



Public Version

Management Audit of Yankee Gas Services Company

Prepared for
Department of Energy & Environmental Protection
Public Utilities Regulatory Authority

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Preface

There are two versions of this report: a public version with confidential information redacted and a confidential version. The Company requested the redactions and reviewed and approved the public version of the report prior to release.

The word *audit* is intended, as it is commonly understood in the utility regulatory environment, to mean a regulatory review, a field investigation, or a means of determining the appropriateness of a financial presentation for regulatory purposes. It is not intended in its precise accounting sense as an examination of booked numbers and related source documents for financial reporting purposes. Neither is the term audit in this case an analysis of financial statement presentation in accordance with the standards established by the American Institute of Certified Public Accountants. The reader should distinguish regulatory reviews such as those that Blue Ridge performs from financial audits performed by independent certified public accountants.

This report was prepared based in part on information not within the control of the consultant, Blue Ridge Consulting Services, Inc and River Consulting Group, Inc. (BRCS/RCG) While it is believed that the information that has been provided is reliable, Blue Ridge does not guarantee the accuracy of the information relied upon.

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1. EXECUTIVE SUMMARY

Background

The Connecticut Department of Public Utility Control (Department) retained Blue Ridge Consulting Services, Inc. and River Consulting Group, Inc. (BRCS/RCG) to perform a diagnostic management audit of the Yankee Gas Services Company (“Yankee,” YGS, or “Company”).

YGS is a wholly owned subsidiary of Northeast Utilities (NU), which serves customers as a regulated natural gas and electric power set of distribution companies. YGS provides natural gas service to approximately 218,000 customers in 70 cities and towns in Connecticut. With annual revenues of approximately \$424 million, YGS is Connecticut’s largest gas utility. In 2012, NU merged with NSTAR and began a metamorphosis of the then existing NU into the new NU, which radically changed the way NU and YGS were structured. At the time of our investigation, the post-merger NU company, and YGS in particular, were undergoing a significant restructuring effort. To call attention to the restructuring, NU has announced that its name will change to Eversource Energy and that all company names will reflect this new name. The new YGS will be significantly leaner and aligned with its sister company, the former NSTAR Gas.

Objective and Scope

The objective of BRCS/RCG’s review included (1) an investigation and assessment of the Company’s business processes, procedures, and policies relating to the management operations and system of internal controls in place and (2) an identification of areas of the Company that might require further investigation.

The scope of BRCS/RCG’s management audit included eight focus areas:

- Executive Management
- System Operations
- Finance
- Human Resources
- Customer Service
- External Relations
- Support Services
- Special Topics

During the course of BRCS/RCG’s management audit, 84 interviews were conducted and 520 data requests were reviewed. The team conducted 8 field observation site visits, which included tours of the Company’s LNG facilities in Waterbury, some field site visits to observe crews working in the field, a tour of the Yankee Gas section of the main warehouse facility in Berlin, and a site visit to a storeroom in Meriden. BRCS/RCG interviewed NU Corporate and YGS senior management as well as representatives of the Company’s unions.

The audit workpapers, interview notes and data responses relied upon in this report are available upon request from PURA.

Overall Assessment

Executive Management

Yankee Gas Services Company is generally well managed. The post-merger YGS entity, in connection with the NSTAR gas business, is being formed into one homogenous gas company under the new NU parent company, now Eversource Energy. The corporate strategic direction is to have one gas company, with uniform policies, practices, and procedures that adopts the best from the pre-merger companies. This one-company theme will drive a strong customer focus and remove unnecessary costs from the gas business. The organization is in a state of post-merger flux, however, because all the pieces are not fully in place. A number of key director positions that have yet to be filled. All this change has created some tension at the lower levels of the business. The capital and O&M budgets appear to be well controlled and monitored by the senior management.

The Internal Audit (IA) Department is positioned correctly within NU to provide independent assessments of NU processes. It is professionally staffed with individuals who meet the requirements of IA auditors. The audit planning process is appropriately risk-based, and audits are identified and prioritized based upon input from across the organization.

NU's performance and compensation programs are aligned with the corporate mission, objectives, and goals. The executive compensation practices and current compensation levels are competitive with those of similarly sized utilities and general industry. The metrics used in the incentive plans are consistent with the corporate objectives and annual goals. The compensation programs, therefore, should support the attraction and retention of qualified officers and directors.

System Operations

System Operations, as defined by the Authority's originating RFP for this Management Audit, includes the following functions:

- Requirements Forecasting
- Gas Supply
- System Planning and Design
- System Reliability and Construction
- System Operation and Maintenance

Requirements Forecasting

The Forecast Department has a clear mission that is well understood and focuses on forecasting revenue. The forecast is compared to actual requirements on a monthly basis and is within a reasonable level of accuracy. The performance of the forecast is not compared to a peer group of similar utilities. As a result of the recent NU-NSTAR merger, there has been a significant reduction in the staffing from the aggregate levels at the two companies before the merger. Forecasting has transitioned to statistical models to reduce data requirements, outside consultants, and internal staffing. Forecasting is adequately staffed to continue this level of performance.

Gas Supply

Gas Supply, which resides in NUSCO, the service company, obtains and manages pipeline transportation, storage capacity, and commodity purchases. The Department has a clear mission that is well understood and focuses on the needs of downstream departments. The long-term planning and procurement of commodity and transportation are managed to meet both existing and emerging needs. There is a robust short-term gas supply process. The performance of Gas Supply is compared to only one external measure, and its performance is reasonable. As a result of a longstanding decision based upon a disparate allocation of risk versus reward, YGS does not undertake action to reduce price volatility. The Gas Supply function is adequately staffed to continue this level of performance.

System Planning and Design

YGS's System Planning and Design does an adequate job of maintaining system integrity while balancing the capital budget with the accelerated mains replacement program and system expansion brought about by the Connecticut oil/gas conversion program. Both the Planning and Design functions are well thought out and consistent with sound organizational practices; however, the planning estimation accuracies can be improved, the use of outsourced design services seems high, and benefits of main replacements are not positively impacting O&M spend.

Reliability and Construction

System Reliability is a constant priority in the natural gas industry and is vital to the public interest in many ways. System reliability and construction, for example, are paramount as they both can affect the ultimate customer's experience.

BRCS/RCG believes that the system reliability and construction efforts performed by YGS are, on the whole, adequate and reasonably performed. Work toward pipeline integrity appears reasonable and adequate both in managing developed leaks and in ensuring both pipe replacement activity and expansion plans reduce deterioration through materials and cathodic protection. However, a few areas exist which may benefit by efficiency improvements.

The Company's construction activity is heavily dependent on contractors. Even the QA/QC inspectors and the Construction Coordinators are contractors; this means that contractors review the work of other contractors. While this is not unreasonable and may provide efficiencies in certain areas, a downside may exist in communication and emphasis of Company expectations.

Operations and Maintenance

System Operations and Maintenance (O&M) ensures that customers receive adequate supply of natural gas and that leaks are addressed in a timely manner and consistent with DOT standards for the type leak identified. While it is difficult to evaluate the steady-state O&M environment and all its processes given the current state of flux,

BRCS/RCG believes that the organization is moving in the right direction, but we did notice several opportunities to correct a number of emerging issues.

As of this writing several key director positions are open. Further, management is working diligently to break down any lingering instances of the old YGS's insular culture and move toward a more numbers- and customer-focused business model. This is not to say that the old YGS was not customer focused; many of the management and union personnel pointed out that they had already been making progress in customer-focused and numbers-focused work before the merger.

Because the top Operations management positions are open and former managers/directors are shifting to other positions, there is a fair amount of discord at the line-level. A consistent theme heard across the organization is that personnel are tired of the management changes and want to settle into a "normal" routine. BRCS/RCG understands this discord but realizes the work still must be done.

Finance

The Finance Organization under the CFO has adequate systems in place to establish controls in the financial management of the business, establish metrics for performance evaluation on both company and personnel levels, facilitate decision-making, and establish priorities.

The Company's finance personnel participate in extensive training relevant to their areas of responsibilities. Leadership talent in the finance organization is assessed on a yearly basis: identified high-potential manager and director level individuals become part of the Succession Plan. Since the merger, the process of identifying key and emerging talent is complete; however, NU is still in the process of working through the development plans.

The issue of aging work force and future retirements was identified as a future threat to the organization. The group is actively working to keep a good pipeline of individuals that can step in. However, the Internship Program, that, in the past, had successfully provided a pipeline of high-potential future accounting employees, was discontinued following the merger. The pipeline is necessary to replace personnel that leave for other opportunities or retirement.

YGS uses short-term debt to fund its working capital needs, which include payroll, fuel, and taxes. YGS's short-term debt balances grew in 2011 through 2013. The short-term debt balances were reduced after the long-term debt placement for YGS was priced at the end of 2013 and closed in January 2014. The Company does not see a need for additional long-term debt placement in 2014, but there will likely be a need next year. Corporate Finance and Cash Management departments constantly monitor the current and forecasted YGS short-term debt balances and borrowing capacity available under the lines of credit.

YGS has an effective corporate finance process. YGS's long-term Corporate Credit Ratings recognize the Company as having medium to low risk. YGS does not issue equity in external markets. A return on invested capital is paid by YGS in the form of common dividends to NU, and, when required, it receives infusions from NU in order to maintain an appropriate capital structure. While YGS stated that it generally maintains an annual common dividend

payout ratio (to NU) of approximately 60%, the actual payout ratios for 2011 through 2013 were substantially higher. YGS's capital structure currently relies on more equity than was allowed in its most recent general rate case. However, the debt-to-equity ratio (three-year average 41.1% to 58.9%) is within the financial covenants required by the credit facilities, which require a ratio of consolidated debt to total capitalization of no more than 65%.

NU has an effective system of accounting process and controls to manage its business. NUSCO maintains an extensive array of policies and procedures on its corporate intranet site for its employees to reference in the performance of their jobs. However, the NU and NSTAR legacy payroll processes have not been fully integrated. The Company has begun implementation of a redesign to integrate the HR and Payroll legacy system. YGS's current depreciation rates are based on a depreciation study completed in 2010. The study should be updated.

YGS is part of the NU consolidated federal income tax return. The processes used to ensure accurate preparation and timely submission of tax returns is reasonable and appropriate. All income, property, sales, and franchise tax returns have been timely filed with local, state, and federal jurisdictions for 2009 through 2013. As is typical of a large corporation, NU has been subject to IRS and state jurisdictional audits of its tax filings over the last five years. The audits have either had no adjustments or findings that did not have an impact to YGS. No operational process changes have been made in response to the audits.

Human Resources

The Human Resources organization at NU is structured to support the business strategy. Its use of Business Partners (HR individuals charged with the responsibility to translate a business unit's HR needs while maintaining consistency with NU practices) provides YGS and the other operating companies individualized needs evaluation, while keeping the service menu consistent throughout NU. Employee safety performance, labor relations, talent drain, and legacy Human Resources Information System (HRIS) capability are HR's current challenges.

The HR team follows industry standard policies and practices and develops specific programs to address the strategic and tactical needs of the business. The majority of the work completed by the Human Resources department is of best practice level.

Wage and salary policies and procedures and the compensation programs for executives and non-executives as well as all salaried and hourly employees are based upon standard industry practices and are administered with impartiality, expertise, and a high-level of integrity. The Compensation department, the Compensation Committee, and the independent outside executive compensation consultant design and monitor all the compensation components to help the Company remain competitive in attracting and retaining competent executives, management, professional, and hourly employees.

The Employee Benefits (including pensions, 401k and OPEB) offer a wide range of benefits that provides flexibility in meeting the changing and demanding needs of the diverse workforce marketplace. The benefit programs are integrated within an overall total rewards strategy. The Company manages its benefits programs well. The Company has changed most of its benefit programs to be consistent throughout the post-merger NU and consistent with the

marketplace in an effort to control its benefit cost. HR is in the process of negotiating such changes with its unions.

The employee development strategy focuses on developing and promoting from within. Hiring is used to fill skills gaps identified in the annual succession planning assessment. In this assessment, high-potential employees are identified, their associated development gaps are detailed, and a development plan is established. This process has not yet been fully completed for YGS and other parts of NU.

Training is comprised of two main components: (1) technical and compliance training and (2) organizational change and learning. Both provide an adequate array of programs for specific populations.

HR's performance evaluation and management has opportunities to improve both at the department and the Company level. The new approach will provide consistency across NU and allow HR to better track progress and completion against the established schedule.

Labor Relations, staffed with experienced experts, handles union relations, negotiations, grievance processing, and company-wide disciplinary actions. New leadership in this area has brought a renewed effort to improve communication with all Union Local leadership. The group has a good working relationship with one YGS union and is enhancing the relationship with the other major bargaining unit. Labor Relations has a critical role in negotiating both YGS's benefit and sick time programs' changes to bring these programs in line with the marketplace and the rest of NU.

Workforce or manpower planning is a major impetus for NU and YGS. With the current consolidation efforts in the gas business and the expected retirements of baby boomers during the next five years, NU has spearheaded a concerted effort to recruit younger and more diverse employees and encourage students to consider utility work as their choice of profession.

The Employment and Staffing function of the organization implements the workforce and manpower planning strategy and develops the hiring strategy consistent with these strategies and the organizational current and future needs. The Company complies with both the letter and the spirit of the law regarding ethics, diversity, and EEO (Compliance). The Recruiting function supports the diversity to the point where they will hold a position open if the candidate pool isn't deemed to be sufficiently diverse.

YGS's employee safety performance has not met Company goals for the last five years, and this lack is viewed as a significant issue by its leadership.¹ The driver safety performance has been exceptional and has been cited as such by the Company's insurance provider.²

The Payroll practices are consistent with industry standards. The process has a number of manual steps and is very labor intensive.³ Current plans to replace the time and attendance

¹ Interview C. Carmody 10/14/14.

² Interview B. Bolger 10/16/14.

³ Interview C. Carmody 10/14/14.

system with the capability to handle all the payroll rules associated with the labor union contract should improve the process dramatically.

Customer Service

YGS customer calls are handled through the NU Windsor Call Center along with CL&P customer calls. This call center uses best-in-class technology and techniques to provide real-time monitoring of the call center's performance. The call center management effectively uses these tools to achieve the expected performance levels.

YGS's credit and collections function is integrated with CL&P processing. The credit and collections function has outsourced the handling of all collection calls. Additional opportunities exist to outsource non-core collection work. The effectiveness of the collection effort has deteriorated over the past several years as indicated by the increase in YGS's residential accounts receivable. NU uses a number of low-income programs, but some of them are not available to YGS customers.

NU and YGS use current AMR technology, and the customers benefit in higher accuracy rates. The Company reads 99.3% of schedule. Exceptions relate to ERT failures or delays in meter change-out paperwork processing. These exceptions have resulted in an increase in estimated bills.

BRCS/RCG concluded that the NU billing processes use leading practices that result in timely and accurate billing and remittance processing.

According to J.D. Power, satisfaction with residential gas utilities has improved for a third consecutive year, but a great deal of work still remains to achieve the first-quartile status its sister company, the old NSTAR Gas, enjoys. In fairness to YGS, part of the issue could be tied to CL&P's performance during Super Storm Sandy.

YGS is continually looking for ways to expand its use of self-service technologies to keep pace with the evolving customer demographic preferences.

External Relations

YGS demonstrates effective management of timely message development, administration, and distribution both externally and to employees. Media relations manages message distribution across many of the traditional channels of communications, such as the call center, physical documents, and mass media, but also has begun to take advantage of newer channels by which younger customers seek more timely information, including social media and corporate websites. Since these functions were centralized post-merger, more experienced management and competent resources now support YGS customers across geographies (with specific community responsibilities). However, more work to make external relations effective remains to be achieved, as reported in the Customer Satisfaction section of the Customer Services chapter. While NSTAR has moved into the first quartile of JD Power's satisfaction survey results, YGS remains in the third quartile in part due to poor ratings on corporate citizenship.

Support Services

BRCS/RCG found that the Company's Support Services organization generally provides support services in an appropriate manner, managing functions through policies and procedures, ensuring knowledgeable personnel, and developing and implementing plans coordinated with Company goals.

Risk Management

The Company's risk management organization has guidelines and process documents that are thorough and organized with proper attention to detail. The Enterprise Risk Management (ERM) Group provides a reasonable and appropriate means to ensure awareness and addressing of risk for the integrated business units. The goals and objectives involved in the Company's risk management are reasonable and are adequate to focus attention on the department's functional roles. However, BRCS/RCG believes that a formal, written mission statement would help the ERM Group maintain a cohesive focus beyond current management communication.

Legal

BRCS/RCG found that the Company's Legal Department has operational information in various document types (memos, guidelines, etc.) whose variety of form does not provide the most efficient means to ensure that these policies, procedures, and guides are followed by department personnel. On the other hand, the Facilities organization has well-organized and comprehensive operational documentation.

Facilities Management

Based on our review of the facilities management guiding documentation, goals, objectives, and performance measurement, BRCS/RCG believes that the Company manages its facilities adequately. Because of the impact of the merger, however, there is significant empty space at the NU Headquarters that is going unutilized. PURA Staff may want to consider this when it reviews the service company allocations in the next rate case.

Materials Management

Overall, Yankee Gas's Supply Chain (Procurement and Materials Management, including stores) effectively and efficiently manages the Company's purchasing dollars. Materials Management effectively stores and moves materials and supplies to meet the needs of operating personnel. Like any supply chain function, opportunities for improvement exist, and Yankee Gas is aware of these areas, taking steps to address them.

Transportation

Based on our review of the transportation services guiding documentation, goals, objectives, and performance measurement, BRCS/RCG believes that the Company manages its transportation services adequately.

Information Technology

NU's IT is organized appropriately and consistent with its strategy. It has access to senior leadership to ensure IT solutions are consistent with corporate strategies and the strategic needs are receiving appropriate priority of resources. Leading cyber security measures have been implemented to protect against unauthorized access to sensitive information and/or systems. Periodic internal and external audits are performed to confirm the adequacy of the cyber security measures.

Records Management

BRCS/RCG has found that the Company's Records Management functions appropriately. Policies and procedures exist to order activity, and internal controls ensure the proper emphasis toward operational performance in accuracy, security, and control.

Special Topics

Regarding Affiliate Transactions and Cost Allocation, the Company operates a robust cost-allocation process that emphasizes direct charging but includes fully detailed allocation procedures recorded in the affiliate service agreement and the cost allocation manual.

Based on our review of affiliate transactions, including cost allocation, BRCS/RCG believes that the shared services organization (NUSCO) properly charges for services both in its direct charges and its cost allocations. The program is well documented and sophisticated, but additional internal auditing and verification processes could provide additional assurance to YGS that costs are appropriate.

Regarding Hurdle Rate and CIAC, the Company has addressed previous issues regarding inaccurate estimates involved in the Company's hurdle rate. The resultant model and practice appear reasonable.

Conclusions and Recommendations

Specific conclusions and recommendations for each of the focus areas follow:

Chapter 3 – Executive Management

3.1 Organization and Planning

Conclusion 3.1.1 *BRCS/RCG found that YGS's highly focused effort in addressing the 2008 audit strategy and organizational recommendations demonstrates a reasonable and adequate response, although many of these 2008 recommendations may be superseded by certain post-merger objectives and actions.*

Conclusion 3.1.2 *BRCS/RCG found that while the new NU organization is still evolving, the governance and the proposed organizational structure are in line with the stated mission and should benefit current and future YGS customers.*

Conclusion 3.1.3 *BRCS/RCG found that the current YGS and NU organizational responsibilities for planning priorities and budget allocations are reasonable.*

Conclusion 3.1.4 *BRCS/RCG found that the Board of Trustees devotes reasonable effort to the gas business as it pertains to the expansion of the gas business.*

Conclusion 3.1.5 *BRCS/RCG found YGS management uses appropriate measurable goals, metrics, key performance indicators (KPIs), etc. to support the corporate mission and objectives and the performance improvement process at successive levels of management. The Company performs an adequate review of these goals and objectives and adjusts the scorecards and KPIs as required.*

3.2 Internal Auditing

Conclusion 3.2.1 *BRCS/RCG found that the Company adequately addressed the 2008 recommendations regarding the consideration of audit subjects that had been not reviewed in the past five years.*

Conclusion 3.2.2 *BRCS/RCG found that YGS does not have a separate internal audit group. Internal audit is provided through NUSCO. The reporting lines of NUSCO's Internal Audit Department (IAD) are appropriate.*

Conclusion 3.2.3 *BRCS/RCG found that the IAD is well organized and adequately staffed.*

Conclusion 3.2.4 *BRCS/RCG found that the internal auditing group needs technical auditors to support their efforts in technical audits.*

Conclusion 3.2.5 *BRCS/RCG found that individuals in IAD are qualified and participate in continuing professional education.*

Conclusion 3.2.6 *BRCS/RCG found that the audit planning process is appropriately risk-based and audits are identified and prioritized based upon input from across the organization.*

Conclusion 3.2.7 *BRCS/RCG found that the internal audits, performed from 2009 through 2014, demonstrated that the Company's internal audit program ensures independent verification of the accuracy of accounting information and provides objective evaluation (and improvement) of the accounting and operational practices of the Company.*

Conclusion 3.2.8 *BRCS/RCG found that Internal Audit also performs a limited number of consulting assignments, such as process reviews and special projects.*

Conclusion 3.2.9 *BRCS/RCG found that the group monitors and compares itself to industry best practices. It participates in regular peer reviews and adheres to the Institute of Internal Auditors Standards and the Code of Ethics.*

3.3 Executive Compensation

Conclusion 3.3.1 *BRCS/RCG concluded that NU's Board Compensation Committee's executive compensation actions focus on pay-for-performance against pre-established goals and objectives.*

Conclusion 3.3.2 *BRCS/RCG concluded that NU's executive compensation practices are consistent with utilities of similar size and general industry.*

Conclusion 3.3.3 *BRCS/RCG concluded that the metrics used in executive incentive compensation are consistent with the corporate objectives and goals. Additionally, the performance program used for executives has a variable pay component that is directly tied to measurable performance metrics.*

3.4 Strategic Planning

Conclusion 3.4.1 *BRCS/RCG found that the corporate strategy is well documented and communicated throughout the corporation, including YGS. While cost control isn't necessarily forward thinking or visionary, the customer focus is very much so.*

Conclusion 3.4.2 *BRCS/RCG found that NU's effort is thorough in planning its strategic goals and objectives via in-depth analysis of its options and their impact on financials.*

Conclusion 3.4.3 *BRCS/RCG found that management needs to continue its efforts to broadcast the objectives below the Director level. The NU mission is clear; both executive and senior management understand and embrace the mission and objectives, but, there are areas within YGS where the message is not receiving the full support necessary to convey its importance.*

Conclusion 3.4.4 *BRCS/RCG found that YGS has done a good job of defining and communicating the core values. More monitoring and strategic efforts are needed to address the soft-tissue-injury issue and its impact to YGS financials.*

Conclusion 3.4.5 *BRCS/RCG found that major strategic priorities have been defined which address fiscal viability and profitability, public trust, customer service, process improvements, organizational change, economic development for the region, environment, and initiatives to sustain continuous improvement and learning within the workforce.*

Conclusion 3.4.6 *BRCS/RCG found that YGS's approach to competitive issues is centered on the expansion of gas service in Connecticut as well as on providing gas pipeline capabilities to critical electric generation. There was no mention other new gas markets in the strategic plan.*

Recommendation 3.4.1 *BRCS/RCG recommends that the Company complete the development plans for the NU Succession Planning process to ensure that a successor is prepared to assume any of the key roles within internal audit.*

3.5 O&M Budget Process

Conclusion 3.5.1 *BRCS/RCG found the organizational responsibilities and assignment of priorities is reasonable and appropriate. There is clear and independent oversight of O&M budgets all the way up to and including the Board.*

Conclusion 3.5.2 *BRCS/RCG found that the budget development process appropriately and accurately factors its financial position and the level of its rates into the budgeting process.*

Conclusion 3.5.3 *BRCS/RCG found that the budgeting process is formally linked to strategic initiatives.*

Conclusion 3.5.4 *BRCS/RCG found that the O&M budgeting process has had some challenges following the merger. The Company is addressing the challenges to make the budgeting process more robust.*

Conclusion 3.5.5 *BRCS/RCG found that NU’s Board of Trustees and executive and senior management are appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company.*

Conclusion 3.5.6 *BRCS/RCG found that the Board appropriately approved a consolidated NU Operating Plan, which includes the O&M Budget.*

Conclusion 3.5.7 *BRCS/RCG found that the Company’s process used to evaluate and correct for any variances between the budget and actual results is reasonable.*

Conclusion 3.5.8 *BRCS/RCG found that YGS does not adjust the budget for any emergency spending.*

Recommendation 3.5.1 BRCS/RCG recommends that the Company continue to work through the different legacy NU and NSTAR processes to make the O&M budgeting process more robust.

3.5 Capital Budget Process

Conclusion 3.6.1 *BRCS/RCG found that YGS has an adequate capital budget system in place that is closely linked to the overall financial planning process.*

Conclusion 3.6.2 *BRCS/RCG found that organizational responsibilities for planning priorities and budgeting allocations are reasonable and appropriate.*

Conclusion 3.6.3 *BRCS/RCG found that executive and senior management are appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company.*

Recommendation 3.6.1 BRCS/RCG offer no recommendations in regards the capital budgeting process.

Recommendation 3.6.2 BRCS/RCG recommends that management accelerate the completion of organizational changes to allow YGS to settle into a normal operating mode and allow the employees to better focus on the work.

Recommendation 3.6.3 BRCS/RCG recommends management continue its Town-Hall meetings to reinforce the objectives of NU and infuse them into all levels of YGS, particularly with respect to customers and any issues they have.

Chapter 4 – System Operations

4.1 Requirements Forecasting

Conclusion 4.1.1 *BRCS/RCG is concerned that the Forecasting Department has not consistently implemented its recommendation from the 2008 audit.*

Conclusion 4.1.2 *BRCS/RCG determined that the Forecasting Department uses an appropriate process to develop a forecast to meet the requirements of the financial and*

regulatory organizations for its present (pre-1/1/14 customers). However, neither the review and approval process for the forecast nor its distribution includes Gas Supply or Engineering.

Conclusion 4.1.3 *BRCS/RCG is concerned that YGS will need to implement a better supported forecast methodology for including the expected effects of the Comprehensive Energy Strategy (CES) within the annual forecast.*

Conclusion 4.1.4 *BRCS/RCG is concerned that there is no formal approval process (and subsequent distribution) for the forecast beyond the CFO organization.*

Conclusion 4.1.5 *BRCS/RCG determined that the transition from end-use to econometric models was well executed, but the savings could not be confirmed by BRCS/RCG.*

Conclusion 4.1.6 *BRCS/RCG determined that the Forecasting Department has a single performance indicator to ensure that the forecast is accurate and meets the needs of the financial and regulatory organizations.*

Recommendation 4.1.1 *BRCS/RCG recommends that forecasts should clearly include EHDD, HDD, and wind speed to clarify the relationship and educate the reader.*

Recommendation 4.1.2 *BRCS/RCG recommends that the CES forecast process should be defined, including methodology, input from upstream and downstream participants, and a formal approval process.*

Recommendation 4.1.3 *BRCS/RCG recommends that, because of its expertise and existing responsibility for the present customer forecast, the Company should assign the Forecasting Department the responsibility to prepare the CES forecast. Combined with a broadened approval process this change will ensure the input of the CES – Gas Expansion group is tightly coordinated with the existing customer forecast.*

Recommendation 4.1.4 *BRCS/RCG recommends that the Company’s forecast should be subject to a formal approval process that includes not only the CFO organization but also other groups that provide (or should provide) input and/or use the forecast.*

4.2 Gas Supply

Conclusion 4.2.1 *BRCS/RCG has determined that the Gas Supply Department has met the requirements of its three recommendations from the 2008 audit.*

Conclusion 4.2.2 *BRCS/RCG determined that Gas Supply has limited performance indicators to track its performance and clear goals have not been articulated.*

Conclusion 4.2.3 *BRCS/RCG determined that the Gas Supply Department’s process to procure long-term transportation capacity is reasonable.*

Conclusion 4.2.4 *BRCS/RCG determined that the Gas Supply Department’s process to manage short-term transportation capacity is reasonable.*

Conclusion 4.2.5 *BRCS/RCG has determined that the Gas Supply Department’s process to procure commodity is reasonable.*

Conclusion 4.2.6 *BRCS/RCG determined that YGS’s Gas Supply risk management processes and procedures are reasonable and enforced.*

Conclusion 4.2.7 *BRCS/RCG determined that the Gas Supply Department has prepared for the expected effects of the Comprehensive Energy Strategy within the annual forecast; however, the forward process connecting the two departments has not been defined, although Gas Supply reviews significant new loads.*

4.3 System Planning & Design

Conclusion 4.3.1 *BRCS/RCG concluded that YGS's engineering planning function has met the intent of the 2008 Management Audit recommendations.*

Conclusion 4.3.2 *BRCS/RCG found that the infrastructure planning and engineering functions are reasonably staffed and aligned to support system planning and design with the augmentation of design contractors.*

Conclusion 4.3.3 *BRCS/RCG found that there are appropriate priorities, guidance, and other instructions for evaluations, tradeoffs, and decision-making in place.*

Conclusion 4.3.4 *BRCS/RCG found that there is a formal process for creating the distribution system capital budget.*

Conclusion 4.3.5 *BRCS/RCG found no financial consideration in maintenance planning for programs and spending as a result of YGS's distribution system capital program.*

Conclusion 4.3.6 *BRCS/RCG found no immediate plans for YGS-Connecticut to increase gas storage over the next five years.*

Conclusion 4.3.7 *BRCS/RCG found that the current Planning capital project estimating can be improved to provide a more accurate initial ranking in the annual capital project line-up.*

Conclusion 4.3.8 *BRCS/RCG found the centralized structure for the construction function to be reasonable and well designed, although the QA/QC is limited to contractor only.*

Conclusion 4.3.9 *BRCS/RCG found that the high-level capital planning to be very formal with close management attention.*

Conclusion 4.3.10 *BRCS/RCG found that the on-going capital project financial follow-up is reasonable.*

Conclusion 4.3.11 *BRCS/RCG found the closeout process to be formal and consistent with good engineering practices.*

Conclusion 4.3.12 *BRCS/RCG found that YGS uses the more costly open-trench construction over the boring method for the majority of plastic and coated steel pipe in its expansion program; this will aid better maintenance but drive installation cost up.*

Yankee Gas Response: The Company disagrees with this conclusion. Please provide cite on installation costs.

BRCS/RCG Reply: In work with a confidential client the Auditor did an analysis of trenching versus directional boring and found that directional boring was the lower cost option. However, this client was not in CT. The exception to this would be in urban areas where there are significant services tied to the main. In suburbs where the density of services is much lower than boring would be more cost effective.

Recommendation 4.3.1 BRCS/RCG recommends that YGS perform a cost analysis of outsourced engineering efforts to determine the ideal cost-effective split between contracting and in-house engineering staffing.

Recommendation 4.3.2 BRCS/RCG recommends that YGS develop a methodology to translate distribution system capital improvements to the overall O&M annual budget. Further, cost additions can be made for system expansion.

Recommendation 4.3.3 BRCS/RCG recommends that YGS explore improvements to the initial Planning capital project estimating to support more accurate initial project ranking in the annual capital project line-up.

Yankee Gas Response: Is there anything besides cost that's being considered in this comment about ranking?

BRCS/RCG Reply: We recognize that there are other considerations in the project approval process, but this recommendation is focused only on financial estimating and not anything else.

4.4 Reliability & Construction

Conclusion 4.4.1 *BRCS/RCG concluded that the Company has adequately addressed the 2008 audit recommendations for System Reliability and Construction.*

Conclusion 4.4.2 *BRCS/RCG concluded that the Company's balance between in-house and contracted resources is reasonable but additional controls could provide additional assurance that quality and cost goals are maintained.*

Conclusion 4.4.3 *BRCS/RCG concluded that the Company's budgeting and scheduling of construction projects is adequately undertaken and performed, but certain improvements could support cost efficiencies. Further, it appears the State of Connecticut requires all excess spoils to be tested and sent to approved landfills.*

Yankee Gas Response: Edits provided above

BRCS/RCG Reply: Edits Accepted

Conclusion 4.4.4 *BRCS/RCG concluded that the Company's safety record is not unreasonable.*

Conclusion 4.4.5 *BRCS/RCG concluded that the Company's gas distribution integrity management activity meets reasonable expectations for ensuring system reliability.*

Recommendation 4.4.1 BRCS/RCG recommends that the Company reevaluate the 100% contractor makeup of the QA/QC inspection and Construction Coordinator staff and determine whether a minimum level of in-house QA/QC inspectors and Construction Coordinators could be maintained both to provide greater assurance of consistency in Company performance expectation and for reason of cost-effectiveness.

Recommendation 4.4.2 BRCS/RCG recommends that the Company explore the possibility of expanding use of the STORMS work management system to be used by Engineering and Planning in the initial development of a project so as to ensure accurate estimates.

Recommendation 4.4.3 BRCS/RCG recommends that the Company develop an organized communication plan regarding merger changes to eliminate confusion and ensure employees are confidently aware of revised processes and operations.

Recommendation 4.4.4 BRCS/RCG recommends that YGS explore alternative solutions to managing the spoils issue with the focus being on cost reduction for the entire spoils process.

Recommendation 4.4.5 BRCS/RCG recommends that YGS continue its current system safety practices.

Recommendation 4.4.6 BRCS/RCG recommends that the Company continue its leak management policy and process.

4.5 Operations & Maintenance

Conclusion 4.5.1 *BRCS/RCG found that YGS management has implemented the recommendations for System Operations and Maintenance listed in the 2008 Management Audit.*

Conclusion 4.5.2 *BRCS/RCG concluded that the centralization and use of focused contractors has made Leak Management and Corrosion Management successful.*

Conclusion 4.5.3 *BRCS/RCG concluded that Planning & Scheduling is a new organization with a clear mission, but the process has to be better thought out at the supervisor-crew interface.*

Conclusion 4.5.4 *BRCS/RCG concluded that QA/QC (a recently added organization) is staffed by non-company personnel and oversees only contractor construction activities and does not address in-house construction work. There are a number of senior YGS mechanics on limited duty, who already possess the skills and technical knowledge to be QA/QC inspectors, and therefore could be QA/QC inspectors if the Company wanted to staff the department with some or all employees rather than contractors.*

Yankee Gas Response: Eversource is evaluating the QA/QC program and will be introducing internal inspectors as well as performing inspections on company work crews

BRCS/RCG Reply: Response consistent with conclusion. No objection.

Conclusion 4.5.5 *BRCS/RCG concluded that the Area Work Centers are currently reasonably well situated to minimize crew windshield time for the territory. This may change with the gas expansion program and may require new locations, satellite locations, or, at a minimum, redeployment of crews.*

Conclusion 4.5.6 *BRCS/RCG concluded that YGS is outsourcing the majority of construction work and a number of other functions that could be impacting its system's knowledge base.*

Yankee Gas Response: Outsourcing construction may not impact system knowledge base. The reference to other outsourced functions requires a reference in order to evaluate.

BRCS/RCG Reply: Auditor disagrees with this response – outsourcing of construction and engineering by its very definition indicates that the experience gained by performing the construction or engineering resides with a third party. The auditor will agree that depending on how closely the work was supervised or managed by YGS employees will allow some level of knowledge transfer.

Conclusion 4.5.7 *BRCS/RCG found no significant issues with design operating pressures being maintained across a range of temperatures and demand requirements.*

Conclusion 4.5.8 *BRCS/RCG concluded that YGS needs to improve its estimating practices to minimize the final number and dollar value of projects falling outside the plus/minus 10 percent range and bring up the number of projects estimated correctly.*

Conclusion 4.5.9 *BRCS/RCG concluded that the primary reasons for overruns are the difficulty of soil conditions, the need to use contractors for work that was previously slated for YGS crews but changed due to resource constraints, requirements for soil remediation, paving, and how STORMS estimates the work.*

Conclusion 4.5.10 *BRCS/RCG concluded personnel safety on the job is problematic; the number of lost-time accidents is low, but the number of soft tissue injuries is high, particularly in the senior mechanics. More importantly, this situation reflects badly on the overall culture of YGS with regard to safety as well as impacts the O&M budget.*

Yankee Gas Response: Management has under taken numerous initiatives to address safety performance. Some of the actions taken include, safety incident analysis involving a cross section of management employees, leadership attendance at local monthly safety committee meetings, involvement of bargaining unit employees in executive safety committee meetings, initiation of an annual safety speaker series, conducting of safety stand-ups and stand-downs, and utilization of an outside consultant to conduct a safety culture assessment.

BRCS/RCG Reply: The Auditor agrees with the Company’s statement, but the results are not being manifested in the numbers

Conclusion 4.5.11 *BRCS/RCG found that YGS’s STORMS system is used during design to price out the work for materials and labor. During construction STORMS is used to track both project progress and field personnel productivity. For YGS crews the use of this information is inconsistent.*

Recommendation 4.5.1 BRCS/RCG recommends that the current Planning & Scheduling process be modified to provide operations supervisors with more advanced notice of projects coming to the field. Further, we recommend that there is a formal work planning session involving the AWC Manager, supervisors, and planners to review pending projects prior to crew assignment.

Recommendation 4.5.2 BRCS/RCG recommends that YGS evaluate augmenting staffing requirements for both the QA/QC inspectors and Construction Coordinators with restricted duty personnel who have the critical system and construction knowledge.

Recommendation 4.5.3 BRCS/RCG recommends that YGS develop a methodology for annually re-evaluating AWC locations in light of the aggressive expansion program. Focus of the methodology should be on minimizing both crew windshield and leak response times.

Recommendation 4.5.4 BRCS/RCG recommends that YGS reevaluate its level of construction work outsourcing to determine the most cost-effective split between contractors and in-house personnel.

Recommendation 4.5.5 BRCS/RCG recommends that YGS develop a more proactive personnel safety program aimed at reducing soft tissue injuries on the job. Further, YGS should look to providing alternative work solutions to personnel with chronic conditions, which essentially permanently remove them from the active workforce.

Recommendation 4.5.6 BRCS/RCG recommends that YGS management reinforce the use of STORMS performance information across all AWCs. We recommend that YGS ensure that the information is prominently displayed throughout each AWC and local management cover performance more consistently with crews.

Recommendation 4.5.7 BRCS/RCG recommends that YGS management continue its efforts to find a political solution to the soil remediation issues. If efforts for a political solution fail, the Company should consider alternatives to the existing process, such as reclaiming and reconditioning excavated soils and stockpiling the cleaned material for future reuse.

Recommendation 4.5.8 BRCS/RCG recommends that YGS management focus on improving its estimation process and holding project managers/engineers to a higher degree of accountability for the estimates. In particular, the Company should capture the specific causes of the overruns/underruns, document these in lessons learned, and incorporate them into future estimating activities. Based on the lessons learned developed, the capital budget review committee should challenge the project managers/engineers on their assumptions.

Chapter 5 – Financial Operations

5.1 Finance Organization

Conclusion 5.1.1 *BRCS/RCG found that, in response to the 2008 Management Audit recommendation that Corporate Finance use quantitative performance benchmarks for cost of borrowing, the Company’s explanation of the process it uses is reasonable.*

Conclusion 5.1.2 *BRCS/RCG found that the Company’s finance personnel participate in extensive training relevant to their areas of responsibilities.*

Conclusion 5.1.3 *BRCS/RCG found that leadership talent in the finance organization is assessed on a yearly basis with manager and director level individuals identified as high potential for becoming part of the Succession Plan.*

Conclusion 5.1.4 *BRCS/RCG found that the issue of aging work force and future retirements is a future threat to the organization.*

Recommendation 5.1.1 BRCS/RCG recommends that the Company should continue its efforts to identify key and emerging talent in the finance organization and implement development plans to ensure that the individuals are ready to assume leadership roles as part of a comprehensive succession plan.

Recommendation 5.1.2 BRCS/RCG recommends that the Accounting Internship Program should be reinstated to help ensure that the pipeline of high potential future accounting employees be available to replace personnel that leave for other opportunities or retirement.

