-Chan, Lindsey Fitzgerald

---

See the Implementation Plan for Recommendation 5.

Recommendation Number(s): CECONY 9 and O&R 5 (CECONY, Chap. III (A), Rec. 1 and O&R Chap. III (A), Rec. 1)

Recommendation(s):

- CECONY should expand measures of contractor work load to include FTE- or person-hour based values.
- ORU should expand measures of contractor work load to include FTE- or person-hour based values.

Roles and Responsibilities:

Executive Sponsor(s): CECONY – Constantine Sanoulis; O&R – Frank Peverly
Team Lead(s): CECONY –Nick Colonna, Tom Thatcher, Amr Hassan; O&R – Glenn Meyers, Orville Cocking
Team Member(s):

Project Purpose, Objectives and Assumptions:

As explained by Liberty in the Final Audit Report, there are two options that can be used to implement this recommendation:

1. the use of historical person-hour amounts from past contracts (if the data is kept) to project unit rates, or;
2. the use of engineering estimates to quantify projected workloads at the program level.

For Liberty's proposed option two, above, the Companies currently make use of engineering estimates to compare and evaluate contractor pricing. The Companies employ a competitive bid process to award the majority of Contractor work. The Companies evaluate each bid within the competitive bid process to determine the qualified lowest priced bidder. The Companies then estimate workload and associated activities for unit price and lump sum contracts. These estimates are evaluated by the Companies' bid check process for contracts that exceed $500,000 and for change orders of $25,000 or greater. This process allows the Companies to demonstrate that the prices offered by the Contractor are fair and reasonable as compared to prevailing market prices.

For Liberty's proposed option one, above, the Companies do not have or maintain historical person-hour amounts from past contracts. The Companies have consistently maintained during the course of the Staffing Audit, that there are no existing methods or tools available in the industry for comparing internal workforce and contractors on a FTE or person-hour basis. Although the Company asked Liberty to provide an example of where this process was in use, in order determine its feasibility, Liberty did not provide an example. To compare internal workforce and contractors on a FTE or person-hour basis as Liberty recommends, would require

a wholesale change from the Companies' current practice and, there has been no demonstration in the Final Audit Report, that there is any associated value to making such changes.

The Companies will continue with their current practice of using engineering estimates and the bid check evaluation process as the method for verifying the reasonableness of contractor resources. Liberty has made no demonstration that the Companies' current practices are deficient, that alternative methods and tools are available or that cost savings will result from adopting this recommendation.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments

Cost Benefit Analysis:

Risk Analysis:

Success Criteria:

Post Evaluation Process:

Status Updates:

April 13, 2018 Update
This recommendation is complete and is pending Staff review and closeout.

Recommendation Number(s): CECONY 10 and O&R 6 (CECONY Chap. III (A), Rec. 2 and O&R Chap. III (A), Rec. 2)

Recommendation(s):

- CECONY resource plans should include data driven analyses that help management evaluate the trade-offs for overtime, contractors, and internal staff at the functional/work group level. [10]

- ORU resource planning should include data driven analyses that help management evaluate the trade-offs for overtime, contractors, and internal staff at the functional and work group levels. [6]

Roles and Responsibilities:

Executive Sponsor(s): CECONY – Constantine Sanoulis, Patrick McHugh, Kathy Boden, Hugh Grant, Walter Alvarado, Robert Boyle, Scott Sanders; O&R – Frank Peverly
Team Lead(s): CECONY – Amr Hassan, Gina Callender; O&R – Orville Cocking, Glenn Meyers
Team Member(s): CECONY – Tom Thatcher, Matthew Walther, Carlos Vega, Mike Rajapakse, Joe Daly, Tracy Cureton, John Giamarino, Dominick Tutrone, James Quackenbush, Vladimir Salomon, Derek Rounds, Angelina Brady; O&R – Gary Windman, Angelo Regan, Flannan Hehir, Ken McKenna

---

Project Purpose, Objectives and Assumptions:

CECONY and O&R will expand use of the current capability model to assist operating organizations in forecasting the level of resources from internal staff (straight time and overtime) and contractors required by the work plan.

The most advanced version of the capability model is currently being utilized by CECONY Electric Operations and is described in detail in the CECONY implementation plan for recommendations 3 and 21.

CECONY Gas Operations has developed a comprehensive capability model that converts forecasted work (in units) to man-hours to determine whether or not the organization has sufficient resources to achieve the forecasted work plan. This version of the capability model is described in the CECONY implementation plan for recommendation 11.

CECONY Central Operations will evaluate the feasibility of developing a similar capability model.

O&R has a capability model that will be updated.

This implementation plan will also address Recommendation VII-6 from NorthStar's comprehensive management and operations audit in Case 14-M-0001:

Develop formal studies and provide updates of contractor versus in-house costs every three to five years, and use the results of these studies in CECONY and O&R resource planning to determine the optimal use of contractors.

Work Plan:

The capability model will be presented to each organization and modified to best fit their needs.

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Review existing CECONY Electric capability model with CECONY Gas Operations, CECONY Central Operations and O&R	4/3/17	5/31/17	4/17/17	4/17/17	Complete
Update CECONY Gas Operations capability model	6/1/17	7/31/17	6/15/17	6/15/17	Complete
Update O&R capability model	6/1/17	7/31/17	6/1/17	2/15/18	Complete
Develop capability model for CECONY Central Operations	6/1/17	11/30/17	6/19/17	11/13/17	Complete
Establish CECONY and O&R guideline for capability model	12/1/17	2/28/18	12/1/17	2/28/18	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
CECONY and O&R guideline for capability model	2/28/18	2/28/18	Complete

Cost Benefit Analysis:

There should be little or no incremental costs associated with maintaining and updating the capability models for CECONY Electric Operations, CECONY Gas Operations and O&R. The costs associated with developing a capability model for CECONY Central Operations will be determined during the development phase of the work plan.

Risk Analysis:

There is no risk associated with implementing this recommendation. However, the expected risk of not implementing this recommendation would be the missed opportunity to potentially increase productivity and lower costs.

Success Criteria:

The implementation of this recommendation will be deemed successful if organizations are able to meet their targets for O&M spending, capital costs, staffing levels and overtime without causing a corresponding decline in productivity.

Post Evaluation Process: To be determined.

Status Updates:

April 13, 2018 Update
This recommendation is complete.

Central Operations has completed the capability model for both O&M and Capital needs. Central Operations completed a guidance document for the use of the capability model for future use on February 28, 2018.

Gas Operations had previously completed the capability model and the guidance document.

O&R has completed the capability model for both O&M and Capital needs.

Recommendation Number: 11 (Chap. III (A), Rec. 3)

Recommendation:

CECONY should continue to aggressively enhance gas operations' resource planning tools and methods, establishing clear schedules and completing them expeditiously.

Roles and Responsibilities:

Executive Sponsor(s): Kathy Boden
Team Lead(s): Amr Hassan
Team Member(s): Lindsey Fitzgerald, Scott Kalberer, Michelle Richards, Junyan Chang

---

Project Purpose, Objectives and Assumptions:

Since the audit commenced in 2014, Gas Operations has adopted many of the best practices that Electric Operations has deployed. For resource planning, Gas Operations has staffed the Work and Resource Management Department to handle work and resource planning functions. Although a work management system is in development, tools have been deployed to manage, track, and schedule the work in the interim. Recommendation 14

covers centralization of the scheduling functions; this recommendation will cover enhancements to resource planning tools and methods.

In mid-2016, a resource capability analysis was developed and rolled out across all the operating areas. Resource capability is a comprehensive resource model that converts forecasted work (in units) to man-hours to analyze whether the organization has resources to achieve the forecast. This analysis looks at work forecasted near term (1-3 months), and up-to one year out. Longer term resource forecasts are covered under the enhancement of the Resource Plan (see recommendation 5).

The resource capability analysis matches work (units) budgeted and forecasted to hours required for each unit (REs) to determine Gas Operations ability to achieve budgeted and forecasted targets. Data analytics is completed under the Work and Resource Management department as a centralized organization with the benefit of overseeing trends throughout all the operating areas. Each quarter, resource capability meetings are conducted in each operating area with construction departments and subject matter experts (SMEs) that oversee the resources. Since the roll out of this model, it has been successful at identifying and executing resource movements in advance.

Work Plan:

Going forward, the work plan includes continuing iterative resource capability analysis and SME meetings on a quarterly basis to proactively identify risks. To enhance and mature this relatively new resource planning model, a guidance document will be developed to memorialize the process.

The guidance document will be a single reference document to describe the resource capability model, clearly identify responsibilities, outline quarterly deliverables, show annual schedules, and serve as training material for new employees. Since the resource capability analysis has a feedback mechanism into the staffing strategy and resource plan (see recommendation #5), this guidance document will be completed in parallel with the work plan for that recommendation. The guidance documents for both will have sections to address how information analysis informs each process.

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Kick off meeting with stakeholders to begin development of guidance document	3/24/17	3/24/17	3/23/17	3/23/17	Complete
Develop outline for document	4/1/17	6/30/17	4/1/17	5/8/17	Complete
Complete draft and circulate for feedback	7/1/17	7/31/17	7/10/17	7/28/17	Complete
Receive necessary approvals	8/1/17	8/31/17	8/1/17	9/12/17	Complete
Finalize guidance document	9/1/17	9/15/17	9/12/17	10/2/17	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Draft guidance document	7/31/17	7/10/17	Complete
Guidance document	9/15/17	10/2/17	Complete

Cost Benefit Analysis:

Adequate resource planning promotes workforce efficiency by matching work to resources early on. Benefits to creating this guidance document include:

- ✓ It will serve as a single reference document for anyone seeking information.
- ✓ Clearly assigning and documenting responsibility will help guarantee the resource planning function continues.
- ✓ Should employee turnover take place in the resource planning functions, it will aid in training and transitions.
- ✓ The document will be used in development of the Gas Work and Resource Management system (currently under development).

Creating the guidance document has limited costs, including:

- ✓ Dedicating resources to project managing the process to developing, writing, and getting necessary approvals.

Risk Analysis:

If a guidance document is not created, it is possible for roles and responsibilities to be unclear, which could lead to incomplete resource planning functions. Without it, we also risk loss of expertise if employees currently responsible for resource planning move onto new roles.

Success Criteria:

- ✓ Development of a guidance document that memorializes our process.

Post Evaluation Process:

The guidance document will contain information on the post evaluation process. To stay current, the document will be reviewed on a regular basis. The frequency of the review will be determined during the "complete draft and circulate for feedback" activity.

Status Updates:

April 13, 2018 Update
This recommendation is complete.

Gas Operations' existing resource planning practices are based on a five-year resource plan that is utilized as part of annual business planning activities. Gas Operations has developed a comprehensive workforce planning strategy through the formal processes around resource capability analysis and the five-year resource plan to address the forecasted increase in work volumes. Resource capability analysis is completed quarterly and the five-year resource plan is updated annually. The quarterly analysis establishes a formal process for managing resources for near term work and the five-year resource plan allows for longer term resource planning. Resource capability is a comprehensive resource model that converts forecasted work (in units) to man-hours to analyze whether the organization has resources to achieve the forecast. The result of the five year resource plan includes a long term staffing strategy for Company and contractor workforces to meet the needs of future capital and O&M programs. To enhance and mature this new resource planning model, a guidance document was issued on October 4, 2017 to memorialize the process. The issuance of the guidance document satisfies this recommendation.

Recommendation Number: 12 (Chap III (A), Rec. 4)

Recommendation:

CECONY should confirm that the historical inability to separate overtime and straight time has been eliminated.