5.2 Treasury, Corporate Finance, and Capital Structure

Conclusion 5.2.1 *BRCS/RCG found that the Company initially implemented the 2008 Management Audit recommendation that the vacancy for Manager-Corporate Finance should be filled with someone capable of supporting YGS's business. However, after the merger, that position was eliminated when the group was downsized.*

Conclusion 5.2.2 *BRCS/RCG found that the Company response to the 2008 Management Audit recommendation that additional quantitative benchmarks for the cost of borrowing be established is reasonable.*

Conclusion 5.2.3 *BRCS/RCG found that the Treasury and Corporate Finance is part of shared services that is responsible for (1) financing and liquidity needs, including long- and short-term debt programs, equity issuances, and alternative financing structures, (2) daily cash management, including short-term borrowing and investment activities, and (3) managing to the appropriate allowed capital structure.*

Conclusion 5.2.4 *BRCS/RCG found that Treasury and Cash Management use several effective applications and systems to perform its responsibilities.*

Conclusion 5.2.5 *BRCS/RCG found that YGS uses short-term debt to fund its working capital needs, which include payments of items such as payroll, fuel, and taxes.*

Conclusion 5.2.6 *BRCS/RCG found that YGS's short-term debt balances grew substantially during 2011 through 2013. The short-term debt balances dropped following a long-term debt placement in January 2014.*

Conclusion 5.2.7 *BRCS/RCG found that Company uses a formal process and reviews the appropriate elements to determine the need for long-term debt placements.*

Conclusion 5.2.8 *BRCS/RCG found that Corporate Finance and Cash Management departments continuously monitor the current and forecasted YGS short-term debt balances and borrowing capacity available under the lines of credit.*

Conclusion 5.2.9 *BRCS/RCG found that the YGS long-term Corporate Credit Ratings recognize the Company has having medium-to-low risk.*

Conclusion 5.2.10 *BRCS/RCG found that YGS's equity is owned by NU and that a return on invested capital is paid by YGS in the form of common dividends to NU, and, when required, it receives infusions from NU in order to maintain an appropriate capital structure.*

Conclusion 5.2.11 *BRCS/RCG found that while YGS stated that it generally maintains an annual common dividend payout ratio (to NU) of approximately 60%, the actual payout ratios for 2011 through 2013 were substantially higher.*

Conclusion 5.2.12 *BRCS/RCG found that YGS's capital structure is currently relying on more equity than was allowed in its most recent general rate case. However, the debt-to-equity ratio (three-year average 41.1% to 58.91%) is within the financial covenants required by the credit facilities, which require a ratio of consolidated debt to total capitalization of no more than 65%.*

Conclusion 5.2.13 *BRCS/RCG found that the Company has minimal non-utility investments.*

Conclusion 5.2.14 *BRCS/RCG found that while Corporate Finance has not recently done any formal benchmarking studies, it closely monitors capital market conditions and peer financing transactions.*

5.3 Accounting

Conclusion 5.3.1 *BRCS/RCG found that the Company addressed the 2008 management audit recommendation to fill the director and manager level positions. All accounting and manager level positions are filled.*

Conclusion 5.3.2 *BRCS/RCG found that the Company addressed the 2008 management audit recommendation that external benchmarking be performed to assess the efficiency of the accounting and tax services.*

Conclusion 5.3.3 *BRCS/RCG found that the Company addressed the 2008 management audit recommendation regarding the review and identification of opportunities to streamline or modify the Management Information & Budgeting System (MIBS).*

Conclusion 5.3.4 *BRCS/RCG found that NUSCO has an effective system of accounting process and controls to manage its business.*

Conclusion 5.3.5 *BRCS/RCG found that the Company's financial closing is a typical calendar-driven process. Various post-closing analyses and reconciliations are performed to ensure accuracy.*

Conclusion 5.3.6 *BRCS/RCG found that the accounting department provides several types of reports to support the business groups and provide information required to manage the Company.*

Conclusion 5.3.7 *BRCS/RCG found that the accounts payable function has an effective system to process invoices and ensure timely and accurate payment.*

Conclusion 5.3.8 *BRCS/RCG found that the payroll processing has not been fully integrated. While the current NU and NSTAR legacy payroll processes result in employees being paid accurately and timely, the Company has begun implementation of a redesign to integrate the HR and Payroll legacy systems.*

Conclusion 5.3.9 *BRCS/RCG found that plant accounting operates efficiently and effectively.*

Conclusion 5.3.10 *BRCS/RCG found that YGS's current depreciation rates are based on a depreciation study completed in 2010.*

Recommendation 5.3.1 *YGS's depreciation rates are based on a study completed in 2010. The study should be updated.*

5.4 Tax

Conclusion 5.4.1 *BRCS/RCG found that the Tax Department is a shared service with NUSCO that is responsible for the following processes: (1) preparing the various income, gross receipts, property, and sales and use tax returns; (2) tax provisions for financial reporting of tax accruals for each quarterly close; and (3) supporting other process like budgeting, forecasting/projections, and the regulatory reporting functions. The group also supports special projects and audits as needed.*

Conclusion 5.4.2 *BRCS/RCG found that the tax functions performed by NUSCO's tax group on behalf of the NU operating companies create efficiencies that benefit all of NU.*

Conclusion 5.4.3 *BRCS/RCG found that the tax group is fully staffed with all positions filled.*

Conclusion 5.4.4 *BRCS/RCG found that YGS is part of the NU-consolidated federal income tax return.*

Conclusion 5.4.5 *BRCS/RCG found the processes used to ensure accurate preparation and timely submission of tax returns reasonable and appropriate.*

Conclusion 5.4.6 *BRCS/RCG found that all income, property, sales, franchise tax returns have been timely filed with local, state and federal jurisdictions for 2009 through 2013.*

Conclusion 5.4.7 *BRCS/RCG found that, as is typical of a large corporation, NU has been subject to IRS and state jurisdictional audits of its tax filings over the last five years.*

Conclusion 5.4.8 *BRCS/RCG found that the Director of Tax monitors Best in Class performance through training, seminars, and his industry contacts.*

5.5 Cost Control Functions

Conclusion 5.5.1 *BRCS/RCG found that YGSs' primary cost control is accomplished through its budget variance management process.*

Chapter 6 – Human Resources

6.1 Payroll Practices

Conclusion 6.1.1 *BRCS/RCG found that the HR organization thinks, plans, and acts strategically. However, the legacy Human Resources Information System (HRIS) does not support the new HR model and the strategic rollout.*

Conclusion 6.1.2 *BRCS/RCG found that the HR team is articulate, strategic, expert, and committed. They employ industry standard HR practices and procedures. In spite of some archaic systems, such as the legacy HRIS, they provide creative, legal, and good results.*

6.2 Wage and Salary Policies and Practices and Compensation Programs

Conclusion 6.2.1 *BRCS/RCG concluded that HR functions have met the intent of the 2008 Management Audit recommendations relating to Wage and Salary Policies and Practices and Compensation Practices.*

Conclusion 6.2.2 *BRCS/RCG found that YGS's salary, wage, compensation strategy, and policies and procedures are consistent with industry experience and practice.*

Conclusion 6.2.3 *BRCS/RCG found that YGS's, NU's, and other affiliates' executive compensation packages are reasonable for the industry and region.*

Conclusion 6.2.4 *BRCS/RCG found the utility is effectively using benchmarking for its total compensation for executives, supervisors, professional, and hourly workers.*

Conclusion 6.2.5 *BRCS/RCG found NU compensation policies and practices to be consistent with good business and utility practices.*

Conclusion 6.2.6 *BRCS/RCG found HR has limited means in place to monitor and control implementation of compensation practices.*

6.3 Employee Benefits Including Pension Plan, 401K, and OPEBs

Conclusion 6.3.1 *BRCS/RCG concluded that the HR function has met the intent of the 2008 Management Audit recommendations on Employee Benefits.*

Conclusion 6.3.2 *BRCS/RCG found most of YGS's benefits package and pension/OPEB/401k practices are in line with those of other Connecticut utilities, but the sick time benefits for YGS union employees is an exception. Additionally, NU still has an exposure to the 2018 Excise Tax associated with any plan deemed to be a "Cadillac Plan." Future changes will have to be made to avoid this exposure.*

Conclusion 6.3.3 *BRCS/RCG found the legacy Human Resources Information System (HRIS) limits HR's ability to quickly access personnel and benefit information, does not lend itself to any complex analysis, and reduces the ability for them to perform their assigned duties.*

Recommendation 6.3.1 BRCS/RCG recommends that the Company complete the negotiations with the YGS union locals to complete the transition of YGS hourly employee benefits, benefit carriers, and sick-time benefits to a level consistent with the rest of the NU employees.

Recommendation 6.3.2 BRCS/RCG recommends that the Company accelerate the HRIS implementation and subsequent utilization to eliminate the work-arounds created in the old HRIS.

6.4 Employee Development

Conclusion 6.4.1 *BRCS/RCG found NU has a well-defined formal succession planning process that integrates talent identification and employee development. The approach is consistent with best practices. The process includes the identification of high-potential employees and the associated development process to address the "brain drain" associated with baby-boomer retirements.*

Conclusion 6.4.2 *BRCS/RCG found HR’s management and control of the performance evaluation and process need to improve both at the department and the Company level.*

Conclusion 6.4.3 *BRCS/RCG found YGS’s succession planning and associated development planning and implementation has not been completed.*

Recommendation 6.4.1 *BRCS/RCG recommends that the Company implement, at YGS, NU’s succession planning and talent identification and development process, including methodology to evaluate effectiveness and consistency between operating districts.*

6.5 Training and Evaluation

Conclusion 6.5.1 *BRCS/RCG concluded that the HR function has met the intent of the 2008 Management Audit recommendations on Training and Evaluation functions, but with continuing consolidation of the gas business, YGS needs to bring their training in line with NU practices.*

Conclusion 6.5.2 *BRCS/RCG concluded that the enterprise training is developed and conducted using best practice techniques.*

Conclusion 6.5.3 *BRCS/RCG found the Compliance training is completed annually.*

6.6 Labor and Employee Relations

Conclusion 6.6.1 *BRCS/RCG concluded that the Labor Relations function has not fully satisfied the intent of the 2008 Management Audit recommendations on employee safety. Although YGS has taken proactive steps to address the issues leading to employee injuries, the inconsistent application of these steps by the District leadership leaves in question the commitment to change.*

Conclusion 6.6.2 *BRCS/RCG determined that the NU labor relations organization is staffed with experienced professionals and provides a dedicated labor professional to handle YGS’s two labor contracts.*

Conclusion 6.6.3 *BRCS/RCG found that the labor agreements do not contain barriers to increased productivity, increased work flexibility, and increased use of contractors.*

Conclusion 6.6.4 *BRCS/RCG found the current labor relations status and methodology is appropriate for a company the size of YGS.*

Conclusion 6.6.5 *BRCS/RCG determined that communications with the union leadership is not done on a regular or formalized basis and leads to misinformation and confusion on the union employees’ part.*

Conclusion 6.6.6 *BRCS/RCG concluded that NU has met the intent of the 2008 Management Audit recommendations relating to Employee Absenteeism. However, union employee absenteeism at YGS has not been brought under control.*

Conclusion 6.6.7 *BRCS/RCG found that all employment-related activities, including hiring, promotions, demotions, discipline, and terminations are reviewed and approved by HR prior to implementation.*

Recommendation 6.6.1 BRCS/RCG recommends that the Company seek opportunities to renegotiate changes to the YGS union contract provisions to provide for more management control over employee sick time utilization.

6.7 Manpower Planning

Conclusion 6.7.1 *BRCS/RCG found NU’s staffing strategy to select talent from within the entire organization and selectively hire to fill current leadership of skills gaps is reasonable.*

Conclusion 6.7.2 *BRCS/RCG found that NU’s affirmative action and equal employment opportunity (AA/EEO) policies, procedures, and functions are effective and reasonable.*

Recommendation 6.7.1 Reestablish detailed reporting of Affirmative Action performance by organizational unit to senior leadership of YGS.

6.8 Employee Safety

Conclusion 6.8.1 *BRCS/RCG concluded that the HR function has not met the intent of the 2008 Management Audit recommendation on Employee Safety. Since the employee accident performance at YGS has not improved, it leaves in question why seeking input from best-in-class performers would not be an effective course of action.*

Conclusion 6.8.2 *BRCS/RCG concluded that the Safety department inclusion in the Operations Services organization is not consistent with industry practices and may need reassessment.*

Conclusion 6.8.3 *BRCS/RCG determined that the employee safety performance has not met management expectations over the past five years and varies across YGS’s operating areas.*

Recommendation 6.8.1 BRCS/RCG recommends that the Company adopt a benchmarking culture in Safety to identify top performer practices within and outside the utility industry through both industry contact and safety consultant experts.

Recommendation 6.8.2 BRCS/RCG recommends that the Company reevaluate the organizational alignment of the Safety organization within Operation Services through a review of best practices.

6.9 Payroll Practices

Conclusion 6.9.1 *BRCS/RCG found the time and attendance collection and processing practices are consistent with utilities having similar penetration of computers in their field operations. The time and attendance process has a number of manual steps and is labor intensive.*

Yankee Gas Response: The Company generally agrees with this conclusion. However, the Company does employ a mobile hand-held device, Mechanical Resource Time System (MERTS) for field employees. MERTS allows field employees to enter their time directly into the device, thus, eliminating the need for time entry clerks. MERTS is linked to the COLT system allowing supervision to approve time each week. Despite the use of MERTS, supervisors still need to manually review time codes for proper compliance with union contracts, which is time consuming.

BRCS/RCG Reply: Comment noted.

Conclusion 6.9.2 *BRCS/RCG found that supervisory review and approval process is working well and has kept the payroll errors to a minimum.*

Conclusion 6.9.3 *BRCS/RCG determined that payroll processing of time data requires a minimum amount of data checking and correction.*

Conclusion 6.9.4 *BRCS/RCG found the use of payroll direct deposits is high for an organization that does not require all employees to use it.*

Conclusion 6.9.5 *BRCS/RCG determined that the payroll and time collection system does not support efficient payroll processing.*

Recommendation 6.9.1 *BRCS/RCG recommends that the Company explore opportunities to reduce the manual steps and the labor intensity in the time and attendance processing through an upgrade of the associated IT and COLT systems.*

Chapter 7 – Customer Service

7.1 Call Center

Conclusion 7.1.1 *BRCS/RCG concluded that call center function has met the intent of the 2008 management audit recommendations.*

Conclusion 7.1.2 *BRCS/RCG found that the Windsor, CT, Call Center that handles YGS customer calls uses best-in-class real-time workforce management techniques and third-party call monitoring.*

Conclusion 7.1.3 *BRCS/RCG found that the call center handling YGS customer calls expanded the number of agents capable of taking YGS calls and appropriately supplemented its staff with contract services. As a result, YGS customer calls receive the same level of answering performance as any other NU customer in Connecticut.*

Conclusion 7.1.4 *BRCS/RCG found that the call center has a process in place to ensure YGS emergency customer calls are immediately routed to the dispatch organization irrespective of the call volume being handled by the call center.*

7.2 Credit & Collections and Low Income Programs

Conclusion 7.2.1 *BRCS/RCG concluded that the credit and collections policies and practices are innovative and administered to take into account the current realities of the Connecticut economy. However, opportunities exist to improve collection effectiveness.*

Conclusion 7.2.2 *BRCS/RCG found that the effectiveness of collections of YGS residential accounts has deteriorated over the past several years and opportunities exist to further outsource non-core collection activities to provide resources for core collection activities to improve collections.*

Conclusion 7.2.3 *BRCS/RCG concluded that NU uses a wide variety of low-income programs to assist those qualifying customers in paying and staying current with their bill payments. However, not all of these programs have been made available to YGS customers.*

Recommendation 7.2.1 BRCS/RCG recommends that NU should continue to pursue the identified collection improvement opportunities to reduce the number of YGS accounts in arrears.

Recommendation 7.2.2 BRCS/RCG recommends that consideration should be given to expand the use of the NUStart program to YGS customers.

7.3 Meter Reading and AMR

Conclusion 7.3.1 *BRCS/RCG concluded that YGS has met the intent of the 2008 Management Audit recommendations. However, recent performance requires further focus on field practices that are contributing to an increase in estimated bills.*

Conclusion 7.3.2 *BRCS/RCG concluded that the meter reading function accurately reads most meters on their appropriate cycle. However, the number of estimated bills have increased over the last two years due to “no reads” and requires a review of the field activities that are contributing to this reduction in performance.*

Recommendation 7.3.1 BRCS/RCG recommends that the Company ensure that the processes for identifying and prompt repairing of failed ERTs are efficient and timely. Further, the timely data updating associated with meter change-outs should be reviewed for improvements that contribute to lowering the number of estimated billings due to “no reads.”

7.4 Billing Practices

Conclusion 7.4.1 *BRCS/RCG found that most bills are printed within one day of the meter reading.*

Conclusion 7.4.2 *BRCS/RCG found that the bill and remittance processing is using industry leading practices, resulting in timely and accurate customer payment cash processing.*

Recommendation 7.4.1 BRCS/RCG recommends that the Company perform a study to determine if there is a more cost-effective solution to in-house bill printing, inserting, and mailing.

7.5 Customer Satisfaction and Customer Experience

Conclusion 7.5.1 *BRCS/RCG concluded that YGS has trended flat in their J.D. Power Customer Satisfaction ratings and stayed in the middle of their regional peers’ rankings. Management has a good understanding of where YGS ranks according to each of the six criteria and has put in place similar management practices as those that advanced NSTAR Gas from 3rd quartile to 1st quartile in the same period.*

Conclusion 7.5.2 *BRCS/RCG found that, in 2013, overall customer satisfaction lags the regional peer group average by 2.5%. In 2014, YGS moved to the regional average for the East Midsize gas companies.*

Conclusion 7.5.3 *While BRCS/RCG was not aware of any major emergencies since the merger, the organization appears to be well positioned for any such event.*

Conclusion 7.5.4 *BRCS/RCG found that YGS coordinates across functions in speaking with the public in the areas of public events, corporate activities, energy conservation, and safety.*

Recommendation 7.5.1 BRCS/RCG recommends that the Company conduct a re-design of the residential bill to help customers more quickly identify the amount due, when the payment is due, and other information on the bill. Simplifying the bill may raise the satisfaction level and may reduce some inbound phone calls regarding information on the bill that is unclear.

Recommendation 7.5.2 BRCS/RCG recommends investigating bill presentation technologies that may include personalized messaging and a digital pathway to other NU/Yankee resources available through the website, social media, or future technologies. Creating an enhanced eBill with not only similar redesign as mentioned above, but also with an interactive capability (taking advantage of YGS’s high customer adoption rate for eBills), will continue to make this option attractive to customers for lowering printing and distribution costs.

Recommendation 7.5.3 BRCS/RCG recommends that YGS conduct deeper research to gain customer insight into where their customer base gets information about corporate citizenship and other Company programs. As part of understanding where they will be exposed to this information, it will also be valuable to understand when the best time for them to receive it is. The research should seek to understand how the information might be delivered, in addition to traditional methods, looking at social media, text, and other digital channels. This could raise awareness and improve customer satisfaction with the corporate citizenship survey questions as well as expose them to more utility programs that would be of value to them.

Recommendation 7.5.4 BRCS/RCG recommends more comprehensive, proactive notifications be offered to customers via their channel preference (e.g., social media, text, outbound calls, and/or email) to provide personalized notifications of interruptions of service, financial alerts and confirmations, and usage alerts as available. Providing proactive alerts builds value in the utility and further expands self-service adoption, while providing the customer the feeling that they are being cared for by the utility.

7.6 Customer Self-Service Technologies

Conclusion 7.6.1 *BRCS/RCG found that NU and YGS are well positioned for continuing to expand their self-service technologies to improve their customers’ experience and hold expenses in check.*

Chapter 8 – External Relations

8.1 External Relations

Conclusion 8.1.1 *BRCS/RCG found that YGS, working as a part of the NU Corporate Relations group, creates messages and coordinates their distribution across all channels of communications, working in conjunction with other YGS and NU organizations.*

Conclusion 8.1.2 *BRCS/RCG found that YGS, in conjunction with NU Corporate Relations, has put in place good social media tools to keep its stakeholders informed. This is accomplished through consistent collaboration across relevant YGS departments to craft effective messages for external delivery, advance YGS’s best interests where possible, and assist customers when the opportunity arises.*

Conclusion 8.1.3 *BRCS/RCG found that the corporate relations groups (media relations, corporate communications, and government affairs) work in close conjunction with other customer-facing organizations, preparing focused and effective messages as well as developing forward-thinking messaging and promotions strategies.*

Conclusion 8.1.4 *BRCS/RCG found that the Company’s external relations teams have developed good connections with various field and community functions to gain up-to-the-minute insight if a critical event arises.*

Recommendation 8.1.1 BRCS/RCG recommends that the Company expand efforts to attract social media following to increase the number of followers from the hundreds to multiple thousands. This will provide more consistent and timelier communications to those customers choosing to follow. This will also contribute to improved awareness of what NU and YGS are doing in the community and should contribute to overall customer satisfaction. This will require further analysis on how to and when to promote these channels in order to heighten adoption rates.

Recommendation 8.1.2 BRCS/RCG recommends that the Company’s Customer Operations and Customer Services groups, working in conjunction, should identify how to better promote and build awareness of NU/YGS community programs, charitable participation, energy effectiveness, etc. to address low customer satisfaction in the area of the JD Power’s survey results for 2014.

Recommendation 8.1.3 BRCS/RCG recommends that the Company deliver employee newsletters (and notifications of a new publication available) via social media in the distribution of daily and monthly news, in addition to current methods. Initially only a minority may adopt take advantage of this tool, but the numbers will increase as many no longer lose connection because the paper copy of the newsletter remains in the office.

Chapter 9 – Support Services

9.1 Risk Management

Conclusion 9.1.1 *BRCS/RCG found that the Company has adequate departmental policies and procedures for risk management.*

Conclusion 9.1.2 *BRCS/RCG found that the Company has adequate departmental goals and objectives for risk management; however, no formal, written mission statement exists for Enterprise Risk Management.*

Conclusion 9.1.3 *BRCS/RCG found that the Company does ensure awareness of a goals-to-performance link in its oversight of the risk management groups.*

Recommendation 9.1.1 Although the ERM Group is able to state clearly its function and goals, BRCS/RCG believes that a formal, written mission statement would help maintain the cohesive focus of the group and recommends that the group develop such a mission statement.

9.2 Legal

Conclusion 9.2.1 *BRCS/RCG found that, from review of legal affairs process and procedural documentation, the Company appears to manage its legal affairs adequately; however, the documentation for its processes and policies should be definitively written and maintained as one commonly formatted and organized source.*

Conclusion 9.2.2 *BRCS/RCG found that the Company has adequate departmental goals and objectives for risk management.*

Conclusion 9.2.3 *BRCS/RCG found that the Company does ensure awareness of a goals-to-performance link in its oversight of the Legal Department.*

Recommendation 9.2.1 BRCS/RCG recommends that the Legal Department develop written processes and policies to ensure thorough and consistent communication throughout the organization for both current and future reference. Areas to be covered by these procedures should include, but are not limited to, the following: office operations, notification of potential legal risks to senior management, and control and use of external legal services.

9.3 Facilities Management

Conclusion 9.3.1 *BRCS/RCG found that the Company has adequate policies and procedures for facilities management.*

Conclusion 9.3.2 *BRCS/RCG found that the Company has adequate departmental goals and objectives for facilities management.*

Conclusion 9.3.3 *BRCS/RCG found that the Company does ensure awareness of a goals-to-performance link in its oversight of facilities management.*

9.4 Materials Management

Conclusion 9.4.1 *BRCS/RCG found that the Company has adequate policies and procedures for YGS's procurement and materials processes. However, these policies and procedures could be enhanced to further emphasize the importance of the procedures.*

Conclusion 9.4.2 *BRCS/RCG found that the Company has sufficient department goals and objectives for Supply Chain and uses appropriate metrics to monitor the Department's success in meeting those goals and objectives. However, the Monthly Report to the Vice President Supply Chain should include the specific procurement goals, objectives, and metrics.*

Conclusion 9.4.3 *BRCS/RCG found that Company takes reasonable measures such that its policies and procedures are adhered to.*

Conclusion 9.4.4 *BRCS/RCG found that materials management warehouse facilities and space utilization are within expected norms.*

Recommendation 9.4.1 An appropriate member of YGS’s senior management should formally approve the Company’s Procurement and Warehouse Policies and Procedures. Further, the Procurement procedures should specify the buying and approval authorities by title.

Recommendation 9.4.2 The Company should include Procurement Goals and Performance Metrics (Month and YTD) in the Supply Chain monthly report.

Recommendation 9.4.3 Yankee Gas should continue its efforts to improve turn rates and inventory accuracy. The training program for operating personnel at field locations should be solidified and implemented during 2015.

9.5 Transportation

Conclusion 9.5.1 *BRCS/RCG found that the Company has adequate policies and procedures for transportation.*

Conclusion 9.5.2 *BRCS/RCG found that the Company has adequate departmental goals and objectives for transportation.*

Conclusion 9.5.3 *BRCS/RCG found that the Company does ensure awareness of a goals-to-performance link in its oversight of transportation activity.*

9.6 Information Technology

Conclusion 9.6.1 *BRCS/RCG concluded that YGS’s IT function has met the intent of the 2008 Management Audit recommendations.*

Conclusion 9.6.2 *BRCS/RCG concluded that the Company has adequate departmental policies and procedures for IT. These policies and procedures address the appropriate aspects of IT, including extensive information on cyber security.*

Conclusion 9.6.3 *BRCS/RCG concluded that the IT goals and objectives are clear, measureable, and realistic.*

Conclusion 9.6.4 *BRCS/RCG concluded that Company regularly communicates and reviews performance metrics for IT.*

Conclusion 9.6.5 *BRCS/RCG concluded that the Company’s IT technology and major systems are effective in addressing the strategic needs of the business.*

Conclusion 9.6.6 *BRCS/RCG concluded that YGS has access to IT project funding and support.*

9.7 Records Management

Conclusion 9.7.1 *BRCS/RCG concluded that Records Management’s policies and procedures are adequate.*

Conclusion 9.7.2 *BRCS/RCG concluded that Records Management policies and procedures maintain a best practices approach in operation.*

Conclusion 9.7.3 *BRCS/RCG concluded that Records Management performs properly.*

Chapter 10 – Special Topics

10.1 Special Topic – Affiliate Transactions & Cost Allocation

Conclusion 10.1.1 *Proper Guidance - BRCS/RCG found that the Company has an adequate cost allocation system and policies and procedures for affiliate transactions; however, the cost allocation manual could provide additional information.*

Conclusion 10.1.2 *Proper Control - BRCS/RCG found that, while indications exist assuring stakeholders that the Company's cost allocation and affiliate transactions are appropriate, improvement could be made with regard to additional verification activities.*

Conclusion 10.1.3 *Proper Application - BRCS/RCG concluded that the Company applies reasonable costs for services.*

Recommendation 10.1.1 BRCS/RCG recommends that the Cost Allocation Manual include more detailed information concerning the specific services provided by NUSCO to the operating utilities (such as found in the Service Contract between Northeast Utilities Service Company and Yankee Gas Services Company).

Recommendation 10.1.2 BRCS/RCG recommends that the internal audit group schedule an audit within the next year (and include an audit on a three-year cycle) to review the cost allocation manual and process and other affiliate transactions to ensure that (1) actual practice does comply with the governing documentation and (2) that the governing documentation does indeed cover all current activity.

Recommendation 10.1.3 BRCS/RCG recommends that a validation and verification process be developed to randomly check the use of the CAU 99 for multi-company allocations to ensure that work performed was correctly allocated.

Recommendation 10.1.4 BRCS/RCG recommends that the Company continue to participate in additional industry studies or develop their own peer group analysis of shared services costs to ensure appropriate levels of service costs.

Recommendation 10.1.5 BRCS/RCG recommends that an internal audit be performed on NUSCO charges after the close of 2014 to ascertain the difference in year-to-year charges and, if significant, the explanation for the difference.

10.2 Special Topic – Hurdle Rate and CIAC

Conclusion 10.2.1 *BRCS/RCG found that the Company's hurdle rate financial analysis is adequate for its purpose.*

Conclusion 10.2.2 *BRCS/RCG found that the Company collected CIAC from customers that met the Company's criteria for when customers are supposed to make a commitment to a project to serve them. Further, we did not find any instance in which a customer did not pay when CIAC was required.*

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2. INTRODUCTION

Background

The Connecticut Department of Public Utility Control (Department) retained Blue Ridge Consulting Services, Inc. and River Consulting Group (BRCS/RCG) to perform a diagnostic management audit of the Yankee Gas Services Company (“Yankee,” YGS, or “Company”).

YGS is a wholly owned subsidiary of Northeast Utilities (NU) and serves customers as a regulated electric power distribution company. Yankee Gas provides natural gas service to approximately 218,000 customers in 70 cities and towns in Connecticut. With annual revenues of approximately \$424 million, Yankee is Connecticut’s largest gas utility.

Objective and Scope

The objective of BRCS/RCG’s review included (1) an in-depth investigation and assessment of the Company’s business processes, procedures, and policies for management operations and system of internal controls in place and (2) an identification of areas of the Company that might require further investigation.

The scope of BRCS/RCG’s management audit included eight focus areas:

- Executive Management
- System Operations
- Finance
- Human Resources
- Customer Service
- External Relations
- Support Service
- Special Topics

During the course of BRCS/RCG’s management audit, 84 interviews were conducted and 520 data requests were reviewed. The team conducted 8 field observation site visits, which included tours of the Company’s LNG facilities in Waterbury, some field site visits to observe crews working in the field, a tour of the Yankee Gas section of the main warehouse facility in Berlin, and a site visit to a storeroom in Meriden. BRCS/RCG interviewed NU Corporate and YGS senior management as well as representatives of the Company’s unions.

Approach

BRCS/RCG’s management audit methodology allowed the Company the opportunity to explain their processes fully while providing to the auditors the means to observe, question, and otherwise interact with key personnel to ensure complete understanding of the business practices. For each of the eight focus areas, BRCS/RCG prepared initial data requests to examine the documentation produced from the business and by which the business operates. BRCS/RCG also scheduled interviews with key personnel to obtain information concerning (1) the communication/integration of corporate policy and activity, (2) departmental activity, (3)

clarification of responses received through data requests, and (4) additional issues/questions generated through previous data requests and other interviews.

The data request/response process and interview scheduling was an iterative process based on the need for clarification to understand process and practice fully and for information concerning emerging potential issues.

Well into the data gathering activity of the project, but still overlapping it, the auditors began analysis of the information, including determining the efficacy and efficiency of operations as well as the possible effect of any potentially ineffective or inefficient activity. This report provides the results of that analysis along with recommendations to correct or alter any activities in order to move closer toward ideal performance.

Report Organization

The report is organized by focus area as noted under Scope (above). Within each focus area chapter, sections concerning major elements (groups, departments, initiatives, projects, etc.) are delineated. Each chapter is discussed, normally providing Objectives and Scope, Overall Assessment, Evaluation Criteria, Conclusions (in which Analysis is found), and Recommendations. If a chapter has multiple sectional topics, the conclusions (and analysis) and recommendations will be provided by section. The report includes an appendix defining Acronyms.

BRCs/RCG included the Special Topics identified in the RFP for this project within the focus areas of this report where applicable. The following list identifies those special topics by chapter in which their analysis appears.

Chapter 3 – Executive Management

- Special Topic 12 – O&M Budget Process
- Special Topic 19 – Capital Budget Process

Chapter 4 – System Operations

- Special Topic 2 – Gas Commodity Procurement
- Special Topic 3 – Pipeline capacity Agreements
- Special Topic 4 – CT Comprehensive Energy Strategy
- Special Topic 8 – Gas Supply Function
- Special Topic 10 – Inventory Control Function
- Special Topic 13 – Construction Management Function
- Special Topic 15 – Lost & Unaccounted for Gas (also identified as Special Topic 5)

Chapter 5 – Finance

- Special Topic 5 – Treasury Function
- Special Topic 6 – Capital Structure
- Special Topic 7 – NU Impact on YGS Financials
- Special Topic 11 – Internal Audit Practices
- Special Topic 17 – Cost Control Functions
- Special Topic 18 – Receivables Collection Process

Chapter 6 – Human Resources

- Special Topic 16 – Payroll Practices
- Special Topic 20 – Pension Plan Comparisons
- Special Topic 21 – Post-Retirement Benefits
- Special Topic 22 – 401K Savings Plan

Chapter 7 – Customer Service

- Special Topic 14 – Billing Practices

Chapter 10 – Special Topics

- Special Topic 1 – Affiliate Transactions
- Special Topic 9 – Cost Allocation Process
- Special Topic 23 – Hurdle Rate
- Special Topic 24 – Costs & Sales Forecasting Techniques
- Special Topic 25 – Costs & Sales Large Variances
- Special Topic 26 – CIAC

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3. EXECUTIVE MANAGEMENT

Objectives and Scope

The Executive Management audit area includes a review of the Company's Parent Board of Directors, officers, organization structure, strategic and corporate planning, corporate communications and control, administration, and regulatory compliance. In addition, it captures BRCS/RCG's review of the O&M and Capital budgeting areas as they pertain to YGS.

The parent and Company's Board of Directors and the executive management teams, while addressing all its other businesses, must spend an appropriate and proportionate amount of time on ensuring YGS is moving in the right direction. This task area examines the corporate structure and function of the utility's executive management and the ability of both its Boards of Directors and its management to anticipate and respond to opportunities and problems.

BRCS/RCG contends that an effective executive management and governance approach should have the following attributes:

- An experienced and knowledgeable board of directors (BOD) with appropriate committees to provide effective oversight and direction that benefit Connecticut gas customers
- At least one board member who has specific knowledge of the history and environment that Connecticut utilities operate within
- An executive management structure with the right people focusing on the needs of Connecticut customers
- A management team and strategic planning process properly focused on delivering the best service possible at a reasonable cost to Connecticut customers
- A set of strategic plans and objectives grounded in delivering safe and reliable services at competitive prices to Connecticut customers
- An effective corporate management process for addressing operational, legal, and regulatory issues with formal performance reporting
- A clear and defined budgeting process with a formal timetable and criteria
- Regular executive visibility of O&M budgets
- Formal capital committee oversight with regular evaluation of the rate of spending and budget adjustments for unforeseen events
- A system planning process tied to capital budgets as well as expected new business growth predicted by load forecasting
- Clearly articulated budgets reflecting the O&M needs of the gas distribution systems, generally expressed in formal programs (repair, cathodic protection, gas leak survey, etc.)

- A process for developing management talent and filling key positions with highly qualified individuals
- A uniform process for managing and operating across its service territory

Overall Assessment

Yankee Gas Services Company is generally well managed. The post-merger YGS entity, in connection with the NSTAR gas business, is being formed into one homogenous gas company under the new NU parent company. The corporate strategic direction is to have one gas company, with uniform policies, practices, and procedures, that adopts the best from the pre-merger companies. This one-company theme will drive a strong customer focus and remove unnecessary costs from the gas business. However, the organization is in a state of post-merger flux, as all the pieces are not fully in place. There are a number of key director positions that have yet to be filled. All this change has created some tension at the lower levels of the business. The capital and O&M budgets appear to be well controlled and monitored by the senior management.

Evaluation Criteria

BRCS/RCG applied the following evaluation criteria to the executive management review. For uniformity, the capital and operations and maintenance (O&M) budgeting material is presented in the last sections of this chapter.

- To what extent did the Company implement the 2008 audit recommendations?
- Are governance, organizational structure, missions, and relationships within YGS appropriate as they relate to the business model?
- Are organizational responsibilities for planning priorities and budgeting allocations reasonable and appropriate?
- Are the Board of Directors and executive and senior management appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company?
- Does the parent Board of Trustees (BOT) devote adequate time to the business of YGS?
- Does YGS management use appropriate measurable goals, metrics, key performance indicators, etc. to achieve the corporate mission and objectives, and the performance improvement process at successive levels of management?
- Does management's performance comply with procedures and practices related to the scope of this audit (i.e., internal controls, internal audit function, and the Sarbanes-Oxley Act) and are performance and compliance accurately reported?
- Are management performance and compensation programs in alignment with the corporate mission, objectives, and goals at all organizational levels?
- Does YGS appropriately and accurately factor its financial position and the level of its rates into the budgeting process?

- What is YGS’s approach to competitive issues for new markets (such as natural gas vehicles); i.e., what new markets are being considered by the Company, how would the costs for entry into those markets be funded, and would the Company's entry into those markets serve to help or hinder competition in those new markets?
- Is the corporate strategy documented? Is it forward thinking – visionary?
- Are the planning assumptions defined? Do they consider multiple scenarios – potential best, most likely, or worst scenarios for the future?
- Is the mission clear? Understood and embraced by employees?
- Are the values defined? Do employees understand what these values mean and what behaviors they should cultivate to be consistent with these values?
- Have the major strategic priorities been defined? Do the strategic priorities address such areas as fiscal viability and profitability, public trust, customer service, process improvements, organizational change, economic development for the region, environment, and initiatives to sustain continuous improvement and learning within the workforce?
- Are the plans updated to reflect changes, accomplishments, and lessons learned?
- What are the roles of the executive and senior management in the O&M budgeting process? What processes are used by the Board to oversee O&M budgets? What is the level of budget detail the Board sees and what are their responsibilities with regard to the budgets?
- What are the budgeting guidelines, practices, and procedures, including “zero-based” and other alternative methods?
- Is budgeting formally linked to strategic initiatives?
- Is there clear and independent oversight of O&M budgets all the way up to and including the BOD?
- Is there a formal process for handling emergency spending and integrating results into existing O&M budgets?
- What is construction/capital priority-setting process?
- How does the capital budgeting process (including project authorization, project appropriation, increase/decrease of authorization/appropriation, capital budget status reporting, validation in advance of appropriation, funding controls, and other elements of the capital budgeting process) function in YGS?
- How does management oversee and control of capital budgeting? Including the methodologies used to control and manage program and project capital costs in the near and long term; the annual process for reviewing and determining whether total capital planned expenditures are adequate; cost control systems and processes from both a top-down and bottom-up perspective; controls to ensure that increases and

decreases to the construction budget/expenditures are justified and appropriately approved)?

3.1 Organization and Planning

Objectives and Scope

Since the last audit in 2008, NU merged with NSTAR in 2012. This merger is ushering in a number of interesting and positive changes to the legacy NU and YGS companies. A number of significant strategic initiatives are underway, which in some cases exceed the intent of the 2008 YGS Management audit recommendations. Executive management has defined the following corporate objective themes:

- An intense customer focus (customer-centric) based in part on strong communications leading to exceeding their expectations
- A relentless push on managing expenditures in all areas and levels
- A drive to standardize policies, procedures, practices, tools, and equipment across the entire combined NU businesses, consistent with regulatory requirements
- Safety
- Eliminating the five unique brands in favor of one new consistent brand across all business units⁴

These are focused and sometimes competing objectives, but the results, if achieved, will be a highly cost-efficient, customer-focused gas business model. Other mergers have tried these, with varying levels of success. But it is clear from all our senior management interviews that NU is committed to achieving these objectives.⁵

Executive management is well aware of the fact that they must pierce the “frozen middle,”⁶ as one executive put it, to get these objectives fully ingrained in the people and business. From YGS’s perspective, some of these initiatives are beginning to be understood by most levels.

Overall Assessment

YGS has adequately addressed the 2008 Management Audit Executive-level recommendations and continues to address the recommendations through its restructuring effort.

⁴ Interviews T. May 10/14/14, J. Nolan 10/14/14, and C. Carmody 10/14/14; Review of the Strategic Plan.

⁵ Interviews M. Andrukiewicz 10/16/14, A. Marsocci 10/15/14, and R. Powell 10/28/14.

⁶ Interview T. May 10/14/14.

Conclusions

Conclusion 3.1.1 *BRCS/RCG found that YGS’s highly focused effort in addressing the 2008 audit strategy and organizational recommendations demonstrates a reasonable and adequate response, although many of these 2008 recommendations may be superseded by certain post-merger objectives and actions.*

Analysis

BRCS/RCG examined the following 2008 audit recommendations:

4.2.1 Executive Management/Organizational Structure (Priority: Low): As NU Enterprises, Inc. continues to undergo divestiture, NU needs to fully evaluate opportunities to streamline the NUSCO support organization structure.

Company Response:

[REDACTED]

Under the merged company, NU and YGS have made significant strides toward aligning the needs of the business with the new model. Specifically, three of the strategic objectives govern much of the merged company’s organizational design: (1) focus on the customer, (2) focus on adopting common practices, policies, procedures, and systems across business units, and especially between NSTAR Gas and YGS, consistent with each company’s local regulatory

⁷ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009.

requirements, and (3) focus on cost control and the need to drive excess spending out of the business. In interviews with the executive team and YGS managers, BRCS/RCG learned that there is an intense focus on the restructuring of the Company and on the three objectives. Where there is non-compliance to these ideals, management is taking corrective action.

NU has kept its promise to reevaluate “its business model with an eye towards reshaping and realigning its organizational structure,” noted above in its response to the audit recommendation. In September of 2014, NU released its new corporate organization chart, shown in the figure below. The gas business is the first of the two utility distribution systems, gas and electric, to be fully combined into a single reporting unit, Yankee Energy Systems, Inc. This alignment is in direct response to NU strategic initiatives to have only two distribution systems across all its territory.

4.3.1 Strategic and Corporate Planning (Priority: Medium) We recommend consideration toward implementing an enhanced company-wide Strategic and Corporate Planning Process. An enhanced Strategic and Corporate Planning Process would incorporate a strategic management-quality system that cascades through all levels of the NU/Yankee Gas organization, and will help to create the desired employee behaviors, company values, and stakeholder benefits.

BRCs/RCG's believes that NU and its subsidiary, YGS, are linked by an appropriate strategic plan with clearly defined objectives. Further, these objectives are linked to NU's performance management process and monitored regularly.



[REDACTED]

Safety Culture Assessment – [REDACTED]

[REDACTED]

YGS’s key safety issue continues to be soft tissue injuries. Management has instituted a number of changes to minimize future occurrences. But with an aging work force, fewer field people to perform the work, and contract reform, this “soft-tissue” issue continues to plague the Company. Fortunately, there are no major re-occurring more serious types of personnel injuries. In BRCS/RCG’s opinion, the serious injury avoidance is well managed by the safety personnel, supervisors and most importantly the crews.

Conclusion 3.1.2 *BRCS/RCG found that while the new NU organization is still evolving, the governance and the proposed organizational structure are in line with the stated mission and should benefit current and future YGS customers.*

Analysis

The governance, organizational structure, missions, and positional relationships within YGS are reasonable as they relate to the business model. However, as BRCS/RCG was performing this management audit, a number of organizational changes were taking place within YGS. From the chief executive down to the manager level, most members of YGS management understand the objectives set forth in the strategic plan. However, some resistance is still evident at the lower levels as indicated by the executive remark that there is a frozen middle that must be corrected. The new vice president of Gas Operations is identifying where the problems are and making organizational changes.

The new organization structure of having only one gas company for NU is well on its way to achievement. In this new structure the directors and above will have a single focus for all gas company management responsibilities across what was formally two companies, NSTAR Gas and YGS. From managers down through supervisors, focus will center on either Connecticut or Massachusetts functions. There are two exceptions to this new structure:

- The Manager of Pressure Management, who, as part of his responsibilities, operates the meter test lab, is now a centralized function based in Massachusetts where all NU gas meters are tested.
- The Manager of LNG Operations, who is based in Connecticut, now has management responsibility for all LNG facilities both in Connecticut and Massachusetts. This position reports directly to the Director of Engineering.

One of the biggest current organizational changes is in the overall structure of Gas Operations, which recently was revised in July of 2014 to include a Vice President of Gas

⁹ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009-Attachment 1.

Operations. Reporting to this new vice president position will be five directors (three positions have been filled and the two remaining have been posted), who will be responsible for managing each of the following areas for both states:

- Planning, Scheduling, & Resource Management
- Dispatch, Leak Survey, Damage Prevention, & Pressure
- Meter services (emergency response, ERT, install, replacement)
- Construction (in-house and contractors; new main extension, and main replacement)
- Maintenance

The significance of this change is that under the legacy YGS structure the mechanics were trained to do everything; under the new structure, mechanics will have more focused work. The management team believes that this division of labor will enable a higher quality of work to be performed in an efficient manner. The net result should be a lower cost per unit of work.

BRCS/RCG observed that all executives are highly focused on the objectives and have indicated that there is an ongoing focus on the objectives by senior management. The current YGS management team, which is in a state of flux as new changes are announced almost weekly, also reinforced this focus.

Conclusion 3.1.3 *BRCS/RCG found that the current YGS and NU organizational responsibilities for planning priorities and budget allocations are reasonable.*

Analysis

YGS runs a lean organization, yet accomplishes all the required tasks. As examples, Operations completes its formal annual compliance to-do list, and leaks are being addressed according to schedule as defined by the class of leaks (Type 1, 2, 3).

The evolving organization structure indicates that YGS is a reasonably small organization functionally, as many of the support functions have historically been part of the Northeast Utilities Service Company (NUSCO) and after the NU/NSTAR merger, additional functions were moved from Operations and into NUSCO (see page 9 from presentation at kick-off meeting). Specifically, the following functions are centralized in NUSCO:¹⁰

- *Accounting:* Accounting and related services, including, without limitation, preparation of financial reports and preservation of records
- *Auditing:* Auditing and related services, including without limitation, providing planned audits, investigations, external audit activities, Sarbanes-Oxley compliance, and special audits, including preparation of reports and recommendations.
- *Business Continuity and Emergency Response Services:* Business continuity planning, emergency response and related services, including, without limitation, services related to disaster recovery, weather events and emergency maintenance and restoration of

¹⁰ Response to Data Request Q-EXECUTVE-01-038.

utility company services and mobilization of personnel and equipment. There is now a corporate level vice president in charge of these critical functions.

- *Communications*: Communications and related services including without limitation, executive communications, customer and enterprise employee communications, media relations and regulatory communications, operating company and transmission communications, and communications to investors, financial analysts, rating agencies and investment firms.
- *Conservation & Load Management Services*: Conservation, load management and related services including, without limitation supporting various energy efficiency and conservation programs for residential, commercial/industrial and municipal customers and providing affiliates with tracking, analysis and reporting on electric and natural gas programs and budgets.
- *Construction*: Construction, maintenance and related services, including without limitation, provision of equipment and services for gas and electric systems and infrastructure construction and maintenance.
- *Corporate Matters and Corporate Records*: Corporate and related services including, without limitation, corporate matters of affiliates, corporate regulatory filings, financing, regulatory compliance, contracts, claims and litigation, shareholder and investor relation services, corporate record keeping, services related to shareholder and director meetings.
- *Customer Relations*: Utility customer services including, without limitation, customer call center operations, metering operations, billing services, credit and collection services, revenue stream operations, information technology and systems operations.
- *Demand Side Management*: DSM program design, project management, and monitoring and evaluation services; technical advice and assistance in preparing responses to RFPs.
- *Electrical and Gas Plant Operations and Maintenance*: Comprehensive services relating to ongoing and maintenance of electric and gas generating, transmission and distribution facilities.
- *Energy Supply*: Energy supply and related services including, without limitation, planning, procurement of fuel, electricity and natural gas, contract negotiation and administration, and management of renewable energy programs.
- *Engineering*: Civil, mechanical, electrical, environmental and other engineering services; technical advice, design, installation, supervision, planning, research, testing, operation of communications, and operation and maintenance of specialized technical equipment.
- *Enterprise Risk Management*: Enterprise risk management services including, without limitation, assisting businesses with prioritizing, developing mitigation strategies for monitoring, and reporting on their strategic, financial, operational and major capital project execution risks.

- *Environmental:* Environmental and related services including, without limitation, environmental compliance, management, remediation and site assessment, and training.
- *Facilities:* Facilities and related services including, without limitation, property acquisition, property maintenance, property disposition, documentation and recordkeeping of property inventories and valuations and other facilities information.
- *Finance/Business Planning:* Corporate finance and related services including, without limitation, financial analysis, cost analysis, budgeting, tax planning, and performance management.
- *Human Resources:* Human resources and related services including employee ethics, compensation, recruiting, hiring, and orienting new employees, diversity and Affirmative Action, performance management, leadership development and training, wellness, labor relations, and employee benefits.
- *Information Technology:* Information technology services including, without limitation, IT technical support, business process support, document management, software and hardware disbursement and support, web development, application development, project management, network access and support, information security, streaming media, and computer recycling services.
- *Insurance:* Insurance and related services including, without limitation, development, placement and administration of insurance coverages, claims and valuations.
- *Legal:* Legal services including, without limitation legal services related to corporate governance, finance, transactional activities, regulatory proceedings and appeals, and commercial litigation.
- *Marketing:* Marketing services and expertise related to natural gas, DSM, electric transportation and other services.
- *Policies and Procedures:* Services related to the development, implementation and training of policies, procedures, standards, guidelines and related information.
- *Procurement and Stores:* Procurement and related services including, without limitation, procurement and storage of materials, supplies and equipment, contracting of services, strategic sourcing, commodity planning, utilization of diverse suppliers, and sustainability review of products and services in support of affiliates business objectives.
- *Rates:* Review, design, interpretation, analysis, and other services regarding rates and special contracts for sale of gas and electricity.
- *Regulation:* Analysis of laws, rules, and regulations and recommendations for action thereunder; handling of matters with regulatory and governmental authorities; preparation of applications, registrations, and periodic reports; analysis and compliance with environmental requirements.
- *Taxes:* Services regarding federal, state and municipal taxes, preparation of returns and handling of audits and claims by taxing authorities.

- *Transportation:* Transportation and related services to manage, maintain, and provide all support for affiliates’ vehicle assets - the fleet vehicles and heavy equipment motor pool.
- *Treasury and Statistical:* Services regarding financing to meet affiliate capital requirements, both short- and long-term, determination of capital needs, investment management, lender relations, credit risk assessments, and treasury operations, and preparation of financial and statistical reports.
- *Other Services:* Such other services as are requested from time to time.

As a result of removing additional support functions from the YGS operating company it is now clearer to understand organizational responsibilities for planning priorities and budgeting allocations. Further, each of the support functions has clear responsibilities, planning priorities, and budget allocations.

Conclusion 3.1.4 *BRCS/RCG found that the Board of Trustees devotes reasonable effort to the gas business as it pertains to the expansion of the gas business.*

Analysis

In reviewing the strategic plan and in discussions with NU executives, BRCS/RCG recognized an understanding in NU that the only growth area within the corporation is the gas business, which is due directly to the gas expansion programs first authorized in Connecticut and then in Massachusetts. These programs are receiving management attention and some level of Board of Trustees (BOT) review. For Connecticut, there is a target of 82,700 new gas customers in ten years with a target capital spend of \$696 million to support the distribution infrastructure expansion.



Conclusion 3.1.5 *BRCS/RCG found that YGS management uses appropriate measurable goals, metrics, key performance indicators (KPIs), etc. to support the corporate mission and objectives and the performance improvement process at successive levels of management. The Company performs an adequate review of these goals and objectives and adjusts the scorecards and KPIs as required.*

Analysis

The NU parent company, through its executive vision and key objectives, has developed a number of metrics to be used by the performance management team to measure the performance against the Company’s key objectives:

¹¹ CONFIDENTIAL Response to Data Request Q-EXECUTIVE-05-21.

- Cost Control and units of performance measurement (lower levels of management and union personnel)
- Customer Satisfaction
- Reliability
- Employee safety
- Accelerated Replacement Program (ARP) based on an ambitious 15 to 20 year program

Regarding the first objective, BRCS/RCG found that as the organization pursues these thematic objectives, a clear understanding exists that cost control is critical and closely watched by senior management throughout the entire YGS organization, including among union personnel.

Regarding the second objective, BRCS/RCG found the YGS line organization to understand the need to keep the customer informed. However, some direct and non-direct customer-facing units in the organization did not demonstrate the same focus for this objective.¹² During several interviews, the customer focus was not addressed as ongoing focus. Potentially this situation contributes to YGS's J.D. Powers Customer Service rating rising slightly but still in the fourth quartile, while the NSTAR Gas side of the business is in the first quartile.

The metrics are in focus in the following ways:

- They are incorporated into the scorecards used to evaluate management personnel.¹³
- They are posted on office walls (particularly Customer satisfaction and Safety).¹⁴
- They are discussed with the CEO at regularly scheduled executive meetings.
- They are reviewed with managers and supervisors at annual or semi-annual reviews.¹⁵
- They are presented at field safety meetings.

NU has a Corporate Performance Management department whose mission is to support NU's goals and objectives by enabling and, as appropriate, collaboratively driving NU success through developing, measuring, reporting, and communicating progress on key initiatives, performance indicators, and targets in line with corporate and business area strategies.¹⁶

Corporate Performance Management is well founded, contains all the required elements to support a robust and appropriated tracking of the organization's progress. The performance process begins in the fourth quarter of each year. The Corporate Performance Management (CPM) department facilitates a process whereby the CEO and his direct reports (the Senior Team) review and discuss different initiatives that could be the top priorities for NU in the following year. In addition, the Senior Team reviews and discusses the metrics and targets that could be on the top-level scorecard in the following year. Ultimately, a final set of initiatives, metrics, and targets are established and referred to as the Senior Team Priorities and

¹² Field observation at two AWCs; interview T. Foley 10/22/14; Interview S. Winslow 10/20/14; Interview R. Pantalone and K. Richey 10/16/14.

¹³ Interview L. Oliver, 10/14/14.

¹⁴ Field observation at Waterbury AWC.

¹⁵ Interview C. Carmody 10/14/14.

¹⁶ Response to Data Request Q-EXECUTIVE-01-036.

the NU Corporate Performance Scorecard. At the same time, initiatives and scorecards (with metrics and targets) are established for the following year for each of the CEO's direct reports. All of these documents are gathered into one report and referred to the Executive Performance Review package.

Concurrent with the performance process, NU is following its budgeting process and establishing organizational budgets for the following year. To ensure linkage between the performance expectations and the budget expectations for the following year, the CPM department working with each organization synchronizes its calendar with the key milestones from the budgeting process. Early in the year minor refinements may be made to the initiatives, metrics, or targets based on the final results for the prior year and/or emerging issues.

The approved initiatives and scorecards described are reviewed monthly with each officer's leadership organization followed by a group meeting with the Senior Team executives. The meetings focus on the progress to date and expectations for the future. These meetings give the attendees the opportunity to interact directly with each other, to better understand NU's performance as a whole, to better understand their peer's performance, and to effectively make decisions regarding reprioritization, collaboration, etc. The meeting results are assembled into the Executive Performance Review package that is distributed electronically to all NU directors and above along with a brief summary of talking points. The combination of the attendees at the meeting and distribution of the performance results allows the management team to update their staff on NU's overall performance and their own organization's performance as well. Corporate Communications also provides performance posters through the NU System, which highlight a few key metrics and results. The information from this combined effort feeds the next year's planning process.

The CPM department continues its performance-related work throughout the year. This work can include refinement and/or alignment of metrics between and across organizations, providing performance analytics, leading or supporting specific performance initiatives, coordinating NU's involvement in benchmarking studies, and supporting various regulatory requirements.¹⁷

A number of systems support and feed performance management reports. The table below references the various information or support systems used to support the Yankee Gas performance management process.

¹⁷ Response to Data Request Q-EXECUTIVE-01-028.

Table 1: Performance Management System¹⁸

Safety	SIRS Database – Internal database maintained by Safety Department
Service Appointments	PCAD (Program Computer Aided Dispatch) – mobile dispatch system managed by Gas Dispatch
Construction & Work Management	STORMS – utility industry application used to create, design, and track field work orders
Personnel Time Reporting	COLT – Yankee Gas system to track and manage timesheet information such as jobs worked, hours worked.
Financial	CPM System – (now retired) system that tracks and reports financials for Yankee Gas
Other Operational Data	EXCEL – numerous departmental/functional spreadsheets maintained by Yankee Gas management to track and manage business functions
Performance Measures	Actuate’s Performance Scorecard – a software tool which maintains & reports a record of performance
Performance Data	SAS – a set of software applications used to store, combine, and report data from a variety of sources

Because the performance system had been in place pre-merger, the Company was able to adjust indicators to capture merger efforts as well as normal performance. The variation in reporting frequency appears to be tied to management’s need to respond to evolving changes in the merger effort as well as normal business activity.

Since the completion of the merger, management and, in particular, Performance Management has devote much of their time to integrating the legacy NU family of businesses into the new NU business model. Below is a review of management’s efforts to effectively merge the two businesses.¹⁹

2012 Goal – integrate legacy NU and legacy NSTAR performance management functions, systems, and reporting.

Results

- Successfully implemented the post-merger Corporate Scorecard, which was mostly designed during the pre-merger integration work, and the post-merger Organization Scorecards. These scorecards allowed the Senior Team to effectively monitor and review progress toward a common set of goals.
- Extensive collaboration and facilitation with appropriate business areas was required in order to create scorecards with metrics that were consistent in spirit and could be embraced by the Senior VPs and Operating Presidents.
- Almost all automation previously relied upon to generate reports and analytics was unavailable due to incompatibility of software and/or technology between pre-

¹⁸ Response to Data Request Q-EXECUTIVE-01-032.

¹⁹ Response to Data Request Executive-01-037.

merger companies. Extensive amount of manual work was required to generate deliverables. Planned and initiated steps to align performance management reporting to support the post-merger company.

- Identified over 90 Organization metrics that were calculated differently between operating companies and/or completely new to at least one of the operating companies. By year-end, approximately 58 of these metrics had been reworked and resolved.
- Successfully led the Performance Review Process, a multi-level monthly process to review and discuss progress toward meeting key goals and initiatives at all key business leadership levels across NU. The process is supported by the Corporate and Organizational performance scorecards, key initiative progress summarizes, and supporting analytics.

2013 Goal –Operating Plan and Budget - improve integration of performance planning and metrics with the development of the budget.

Results

- Successfully integrated the 2014 metrics, goals, and initiatives into the planning process at an earlier stage than prior years. Historically, discussions about 2014 metrics, targets, and initiatives have taken place after the budget review meetings with the CEO and CFO and this has left very little time before the NU Board meeting in December. In August, Corporate Performance Management provided key glide path and benchmarking information, along with supporting analyses and templates, which in turn allowed each SVP organization to better correlate their budget submissions to their performance expectations. On October 1st, a meeting was held with the Senior Team to provide early indications of the 2014 performance picture and better preparation for the budget review meetings. Refinement of the 2014 targets still occurred in late November, but with much less confusion and urgency than prior years.

2013 Goal - Standardization and Consistency – move away from the temporary and ad-hoc processes that were followed in 2012 and now design and implement appropriate processes in 2013 that will further the overall goal of standardization and consistency. Areas of focus (for CPM) will include – standardized reporting that maximizes the availability of automated reports, and harmonization of performance metrics across all of NU.

Results

- Proposed and initiated six working teams to align remaining officer level metrics in Operations. Some of the newly aligned metrics were incorporated into the monthly performance scorecards while others were held until January 1, 2014 for implementation.
- Collaborative sessions held with various organizations to establish consistent definitions and reporting on items such as monthly electric and gas work plan meetings, overtime, reliability reporting by area work centers, safety metrics, customer surveys, etc.

- Incorporated the impacts of merger integration into the existing processes in a consistent and standardized manner. Some of the merger integration events include creating the position of President of Distribution Business reorganization in Transmission, integration and reorganization in Gas Operations, etc.

2013 Goal - Performance Reporting Technology – the generation and reporting of performance scorecards and supporting analytics is incredibly manual at this time. This project focuses on the upgrade of PBVIEWS to the latest version and the redesign of the pre-merger structures to create a post-merger set of “views” that will support the ongoing performance reporting needs and move NU back to a satisfactory level of automation. Once complete, other process improvements can be investigated in earnest.

Results

- Working collaboratively with the IT organization and the vendor to resolve configuration issues with the product, PBVIEWS was upgraded albeit a few months later than planned. In response to the delayed implementation of the upgrade and to the IT reorganization that began in September, the Corporate Performance Management team reworked their remaining project plan and realigned existing resources in order to complete the work.
- In addition to the upgrade of PBVIEWS to the latest version for both legacy companies, CPM consolidated the databases into one database, and redesigned the pre-merger structures to create a post-merger set of “views” to support the ongoing performance reporting needs.
- Options for future reporting tools continue to be evaluated collaboratively with the IT organization. The PBVIEWS product has limitations from a reporting perspective and for ad-hoc reporting of performance data. Both companies have utilized different methods to handle these reporting needs, such as using Excel, Access, and SAS, but a more integrated and easier method is needed. The IT organization is helping to identify and evaluate options.

2013 Goal - Service Quality Plans – defend against inappropriate metrics, targets, and/or potential penalties and proactively support and advocate for metrics that support NU’s overall belief in a high-quality level of customer service.

Results

- As expected, the MA DPU opened a generic investigation into the quality of service provided by the local distribution companies and will determine what changes, if any, are necessary to improve the service quality standards. Responses to the DPU’s request for comments and to the MA AG’s recommendation to strengthen the service quality standards were filed in March. Reply comments and additional comments on the MA AG’s comments were filed in May and June. The effort was collaborative and coordinated by outside counsel with the Corporate Performance Management organization taking a leadership role. NU’s position on different questions and recommendations was clearly stated and collaboration with other utilities was positive. The investigation remained dormant until early December

when the DPU notified the parties of its intention to draft proposed changes to the service quality standards at an unspecified time in the future. In the interim, questions have and will continue to be posed to the parties.

2013 Goal – Benchmarking & Best Practices – compare key process and functions to the industry to identify opportunities for continuous improvement.

Results

- Conducted benchmarking and best practice research through participation in several annual studies focused on electric operations, gas operations and customer care related processes and functions, and initiated or responded to numerous smaller studies focused on specific functions. Provided NU business area leaders with results and analysis throughout the year to support key initiatives, strategic planning, budgeting, and performance goal-setting processes.

3.2 Internal Auditing

Objectives and Scope

The Institute of Internal Auditors defines internal auditing as “an independent, objective assurance and consulting activity designed to add value and improve an organization’s operations.” Auditing helps an organization accomplish its objectives by bringing a systematic, disciplined approach to evaluate and improve the effectiveness of risk management, control, and governance processes.

BRCS/RCG’s evaluation of the internal audit function focused on the Internal Audit Department’s (IAD) organizational structure and reporting lines, responsibilities, experience and training, audit planning, audit execution and follow-up, and best practices.

Overall Assessment

The Internal Audit Department is positioned correctly within NU to provide independent assessments of NU processes. It is professionally staffed with individuals who meet the requirements of IA auditors. The audit planning process is appropriately risk based, and audits are identified and prioritized based upon input from across the organization.

The Company implemented the 2008 management audit recommendations regarding consideration of audit subjects that had not been reviewed in the past five years. The Company stated that IAD considered all YGS subjects each year when creating its audit plan.

YGS does not have a separate internal audit group. Internal audit is provided through NUSCO. The internal audit reporting lines are appropriate with the Vice President of Internal Audit reporting functionally to the Audit Committee and administratively to the Vice President/General Counsel/Corporate Secretary of NU. These reporting lines help ensure IAD has the authority and support it needs to accomplish its assignments throughout the organization.

The internal audits, performed from 2009 through 2014, demonstrated that the Company’s internal audit program ensures independent verification of the accuracy of

accounting information and provides objective evaluation (and improvement) of the accounting and operational practices of the Company.

The Company tracks open audit recommendations. The YGS open audit recommendations identified for the last five years have been completed.

The group monitors and compares itself to industry best practices. It participates in regular peer reviews and adheres to the Institute of Internal Auditors Standards and the Code of Ethics.

Conclusions

Conclusion 3.2.1 *BRCS/RCG found that the Company adequately addressed the 2008 recommendations regarding the consideration of audit subjects that had been not reviewed in the past five years.*

Analysis

The Company stated that IAD considers all YGS subjects each year when creating its Audit Plan. The 2008 Management Audit included the following recommendation:

6.4.1

[REDACTED]

BRCS/RGC reviewed the process used to develop the annual Audit Plan. The plan is developed in coordination with Company management, the Enterprise Risk Management group and the Internal Audit Department to develop an audit universe. The audit universe includes all YG audit subjects which is further refined to identify high-risk areas and areas for potential audit. While the time since an audit was last performed in a given subject area is considered, it is appropriately not the primary factor in determining whether that area should be subject to audit in a given year. The Internal Audit Department appropriately focuses its resources on the high-risk areas to ensure that the processes are providing reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance.²¹

Conclusion 3.2.2 *BRCS/RCG found that YGS does not have a separate internal audit group. Internal audit is provided through NUSCO. The reporting lines of NUSCO's Internal Audit Department (IAD) are appropriate.*

²⁰ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1, page 15-16.

²¹ Interview R. Smith 10/20/14.

Analysis

BRCS/RGC found that the Internal Audit Department (IAD) reporting is a shared services function. The IAD lines are appropriate with the Vice President of Internal Audit reporting functionally to the Audit Committee of the Board and administratively to the Vice President/General Counsel/Corporate Secretary of NU. These reporting lines help ensure IA has the authority and support it needs to accomplish its assignments throughout the organization.

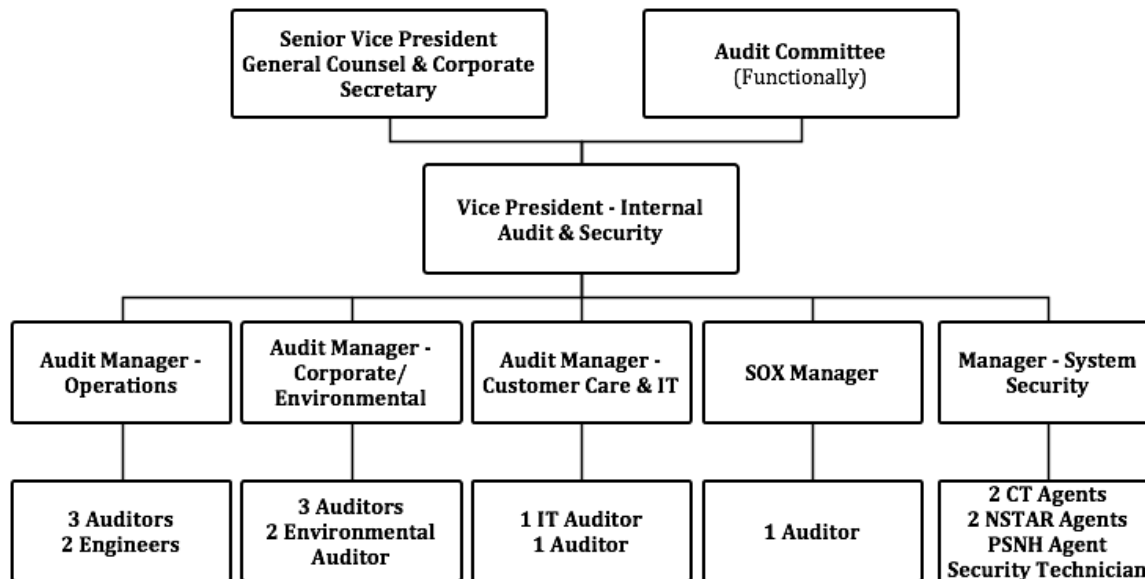
At the time of the merger, the NSTAR internal audit group reported to the CFO and the NU internal audit group reported to the CEO. Following the merger, NU changed the internal audit group reporting line to the General Counsel. The Vice President of Internal Audit explained that with all that was going on with the merger integration, NU believed that the General Counsel would have more time to focus on this important group.²²

Conclusion 3.2.3 *BRCS/RCG found that the IAD is well organized and adequately staffed.*

Analysis

The IAD group is organized as follows.

Figure 2: Internal Audit and Security Organizational Chart



The Internal Audit Department is responsible for the following:

1. Planned Audits
2. Environmental Auditing
3. Sarbanes-Oxley Section 404 Audit Coverage
4. Investigations/Special Projects

²² Interview R. Smith 10/20/14.

5. Consult on existing or proposed systems, projects, plans, policies, and procedures of the Company²³

The Vice President, Internal Audit and Security, is also responsible for physical security and access control, which is addressed in the Support Services chapter of this report.

The group is not responsible for any specific strategic initiatives, but supports several strategic initiatives, including implementation of the common accounting system to ensure controls are in place and SOX Section 404 testing.²⁴

Conclusion 3.2.4 *BRCS/RCG found that the internal auditing group needs technical auditors to support their efforts in technical audits.*

Analysis

Technical audits have previously been handled through job rotation. The IAD is currently seeking to hire a second permanent engineer to assist in the completion of those audits.²⁵

Conclusion 3.2.5 *BRCS/RCG found that individuals in IAD are qualified and participate in continuing professional education.*

Analysis

The group is well organized and adequately staffed. Individuals are qualified and participate in continuing professional education.

In addition to holding undergraduate degrees, most of the 18 professionals within the internal audit group have advanced degrees and/or professional designations. The average work experience is 25 years, with an average of 12 years in internal audit. The average tenure with NU is 16 years. All of the professional staff are members of the Institute of Internal Audits (IIA).²⁶

Each member of the audit staff, including managers, has a goal associated with his or her personal and professional development. Training is planned each year based on the individual auditor's need and skill level.²⁷ Professional certifications require minimum training hours. For example, CIAs (Certified Internal Auditors) must complete and report 80 hours of Continuing Professional Education credits every two years.

IAD personnel attend seminars and conferences that cover a variety of subject matter related to the internal audit profession. Professional associations, such as the Institute of Internal Auditors (IIA) and the Information Systems Audit and Control Associations (ISACA),

²³ Interview R. Smith 10/20/14.

²⁴ Interview R. Smith 10/20/14.

²⁵ Interview R. Smith 10/20/14.

²⁶ Response to Data Request Q-IA-01-299.

²⁷ Response to Data Request Q-IA-01-300.

generally sponsor the seminars and conferences attended. Deloitte and KPMG provide other training. Contractors, on an as-needed basis, provide specialty and technical training.²⁸

Conclusion 3.2.6 *BRCS/RCG found that the audit planning process is appropriately risk-based and audits are identified and prioritized based upon input from across the organization.*

Analysis

The development of the annual Audit Plan is among the most critical activities that Internal Audit (IA) performs. The Audit Plan is developed to provide a thorough and effective planning process to ensure that a meaningful and challenging plan is designed to provide Company management with timely and useful feedback on the Company’s operations and control environment.

[REDACTED]

²⁹

[REDACTED]

³⁰

Conclusion 3.2.7 *BRCS/RCG found that the internal audits, performed from 2009 through 2014, demonstrated that the Company’s internal audit program ensures independent verification of the accuracy of accounting information and provides objective evaluation (and improvement) of the accounting and operational practices of the Company.*

Analysis

Internal Audit conducts approximately 50 internal audits, 30 environmental audits, and 10 reviews of control process each year.³¹ IAD planned and conducted the following audits of YGS for 2009 through 2014:³²

[REDACTED]

²⁸ Response to Data Request Q-IA-01-300.

²⁹ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1, pages 15-16.

³⁰ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1, pages 15-16.

³¹ Interview R. Smith 10/20/14.

³² Response to Data Requests Q-IA-01-303 and CONFIDENTIAL Q-FINANCE-03-024.

[Redacted text block]

[Redacted text block]

[Redacted text block]

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[REDACTED]

[REDACTED]

BRCs/RCG found that the Company tracks open audit recommendations. The YGS open audit recommendations identified for the last five years have been completed.

The Company tracks open audit recommendations and provided BRCs/RCG a copy of their status for 2010-2014. The status report included the audit finding and description and the management action completion date. The following table provides the open audit recommendations for YGS. Management has completed all recommended actions.³³

Table 2: Audit Recommendations for YGS 2010-2013

Date Issued	Audit	Audit Area	Audit Recommendation
1/19/2010	Liquefied Natural Gas (LNG) Audit Rating: Controlled with Opportunities for Improvement	<ul style="list-style-type: none"> • Configuration Management – Plant Design and Drawing Changes • Operations – Operating Procedures • Maintenance 	<ul style="list-style-type: none"> • The LNG Plant should develop additional procedural controls for plant drawings, which addresses controlled hardcopies, storage of electronic files, archiving of superseded revisions, review and approval of changes. Uncontrolled drawings should be removed from the control room. • The plant design change process should be enhanced to include specific consideration of design specifications, operating and maintenance procedures, maintenance manuals, plant drawings, obsolete spares, new spares, CASCADE, training, environmental and safety

³³ Response to Data Request Q-IA-01-305.

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Date Issued	Audit	Audit Area	Audit Recommendation
		<ul style="list-style-type: none"> • Safety • Training 	<p>issues.</p> <ul style="list-style-type: none"> • Management should ensure that all preventative and corrective maintenance tasks are initiated, tracked, and documented using CASCADE. Any hard copy documentation should be scanned for retention. A monthly backlog query should be performed. • The LNG Plant should enhance existing procedural controls regarding purging of plant equipment other than piping. Additional enhancements are also recommended for the electrical arc flash and Lockout Tagout programs. • Error prevention training should be incorporated in the training manual.
11/1/2010	Waterbury-to-Wallingford Line (WWL) Project Audit Rating: Controlled	<ul style="list-style-type: none"> • Yankee Gas Project Management Process and Framework 	<ul style="list-style-type: none"> • Yankee Gas should prepare a specific project management manual, which supports an overall large capital framework, which integrates all the project requirements and activities.
7/15/2011	Yankee Gas (YG) Gas Control Audit Rating: Controlled with Opportunities for Improvement	<ul style="list-style-type: none"> • Policies and Procedures 	<ul style="list-style-type: none"> • Gas Control management should review, update and communicate GOs and GCs. Updates should address differences between GOs and GCs, management expectations regarding alarm responses, documentation requirements, process surrounding alarm changes and adding new alarms.
1/25/2013	Yankee Gas Dispatch Audit Rating: Controlled	<ul style="list-style-type: none"> • Dispatcher Shift Turnover Process • Dispatcher Training Program 	<ul style="list-style-type: none"> • YG Meter & Service management should review the expectations regarding the shift turnover process and reinforce what actions are necessary (including updating procedures) to drive to a more consistently applied process. • YG Meter & Service management should review the current training program and take necessary actions to further enhance the training program and provide greater consistency.
12/17/2013	Yankee Gas Construction Process Audit Rating: Controlled	<ul style="list-style-type: none"> • Construction Documentation Framework 	<ul style="list-style-type: none"> • Yankee Gas management should establish a program with a defined and documented framework reflecting the capital project processes for the Accelerated Replacement and New Business programs.

Conclusion 3.2.8 *BRCS/RCG found that Internal Audit also performs a limited number of consulting assignments, such as process reviews and special projects.*

Analysis

IA performs some unplanned reviews, which are typically requested by management and are assessed by IAD on whether time and resources are available. Less than ten percent of the IAD time is spent on consulting assignments. Once a consulting assignment is accepted, IAD works with the manager requesting the work to develop a plan. Once complete, a memo is issued with the results and observations. No formal tracking is maintained on any recommendations.³⁴

Internal Audit provided the following non-audit projects for YGS from 2009-2014.³⁵

2009

- Yankee Gas Financial Customer Loan Review

2010

- Yankee Gas Meter Inventory (Planned 2009, Completed in 2010)

2011

- Yankee Gas Cast Iron Retirement Process Review
- Yankee Gas Distribution Integrity Management Program
- Yankee Gas Code of Conduct Implementation
- Yankee Gas/Plant Accounting Records Reconciliation (PURA Request)

2012

- Yankee Gas Public Awareness Program (PAP) Review

2013

- Review of Yankee Gas Call Before You Dig Company at Fault Incidents

2014

- No Yankee Gas Non-audit Projects completed as of August 1, 2014

Conclusion 3.2.9 *BRCS/RCG found that the group monitors and compares itself to industry best practices. It participates in regular peer reviews and adheres to the Institute of Internal Auditors Standards and the Code of Ethics.*

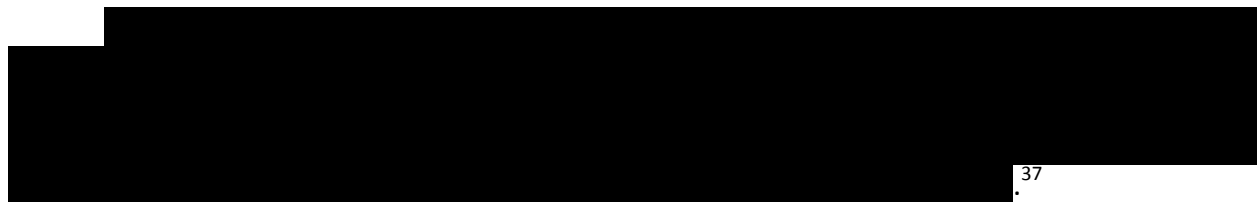
Analysis

The Institute of Internal Auditors (IIA) requires an independent quality assurance review every five years to evaluate compliance to standards. The report is issued to the Audit Committee. The last audit was completed in 2010.³⁶

³⁴ Interview R. Smith 10/20/14.

³⁵ Response to Data Request Q-IA-01-304.

³⁶ Interview R. Smith 10/20/14.



³⁷

Other best practices are identified through industry conferences, training seminars, and participating on various committees with EEI, AGA, and the Corporate Executive Board.³⁸

3.3 Executive Compensation

Objectives and Scope

In this area, BRCS/RCG examined the Company's executive compensation practices using responses to data requests, the 2014 NU Proxy Statement, and the interview with the Director of Compensation. Since the compensation and performance assessment practices of the CEO, CFO, and named executive officers of NU are required by the SEC to be disclosed in the NU Proxy Statement, BRCS/RCG relied substantially on this information to form its findings.

The Company identified the NU Mission Statement as follows:

We are one company focused on delivering reliable energy and superior customer service. We seek to be the region's most respected energy provider. We meet the highest expectations of customers, shareholders and regulators by:

- Meeting and exceeding our performance targets while driving efficiency and managing costs
- Providing reliable service and accurate information
- Demonstrating inclusive, respectful, honest and ethical behavior³⁹

Overall Assessment

NU's performance and compensation programs are in alignment with the corporate mission, objectives, and goals. The executive compensation practices and current compensation levels are competitive with similarly sized utilities and general industry. The metrics used in the incentive plans are consistent with the corporate objectives and annual goals. The compensation programs, therefore, should support the attraction and retention of qualified officers and directors.

³⁷ CONFIDENTIAL Response to Data Request Q-IA-01-306.

³⁸ Interview R. Smith 10/20/14.

³⁹ Response to Data Request Q-GENERAL-01-004.

Evaluation Criteria

BRCS/RCG applied the following evaluation criterion to the Executive Compensation review:

- Are management performance and compensation programs in alignment with the corporate mission, objectives, and goals at all organizational levels?

Conclusions

Conclusion 3.3.1 *BRCS/RCG concluded that NU's Board Compensation Committee's executive compensation actions focus on pay-for-performance against pre-established goals and objectives.*

Analysis

The NU Board's Compensation Committee is responsible for reviewing and approving the corporate goals and objectives relevant to the CEO's compensation and evaluating the CEO's performance against those goals and objectives. Consistent with this responsibility, the Committee established the CEO's performance criteria and approved the total compensation based on the annual evaluation. In addition, in collaboration with the CEO, the Committee oversees the evaluation of those executive officers reporting directly to the Chief Executive Officer.⁴⁰ This approach is consistent with the industry and the SEC requirements.

The Committee stated that their philosophy is to link executive compensation to performance that will ultimately benefit NU's customers and shareholders. Their intent of the NU compensation program is to attract and retain the best executive talent, motivate the executives to meet or exceed specific stretch financial and organizational goals set each year, and compensate the executives in a manner that aligns compensation directly with performance.⁴¹

Consistent with the Compensation Committee's stated practices, BRCS/RCG has confirmed that the Committee relies on annual industry compensation surveys and advice from a compensation consultant and an experienced compensation executive for the appropriate industry compensation data and guidance.

Conclusion 3.3.2 *BRCS/RCG concluded that NU's executive compensation practices are consistent with utilities of similar size and general industry.*

Analysis

Based on BRCS/RCG's experience, the Compensation Committee's stated practice of providing the executive officers with target compensation opportunities, using a range that is

⁴⁰ 2014 NU Proxy Statement, Compensation Committee, p. 18.

⁴¹ 2014 NU Proxy Statement, CD&A, Pay for Performance, p. 24.

approximately equal to the median compensation levels for executive officers of companies comparable to NU, is consistent with practices of other utilities.⁴²

The Compensation Committee established parameters regarding the components that make up NU's executive compensation. The mix of compensation elements is targeted to be approximately equal to the competitive median market mix. The mix is heavily weighted toward incentive compensation, and incentive compensation is heavily weighted toward long-term compensation. The Committee believes that since the most senior positions have the greatest responsibility for implementing NU's long-term business plans and strategies, a greater proportion of total compensation will be based on performance with a long-term focus.⁴³ This approach is consistent with industry practices.

The Compensation Committee establishes specific financial, operational, and individual performance goals, payment percentage, and weighting for the executives each year. This practice is also consistent with industry practices.

Conclusion 3.3.3 *BRCS/RCG concluded that the metrics used in executive incentive compensation are consistent with the corporate objectives and goals. Additionally, the performance program used for executives has a variable pay component that is directly tied to measurable performance metrics.*

Analysis

The Compensation Committee of the Board establishes incentive compensation goals annually. These objectives or goals are listed each year in the NU Proxy Statement. The 2014 NU Proxy Statement's Compensation Discussion and Analysis (CD&A) section also contains the analysis of performance against the 2013 goals.⁴⁴ Examples of the 2013 goals and the performance assessment are listed below:

- We achieved recurring earnings per share of \$2.53 in 2013, exceeding the challenging goal of \$2.50. This earnings result was an 11% increase over 2012 versus an average industry increase of approximately 4%. The Committee determined this goal to have attained a 200% performance result.
- We achieved operations and maintenance cost reductions through successful integration initiatives, resulting in a 3.2% reduction in operating expenses in 2013. This exceeded the goal of a 3% reduction and compared with an expected average industry increase of 2-3%. The Committee determined this goal to have attained a 175% performance result.
- Our dividend increased to \$1.47 per share, a 7.1% increase from the prior year, and nearly double the industry average dividend growth of 3.7%. The Committee determined this goal to have attained a 150% performance result.

⁴² 2014 NU Proxy Statement, CD&A, Market Analysis, p. 26.

⁴³ 2014 NU Proxy Statement, CD&A, Market Analysis, p. 27.

⁴⁴ 2014 NU Proxy Statement, CD&A, 2013 Annual Incentive Program, pp. 29-32.

- The Company’s credit rating at Standard & Poor’s is “A-,” among the highest in the utility industry, providing the foundation for favorable financing opportunities during the year and in the future. The industry average credit rating at Standard & Poor’s is “BBB.” The Committee determined this goal to have attained a 150% performance result.
- We delivered total shareholder return of 12.3%, the fifth consecutive year of double-digit total shareholder return. The Committee determined this goal to have attained a 100% performance result.

These goals are specific and measurable and consistent with the corporate mission.

3.4 Strategic Planning

Objectives and Scope

Strategic Planning is essential to today’s utilities. Utility executives have to navigate an environment that sometimes has planning elements competing for limited resources. In recent years, a shift has occurred in how utilities manage customer expectations, which are being formed by non-utility businesses. One example is customer expectations of service level to customer inquiries. Compounding this difficulty is the rising cost of maintaining a complex distribution system and the pressure to manage rates aggressively. In this section, BRCS/RCG reviews NU and YGS’s efforts to plan for the future while balancing all the competing interests.

Overall Assessment

As a result of the merger, NU has elevated its strategic planning and performance management effort, while integrating the two. The three principal strategic objectives are integrated into both the performance management function as well as the daily operations of YGS.

Conclusions

Conclusion 3.4.1 *BRCS/RCG found that the corporate strategy is well documented and communicated throughout the corporation, including YGS. While cost control isn’t necessarily forward thinking or visionary, the customer focus is very much so.*

Analysis

The mission of the Strategic Planning and Policy organization is to identify and catalyze opportunities to better meet the needs of their customers and increase the customer and shareholder value of NU by identifying growth opportunities grounded in sound strategic and business analysis, framing the Company’s policy agenda and establishing NU as the region’s thought leader, and managing the Company’s research investments into emerging opportunities.⁴⁵

⁴⁵ Response to Data Request Q-EXECUTIVE-01-017.