Roles and Responsibilities:

Executive Sponsor(s): Scott Sanders
Team Lead(s): Nick Colonna
Team Member(s): Fahmid Khanom

Project Purpose, Objectives and Assumptions:

During the staffing audit, the utilities were required to provide Liberty with straight time and overtime hours from 2009 through 2014. At CECONY, CARE was the financial system from 1995 to June 2012. CARE provided straight time and overtime hours at an individual employee level and supplemental systems (Impromptu and Direct Labor Hour System) were used to compile the straight time and overtime hours to the section and organization level. CARE and the supplemental systems did not have the capability to separate straight time and overtime hours by functional activities.

Effective July 1, 2012, Oracle Business Intelligence ("BI") replaced CARE as CECONY's financial system. BI is capable of providing both straight time and overtime hours worked by functional activities. When performing trend analyses, CECONY's practice is to use no more than five years of historical data. Beginning in 2018, any retrospective review would include the years 2013 through 2017. Both straight time and overtime hours would be available for this period by functional activities in BI. Therefore, we consider this recommendation to be complete with no further action required.

Work Plan:

None

Milestones/Deliverables:

None

Cost Benefit Analysis:

None

Risk Analysis:

None

Success Criteria:

None

Post Evaluation Process:

None

Status Updates:

None

April 13, 2018 Update
This recommendation is complete and is pending Staff review and closeout.

Recommendation Number: 13 (CECONY Chap. III (B), Rec. 1)

Recommendation: CECONY should establish comprehensive detailed plans, and set firm, detailed schedules to complete the upgrade of its Work Management System for Gas Operations.

Roles and Responsibilities:
Executive Sponsor(s): Kathy Boden
Team Lead(s): Amr Hassan
Team Member(s): Pascale J. Ambrosio, Michael DeVirgilio Jr., Janine Sanchez, Luis Suarez

---

Project Purpose, Objectives and Assumptions:

A Work and Asset Management Solution for Gas Operations will be created that will allow for standardization of work processes, better work scheduling and prioritization, as well as provide a single repository for all work and asset data related to CECONY's gas facilities. A comprehensive schedule will be established to manage the project and provide for the on-time completion of activities, milestones and deliverables.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Approve business case	1/20/17	1/20/17	1/20/17	1/20/17	Complete
Complete appropriation	1/26/17	3/6/17	1/26/17	3/6/17	Complete
Prepare RFP	1/26/17	3/3/17	1/26/17	3/3/17	Complete
Review bids and select vendor	2/20/17	6/21/17	2/20/17	6/21/17	Complete
Complete project plan	1/20/17	7/15/17	1/20/17	8/4/17	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Project approval	1/19/17	1/19/17	Complete
Appropriation approval	3/6/17	3/6/17	Complete
RFP approval	3/3/17	3/3/17	Complete
Bid award/Issue PO	6/21/17	6/30/17	Complete
Project plan	7/15/17	8/4/17	Complete

Cost Benefit Analysis:

None

Risk Analysis:

Risk of no action:

There is a significant risk to the successful completion of the GWAM project if a schedule is not created and followed.

Risk to project success:

- Lack of schedule management
- Failure to manage cost and project deliverables
- Regulatory requirements continue to become more stringent and may impact the scope and duration of the project and therefore, the schedule

Success Criteria:

- Completed GWAM schedule

Post Evaluation Process:

None

Status Updates:

April 13, 2018 Update
This recommendation is complete.

As required with any large technology implementation, a key factor of success is a comprehensive schedule that shows activities and milestones required for on-time delivery of the project. Attached is the high level schedule that was created.

Recommendation Number: 14 (CECONY Chap. III (B), Rec. 2)

Recommendation:

Gas Operations should also centralize as many scheduling functions as possible, including all capital work.

Roles and Responsibilities:

Executive Sponsor(s): Kathy Boden
Team Lead(s): Amr Hassan
Team Member(s): Matt Bracconeri, Brian Yee-Chan, Lindsey Fitzgerald

---

Project Purpose, Objectives and Assumptions:

As cited in the audit report, Gas Operations previously initiated the creation of two new departments to support centralized scheduling functions: Program and Project Management (PPM) and Gas Work & Resource Management (WRM). The audit commenced in 2014 and the report was issued in 2016, during that time specific changes have taken place that address this recommendation.

Capital work is segregated into large scale projects and high volume programs. The PPM group provides schedule updates for major projects where an individual Project Manager is assigned to each project. For program work, where each program includes hundreds of small projects, the WRM group provides schedule updates. All schedules are created and centralized in Oracle Primavera P6 software.

Work Plan:

Primavera P6 creates and stores all the schedules for Gas Operations. The schedules use a common Work Breakdown Structure, allowing a standard report template known as a Project Summary Report (PSR) to be created for all projects. PSR's are distributed widely to provide a concise weekly status update, summarized on a single sheet.

Major projects are assigned Project Managers to oversee the project from design, through execution, to completion. The schedules for major projects are updated by Project Managers in the PPM group. For their work, schedule updates are collected from team members using update turnaround sheets. The sheets focus only on tasks within a 2 week window in order to facilitate the weekly update cycle. The sheets are collected by the PPM Scheduler and the updates are uploaded into Primavera P6.

For large volume program work, the WRM group uses Work Organizers assigned to specific regions to plan and issue work. Once work packages with layouts, permits, and other prerequisites are created, the work is scheduled with available Construction crews. The dates for milestones such as estimated start and finish dates for each job are documented with the Gas Work Tracker (GWT), a database used by WRM to record all of the scheduled program work. GWT contains other pertinent job data, such as work scope, location, and resources used. Primavera P6 takes advantage of exported GWT data to produce updated schedules and PSR's.
Through the combined efforts of the PPM and WRM groups, Primavera P6 has successfully centralized the creation and distribution of schedules for capital work. These schedules are

distributed and used by project and program managers to track progress to plan for the successful completion of all capital work. Con Edison believes that the recommendation has been addressed and that no further action is required.

Milestones/Deliverables:

None required.

Cost Benefit Analysis:

None required.

Risk Analysis:

None required.

Success Criteria:

Gas Operations has successfully implemented the resources and tools to centralize its scheduling functions.

Post Evaluation Process:

None required.

Status Updates:

April 13, 2018 Update
This recommendation is complete and is pending Staff review and closeout.

Recommendation Number: 15 (CECONY Chap. III (B), Rec. 3)

Recommendation:

Gas operations should identify documentation and training needs that match its plans for its new WMS.

Roles and Responsibilities:

Executive Sponsor(s): Kathy Boden
Team Lead(s): Amr Hassan
Team Member(s): Pascale J. Ambrosio, Michael DeVirgilio Jr., Janine Sanchez, Luis Suarez

Project Purpose, Objectives and Assumptions:

As identified by the report, Gas is developing a system, modeled after the Electric Work Management System, to aid in work tracking, assignment, communication, and compliance. As part of that system, a necessary component to aid the change management needs of the system is to document the training needs associated with it.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Establish team lead	2/1/17	2/1/17	2/1/17	2/1/17	Complete
Build team	6/30/17	7/31/17	6/30/17	7/10/17	Complete
Develop documentation/training plan	8/1/17	12/31/17	7/10/17	12/21/17	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Assemble team	7/31/17	7/10/17	Complete
Begin developing documentation /training plan	8/1/17	7/10/17	Complete
Complete documentation /training plan	12/31/17	12/21/17	Complete

Cost Benefit Analysis:

None

Risk Analysis:

Failure to provide adequate documentation and training will result in underutilization of the Gas Work and Asset Management System.

Success Criteria:

Gas Operations completes the plan that encompasses all required documentation and training needs.

Post Evaluation Process:

To ensure training document remains current, it will be reviewed on a periodic basis to be defined in the training plan.

Status Updates:

April 13, 2018 Update
This recommendation is complete.

The path to a confident workforce using a new system is the careful design and delivery of a training program. Working with our vendor, we developed a comprehensive training plan that will be a vital part of managing a transition of this new system. The developed training curriculum is robust and focused on business-processes and highlights the use of the Gas Central solution that is infused with business scenarios. The training will be delivered with different methods including instructor-led and computer-based to allow for a tailored experience.

Recommendation Number: 16

Recommendation:

CECONY should address the availability of sufficient numbers of seasoned gas salaried employees to serve in mentoring and similar roles for an internal staffing complement forecasted to expand greatly.

Roles and Responsibilities:

Executive Sponsor: Nick Inga
Team Lead(s): Amr Hassan
Team Member(s): Robert Massoni, Vic Faster, Tony Leto

Project Purpose, Objectives and Assumptions:

In order to ensure sufficient numbers of tenured management employees to support the elevated hiring forecast, Gas Operations must focus on retaining seasoned employees. To further the development of supervisors as well as improve retention, a developmental training curriculum will be developed outside the normal leadership and technical training that supervisors go through. The material will be delivered by senior Gas Operations employees.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Develop curriculum for supervisor program	10/30/17	12/31/17	10/24/17	1/8/18	Complete
Validate curriculum with senior management	1/1/18	1/31/18	1/12/18	1/12/18	Complete
Finalize curriculum	2/1/18	2/15/18	2/1/18	2/9/18	Complete
Develop training schedule	1/1/18	2/15/18	3/1/18	3/15/18	Complete
Begin program	3/1/18	3/1/18			

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Team kickoff	10/19/17	10/19/17	Complete
Program developed	2/15/18	2/9/18	Complete
Program Launch	3/1/18		

Cost Benefit Analysis:

- The cost will be associated with supervisor training time of an additional 24-48 hours per person over the course of several months.

Risk Analysis:

Risk of no action:

Gas Operations will continue to experience elevated levels of management attrition (primarily band 1 Operating Supervisors), and experienced, knowledgeable employees while optimal knowledge transfer is not achieved.

Risk to project success:

- Competing activities and priorities place a strain on the availability of team members to participate in the project.

Success Criteria:

- Average employee tenure increases
- Decreased attrition

Post Evaluation Process:

- Attrition analysis

Status Updates:

April 13, 2018
The original plan that was initially submitted in our filing was revised due to a change in direction with this recommendation. It was decided to forgo the cultural survey as initially intended and directly implement a program that had been proven successful in the past. Rebooting the Gas Supervisors Excellence Program (GESP), which is an enrichment program that supplemented technical training for supervisors, has received good feedback in the past and aided retention.

In order to accelerate the learning of gas supervisors and improve retention, Gas Operations has developed the Gas Supervisors Excellence Program (GSEP). The program was designed by a team of General Managers with input from a team of Section Managers who are considered subject matter experts in their field. The program will provide supervisors with a broader understanding of Gas Operations and more importantly show how their contributions fit into making Gas Operations successful as one business unit. The program consists of eight half-day sessions held once a week, for eight consecutive weeks and includes technical information, interactive modules, and a space to ask questions – the first session is scheduled for May 3, 2018. Our goal is to provide our supervisors with the tools (technical and institutional knowledge) necessary to be successful and to provide them with a wider network and sense of belonging to a larger team – Gas Operations.

Recommendation Number(s): CECONY 17 and O&R 11 (CECONY Chap. III (C), Rec. 2 and O&R Chap III (C), Rec. 1)

Recommendation:

- CECONY should develop key performance indicators that measure the effectiveness of efforts to achieve staffing targets and accountability should be assigned to the appropriate individual(s). [17]

- ORU should develop key performance indicators that measure the effectiveness of its efforts to achieve its staffing targets and accountability should be assigned to the appropriate individual(s). [11]

Roles and Responsibilities:

Executive Sponsor(s): (CECONY) Joan Jacobs, Richard Bagwell, Kathy Boden, Constantine Sanoulis, Patrick McHugh, Scott Sanders; (O&R) Francis Peverly
Team Lead(s): Andrea Levoritz

Team Member(s): (CECONY) Stephanie Ullah-Mazzuca, Tricia Medlin-Fogg, Timothy Indiveri, Amr Hassan, Gary Hugo, Matthew Walther, Tom Thatcher, Audrey Elliott-Barnes, Michael Kershner, Robert Massoni, Joseph Somma, Salvatore Pitonzo, Kisha Rand-Hudson; (O&R) Glenn Meyers, John Coffey

---

Project Purpose, Objectives and Assumptions:

This implementation plan sets forth the work activities that will be performed to evaluate the feasibility of developing metrics that measure the effectiveness of efforts to achieve staffing targets. The work plan also includes activities related to the implementation of any improvements arising and approved from the feasibility study process.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Form Team	3/1/17	3/31/17	3/1/17	3/27/17	Complete
Document Current State	4/3/17	7/31/17	4/26/17	8/28/17	Complete
Define Future State	8/1/17	9/29/17	9/11/17	11/17/17	Complete
Research Cost Benefit/Risk Analysis of Proposed Future State	10/2/17	11/30/17	2/26/18	2/26/18	Complete
Develop Implementation Plan – (If Required)	12/1/17	3/30/18			
Execute Implementation Plan – (If Required)	4/2/18	6/30/18			

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Documentation of Current State	7/31/17	8/28/17	Complete
Define Future State	9/29/17	11/17/17	Complete
Proposed Future State	11/30/17	2/26/18	Complete
Execute Implementation Plan	6/30/18		

Cost Benefit Analysis:

The estimated cost of implementing the recommendation will be determined as part of the proposed future state plan.

Risk Analysis:

The risk analysis will be determined as part of the proposed future state plan.

Success Criteria:

The success criteria will be the result of the execution of the implementation plan.

Post Evaluation Process:

To be determined.

Status Updates:

April 13, 2018 Update
The first steps of the implementation plan were to establish a team of key stakeholders from across the Company, including operations and support organizations, to provide structure and knowledge for evaluating the feasibility of implementing this recommendation.

The team has worked to document the current state of the staffing process and to identify existing metrics that track success in meeting resource recruitment, acquisition, development, and training targets. The current documentation was completed as of August 28, 2017.

The next step was to define the future state. The team developed several alternative future state possibilities for presentation to the Executive Sponsors. The definition of the draft future state alternatives was completed by November 17, 2017.

The next step was to propose the future state. The future state alternatives were proposed to the Executive Sponsors and a future state was determined on February 26, 2018. There were no incremental costs or risks associated with the proposed future state.

The next step is developing an implementation plan, which is still in process.

Recommendation Number(s): CECONY 18, 19, 20 and O&R 3, 12, 13, 14
(CECONY Chap. III (D), Rec. 1; CECONY Chap. III (D), Rec. 2; CECONY Chap. III (D), Rec. 3; and O&R Chap. II, Rec 3; O&R Chap. III (D), Rec. 1; O&R Chap. III (D), Rec. 2; O&R Chap. III (D), Rec. 3)

Recommendation(s):

CECONY:

- CECONY should develop analytically supported methods for determining optimum overtime levels. [#18]

- CECONY should include all relevant factors in its decision-making vis-à-vis overtime. [#19]

- CECONY should define an optimum level of overtime, presumably well below that projected at the current time, and implement control schemes to manage within that value or range. [#20]

O&R:

- To the extent high overtime issues in distribution have not yet been resolved, O&R should: (a) determine optimal levels, (b) develop plans to achieve those optimal levels, and (c) take steps to manage to those levels. [#3]

- O&R should develop a more analytical process to determine the optimum levels of overtime. [#12]

- O&R should evaluate the degree to which it includes all relevant factors in its decision-making vis-à-vis overtime. [#13]

- O&R should expand the use of functional planning, budgeting, and monitoring in the realm of overtime. [#14]

Roles and Responsibilities:

Executive Sponsor(s): Scott Sanders, (CECONY), Frank Peverly (O&R)
Team Lead(s): Lori Posey (CECONY), John DeLaBastide (O&R), Ken McKenna (O&R)
Team Member(s) CECONY: Tom Thatcher, Gina Callender, Amr Hassan, Michelle Anderson, Valerie Sigal, Matthew Bracconeri, Wazir Hussan, Matthew Walther
Team Member(s) O&R: Maya Joseph, Sal Muto, Kevin Waldron, Don Higgins

---

Project Purpose, Objectives and Assumptions:

CECONY and O&R (the Companies) will develop an analytically supported method for determining optimum overtime levels. This method will consider all relevant factors relating to decisions about overtime and will include control measures that facilitate the maintenance of overtime levels within an acceptable range.

This implementation plan will also address Recommendation VII-5 from NorthStar's comprehensive management and operations audit in Case 14-M-0001:

> Develop overtime targets for CECONY and O&R based on economic analyses and verified industry norms.

The following assumptions will apply:

- Economic analyses will mean that overtime targets will be the result of a reasonable and systematic quantitative approach that considers factors such as expected work volumes, mandatory work completion dates, resource mixes, constraints and cost.

- Verified industry norms will mean that overtime targets will be developed in a manner consistent with identified best practices derived from internal Company analyses and benchmarking with peer companies in the utility industry.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Conduct internal survey to determine current state for setting overtime targets	12/6/16	3/15/17	12/6/16	3/15/17	Complete
Conduct benchmarking survey with peer utilities to determine industry norms for setting overtime targets	1/9/17	3/15/17	1/9/17	3/15/17	Complete
Perform gap analysis to compare current state to industry norms	2/13/17	3/31/17	2/13/17	3/15/17	Complete
Develop processes and categories for collecting activity based overtime data	2/21/17	4/28/17	2/21/17	7/27/17	Complete
Analyze if process changes require system changes or standardized reporting	4/1/17	5/31/17	2/21/17	8/31/17	Complete
Using activity based overtime data, develop an analytical method for setting overtime targets	5/1/17	7/31/17	5/1/17		
Develop control measures for maintaining overtime levels within an acceptable range	6/1/17	9/30/17	6/1/17		

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Final benchmarking report, including gap analysis comparing current state assessment and comparative industry data	3/31/17	5/5/17	Complete
Development of an analytical method for setting overtime targets	7/31/17		
Develop internal procedure documenting control measures for maintaining overtime levels within an acceptable range	10/2/17		

Cost Benefit Analysis:

Activity	Estimated Cost/(Benefit)
Obtain benchmarking survey[1, 2]	$62,725
Develop overtime targets every year [3]	0
Net cost/(benefit)	$62,725

[1]The total cost of $250,900 includes benchmarking surveys for four recommendations from the NorthStar comprehensive management and operations audit in Case 14-M-0001.
[2]The cost of the benchmarking survey will be allocated between CECONY and O&R in accordance with the Shared Services agreement.
[3]There is no incremental cost for this activity since CECONY and O&R currently develop overtime targets on an annual basis.

Risk Analysis:

There is no risk associated with implementing this recommendation. However, the expected risk of not implementing this recommendation would be the missed opportunity to potentially increase productivity and lower costs.

Success Criteria:

The implementation of this recommendation will be deemed successful if future overtime rates become sustainable at levels below current expectations without causing a corresponding decline in productivity or increase in cost.

Post Evaluation Process:

Overtime targets will be established annually and reviewed monthly thereafter. Corrective action will be taken if overtime levels consistently exceed or fall below an acceptable range over a determined period of time.

Status Updates:

April 13, 2018 Update
The first steps of the implementation plan relate to the performance of a benchmarking survey to determine industry norms for setting overtime targets. CECONY and O&R engaged Ernst & Young ("EY") to perform the benchmarking survey. Based on the results of the benchmarking survey, EY concluded that CECONY and O&R's overtime usage, calculation method and targets are close to industry norms.

The next steps of the implementation plan relate to the collection of data needed to analyze overtime. In accordance with the method that Liberty described in Chapter VI of the statewide final audit report, we analyzed overtime data for a 52 week period to develop an annual target level and control bands.

The completion of the final milestones for this implementation plan involve coordinating the development of the overtime targets and control bands with the capability models discussed in the implementation plans for CECONY recommendation #10 and O&R recommendation #6. The final milestone for CECONY recommendation #10 and O&R recommendation #6 was completed on February 28, 2018; therefore, the July 31, 2017 and October 2, 2017 milestone deliverable dates from this implementation plan will be moved to July 31, 2018.

Recommendation Number(s): 19 (Chap. III (D), Rec. 2)

Recommendation(s):

CECONY should include all relevant factors in its decision-making vis-à-vis overtime.

Roles and Responsibilities:

Executive Sponsor(s): Scott Sanders, (CECONY), Frank Peverly (O&R)
Team Lead(s): Nick Colonna (CECONY), John DeLaBastide (O&R), Ken McKenna (O&R)
Team Member(s) CECONY: Tom Thatcher, Ed Conway, Amr Hassan, Michelle Anderson, Valerie Sigal, Matthew Bracconeri, Charmaine Joseph, Matthew Walther
Team Member(s) O&R: Maya Joseph, Sal Muto, Kevin Waldron, Don Higgins

---

See the Implementation Plan for Recommendation 18.

Recommendation Number(s): 20 (Chap. III (D), Rec. 3)

Recommendation(s):

CECONY should define an optimum level of overtime, presumably well below that projected at the current time, and implement control schemes to manage within that value or range.

Roles and Responsibilities:

Executive Sponsor(s): Scott Sanders, (CECONY), Frank Peverly (O&R)
Team Lead(s): Nick Colonna (CECONY), John DeLaBastide (O&R), Ken McKenna (O&R)
Team Member(s) CECONY: Tom Thatcher, Ed Conway, Amr Hassan, Michelle Anderson, Valerie Sigal, Matthew Bracconeri, Charmaine Joseph, Matthew Walther
Team Member(s) O&R: Maya Joseph, Sal Muto, Kevin Waldron, Don Higgins

---

See the Implementation Plan for Recommendation 18.

Recommendation Number(s): 21 (Chap. III (D), Rec. 4)

Recommendation(s):

CECONY should review its electric distribution plans, whose assumption of substantial decreases in both staffing and overtime do not seem reasonable.

Roles and Responsibilities:
Executive Sponsor(s): Patrick McHugh
Team Lead(s): Thomas Thatcher
Team Member(s): Brandon Bobe, Jacob Schlusselberg, Charmaine Joseph

---

See the Implementation Plan for Recommendation 3.

Recommendation Number: 22 (CECONY Chap. III (E), Rec. 1)

Recommendation:

CECONY should conduct a structured evaluation of the costs and benefits of bringing electric overhead line contractor oversight under the central contractor management organization.

Roles and Responsibilities:

Executive Sponsor(s): Patrick McHugh
Team Lead(s): Thomas Thatcher
Team Member(s): Shakira Wilson, Jennifer Dampf-Alencar, Jim Lucente, Robert Finch, Krista Price, Tim Barnhill, Jeff Immoor, Vito Minucci, Kwame Lewis

---

Project Purpose, Objectives and Assumptions:

This recommendation requires Electric Operations to evaluate the costs and benefits associated with centralizing Overhead (OH) contract management. The team will also conduct an analysis on the current process and an alternate proposal of transferring responsibility to Construction Management. Once the review is completed, the most efficient process identified will be presented with next steps for implementation.

Work Plan:

This recommendation will be addressed in three phases:

1) A feasibility study will be conducted to determine whether the current process and work practices are beneficial as is;
2) The second study will include centralizing Overhead Contractors under one region reporting to one manager; and
3) The third study will determine if all Overhead Contractors should report to Construction.