The Customer focus component of the strategy is the adoption of the “New” utility model wherein the customer is kept well informed and has a definite say in how he or she will use energy. NU’s focus on the customer has already positioned NSTAR in the first quartile of the JD Power’s Customer Survey. YGS, the newer member of the post-merger NU business, has already seen a small bump-up, moving from fourth to third quartile.

There is a formal NU strategic plan and a small eight-person strategic planning function, headed by the Vice President of Corporate Strategy, who reports to the Executive Vice President and CAO. The CEO and his direct reports design the strategic plan.

- Staffing levels remain consistent over the last three years.⁴⁶
- Roles and responsibilities are consistent with other strategic planning organizations. The skill requirements are also in line with the roles and responsibilities.⁴⁷

Conclusion 3.4.2 *BRCS/RCG found that NU’s effort is thorough in planning its strategic goals and objectives via in-depth analysis of its options and their impact on financials.*

Analysis

In order to deliver on the objectives outlined in the Strategic Plan (which are confidential in their specific expression but are listed in this chapter as broad themes), management would have to evaluate a number of different scenarios to ensure that the selected objectives would produce the desired results without causing harm to its financial concerns, customers, or employees. In their direct response to our initial questions, the Company included the following statement on the strategic planning process:

The goals of the Strategic Planning area are developed in the context of the mission of the group which is to "identify and catalyze opportunities to better meet the needs of our customers and increase the customer and shareholder value of NU by identifying growth opportunities grounded in sound strategic and business analysis, frame the Company's policy agenda and establish NU as the region's thought leader and manage the company's research investments into emerging opportunities."⁴⁸

Conclusion 3.4.3 *BRCS/RCG found that management needs to continue its efforts to broadcast the objectives below the Director level. The NU mission is clear; both executive and senior management understand and embrace the mission and objectives, but there are areas within YGS where the message is not receiving the full support necessary to convey its importance.*

Analysis

Our interviews of executive management through the director level showed a clear understanding and ownership for the mission and the objectives of the strategic plan.

⁴⁶ Response to Data Request Q-EXECUTIVE-01-020.

⁴⁷ Response to Data Request Q-EXECUTIVE-01-021.

⁴⁸ Response to Data Request Q-EXECUTIVE-01-018.

BRCS/RCG did observe during our interview process that, at the supervisory and field levels, some of the metrics seemed to be lost or, at minimum, blurred. Several management personnel and many of the union personnel could not articulate all the objective themes, except in the area of cost control. There was some frustration concerning this particular objective.⁴⁹

Management has referred to this as the “Frozen Middle,” an area in which there is a breakdown in the message at the director-manager level.⁵⁰ Management has directed its officers to hold Town-Hall style meetings to discuss the changes and the importance of the metrics. Many of the executives have already begun the Town-Hall meetings, which have been well received. Management is moving in the direction of having the directors conduct Town-Hall meetings down to the field level.

BRCS/RCG observed this communication breakdown in one of the Area Work Centers (AWC), where the management team did not take full ownership of the message. In our opinion, this causes the message to be dismissed by the audience.

Conclusion 3.4.4 *BRCS/RCG found that YGS has done a good job of defining and communicating the core values. More monitoring and strategic efforts are needed to address the soft-tissue-injury issue and its impact to YGS financials.*

Analysis

The Chief Executive Officer communicated the values the corporation should hold. These are communicated throughout NU/YGS by the senior executives in their Town-Hall meetings. It would appear that the values are understood by all employees, particularly with respect to ethics, customer management, and budget adherence. One area of possible concern is the number of soft tissue injuries. YGS is experiencing a high number of these, particularly in the senior ranks of the mechanics. While many of these are fully justified, we found that a number of these are occurring in employees nearing retirement. These types of injuries do, in fact, impact the overall O&M expense numbers and put YGS in a position to have to use more contractors to do work slated for in-house personnel.

Management has done a good job with communicating values, but it needs to do more concerning monitoring soft tissue claims and when they occur.

Conclusion 3.4.5 *BRCS/RCG found that major strategic priorities have been defined which address fiscal viability and profitability, public trust, customer service, process improvements, organizational change, economic development for the region, environment, and initiatives to sustain continuous improvement and learning within the workforce.*

⁴⁹ Interviews R. Pantalone and K. Richey 10/16/14, T. Foly 10/22/14, Waterford mechanics 10/16/14.

⁵⁰ Interview T. May 10/14/14.

Analysis

As was stated in the opening of this chapter, the major objective themes have been defined and in place since the merger. Many of these themes were in place at NSTAR prior to the merger and serve as the guiding principles for the post-merger NU Company.

Conclusion 3.4.6 *BRCS/RCG found that YGS's approach to competitive issues is centered on the expansion of gas service in Connecticut, as well as on providing gas pipeline capabilities to critical electric generation. However, there was no mention other new gas markets in the strategic plan.*

Analysis

Generally, the new markets issue is a corporate level consideration. As such BRCS/RCG did not see or hear any statements directly addressing new markets such as natural gas vehicles or gas air conditioning. We did receive information on two-other fronts pertaining to natural gas markets. The first is Connecticut's comprehensive energy plan to convert oil-heated customers to natural gas. The Board of Trustees is following this particular effort as it is generally considered the single greatest growth area for NU. The second is the pipeline spur joint venture, which will bring needed gas to gas-fired electric generators to help stabilize the price of electricity in the New England.

Recommendations

Recommendation 3.4.1 BRCS/RCG recommends that the Company complete the development plans for the NU Succession Planning process to ensure that a successor is prepared to assume any of the key roles within internal audit.

3.5 O&M Budget Process

Objectives and Scope

The O&M budget is a key component of the framework for developing supportable and attainable financial plans. It is used to evaluate actual performance and aids management in making business decisions and monitoring ongoing financial performance for each operating entity and for the shared services that support those entities. The effectiveness of the planning processes determines the successful execution of strategic, operational, and financial plans within an evolving dynamic environment. The O&M budget is used to finance expenses related to the non-capitalized operations and maintenance.

BRCS/RCG's review of the O&M budget process focused on the NU Finance group's role in preparing the annual O&M budget and the process used to evaluate and correct for any variances between the budget and actual results.

Overall Assessment

The O&M budget process organizational responsibilities and assignment of priorities is reasonable and appropriate. There is clear and independent oversight of the O&M budget all the way up to and including the Board. The budget development process appropriately and

accurately factors the Company’s financial position and the level of its rates into the budgeting process. The budgeting process is formally linked to strategic initiatives.

While the O&M budgeting process has had some challenges following the merger, the Company is working through the “pain points” that exist as a result of the two legacy companies’ financial systems being used. Through careful planning, the CFO organization is designing and implementing processes that are effectively eliminating prior-year difficulties. We recommend that the Company continue to work through the different legacy NU and NSTAR processes to make the O&M budgeting process more robust.

The NU Board of Trustees and executive and senior management are appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company. The Board appropriately approved a consolidated NU Operating Plan, which includes the O&M Budget.

The Company process used to evaluate and correct for any variances between the budget and actual results is reasonable. YGS does not adjust the budget for any emergency spending. Once the budget is set, it is not changed.

Evaluation Criteria

BRCS/RCG used the following evaluation criteria as the principle areas of investigation and the foundation for this section of the report.

- Are organizational responsibilities for planning priorities and budgeting allocations reasonable and appropriate?
- Are the Board of Trustees and executive and senior management appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company?
- Does YGS appropriately and accurately factor its financial position and the level of its rates into the budgeting process?
- What are the roles of the executive and senior management in the O&M budgeting process? What processes are used by the Board to oversee O&M budgets? What is the level of budget detail the Board sees and what are their responsibilities with regard to the budgets?
- What are the budgeting guidelines, practices, and procedures, including “zero-based” and other alternative methods?
- Is budgeting formally linked to strategic initiatives?
- Is there clear and independent oversight of O&M budgets all the way up to and including the BOD?
- Is there a formal process for handling emergency spending and integrating results into existing O&M budgets?

Conclusions

Conclusion 3.5.1 *BRCS/RCG found the organizational responsibilities and assignment of priorities is reasonable and appropriate. There is clear and independent oversight of O&M budgets all the way up to and including the Board.*

Analysis

Budget development responsibility is shared among several groups. Within the Shared Services organization (NUSCO), the Financial Planning and Analysis group develops the revenue forecast and long-range plan. This group works collaboratively with the Budget and Internal Reporting group to develop targets that are handed off to the annual budget process.

The Budgets and Investment Planning function manages the O&M budgeting function for the operating companies, including YGS. Once the operating companies' budgets are developed, they are submitted to the Budget and Internal Reporting group, which prepares the Shared Services budget and consolidates all of the budgets, including operations, into a Corporate Operating Plan.

The Budgets and Investment Planning group that works directly with the operating companies, including YGS, has a mission statement, which is “to support the goals and objectives of NU and Yankee Gas by providing accurate and meaningful financial analysis and reports, and through compliance with the corporation’s policies and internal controls.”⁵¹ The group partners with the operations group to build a bottom-up, zero-based O&M budget. Operations identifies the work that needs to be performed for the next year. The Budgets and Investment Planning group estimates the cost to perform the work. The preliminary cost-out is discussed with operations managers, assumptions are challenged, and, through an iterative process, the budget is fine-tuned to formulate an operations budget. The budget is compared to the targets received from senior management and adjustments are made as appropriate.⁵² Typically, the operating group’s budgets are in excess of the target, and senior management must present an overview of their budgets and explain why they need more funding.⁵³

The Budget and Internal Reporting group consolidates the operations budget with the Shared Services budget into a Corporate Operating Plan. The Corporate Operating Plan includes an income statement, balance sheet, department budgets, earnings, capital spending, sales forecast, and depreciation.⁵⁴

Conclusion 3.5.2 *BRCS/RCG found that the budget development process appropriately and accurately factors its financial position and the level of its rates into the budgeting process.*

⁵¹ Response to Data Request Q-BUDO&M-01-147.

⁵² Interview L. Landry 10/15/14.

⁵³ Interview D. Driscoll 10/15/14.

⁵⁴ Interview D. Driscoll 10/15/14.

Analysis

The operating companies, such as YGS, develop a zero-based budget on the work that needs to be done. The Company's financial position and the level of its rates is the focus of the Shared Services Budget and Internal Reporting group as it develops the earnings forecast. The earnings forecast supports the five-year plan and annual budget targets. The iterative process feeds this information back to the operations group as targets for the amount of funding that is available.

Conclusion 3.5.3 *BRCS/RCG found that the budgeting process is formally linked to strategic initiatives.*

Analysis

NU described its strategic planning process as follows:

The Company's strategic planning process starts with a review of long-term energy, technology and policy trends and may include review of strategic business initiatives and other opportunities. This process is coordinated by the Strategic Planning group. Subsequent to this initial strategic review, the Company continues its planning process with a review of its annual long-range financial forecast which may include strategic business initiatives and opportunities. This typically occurs in the spring/summer and is led by the Financial Forecasting Group ("FFG") under the direction of the Chief Financial Officer ("CFO"). The FFG considers several factors in developing this forecast, such as, strategic business initiatives, regulatory developments, and other relevant economic and operational elements. The key objectives that the FFG targets when developing the long-range financial forecast are earnings growth, capital investments, dividend growth and strong financial condition.

Once the FFG completes the long-range financial forecast, the CFO reviews it with the Company's Senior Management Team that consists of the CEO and his direct reports. After incorporating feedback from this review, the long-range forecast is presented to the Company's Board of Trustees. Subsequent to its review with the Board of Trustees, the long-range financial forecast is used to set goals for the coming year's annual budget, operating plan and key initiatives.⁵⁵

Conclusion 3.5.4 *BRCS/RCG found that the O&M budgeting process has had some challenges following the merger. The Company is addressing the challenges to make the budgeting process more robust.*

Analysis

Following the merger in 2012, NU's and NSTAR's practices, procedures, and general ways of doing business were significantly different from each other; this created challenges in pulling together the information required for financial reporting and budgeting, and because of continual organization changes and incompatibilities in budget systems, the baseline budget

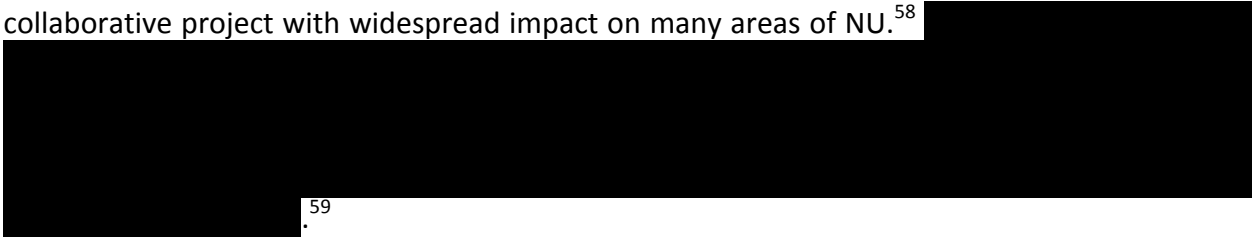
⁵⁵ Response to Data Request Q-EXECUTIVE-01-012.

data was almost useless as a reference point. Significant amounts of creativity and attention to detail were required in order to track budget swaps between officers, maintain a general sense of control and equity between organizations, and generate internal reports that allowed the Senior Team and their officers to manage their functions and make decisions. Impacts were far more challenging for the shared services organization than they were for Operations.⁵⁶

In 2013, the Budgets and Investment Planning department focused on standardization and consistency in an effort to move away from the temporary and ad-hoc processes that were followed in 2012. The group reported on the notable achievements in 2013, which included the following:

- Implemented a monthly process and calendar for the BFS & CPM organization which in turn is also used by the Controller organization for internal reporting purposes - it includes early analyses on the monthly close, budget-to-actual variance analyses, projections, reports to the COO and his organization, performance scorecards, etc.
- Collaborative sessions held with various organizations to establish consistent definitions and reporting on items such as monthly electric and gas work plan meetings, overtime, reliability reporting by area work centers, safety metrics, customer surveys, etc.
- Incorporated the impacts of merger integration into the existing processes in a consistent and standardized manner. Some of the merger integration events (specific to Yankee Gas/Gas Operations) include adoption of NU accounting policies by NSTAR, NSTAR Gas, and integration and reorganization in Gas Operations, etc.⁵⁷

In 2013, the Financial Simplification and Standardization Project (FSSP) was initiated as a collaborative project with widespread impact on many areas of NU.⁵⁸



⁵⁹

In 2013, the Company worked through the “pain points” that existed in 2012 because of the two legacy companies’ financial systems. Through careful planning, the CFO organization designed and implemented processes in 2013 that effectively eliminated the prior-year difficulties.⁶⁰

Conclusion 3.5.5 *BRCS/RCG found that NU’s Board of Trustees and executive and senior management are appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company.*

⁵⁶ Response to Data Request Q-BUDO&M-01-148.

⁵⁷ Response to Data Request Q-BUDO&M-01-148, Attachment 1.

⁵⁸ Response to Data Request Q-BUDO&M-01-148.

⁵⁹ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1, page 15.

⁶⁰ Response to Data Request Q-BUDO&M-01-148.

Analysis

NU described the Board of Trustees involvement in the budgeting process this way:

In the spring of each year, NU prepares a long-range financial forecast and discusses it with the Board of Trustees. The first year of the long-range financial forecast is then used to establish O&M targets for the following year for all organizations. In late summer and early fall, each organization prepares its budget proposal, which includes O&M and capital, and this information is then presented to the CEO and CFO. After reviewing all budget proposals and considering other factors, the CEO and CFO establish the final budgets. The budgets are incorporated into the Corporate Operating Plan for the following year and the plan is approved by the CEO, and then discussed with and approved by the Board of Trustees.⁶¹

Conclusion 3.5.6 *BRCS/RCG found that the Board appropriately approved a consolidated NU Operating Plan, which includes the O&M Budget.*

Analysis

The Board of Trustees approved the NU Operating Plan for 2009 through 2011. For 2012, no formal Board level approval was obtained, as that was the year the merger was completed and the process for approving the Operating Plan was under review. Following that review, it was determined that the NU Board should annually approve a consolidated NU Operating Plan. Subsequently, the NU Board approved the consolidated NU Operating Plan for 2013 and 2014.⁶²

Conclusion 3.5.7 *BRCS/RCG found that the Company's process used to evaluate and correct for any variances between the budget and actual results is reasonable.*

Analysis

NU described the O&M budget variance management this way:

On a monthly basis, the actual O&M results are compared to the budget and variances are analyzed. The results and the variances are discussed within the respective organizations and also rolled up to a higher level for reports that are discussed with senior executives such as the CEO and CFO. At Yankee Gas, the monthly results and variances are distributed to the management team and depending on the nature and materiality of the variances, additional discussions may take place with managers and directors. After analyzing the results and identifying the drivers behind the variances, a summary report is provided to the president and vice presidents along with a projection of any variances at year-end. The analyses, reports, and facilitation of this process for Yankee Gas are the responsibility of the Budgets & Investment Planning department.

⁶¹ Response to Data Request Q-BUDO&M-01-143.

⁶² Response to Data Request Q-BUDO&M-01-146.

The results and variances are discussed at different levels and in different forums including the president's staff meeting, monthly work plan meetings, COO staff meetings, and monthly performance review meetings with the Senior Team. Each organization has accountability for their budget and their results and they are expected to manage their functions within their approved budget.⁶³

The budget variance reports and specific actions taken are discussed in the System Operations chapter of this report.

Conclusion 3.5.8 *BRCS/RCG found that YGS does not adjust the budget for any emergency spending.*

Analysis

Once the budget is set, it is not changed. YGS typically handles emergencies as cost effectively as possible. During the emergency, the Budgets and Investment Planning department maintains contact with the operating company and is provided updates on cost estimates. Once the emergency is over, the additional spending is accumulated. Senior management must approve any adjustment to the forecast.

Recommendations

Recommendation 3.5.1 BRCS/RCG recommends that the Company continue to work through the different legacy NU and NSTAR processes to make the O&M budgeting process more robust.

While the O&M budgeting process has had some challenges following the merger, the Company is working through the “pain points” that exist because of the use of two legacy companies’ financial systems. Through careful planning, the CFO organization is designing and implementing processes that are effectively eliminating prior year difficulties.

3.6 Capital Budget Process

Objectives and Scope

As with most utility organizations, the capital budget process, system planning, and system reliability are intertwined, and at times it is difficult to determine where one ends and another begins. For the analysis of the capital budget process, system planning and system reliability are inputs to the process, and the capital budget is an output. BRCS/RCG’s evaluation in this section focused on the output or YGS’s capital budget.

Overall Assessment

YGS has an adequate capital budget system in place that is closely linked to the overall financial planning process. Organizational responsibilities for planning priorities and budgeting allocations are reasonable and appropriate. Executive and Senior Management are

⁶³ Response to Data Request Q-BUDO&M-01-144.

appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company. The Board of Trustees appropriately approves a consolidated NU operating plan. Actual expenditures are tracked versus budgeted expenditures in sufficient detail to allow management to control spending and allocate its resources wisely.

Evaluation Criteria

BRCS/RCG used the following evaluation criteria as the principal areas of investigation and the foundation for this section of the report.

- Are organizational responsibilities for planning priorities and budgeting allocations reasonable and appropriate?
- Are the Board of Directors and executive and senior management appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company?
- How does the capital budgeting process (including project authorization, project appropriation, increase/decrease of authorization/appropriation, capital budget status reporting, validation in advance of appropriation, funding controls, and other elements of the capital budgeting process) function in YGS?
- How does management oversee and control capital budgeting, including the methodologies used to control and manage program and project capital costs in the near and long term, the annual process for reviewing and determining whether total capital planned expenditures are adequate, cost control systems and processes from both a top-down and bottom-up perspective, and controls to ensure that increases and decreases to the construction budget/expenditures are justified and appropriately approved)?

Conclusions

Conclusion 3.6.1 *BRCS/RCG found that YGS has an adequate capital budget system in place that is closely linked to the overall financial planning process.*

Analysis

The long-range financial forecast is used to set goals (also referred to as targets) for the coming year's annual budget, operating plan, and key initiatives.

Conclusion 3.6.2 *BRCS/RCG found that organizational responsibilities for planning priorities and budgeting allocations are reasonable and appropriate.*

Analysis

Long-term system needs are identified through NU's strategic planning process and cumulate into the Company's Five Year Business Plan.⁶⁴

⁶⁴ Interview M. Ausere 10/20/14.

The Engineering organization and Budgets & Investment Planning group facilitate the capital planning process and solicit estimates and justifications for capital investments from the Yankee Gas departments.

Conclusion 3.6.3 *BRCS/RCG found that executive and senior management are appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the Company.*

Analysis

Once gathered and consolidated, the capital investments under consideration are reviewed and discussed by Yankee Gas senior leadership. After reviews and iterations are complete, the YGS president proposes a level of spending for the following year and presents this information to the CEO, CFO, and COO as part of the annual budgeting process.⁶⁵ After the budget is finalized, the Financial Planning & Analysis group reviews the budget to determine the impact on the Five Year Plan, and the Plan is updated as appropriate.⁶⁶

In February, the Board of Trustees approves a consolidated NU Operating Plan for that year.⁶⁷

The capital budget process can be summarized as follows:

For Yankee Gas, capital planning is an ongoing process in the sense that the Company is continually monitoring its capital projects and respective budget for the current year and considering longer term investments that will need to be made as well. The Company annually implements a formal planning process and generates a high-level five-year capital spending forecast and a more detailed plan for the following year in support of its proposal for the annual budgeting process.⁶⁸

As presented in the O&M Budget Process section and replicated for ease of reference, NU described its budgeting process, which included capital budgeting, as follows:

In the spring of each year, NU prepares a long-range financial forecast and discusses it with the Board of Trustees. The first year of the long-range financial forecast is then used to establish O&M targets for the following year for all organizations. In late summer and early fall, each organization prepares its budget proposal, which includes O&M and capital, and this information is then presented to the CEO and CFO. After reviewing all budget proposals and considering other factors, the CEO and CFO establish the final budgets. The budgets are incorporated into the Corporate Operating Plan for the following year and the plan is approved by the CEO, and then discussed with and approved by the Board of Trustees.⁶⁹

NU described its strategic planning process as follows:

⁶⁵ Response to Data Request Q-SYS PLANENG-01-114.

⁶⁶ Interview M. Ausere 10/20/14.

⁶⁷ Response to Data Request Q-BUDO&M-01-136.

⁶⁸ Response to Data Request Q-SYS PLANENG-01-113.

⁶⁹ Response to Data Request Q-BUDO&M-01-143.

The Company's strategic planning process starts with a review of long-term energy, technology and policy trends and may include review of strategic business initiatives and other opportunities. This process is coordinated by the Strategic Planning group. Subsequent to this initial strategic review, the Company continues its planning process with a review of its annual long-range financial forecast which may include strategic business initiatives and opportunities. This typically occurs in the spring/summer and is led by the Financial Forecasting Group (“FFG”) under the direction of the Chief Financial Officer (“CFO”). The FFG considers several factors in developing this forecast, such as, strategic business initiatives, regulatory developments, and other relevant economic and operational elements. The key objectives that the FFG targets when developing the long-range financial forecast are earnings growth, capital investments, dividend growth and strong financial condition.

Once the FFG completes the long-range financial forecast, the CFO reviews it with the Company’s Senior Management Team that consists of the CEO and his direct reports. After incorporating feedback from this review, the long-range forecast is presented to the Company’s Board of Trustees. Subsequent to its review with the Board of Trustees, the long-range financial forecast is used to set goals for the coming year’s annual budget, operating plan and key initiatives.⁷⁰

BRCS/RCS found that the Board appropriately approved a consolidated NU Operating Plan for 2009 through 2011. For 2012, no formal Board level approval was obtained, as that was the year the merger was completed and the process for approving the Operating Plan was under review. Following that review, it was determined that the NU Board should annually approve a consolidated NU Operating Plan. Subsequently, the NU Board approved the consolidated NU Operating Plan for 2013 and 2014.⁷¹

BRCS/RCG found that actual expenditures are tracked, versus budgeted expenditures, in sufficient detail to allow management to control spending and allocate its resources wisely.

NU’s description of the process used to manage the capital program follows:

Throughout the year, Yankee Gas employs an Operating Company Review Committee (OCRC) to manage the Company's capital program. The OCRC has six members with representation from Sales/Marketing, Construction, Engineering, Budgets & Investment Planning, Operations and Pressure Management. Each year, changes related to new business and emerging projects will arise and the OCRC may approve individual projects and eliminate others that are less critical in order to manage the capital program within the approved level of spending. The OCRC also approves the annual ARP, which is developed in Engineering and reviewed/adjusted with the input of operation managers.⁷²

⁷⁰ Response to Data Request Q-EXECUTIVE-01-012.

⁷¹ Response to Data Request Q-BUDO&M-01-146.

⁷² Response to Data Request Q-SYS PLANENG-01-114.

The Company's description of its corrective action process when there are variances between the capital budget and actual expenditures follows:

Corrective actions are taken on a monthly basis depending on the actual spend on the total capital program. Individual projects may be postponed or canceled if the budget is running over. Additional projects may be added if projects are under budget. If YGS has numerous leaks and the emergency replacements are high, but municipal projects are behind schedule and expected to come in under budget the two line items offset one another. The program is reviewed in its entirety and is managed as such.⁷³

BRCS/RCG reviewed a six-year history (2008-2013) of capital budgeting variance explanations. The Company provided explanations for both the reasons for being over and under budget.⁷⁴ Specific discussion of the variances is addressed in the System Planning and Engineering section of this report.

Recommendations

Recommendation 3.6.1 BRCS/RCG offer no recommendations in regards the capital budgeting process.

Recommendation 3.6.2 BRCS/RCG recommends that management accelerate the completion of organizational changes to allow YGS to settle into a normal operating mode and allow the employees to better focus on the work.

Recommendation 3.6.3 BRCS/RCG recommends that management continue its Town-Hall meetings to reinforce the objectives of NU and infuse them into all levels of YGS, particularly with respect to customers and any issues they have.

⁷³ Response to Data Request Q-SYS PLANENG-01-112.

⁷⁴ Response to Data Request Q-SYS PLANENG-01-112.

4. SYSTEM OPERATIONS

Objectives and Scope

System operations includes a review of gas supply, system planning, system design, system operation and maintenance, and system reliability and construction. System Operations spans a rather significant portion of the natural gas business model from determining the gas requirements all the way to delivering the gas to and satisfying the ultimate customers. In evaluating gas supply and system planning, it is necessary to also look at the requirements forecasting process. We will divide this chapter into the following sections and address each in turn:

- Requirements Forecasting
- Gas Supply
- System Planning and Design
- System Reliability and Construction
- System Operation and Maintenance

Overall Assessment

Requirements Forecasting

The Forecast Department has a clear mission, which is well understood and focuses on forecasting revenue. The forecast is compared monthly to actual requirements and is within a reasonable level of accuracy. The performance of the forecast is not compared to a peer group of similar utilities. As a result of the recent NU-NSTAR merger, there has been a significant reduction in the staffing as compared to the aggregate levels at the two companies before the merger. Forecasting has transitioned to statistical models to reduce data requirements, outside consultants, and internal staffing. Forecasting is adequately staffed to continue this level of performance.

Gas Supply

Gas Supply, which resides in NUSCO, the service company, obtains and manages pipeline transportation, storage capacity, and commodity purchases. The Department has a clear mission, which is well understood and focuses on the needs of downstream departments. The long-term planning and procurement of commodity and transportation are managed to meet both existing and emerging needs. There is a robust short-term gas supply process. The performance of Gas Supply is compared to only one external measure, and its performance is reasonable. As a result of a longstanding decision based upon a disparate allocation of risk versus reward, YGS does not undertake action to reduce price volatility. The Gas Supply function is adequately staffed to continue this level of performance.

System Planning and Design

YGS's System Planning and Design does an adequate job of maintaining system integrity while balancing the capital budget with the accelerated mains replacement program and system expansion brought about by the Connecticut oil/gas conversion program. Both the

Planning and Design functions are well thought out and consistent with sound organizational practices; however, the planning estimation accuracies can be improved, the use of outsourcing for design services seems high, and benefits of main replacements are not positively impacting O&M spend.

Reliability and Construction

System Reliability is a constant priority in the natural gas industry and is vital to the public interest in a multitude of ways. System reliability and construction, for example, are paramount as they both can affect the ultimate customer's experience.

BRCS/RCG believes that the system reliability and construction efforts performed by YGS are, on the whole, adequate and reasonably performed. Work toward pipeline integrity appears reasonable and adequate both in managing developed leaks and in ensuring both pipe replacement activity and expansion plans reduce deterioration through materials and cathodic protection. However, a few areas may benefit from efficiency improvements.

The Company's construction activity is heavily dependent on contractors. Because even the QA/QC inspectors and the Construction Coordinators are contractors, contractors review the work of other contractors. While this is not unreasonable and may provide efficiencies in certain areas, a downside may exist in communication and emphasis of Company expectations.

Operations and Maintenance

System Operations and Maintenance (O&M) ensure that the customers receive adequate supply of natural gas and that leaks are addressed in a timely manner and consistent with DOT standards for the type leak identified. While it is difficult to evaluate the steady state O&M environment and all its processes given the current state of flux, BRCS/RCG believes that the organization is moving in the right direction, but we did notice several opportunities to correct a number of emerging issues.

As of this writing, several key director positions are open. Further, management is working diligently to break down any lingering instances of the old YGS's insular culture and move toward a more numbers- and customer-focused business model. This is not to say that the old YGS was not customer focused; many of the management and union personnel pointed out that they had already been making progress in customer-focused and numbers-focused work before the merger.

With the top Operations management positions open and the shifting of the former managers/directors to other positions, there is a fair amount of discord at the line-level. A consistent theme heard across the organization is personnel are tired of the management changes and want to settle into a "normal" routine. BRCS/RCG understands this discord but realizes the work still must be done.

Evaluation Criteria

Each section will contain its own set of criteria, overall assessment statement, conclusions with discussion, and recommendations as necessary.

4.1 Requirements Forecasting

Objectives and Scope

Requirements Forecasting function included a review of the Company’s forecast models; inputs such as economic data sources; the forecast approval process; the methodologies used to validate the forecast, and the use of the requirements forecast throughout the organization. The review concentrated on the interaction between the elements of forecasting, including model choice, input data, review and approval of the forecast, and backcasting and post-forecasting reviews of the model and its results along with key performance indicators, budgets, and staffing.

Overall Assessment

Requirements Forecasting reports to the Director, Rates & Load Forecasting, who reports to Rates and Regulatory Requirements, who reports through the Controller and CFO organization,⁷⁵ which is part of NUSCO. The forecast focuses on the needs of the financial and regulatory groups within NU. The forecast is used as an underlying checkpoint, but it is not directly used for operational functions, such as Gas Supply and System Planning, because those functions require more granular information. There is also a supplemental forecast, not produced by the Forecasting Department, that is produced in parallel to predict the loads and customers resulting from expansion driven by the CES. The approval process for forecasts is not formalized and does not extend beyond the CFO organization, except for a review by the Chief Customer Officer.

The Forecast Department has a clear mission, which is well understood and focuses on forecasting revenue. The forecast is compared monthly to actual requirements and is within a reasonable level of accuracy. The performance of the forecast is not compared to the performance of a peer group of similar utilities. As a result of the recent NU-NSTAR merger, there has been a significant reduction in the staffing as compared to the aggregate levels at the two companies before the merger. Forecasting has transitioned to statistical models to reduce data requirements, outside consultants, and internal staffing. Forecasting is adequately staffed to continue this level of performance.

Evaluation Criteria

- To what extent were the recommendations from the 2008 audit implemented?
- What are the models, assumptions and key drivers, and other inputs used to forecast local and system-wide natural gas requirements?
- What are the inputs, including demand-side management (demand response, etc.), energy efficiency, and other initiatives that are factors in the forecasting process?
- Are the organization and staffing of forecasting functions reasonable?

⁷⁵ Response to Data Request Q-GENERAL-01-001, pp. 140, 163, and 165.

- Does the Company perform customer research?
- Does the Company statistically test and backcast its forecasting models and routinely compare its forecast to actual sales and peak?

BRCS/RCG's analysis of the Forecasting function is based upon 24 data requests presented to the Company and interviews with two levels of management within, related to, or supporting Forecasting. BRCS/RCG also reviewed the Company's biennial Forecast of Natural Gas Demand and Supply (2013 – 2017) along with its predecessors (2009 – 2013) and (2011 – 2015).⁷⁶

Conclusions

Conclusion 4.1.1 *BRCS/RCG is concerned that the Forecasting Department has not consistently implemented its recommendation from the 2008 audit.*

Analysis

The single forecasting recommendation focused on how information was conveyed. The Company addressed the 2008 recommendation.

5.1.1 System Operations/Gas Supply (Priority: Medium): To improve consistency and the quality of information provided to the users of load forecast information, we would suggest when reporting actual demand, EDD be avoided and that the HDD and average wind speed be given. Furthermore, forecasts of demand should be based on HDD, as is presently done, and the implied wind speed be stated.

The Company reports that it forecasts based upon Effective Heating Degree Days (EHDD), which is a combination of Heating Degree Days (HDD) and wind speed, and that it had interpreted the previous audit recommendation to explain that EHDD is a combination of HDD and wind speed.⁷⁷ BRCS/RCG's review of the forecast submitted to PURA describes the forecast methodology and the independent variables, which include EHDD used within the use per customer models,⁷⁸ HDD without mention of EHDD or wind speed,⁷⁹ along with the use of EHDD in the SENDOUT model.⁸⁰ A summary of historical peak days (2007-2012) uses EHDD⁸¹ along with the use of both HDD and EHDD.⁸² Therefore, the possibility of confusion may still exist.

Conclusion 4.1.2 *BRCS/RCG determined that the Forecasting Department uses an appropriate process to develop a forecast to meet the requirements of the financial and regulatory organizations for its present (pre-1/1/14 customers). However, neither the review and the approval process for the forecast nor its distribution includes Gas Supply or Engineering.*

⁷⁶ Response to Data Request Q-GAS SUPPLY-01-041.

⁷⁷ Interview C. Goodwin 10/21/14.

⁷⁸ Response to Data Request Q-GAS SUPPLY-01-041, p. 1 and Attachment 1, p. 1.

⁷⁹ Response to Data Request Q-GAS SUPPLY-01-041, p. 1 and Attachment 4, pp. 40-42, 45, 47, 51, and 54.

⁸⁰ Response to Data Request Q-GAS SUPPLY-01-041, Attachment 4, p. 58.

⁸¹ Response to Data Request Q-GAS SUPPLY-01-041, Attachment 4, Exhibit IV-2.

⁸² Response to Data Request Q-GAS SUPPLY-01-041, Attachment 4, Exhibit IV-3.

Analysis

The Company's biennial forecast provides a detailed description of the forecast methodology, which builds a forecast from independent class-specific econometric models (residential, commercial, and industrial) with a consistent structure based on economic forecasts of customers by class and use per customer by class. External adjustments are made for the Company's conservation and load management efforts (energy efficiency) and large customers' loads, including distributed generation and shifts from interruptible to firm service. Major inputs include state focused economic data and energy prices provided by nationally recognized firms.⁸³ The relationships between the inputs and dependent variables are developed through regression techniques, including the impact of weather.⁸⁴ The Company also produces (in a similar manner) annual forecasts that are used internally.⁸⁵ The Company's modeling methodology is consistent with good utility practice. The scope and detail of the Company's biennial forecast is excellent.

The Vice President of Engineering reports that his engineers use the same parameters for design as Forecasting, but the engineers correctly focus on the peak hour for design purposes while the forecasters use the peak day.⁸⁶ The engineers use the peak day forecast divided by 20 to estimate the peak hour and receive the information from Gas Supply.⁸⁷ Although Gas Supply indicated that the Forecast Department develops the peak day used by Gas Supply⁸⁸ and provides Gas Supply with statistical modeling support,⁸⁹ neither the review and the approval process for the forecast nor its distribution includes Gas Supply or Engineering.⁹⁰

Conclusion 4.1.3 *BRCS/RCG is concerned that YGS will need to implement a better supported forecast methodology for including the expected effects of the Comprehensive Energy Strategy (CES) within the annual forecast.*

Analysis

Connecticut has developed the CES to aid and encourage increased penetration of natural gas with expected energy cost saving and environmental benefits.⁹¹ The CES aggregated a statewide forecast from individual company forecasts. Yankee Gas expects in excess of 82,000 new customers by 2023, an increase of over 38% over its present 214,000 customers and almost double the number of new customers added annually compared to 2013.⁹²

⁸³ Response to Data Request Q-GAS SUPPLY-01-041, Attachment 4.

⁸⁴ Response to Data Request Q-GAS SUPPLY-01-041, Attachment 4, Section III, and Interview C. Goodwin 10/21/14.

⁸⁵ Response to Data Request Q-FORECAST-05-015.

⁸⁶ Interview M. Andrukiewicz 10/16/14.

⁸⁷ Interview B. Factoria 10/20/14.

⁸⁸ Interview L. Cullen 10/22/14.

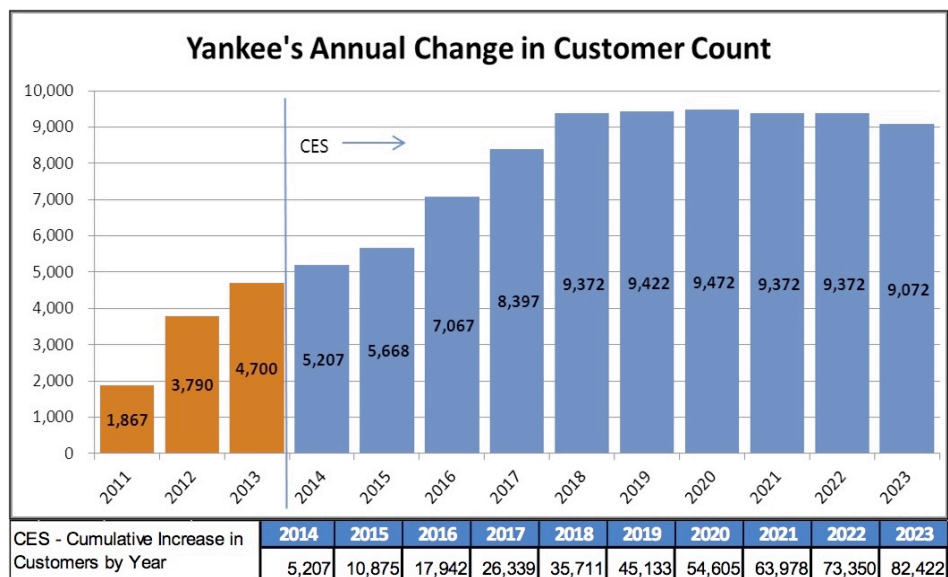
⁸⁹ Interviews E. Karanian 10/21/14 and E. Soderman 10/22/14.

⁹⁰ Response to Data Request Q-FORECAST-05-015.

⁹¹ Response to Data Request Q-GAS SUPPLY-01-053.

⁹² CES, p. 52.

Figure 3: YGS Annual Change in Customer Count



The CES process operates within a regulatory arrangement that in effect bifurcates the Company’s revenue streams before and beginning 1/1/2014. However, 10,000 of the expected residential customers are existing low-use customers.⁹³ Therefore, the methodology to forecast the incremental load on or after 1/1/2014 will be an increasingly critical issue as it may impact or overlap the existing load forecast. BRCS/RCG reviewed this issue with the Company’s forecasters and the Director of Gas Expansion to explore how they expect this bifurcated forecast to be developed. At present, the relationship between the two groups was described as “not very close.” The existing forecast methodology is used for pre-1/1/2014 customers, and the gas expansion sales team estimates the CES customers’ load with input from other areas.⁹⁴ Confirmation of this split between the forecast and the estimate was obtained from the forecasting area.⁹⁵ Integration of the CES – Gas Expansion provided forecast does not occur at the senior management level and the governance process has not been formalized. At lower levels a dialogue has been reported but the process has not been worked out.⁹⁶

While the CES specifies a tracking process for rate regulation of new customers, the Company’s longer-term forecast of expansion has impacts across the Company. Estimates provided by the Gas Expansion sales force will not have the rigor and review of a well-developed utility load forecast. Thus, it is possible that there will be an overlap of low-use customers in the two forecasts. Further, as CES customers become long-term customers, the estimate produced by the Gas Expansion sales force may not include the changes in usage that affect all customers over time.

⁹³ CES, Exhibit IV-3.

⁹⁴ Interview C. Frattini 11/4/14.

⁹⁵ Interviews C. Goodwin 10/21/14 and C. Plecs 10/21/14.

⁹⁶ Interview C. Frattini 11/4/14.

Conclusion 4.1.4 *BRCS/RCG is concerned that there is no formal approval process (and subsequent distribution) for the forecast beyond the CFO organization.*

Analysis

The existing forecast (customers in service prior to 1/1/14) is reviewed within the CFO organization with input from the Chief Customer Officer.⁹⁷ Although Gas Supply does see the forecast, it is not vetted by Gas Supply before its approval.⁹⁸ As noted above, there is no formal approval process for the CES-related forecast. Further, there does not appear to be a formal approval process for gas supply and peak-day forecasting that involves a range of relevant stakeholders across the Company.⁹⁹ The existing documentation of the present forecast approval process demonstrates that the approval process is concentrated in the CFO organization and the distribution list is solely to the CFO organization.¹⁰⁰

A formalized approval process ensures that input is received from a wide range of expertise and viewpoints and builds confidence with those groups that use the forecast directly or indirectly. It also helps to ensure that assumptions and forecast output are used uniformly across the Company.