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Gather and Access OH Contractor Data	4/1/17	5/1/17	4/14/17	5/1/17	Complete
Identify Contractor "work type" to gauge oversight in each region	4/1/17	4/15/17	4/14/17	5/1/17	Complete
Document and Define "as-is" State (# of FTEs per region, contract dates/PO's, type of work performed, oversight structure including clerical, cost management, etc.)	4/1/17	5/1/17	4/14/17	5/1/17	Complete
Conduct Benefit/Cost Analysis on three options (include system implications, reporting structure changes, etc.)	5/1/17	8/31/17	8/1/17	8/31/17	Complete
Identify pros and cons for each study and provide recommendation	9/1/17	10/1/17	9/1/17	10/1/17	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Kick off meeting with all team members	3/27/17	4/14/17	Complete
Develop Schedule	3/27/17	3/7/17	Complete
Evaluate Organizational change to implement	10/1/17	9/28/17	Complete
Present best practices and make final decision	11/1/17	4/9/18	Complete

Cost Benefit Analysis:

The cost/benefits will be determined as part of the feasibility studies.

Risk Analysis:

Potential risks associated with not following the recommendation:

- Inefficient use of existing resources
- Missed deadlines
- Inability to prioritize, optimize, and levelize resource utilization.

Success Criteria:

Provide a recommendation that is aligned with the benefit/cost analysis and the needs of the organization.

Post Evaluation Process:

If new oversight is implemented, reevaluate in 6 months.

Status Updates:

April 13, 2018 Update
This recommendation is complete.

In order to achieve our milestones, we formed a cross function team; which consisted of members from Electric Operations, Construction, and Cost Management. Together we evaluated three different options, namely:

- Current process and work practices are beneficial as is;
- Centralize Overhead Contractors to one region/one manager in Electric Operations;
- Determine if all Overhead Contractors should report to Construction, Central Operations.

In order to evaluate the different options and finalize our recommendation, first we conducted a lengthy survey to gather the "As Is" process in each of the regions (including contractor names, FTE's, oversight structure, credentials, work load, clerical support, etc.) and that of Construction Management, along with their respective costs. Next, we discussed what the structure would look like for each of the three options proposed and where we had gaps (i.e. lack of training, needing additional resources during ICS, etc.). Using these gaps, we noted the advantages and disadvantages of the options (in Supplemental section below). Finally, a recommendation made by the team and ultimately submitted to our executives. Along with the recommendation was an implementation framework and timeframe (to be in place by January 2019).

Ultimately, after a careful review by the team, our recommendation is to centralize the Overhead Contractors under Electric as the best option to achieve desired results. The proposal is to combine line clearance and Overhead Contractor oversight functions under one section manager and add a manager under the section manager to avoid a 17:1 span of control. Construction in Central Operations has expertise in trenching and civil construction work management; however, moving these responsibilities under that group would require a significant transfer of overhead qualified personnel to Construction to guarantee adequate technical oversight. In the team's judgement, that would have a diminished effect overall on Overhead resource management. Furthermore, within our company, there exist examples in both Gas and Steam where commodities have chosen to retain contractor oversight control for similar concerns regarding technical oversight capability. Finally, in relation to costs, we expected the centralization under Construction to cost more than if under Electric Operations due to the increased clerical resources Construction would need to support the current processes. We can obtain the advantages of centralizing, while avoiding the retraining, within Electric Operations.

Supplemental:

Advantages to Centralizing

- Consistent Policy – Allows for prescriptive controls, common processes throughout regions – billing, contractor oversight standards, documentation, etc.
- Scalable organization easier to respond to shifts in workload, mutual aid, etc.
- Increased alignment – decision making is linked directly to overall organizational strategy and priorities

Disadvantages

- Reporting – difficult to monitor personnel in various regions

Recommendation Number(s): 23 (Chap. III (E), Rec. 2)

Recommendation(s):

CECONY should refine and expand plans for increasing internal staffing, the contractor base, or both to meet the needs of the future pipe replacement program.

Roles and Responsibilities:

Executive Sponsor(s): Kathy Boden
Team Lead(s): Amr Hassan
Team Member(s): Matt Bracconeri, Brian Yee-Chan, Lindsey Fitzgerald

---

See the Implementation Plan for Recommendation 5.

Recommendation Number: 24 (Statewide Report Chap. XI, Rec. 1)

Recommendation: All of the operations studied (save NFG) should undertake scenario studies of the impact of REV and other similar type changes, to better prepare for multiple possible eventualities.

Roles and Responsibilities:
Executive Sponsor(s): Matthew Ketschke
Team Lead(s): Deidre Altobell, Stephen Wemple
Team Member(s):

Project Purpose, Objectives and Assumptions:
The purpose of the report's recommendation is to make sure that utilities are prepared to adjust to a range of potential outcomes that may result from a changing energy environment influenced by policy, technology, and customer behavioral changes.

The Company's objectives is to show how its current actions have sufficiently prepared it to recognize operational needs, and are flexible enough to respond to changes in an efficient and cost effective manner.

The Company has already begun and will continue to advance its everyday work functions to fully integrate DERs and clean energy resources into its core business activities. Its initial changes included proactively creating a new Distributed Resource Integration (DRI) organization with both new REV-related teams as well as related existing functions to bring together policy, business, and technical experts, and create the synergies necessary to align our internal processes with our customers evolving needs and uses of the Company's infrastructure. This reorganization brought existing departments such as the Energy Efficiency /Demand Response and Distribution Planning together with new functions such as Demonstration Projects, and Utility of the Future, combining the interrelated functions that would help the Company efficiently and effectively adapt to REV's changing energy environment.

Successful progression of REV goals require the adoption of new advanced tools and technologies that enable the facilitation of DERs and promote customer engagement activities. Implementation is focused more on adapting existing and/or inserting new workflow processes, tools, technologies, and procedures rather than changing staffing levels. To that end, the Company has already instituted the first DG Ombudsman, provided an interconnection online application portal for developers, made available initial hosting capacity maps to third parties, included DER impacts such as storage, solar PV, batteries, and CHP projections in its peak demand and network forecast methodology, has executed several NWA solicitations around the BQDM capital deferral, and revised procedures such as the feeder loading procedure to enable more NWA opportunities. The Company has identified and prioritized several work streams going forward to prepare itself and keep pace with the advancement of distributed behind the meter resources. These work streams include:

- **Interconnections:** DRI has completed its business process mapping, and reviewed SIR revisions. In 2017 it is updating the Customer Project Management System (CPMS) to coordinate with Powerclerk IT solutions enhancing the new business tracking process, and developing subsequent phases of the interconnection online application portal (IOAP) with advanced capabilities and increasing phases of automation. As each new system is developed, training for internal system users as well as developers will be provided. Additionally the Company is developing its

queue management policy and reviewing its alternative cost estimation/reconciliation approach with Staff.

- **Hosting capacity:** The Company has released simplified network hosting capacity maps with the 2016 DSIP filing and tested the EPRI DRIVE tool to establish baseline assumptions. In 2017 it will focus on a visualization tool to update hosting capacity maps, set configuration assumptions and enhance power flow analytics associated with calculating hosting capacity. Additionally, a hosting capacity demonstration project providing cost certainty to interconnecting DGs will be filed before the end of Q1-2017 and reviewed by Staff.
- **DG documentation:** A developer's' guide has been drafted for PV interconnections and the Interconnections team has begun to draft other technology guides (fuel cell, battery, CHP). Engineering specifications and customer service procedures are being updated for both Distribution Engineering and Energy Services respectively.
- **DSM supporting systems (DRMS,DMAP, DMTS):** Several platforms and analytic tools are being created, updated, and integrated to better track and engage customers with distributed resources while providing valuable insights into energy savings potential and cost effectiveness.
- **Modernization of Protective Relays:** Establish and rollout pilot program that tests new relays that enable the connection of PV to the low voltage system, revise procedures and identify locations for broader scale deployment.
- **Non-wires alternative (NWA) end to end process:** The Company has mapped the NWA process from identification of projects suitable for consideration through successful procurement and award. Currently internal processes are being streamlined and refined, and procedures are being drafted. RFPs for DSIP project candidates are being released and the process continues to evolve with new learnings being incorporated each cycle.
- **DERMS system:** The RFP process has been initiated to scope the business, technical and functional requirements for a DER Management System (DERMS). A vendor will be selected to perform a current state analysis on Con Ed infrastructure along with market evaluation of solution options delivering a DERMS roadmap by end of year.
- **Automatic Metering Infrastructure (AMI):** Deployment has begun in 2017 first with back office infrastructure followed by field assets. Outreach and education is in progress, both internally with employees and externally with customers, and will continue throughout the implementation. Customers will have access to more granular data starting in mid 2017.
- **DSP/DCX Requirements:** The Company is revamping its website, focused on improving the customers' digital experience, providing improved analytics and tools to empower customers, and moving towards organizing DSP related data and information in one area, improving third party accessibility.
- **Green Button Connect:** The Company will initially give customers the ability to share usage data with PSC approved DERs and extend access to interested ESCOs and large customers.
- **Demonstration Projects:** The Company has launched several demonstration projects to test and learn from new REV-related concepts through the 1) Connected Homes customer shopping portal for residential customers; 2) Building Efficiency

Marketplace for larger commercial customers; and 3) Energy Storage. In addition, we are building a pipeline of additional projects to investigate options for Low Income customers and Electric Vehicles.

Complimentary to the ongoing REV implementation efforts, the Company continues to look ahead and anticipate forward progress. It has recently embarked upon a long term strategic initiative of its core electric business, considering a range of policy, technological, and customer behavioral outcomes that will result in our corporate vision of a successful business model and the value we bring to customers. This evaluation will identify the signposts that indicate change is happening, and adjustments are necessary to stay on a path towards a successful future. The Company will consider signposts during the preparation of each of its subsequent DSIP submittals, and to the extent that the signposts become evident during a particular DSIP cycle, the Company will take appropriate actions to readjust and meet its necessary planning, operational and business needs. This includes procedural and regulatory changes, as well as proposing organizational and staffing changes in subsequent rate cases that may be necessary to achieve realignment. The Company believes this signpost based approach is most suitable to consider organizational, operational, and staffing changes holistically within the context of its rate case rather than trying to explicitly model and develop staffing plans for different scenarios that, by definition, are uncertain and speculative. Instead, the Company plans to use the signposts during the updates of its DSIP and rate case preparations, where each of the policy, technological, and customer behavioral changes can be evaluated and integrated into the evolving role and responsibilities of the utility.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Document work streams			ongoing	03/23/2017	complete
Develop strategic effort			Feb 2017	ongoing	iterative, continuing effort
Document signpost, DSIP, and rate case coordination activity			3/23/2017	3/23/2017	complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Description of work streams	03/23/2017	03/23/2017	Completed through documentation in this response
Develop strategic initiative			Iterative, continual effort
Description of signpost, DSIP, and rate case coordination activity	03/23/2017	3/23/2017	Completed through documentation in this response; iterative review every two years during DSIP activities

Cost Benefit Analysis:

None.

Risk Analysis:

Regulatory proceedings such as the Value of D, DSIP Implementation, Utility Ratemaking and Regulatory Model Framework, Demonstration Projects, etc., are underway, outlining the REV goals. Compliance with their requirements, along with Staff oversight, will ensure that suitable progress is made.

Success Criteria:

REV is an evolution of the utility business model and will be measured over a continual, longer term, time horizon. It does not lend itself to short term, point in time based scenario assessments but instead is better suited for monitoring its progress through the biannual DSP efforts.

Post Evaluation Process:

None.

Status Updates:

April 13, 2018 Update
This recommendation is complete and is pending Staff review and closeout.

Recommendation Number: 1 (O&R Chap. II, Rec. 1)

Recommendation:

ORU should analyze its distribution staffing (including engineering), identifying the sources appropriateness of it's the relatively high levels versus the other state utilities.