Conclusion 4.1.5 *BRCS/RCG determined that the transition from end-use to econometric models was well executed, but the savings could not be confirmed by BRCS/RCG.*

Analysis

In 2006 NU recognized that end-use modeling was costly due to required appliance saturation studies, model licenses, and other input data along with the maintenance of the models.¹⁰¹ Further, by moving to econometric models (NSTAR was using them before the merger¹⁰²), the work and expertise required would be consistent across NU's operating companies¹⁰³.

The Company could not provide specific budgets for the forecasting function because it is a shared service function and budget information is not available as requested.¹⁰⁴ Manning tables or other employee counts prior to 2012 are not available.¹⁰⁵ The time spent specifically on YG is not directly tracked.¹⁰⁶ Therefore, the savings due to this change cannot be estimated by BRCS/RCG.

⁹⁷ Interviews C. Goodwin 10/21/14 and C. Plecs 10/21/14 and Response to Data Request Q-FORECAST-05-015.

⁹⁸ Interview C. Goodwin 10/21/14.

⁹⁹ Response to Data Request Q-GAS SUPPLY-01-053.

¹⁰⁰ Response to Data Request Q-FORECAST-05-015.

¹⁰¹ Interview C. Goodwin 10/21/14.

¹⁰² Interview C. Goodwin 10/21/14.

¹⁰³ Interview C. Plecs 10/21/14.

¹⁰⁴ Response to Data Request Q-GAS SUPPLY-01-061.

¹⁰⁵ Response to Data Request Q-GAS SUPPLY-01-062.

¹⁰⁶ Interviews C. Goodwin 10/21/14 and C. Plecs 10/21/14.

Conclusion 4.1.6 *BRCS/RCG determined that the Forecasting Department has a single performance indicator to ensure that the forecast is accurate and meets the needs of the financial and regulatory organizations.*

Analysis

The Forecasting Department has defined its key performance indicator as forecasts which fall within 1.45% of weather normalized actuals for the years, for all of the NU operating companies in aggregate, using the weighted average of the absolute value of each operating company's variance.¹⁰⁷ The Company reported that for 2013 the forecasts missed the normalized actuals by 0.9%.¹⁰⁸ BRCS/RCG requested and reviewed the variance reports for various months and found that there are in-depth and detailed variance analyses presented on a monthly basis.¹⁰⁹ The Company does not compare its forecast accuracy against other utilities.¹¹⁰ While that single KPI is reasonable, it is not all encompassing as a measure of the performance of the Forecasting Department.

Recommendations

Recommendation 4.1.1 BRCS/RCG recommends that forecasts should clearly include EHDD, HDD, and wind speed to clarify the relationship and educate the reader.

Recommendation 4.1.2 BRCS/RCG recommends that the CES forecast process should be defined, including methodology, input from upstream and downstream participants, and a formal approval process.

Recommendation 4.1.3 BRCS/RCG recommends that, because of its expertise and existing responsibility for the present customer forecast, the Company should assign the Forecasting Department the responsibility to prepare the CES forecast. Combined with a broadened approval process this change will ensure the input of the CES – Gas Expansion group is tightly coordinated with the existing customer forecast.

Recommendation 4.1.4 BRCS/RCG recommends that the Company's forecast should be subject to a formal approval process that includes not only the CFO organization but also other groups that provide (or should provide) input and/or use the forecast.

The evidence of approval of the forecast should be part of and included with the forecast. One potential structure for the process would involve the director levels of forecasting, gas supply, engineering, and sales and marketing, along with the present directors within the CFO organization. Once the director level has reviewed the forecast, a similar review would take place at the vice-presidential level before the approval of the forecast by the CFO.

¹⁰⁷ Response to Data Request Q-GAS SUPPLY-01-060 and Interview C. Goodwin 10/21/14.

¹⁰⁸ Response to Data Request Q-GAS SUPPLY-01-060 and Interview C. Goodwin 10/21/14.

¹⁰⁹ Response to Data Request Q-FORECAST-05-014.

¹¹⁰ Interview C. Goodwin 10/21/14.

4.2 Gas Supply

Objectives and Scope

The review of Gas Supply evaluated the Company's short and long-term commodity and transportation planning and procurement process; the shorter term management of assets; the interaction between Gas Supply and organizations such as Gas Control, Forecasting, Sales & Marketing, and Engineering; the management of interruptible load; risk management; and controls, including the middle office, mission, key performance indicators, budgets, and staffing.

Overall Assessment

Gas Supply reports to the Vice President, Energy Supply, who reports to the Executive Vice President & CAO, who is part of NUSCO.¹¹¹ Gas Supply obtains and manages pipeline transportation, storage capacity, and commodity purchases. Gas Supply supports and/or interacts with the operating, financial and regulatory groups of the Company. The Department has a clear mission, which is well understood and focuses on the needs of downstream departments. The long-term planning and procurement of commodity and transportation are managed to meet both existing and emerging needs. There is a robust short-term gas supply process. The performance of Gas Supply is only compared to one external measure, and its performance is reasonable. As a result of a longstanding decision based upon a disparate allocation of risk versus reward, YGS does not undertake action to reduce price volatility. The Gas Supply function is adequately staffed to continue this level of performance. The Company's risk management process as related to Gas Supply is reasonable.

Evaluation Criteria

- To what extent were the recommendations from the 2008 audit implemented?
- Are the supply portfolio principles, goals, and objectives for mass-market default customers reasonable and appropriate to ensure continuity of supply?
- Are the risk management strategies and practices appropriate for a gas operation of this size?
- What are the supply procurement strategies, policies, processes, and methods?
- Are the financial and physical hedging practices reasonable and appropriate?
- Does YGS use performance benchmarking with other utilities as part of its supply strategy?
- What are YGS's portfolio performance goals?
- Are portfolio oversight and controls appropriate?

¹¹¹ Response to Data Request Q-GENERAL-01-001, pp. 12, 14, and 16.

- How are demand management/response, energy efficiency, and migration of retail customers to competitive suppliers integrated into both the portfolio and procurement processes?
- How are the management of local assets (such as storage of LNG/CNG and propane/air) and the resulting impact of emerging supplies in the Marcellus region impacting supply planning?
- What is the gas market power in the capacity market and the effect of YGS's buying power on other suppliers for capacity and supply in and around the Mid-Atlantic and New England market?
- Review the Company's management and reporting structures, staffing, accountability, and experience to determine if they are consistent with the goals and objectives of the procurement process.
- Examine whether the Company has adequately considered the pace of the economic recovery on wholesale prices and the gas supply process.

Conclusions

Conclusion 4.2.1 *BRCS/RCG has determined that the Gas Supply Department has met the requirements of its three recommendations from the 2008 audit.*

Analysis

The Company addressed the 2008 Audit recommendations.

5.1.2 System Operations/Gas Supply (Priority: High): Given that an initial gas supply short fall is expected to occur beginning 2009/2010 and the time required for pipeline planning, permitting, and approval, we believe Yankee Gas should complete and submit to the DPUC, a study of the risks and options available to Yankee to address future peak-day supply obligations by June 2008.

The Company has completed and filed three comprehensive filings covering demand and supply options (Forecast of Natural Gas Demand and Supply (2013 – 2017, 2011 – 2015, and 2009 – 2013). These filings provide historical information, economic drivers, gas and transportation costs, demand forecasts, and potential supply options. [REDACTED]

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5.1.3 [REDACTED]

¹¹² Response to Data Requests Q-GAS SUPPLY-01-041, Attachments 4, 3, and 2, and CONFIDENTIAL Q-GENERAL-01-009, p. 5.

[REDACTED]

[REDACTED]

[REDACTED].¹¹³ BRCS/RCG reviewed the annual gas supply procurement plan for 2013 – 2014 and determined that the annual plan offers a summary of the new sources of supply and transmission acquired by the Company. The plan also includes details of LNG commitments made and expected volumes available by October 31 at the Company’s LNG facility. The status of the Company’s storage capability is included with a goal of filling 98% of capacity by November 1. The Company details the status of the capacity release program (which is done to mitigate firm customers’ gas costs) along with retained callback rights that may be needed to meet peak demands. This plan is distributed to Gas Control, Engineering, and Operations, after its review by the Director – Gas Supply.¹¹⁴

5.1.4 System Operations/Gas Supply (Priority: Medium): Strategic Workforce Planning process needs to be applied to the Gas Management organization, specifically in the gas supply area. The demand for the unique skills and responsibilities associated with gas supply makes finding qualified candidates very difficult.

BRCS/RCG explored the functioning of the Gas Supply Department and ascertained the participation of various members of the department in operational and training activities.¹¹⁵

[REDACTED]¹¹⁶ The ability of various individuals to backup or support sub-areas of Gas Supply was explored during interviews and found to be reasonable.¹¹⁷

Conclusion 4.2.2 *BRCS/RCG determined that Gas Supply has limited performance indicators to track its performance and clear goals have not been articulated.*

Analysis

The mission of Gas Supply is consistently described as “provide safe, reliable gas supply at a reasonable cost.”¹¹⁸ Gas Supply has numerous performance indicators, but departmental performance indicator (including measurement) was not supplied,¹¹⁹ although some of the measures were addressed anecdotally during interviews and are considered individual and team goals.¹²⁰ There are opportunities to track and measure performance against some of those indicators, such as capacity release, balancing, storage management, contract counterparties, and accuracy of nominations. Tracking and measuring additional performance

¹¹³ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, p. 5, and Interview E. Karanian 10/21/14.

¹¹⁴ Response to Data Request Q-GAS SUPPLY-05-003.

¹¹⁵ Response to Data Requests Q-GAS SUPPLY-05-005, 006 and 008.

¹¹⁶ Interview E. Karanian 10/21/14 and Response to CONFIDENTIAL Data Request Q-GENERAL-01-009, p. 6.

¹¹⁷ Interview E. Soderman 10/22/14.

¹¹⁸ Interviews E. Karanian 10/21/14, E. Soderman 10/22/14, and L. Cullen 10/22/14 and Response to Data Request Q-GAS SUPPLY-01-088.

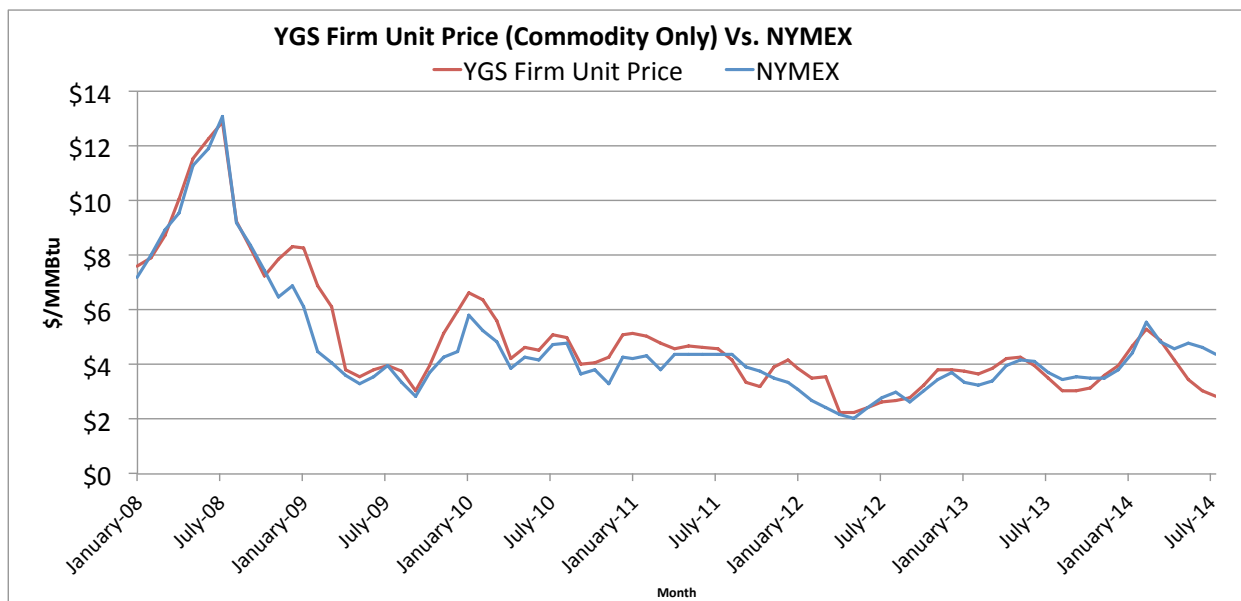
¹¹⁹ Response to Data Request Q-GAS SUPPLY-01-089.

¹²⁰ Interviews E. Karanian 10/21/14 and L. Cullen 10/22/14.

indicators would document the performance of Gas Supply. Further, the process of developing the goal to be applied would help to focus on the underlying process.

Gas Supply compares the average monthly unit rate of gas costs for firm customers as compared to the NYMEX settlement of natural gas as an approximation of the relative value of gas purchased. As the chart below indicates, the YGS price tracks reasonably to the NYMEX price. It should be recognized that YGS’s price position is and can be affected by a wide range of operational, regulatory, geographic, and economic conditions.¹²¹

Figure 4: YGS Firm Unit Price (Commodity Only) Vs. NYMEX



While Gas Supply has explored comparison to other utilizes it has been concerned with the availability of that data and how it may be affected by regulatory policies and therefore these comparisons are not generally used.¹²²

Conclusion 4.2.3 BRCS/RCG determined that the Gas Supply Department’s process to procure long-term transportation capacity is reasonable.

Analysis

The Company’s geographic location coupled with the historical limitations of pipeline capacity in New England complicates its procurement of long-term pipeline capacity. The Company performs a detailed survey of potential capacity expansion projects.¹²³ The Company is well aware that not all opportunities for new capacity will eventually be built on time and that expansion is subject to commitments by other parties, utilities, and regulators.¹²⁴ Gas Supply evaluates those opportunities with a multiple-step process that considers regional

¹²¹ Response to Data Request Q-GAS SUPPLY-01-080.

¹²² Response to Data Request Q-GAS SUPPLY-01-090 and Interview E. Karanian 10/21/14.

¹²³ Response to Data Request Q-GAS SUPPLY-01-041, Attachments 4, 3, and 2.

¹²⁴ Interview L. Cullen 10/22/14.

interest; costs and value; receipt point; and, if appropriate, a term sheet is generated, including a negotiated rate (with a most-favored-nation clause), which is then formally approved by the Energy Supply Risk Committee, which consists of the COO/President of the LDCs, the CFO, the CAO, and the EVP Enterprise Energy Strategy and Business Development.¹²⁵

Negotiations for capacity are conducted along with other Connecticut gas utilities and YGS's affiliate NSTAR in Massachusetts. A notable result of its negotiations is the inclusion of a most-favorable-nations clause within the contracts,¹²⁶ which should lead to favorable pricing. The Company is a participant in the technical conferences for the FERC Docket AD12-12-000 Coordination between Natural Gas and Electricity Markets and the New England Gas-Electric Focus Group.¹²⁷

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Conclusion 4.2.4 *BRCS/RCG determined that the Gas Supply Department's process to manage short-term transportation capacity is reasonable.*

Analysis

Under Connecticut's Supplier of Last Resort (SOLR) requirement, the Company is obligated to procure transportation capacity for all firm customers. Should a customer decide to obtain transportation and commodity from a retail supplier, the Company is then obligated to dispose of the resulting excess capacity in a manner that still will provide capacity if the retail supplier should subsequently default.¹²⁹

The focus of the capacity release program is to obtain the highest price for the capacity in a transparent manner, while complying with a range of FERC requirements. Asset management agreements are structured to allow for recall to meet peak needs, which provides flexibility.¹³⁰ BRCS/RCG considers the accompanying capacity release-training program reasonable.

Interruptible (non-firm) customers can be used to manage capacity requirements. The process includes consultation with Gas Control, Engineering, and Sales & Marketing and is driven by Gas Supply.¹³¹ Operational Flow Orders (OFO) and curtailments are tracked, including reasons and EHDD.¹³² BRCS/RCG has reviewed Gas Supply's process for determining whether interruptible customers should be curtailed (other than due to distribution system issues), and BRCS/RCG considers that process reasonable.

¹²⁵ Response to Data Request Q-GAS SUPPLY-05-002, Interviews L. Cullen 10/22/14, and E. Karanian 10/21/14.

¹²⁶ Interview L. Cullen 10/22/14.

¹²⁷ Response to Data Request Q-GAS SUPPLY-01-091.

¹²⁸ CONFIDENTIAL Response to Data Request Q-GAS SUPPLY-01-086.

¹²⁹ Interview L. Cullen 10/22/14 and Response to Data Request Q-GAS SUPPLY-01-073.

¹³⁰ Response to Data Request Q-GAS SUPPLY-05-008.

¹³¹ Interviews E. Karanian 10/21/14, E. Soderman 10/22/14, L. Cullen 10/22/14, and Response to Data Request Q-GAS SUPPLY-05-007.

¹³² Response to Data Request Q-GAS SUPPLY-01-083.

The Company has not been assessed any pipeline penalties since 2008.¹³³

Conclusion 4.2.5 *BRCS/RCG has determined that the Gas Supply Department’s process to procure commodity is reasonable.*

Analysis

Due to a longstanding Connecticut regulatory decision (in 1994)¹³⁴ on the disparate allocation of risks and rewards of using the futures market the Company has not entered into hedges for firm customers.¹³⁵

The Company procures approximately 30% of its commodity needs under contract. The remainder of its commodity requirements is purchased based on a fixed differential from the NYMEX price. Formal monthly gas supply procurement plans are prepared and reviewed within Gas Supply and distributed within the organization and to the Middle Office and Accounting.¹³⁶ During the winter, storage and LNG together may amount to 50% of total supplies.¹³⁷

During the winter season a “morning meeting” is held each working day to determine the commodity needs and develop a plan to purchase (or release) commodity. Meeting notes document the decisions made and are transmitted to Gas Supply and Gas Control. The notes include spot purchases, pipeline take instructions, nominations (including for the weekend from the Friday meeting), weather data, historical prices and volumes, and pipeline conditions and restrictions (such as operational flow orders, imbalance warnings, and capacity constraints), NEISO status (electrical generation and demand), and YGS-projected system load.¹³⁸ This plan includes the use of storage and LNG as required. The management of commodity is accomplished by the use of spreadsheets, market monitoring, including data sources, and contacts.¹³⁹ Storage is typically conserved to provide capacity in March if required due to weather or other situations.¹⁴⁰

Conclusion 4.2.6 *BRCS/RCG determined that YGS’s Gas Supply risk management processes and procedures are reasonable and enforced.*

Analysis

The Company has detailed procedures to manage the risk of gas supply contracts. These procedures include transaction authority, confirmation of transactions, gas supply contract review, and counterparty credit approvals. Only specific employees are authorized to engage in purchase and sale transactions. A recorded telephone line must be used or an email must

¹³³ Response to Data Request Q-GAS SUPPLY-01-087.

¹³⁴ Interview E. Soderman 10/22/14 and Response to Data Request Q-GAS SUPPLY-01-077.

¹³⁵ Response to Data Request Q-GAS SUPPLY-01-078.

¹³⁶ Response to Data Request Q-GAS SUPPLY-05-004.

¹³⁷ Interview E. Soderman 10/22/14.

¹³⁸ Response to Data Requests Q-GAS SUPPLY-05-005 and 006 and Interviews E. Karanian 10/21/14, E. Soderman 10/22/14, and L. Cullen 10/22/14.

¹³⁹ Interview E. Soderman 10/22/14.

¹⁴⁰ Interview E. Soderman 10/22/14 and Response to Data Requests Q-GAS SUPPLY-01-082 and 085.

confirm the transaction. Employees have pre-designated purchase levels, and there is a defined escalation of the approval process as contract value increases. Completed purchase and sales transactions must be documented by creating a confirmation notice, which must include a second review and signature. All transactions are considered a record for Record Information Management purposes. The North American Energy Standards Board Base Contract for the Short-Term Purchase and Sale of Natural Gas is generally used with special provisions for Yankee Gas that are developed with the Company's Treasury Department.¹⁴¹ Pipeline and Storage contracts are standard agreements based on FERC tariffs.¹⁴² The risk management focus has been characterized as increased since the merger.¹⁴³

The Company has implemented a Middle Office & Credit function residing in the Enterprise Risk Management function, which reports to the Vice President and Treasurer, which reports to the CFO. The Middle Office is separate from the Gas Supply approval chain of command, which reports to the CAO.¹⁴⁴ There are structured, quarterly meetings with Accounting and Gas Supply. The Middle Office & Credit function was established after the merger to handle quarterly reporting, provide a central database of all contracts, and perform mark-to-market valuations. The credit function was established over ten years ago. Because gas is purchased month-to-month, mark-to-market valuations are not required. The department manager approves authorizations for payments.¹⁴⁵

The Company has had no default exposure and, in only rare cases, had to draw on the collateral for a contract. The department uses multiple information sources to track the credit status of counterparties.

The department tracks a performance indicator for credit approval turnaround time accomplishing 100% within 5 days.¹⁴⁶ Gas Supply uses a Lotus Notes database and email notification process to notify other departments, including the Middle Office and gas controllers.¹⁴⁷ Energy contracts are recorded in the Record Information Management system with a five-day turnaround goal. Energy Supply (which includes Gas Supply) provides contracts within 24 hours.¹⁴⁸

BRCS/RCG considers the Middle Office function reasonable.

Conclusion 4.2.7 *BRCS/RCG determined that the Gas Supply Department has prepared for the expected effects of the Comprehensive Energy Strategy within the annual forecast; however, the forward process connecting the two departments has not been defined, although Gas Supply reviews significant new loads.*

¹⁴¹ Response to Data Requests Q-GAS SUPPLY-01-067 and 072.

¹⁴² Interviews E. Karanian 10/21/14, E. Soderman 10/22/14 and Response to Data Request Q-GAS SUPPLY-01-072.

¹⁴³ Interview L. Cullen 10/22/14.

¹⁴⁴ Response to Data Request Q-GENERAL-01-001, pp. 161, 158, 140, and 193.

¹⁴⁵ Interview A. Cullen 12/1/14.

¹⁴⁶ Interview A. Cullen 12/1/14.

¹⁴⁷ Interviews E. Karanian 10/21/14 and E. Soderman 10/22/14.

¹⁴⁸ Interview A. Cullen 12/1/14.

Analysis

The Gas Supply Department has been actively engaged during the development of the CES, although, now that the CES is being implemented, there is no formal process in place to monitor actual progress and forward commitments.¹⁴⁹

BRCS/RCG reviewed the single Internal Audit report relating to Gas Supply (generated since 4/1/2008). This report referred solely to NSTAR and, therefore, was not relevant to YGS.¹⁵⁰

4.3 System Planning & Design

Overall Assessment

Gas system planning and design (engineering) are the cornerstones of the utility's effort to ensure adequate, safe, and reliable gas energy delivery network. Both must be consistent with the Company's strategic plan and will impact customer satisfaction. The resulting planning and engineering efforts drive YGS's capital and impact O&M planning and budgeting. Specifically, the system planning and design processes

- Plan the YGS's capital construction program, which
 - Minimizes equipment failures and leaks of all types
 - Addresses the replacement of aging infrastructure, particularly cast iron and bare steel mains
 - Ensures adequate gas supply network to new and existing customers, particularly with respect to Connecticut's statewide oil to gas conversion program
 - Minimizes the need for excessive corrective maintenance actions
- Support the development of a formal asset management strategy and plan
- Encourage proactive maintenance planning to optimize O&M spending
- Minimize potential excess spending caused by uncoordinated capital and maintenance efforts
- Allow management to identify the appropriate staffing and outsourcing levels for constructing and maintaining the system
- Permit management to determine the most cost-effective means for executing its capital plan

YGS's System Planning and Design does an adequate job of maintaining system integrity while balancing the capital budget with the accelerated mains replacement program and system expansion brought about by the Connecticut oil/gas conversion program.

YGS's Planning and Design functions are well thought out and consistent with sound organizational practices, but planning estimate accuracies can be improved, and the use of outsourcing for design services seems high. The accelerated replacement program has only

¹⁴⁹ Interviews C. Frattini 11/4/14 and E. Karanian 10/21/14.

¹⁵⁰ Interview L. Cullen 10/22/14 and Response to Data Request Q-GAS SUPPLY-01-096.

been active for 3.5 years so it is still early in the long term (15-20 year) plan, so it is too early to register the full benefits of the program.

Evaluation Criteria

The following evaluation criteria focused our investigation and foundation for this assessment:

- To what extent did the Company implement the 2008 recommendations?
- Are infrastructure planning and design (engineering) functions appropriately staffed and aligned to support system planning?
- Are there appropriate priorities, guidance, and other instructions for evaluations, tradeoffs, and decision-making in place? Specifically, do they address:
 - An asset condition and management process?
 - Input from the asset health review process?
 - Linking asset management decisions (e.g., predictive failure analyses) to improve reliability and performance?
- Does the Company prepare system forecasts and develop infrastructure requirements?
- Are there formal processes for identifying, developing, and justifying the need for major projects (e.g., gas lines, regulator stations, etc.)?
- Are there a formal process and criteria for making decisions regarding replace-versus-repair, including how the overall construction program planning process is affected?
- Are there planning processes for (a) reliability versus new business tradeoffs and (b) regional versus central planning dynamics?
- To what extent are benefit/cost analyses and risk analyses considered in the decision-making process, and are the specific types of benefit/cost and risk analysis methodologies assessed?
- Are trade-offs optimized for replacement of older technology with newer technology and for the resulting impact on the useful lives and depreciation assumptions of the existing infrastructure, cash flow, and system reliability?
- How are distribution problem areas included in the system planning process?
- Are planning results adequately backcasted for accuracy and model manipulation?
- What is the impact to maintenance planning in terms of programs and spending?
- How has the Company's gas main and service line replacement plan changed over the last five years? What is the projected capital spending for the next five years?
- What tools and models are used to project gas main replacement? How are the results verified?

- Does the Company plan to increase gas storage over the next five years? What drives storage decisions?
- Is there a formal standards function for equipment and designs?
- Is there adequate early coordination with supply chain to maximize equipment discounts on long-lead time items?
- Are engineering designers required to visit field locations prior to commencing designs?
- Are there adequate geographic data to assist in design projects accurately?
- How are automated design tools used?
- Are trade-offs optimized for replacement of older technology with newer technology and for the resulting impact on the useful lives and depreciation assumptions of the existing infrastructure, cash flow, and system reliability?

Conclusions

Planning

This section describes the Engineering Planning function and the overall Engineering function's organization. The Planning function is a critical step in designing and building a resilient gas distribution system. First, it defines what constitutes a safe and reliable distribution system. Second, it must continually ensure adequate distribution capacity to allow all the customers to draw the amount of gas necessary on the coldest day of the year and still have capacity to meet the needs of both its organic growth in any part of the service territory and any new loads, such as gas vehicles. With these plans YGS is well poised to increase its 80% customer saturation rate along the gas mains.¹⁵¹

Conclusion 4.3.1 *BRCS/RCG concluded that YGS's engineering planning function has met the intent of the 2008 Management Audit recommendations.*

Analysis

There were two recommendations that impacted the Engineering Planning function at YGS.

5.3.1 System Design (Priority: Medium): We recommend that Yankee Gas review and document the basis for its system design temperature and reaffirm that the design temperature provides the capacity to meet both firm sales and transportation forecast loads.

From a planning perspective, the engineers use the GL Denton's Synergi (formerly GL Denton's SynerGEE) modeling tool to project the distribution system requirements based on the peak hour demand, usually occurring on the coldest day at 6 AM. Data for this model comes from their 28 gate stations, and annual customer usage comes from C2, their customer

¹⁵¹ Interview A. Marsocci 10/15/14.

information system. In the summer, the Company begins planning for the coming winter. Once the model produces its results, they compare the output with Gas Supply's gate station peak day projection divided by 20 to match up the peak hour. This methodology is tested against SCADA data to ensure its reasonableness. Because YGS has installed mid-grid sensing units, they are able to further refine the peak gas flows around the distribution system.¹⁵²

Company Response: Gas Supply and Gas Engineering both use a 67 HDD as a design basis. The HDD (Heating Degree Day) is defined as the difference between 65 degrees and the average of the high and low temperatures of the day. If the high temperature was 25° and the low was 15°, the average would be 20° and the difference between 65° and 20° is 45° for a 45 HDD. If the high temperature was +8° and the low was -12°, the average would be -2° which is 67° difference from 65° (a design day). Although Gas Engineering is interested in the peak demand hour on the coldest day, the peak hour cannot be determined from the Heating Degree Day. Therefore, Gas Engineering models the average temperature (HDD) and relies on other assumptions to adjust for the peak hour of the day.

The average hourly sendout is 1/24th or 4.2% of the daily sendout. Gas Engineering uses 5% of the daily sendout to obtain a peak hour and that has proven conservative. Recent load data shows a peak hour of 4.7% to 4.8% of the daily sendout. If the difference between 4.2% (hourly the same as peak hour) and 5% (the rule of thumb for obtaining the peak hour) was applied to the HDD ($0.8\% \times 67 \text{ HDD} = 0.536 \text{ HDD}$) the HDD would have to be increased a little more than 1/2 a HDD to account for the peak hour. This exceeds the degree of accuracy to predict HDDs.

The load study is based on numerous assumptions. Experience has shown that the assumptions being used give results that can be substantiated with actual sendout data. Each year the load and distribution system data is updated and the predictions of the load study verified for actual conditions the previous winter. Update system planning model - annually model is updated with new customer load and facility information and validated against previous winter's operations, Engineering took actual data from this past year's winter and tested the model, it was modified slightly to reflect performance.¹⁵³ Due to the correlation of the modeled results to actual results, Yankee will continue its present practice.

Company Status as of July 31, 2014: Additionally, annually Gas Engineering and Gas Supply meet to review the performance of the system during the winter months. Peak day as well as peak hour actuals are reviewed in comparison to the models predictions. The model is then adjusted to better reflect actual performance, but Gas Engineering's model has been proven to be consistent in determining peak day and hour requirements.

¹⁵² Interview B. Facteria 10/20/14.

¹⁵³ Response to Data Request Q-SYS PLANENG-01-105.

BRCs/RCG's believes that the method used to forecast the peak hour load requirement is reasonable and meets the intent of the 2008 Audit recommendation in that there appears to be adequate checks of the calculation against actual demand for the purposes of backcasting the results for accuracy.

As YGS moves forward to expand its distribution system in response to the Connecticut-mandated expansion program, the Company will need to pay closer attention to these calculations to ensure adequate capacity on those mains which are adding new demand.

5.6.1 System Planning (Priority: Low): Conduct annually "post-mortem" reviews on all large capital projects and on a representative sample of other capital projects. In addition to cost, this review should validate the projects contribution to gas systems reliability, capacity, adequacy of service and specific project objectives. To assess adequately, the reviews may need to be completed after the project has been in-service for a time.

Company Response: With regard to new business projects, Yankee Gas currently conducts post-mortem analysis on a select group of projects to review how well the project performed against the anticipated new business loads and estimated cost to serve. This activity will continue going forward.

With regard to non-new business projects, Yankee Gas agrees that a post-mortem review of a select group of projects is an effective means by which to identify lessons learned opportunities and as a means to measure the performance of the construction organization. In 2009, Yankee Gas will formalize a construction project post mortem review process using the Operating Companies Capital Program (OCCaP) guidance documents.

The Company is in agreement with this recommendation and has several processes and procedures to address the concern. BRCs/RCG provides its review of the accuracy element later in this chapter.

Conclusion 4.3.2 *BRCs/RCG found that the infrastructure planning and engineering functions are reasonably staffed and aligned to support system planning and design with the augmentation of design contractors.*

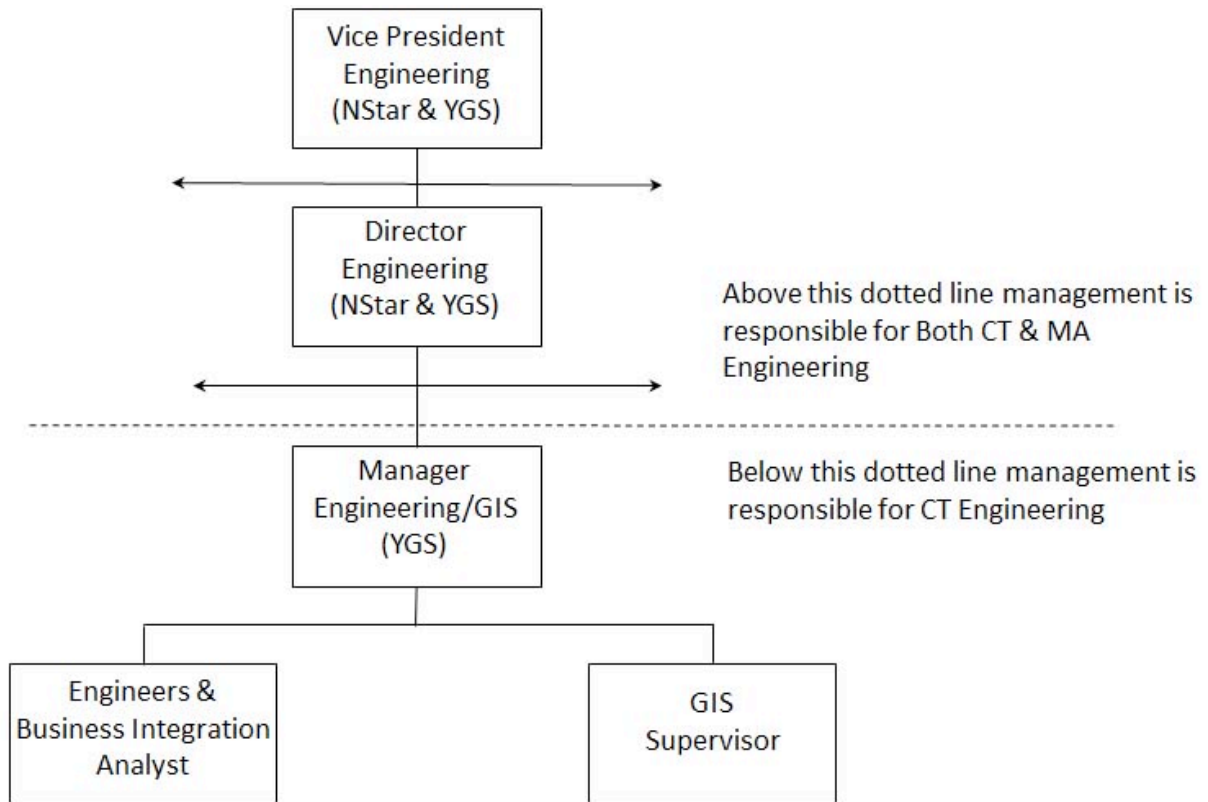
Analysis

As mentioned in the Executive Chapter of this report, the engineering function is changing. The Vice President of Engineering is now responsible for the combined NSTAR and YGS gas engineering functions. The vice president believes there are significant benefits to this combined gas business model. In particular, he believes the standardization of materials, processes, and work methods will bring about both cost savings and greater flexibility in building and maintaining the gas distribution systems.¹⁵⁴ One of his direct reports is the

¹⁵⁴ Interview M. Andrukiewicz 10/16/14.

Manager of Engineering and GIS. This group is responsible for all the gas engineering in YGS. Exhibit 1 shows this organization.

Figure 5: YGS Engineering Function



The Manager has 10 individuals within his organization who are responsible for both the planning and design of the gas distribution system. Additionally, the GIS function reports to him and is responsible for the mapping of the distribution system.

Job descriptions appear to be updated frequently. Many of the Planning and Engineering job descriptions have been recently updated in 2014. The descriptions appear reasonable in job responsibility.¹⁵⁵

For larger projects, the Company can use a number of engineering firms, which each have annual contracts with YGS for engineering services. Design firm usage is likely to grow with the expansion program’s ambitious targets and the accelerated mains replacement program. Further, there is the Approved Road Projects – the plan for municipalities performing roadwork – which can be very stochastic by its very nature, since the work is highly dependent on municipal funds availability. Given that two of the programs have a finite life to them – 10 years for the expansion program and 15 to 20 years for the mains replacement effort – and the third is dependent on variables out of YGS’s control, the use of contractors is reasonable.

¹⁵⁵ Response to Data Request Q-SYS PLANENG-01-108.

System Planning and Engineering's stated mission is "Gas System Planning and Engineering's objective is to provide distribution system strategic plans and compliance guidelines to operating personnel to ensure safe and reliable service to customers."¹⁵⁶

One of the department's goals was to maintain and develop procedures - write and update procedures in order to maintain compliance with minimum federal safety standards. In response the O&M manual was reviewed, 14 procedures and the Service and Main Construction standards were updated in 2013.¹⁵⁷

This effort is on-going given the strategic objective of having common policies, procedures, processes, standards, and work practices in what was once two independent gas companies.

Conclusion 4.3.3 *BRCS/RCG found that there are appropriate priorities, guidance, and other instructions for evaluations, tradeoffs, and decision-making in place.*

Analysis

With the merger just reaching its second anniversary, it still too early to determine how the drive to best practices between the two gas companies has impacted the CT group. However, based on the last management audit, YGS Engineering and Planning was in good condition with a solid foundation. The addition of the post-merger strategic objectives further strengthens Engineering and Planning's priority setting and guidance. It appears from our interviews that the function is well managed and has the tools necessary to perform the tasks at hand. Key elements to their success include the following:

- In 2011, Leak Survey was centralized for YGS, and the formal leak surveys were outsourced. As a result of this change, there has been a significant increase in the number of leaks identified annually.
 - 2010 – 244 leaks found
 - 2011 – 408 leaks found
 - 2014 (YTD) – 1196 leaks found¹⁵⁸

There are a variety of contributing factors that may affect this increase:

- Number and frequency of leak surveys
 - Increased winter patrols over cast iron
 - Special or project related surveys
- Aging/deteriorating infrastructure
- Mechanical coupling (failures)

¹⁵⁶ Response to Data Request Q-SYS PLANENG-01-104.

¹⁵⁷ Response to Data Request Q-SYS PLANENG-01-105.

¹⁵⁸ Response to Data Request Q-LOST GAS-02-021.

Gas Asset Management Evaluation System (GAMES) is used to make the repair-versus-replace decision and prioritize the Mains for replacement.¹⁵⁹ There are 20 elements considered in the model:

- Location in a business district
- Elevated low pressure cast Iron (CI)
- Intermediate or High pressure steel (ST)
- Main size 4" CI
- CI age ranges (three categories)
- ST age ranges (three categories)
- Active corrosive area
- Number of leaks repaired per mile (three categories)
- Number of pending leaks per mile (three categories)
- Average length between sealed joints (two categories)
- Main size 4" type ST<1960

Each of these has a specific point value. With the above information, a point value for segment of pipe is determined, and those segments with the highest point value are replaced.¹⁶⁰

- As a result of the merger, there is a significant emphasis on standardization of policies, processes, procedures, work practices, and materials that will allow for better management of the combined gas distribution systems.
- Recently (18 months ago) the Company established a centralized QA/QC function, which will bring about a higher degree of consistency in contractors' construction efforts.

The accelerated replacement program uses the above criteria to select the riskiest main segment candidates for replacement. Another factor that could alter the "when" for replacement is municipal street openings/repaving, which can reduce the cost to YGS and increase customer satisfaction.

YGS's GIS serves as its mapping system as well as its asset management tool. Management believes that the GIS system is reasonably accurate. Management bases its claim on the fact that there have been 65,000 "Call before you dig" calls and only 120 dig-ins. The company works to improve the accuracy of the GIS system by reviewing company records and updating GIS when discrepancies are found in the field. The system contains some installation and manufacturing information. The manufacturing data collection is part of a company pilot program and may be expanded in the coming year.¹⁶¹

Conclusion 4.3.4 *BRCS/RCG found that there is a formal process for creating the distribution system capital budget.*

¹⁵⁹ Interview B. Factoria 10/20/14.

¹⁶⁰ Response to Data Request Q-SYS PLANENG-04-013.

¹⁶¹ Interview B. Factoria 10/20/14.

Analysis

The formal process for setting the capital budget (dating back to 2009) is well described in two responses to our data requests and corroborated in our interviews.

Capital planning is performed in each organization of NU and capital spending is ultimately reviewed and approved as part of the annual budgeting process. Although uncommon, circumstances could arise in an interim month and require review and approval to occur outside of the annual budget review process.

For Yankee Gas, capital planning is an ongoing process in the sense that the Company is continually monitoring its capital projects and respective budget for the current year and considering longer term investments that will need to be made as well. On an annual basis, the Company implements a formal planning process and generate a high-level five year capital spending forecast and a more detailed plan for the following year in support of its proposal for the annual budgeting process.¹⁶²

The Engineering organization reporting to both the Director and Vice President of Engineering along with the Director and Vice President of Budgets & Investment Planning facilitate the capital planning process and solicit estimates and justifications for capital investments from the Yankee Gas departments. The inputs to the planning process include significant projects such as gate stations and large reliability work as well as the programmatic buckets of work such as the Accelerated Replacement Program and meter replenishment. Once gathered and consolidated, the capital investments under consideration are reviewed and discussed by Yankee Gas senior leadership. After reviews and iterations are complete, the president of Yankee Gas proposes a level of spending for the following year and presents this information to the CEO, CFO, and COO as part of the annual budgeting process.

This process description was tested in the interviews with executive management and Vice President, Director, and Manager of Engineering. There is a clear understanding of executive management requirements for budget adherence. When a project has an overrun, all levels review it to ensure that the reasons for the overrun are reasonable. During our interviews, BRCS/RCG learned that one of the major reasons for overruns was due in part to not knowing the subsurface soil conditions in the area. We also learned that YGS costs for backfilling trenches are more costly than for its Massachusetts gas construction work. This is due to the requirement that the spoils from the trenching must be removed and sent to an approved landfill, and that clean soil must be used to fill the trench. This requirement can substantially increase the cost of a project. Management is now working on several fronts to get this requirement altered to reduce construction costs in the future.

Construction Supervisors and Project owners meet monthly with the Senior Project Cost Analyst in order to establish sound budget projections. The Construction Supervisors also meet with the Director of Operations to review both schedule and

¹⁶² Response to Data Request Q-SYS PLANENG-01-113.

budget variances. During the construction season some members of the Operating Company Review Committee (OCRC) also meet with the VP Engineering on a monthly basis to review a high-level budget variance and projection.¹⁶³

Throughout the year, Yankee Gas utilizes the OCRC to manage the Company's capital program. The OCRC has six members with representation from Sales/Marketing, Construction, Engineering, Budgets & Investment Planning, Operations and Pressure Management. Each year, changes related to new business and emerging projects will arise and the OCRC may approve individual projects and eliminate others that are less critical in order to manage the capital program within the approved level of spending. The OCRC also approves the annual ARP, which is developed in Engineering and reviewed/adjusted with the input of operation managers.¹⁶⁴

In early 2011, YGS's OCRC reaffirmed its need to refine the capital budget variance process and its 10 percent over/under trip wire, including project scope changes. Project managers are requested to attend meetings to discuss project over/under runs.

During review of the OCRC meeting minutes, BRCS/RCG found evidence of good project controls to manage the overall Capital budget number.¹⁶⁵ We found that the Company adhered to the following project controls description in our interviews with Engineering management. As stated earlier in this chapter, management is keenly aware of the executive oversight now in place since the merger was completed.

The close-out of capital projects is completed by the Project Owner, with the support of the Planning & Scheduling organization. The close-out includes the completion of the GIS Mapping, submitting the buried piping inspection forms to the Corrosion department, submitting SCADA changes to Gas Control, filing of the pressure test record, ensure as-builts are properly completed and sent to operations, completing cost & schedule variance reports and approving invoices. The work order is placed in completed status, Plant Accounting performs a final close of the work order and the package is filed and retained according to the retention policy.¹⁶⁶

Conclusion 4.3.5 *BRCS/RCG found no financial consideration in maintenance planning for programs and spending as a result of YGS's distribution system capital program.*

Analysis

YGS is very aggressive in its main replacement and other capital programs. BRCS/RCG would expect to see some change in the total maintenance spend as a direct result of the elimination of problem segments of pipe and failing services. This doesn't seem to be happening yet. BRCS/RCG recognizes that the level of compliance maintenance work will not decline and will likely expand under the gas (expansion) conversion program and that the

¹⁶³ Response to Data Request Q-SYS PLANENG-01-111.

¹⁶⁴ Response to Data Request Q-SYS PLANENG-01-114.

¹⁶⁵ Response to Data Request Q-SYS PLANENG-01-115.

¹⁶⁶ Response to Data Request Q-SYS PLANENG-01-123.

accelerated mains replacement program is fairly recent. Nonetheless the benefit of replacing mains and services should lead to a reduction in O&M.

Conclusion 4.3.6 *BRCS/RCG found no immediate plans for YGS-Connecticut to increase gas storage over the next five years.*

Analysis

From the interviews conducted, there does not appear to be a need to increase YGS's gas storage in Connecticut. Currently, the LNG facility in Waterbury (1.2 BCF) is designed to handle 50% of the peak-day load. Generally, at the end of the heating season the tank is at 47% of capacity.

Design

Design is co-mingled between the Engineering and the Operations organizations. First, Engineering is responsible for all designs either through developing standards, performing design work, or outsourcing the design aspects of a project. Depending on the size and complexity of the project, Engineering will either design it, outsource the design if the work load is high or requires special considerations, or turn it over to the Construction function, which in turn will design it through one of the Construction project owners.

High level engineering e.g., pressure system to tie-in to, size of main, meter and regulator sizing, is performed in-house. Detailed civil planning for permitting requirements which indicate line assignment, potential roadway conflicts and detailed tie-in diagrams are outsourced. For large municipal or state projects such as bridge crossings, engineering can be performed either internally or outsourced depending on resource availability at the time.¹⁶⁷

Project owners have responsibility for approved projects for design, costing, and execution. These project owners are the individuals who will be responsible for both the physical construction and the financial aspects of the project.¹⁶⁸ Should the project owners be fully committed, they have the option to outsource the work to approved design firms under blanket arrangements. All designs must be done in accordance with YGS-approved standards and materials. Engineering, therefore, has its hand on every project either directly or indirectly through the standards it develops.

Conclusion 4.3.7 *BRCS/RCG found that the current Planning capital project estimating can be improved to provide a more accurate initial ranking in the annual capital project line-up.*

Analysis

Planning does an initial planning estimate for the capital projects using a number of different estimating tools and techniques that yield estimates that may be off by more than 10

¹⁶⁷ Response to Data Request Q-SYS PLANENG-01-119.

¹⁶⁸ Interview S. Testa 10/16/14.

percent for an estimated 50 percent of the projects identified.¹⁶⁹ Once the project is approved and assigned to a project owner, the detail design is prepared and fed into the STORMS system where the material and labor costs and all other requirements are estimated for the project.

Conclusion 4.3.8 *BRCS/RCG found the centralized structure for the construction function to be reasonable and well designed, although the QA/QC is limited to contractor only.*

Analysis

YGS designed the construction function with the following resource types:

- Two project managers reporting to the Manager of Construction.
- Five project owners per supervisor who own all the projects (four positions open as of this review)
- Cost analysts to support the project owners
- Construction coordinators to the in the field eyes, these are an outsourced position

In addition, the recently formed centralized Quality Assurance/Quality Control function provides the quality field inspectors to oversee the physical plant installation. All of the inspectors are also outsourced.

Currently this group only inspects contractor work, not any of the YGS mechanics work on capital projects. Construction Supervisors and Project Owners meet monthly with the Senior Project Cost Analyst in order to establish sound budget projections. The Construction Supervisors also meet with the Director of Operations to review both schedule and budget variances. During the construction season some members of the Operating Company Review Committee (OCRC) also meet with the VP Engineering on a monthly basis to review a high-level budget variance and projection.¹⁷⁰

Conclusion 4.3.9 *BRCS/RCG found that the high-level capital planning to be very formal with close management attention.*

Analysis

The Engineering organization's vice president and director meet with the Budgets & Investment Planning's vice president and director to commence the capital planning process, solicit estimates, and review capital investments justifications from the Gas business. The inputs to this planning process can include significant projects, such as gate stations, large reliability projects, as well as the programmatic buckets of work, such as the Accelerated Replacement Program (ARP) and meter replenishment. After reviews and iterations are complete, the president of Yankee Gas proposes a level of spending for the following year and presents this information to the CEO, CFO, and COO as part of the annual budgeting process.¹⁷¹

¹⁶⁹ Interview B. Factoria 10/20/14.

¹⁷⁰ Response to Data Request Q-SYS PLANENG-01-111.

¹⁷¹ Response to Data Request Q-SYS PLANENG-01-114.

Yankee Gas employs an Operating Company Review Committee (OCRC) to manage the Company's capital program. The six-member OCRC represents the following departments:

- Sales/Marketing
- Construction
- Engineering
- Budgets & Investment Planning
- Operations
- Pressure Management

The capital budget is dynamic and somewhat fluid as the projects which make up this approved budget can change as new business opportunities and emerging projects present themselves. OCRC has some discretion and may approve individual projects and eliminate others that are less critical in order to manage the capital program within the approved level of spending. The OCRC also approves the annual ARP, which is developed in Engineering and reviewed/adjusted with the input of Operation Managers.¹⁷²

Conclusion 4.3.10 *BRCS/RCG found that the on-going capital project financial follow-up is reasonable.*

Analysis

BRCS/RCG has seen more complex capital project financial oversight processes, but the one in place at NU and practiced by YGS is reasonable for the size operation without being over burdening to the Project Owners and management team. The current capital budget process appears to be rigorous and sufficient to provide adequate project oversight while allowing management ample time to manage a project's progress. There is extensive follow-up on all projects from a number of different sources. The OCRC reviews the projects on a regular basis and Project Owners have regular meeting outside of OCRC with their manager to track progress against both schedule and budget. In addition, the scheduling group tracks progress and meets regularly with the involved parties.

The Company provided a description of its activity:

A centralized Construction group manages capital projects throughout the entire company. At the start of the year they input known work by type and area into a schedule and determine a base line for the number of crews that will be needed. They also utilize sales projections to forecast the number of crews needed to complete the annual new business program.

There are two Lead Project Managers that split the work between new business and replacement. They supervise Project Owners who are responsible for the execution (safety, cost and schedule) of the capital project work throughout the service territory. The centralized Construction group tracks results and provides weekly construction updates to the company's project and management teams.

¹⁷² Response to Data Request Q-SYS PLANENG-01-114.

There are also monthly capital construction performance review meetings held by the Director of Operations and attended by the Manager of Construction, Manager of Planning & Scheduling, and Area Operations Managers to review and justify any scheduling and/or cost variances and communicate the mitigation strategy to minimize the variances.¹⁷³

Construction supervisors and project owners meet monthly with the senior project cost analyst in order to establish sound budget projections. The construction supervisors also meet with the Director of Operations to review both schedule and budget variances. During the construction season some members of the OCRC also meet with the VP Engineering on a monthly basis to review a high-level budget variance and projection.

For any project with a variance over 10%, the project owner is required to come before the OCRC with justification for the variance.¹⁷⁴

Corrective actions are taken on a monthly basis depending on the actual spend on the total capital program. Individual projects may be postponed or canceled if the budget is running over. Additional projects may be added if projects are under budget. If YG has numerous leaks and the emergency replacements are high, but municipal projects are behind schedule and expected to come in under budget the two line items offset one another. The program is reviewed in its entirety and is managed as such.¹⁷⁵

Management takes corrective action on a monthly basis, depending on the rate of spend on the entire YGS capital program. Projects may be postponed or canceled if the program budget is projected to exceed the limit of the capital budget. Conversely, new projects can be added if there is a project under-spend.¹⁷⁶

Conclusion 4.3.11 *BRCS/RCG found the closeout process to be formal and consistent with good engineering practices.*

Analysis

The Project Owner completes closeout of capital projects with the support of the Planning & Scheduling organization. The closeout process includes these items:

- Completing of the GIS Mapping
- Submitting the buried piping inspection forms to the Corrosion department
- Submitting SCADA changes to Gas Control
- Filing of the pressure test record
- Ensuring as-builts are properly completed and sent to operations
- Completing cost & schedule variance reports

¹⁷³ Response to Data Request Q-SYS PLANENG-01-120.

¹⁷⁴ Response to Data Request Q-SYS PLANENG-01-111.

¹⁷⁵ Response to Data Request Q-SYS PLANENG-01-112.

¹⁷⁶ Response to Data Request Q-SYS PLANENG-01-112.

- Approving invoices

The work order is placed in completed status, Plant Accounting performs a final closeout of the work order, and the package is filed and retained according to the retention policy.¹⁷⁷

Conclusion 4.3.12 *BRCS/RCG found that YGS uses the more costly open trench construction over the boring method for the majority of plastic and coated steel pipe in its expansion program; this will aid better maintenance, but drive installation cost up.*

Yankee Gas Response: The Company disagrees with this conclusion. Please provide cite on installation costs.

BRCS/RCG Reply: In work with a confidential client the Auditor did an analysis of trenching versus directional boring and found that directional boring was the lower cost option. However, this client was not in CT. The exception to this would be in urban areas where there are significant services tied to the main. In suburbs where the density of services is much lower than boring would be more cost effective.

Analysis

Yankee Gas chooses from coated steel or plastic pipe, depending on load and pressure requirements of the project:

Steel line pipe conforms with the requirements of specification API 5L, PSL 2 Electric Welded Pipe, Grade B. Grade X42 may be supplied. Pipe manufactured in accordance with ASTM A 53, Grade B or ASTM A 106, Grade B, may be substituted provided in both cases the pipe meets the chemical composition of API 5L Grade B pipe. The pipe is standard wall pipe (schedule 40) in sizes from 3/4" IPS through 2" IPS and in light wall in larger sizes. Pipe coating consists of 10 mils of butyl mastic/rubber adhesive undercoating with a polyethylene jacket (brand name "Pritec" or "X-Tec II") ranging in thickness from 25 to 40 mils.

Plastic line pipe conforms with the requirements of ASTM D 2513. The pipe shall be of material designation PE4710. Resins can be either Dow Chemical DGDA-2490 Resin or BP Solvay TUB 121 Resin. Pipe is supplied in tubing sizes 1/2" CTS through 1-1/4" CTS (wall thickness is 0.090") and in 2" IPS through 12" IPS (SDR 11.0).¹⁷⁸

The vast majority of the new mains are being installed with the traditional method of open trenching. Yankee Gas has inserted pipe, used directional drilling, lined pipe, and jacked new pipe, but the replacement program and new business installations are almost exclusively being performed by the open trench method.¹⁷⁹

The primary reasons the Company uses the traditional method of open trenching appears to be as follows:

¹⁷⁷ Response to Data Request Q-SYS PLANENG -01-123.

¹⁷⁸ Response to Data Request Q-OPERATIONS-01-185.

¹⁷⁹ Response to Data Request Q-OPERATIONS-01-186.

- The Connecticut soil conditions are very rocky making direction boring more difficult and potentially more expensive.
- YGS has the good fortune of having an 80 percent penetration of the available customers along its mains already connected, requiring a lot of digging, even if an insertion method were used, in order to reach all the service taps and reopen services for gas flow.

Recommendations

Recommendation 4.3.1 BRCS/RCG recommends that YGS perform a cost analysis of outsourced engineering efforts to determine the ideal cost-effective split between contracting and in-house engineering staffing.

Recommendation 4.3.2 BRCS/RCG recommends that YGS develop a methodology to translate distribution system capital improvements to the overall O&M annual budget. Further, cost additions can be made for system expansion.

Yankee Gas Response: Please clarify the second sentence

BRCS/RCG Reply: Since YGS is expanding their gas distribution system into new territories, any O&M offset that would be gained in the existing system as a direct result of the mains replacement program and other replacements, could be applied to O&M requirements created during recent system expansion efforts.

Recommendation 4.3.3 BRCS/RCG recommends that YGS explore improvements to the initial Planning capital project estimating to support more accurate initial project ranking in the annual capital project line-up.

Yankee Gas Response: Is there anything besides cost that's being considered in this comment about ranking?

BRCS/RCG Reply: We recognize that there are other considerations in the project approval process, but this recommendation is focused only on financial estimating and not anything else.

4.4 Reliability & Construction

Overall Assessment

System reliability is a constant priority in the natural gas industry. It is vital to the public interest in many ways. Reliability, of course, could be managed with relative ease if nothing ever changed. But aging, expanding, and altering infrastructure challenge reliability, requiring utilities to respond responsibly with adequate forethought and effort. A utility's infrastructure construction projects are both a response to reliability concerns and a cause for heightened reliability control. For example, the necessity of replacing aging cast iron helps to ensure system reliability, but just as certainly, the construction controls and process during that installation also speak to future reliability.

System reliability and construction are paramount as they both can affect the ultimate customer's experience. Further, this is where a company's capital spend turns to hard money, and the success of a particular project can be judged immediately.

Construction projects provide the necessary upgrades to the gas distribution system to meet the operational objectives of the utility. Some projects are implemented in response to damaged, leaking, and/or corroding pipe. Other projects are designed to ensure longer lasting reliability. Some projects are developed with requests from various internal and external entities for major system upgrades or to provide service to new residential subdivisions, commercial buildings, and industrial facilities.

Therefore, in reviewing a utility's reliability and construction activity, five major components emerge as areas of focus: Past Responsiveness to Audited Recommendations, Use of Contracted Resources, Budgeting and Scheduling Performance, Safety Concerns, and Gas Distribution Integrity Management.

BRCS/RCG believes that the system reliability and construction efforts performed by YGS are, on the whole, adequate and reasonably performed. Work toward pipeline integrity appears reasonable and adequate both in managing developed leaks and in ensuring both pipe replacement activity and expansion plans reduce deterioration through materials and cathodic protection. However, a few areas may benefit by efficiency improvements.

The Company's construction activity is heavily dependent on contractors. Even the QA/QC inspectors and the Construction Coordinators are contractors, so that contractors review the work of other contractors. While this is not unreasonable and may provide efficiencies in certain areas, it may cause a downgrade in communication and emphasis of Company expectations.

YGS users of the Company's work management system, STORMS, appreciate its precision and efficiency. However, current engineering and planning processes develop projects and estimates without visiting the field or conducting any detailed field investigations. These high level estimates are established to set an initial budget and are performed prior to input to STORMS, resulting in initial estimates that are disappointing in their accuracy relative to the subsequent STORMS cost forecast

Another area of operational frustration is changes resulting from the NSTAR/NU merger. While Company employees expected and even welcomed changes in certain areas, the length of time to complete the integrated change is tiresome.

Evaluation Criteria

BRCS/RCG had proposed the nine evaluation criteria below as the principal areas of investigation and the foundation for this study area. These criteria may be coordinated with the five major focus components of review:

Past Responsiveness to Audited Recommendations

- To what extent did the Company implement the 2008 audit recommendations?

Use of Contracted Resources

- Is there a reasonable balance between in-house and contracted resources?

Budgeting and Scheduling Performance

- Are there appropriate priorities, guidance, and other instructions for evaluations, tradeoffs, and decision-making in place?
- What percentage of construction projects are coming in on budget and on schedule?
- What is the number of projects finishing over budget and/or schedule? What are the primarily reasons for overruns?
- How are "as-built" diagrams filtered back to the plant records? Is the number of red-lined drawings tracked?

Safety Concerns

- What is the construction safety record? What is the number of lost time accidents?

Gas Distribution Integrity Management

- How is a project's reliability impact tracked after completion?
- What is the most preferred method of main replacement at YGS?

Conclusions

Conclusion 4.4.1 *BRCS/RCG concluded that the Company has adequately addressed the 2008 audit recommendations for System Reliability and Construction.*

Analysis

YGS received two recommendations regarding System Reliability and Construction.

5.5.1 System Reliability and Construction (Priority: High): The selection of system renewal and reliability projects for the capital budget need to be tied to an analytical and decision process. The process and tools need to be capable of not only producing accurate costs, but also the contribution to system risk mitigation, understanding for project interdependencies, reliable estimates of proposed project value, and a defensible justification for project funding. This will help assure that the proper amount of money is available and being spent to maintain the system at an acceptable level of risk. In anticipation of DIMP becoming reality and recognizing the significant delays associated with budgeting, acquiring and installing new software, Yankee should initiate a search to find a comprehensive risk prioritization, mains replacement, and asset management system.

BRCS/RCG reviewed the Company activity related to this recommendation.¹⁸⁰ The Company's response incorporates three elements. The first was the establishment of an OCRC to review all new capital projects. The second involves use of two models: Identified Active Corrosion Areas (IACA) to identify corrosive areas, and the Gas Asset Management Evaluation

¹⁸⁰ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1, p. 10.

System (GAMES), which considers all leaks on all types of pipe (not just corrosion leaks). Third, YGS states that models alone cannot take into account certain other factors, such as paving projects, program synergy, and alternate designs to reduce costs. Therefore, Subject Matter Experts review the model output to establish the final replacement projects.

5.5.1 System Reliability and Construction (Priority: High): An audit team needs to review the effectiveness of the quality control program as implemented. The scope of this undertaking would be to document the recent activities undertaken since the instances of noncompliance occurred, assess the overall program effectiveness and make recommendations as to how the quality-control program can be improved. The second recommendation advises that an audit should be performed on the quality control program to assess activities undertaken since instances of noncompliance occurred, to assess the overall program effectiveness, and to make recommendations as to improvement.

BRCS/RCG reviewed the activity performed by YGS in regard to this recommendation.¹⁸¹ YGS has developed a new Construction and Maintenance Observation program involving training, an audit process, and an on-site inspection checklist. The Company's Quality Assurance and Quality Control (QA/QC) department also inspects all contractor crews. This group reviews opportunities for improvement and best practices with the operations team leadership.

Conclusion 4.4.2 *BRCS/RCG concluded that the Company's balance between in-house and contracted resources is reasonable but additional controls could provide additional assurance that quality and cost goals are maintained.*

Analysis

Since the objective of resource balancing is to complete the work in a cost-effective and timely manner, splits between in-house and contracted resources cannot be arbitrary, but must focus on both cost and schedule. YGS states that staffing plans take into account the level of work for the year, recognizing that in some months the work scope is greater than in others. Maintaining a large enough staff to cover high work volume months would ultimately be inefficient. Therefore, the Company employs competitive outsourcing for the majority of construction activity as a cost-effective way to manage that aspect of the business. Additionally, YGS states that it continually monitors cost and efficiency, and, if moving more work from external sources to internal or vice versa, the Company would pursue that course of action.¹⁸²

About 90-95% of YGS construction is outsourced.¹⁸³ Additionally, all QA/QC inspectors are outsourced; the YGS QA/QC department consists of two people who manage the outsourced inspectors.¹⁸⁴ Since inspection necessarily rises and falls with workload, the same reasoning for maintaining a high contracted construction workforce would apply to the inspector workforce.

¹⁸¹ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1, p. 11.

¹⁸² Response to Data Request Q-RELIABILITY CONST-01-134.

¹⁸³ Interview S. Testa 10/16/14.

¹⁸⁴ Interview B. Factoria 10/20/14.

Although inspectors are contractors, a weekly call with all inspectors helps to calibrate them for consistency and specific problems, so that, for example, a problem discovered in one location will be looked for in other areas.¹⁸⁵

While the justification for relying on contracted inspectors to inspect contracted construction work is reasonable, the level of workload does not demand that 100% of inspectors be contracted. By maintaining a portion of in-house inspectors to rotate throughout the construction work projects, a greater level of assurance of Company performance expectation could be maintained. An in-house crew of inspectors could also possibly prove cost-effective.

Conclusion 4.4.3 *BRCS/RCG concluded that the Company’s budgeting and scheduling of construction projects is adequately undertaken and performed, but certain improvements could support cost efficiencies. Further, it appears the State of Connecticut requires all excess spoils to be tested and sent to approved landfills.*

Yankee Gas Response: Edits provided above

BRCS/RCG Reply: Edits Accepted

Analysis

From 2011 through 2014, 567 construction projects were undertaken, of which 189 were over budget and 288 were over schedule.¹⁸⁶ At first glance, these percentages (33% of projects over budget and 51% over schedule) appear significantly high. However, it must be borne in mind that these are total project numbers regardless of capital spend, budget excess, and length of schedule extension. Reasons for projects exceeding budget include encountering unexpected rock in the dig, extensive paving requirements by municipalities that were not known prior to project start, construction occurring during winter, necessity for more than anticipated test pits, poor construction conditions due to congestion of urban rights-of-way, contaminated spoils, and night construction requirements. Schedule overruns for projects are caused by many of the same reasons as that of cost overruns. Additionally, schedule difficulties arise regarding coordination with customers’ schedules. Also, over half of the schedule extensions were because final paving had to be pushed off to allow for settlement over the winter months.¹⁸⁷

Two important considerations find focus in budgeting and scheduling concerns: original estimating and project control. At YGS, Planning and Engineering first estimate the project cost. However, these estimates, according to Company personnel are not very good.¹⁸⁸ According to the Manager, Engineering and GIS, the Planning/Engineering estimates are off by greater than 10% on 50% of the projects.¹⁸⁹ When the project is assigned to the Project Owner (project

¹⁸⁵ Interview B. Factoria 10/20/14.

¹⁸⁶ Response to Data Request Q-RELIABILITY CONST-01-135.

¹⁸⁷ Response to Data Request Q-RELIABILITY CONST-01-135.

¹⁸⁸ Interview S. Gluck 10/17/14.

¹⁸⁹ Interview B. Factoria 10/20/14.

manager overseeing the project from beginning to end¹⁹⁰), project data is entered into the STORMS system, the Company's work management system. The consensus of users is that the detailed cost produced by the STORMS system is a much more reliable estimate. (See the Design subsection of this Chapter for more information.) The Manager Centralized Construction indicated that he would like even the sales force to be integrated with STORMS.¹⁹¹

The second significant consideration in evaluating budgeting and scheduling regards project control. As stated by the Director Engineering, cost control is critical.¹⁹² Recognizing this, the Company concentrates on several methods to ensure cost efficiencies, especially with regard to resources. Repair versus replace is always examined. Leaks on service lines are always replaced.¹⁹³ Mains have a replacement algorithm, which includes a criterion of three corrosion leaks per 200 feet to generate an IACA and the GAMES model which incorporates all repaired leaks.¹⁹⁴

While it is true that many of the project overruns have been due to ground condition, contractor inefficiencies are also an area of concern, especially since contractors perform 90-95% of construction.¹⁹⁵ However, in the time since the merger, a much greater focus has been placed on budget concerns.¹⁹⁶ And, as noted in the Company's Gas Expansion Plan (a project spanning the next ten years at a cost of about \$696 million), several items take cost effectiveness particularly into account, as shown by this sampling:¹⁹⁷

1. P. 53: "Yankee's marketing plan will focus primarily on prospects that can economically connect to Yankee's distributions system."
2. P. 59: "Under the current regulatory environment, Yankee will extend mains to serve a large anchor load only if that single individual anchor load supports the estimated capital costs associated with main extension, service and meter(s) required to the [sic] serve the anchor load."
3. P. 63: "Yankee's growth strategy as outlined in this Plan is primarily geared toward systematically marketing to those prospects that are most likely convert and could simultaneously be connected to Yankee's distribution system in the most economical fashion." "However, scheduling of jobs will be determined by Yankee's ability to get the work completed cost effectively, safely and reliably. Yankee will have to continually balance the work needed with the resources at its disposal."
4. P. 73: "As part of its planning for the aggressive Plan additions, Yankee has identified four major avenues of controlling construction costs associated with its infrastructure expansion:

¹⁹⁰ Interview S. Testa 10/16/14.

¹⁹¹ Interview S. Testa 10/16/14.

¹⁹² Interview T. Hart 10/21/14.

¹⁹³ Interview T. Hart 10/21/14.

¹⁹⁴ Interview D. Orsini 10/17/14.

¹⁹⁵ Interview S. Gluck 10/17/14.

¹⁹⁶ Interview B. Fortier 10/20/14.

¹⁹⁷ Response to Data Request Q-GAS SUPPLY-01-53.

1. Optimizing service installations (realign construction department to create a dedicated *new construction* group)
2. Applying a portfolio approach to system expansion projects (multiple facilities that could be served by the same expansion project have been combined in the rate financial analysis)
3. Coordinating construction projects with municipalities and other utilities using a right-of-way construction coordination software, and
4. Implementing a spoil reuse and recycling policy across its service territory”

Another factor influencing YGS’s cost and schedule control may be related to the merger of Northeast Utilities with NSTAR, completed in 2012. Quite a bit of change has occurred since the merger to bring operations into common orientation. In a view of the larger picture, the merger has worked well. According to the Manager Centralized Construction, change has occurred because of the merger, but as the companies worked together on pipeline contracts, they now have good alignment with Massachusetts. However, in day-to-day operations, the changes have become so tiresome as to cause Company workers to believe the change is taking too long and creating a lack of stability.¹⁹⁸ The result has been that the Company vision has been clouded, a lack of understanding concerning what is happening has arisen, Company personnel continue to see things as unsettled, and operational issues are more difficult to resolve due to changes in previous resolution contacts and methods.¹⁹⁹

The frustration of working with project estimates which are understood to be incorrect more times than not requires a change of tools. The STORMS system works well and is a trusted and welcome tool. Considering that employees have identified STORMS as a central use tool for other departments and presuming that the system could be adapted for use in the original estimates, expanding its role into the initial estimating performed by Engineering and Planning appears appropriate.

Project control will always be challenged by the uncontrollable factors in construction operation. However, the Company does appear to have appropriate interest in promoting cost efficiencies in its projects as evidenced in interviews and from Company documents. The QA/QC GROUP and the Construction Coordinators should address the inefficiencies of contractor construction more aggressively. Adopting the recommendation of 4.4.2 above would also be beneficial.

Changes in operation and organization due to a major merger are, of course, necessary. However, after changes are decided, it is crucial to fully document and communicate the changes down through all levels of management, with training and/or informational meetings as necessary, to avoid schedule and cost inefficiencies and to maintain the morale of the workforce.

Conclusion 4.4.4 *BRCS/RCG concluded that the Company’s safety record is not unreasonable.*

¹⁹⁸ Interviews S. Gluck 10/17/14 and M. Fortier 10/21/14.

¹⁹⁹ Interview M. Fortier 10/21/14.

Analysis

BRCS/RCG examined several items concerning YGS's safety record. YGS provided BRCS/RCG with a history of pipeline or safety-related condition reports covering the previous five years. Four incidents were reported:

1. House explosion, resulting from a cast iron main break
2. Snow load damage to aboveground pipe, resulting in leak and building damage
3. Failure of service saddle resulted in interruption of service to 599 customers
4. Live service line cut inside a building's crawl space, igniting a fire and destroying the building

BRCS/RCG also reviewed a listing of fourteen civil penalties assessed to YGS over the past five years that totaled \$242,350, including a \$150,000 fine for the structure fire in Waterbury, Connecticut.

The structure fire occurred in June 2011. YGS had initiated a replacement project in order to retire the cast iron main and bare steel services. The neighborhood has several houses that are elevated about two feet above ground on stilt supports creating a crawl space. The original gas services came up underneath the houses behind siding that covered the area. Prior to this (March 2011), the service to one section had been replaced and relocated to an outside location, but the original service underneath the house was not abandoned. In March 2013, a YGS contractor was completing some punch list items from the retirement project. He cut into the old riser, not realizing it was still active. The cut resulted in releasing 60 psi natural gas. The contractor immediately evacuated the residents, but the gas ignited in about five minutes and the house caught fire.²⁰⁰

YGS was found to be in violation of 49 CFR 192.605(a), 192.603(b), and 192.613(a). The Company identified and completed ten corrective actions.²⁰¹

1. Modify service and main construction standards to include verbiage to treat all pipe as live until verified otherwise.
2. Ensure that Contractor Safety Rules include requirements that job safety (tailboard) briefings address safety and live gas hazards.
3. Standardize Work Order Descriptions for work packages and work orders.
4. Contract documents to require all contractors have a process for knowledge sharing and transferring of information between their employees when changes of resources are required.
5. Develop a process for tracking installed and retired facilities involved in replacement work.
6. Document Mapping work practices, including a process for mapping new installations regardless of work package status.
7. Revise GO-230 for applicability and updated processes.
8. Train employees and contractors on new Work Order standardization.

²⁰⁰ Response to Data Request Q-OPERATIONS-08-001.

²⁰¹ Response to Data Request Q-OPERATIONS-08-001.

9. Re-evaluate how the inMaps tools are utilized and reflect this in the appropriate GO or standard.
10. Develop a process as a control mechanism that identifies live and abandoned gas facilities.

BRCS/RCG found the corrective actions to be a reasonable and adequate response to the incident.

YGS also provided certain safety performance measures as reported in their annual pipeline integrity reports for 2009 through 2013. The following Exhibit provides excavation damages.

Table 3: Excavation Damages 2009-2013es 2009-2013²⁰²

	(a) Year	(b) # of Requests	(c) # of Damages
1	2009	55,987	74
2	2010	62,409	117
3	2011	62,476	103
4	2012	65,180	103
5	2013	65,593	132

The Company’s record in Emergency Response over the past five years appears in the table below.

Table 4: Emergency Response Record²⁰³

	(a) Year	(b) Total	(c) # On Time	(d) % On Time	(e) Total	(f) # On Time	(g) % On Time
		Normal Hours			After Hours		
1	2009	4,278	4,251	99.4%	3,347	3,327	99.4%
2	2010	4,727	4,661	98.6%	3,730	3,704	99.3%
3	2011	5,427	5,306	97.8%	4,135	4,019	97.2%
4	2012	5,366	5,318	99.1%	4,004	3,979	99.4%
5	2013	6,780	6,703	98.9%	4,615	4,475	97.0%
6	YTD 2014	5,341	5,275	98.8%	2,835	2,782	98.1%

Normal Hours response time = within 30 minutes

After Hours response time = within 45 minutes

YGS has been reducing their miles of cast iron mains. Through an accelerated program, YGS expects to eliminate its cast iron mains within the next fifteen to twenty years. Additionally, the Company has been steadily increasing their cathodically protected pipe.

²⁰² Response to Data Request Q-OPERATIONS-01-179.

²⁰³ Response to Data Request Q-OPERATIONS-01-179.

Cathodic protection is a technique using electrical current and a cathode metal to protect the metal of the pipes from corrosion. The following table presents work in this area over the past five years.

Table 5: Main and Service Protection²⁰⁴
(change in miles of pipe)

	(a) Year	(b) Cast Iron Mains	(c) Cathodically Protected Mains	(d) Cathodically Protected Services
1	2009	-8.848	10.952	-473
2	2010	-5.876	11.998	1222
3	2011	-14.000	8.700	13
4	2012	-18.500	2.600	373
5	2013	-21.100	3.500	993

The EVP Engineering characterized YGS safety as flat over the years. He expressed interest in doing more to promote employee engagement in the context of safety culture. The Company does chair quarterly local safety committee meetings with union representatives.

Conclusion 4.4.5 *BRCS/RCG concluded that the Company’s gas distribution integrity management activity meets reasonable expectations for ensuring system reliability.*

Analysis

Ensuring the integrity of a gas distribution system requires both detection of leaks and measures to reduce leaks. YGS classifies leaks according to three types:²⁰⁵

- Type 1 –a leak that creates an immediate hazard such as greater than 80% LEL gas in manhole or gas readings found against the foundation wall of a building.
- Type 2 – any reading of gas between 20-80 LEL in a manhole or significant readings that do not qualify as a type 1
- Type 3 – any leak unlikely to migrate towards a building or into confined spaces

Special checks and surveys are performed to identify gas leaks:²⁰⁶

1. Inside meter checks – The checks of inside gas meters and associated service piping into the meter result in a gas leak identification of about 10% of inside service checks.

²⁰⁴ Response to Data Request Q-OPERATIONS-01-179.

²⁰⁵ Interview D. Orsini 10/17/14.

²⁰⁶ Interview D. Orsini 10/17/14.

2. Driving (winter checks) – with new detection units on vehicles and driving about 10 mph, survey technicians search for class 1 leaks. However, this method also results in identifying several class 3 leaks.
3. Walking checks – Meter set inspection, both inside and outside, are conducted annually in the business districts. Additionally, 1/3 of all services outside the business district are checked annually.
4. Special surveys – Special surveys are initiated from customer calls or Operations personnel.
5. Surveys on mains operating over 200 lb pressure are conducted twice yearly.

The history of gas leaks over the past six years is shown in the following table.

Table 6: History of Gas Leak Management²⁰⁷

	(a)	(b)		(c)		(d)	(e)	(f)	(g)	(h)
	Year	Class I Repairs		Class II Repairs		Class III Repairs		Class II Backlog		Year End
		Main	Service	Main	Service	Main	Service	Main	Service	
1	2008	82	230	197	101	unknown	unknown			143
2	2009	118	192	204	90	16	12			141
3	2010	111	335	246	141	9	15			263
4	2011	117	367	230	185	18	15			297
5	2012	130	369	460	330	4	12			54
6	2013	153	562	358	328	4	6			71

According to the table, Class I and II leak detection and repair have increased significantly in years 2012 and 2013. While the Company classifies its system reliability as very good,²⁰⁸ and the number of leaks as similar to that of NSTAR,²⁰⁹ the Company does state that focus is on continuing improvement. For example, since the merger, there has been a push to bring NSTAR and YGS leak and corrosion survey together. The Manager Leak Management welcomes this change.²¹⁰

Leak repair may take the form of insertions, as is often done on service lines. However, insertions are not used as often on mains.²¹¹ The decision to replace is often made due to extra problems that often result in digging up the streets anyway.

Besides the detection of leaks, the Company has taken measures to reduce leaks. The accelerated main replacement program, although 15 to 20 years away from completion, is an aggressive attempt to replace piping of material such as cast iron that deteriorates more

²⁰⁷ Response to Data Request Q-OPERATIONS-01-173.

²⁰⁸ Interview M. Adrukiewicz 10/16/14.

²⁰⁹ Interview D. Orsini 10/17/14.

²¹⁰ Interview D. Orsini 10/17/14.

²¹¹ Interview T. Hart 10/21/14.

readily. The amount of cathodically protected pipe increases each year as the old pipe is replaced. The program budgets approximately \$40 million annually toward this project.²¹²

YGS uses the Gas Asset Management Evaluation System (GAMES) as a tool to support its pipe repair and replacement. Capital projects are selected based on criteria such as a focus on business districts, corrosion areas, leak history, water issues, system pressure, and pipe size. According to this information, a point value for a segment of pipe is determined, and the pipe with the highest point value is replaced.²¹³

Marketing also feeds information into the capital project decision-making by contributing when large loads may be coming on. Engineering also communicates back with Marketing/Sales to tell them of areas where pressure problems exist.²¹⁴ The Company also uses its asset management system GIS (Graphical Inventory System) to collect asset information (such as year of install, materials, and physical location) and document as-built conditions. Additional manufacturer information will be added in the coming year.

The significant increase in Class I and II leak detection and repair in the last couple of years may be due to more focused methods related to changes resulting from the merger. By continuing to focus on both leak detection and main replacement, the Company should be able to maintain adequate reliability of the system.

Recommendations

Recommendation 4.4.1 BRCS/RCG recommends that the Company reevaluate the 100% contractor makeup of the QA/QC inspection and Construction Coordinator staff and determine whether a minimum level of in-house QA/QC inspectors and Construction Coordinators could be maintained both to provide greater assurance of consistency in Company performance expectation and for cost-effectiveness.

Recommendation 4.4.2 BRCS/RCG recommends that the Company explore the possibility of expanding use of the STORMS work management system by Engineering and Planning in the initial development of a project to ensure accurate estimates.

Recommendation 4.4.3 BRCS/RCG recommends that the Company develop an organized communication plan regarding merger changes to eliminate confusion and ensure employees are confidently aware of revised processes and operations.

Recommendation 4.4.4 BRCS/RCG recommends that YGS explore alternative solutions to managing the spoils issue with the focus being on cost reduction for the entire spoils process.

Recommendation 4.4.5 BRCS/RCG recommends that YGS continue its current system safety practices.

Recommendation 4.4.6 BRCS/RCG recommends that the Company continue its leak management policy and process.

²¹² Response to Data Request Q-SYS PLANENG-01-124.

²¹³ Interview B. Factoria 10/20/14.

²¹⁴ Interview B. Factoria 10/20/14.

4.5 Operations & Maintenance

Overall Assessment

System operations and maintenance ensure that customers receive adequate supply of natural gas and that leaks are addressed in a timely manner and consistent with DOT standards for the type of leak identified. Maintaining adequate volume and pressure is critical in a gas distribution system to prevent serious problems at the customer's premise and rapid response to gas odor calls is paramount. The work includes main repair and replacement (small capital jobs as time permits), new services, compliance work (both inspection and preventative maintenance), installing and repairing meter sets, leak calls and repairs, meter reading, regulator installation and maintenance, mark-outs, etc. They also do landscape repairs to correct service replacement work to the customer's satisfaction. This work is in high demand in the springtime as a result of all the replacement work done during the winter. This includes essentially any work on the distribution system except large capital projects. The mechanics are fully trained in all areas of gas distribution operation and maintenance:

- Support the implementation of a formal asset management strategy and plan
- Manage maintenance expense spend
- Coordinate with supply chain services to ensure the right materials and equipment are at the job site at the right time to minimize both delays and labor costs
- Allow management to identify the appropriate staffing levels for maintaining the system
- Optimize the use between in-house and contracted resources to control capital spend

While it is difficult to evaluate the steady-state O&M environment and all its processes given the current state of flux, BRCS/RCG believes that the organization is moving in the right direction, but we did notice several opportunities to correct a number of emerging issues.

Currently System Operations & Maintenance is undergoing a significant top-down reorganization, which is consistent with the strategic objective of “One Gas Company” for all of NU. The Company has eliminated the position of Director of YGS Gas Operations in favor of subdividing the responsibilities under five Directors reporting to the newly hired (July 2014) Vice President of Gas Operation:

- Planning & Scheduling
- Dispatch, Leak Survey and Damage Prevention
- Meter services (emergency response, ERT, install, replacement)
- Construction (in-house and contractors; new main extension and main replacement)
- Maintenance

All of these directors will be responsible for both gas companies as described in the Executive Chapter of this report. The single goal is to have a common platform for all policies, procedures, processes, materials, equipment, and work methods insofar as these can be within the bounds of local regulation and union contracts.

As of this writing all positions are open, but the Vice President would like a minimum of three directors to come from the outside. Management is working diligently to breakdown any the old YGS insular culture and move toward a more numbers- and customer-focused business

model. This is not to say that the old YGS was not customer focused, as many of the management and union personnel pointed out that they had already been doing many of the things they are now required to do. The one major exception is the “call before you go to the customer.” Additionally, they are now required to explain to the customer what is going to be done on their property and that all landscaping repairs/clean-up will be made to the satisfaction of the customer.