Roles and Responsibilities:

Executive Sponsor: Frank Peverly
Team Leads (s): Brian Nugent
Team Members(s): Angelo Regan, Ken McKenna, Gary Windman

Scope: Project Purpose, Objectives, and Assumptions

The Company shall perform an analysis of Orange and Rockland Utilities, Inc. (O&R) current (2017) distribution staffing levels (including engineering) to assess the appropriateness of staffing levels in comparison to other state utilities within Liberty Consulting Group's (LCG) model and report. Many years have passed since the evaluation period used by LCG and the Company has undergone substantial reorganization and growth since such period. Based on current day staffing (2017) and 2017 workload versus the 2013 test year data contained in the LCG report, the Company believes that current staffing levels are within acceptable model ranges and requests the opportunity in this implementation plan to evaluate and support its assertion.

Work Plan:

A team will be formed to document current (2017) O&R distribution staffing levels.

The analysis will:

- Review the O&R distribution staffing levels used for the 2013 test year in the Liberty Report.
- Quantify the current O&R distribution staffing levels.
- Compare O&R current staffing level ratios to the ratios of other state utilities listed in the report.
- Create a position paper documenting if any changes necessary to current staffing levels.

Deliverables/Milestones:

Deliverable/Milestone	Recipients	Delivery Date	Delivery Method	Comments
Phase I: Analysis				
Review staffing levels in Liberty Audit		6/1/2017	Spreadsheet	Complete
Document O&R Current (2017) Staffing Levels		6/1/2017	Spreadsheet	Complete
Perform Gap Analysis		7/1/2017	Document	Complete
Position Paper		7/31/2017	Document	Complete
Phase II: Create Implementation Plan, (If Required) Based on Position Paper.		TBD	TBD	Only if changes in staffing levels are required

Cost Benefit Analysis:

The cost benefit of this recommendation will be calculated as part of the analysis.

Risk Analysis:

There is no significant risk associated with implementing this recommendation. However, the expected risk of not implementing this recommendation would be the missed opportunity to potentially increase productivity and lower costs.

Success Criteria:

The successful completion of this recommendation will include the creation of a position paper that will clearly demonstrate O&R distribution staffing levels as compared to those of the other electric distribution utilities in New York represented in the LCG model results. Based on the results contained within the position paper, if staffing modification plan(s) are required, they will be developed to make any required staffing adjustments. If the results support and conclude that O&R's current distribution staffing is in line with state levels; no additional staffing plan(s) will be required and this recommendation will be considered complete.

Conclusion:

This recommendation is complete.

The Company formed a cross-functional team to review electric distribution staffing levels (including engineering) to assess the appropriateness of the staffing levels in comparison

to other state utilities within the LCG model and report. Because the analysis required a full calendar year's worth of data, O&R selected 2016, as it was the most current available.

O&R documented and analyzed 2016 staffing levels by extracting information from O&R's Work Management System and financial systems. This information was in the same format as that provided to LCG for the original analysis.

O&R then conducted a gap analysis to determine how its staffing levels compared relative to the 2016 forecasted staffing levels from the LCG report, as well as the Reference Utility (RU) from the LCG report.

The O&R 2016 actual staffing levels showed a total less than forecasted by the LCG model, and also lower than O&R's 2015 actual staffing levels. LCG identified a trend in the initial report that showed escalating staffing levels from 2010 to 2012. LCG correctly attributed this trend to a significant increase in the storms that caused massive damage to the electric distribution system. That trend continued into 2013. O&R determined that its 2016 actual staffing levels consistent with the O&R 2009 actual staffing levels in magnitude, O&M/Capital/Engineering split and Straight Time/Overtime/Contractor split.

The O&R 2016 actual staffing levels also showed a more favorable ratio of distribution engineering staff FTEs to field staff FTEs (combination of capital and O&M work). The LCG report calculated the O&R ratios at 1 to 4.8 compared to a range of ratios for other utilities from 1 to 6.8 to 1 to 7.5. The ratio calculated based on O&R 2016 actual staffing level is 1 to 6.4. Taking into consideration the increased technical requirements for distribution systems documented in REV this number is expected.

The results of O&R's gap analysis support the conclusion that O&R's current distribution staffing is consistent with overall state levels and that no additional staffing plan will be required. As a result, no cost benefit analysis will be performed.

Recommendation Number: 2 (O&R Chap. II, Rec. 2)

Recommendation:

With gas productivity levels moderately weaker versus other utilities, ORU should determine the reasons for such deviations, and identify resulting opportunities for improvement.

Roles and Responsibilities:

Executive Sponsor: Frank Peverly
Team Leads (s): Glen Meyers
Team Members(s): Allison Kleinberger, Nate Hoyt, Joe Mandara, Jackie Winter

Scope: Project Purpose, Objectives, and Assumptions:

O&R will review gas productivity factors and trends to identify areas where improvements may be realized.

The objective is to develop reasonable targets for all categories of gas productivity from which performance may be measured.

The following assumptions will apply:

- Historical data will collected in WMS, the Company's work management system, and used to develop baseline numbers in various gas productivity categories.
- Significant deviations from the baseline will be considered outliers for the purpose of this analysis.

Work Plan:

A cross-functional team will be assembled consisting primarily of representatives from various departments within Gas Operations. The team will collect historical data in an effort to develop baseline performance data. This data will be used to benchmark with peer companies to identify where gaps in performance and improvement opportunities may exist. Where opportunities are identified, a plan for implementation will be developed.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Form Team	4/1/17	4/15/17	Complete
Collect O&R's Historical Gas Productivity Data (As-Is State)	4/15/17	5/15/17	Complete
Develop O&R 's Gas Productivity Baselines	5/15/17	5/30/17	Complete
Benchmark with Peer Utilities on gas productivity levels and standard measures	5/30/17	6/30/17	Complete

Perform Gap Analysis O&R Current State Baseline Data vs Peer Utilities	6/30/17	8/15/17	Complete
Identify Improvement Opportunities	8/15/17	9/15/17	Complete
Develop Implementation Plan for Improvements Opportunities	9/15/17	10/15/17	Complete
Implement Opportunities	10/15/17	12/30/17	Complete

Cost Benefit Analysis:

There is no incremental cost for this initiative.

Risk Analysis:

There is no risk associated with implementing this recommendation. However, the expected risk of not implementing this recommendation would be the missed opportunity to potentially increase productivity and lower costs.

Success Criteria:

The implementation of this recommendation will be deemed successful if productivity improvements are realized.

Conclusion:

This recommendation is complete.

The Company formed a cross-functional team and held meetings to discuss the purpose, objectives, and plan for the team. The team collected and reviewed current and historical productivity data. The team also analyzed and compared other utilities' data that was included in the LCG report to determine which utilities would serve as usefule benchmarking candidates.

The team reviewed current productivity data for gas, which included data such as job site factor, non-productive time, yard time, and travel time. In addition, the team looked at O&R

Gas Operations as a whole. Further, the team used a utilization report through WMS which broke down the non-productive time by category. Using this information, the team analyzed what categories resulted in non-productive time and how the non-productive hours were distributed throughout the year. O&R's non-productive time currently includes travel time, yard time, snow plowing, training, breaks.

The team also benchmarked with other utilities in the report to understand how they measure productivity and what work types they classify as productive and non-productive. These benchmarking efforts demonstrated that that there is no standard method used by the utilities to measure productivity. .

Despite the inability to compare utility productivity for lack of a standard productivity formula among the utilities, the team identified several improvement opportunities as a result of its analysis. They are listed below:

1. Replacing 3-man crews with 2-man crews. For certain less complicated jobs (such as lay-ins for New Business or periodic meter changes) could be performed with a 2-man crew. In addition, there could be one or two roving dump truck drivers to cover the 2-man crews if the work requires a dump truck. In this model, the dump truck could assist more than one crew a day rather than being assigned as a third man on a job.

2. Productivity could be increased by using steel plates over excavations that the Company will have to return to. This will decrease the amount of time spent re-digging an excavation.

3. When assigning jobs, the use of Chief's should be optimized so as to maximize the number of crews.

4. Increased supervisor presence on jobs will also help to increase the crews' productivity.

5. Use of new WMS reports will facilitate the tracking and monitoring of productivity, as well as the identification of improvement areas.

O&R has implemented all of the above listed improvement opportunities.

Recommendation Number: O&R #3

Recommendation:

To the extent high overtime issues in distribution have not yet been resolved, ORU should: (a) determine optimal levels, (b) develop plans to achieve those optimal levels, and (c) take steps to manage to those levels.

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly

Please see combined CECONY and O&R Implementation Plan for Recommendation # CECONY 18.

Recommendation Number: 4 (O&R Chap. II, Rec. 4)

Recommendation:

- ORU should conduct a structured re-evaluation and report on the role of internal staffing in its long-term plans, particularly as internal staffing will help attain optimal overtime targets. [4]

Roles and Responsibilities:

Executive Sponsor: Frank Peverly
Team Leads (s): Glen Meyers, Orville Cocking
Team Members(s): Ken McKenna

Scope: Project Purpose, Objectives, and Assumptions:

O&R will evaluate the correlation and sensitivity between internal staffing and overtime rates. O&R will further evaluate the role of internal staffing in its long-term plans as it relates to optimal overtime.

The objective is to determine the impact that changes to internal staffing levels have on overtime and if there is an optimal balance relative to cost and productivity.

This study assumes that labor rules and agreements relative to shifts, schedules, and overtime policies will not change.

The study is subject to the availability and expertise of in-house resources in developing an optimization model that includes a sensitivity analysis. If the Company determines that an outside vendor is needed, the work plan below is subject to change.

Work Plan:

O&R will develop a strategy for performing the analysis to evaluate the correlation and sensitivity between internal staffing and overtime. It will determine the optimization tool for evaluating the correlation. This tool will be developed or if internal expertise in developing this optimization model is not available, purchased. O&R will perform an optimization analysis using this tool and perform a gap analysis. O&R will identify

improvement opportunities, develop an implementation plan, and implement improvement opportunities.

All analysis will factor in existing constraints such as the Company's Collective Bargaining Agreement (Clause U26), which requires Company resources be utilized when contractors are utilized; and frequent off hour call outs as result of O&R not being a 24/7, three-shift operation.

Deliverables/Milestones:

Major Activities	Start Date	Delivery Date	Comments
Form Team	**4/1/17**	**4/30/17**	**Complete**
Develop Strategy For Performing Analysis	**4/30/17**	**6/1/17**	**Complete**
Determine Methodology or Tool for Evaluating Optimal Staffing Mix and Overtime	**6/1/17**	**9/1/17**	**Complete**
Develop Methodology/purchase tool- If required	**9/1/17**	**11/1/17**	**Complete**
Perform Optimization Analysis	**11/1/17**	**1/15/18**	**Complete**
Perform Gap Analysis On Current State vs Optimized	**1/15/18**	**2/15/18**	**Complete**
Identify Improvement Opportunities	**2/15/18**	**3/15/18**	**Complete**
Develop Implementation Plan	**3/15/18**	**3/20/18**	**Complete**
Implement Improvement Opportunities	**3/20/18**	**4/1/18**	**Complete**

Cost Benefit Analysis:

There is no incremental cost for this initiative.

Risk Analysis:

There may be some financial risk associated with implementing this recommendation. If it's determined that additional internal staffing is required to optimize overtime levels, cost may be incurred. There is no expected operational risk. The risk of not implementing this recommendation would be the missed opportunity to potentially increase productivity and lower costs.

Success Criteria:

The implementation of this recommendation will be deemed successful if optimal staffing and overtime levels are achieved without negative impact to operations.