With the top Operations management positions open and the shifting of the former managers/directors to other positions, there is a fair amount of discord at the line-level. A consistent theme heard across the organization is folks are tired of the management changes and want to settle into a “normal” routine. BRCS/RCG understands this discord but realizes the work still must be done.

Evaluation Criteria

BRCS/RCG proposed the following evaluation criteria as the principal areas of investigation and the foundation for this study area’s chapter in the final report:

- To what extent did the Company implement the 2008 audit recommendations?
- Is there a reasonable balance between in-house and contracted resources?
- Are design operating pressures maintained across a range of temperatures and demand requirements?
- What percentage of maintenance work is coming in on budget and on schedule?
- What are the primary reasons for overruns?
- What is the maintenance safety record? What is the number of lost-time accidents?

Conclusions

Conclusion 4.5.1 *BRCS/RCG found that YGS management has implemented the recommendations for System Operations and Maintenance listed in the 2008 Management Audit.*

Analysis

Management has satisfactorily implemented the 2008 Management Audit recommendations primarily through the new post-merger activities of the combined company, the key strategic objectives, and management commitments to the Connecticut’s PURA.

5.4.1 System Operations and Maintenance (Priority: Medium): Yankee Gas needs to establish a formal benchmarking process and increase its participation in external benchmarking of leading industry practices. One particular area that could immediately benefit is the gas meter shop.

BRCS/RCG found that the Company met the intent of the System Operations benchmarking recommendation number 5.4.1 and, with respect to the gas meter shop, took

dramatic action by closing down the YGS meter testing shop and combining it with the more efficient NSTAR operation.

YGS currently participates in several gas distribution benchmarking groups. The YGS benchmarking process was fragmented. In 2009, YGS developed a comprehensive benchmarking process which looked outside YGS business.

Since the merger the Corporate Performance Management Group (CPM) took over the benchmarking responsibility for all of the post-merger NU. CPM works with YGS to participate in the annual AGA Operations Study and the PSE&G Gas Peer Panel Study. Both studies provide comparisons across several business dimensions including FTEs, spending, operational performance, and safety performance. Further, YGS participates in the J.D. Power & Associates annual Residential Customer Satisfaction Survey.

CPM currently coordinates the on-going benchmarking process by initiating or responding to focused, smaller surveys designed to share information between utilities as it relates to specific practices. The Company can follow up on these by communicating with other utilities to better understand the results.²¹⁵

As part of the post-merger activity, all functions within YGS gas operations were compared with its new sister company, NSTAR Gas. One of the results of this effort was that the YGS gas meter testing shop, was closed down and moved to the NSTAR Gas facility, primarily because the NSTAR operation was seven to eight times faster in processing meter tests. Two of the YGS meter provers units were added to the NSTAR Gas line to increase the overall capacity of the operation. Generally it was found that the process was more efficient at NSTAR and that the labor rates were lower. The net result was that the NSTAR facility could process and ship (both ways) cheaper than the old YGS operation.²¹⁶

As stated in the Executive Management Chapter, Directors and above will have responsibilities for both NSTAR Gas and YGS under the new one company titled Yankee Energy Systems, Inc. Managers and below will have single company responsibility but will be responsible for implementing the “One Company” policies, procedures, and processes insofar as they are consistent with regulatory rules and union contracts.

YGS has centralized three of its functions: Leak Management and Corrosion (LM&C), Planning & Scheduling (P&S), and Quality Assurance and Quality Control (QA/QC).

5.4.2 System Operations and Maintenance (Priority: Medium): Yankee Gas needs to establish performance measure that can be used to appraise the quality, ability and effectiveness of the gas distribution operating and maintenance standards; and can be compared externally with other gas distribution system operators.

Since the formation of the centralized leak survey group, discussed later in this chapter, YGS has nearly tripled the number of leaks it finds annually and corrects them within the required timeframes. The centralized leak survey group has brought about a very uniform

²¹⁵ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1.

²¹⁶ Interview S. LaPlante 10/20/14.

approach to conducting the different leak surveys with a higher degree of accuracy and timeliness than allow the Area Work Centers (AWC) to execute this critical function. The AWC management has many priorities on their agenda, including compliance work which made it difficult to do the number and type leak surveys required to achieve the results of the centralized leak survey group. Now that number of leaks identified is significantly higher the AWC managers must react to the increased leak repair work. Ultimately this has an impact on both the O&M and Capital budgets as well, yet the net result is a safer system.

BRCS/RCG found that this recommendation focused on system integrity and that YGS has met the intent of this recommendation.

The recommendation is, however, somewhat vague in nature, and YGS interpreted it to address the following:

Most of the discussion in the Jacobs Management Audit report was related to leaks, frequency of leakage surveys, quantity of pipe at risk for leakage and number of leaks. It would seem most appropriate to focus performance measures around the number of leaks. Because some of the factors cited in the report vary greatly among gas distribution system operators, we are not convinced that comparisons between companies are as useful as demonstrating internal improvement.

In an update to this, YGS added the following:

- While comparisons between companies may provide some insight to performance and process improvements, the DIMP regulations require companies to rank their individual risk and implement mitigation plans.
- As part of Yankee Gas's DIMP, performance metrics are reviewed on an annual basis. Leak rates are calculated for pipe types, asset type, by local area and by over 50 sub threats listed in the plan.
- Within the DIMP Yankee Gas also monitors excavation damage as well as percent of leaks found by Leak Survey Technician.

BRCS/RCG conducted its review of system integrity and the results are addressed in the System Reliability and Construction and System Operations sections of this chapter.

5.4.3 System Operations and Maintenance (Priority: Medium): Yankee Gas should consider reviewing the process of how it categorizes gas leaks to understand why its classification results vary so extensively from the gas industry's and take appropriate corrective action.

Company Response: Yankee Gas utilizes the leak classification definitions recommended by the Gas Piping Technology Committee (GPTC) in their "Leakage Control Guidelines For Natural Gas Systems." In the discussion of data comparison between gas distribution systems for Distribution Integrity Management Plans, the Department of Transportation has suggested that all companies utilize this guideline. One possibility for Yankee's variance from industry average may be the age and condition of the Yankee distribution system.

Company Status as of July 31, 2014: Yankee Gas continues to utilize the GPTC guidelines for leak classification definitions.

BRCS/RCG found that YGS's leak management process meets the intent of 5.4.3.

For a further review of leak management see the Reliability and Construction section of this chapter.

5.4.4 System Operations and Maintenance (Priority: High) Yankee Gas needs to establish a process that periodically evaluates the threats to the company's distribution system, examines the programs used to manage the system risks, and results in appropriate changes in order to optimize risk reduction for the available resources. This recommendation should be viewed in combination with recommendation 5.5.1.

Company Response: The recommendation is very similar to the requirements contained in the proposed Distribution Integrity Management Plan regulations. In anticipation of the finalization and implementation of these requirements, Yankee Gas has been working on identification of a more complete list of threats to the Company's distribution system beyond the most obvious threats: third party damage, corrosion (for steel pipe) and ground movement (for cast iron pipe). The methods of evaluating these risks, whether by computer program, subject matter expert or a combination of the two acceptable methods is discussed in the response to Recommendation 5.5.1.

Company Status as of July 31, 2014: As part of the DIMP, threats to Yankee Gas are evaluated on an annual basis. The previous year's leaks are reviewed with respect to an established baseline. If the previous year's leaks move the baseline by more than 5% it must be examined in the plan and addressed. Mitigation plans may be modified or added depending on the findings.

Subject Matter Expert (SME) workshops are held, where experienced individuals rank the greatest threats to Yankee Gas according to what they have witnessed in the field. The outcome of these evaluations is then compared to actual data to determine if there are additional threats the company needs to address.

BRCS/RCG found that YGS has met the intent of this recommendation. This Topic is covered in the System Planning & Engineering and the Reliability & Construction sections in detail. Based on our reviews the Company has met this recommendation.

Conclusion 4.5.2 *BRCS/RCG concluded that the centralization and use of focused contractors has made Leak Management and Corrosion Management successful.*

Analysis

From all accounts Leak Management & Corrosion Protection LM&C has been a success for YGS as it consistently proactively identifies Type 1, 2, and 3 leaks across the YGS system. The Exhibit below shows the rate of leak discovery for six-plus years. Note the jumps in the number of discoveries since 2011.

Table 7: Proactive Leak Discovery²¹⁷

YEAR	Leaks Proactively Discovered
2008	219
2009	139
2010	244
2011	408
2012	899
2013	1061
2014 YTD	1196

Prior to 2011, leak identification was left to the Area Work Centers (AWC) and may not have been consistently performed, hence one reason the increase in annual totals. Once leak identification was centralized and outsourced, the results seemed to have changed dramatically, but there are other factors that may have increased the leak totals as well (see page 117 for a list). There are a number of different formal leak surveys conducted annually and semi-annually, see Conclusion 4.4.5, for a description of each survey type. Currently, YGS uses a single, highly responsive contractor, who employs 29 trained leak surveyors, who consistently provides the same surveyors to YGS.²¹⁸

Corrosion management falls under the same manager and is delivering strong results with both passive and active corrosion protection on over 94% of the mains. The majority of this work is outsourced to three contractors. QA/QC has not been there to check the work performed with Corrosion. Instead, one coordinator and two troubleshooters support the oversight efforts and troubleshoot reported breakdowns in the protection.

Conclusion 4.5.3 *BRCS/RCG concluded that Planning & Scheduling is a new organization with a clear mission, but the process has to be better thought out at the supervisor-crew interface.*

Analysis

Planning & Scheduling (P&S) is a recently created function in the YGS organization. The manager has been in place for about six months and has 40 people, including him, in the department. The department includes these personnel:

- Four supervisors
- Four schedulers or planners construction technicians
- Five Operations records clerks
- Four planners
- Contract administrator- oversees all construction contracts
- Field inspectors which are outsourced

²¹⁷ Response to Data Request Q-LOST GAS-02-021.

²¹⁸ Interview D. Orsini 10/17/14.

- Department of Transportation (DOT) coordinator -- works with Connecticut DOT and municipal governments on street and road openings²¹⁹

Supervisors and planners are located at the AWCs to facilitate local planning efforts. In addition, the supervisors have Construction Techs who check on the capital projects. The Techs are generally responsible for creating the work package, calling before digging, meeting with customers to understand their needs, permitting, working with legal on easements, scheduling the project start and finish times, and working with the crews. If the projects are large enough, they may also have a clerk.²²⁰

Overall the group is responsible for planning and scheduling all O&M and capital work across the YGS system. The manager attends supervisor meetings with crews to make sure the process is working. He uses these sessions to promote customer focus. The team's performance is measured on how fast new business work packages can be produced.

For outsourced work, his team coordinates with QA/QC to manage construction quality. QC does NU customer image assessments as well. Generally, contractors are under a one-year contract which can be extended or rebid as necessary.

Scheduling is dynamic and its personnel have to manage around personal injuries, vacations, and sickness leave. While contractors are used for the majority of construction work they are also used to fill in on work when YGS crews are not available. P&S people handle jobs with a value of \$100,000 or less.

Centralized planning, as mentioned earlier, is a fairly recent development, and there is a significant issue in the process at the supervisor-crew interface. P&S schedules most of the work, but there is still compliance and leak work which is not scheduled by the P&S supervisor. Compounding this situation is the fact that on some occasions the previous day's scheduled work is not completed. This all comes to a head when the P&S work packages show up that morning along with the other unscheduled work. The field supervisor has to assimilate and assign it to the crews. This has caused some continuous confusion in one AWC.²²¹

Conclusion 4.5.4 *BRCS/RCG concluded that QA/QC (a recently added organization) is staffed by non-company personnel and oversees only contractor construction activities and does not address in-house construction work. There are a number of senior YGS mechanics on limited duty, who already possess the skills and technical knowledge to be QA/QC inspectors and therefore could be QA/QC inspectors if the Company wanted to staff the department with some or all employees rather than contractors.*

Yankee Gas Response: Eversource is evaluating the QA/QC program and will be introducing internal inspectors as well as performing inspections on company work crews

BRCS/RCG Reply: Response consistent with conclusion. No objection.

²¹⁹ Interview M. Smith 10/16/14.

²²⁰ Interview R. Pantalone and K. Richey 10/16/14.

²²¹ Interview Waterbury mechanics 10/16/14.

Analysis

QA/QC is an 18-month-old organization, designed to provide QA/QC inspections of outsourced construction work. The manager recently left the Company, so the Manager of Engineering has been filling in. The organization itself is very small and manages contracted resources to perform the QA/QC field activities. In addition, the inspectors validate 10 Mark-outs per month for accuracy. This number can go up if there is a dig-in at a Mark-out location.

Management of this group is accomplished by a weekly call with all inspectors to help calibrate their work efforts and to bring findings from one area to all other inspectors' attention.

In addition to field inspections, QA/QC participates in contractor foreman on-boarding to familiarize the new foreman with what inspectors are evaluating. The manager will report to the operations managers and construction project owners at the Directors' meeting on progress and any substantive issues discovered.²²²

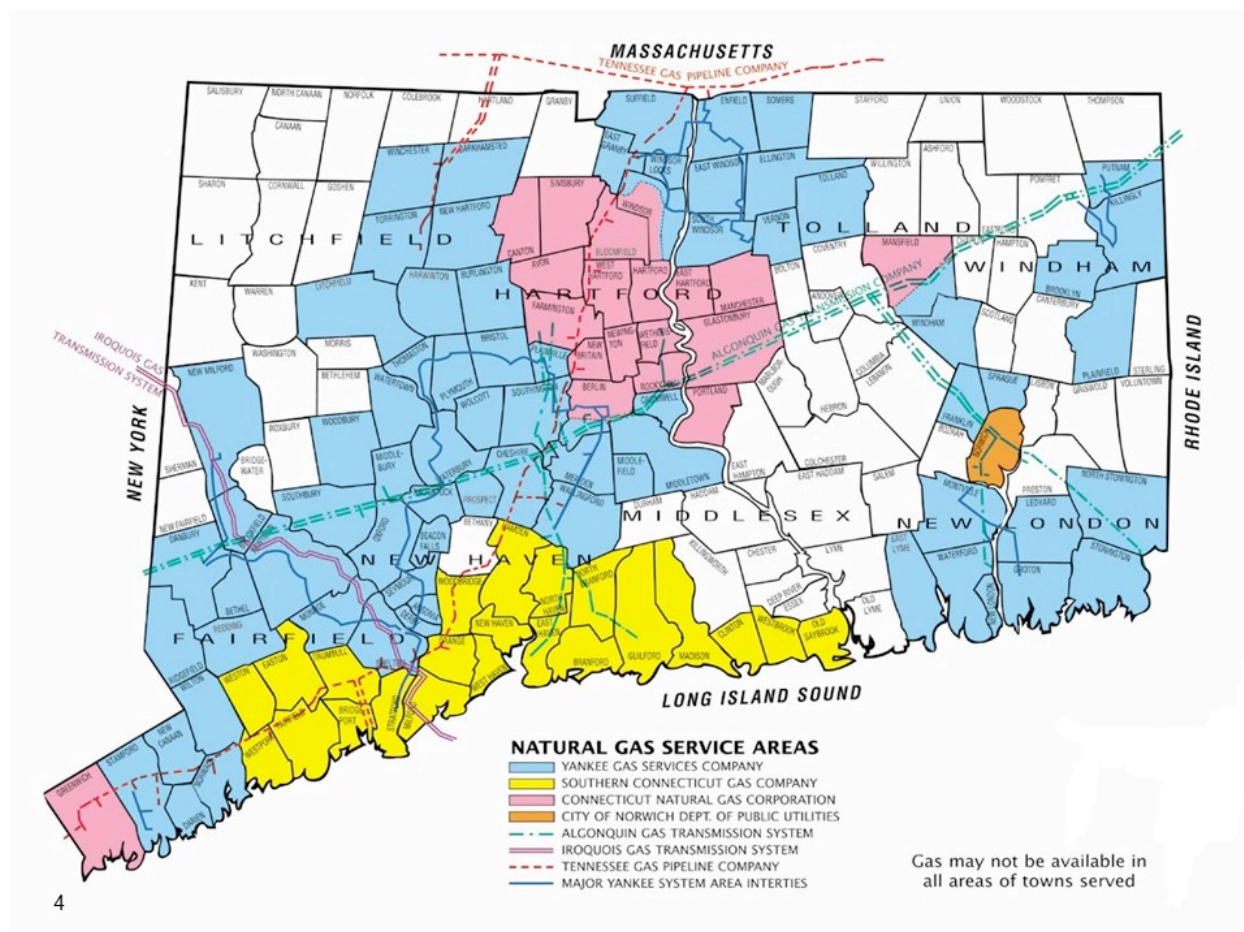
Conclusion 4.5.5 *BRCS/RCG concluded that the Area Work Centers are currently reasonably well situated to minimize crew windshield time for the territory. This may change with the gas expansion program and may require new locations, satellite locations, or, at a minimum, redeployment of crews.*

Analysis

The YGS territory is divided into four regions, as shown in the figure below: Western, Eastern, Central, and Southern regions. The YGS areas are in blue, and the white towns are in play for the gas expansion program. The Area Work Centers (AWCs) seem to be well placed for the territory they cover. However, as YGS moves into the white towns during the ten-year expansion program, adjustment or addition to the number of AWCs may be needed to provide more consistent response times.

²²² Interview B. Facteria 10/20/14.

Figure 6: YGS Service Territory²²³



Conclusion 4.5.6 BRCS/RCG concluded that YGS is outsourcing the majority of construction work and a number of other functions that could be impacting its system’s knowledge base.

Yankee Gas Response: Outsourcing construction may not impact system knowledge base. The reference to other outsourced functions requires a reference in order to evaluate.

BRCS/RCG Reply: Auditor disagrees with this response – outsourcing of construction and engineering by its very definition indicates that the experience gained by performing the construction or engineering resides with a third party. The auditor will agree that depending on how closely the work was supervised or managed by YGS employees will allow some level of knowledge transfer.

²²³ Response to Data Request Q-KICKOFF-016, Attachment.

Analysis

YGS is doing what many other utilities are doing to control costs: they are outsourcing the majority of construction work. However, YGS is taking the use of outsourced support further by outsourcing a number of other areas. This includes areas already reviewed:

- Leak Surveyors
- P&S Construction Techs
- Corrosion system installers
- QA/QC Inspectors
- Engineering Designers

Based on its review of leak surveyors, discussed earlier, BRCS/RCG has little concern with this group of contractors, as they are providing a consistent service across YGS's non-contiguous service territory.

The other three groups are doing acceptable work, but they are in position to gather, maintain, and retain a significant level of system knowledge, which may not be fully captured for future YGS work forces. Examples include the following:

- The corrosion system installer knows exactly what is being installed, where it is, and how it is configured for the specific need for that section of main.
- QA/QC Inspectors and Construction Techs are seeing firsthand the soil conditions in which the pipe is being installed, along with the exact locations and material types used.
- Engineering Designers are designing the system extensions and upgrades and have done the research to back their designs.

It is true that the contractors work to standards and prepare as-built prints, but the institutional knowledge will reside in the GIS and not necessarily in the Company's personnel. BRCS/RCG is a strong proponent of GIS as an Asset Management system, but that requires a certain level of scrutiny to ensure the right information is being captured and stored in the system and is easily assessable to future YGS crews. GIS will capture more manufacturers' information next year,²²⁴ but that will not help with this year's and the previous years' information.

Conclusion 4.5.7 *BRCS/RCG found no significant issues with design operating pressures being maintained across a range of temperatures and demand requirements.*

Analysis

Maintaining operating pressures across a range of temperatures and demand requirements starts with Planning and Engineering's peak hour forecast model, which models the distribution system and determines, as one of its outputs, the peak load forecast for the coldest day/hour of the year. This shows the engineers any pipe constraints which need to be upgraded. It's important to remember that the majority of the YGS distribution system is operating with 80% of the available customers already tied to the system. This means that YGS

²²⁴ Interview B. Facteria 10/20/14.

needs to focus its attention on those areas where the pipe capacity is nearing its limits and additional customers are coming on to the system through organic growth or through the gas conversion program sponsored by the state of Connecticut.

In the post-merger NU, there is a general policy to “try to upgrade low pressure systems to a medium pressure (pound) systems.”²²⁵ Inherent in this policy is the need to replace most of the cast iron mains, which is being done under the accelerated mains replacement program. In addition, this policy generally requires the metering to be outside and a regulator included in the installation to reduce the pressure for customer use. This is no small undertaking and will take years to fully implement. Beyond the mains replacement program,

- YGS does use plastic pipe for mains and services, but YGS/industry standards limits the pressure to 99 pounds on most plastic pipe. Insertion solutions to pipe integrity are done on many services and some mains.
- YGS does use their Waterbury LNG facility to inject gas during peak requirements. During the 2013/14 heating season YGS used only 53% of the 1.2 BCF capacity.²²⁶

From the physical delivery system perspective, YGS has a SCADA system that monitors system gas pressures and flows from transmission to distribution at take-points (gate stations). There are additional downstream sensing units to provide more granular level data. Gas Control²²⁷ manages this activity. The system does not communicate over the internet, therefore the servers and work stations that operate SCADA are dedicated to SCADA and as a result the system is not connected to or vulnerable to hacking via the internet.

Currently the Company is implementing a common software platform called "Clear SCADA," which will initially operate as two separate systems. A review of the possibility of combining the two-assessment activities is ongoing.

Conclusion 4.5.8 *BRCS/RCG concluded that YGS needs to improve its estimating practices to minimize the final number and dollar value of projects falling outside the plus/minus 10 percent range and bring up the number of projects estimated correctly.*

Analysis

From the table below, it would appear that YGS has done a reasonable job of estimating and managing its capital projects. From a pure count perspective, the number of projects over budget by 10% or more is reasonably close to the number of projects completed under budget by 10 percent of more. Over the period reviewed, this amounted to a little over \$13 million in overspending. The reasons for the overspending and under-spending are enumerated in Conclusion 4.5.9.

²²⁵ Interview T. Hart 10/21/14.

²²⁶ Interview A. Langland 10/21/14.

²²⁷ Interview J. Davis 10/16/14.

Table 8: Capital Project Results For 2011-2014²²⁸

Year Project Closed	Greater Than 10% over Budget		Within +/- 10% of Budget		Greater than 10% Under Budget	
	Number of Projects	Total Dollar Value	Number of Projects	Total Dollar Value	Number of Projects	Total Dollar Value
2011	45	\$19,757,057	18	\$46,041,798	43	\$10,347,195
2012	67	25,051,864	25	12,438,048	82	51,911,503
2013	34	20,876,440	17	13,303,081	30	7,599,626
2014	52	25,356,686	25	38,133,483	41	8,139,583
Grand Total	198	\$91,042,047	85	\$109,916,410	196	\$77,997,907

However, the table below shows a slightly different result. The number of projects within an industry acceptable range of plus/minus 10 percent of the estimate for the period examined was 18 percent. While the capital project dollars was better at 40 percent. This leaves room for improvement in the estimating process.

Table 9-Percent Capital Work with Acceptable Range

Year	Percent Number of Projects Within Acceptable Range	Percent Capital Dollars Within Acceptable Range
2011	17%	60%
2012	14%	14%
2013	21%	32%
2014	21%	53%
Period Average	18%	40%

Conclusion 4.5.9 *BRCS/RCG concluded that the primary reasons for overruns are the difficulty with soil conditions, the need to use contractors for work that was previously slated for YGS crews but changed due to resource constraints, requirements for soil remediation, paving, and how STORMS estimates the work.*

Analysis

The estimates used for construction projects are created in STORMS, the work management system. For the most part, these estimates are within plus or minus 10%.

²²⁸ Response to DataRequest Q-CAPITAL PROJECTS-13-001.

However, at times the estimates deviate beyond the 10% on the high side. The reasons for these deviations include the following:²²⁹

- The cost of excavated soil removal can vary from community to community, which causes cost overruns. YGS refers to this as environmental remediation.
- Paving varies widely from community to community, some communities requiring total street repaving instead of patching. YGS tries to negotiate these.²³⁰
- Soil conditions may vary, which requires crews to perform different work or remove obstacles which could not be foreseen.
- Work scheduled for YGS crews may need to be contracted due to resource constraints preventing YGS crews from performing the work.
- STORMS uses work units tied to specific materials to build the estimate. Additional labor requirements, for things such as flagging and police traffic control, are not inherently part of the material estimate units and must be added to the estimate.

The majority of these are typical of what is seen in other utilities, with the exception of soil removal, which is specific to the State of Connecticut. Here the pricing can vary as a result of the need to find a nearby, qualified landfill to accept the soil and close sources of clean soil to use in the closing of trenches. The Company is working within the state to change the requirements to reflect the actual condition of the soils removed.²³¹ Moving “contaminated” soil requires strict procedures to be followed. (“Contaminated”, as used herein, refers to those soils that contain contaminants above certain state regulated thresholds and must be managed (e.g. storage, disposal) in accordance with state requirements.)

Conclusion 4.5.10 *BRCS/RCG concluded personnel safety on the job is problematic; the number of lost-time accidents is low, but the number of soft tissue injuries is high, particularly in the senior mechanics. More importantly, this situation reflects badly on the overall culture of YGS with regard to safety as well as impacts the O&M budget.*

Yankee Gas Response: Management has under taken numerous initiatives to address safety performance. Some of the actions taken include, safety incident analysis involving a cross section of management employees, leadership attendance at local monthly safety committee meetings, involvement of bargaining unit employees in executive safety committee meetings, initiation of an annual safety speaker series, conducting of safety stand-ups and stand-downs, and utilization of an outside consultant to conduct a safety culture assessment.

BRCS/RCG Reply: The Auditor agrees with the Company’s statement, but the results are not being manifested in the numbers

²²⁹ Interview B. Factoria 10/20/14.

²³⁰ Response to Data Request Q-Capital Projects-02-025.

²³¹ Interview A. Marsocci 11/19/14.

Analysis

YGS personnel safety is troubling for the Company. There are a substantial number of repetitive, soft tissue injuries that are causing senior mechanics to be placed on restricted duty. This situation has a major impact on work performance and a significant cost impact to the Company. Normally assigned work has to be either delayed or given to a contractor to complete. Individuals on restricted duty may be performing work well below their pay grade. During BRSC/RCG field visits, we encountered senior mechanics on restricted duty doing lower-grade work.

Management is fully aware of this situation and has instituted a specific retraining program and a therapy program to minimize this situation. Conversely, YGS doesn't seem to have an institutionalized stretching program, which could reinforce the other programs.

Management would like to see the following elements in place to support the safety program:

- Create the right culture and engage the employees
- Have local safety committee chairs with union reps, who meet quarterly

In one senior manager's words, "[Safety] should be viewed as a journey." This journey needs to have a defined end point to reduce the impact to the O&M budget. In some respects YGS has not been willing to take this issue on, but the new Vice President may have other ideas.

Conclusion 4.5.11 *BRCS/RCG found that YGS's STORMS system is used during design to price out the work for materials and labor. During construction STORMS is used to track both project progress and field personnel productivity. For YGS crews the use of this information is inconsistent.*

Analysis

YGS makes use of STORMS as their work management system. Project owners have the design information entered into STORMS to get both the material and labor costs for a project. It is up to the managers and supervisors to use the performance metrics generated by the system to manage the workforce. Outsourced work is not managed through STORMS but rather based on metrics established at the inception of a project. Planning/Engineering and Operations offered the following narrative on how STORMS is currently used at YGS:

For managing its internal crews Yankee Gas work force management reports can be pulled from Hyperion. This software enables the user to pull information from the work management (STORMS) tables and provides a snap shot of performance. Managers, Supervisors or Planners can access these reports to see how their respective groups are performing with respect to individual metrics. These reports are dynamic in nature and do not get distributed or stored. The user can however, modify time frames for the extraction or download the information into Excel in order to maintain and manipulate data.

For managing the contractor work force Yankee Gas Construction establishes a plan baseline for the projected number of crews they believe will be required to complete the expected work. They track the number of crews and meet weekly to

insure all customer expectations are being met. The meetings are at local Operations centers where Project Owners and Supervisors determine what work needs to be accomplished short term and what is on the horizon long term.²³²

The Company reports that it is up to users to determine how much reporting they want out of Hyperion:

As described in Q-SYS PLAN/ENG-01-130, the reporting function from Hyperion is dynamic in nature and does not generate reports for regular viewing, it is up to the users to download the information and maintain the data. Some of the reports the user can download are:

- Schedule adherence
- Crew productivity
- Open work requests²³³

In discussions and observations at two AWCs, we found that the application of this data for field crew performance is inconsistent.²³⁴ In addition, in one AWC, we didn't see performance results posted consistently; in another AWC, performance results were posted in several locations, including lost-time and injury statistics.

Recommendations

Recommendation 4.5.1 BRCS/RCG recommends that the current Planning & Scheduling process be modified to provide operations supervisors with more advanced notice of projects coming to the field. Further, we recommend that there be a formal work planning session involving the AWC Manager, supervisors, and planners to review pending projects prior to crew assignment.

Recommendation 4.5.2 BRCS/RCG recommends that YGS evaluate augmenting staffing requirements for both the QA/QC inspectors and Construction Coordinators with restricted duty personnel who have the critical system and construction knowledge.

Recommendation 4.5.3 BRCS/RCG recommends that YGS develop a methodology for annually re-evaluating AWC locations in light of the aggressive expansion program. Focus of the methodology should be on minimizing both crew windshield and leak response times.

Recommendation 4.5.4 BRCS/RCG recommends that YGS reevaluate its level of construction work outsourcing to determine the most cost-effective split between contractors and in-house personnel.

Recommendation 4.5.5 BRCS/RCG recommends that YGS develop a more proactive personnel safety program aimed at reducing soft tissue injuries on the job. Further, YGS should look to providing alternative work solutions to personnel with chronic conditions, which essentially permanently remove them from the active workforce.

²³² Response to Data Request Q-SYS PLANENG-01-130.

²³³ Response to Data Request Q-SYS PLANENG-01-132.

²³⁴ Interviews W. Klimczah 10/16/14, A. Guite 10/17/14, T. Foly 10/22/14, R. Pantalone and K. Richey 10/16/14, Waterbury mechanics 10/16/14, and Waterford supervisors 10/22/14.

Recommendation 4.5.6 BRCS/RCG recommends that YGS management reinforce the use of STORMS performance information across all AWCs. We recommend that YGS ensure that the information is prominently displayed throughout each AWC and that local management cover performance more consistently with crews.

Recommendation 4.5.7 BRCS/RCG recommends that YGS management continue its efforts to find a political solution to the soil remediation issues. If efforts for a political solution fail, the Company should consider alternatives to the existing process, such as reclaiming and reconditioning excavated soils and stockpiling the cleaned material for future reuse.

Recommendation 4.5.8 BRCS/RCG recommends that YGS management focus on improving its estimation process and holding project managers/engineers to a higher degree of accountability for the estimates. In particular, the Company should capture the specific causes of the overruns/underruns, document these in lessons learned, and incorporate them into future estimating activities. Based on the lessons learned developed, the capital budget review committee should challenge the project managers/engineers on their assumptions.

5. FINANCIAL OPERATIONS

Objectives and Scope

This chapter includes an overview of the Finance Organization under the CFO followed by the specific areas of Treasury, Corporate Finance and Capital Structure, Accounting, Tax, Rates, and Cost Control Functions. Financial operations will be reviewed relative to policies, procedures, controls, and best practices.

Overall Assessment

The Finance Organization under the CFO has adequate systems in place to establish controls in the financial management of the business, establish metrics for performance evaluation on both company and personnel levels, facilitate decision-making, and establish priorities.

The Company's finance personnel participate in extensive training relevant to their areas of responsibilities. Leadership talent in the finance organization is assessed on a yearly basis; manager and director level individuals identified as having high potential become part of the Succession Plan. Since the merger, the process of identifying key and emerging talent is complete; however, NU is still in the process of working through the development plans.

The issue of aging work force and future retirements was identified as a future threat to the organization. The group is actively working to keep a good pipeline of individuals that can step in. However, the Internship Program that in the past had successfully provided a pipeline of high potential future accounting employees was discontinued following the merger. The pipeline is necessary to replace personnel that leave for other opportunities or retirement.

YGS uses short-term debt to fund its working capital needs, which include payments of items such as payroll, fuel, and taxes. Short-term debt is also used to pay dividends, interest, and capital expenditures. Short-term debt is an interim form of financing and is refinanced when long-term debt is issued. YGS's short-term debt balances grew in 2011 through 2013. The short-term debt balances were reduced after the long-term debt placement for YGS was priced at the end of 2013 and closed in January 2014. The Company does not see a need for additional long-term debt placement in 2014, but there will likely be a need next year. Corporate Finance and Cash Management departments constantly monitor the current and forecasted YGS short-term debt balances and borrowing capacity available under the lines of credit.

YGS's corporate finance process is effective. YGS's long-term Corporate Credit Ratings recognize the Company as having medium to low risk. YGS does not issue equity in external markets. A return on invested capital is paid by YGS in the form of common dividends to NU, and, when required, it receives infusions from NU in order to maintain an appropriate capital structure. While YGS stated that it generally maintains an annual common dividend payout ratio (to NU) of approximately 60%, the actual payout ratios for 2011 through 2013 were substantially higher. YGS's capital structure is currently relying on more equity than was allowed in its most recent general rate case. However, the debt-to-equity ratio (three-year

average 41.1% to 58.9%) is within the financial covenants required by the credit facilities, which require a ratio of consolidated debt to total capitalization of no more than 65%.

NU has an effective system of accounting process and controls to manage its business. NUSCO maintains an extensive array of policies and procedures on its corporate intranet site for its employees to reference in the performance of their jobs. The Company's financial closing is a typical calendar-driven process. Various post-closing analyses and reconciliations are performed to ensure accuracy. The accounting department provides several types of reports to support the business groups and provide information required to manage the Company. The accounts payable function has an effective system to process invoices and ensure timely and accurate payment. The NU and NSTAR legacy payroll processes have not been fully integrated. While the current legacy payroll processes result in employees being paid accurately and timely, the Company has begun implementation of a redesign to integrate the HR and Payroll legacy system. YGS's current depreciation rates are based on a depreciation study completed in 2010. The study should be updated.

YGS is part of the NU consolidated federal income tax return. The processes used to ensure accurate preparation and timely submission of tax returns is reasonable and appropriate. All income, property, sales, and franchise tax returns have been timely filed with local, state, and federal jurisdictions for 2009 through 2013. As is typical of a large corporation, NU has been subject to IRS and state jurisdictional audits of its tax filings over the last five years. The audits have either had no adjustments or findings that did not have an impact to YGS. No operational process changes have been made in response to the audits.

Evaluation Criteria

BRCs/RCG evaluated the people, systems, and controls that are in place in the financial services based upon the following evaluation criteria:

- To what extent did the Company implement the 2008 audit recommendations?
- Does the Company have adequate systems in place to establish controls in the financial management of the business, establish metrics for performance evaluation on both company and personnel levels, facilitate decision-making, facilitate investor relations, establish priorities for the treasury function, and provide a tool for management to organize and implement key initiatives?
- Does the Company have adequate systems in place in its treasury function to effectively manage the cash provided by the collected rates from ratepayers and stock and debt issuances to maximize and safeguard cash, as well as to record, summarize, and report the financial results?
- Does the Company have adequate systems in place to maintain corporate liquidity, manage capital structure, and perform other aspects of risk management to maintain a satisfactory debt rating?
- Do the Company's accounting functions include proper use of internal controls, performance metrics, process and systems, procedures, and resulting financial

statements to support the capital structure, ensure proper capital/expense split, adequately protect cash management, and ensure proper taxes and cost control?

- Does the Company have an adequate system in place for cost controls in order to safeguard assets as well as to record, summarize, and report the financial results?
- Does the Company have an adequate financing system in place to meet the financial needs of the company while obtaining financing in a cost effective manner?
- Has the Company evaluated the impact that NU has on the Company's financial performance?

5.1 Finance Organization

Overall Assessment

The CFO's organization regularly reviews its costs as part of the annual budget and forecast processes and as part of the monthly budget-to-actual variance analysis process. It has made both large- and small-scale improvements. Most significant is that the NU/NSTAR merger in April of 2012 resulted in a complete review of the shared services functions and a realization of cost savings as anticipated in the work performed before the merger was consummated.

The Company's finance personnel participate in extensive training relevant to their areas of responsibilities.

Leadership talent in the finance organization is assessed annually; manager and director level individuals identified as having high potential become part of the Succession Plan. Since the merger, the process of identifying key and emerging talent is complete; however, NU is still in the process of working through the development plans.

The issue of aging work force and future retirements was identified as a future threat to the organization. The group is actively working to keep a good pipeline of individuals that can step in. The Internship Program that successfully provided a pipeline of high-potential future accounting employees was discontinued following the merger. The pipeline is necessary to replace personnel that leave for other opportunities or retirement.

Conclusions

Conclusion 5.1.1 *BRCs/RCG found that, in responding to the 2008 Management Audit recommendation that Corporate Finance use quantitative performance benchmarks for cost of borrowing, the Company's explanation of the process it uses is reasonable.*

Analysis

While Corporate Finance has not recently done any formal benchmarking studies, it closely monitors capital market conditions and peer financing transactions. The CFO's organization regularly reviews its costs as part of the annual budget and forecast processes and as part of the monthly budget-to-actual variance analysis process. It has made both large- and small-scale improvements. Most significant is that the NU/NSTAR merger in April of 2012

resulted in a complete review of the shared services functions and a realization of cost savings as anticipated in the work performed before the merger was consummated.

The 2008 Management Audit included the following recommendation:

6.5.1 Finance Cost Controls (Priority: Medium): We recommend that the process improvement techniques that have proven successful in the operating groups also be considered for use in the finance services organization were additional improvement opportunities exist.²³⁵

Company Response as of January 14, 2009: The Chief Financial Officer's organization regularly reviews its costs as part of the annual budget and forecast processes and as part of the monthly budget-to-actual variance analysis process. As a result, there is a continual effort to control and reduce costs whenever practical. In addition, each of the organizations under the Chief Financial Officer regularly adjust their processes when practical improvements are identified. Some of these improvements are of a small scale and some are larger. For example, Northeast Utilities has proactively reduced its shareholder services' costs by providing and encouraging electronic distribution of materials to its shareholders in lieu of paper documents. Another example is the Company's decision to implement a corporate performance management system that will provide greater capabilities and efficiencies with respect to financial reporting, analysis of financial results, projections, and budgets/forecasts.²³⁶

Company Status as of July 31, 2014:

[REDACTED]

²³⁷

Conclusion 5.1.2 *BRCS/RCG found that the Company's finance personnel participate in extensive training relevant to their areas of responsibilities.*

Analysis

The Financial Operations personnel participated in training related to financial reporting, accounting standards, public utility accounting, finance, tax, systems and software, and internal controls.²³⁸ Training needs are identified through the annual goal-setting process, which identifies knowledge gaps or areas in which the employee should gain or expand his or her knowledge or professional development. Formal or informal training is identified as well as on-the-job training within the department or through job rotation.²³⁹

²³⁵ Jacobs Consultancy, Management Audit of Yankee Gas Services Company Final Report, April 2008, Appendix 1.

²³⁶ Docket # 10-12-02 Q-GA-010 YG 2007 Management Audit Responses 1/14/09.

²³⁷ CONFIDENTIAL Response to Data Request Q-GENERAL-1-009, Attachment 1.

²³⁸ Response to Data Requests Q-FINGEN 01-245 and 01-246.

²³⁹ Response to Data Request Q-FINGEN-01-246.

In addition, the Company conducted its Finance Academy from 2008 through 2013. The Finance Academy was developed with the University of Connecticut (UConn) School of Business and School of Education. Its two-and-a-half year curriculum focused on energy markets, financial accounting, managerial accounting, corporate finance, and regulatory requirements. Both a UConn professor and an NU subject-matter expert instructed each class. Over the six-year period, 94 NU employees graduated from the Finance Academy. Thirty-five of the graduates were from the finance and/or accounting organizations.²⁴⁰

With the implementation of the Financial Simplification & Standardization Project (FSSP) in August of 2014, NU has trained 703 employees (most in accounting and/or financial operations roles) in 102 training sessions conducted in July and August of 2014. NU leveraged its eLearning platform in developing this training. The eLearning platform is available for future classroom and individual desktop training.²⁴¹

Conclusion 5.1.3 *BRCS/RCG found that leadership talent in the finance organization is assessed on a yearly basis; manager and director level individuals identified as having high potential become part of the Succession Plan.*

Analysis

Since the merger, the process of identifying key and emerging talent is complete; however, NU is still in the process of working through the development plans.²⁴²

Conclusion 5.1.4 *BRCS/RCG found that an aging work force and future retirements is a future threat to the organization.*

Analysis

Accounting personnel have been working long hours to assist with the merger integration and the blending of the two legacy systems and to support the process to develop a post-merger shared services company. With the improving economy, key talent could seek employment elsewhere.

The group had been actively working to keep a good pipeline of individuals that can step in.²⁴³ Prior to the merger, the Accounting department supported an internship with a goal of developing a pipeline of high potential future accounting employees for NU. In 2011, the accounting program employed 15 interns with many former interns becoming permanent NU employees.²⁴⁴ While the Company continues to employ college interns throughout the organization, the Accounting organization suspended its internship program while resource requirements were evaluated following the NU/NSTAR merger in 2012. The Company stated

²⁴⁰ Response to Data Request Q-FINGEN-01-246.