Conclusion:

This recommendation is complete:

The Company's cross-functional team was formed in April, 2017. The team developed a strategy for performing an analysis and review of the current state of internal staffing, overtime, and the contractor workforce in the Electric and Gas Operations organizations. While institutional knowledge and experience has historically been used to determine the optimal balance of resources, using historical data to support the decisions would be beneficial. There was agreement that the strategy would involve using quantitative analysis to assist in our decision-making.

After benchmarking with CECONY, the team determined that the best approach would be to build an optimization model based on some of the preexisting CECONY logic. O&R would use data captured in the O&R Work Management System (WMS) to populate the model. Exhibit A shows a simplified version of the model using fictitious data for illustrative purposes. To realize the benefit of the model, the Company updated the WMS Work and Manpower Plan. The model considers worker availability and productivity and compares this to the actual work performed.

Exhibit A*

Capability Analysis				
Type	Job Hrs	Earned Hrs	Variance	Equivalent FTEs*
Work Orders	38516	38223	-293	-0.31
Services	2489	1550	-939	-0.98
Other Pay Codes	16083	13527	-2556	-2.67
Total	57088	53300	-3788	-3.96
*The data shown above is for illustrative purposes only.				

Once O&R determines that additional resources are required, a comparison is made to determine which option is most cost effective, see Exhibit B. If overtime is selected as the optimal way to fill the required hours, the ratio of overtime to straight time must then be evaluated, see Exhibit C to determine if there is alignment with stated objectives and goals.

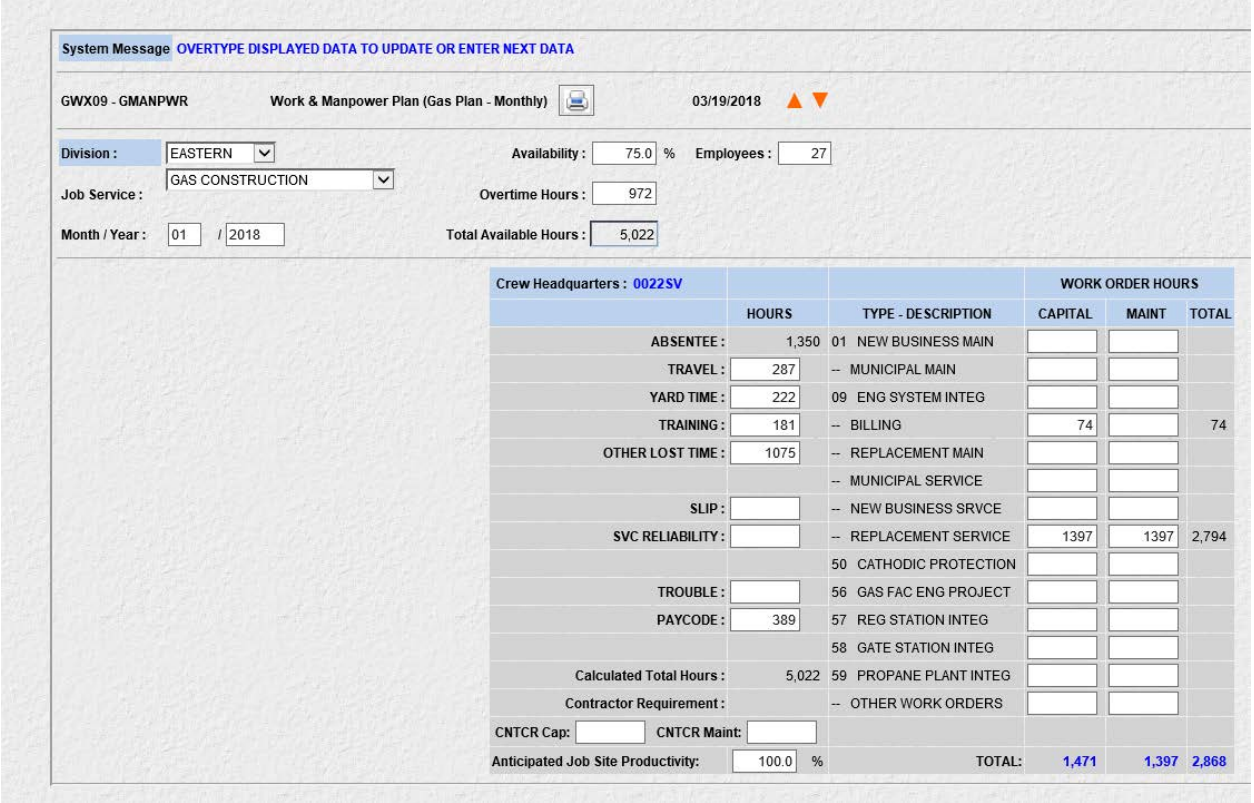
Exhibit B*

Resource Comparison (Hourly Rates)			
Type	Company	Overtime	Contractor
Capital/Retirement	$200	$80	$100
O&M	$150	$80	$100

FTEs	4	4	4
Total Cost Cap/Ret	$800	$320	$400
Total Cost Mtnce	$600	$320	$400
*The data shown above is for illustrative purposes only.			

In Electric and Gas Operations, a second shift is used to minimize overtime impact. This is achieved when stand-by pay is minimized and overtime is optimized. Once shifts and schedules are optimized based on existing collective bargaining agreement requirements, adding resources has little or no impact on overtime, which is overwhelmingly emergency based and independent of the number of resources available. With more resources, the same level of overtime will be spread among a greater number of personnel and impact Straight Time (ST) vs. Overtime (OT) ratios. Currently, based on this analysis, the optimal model would entail using overtime, as the least cost option, until goal levels are met. Overtime is generally intermittent and for short stretches. As a result, productivity levels do not generally decline and can be considered a non-factor.

Historically, labor is the most costly and overtime is the least costly option. To the extent these are optimized, the model is optimal and the contractor requirement is known. All three components sum to the workload required for the particular month or year. Optimizing labor levels is complex and should include considerations such as standby frequency, emergency response requirements and the level of institutional system knowledge. All disciplines have an objective to operate within a specified range of overtime. This capability model will be used to continually analyze the mix of resources as circumstances change. Work and manpower information (sample shown below), when fully inputted, will allow O&R to perform a monthly analysis to determine if adjustments are required.



System Message: OVERTYPE DISPLAYED DATA TO UPDATE OR ENTER NEXT DATA

GWX09 - GMANPWR Work & Manpower Plan (Gas Plan - Monthly) 03/19/2018

Division: EASTERN Availability: 75.0 % Employees: 27

Job Service: GAS CONSTRUCTION Overtime Hours: 972

Month / Year: 01 / 2018 Total Available Hours: 5,022

Crew Headquarters: 0022SV

	HOURS	TYPE - DESCRIPTION	WORK ORDER HOURS CAPITAL	MAINT	TOTAL
ABSENTEE:	1,350	01 NEW BUSINESS MAIN			
TRAVEL:	287	-- MUNICIPAL MAIN			
YARD TIME:	222	09 ENG SYSTEM INTEG			
TRAINING:	181	-- BILLING	74		74
OTHER LOST TIME:	1075	-- REPLACEMENT MAIN			
		-- MUNICIPAL SERVICE			
SLIP:		-- NEW BUSINESS SRVCE			
SVC RELIABILITY:		-- REPLACEMENT SERVICE	1397	1397	2,794
		50 CATHODIC PROTECTION			
TROUBLE:		56 GAS FAC ENG PROJECT			
PAYCODE:	389	57 REG STATION INTEG			
		58 GATE STATION INTEG			
Calculated Total Hours:	5,022	59 PROPANE PLANT INTEG			
Contractor Requirement:		-- OTHER WORK ORDERS			
CNTCR Cap:	CNTCR Maint:				
Anticipated Job Site Productivity:	100.0 %	TOTAL:	1,471	1,397	2,868

Electric and Gas Operations have taken measures to optimize work schedules consistent with the terms of the Company's collective bargaining agreements. Labor levels have been established to meet the schedules required for optimal operating and cost efficiency. Each operating group, as has been required in the past, will continue to be charged with working to reduce overtime levels, where appropriate. Once O&R achieves and sustains established target levels, the tool will be useful for evaluating the mix of resources throughout the year and making necessary adjustments, as required. The model will be used throughout 2018. O&R will make refinements as the tool is used and the concept is proven. Identified opportunities will be implemented throughout the year by increasing or decreasing contractor and overtime hours, the two most cost effective options. Labor attrition will also be factored in. The plan is to begin to test the capability tool using live data beginning in Q2, 2018 to optimize resources and costs for each operating area. While the capability model has initially been developed in Excel, it has now been incorporated into O&R's WMS.

Recommendation Number: O&R #5

Recommendation: ORU should expand measures of contractor work load to include FTE- or person-hour based values.

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly

Please see combined CECONY and O&R Implementation Plan for Recommendation # CECONY 9.

Recommendation Number: O&R #6

Recommendation:

ORU resource planning should include the capability to conduct data driven analyses that help management evaluate the trade-offs for overtime, contractors, and internal staff at the functional and work group levels.

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly

Please see combined CECONY and O&R Implementation Plan for Recommendation # CECONY 10.

Recommendation Number: 7 (O&R Chap. III (A), Rec. 3)

Recommendation:

ORU should set a firm completion date for the execution of plans to enhance Gas Operations' resource planning methods and tools, and aggressively implement them according to that schedule.

Roles and Responsibilities:

Executive Sponsor: Frank Peverly
Team Leads (s): Glen Meyers
Team Members(s): Jackie Winter, Nathan Hoyt, Allison Kleinberger, Hillary Moreau, Brian Palmatier, Andrew Ferraro, Ken McKenna

Scope: Project Purpose, Objectives, and Assumptions:

O&R Gas Operations will review the resource planning methods and tools used by electric operations to determine their applicability and value to Gas Operations. Where best practices are identified and a fit, Gas Operations will develop a strategy to implement them. Gas Operations will evaluate fully staffing the work planning functions and incorporating the tools and analysis used in Electric Operations.

The objective of this analysis is to identify areas where resource planning may be improved to optimize spending and productivity.

Work Plan:

A cross-functional team will be assembled consisting primarily of representatives from various departments within Gas Operations. The team will map the current state resource planning within Gas Operations and compare it against Electric Operations resource planning to identify where gaps in performance and improvement opportunities may exist. Where opportunities are identified and appropriate, a plan for implementation will be developed.

Deliverables/Milestones:

Deliverable/Milestone	Estimated Start Date	Estimated Delivery Date	Comments
Form Team	4/1/17	4/15/17	Complete
Develop Current State- Gas Resource Planning	4/15/17	6/1/17	Complete
Review Electric Operations resource planning	6/1/17	6/30/17	Complete
Perform Gap Analysis (Electric vs. Gas Operations)	6/30/17	9/1/17	Complete
Identify Improvement Opportunities	9/1/17	9/30/17	Complete
Create Implementation Plan	9/30/17	10/30/17	Complete
Implement Improvement Opportunities	10/30/17	12/30/17	Complete

Cost Benefit Analysis:

There is no incremental cost for this initiative.

Risk Analysis:

There is no risk associated with implementing this recommendation. However, the expected risk of not implementing this recommendation would be the missed opportunity to potentially increase productivity and lower costs.

Success Criteria:

The implementation of this recommendation will be deemed successful if optimal staffing levels and mix of resources is achieved.

Conclusion:

This recommendation is complete.

O&R formed a cross-functional team from Gas and Electric Operations and Cost Management to develop and review the current state of gas resource planning. After completring a review of Electric Operations' resource plan, O&R performed a gap analysis in Gas Operations. O&R determined through that analysis that adoption of the hour-based plan used by Electric Operations would improve Gas Operations' resource planning capability.

The team then worked to convert the gas model from a dollar-based to an hour-based format, to allow it to flow into the Work Management System (WMS). In WMS, you can load a Work and Manpower Plan. The Work and Manpower Plan has been completed and this improvement has allowed alignment and comparison of forecasted work hours against actual hours in WMS. This allows Planners to analyze trends in Gas Operations work, using the monthly WMS hours, to review productivity and any outliers by job code to understand what is effecting productivity. This analysis ability fosters the ability to implement preventative and/or correction actions quickly, in order to maintain or improve productivity.

Recommendation Number: 8 (O&R Chap. III (B), Rec. 1)

Recommendation:

- ORU should develop training materials for both its processes and tools, for use by persons new to relevant positions. [8]

Roles and Responsibilities:

Executive Sponsor: Frank Peverly

Team Leads (s): Ken McKenna
Team Members(s): WMS Analysts, Brian Palmatier

Scope: Project Purpose, Objectives, and Assumptions

Develop training materials to train employees in the use of O&R's Work Management System's tools and processes for the Gas, Electric, and Substation departments.

Work Plan:

Meet with end users in Gas, Electric, and Substations to gather information required to develop Work Management System (WMS) training materials for both its process and tools.

Identify current training materials and gaps in documentation of current processes and process enhancements.

Develop and rollout training documentation.

Deliverables/Milestones:

Deliverable/Milestone	Start Date	Delivery Date	Comments
Information Gathering Complete - Gas	6/1/2017	6/30/2017	Complete
Information Gathering Complete – Electric	7/1/2017	7/31/2017	Complete
Information Gathering Complete – Substation	8/1/2017	8/31/2017	Complete
Perform Gap Analysis of Documentation	9/1/2017	9/30/2017	Complete
Develop Change Management Plan	10/1/2017	10/31/2017	Complete
Development of Training Documents	3/1/2018	3/31/2018	Complete
Project Rollout	4/1/2018	3/31/2018	Complete

Cost Benefit Analysis:

Costs were internal labor to develop the guide.

Risk Analysis:

The risk associated with implementing this recommendation is de minimis.

Success Criteria:

The project will be successful when the processes and tools necessary to perform the duties of a new user of the Work Management System are formally documented and institutionalized in the new employee training process.

Conclusion:

This recommendation is complete.

Information gathering was completed by the team by completing visits to supervisors, managers and planners in the Gas, Electric and Substation Operations organizations. These discussions with experienced supervisors, assisted the team in deciding what types of WMS training and information aould be valued by each organization and provided information on as about what screens were most frequently used . It also was the basis for fielding questions from new supervisors that may have questions or issues navigating the system. During the gap analysis, O&R determined that the last documented training material for WMS was over 20 years old, and WMS updates were incomplete. O&R concluded that a complete re-write of the WMS training material was necessary. It was also determined that development of an electronic and on-line version would be the best solution, so that it could be easily updated in an efficient manner. A review for updates will be performed by the WMS Analysts as part of their annual duties.

Project roll out and change management occurred through monthly staff meetings where the new documentation and updated website was demonstrated and a Q&A was facilitated.

Recommendation Number (s): No. 9, No.15 (O&R Chap. III (B), Rec. 2 and O&R Chap. III (E) Rec. 1)

Recommendation(s):

- As a first priority, ORU should develop performance measures for replacement and installation of pipe. [9]

- ORU should implement plans for increasing internal staffing, contractor base, or both to ensure resources needed to maintain levels of current pipe replacement program. [15]

Roles and Responsibilities:

Executive Sponsor: Frank Peverly
Team Leads (s): Glenn Meyers, Flannan Hehir

Scope: Project Purpose, Objectives, and Assumptions

The Gas Main Replacement Program (MRP) is the largest program within the Gas Operations and Engineering budget. O&R's long term plans call for the replacement of all leak prone pipe, currently defined as any aldyl, cast iron or bare steel; within the next (10) years. This is at an estimated cost of $250 million dollars. In the northeast, a substantial amount of surrounding gas utilities have ramped up resources and continue accelerating their main replacement programs. The coincidence of these efforts by many utilities in the same area could potentially put a constraint on available resources to complete this critical work.

The objective of Recommendation No. 9 is to determine what performance measures should be implemented to effectively manage an optimal mix of resources (internal staff, overtime and contractors) that can react to labor market conditions. These performance measures will help us develop the resource plan suggested in Recommendation No. 15.

Assumptions that the Company has relied on during its evaluation are as follows:

- Gas Operator qualifications are necessary to perform main replacement work.
- There is a high demand from gas utilities in New York and the northeast for gas operator qualified contractors and employees.
- Acquiring and/or developing the resources required to maintain levels of current and future pipe replacement programs are critical to the success of the Company's future MRP goals.

Work Plan:

The Company has proposed a multi-phased approach to achieve the objective. First, O&R will review data from previous years to determine what each resource type (gas operator qualified crew, designer, inspector, supervisor), dedicated to main replacement work, is capable of performing annually. Phase 2, will entail using the information learned in Phase 1 to analyze O&R's current staffing levels in relation to its projected goals; and identify any gaps or deficiencies. In Phase 3, O&R will analyze the information gathered from Phase 1 and 2 and benchmark against other Local Distribution Companies (LDCs). The results of this analysis will allow O&R to develop performance measures and develop a resource plan for its future MRP.

Major Activities	Estimated Start Date	Estimated Delivery Date	Comments
Phase 1 – Review O&R MRP- Current State Data and Determine Annual Capability of Each Resource Type.	4/1/2017	5/1/2017	Complete
Phase 2 – Perform Gap Analysis Between Current State and Future O&R MRP Projections.	5/1/2017	7/15/2017	Complete
Phase 3 – Benchmark With Similar Sized Utilities, Analyze and Develop Recommendations.	7/15/2017	9/1/2017	Complete
Implement Phase 3- Approved Recommendations If Required.	12/16/17	3/31/18	

Deliverables/Milestones:

Deliverable/Milestone	Recipients	Delivery Date	Delivery Method	Comments
Completion of All (3) Phases of Work Plan.	VP of Operations, Operations Managers, Cost Management	9/1/2017	In person meeting	Complete
Submit Recommended Changes	VP of Operations, Operations Managers, Cost Management	12/15/2017	Analysis	Complete

Cost Benefit Analysis:

There is no incremental cost for this initiative as the study was performed in-house and managed by the user group.

Risk Analysis:

There is a potential financial risk associated with retaining additional resources (i.e. gas operator qualified crews, designers, inspectors and supervisors) if required as a result of this analysis.

Success Criteria:

The implementation of this recommendation will be deemed successful if an optimal resource balance is achieved without negative impact to the operation.

Conclusion:

Both Recommendation No.9 and Recommendation No.15 are complete.

O&R's Main Replacement Program (MRP) current and future state were reviewed.

O&R's Main Replacement Program has and continues to implement process improvements to obtain maximum efficiency. The most noteable change took place in November of 2014, when the Contractor Administration Group (CAG) reporting structure was changed. CAG was moved from Gas Technical Services (Engineering) to Gas Operations. In addition, larger projects (e.g. transmission mains) were formerly exclusively managed by Gas Engineering. Now, all construction activity is managed by the the CAG group and all design work is managed by Gas Engineering.

The ability to soely focus on design has allowed Gas Engineering to realize efiiciencies and has allowed them to increase the amount of prepared MRP work packages (ready for construction) from (6) months to (2) years. This affords CAG better flexibility to prioritize and manage projects, which allows CAG to optimize and plan work more efficiently. For example, this allows work to be performed more geographically and reduces mobilization and de-mobilzation costs as well as time lost within that activity.

After three years in this new structure, we have have determined that the changes made have been effective. The new processes and workflow contained in this structure has been memorialized in a written guideline.

The goal of the analysis performed in this implementation plan was to analyze and determine if CAG has the tools and resources to address current and future MRP needs. Based on the review, CAG is optimally staffed to manage the projected budget and workload for the next several years. This conclusion is based on two performance measures that are tracked by the Company and described below:

- Chief Construction Inspector (CCI) to Project Ratio
- Fully Loaded MRP Cost Per Foot

Chief Construction Inspector (CCI) to Project Ratio

Each CCI is assigned no more than three projects at any time throughout a construction season. This CCI to Project ratio is the most efficient in effectively managing the various requirements needed to properly execute a project (i.e. customer relations, quality, time, and budget/cost). This optimal ratio is premised in the fact that a CCI needs to be in the field to ensure quality work, address contractor issues, field changes, material issuance/balancing, budget control inovices, customer concerns and municipal requrments. Three active projects allows for two hours of productive time per project per day. CAG has a matrix showing the analysis of how this was determined and how fluctuations in budget/workload will impact the CCI efficiency. Based on CAG's evaluation and analysis, no additional CCI resources were requested in the current gas rate filing.

In addition, O&R uses historical production averages for main (and service) installation, per crew per day, to calculate and anticipate the field resources needed for field construction throughout a construction seaon. Based on these averages, the number of CCI and inspector resources can be forecasted.

Fully Loaded MRP Cost Per Foot

O&R has tracked the historical annual actual cost per foot for replaced gas main. This performance measure aggregates all resources (FTE and contractors), materials and overtime, etc. O&R has compared its actual annual cost per foot with cost per foot targets from other utilities in the region to help recognize the balance between efficiency and competitiveness.

Year	CI Replaced (ft)	Aldyl Replaced (ft)	BS Replaced (ft)	Steel Replaced (ft)	Total Footage (ft)	Total Actual Cost ($)	Cost per Foot	Average Cost per Foot for Past 3 years
2016	18,792	35,515	61,155	9,983	125,445	30,883,000	246.19	
2015	18,276	19,026	43,165	13,056	93,523	26,148,000	279.59	235.50
2014	18,431	19,670	30,612	24,521	93,234	16,849,500	180.72	

This cost per foot costs are reviewed annually to determine if any changes or modications are needed within the MRP. The regional information is gathered from rate case filings so the information is available and current, to make better program decisions.

Benchmarking with other gas utilities regarding MRP proved to be a less valuable exercise. Ddue to the variation in company size, gas systems, contracts, municipal requirements and incoming leaks and leak backlog, it did not provide enough apples to apples comparisons to make an accurate comparison. For example, O&R contractors peform gas work predomonintatly as a turn-key operation, as opposed to other regional utilities who use a blend of resources for the

same project. Therefore, the use of a fully loaded MRP cost per foot performance measure is the most comprehensive measure of a programs effectiveness; which then can be compared against other companies.

Based on historical performance, implementing workforce development initiatives, and consistenty monitoring the performance measures described above, O&R has been consistently able to meet and/or exceed the increased main replacement targets (17 miles - 2015 to 21 miles RY1-2016 and 22 miles RY2-2017). Utilizing the performance measures noted and having the flexibility incorporated within our main replacement contracts to additional resources when necessary,, O&R is able to effectively control the "ramp-up" in our capacity in a systematic way and does not require any additional plans to increase internal staffing, contractor base, or both to ensure resources are available to maintain levels of current pipe replacement program.

Recommendation Number: 10 (O&R Chap. III (B), Rec. 3)

Recommendation: ORU should capture work unit measurements using the data capabilities of its existing data systems.

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly
Team Lead(s): Ken McKenna

Project Purpose, Objectives and Assumptions:

O&R and the CECONY Business Intelligence (BI) Team evaluated the feasibility of developing reports using the data in the Company's Oracle General Ledger to capture work unit measurements for analysis. This report allows O&R to analyze actual vs. budget results for cost, hours, number of units and unit costs by Organization (e.g. Electric Operations) as well as by Section (e.g. Eastern Overhead) Operations and Activity (unit).

Work Plan:

During the Liberty Staffing Audit and prior to the receipt of the audit report, O&R was working towards capturing the work unit measurements from its systems. This effort is now complete. On or about January 1, 2016, a work team was tasked to determine the capability of retrieving unit data easily using the reporting format and capability available in Oracle BI. The team accomplished this task by developing a report in the main dashboard of BI (Report # 2.05) on or about July 28, 2016.

This report is currently used to compare actual and budgeted data, by section, rolled up to organization, for number of units, cost per unit, hours per unit and total cost. Cost

Management and Performance (CM&P) employees were trained on use of this report on or about December 15, 2016.

This recommendation is complete. A schedule reflecting the process and milestones achieved is set forth below:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
BI Capability Study	1/1/2016	07/31/2016	On or about 1/2/2016	On or about 07/28/2016	
Report 2.05 Training for Cost Management and Performance Employees	12/15/2016	12/15/2016	On or about 12/15/2016	On or about 12/15/2016	

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Development of report for review.	1/1/2016	On or about 01/02/2016	
Review report with Cost Management and Performance, gather additional requirements for O&R	5/31/2016	On or about 05/31/2016	
Implementation and announcement of report	7/31/2016	On or about 07/28/2016	
Training of Cost Management and Performance employees	12/31/2016	On or about 12/15/2016	

Cost Benefit Analysis:

Activity	Estimated Cost/(Benefit)
Update of reports by internal CECONY employees	$0
Net cost/(benefit)	$0

Risk Analysis:

There is no risk associated with implementing this recommendation.

Recommendation Number: O&R# 11

Recommendation:

ORU should develop key performance indicators that measure the effectiveness of its efforts to achieve its staffing targets and accountability should be assigned to the appropriate individual(s).

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly

Please see combined CECONY and O&R Implementation Plan for Recommendation # CECONY 17.

Recommendation Number: O&R# 12

Recommendation:

ORU should develop a more analytical process to determine the optimum levels of overtime.

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly

Please see combined CECONY and O&R Implementation Plan for Recommendation # CECONY 18.

Recommendation Number: O&R #13

Recommendation:

ORU should evaluate the degree to which it includes all relevant factors in its decision-making vis-à-vis overtime.

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly

Please see combined CECONY and O&R Implementation Plan for Recommendation # CECONY 18.

Recommendation Number: O&R #14

Recommendation:

ORU should expand the use of functional planning, budgeting, and monitoring in the realm of overtime.

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly

Please see combined CECONY and O&R Implementation Plan for Recommendation # CECONY 18.

Recommendation Number: O&R #15

Recommendation:

ORU should implement plans for increasing internal staffing, contractor base, or both to ensure resources needed to maintain levels of current pipe replacement program.

Roles and Responsibilities:

Executive Sponsor(s): Frank Peverly

Please see combined O&R Implementation Plan for Recommendation #9**.**

Recommendation Number: 16 (Statewide Report Chap. XI, Rec. 1)

Recommendation:

All of the operations studied (save NFG) should undertake scenario studies of the impact of REV and other similar type changes, to better prepare for multiple possible eventualities.

Roles and Responsibilities:

Executive Sponsor: Frank Peverly
Team Lead(s): Roberta Scerbo, Angelo Regan
Team Member(s): JoAnne Seibel, Kristen Barone, Jeffrey Peifer

---

Project Purpose, Objectives and Assumptions:

The purpose of the report's recommendation is to determine that utilities are prepared to adjust to a range of potential outcomes that may result from a changing energy environment influenced by policy, technology, and customer behavioral changes.

The Company's objectives are to show how its current actions have sufficiently prepared it to recognize operational needs, and are sufficiently flexible to respond to changes in an efficient and cost effective manner.

The Company has begun and will continue to advance its everyday work functions to fully integrate DERs and clean energy resources into its core business activities. Initial changes included proactively creating a Utility of the Future ("UotF") organization in June 2015 to organize and align the Company's approach to DER integration with the evolving energy distribution markets in New York. This department has day-to-day REV initiative oversight and is responsible for framing the structure and developing the approach to REV at O&R. The group also helps to set and guide the Company's overall strategy in its approach to REV, in conjunction with Con Edison. UotF functions currently include Regulatory Management, Non-Wires Alternatives ("NWAs"), Earning Adjustment Mechanisms ("EAM"), Distributed System Platform ("DSP") Implementation, and Demonstration Projects. The UotF group's responsibilities and function will continue to evolve as DSP functionalities expand at O&R and REV proceeds.

Successful progression of REV goals also requires the adoption of new advanced tools and technologies that enable the facilitation of DERs and promote customer engagement activities. Implementation is focused more on adapting existing and/or inserting new workflow processes, tools, technologies, and procedures rather than changing staffing levels. To that end, the Company developed both a DSP Technology Roadmap and a DSP Organizational Considerations Appendix as part of its Initial Distributed System Implementation Plan ("DSIP") filing on June 30, 2016. The DSP Organizational Considerations Appendix in particular describes various REV related roles in different departments within O&R and identifies related future staffing considerations to be further developed in future rate cases.

Following the DSIP filing O&R embarked on the next important phase of this effort and began the development of an internal DSP Implementation plan to meet the commitments outlined in the Initial and Supplemental DSIPs ("SDSIP"), including a significant change management effort. This effort included the following steps: (1) reviewing the current state for each area impacted and developing revised processes for key functions; (2) identifying organizational changes required by these process revisions; and (3) beginning implementation of the changes. Thirteen DSP Implementation work streams were created which included: Monitoring and Control of DER, System Planning, NWA End-to-End Process, Demonstration Projects, Communication strategy, Hosting Capacity, Interconnection Management, System Data Sharing, Customer Data Sharing, Communication Infrastructure, Community Distributed Generation Billing, Advanced Distribution Management System (ADMS), and VVO Development and Execution. Progress was made in all work streams but most notably with the development and extensive training on the NWA End-to-End process and significant refinement to the cross-functional asset energization process. This change management effort is ongoing and examples of progress made in some of the work streams include:

- **Interconnection:** In March 2016 the Company implemented Clean Power Research ("CPR") PowerClerk Interconnection software to accept and process applications, sending automatic communications, setting project deadlines, and running reports through an easy to use administrative user interface. O&R also continues to move forward on Smart Grid Program PON 3026 from NYSERDA to work with Electrical Distribution Design and CPR on a project with the objective of building a seamless DER Interconnection Assessment Application that consists of the CPR PowerClerk front-end integrated to O&R's integrated system model. This project will leverage existing functionality from both products and provide consistent, well documented, automated processes and analysis tools for streamlining interconnection application management and review.
- **Hosting Capacity:** In alignment with the Joint Utilities ("JU") timeline established in the SDSIP, a conversion tool was developed to create EPRI DRIVE compatible input files from O&R's already existing integrated system model so that these files can be run directly by EPRI DRIVE to calculate the hosting capacity for each circuit independently. For Stage 2 hosting capacity, the tool is complete for 95% of all feeders in the service territory. Work continues with Con Edison to develop

visualization options for displaying hosting capacity. Additionally, a demonstration project focusing on both technology improvements and the development of a value proposition to increase hosting capacity on the system by utilizing advanced technologies to increase hosting capacity on circuits will likely be filed in the first half of 2017.

- **Non-Wires Alternative End-to-End Process:** The Company has mapped the NWA process from identification of projects suitable for consideration through successful procurement and award. This effort has included an in-depth training session with impacted groups and ongoing change management activities. Currently, internal processes are being streamlined and refined, and procedures are being drafted. RFPs for identified and potential NWA project candidates are being developed, and the process will continue to evolve with new learnings incorporated with each cycle.
- **System Planning:** In conjunction with the JU effort established in the SDSIP, the Company has begun to refine the DER forecasting process. Areas that will potentially be explored include more geographically granular DER forecasting and the introduction of probabilistic aspects to the DER forecast. Probabilistic planning is also starting to be examined more widely through the ongoing JU System Planning Stakeholder Working Group.
- **Advanced Distribution Management System (ADMS):** ADMS will serve as a platform to organize and manage the functionality required to provide real-time visibility and control of grid assets and DER on the system and facilitate the Company's forecasting and planning processes, as well as provide DER providers with information about locations where DER can deliver the most benefit to the distribution system. O&R has completed an ADMS feasibility study and scoping study. The Company is currently in the process of gaining approvals for the development of an RFP and plans to evaluate respondents.
- **DER Energization Process:** The Company has engaged in the formal development and refinement of the energization process for large DG interconnecting to the system. This is a cross-departmental effort establishing the internal responsibilities for each step within the energization process. As part of the energization process development, O&R conducted a simulation exercise with representatives from each group with a role in the energization process. This simulation walked through each step in the developed process and served as both training for the participants and also an opportunity to further refine the process based off of simulation performance and feedback.
- **DSP/DCX Requirements:** The Company is revamping its website, focused on improving the customers' digital experience, providing improved analytics and tools to empower customers, and moving towards organizing DSP related data and information in one area, improving third party accessibility.
- **Green Button Connect:** The Company will initially give customers the ability to share usage data with PSC approved DERs and extend access to interested ESCOs and large customers.
- **Demonstration Projects:** The Company has launched one demonstration project to test and learn from new REV-related concepts through the Customer Engagement and Marketplace Platform. A proposal for a Smart Home Rate was also filed on

February 1, 2017. This demonstration will seek to leverage smart home capabilities and its deployment of Advanced Metering Infrastructure to demonstrate a new framework for sophisticated pricing for residential prosumers. In addition, proposals for demonstration projects aimed at increasing hosting capacity and exploring innovative business models with energy storage are in the late stages of development.

Through the ongoing DSP Implementation and Change Management efforts O&R will continue to identify, develop, and refine internal processes in organizations to meet the continually evolving goals of REV. The Company believes that this approach is most suitable and will feed the consideration of organizational, operational, and staffing changes holistically within the context of rate cases rather than trying to explicitly model and develop staffing plans for different scenarios that, by definition, are uncertain and speculative. The Company plans to address these needs in both updates of its DSIP and rate case filings, where each of the policy, technological, and customer behavioral changes brought about by REV can be evaluated and integrated into the evolving role and responsibilities of the utility. In addition, O&R continues to utilize contractors both at the JU and Company level in order to meet the objectives of REV. These contractors provide flexibility and unique expertise that augments existing O&R functions and assists in the development internal competencies necessary to facilitate evolving utility roles in the REV environment.

Work Plan:

Major Activities	Estimated Start Date	Estimated Delivery Date	Actual Start Date	Actual Delivery Date	Comments
Document work streams			Various	03/23/2017	Complete
DSP Implementation and Change Management			10/1/2016	ongoing	Iterative, continual effort
Document DSIP and rate case coordination activity			3/23/2017	3/23/2017	Complete

Milestones/Deliverables:

Milestones/Deliverables	Target Date	Actual Date	Comments
Description of work streams	03/23/2017	03/23/2017	Completed through documentation in this response
DSP Implementation and Change Management			Iterative, continual effort
Description of DSIP and rate case	03/23/2017	3/23/2017	Completed through documentation

coordination activity			in this response; iterative review every two years during DSIP activities

Cost Benefit Analysis: N/A

Risk Analysis: Regulatory proceedings such as the Value of DER, DSIP Implementation, Utility Ratemaking and Regulatory Model Framework, Demonstration Projects, etc., are underway, outlining the REV goals. Compliance with their requirements, along with Staff oversight, will ensure that suitable progress is made.

Success Criteria: REV is an evolution of the utility business model and will be measured over a continual, longer term, time horizon. It does not lend itself to short-term, point-in-time based scenario assessments but instead is better suited for monitoring its progress through the biannual DSIP efforts.

April 13, 2018 Update:

This recommendation is complete and is pending Staff review and closeout.