²⁴¹ Response to Data Request Q-FINGEN-01-246.

²⁴² Response to Data Request Q-FINGEN-01-249.

²⁴³ Interview Philip Lembo 10/22/14.

²⁴⁴ Response to Data Request Q-FINGEN-01-248.

that as Accounting's post-merger organization stabilizes, the college internship program will be re-evaluated on a year-to-year basis.²⁴⁵

Recommendations

Recommendation 5.1.1 BRCS/RCG recommends that the Company should continue its efforts to identify key and emerging talent in the finance organization and implement development plans to ensure that the individuals are ready to assume leadership roles as part of a comprehensive succession plan.

Recommendation 5.1.2 BRCS/RCG recommends that the Accounting Internship Program should be reinstated to help ensure that the pipeline of high-potential future accounting employees be available to replace personnel that leave for other opportunities or retirement.

5.2 Treasury, Corporate Finance, and Capital Structure

Objectives and Scope

A utility's cash management practices are an integral component to the overall financial health of the company. A utility must balance having adequate cash on hand to pay its bills with having sufficient cash reserves to maximize investment earnings.

In addition to managing cash reserves, gas utilities are capital-intensive businesses. As such, there is a constant need for capital both to replace existing plant and to add to existing plant. Since gas utilities are generally regulated, it is important that the corporate finance function provides capital to the utility in a cost-effective manner. This involves a proper balance of debt/equity. There is a trade-off in the usage of debt capital. A properly balanced debt/equity ratio considers that underlying trade-off so as to minimize the overall cost of capital.

Another consideration in a utility's corporate finance function is the proper deployment of short-term debt. Short-term debt is used to fund projects until a reasonable level of debt is incurred that can be economically converted to long-term debt. Short-term debt may not be included in cost of capital calculations, but it is included in Allowance for Funds Used during Construction (AFUDC). AFUDC amounts are then included in the utility's rate base balances when the plant is included in service.

A further consideration in corporate finance is the appropriate use of dividends, which is measured through a payout ratio. In order to appropriately attract investor capital, a utility must pay some dividend from its earnings. Further, that payout ratio should be as stable as possible to attract investor capital. However, a countervailing factor is the utility's need to retain some earnings for reinvestment in the company so as to avoid the need for constantly issuing new common stock. An appropriate dividend payout ratio balances those competing objectives.

²⁴⁵ Response to Data Request Q-FINANCEGEN-09-001.

BRCS/RCG's evaluation of the treasury and corporate finance functions focused on management's policies and procedures, the organizational structure, and the tools it employs to effectively manage YGS's cash resources, financing, and capital structure.

Overall Assessment

Treasury and Cash Management are effectively performing their responsibilities.

YGS uses short-term debt to fund its working capital needs, which include payments of items such as payroll, fuel, and taxes. Short-term debt is also used to pay dividends, interest, and capital expenditures. Short-term debt is an interim form of financing and is refinanced when long-term debt is issued. YGS's short-term debt balances grew substantially over 2011 through 2013. The short-term debt balances were reduced after the long-term debt placement for YGS was priced at the end of 2013 and closed in January 2014. The Company does not see a need for additional long-term debt placement in 2014, but there will likely be a need next year. Corporate Finance and Cash Management departments constantly monitor the current and forecasted YGS short-term debt balances and borrowing capacity available under the lines of credit. YGS long-term Corporate Credit Ratings recognize the Company as having medium to low risk.

YGS does not issue equity in external markets. A return on invested capital is paid by YGS in the form of common dividends to NU, and, when required, it receives infusions from NU in order to maintain an appropriate capital structure. While YGS stated that it generally maintains an annual common dividend payout ratio (to NU) of approximately 60%, the actual payout ratios for 2011 through 2013 were substantially higher. YGS's capital structure currently relies on more equity than was allowed in its most recent general rate case. However, the debt-to-equity ratio (three-year average 41.1% to 58.9%) is within the financial covenants required by the credit facilities, which require a ratio of consolidated debt to total capitalization of no more than 65%.

The Company has minimal non-utility investments.

Conclusions

Conclusion 5.2.1 *BRCS/RCG found that the Company initially implemented the 2008 Management Audit recommendation that the vacancy for Manager-Corporate Finance should be filled with someone capable of supporting YGS's business. However, after the merger, that position was eliminated when the group was downsized.*

Analysis

The Company stated that the Director-Corporate Finance and Cash Management currently performs the work that had been done by the Manager-Corporate Finance. There are no immediate plans to fill this position.

The 2008 Management Audit included the following recommendation:

6.1.1 Corporate Finance and Financial Requirements Planning (Priority: Low): The vacancy for Manager-Corporate Finance should be filled with someone capable of

supporting Yankee’s business, given the need to ensure that Yankee is able to support its requests for regulatory relief, reach its financial goals, and keep its borrowing costs reasonably low.²⁴⁶

Company Response as of January 14, 2009: Aaron J. Cullen was appointed as the Manager – Corporate Finance in August 2007. Aaron holds his MBA in Finance from the William E. Simon Graduate School of Business at the University of Rochester, NY. He joined Northeast Utilities (“NU”) in September 2001 and prior to assuming his current position he was responsible for issuing long-term debt and equity for NU and its subsidiaries. He also made significant contributions to NU’s interest rate risk management policies and practices, including executing derivative transactions and negotiating agreements with counterparties, and has ensured continued access to short-term liquidity by supporting negotiations of bank lines of credit.²⁴⁷

Company Status as of July 31, 2014: Corporate Finance work is currently performed by Director - Corporate Finance and Cash Management and the senior analysts in the group. If the Manager-Corporate Finance position is filled, it will be filled with someone capable of supporting Yankee’s business, given the need to ensure that Yankee is able to support its requests for regulatory relief, reach its financial goals, and keep its borrowing costs reasonably low.²⁴⁸

Further review found that the Corporate Finance and Cash Management group was downsized in an effort to reduce costs and save money for customers, and the position of Manager-Corporate Finance was eliminated.²⁴⁹

Conclusion 5.2.2 *BRCS/RCG found that the Company response to the 2008 Management Audit recommendation that additional quantitative benchmarks for the cost of borrowing be established is reasonable.*

Analysis

While Corporate Finance has not recently done any formal benchmarking studies, it closely monitors capital market conditions and peer financing transactions.

The 2008 Management Audit included the following recommendation:

6.1.2 Corporate Finance and Financial Requirements Planning (Priority: Medium): We further recommend that additional quantitative performance benchmarks for such metrics as cost of borrowing be established to set direction and use in evaluating performance in the Finance organization.²⁵⁰

²⁴⁶ Jacobs Consultancy, Management Audit of Yankee Gas Services Company Final Report, April 2008, Appendix 1.

²⁴⁷ Docket # 10-12-02 Q-GA-010 YG 2007 Management Audit Responses 1/14/09.

²⁴⁸ Response to Data Request Q-GENERAL-1-009, Attachment 1.

²⁴⁹ Interview with Emilie O’Neil 10/14/14.

²⁵⁰ Jacobs Consultancy, Management Audit of Yankee Gas Services Company Final Report, April 2008, Appendix 1.

Company Status as of July 31, 2014: The Company's cost of borrowing is represented by the coupon rate on its long-term debt, which is established through a marketing process with potential investors conducted by the financial institutions selected to carry out the placement of these debt securities. The coupon rate is comprised of a treasury rate for a treasury bond with the closest maturity to the bond being issued, plus a credit spread that is unique to each issuing company. While treasury rates continuously move intra-day, the treasury component of a coupon is set at the time of the pricing of the bond. The credit spread is determined by the investors and is dependent on the market and general economic conditions at the time of pricing, the term structure of the debt, and the perception that investor's hold of Yankee's risk profile at the time of the issuance, all of which are in constant movement. Generally, credit spreads are higher for longer term securities than for shorter-term securities as longer term securities represent more risk to the investor.

The dynamic nature of interest rates and credit spreads, each of which is influenced by factors that cannot be controlled by Yankee Gas and are unique to each company that issues bonds, prevents the establishment of quantitative performance benchmarks for such metrics as cost of borrowing.

However, leading up to an issuance of new debt securities, Yankee Gas holds ongoing discussions with its investment bankers to review existing capital market conditions and gain updates on financing transactions initiated by other energy companies, which are not directly comparable, but give a general indication of trends in credit spreads, investor requirements and the factors that may be influencing treasury rates and credit spreads at the time of issuance. Yankee Gas maintains this ongoing dialog with its underwriters in advance of and during the marketing of all capital market financing transactions to ensure that such transactions are executed at the then current market price required by investors.²⁵¹

Conclusion 5.2.3 *BRCS/RCG found that the Treasury and Corporate Finance is part of shared services responsible for (1) financing and liquidity needs, including long- and short-term debt programs, equity issuances, and alternative financing structures, (2) daily cash management, including short-term borrowing and investment activities, and (3) managing to the appropriate allowed capital structure.*²⁵²

Analysis

The group is currently staffed with 11 employees with experience with the Company ranging from 10 to 20 years.²⁵³

Conclusion 5.2.4 *BRCS/RCG found that Treasury and Cash Management use several effective applications and systems to perform its responsibilities.*

²⁵¹ Response to Data Request Q-GENERAL-1-009, Attachment 1.

²⁵² Interview with Emilie O'Neil 10/14/14.

²⁵³ Interview with Emilie O'Neil 10/14/14.

Analysis

The following applications are in use.²⁵⁴

Table 10: Applications and Systems Relied Upon by Treasury

Function	Application	Description	Hardware/Software
Treasury	CitiDirect for Securities	Web based portal owned by Citi used to release Commercial Paper trades	Web Based (Hosted) Application
Treasury	Bloomberg Terminal	Web based subscription service used to obtain various market based interest rates (e.g., US Treasuries), bond yields, and capital market index data	Web Based (Hosted) Application
Cash Management	Treasury (Cash Management)	Treasury Daily Cash Flow	Web Based (Hosted) Application
Cash Management	Treasury Manager	Stand alone software owned by NU used to facilitate non-cash accounting of Customer Payment data	Wintel Server/SQL
Cash Management	CashPro	Web based portal of Bank of America used to make wire transfer payments and to decision Positive Pay items	Web Based (Hosted) Application

Conclusion 5.2.5 *BRCS/RCG found that YGS uses short-term debt to fund its working capital needs, which include payments of items such as payroll, fuel, and taxes.*

Analysis

Short-term debt is also used to pay dividends, interest, and capital expenditures. Short-term debt is an interim form of financing and is refinanced when long-term debt is issued.²⁵⁵

The Company met its short-term credit needs from the following credit facilities over the past three years.

September 24, 2010 - July 24, 2012: Yankee Gas was able to borrow up to \$200 million in short-term debt under a new Regulated Companies unsecured revolving credit facility. The \$200 million credit limit was available to Yankee Gas subject to the usage of the facility by the other utility borrowers, such that total borrowings outstanding under the credit facility could not exceed \$400 million. Under this facility, borrowings would be made at variable rates plus an applicable margin based on the higher of Standard and Poor’s or Moody’s Yankee Gas credit ratings.

July 25, 2012 - Current: Yankee Gas is able to borrow up to \$200 million in short-term debt under the NU unsecured revolving credit facility. Under this facility, borrowings would be made at variable rates plus an applicable margin based on the higher of

²⁵⁴ Response to Data Request Q-FINGEN-01-251.

²⁵⁵ Response to Data Request Q-FINCORP FIN-01-255.

Standard and Poor’s or Moody’s Yankee Gas credit ratings. In addition, Yankee Gas can borrow up to \$200 million from NU through the inter-company loan agreement. However, Yankee Gas has board authorization to issue total short-term debt of up to \$200 million.²⁵⁶

YGS is currently borrowing from the inter-company loan at a rate of 0.25%, which is substantially less than borrowing from commercial paper, which has a current rate of 1.25% (1% over the Three-Month LIBOR).²⁵⁷

The NU Money Pool has been inactive since July 25, 2012.²⁵⁸

Conclusion 5.2.6 *BRCS/RCG found that YGS’s short-term debt balances grew substantially during 2011 through 2013. The short-term debt balances dropped following a long-term debt placement in January 2014.*

Analysis

Table 11: YGS Short-Term Debt Total Balances by Quarter 2011-2014²⁵⁹

Date	Balance
3/31/11	-
6/30/11	-
9/30/11	29,600,000
12/31/11	42,500,000
3/31/12	27,500,000
6/30/12	33,700,000
9/30/12	55,600,000
12/31/12	70,600,000
3/31/13	71,200,000
6/30/13	73,600,000
9/30/13	108,700,000
12/31/13	139,700,000
3/31/14	56,300,000
6/30/14	71,600,000
9/30/14	97,300,000

Conclusion 5.2.7 *BRCS/RCG found that Company uses a formal process and reviews the appropriate elements to determine the need for long-term debt placements.²⁶⁰*

²⁵⁶ Response to Data Request Q-FINCORP FIN-01-256.

²⁵⁷ Interview with Emilie O’Neil 10/14/14.

²⁵⁸ Response to Data Request Q-FINCORP FIN-01-258.

²⁵⁹ Response to Data Requests Q-FINCORP, Q-FIN-01-254, and Q-FINCORP-08-002.

²⁶⁰ Interview with Emilie O’Neil 10/14/14.

Analysis

The Company maintains a four-year forecast looking at how much cash will be generated internally (cash from customers) and expenses (cash going out), working capital, and short-term debt levels. The deficiency is calculated and authority from the Department is obtained to issue long-term debt.²⁶¹ *The last long-term debt placement for YGS was priced at the end of 2013 and closed in January 2014.*²⁶² Company personnel stated that they do not see a need for additional long-term debt placement in 2014, but there will likely be a need next year.²⁶³

Conclusion 5.2.8 *BRCS/RCG found that Corporate Finance and Cash Management departments continuously monitor the current and forecasted YGS short-term debt balances and borrowing capacity available under the lines of credit.*

Analysis

Monthly meetings are held with the Budgeting and Tax departments to develop revised forecasts based upon actual ending balances as well as any newly available information. The credit lines are sized at a higher level than the expected maximum needs to protect against any unexpected capital requirements.²⁶⁴

Conclusion 5.2.9 *BRCS/RCG found that the YGS long-term Corporate Credit Ratings recognize the Company has having medium-to-low risk.*

Analysis

YGS's long-term Corporate Credit Ratings improved following the merger between NU and NSTAR. The Corporate Credit Ratings have also improved from the rating agencies' more favorable view of the credit supportiveness of the US regulatory environment.²⁶⁵

YGS's long-term Corporate Credit Ratings are as follow:²⁶⁶

Moody's

01/01/09 – 01/31/14	Baa2	Medium Risk
01/31/14 – 07/31/14	Baa1	Medium Risk

Standard and Poor's

01/01/09 – 05/16/11	BBB	Medium Risk
05/16/11 – 04/15/12	BBB+	Medium Risk
04/15/12 – 07/31/14	A-	Low Risk

²⁶¹ Interview with Emilie O'Neil 10/14/14.

²⁶² Interview with Emilie O'Neil 10/14/14.

²⁶³ Interview with Emilie O'Neil 10/14/14.

²⁶⁴ Response to Data Request Q-FINCORP FIN-01-257.

²⁶⁵ Response to Data Request Q-FINCORP FIN-01-259.

²⁶⁶ Response to Data Request Q-FINCORP FIN-01-259. Relative level of risk definitions are from the Investopedia.com website.

Conclusion 5.2.10 *BRCS/RCG found that YGS’s equity is owned by NU and that a return on invested capital is paid by YGS in the form of common dividends to NU, and, when required, it receives infusions from NU in order to maintain an appropriate capital structure.*²⁶⁷

Analysis

YGS does not issue equity in external markets.²⁶⁸ YGS’s equity is owned by NU. The regular common dividends, and special dividend if applicable, paid to NU and the equity infusions (capital contribution) that it receives from NU are coordinated in terms of timing and amount so that YGS manages to its appropriate capital structure based on a five-quarter average. If unplanned events occur during the year, the level of capital contributions or common dividends may be adjusted.²⁶⁹

Conclusion 5.2.11 *BRCS/RCG found that while YGS stated that it generally maintains an annual common dividend payout ratio (to NU) of approximately 60%, the actual payout ratios for 2011 through 2013 were substantially higher.*²⁷⁰

Analysis

The Company’s dividend payout ratios for the last three years are displayed below.²⁷¹

Table 12: YGS's Dividend Payout Ratio (2011-2013)

Year	Net Income	Dividends	Payout Ratio
2011	31,672	38,160	120.5%
2012	26,264	18,279	69.6%
2013	39,703	52,000	131.0%
Average	32,546	36,146	111.1%

The Company explained that YGS targets a payout ratio of regular common dividends of approximately 60 percent. However, YGS uses special dividends and capital contributions from NU to manage to an appropriate five-quarter average capital structure.²⁷²

Conclusion 5.2.12 *BRCS/RCG found that YGS’s capital structure is currently relying on more equity than was allowed in its most recent general rate case. However, the debt-to-equity ratio (three-year average 41.1% to 58.91%) is within the financial covenants required by the credit facilities, which require a ratio of consolidated debt to total capitalization of no more than 65%.*

²⁶⁷ Response to Data Request Q-FINCORP FIN-01-253.

²⁶⁸ Response to Data Request Q-FINGEN-01-250.

²⁶⁹ Response to Data Request Q-FINCORP FIN-01-253.

²⁷⁰ Response to Data Request Q-FINCORP FIN-01-253.

²⁷¹ Response to Data Request Q-FINCORP FIN-01-261.

²⁷² Response to Data Request Q-FINCORP-08.003.

Analysis

In YGS’s last rate case (Docket No. 10-12-02, Decision dated 6/29/11), the Department found that YGS’s allowed capital structure of 47.8% long-term debt and 52.20% common equity would allow access to the capital markets as well as provide ratepayers with the least-cost capital structure on which to base rates. In that decision, the Department found the above capital structure to be consistent with the capital structures authorized for similar gas utilities. The table below summarizes YGS’s peer companies’ capital structure approved by the Department.²⁷³

Table 13: Department Authorized Capital Structure for Peer Companies

Company	Docket	Decision Date	Debt	Common Equity	Preferred Stock
CNG	08-12-06	6/30/09	47.28%	52.52%	0.20%
Southern	08-12-07	7/17/06	48.00%	52.00%	
Yankee	10-12-02	6/29/11	47.80%	52.20%	

The Company’s total debt-to-equity ratios for the last three years are displayed below:

Table 14: Total Debt to Equity Ratios (2011 – 2013)²⁷⁴

Year	Debt	Equity
2011	39.5%	60.5%
2012	39.5%	60.5%
2013	44.0%	56.0%
Average	41.1%	58.9%

For comparison purposes and to be consistent with the methodology adopted by the Authority, short-term debt should be eliminated from the debt-to-equity ratio. Eliminating short-term debt from the calculation, the equity portion increases as follows:

²⁷³ Docket No. 10-12-02, Decision dated 6/29/11, p. 105.

²⁷⁴ Response to Data Request Q-FINCORP FIN-01-261.

Table 15: Total Long-Term Debt to Equity Ratio (2011-2013)

	2011	2012	2013	Average
Long Term Debt	350,206	345,805	345,682	347,231
Capital Leases	176	119	84	126
Short Term Debt	42,500	70,600	139,700	84,267
Letter of credit	-	7	-	2
Unfunded Vested benefits under ERISA	41,617	25,018	36,105	34,247
Total Debt	434,499	441,549	521,571	465,873
Less Short Term Debt	(42,500)	(70,607)	(139,700)	(84,269)
Total Debt Less Short Term Debt	391,999	370,942	381,871	381,604
Total Capitalization	1,099,883	1,116,581	1,184,614	1,133,693
Total Debt to Total Capitalization	39.5%	39.5%	44.0%	41.1%
Total Long Term Debt to Total Capitalization	35.6%	33.2%	32.2%	33.7%
Debt	35.6%	33.2%	32.2%	33.7%
Equity	64.4%	66.8%	67.8%	66.3%

The credit facilities require that the NU parent and certain of its subsidiaries, including YGS, must comply with certain financial and non-financial covenants. One of the requirements is maintaining a ratio of consolidated debt to total capitalization of no more than 65%.²⁷⁵ The table above indicates that YGS is in compliance with this debt covenant.

Conclusion 5.2.13 *BRCS/RCG found that the Company has minimal non-utility investments.*

Analysis

YGS owns a parcel of land that was purchased in 1985 and transferred to the non-utility account in 2009. The property is valued at \$421,762 as of July 31, 2014.²⁷⁶

Conclusion 5.2.14 *BRCS/RCG found that while Corporate Finance has not recently done any formal benchmarking studies, it closely monitors capital market conditions and peer financing transactions.*

Analysis

To ensure that the Company is performing in accord with industry best practices, the Company holds discussions with several investment banks to review capital market conditions and peer financing transactions. In addition, YGS maintains dialog with its underwriters in advance of and during the marketing of all capital market financing transactions to ensure that such transactions are executed at the then-current market price. The Company also maintains relations with Wall Street and investors.²⁷⁷

²⁷⁵ Northeast Utilities Form 10K, 12/31/13, page 15.

²⁷⁶ Response to Data Request Q-FINCORP FIN-01-262.

²⁷⁷ Interview Emilie O'Neil 10/14/14.

A capital structure benchmarking study conducted in 2010 was used in YGS's 2011 rate case filing to compare YGS's capital structure to its peers over the previous three years.²⁷⁸

Recommendations

BRCs/RCG has no recommendations for this audit item.

5.3 Accounting

Objectives and Scope

In any accounting system it is imperative that the financial statements are accurate and complete and reflect the results of operations for any given period. Providing that result requires adherence to policies and procedures as well as to a system of effective internal controls over the collection, validation, processing, and reporting of financial and managerial accounting data. In addition, an effective accounting system requires safeguarding assets, preserving records, and continually evaluating its performance against best practices. An accounting system must allow for the data to be presented in a timely and usable manner for internal use and for external reporting. Proper staffing is essential for an accounting system to be effective. To the extent that accounting personnel are trained and perform at a high level, they enhance the overall process. In order to do that requires a continual commitment to professional development and training.

Accounting functions such as payroll, accounts payable, accounts receivable, plant accounting and financial statement preparation are done by Northeast Utilities Shared Services Company (NUSCO) rather than at the operating company level.

BRCs/RCG's evaluation of the accounting and controls focused on NUSCO's management's policies and procedures, organizational structure, and the tools it employs to manage its day-to-day accounting processes.

Overall Assessment

NUSCO has an effective system of accounting process and controls to manage its business. NUSCO maintains an extensive array of policies and procedures on its corporate intranet site for its employees to reference in the performance of their jobs. The Company's financial closing is a typical calendar-driven process. Various post-closing analyses and reconciliations are performed to ensure accuracy. The accounting department provides several types of reports to support the business groups and provide information required to manage the Company. The accounts payable function has an effective system to process invoices and ensure timely and accurate payment. The NU and NSTAR legacy payroll processes have not been fully integrated. While the current legacy payroll processes result in employees being paid

²⁷⁸ Response to Data Request Q-FIN/GEN-01-251.

accurately and timely, the Company has begun implementation of a redesign to integrate the HR and Payroll legacy system. Plant accounting operates efficiently and effectively.

YGS's current depreciation rates are based on a depreciation study completed in 2010. The study should be updated.

Conclusions

Conclusion 5.3.1 *BRCS/RCG found that the Company addressed the 2008 management audit recommendation to fill the director and manager level positions. All accounting and manager level positions are filled.*

Analysis

The 2008 Management Audit included the following recommendation:

6.2.1 Accounting and Tax (Priority: Medium): The vacancies at the director and manager level need to be filled to complete the staff, or the review of the realignment of functions between the Utility Group Controller's area and the Vice President – Accounting & Controller's group needs to be expedited.²⁷⁹

Company Response as of January 14, 2009: A Tax Director was hired effective 10/9/07 and a Manager Accounting Policies and Internal Controls was hired effective 12/31/07. All Accounting director and manager level positions are currently filled.²⁸⁰

Company Status as of July 31, 2014: All positions are currently filled.²⁸¹

Conclusion 5.3.2 *BRCS/RCG found that the Company addressed the 2008 management audit recommendation that external benchmarking be performed to assess the efficiency of the accounting and tax services.*

Analysis

The accounting and tax departments participated in several benchmarking studies.

The 2008 Management Audit included the following recommendation:

6.2.2 Accounting and Tax (Priority: Medium): There are no external benchmarks to use in evaluating how efficiently services are provided in comparison to similar groups in other utility companies.²⁸²

Company Response as of January 14, 2009: In 2007 the Accounting group participated in a Benchmarking study through the Corporate Executive Board's Shared Services Roundtable for selected Accounting functions.²⁸³

²⁷⁹ Jacobs Consultancy, Management Audit of Yankee Gas Services Company Final Report, April 2008, Appendix 1.

²⁸⁰ Docket # 10-12-02 Q-GA-010 YG 2007 Management Audit Responses 1/14/09.

²⁸¹ Response to Data Request Q-GENERAL-1-009, Attachment 1.

²⁸² Jacobs Consultancy, Management Audit of Yankee Gas Services Company Final Report, April 2008, Appendix 1.

²⁸³ Docket # 10-12-02 Q-GA-010 YG 2007 Management Audit Responses 1/14/09.

Company Status as of July 31, 2014: In 2010 NU participated in an external Corporate and Shared Services study conducted by PA Consulting. The study included a number of shared service functions, including financial services. The results provided by PA Consulting were broad based and did not provide detailed information for any specific accounting functional areas. As described in response to Q-251, the Tax Department did have a 2012 Corporate Executive Board (CEB) comparison prepared related to their function responsibilities.²⁸⁴

Further review found that, in addition to the benchmark studies mentioned above, the accounting services group participated in other informal assessments of the groups' performance against other utilities and other companies. PWC was retained to look at the financial closing process and to let NU know what their other clients are doing to have an effective close. Pre-merger In 2010, NU participated in a PSE&G-led shared services survey, which included Financial Services. [REDACTED]²⁸⁵ The Company is a member of EEI and accounting employees participate in training and talk to other participants about processes.²⁸⁶

Conclusion 5.3.3 *BRCS/RCG found that the Company addressed the 2008 management audit recommendation regarding the review and identification of opportunities to streamline or modify the Management Information & Budgeting System (MIBS).*

Analysis

In August of 2014, NU implemented its Financial Simplification & Standardization Project (FSSP), which, among other things discussed later in this report, replaced MIBS.

The 2008 Management Audit included the following recommendation:

6.2.3 Accounting and Tax (Priority: Medium): The MIBS is over 20 years old and requires significant staff to support and modify when changes need to be made. We support the effort to review the system and identify opportunities to streamline or modify it to reduce the cost of providing the services it supports.²⁸⁷

Company Response as of January 14, 2009: The Company will be implementing a Corporate Performance Management (CPM) tool in 2009. This tool will provide efficient closing and consolidations and enhance financial reporting. It will eliminate the need for many of the MIB standard reports and greatly simplify the budget input process. Budgets will be input through the CPM rather than MIBS as they are currently done.²⁸⁸

²⁸⁴ Response to Data Request Q-GENERAL-1-009, Attachment 1.

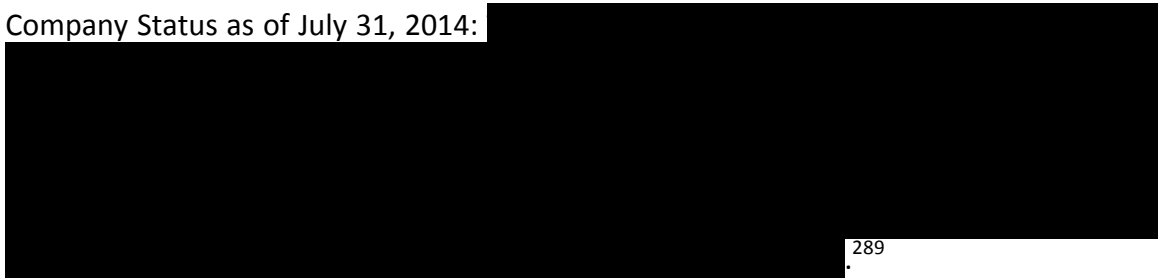
²⁸⁵ CONFIDENTIAL Response to Data Request Q-COST ALLOC-01-376.

²⁸⁶ Interview T. Griffin 10/23/14.

²⁸⁷ Jacobs Consultancy, Management Audit of Yankee Gas Services Company Final Report, April 2008, Appendix 1.

²⁸⁸ Docket # 10-12-02 Q-GA-010 YG 2007 Management Audit Responses 1/14/09.

Company Status as of July 31, 2014:



Accounting Services

Conclusion 5.3.4 *BRCS/RCG found that NUSCO has an effective system of accounting process and controls to manage its business.*

Analysis

The Accounting Services group provides the following services: (1) closing of corporate books, (2) corporate credit card program, (3) allocations and overheads, ²⁹⁰(5) MIBS (Management Information Budgeting System), (6) business group support, (7) monthly and annual regulatory reporting to FERC and other commissions, (8) bank reconciliation and escheating, and (9) other (DOE EIA reporting).²⁹¹

NUSCO maintains an extensive array of policies and procedures on its corporate intranet site for its employees to reference in the performance of their jobs.²⁹² The following print screen from the NU intranet illustrates the information that is maintained to assist employees:

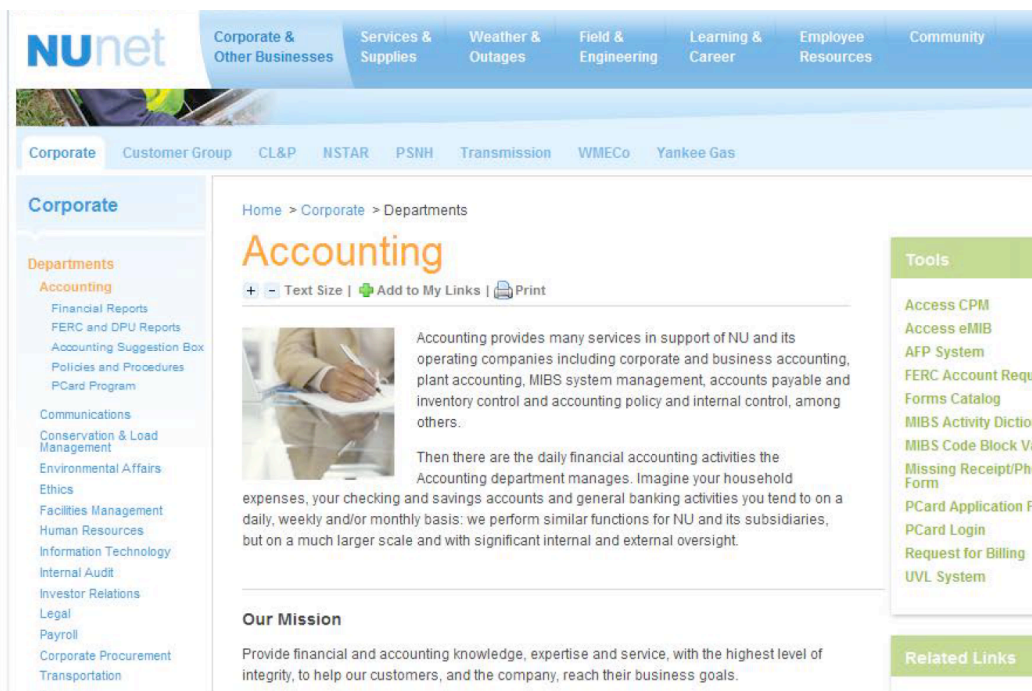
²⁸⁹ CONFIDENTIAL Response to Data Request Q-GENERAL-1-009, Attachment 1.

²⁹⁰ (4) CPM – Corporate Performance Management was edited out per company comments

²⁹¹ Response to Data Request Q-EXECUTIVE-01-024.

²⁹² Response to Data Request Q-EXECUTIVE-01-024.

Figure 7: NUnet Accounting Intranet Page



Other specific policies and procedures, flowcharts, reports, and monthly reconciliations used to collect and validate financial and managerial accounting data were provided in response to a BRCS/RCG data request.²⁹³

The accounting organizations use the applications and systems displayed below.²⁹⁴

Table 16: Applications and Systems Relied Upon by Accounting

Function	Application	Description	Hardware/Software
Accounting	Management Information & Budgeting System (MIB)	Company budgeting, general ledger and journal entry system	Mainframe/Adabas/DB2
Accounting	Management Information Decision Support System (MIDSS)	Allows management to drill down into CCC actual costs	UNIX/Esabase/Sybase
Accounting	Oracle Financials (EBS)	General Ledger	UNIX/Oracle
Accounts Payable	Passport	Company accounts payable & materials procurement system	Mainframe/COBOL/DB2
Accounts Payable	Electronic Data Interface (EDI)	Facilitates electronic vendor billing	UNIX/Proprietary
Accounts Payable	Authorization for Payment	Requests for payment for non-	Wintel Server/SQL

²⁹³ Responses to Data Requests Q-FINGEN-01-250, Q-FINGEN-01-252, Q-FINACCT-01-267, Q-FINACCT-01-268, Q-FINACCT-01-269, Q-FINACCT-01-271, Q-FINACCT-01-272, and Q-FINACCT-01-273.

²⁹⁴ Response to Data Request Q-FINGEN-01-251.

Function	Application	Description	Hardware/Software
	System (AFP)	purchase order expenditures	
Accounts Payable	Unvouchered Liability System (UVL)	Records expenditures and liabilities not yet billed from vendors	Wintel Server/SQL
Revenue Accounting, Accounts Receivable, Customer Billing	Customer Central (C2)	Customer billing and revenue system	Wintel Server/SQL
Revenue Accounting, Accounts Receivable, Customer Billing	Large Customer Billing System	Customer billing system for large customers	Mainframe/Adabes
Revenue Accounting, Accounts Receivable, Customer Billing	Sundry Billing	Billing system for non-customer bills	Mainframe/Adabes/DB2
Payroll	Corporate On Line Time (COLT)	Records and tracks employee time and personal expenses	Mainframe/Adabes/DB2
Payroll	NU Compensation and HR Information System (NUCHRIS)	Company HR system	Mainframe/Adabes/DB2
Financial Reporting	Hyperion Financial Management (HFM)	Provides financial consolidation and reporting supporting external financial reporting	Wintel Server/Oracle
Plant Accounting, Continuing Property Records	STORMS Work Management System	Creates construction work orders for standard capital expenditures	UNIX/Oracle
Plant Accounting, Continuing Property Records	Management Information & Budgeting System (MIB)	Creates construction work orders for non-standard capital expenditures	Mainframe/Adabes/DB2

In mid-2012, work was done to improve understanding the current state of the chart of accounts, systems, data hierarchies, and processes. Efforts were summarized in a September 2012 presentation to the CFO and a decision was made to accelerate the timetable to enable a 2013/1Q 2014 implementation of the Financial Standardization & Simplification Project (FSSP). In November 2012, PWC was employed to assist in executing the accelerated schedule and to provide an industry best practice perspective.²⁹⁵ In 2013, post-merger, the FSSP was initiated as a collaborative project with widespread impact on many areas of the new NU.²⁹⁶ The Company employed an “out of the box” solution, with only seven of the 600 business requirements needing a customized solution. As part of the process, the NU and NSTAR charts of accounts were standardized and simplified, reducing the chart of account values from 12,000 data bits to 4,000.²⁹⁷

In August 2014, the FSSP was implemented and it replaced both NU’s and NSTAR’s general ledger systems (i.e., MIBS and Oracle, respectively) with the latest Oracle EBS (E-

²⁹⁵ Response to Data Request Q-FINGEN-01-248.

²⁹⁶ Response to Data Request Q-BUDO&M-01-148.

²⁹⁷ Response to Data Request Q-FINGEN-01-248.

Business Suite) platform. In addition, a new and expanded PowerPlan²⁹⁸ platform was implemented, which standardized all plant accounting, tax accounting, departmental budgeting, and capital budgeting modules. [REDACTED]

[REDACTED].²⁹⁹ The cost to design and implement the FSSP project is \$33.3 million. The Company expects to incur some small additional post-implementation costs, but does not anticipate them to be significant. The current estimated cost savings is \$7 million annually. The Company anticipates full savings to be realized over the next few years as users become more familiar with the new system and can leverage this knowledge into savings.³⁰⁰

The August 2014 FSSP implementation was successful in that employees and vendors were paid and transactions were processed. The financial closing process took longer as kick-outs related to wrong account numbers or cost centers were triaged. A normal monthly close generally takes 5.5 days while the August close took 12 days. However, employees and vendors were paid, and transactions were processed. Challenges are continuing to be addressed daily. For example, older work orders and purchase orders need to be redone to use the new code block to match the style of the new chart of accounts. The number of kick-outs was reduced by 70% from August to September. The September close, which includes the quarterly close, took 11 days, where a normal quarterly close would take six days.³⁰¹

Conclusion 5.3.5 *BRCS/RCG found that the Company's financial closing is a typical calendar-driven process.³⁰² Various post-closing analyses and reconciliations are performed to ensure accuracy.*

Analysis

The Company described its post-closing analysis as follows:

During the monthly close, budget to actual analyses are done to review all components of the income statement (a year over year review of the balance sheet is also performed) by the Budgeting and Internal Management Reporting teams. Operation and maintenance expense is compared to budget, and variances are investigated and explained. Internal reporting is prepared for management review and includes monthly analyses of actual results to the budget and the projection. This information is then communicated to the Controller and senior management team monthly.

There is no set threshold for a material income statement variance in the budgeting post-close analysis for internal management purposes. On the quarter, analyses are performed comparing results to the prior period. These results are then shared with the Audit Committee and external audiences as part of the earnings release.

²⁹⁸ PowerPlan is the name of a plant accounting software.

²⁹⁹ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1, p. 15.

³⁰⁰ Response to Data Request Q-FINANCEGEN-09-003.

³⁰¹ Interview M. DiPietro 10/16/14.

³⁰² Response to Data Request Q-FINACCT-01-271.

In addition, the Accounting Department performs monthly balance sheet reconciliations and a variance analysis on the balance sheet accounts on a quarterly basis. . . . The variance analysis is populated based on the current quarter actual balance less the December balance. Variances generated over a certain threshold (set by Financial Reporting)³⁰³ require an explanation by the same individual in the Accounting Department that performs the balance sheet reconciliation. These explanations are then reviewed first by Accounting and then by the Financial Reporting Department.³⁰⁴

The Accounting group performs monthly reconciliations on the balance sheet accounts. The budgeting department performs monthly income statement analysis.³⁰⁵

Conclusion 5.3.6 *BRCS/RCG found that the accounting department provides several types of reports to support the business groups and provide information required to manage the Company.*

Analysis

Due to the merger, current report names may not be consistent with what was used in the past. Below is a listing of the current reports being used for analysis:

The Day 6 Report: These reports analyze actual monthly, quarterly, and year-to-date O&M and Capital results and compare them to budgeted amounts. Additionally, the report identifies key drivers for any variances from budget.

Full Time Equivalent (FTE) Report: This report analyzes actual monthly, quarterly, and year-to-date results from a staffing perspective (full time equivalent).

The Actuals to Actuals Report: This report analyzes actual monthly, quarterly, and year-to-date O&M results and compares them to actual amounts from last year. Additionally, the report identifies key drivers for any variances from last year's actuals.

The Financial Briefing and reference documents: This report reviews actual to budget, projection to budget variances within the income statement at an NU Consolidated and specific company level and is presented to senior management monthly.

In addition to these reports, YGS uses NU's budgeting and accounting systems to manage and control its costs. This includes a system that allows each local area of the Company to view and drill into its costs on-line without generating voluminous reports. This system is used to supplement standard reporting. Additionally, YGS's O&M and capital costs are tracked as key performance indicators. Each year, the Company's budget and one-year operating work plan are compiled in concert with one another. Therefore, the Company's budget serves as a

³⁰³ Response to Data Request Q-FINANCE/ACCT-09-004 disclosed that for 2013 and 2014, the threshold for balance sheet accounts that fluctuate over \$1 million from the last audited amounts to the current quarter amounts required a variance explanation.

³⁰⁴ Response to Data Request Q-FINACCT-01-272.

³⁰⁵ Response to Data Request Q-FINACCT-01-273.

guide for planned work in any given year, and, as such, most of the financially oriented reporting generates comparisons to budget.³⁰⁶

Accounts Payable

Conclusion 5.3.7 *BRCS/RCG found that the accounts payable function has an effective system to process invoices and ensure timely and accurate payment.*

Analysis

PO invoices were entered into the system on average within five days of receipt, and Authorizations for Payment (AFPs) within three days of receipt. Most invoices are in the system within one day of receipt.³⁰⁷ The shared services accounts payable group processed 41,672, 45,230, and 41,654 invoices for 2011, 2012, and 2013, respectively.³⁰⁸ To mitigate the risk of incorrect amounts paid, NUSCO has hired outside firms to review payments made to vendors for open credits and duplicate payments. Since January 1, 2009, the outside firm identified only 54 invoices that had open credits related to returned materials and vendor incorrect billings.³⁰⁹

Payroll

Conclusion 5.3.8 *BRCS/RCG found that the payroll processing has not been fully integrated. While the current NU and NSTAR legacy payroll processes result in employees being paid accurately and timely, the Company has begun implementation of a redesign to integrate the HR and Payroll legacy systems.*

Analysis

Following the merger, the payroll group worked with HR to transfer over 2,000 NSTAR service company employees into the payroll system. Employees have been paid accurately and timely, including several retroactive pay increases due to union renegotiations. The Payroll group successfully moved all employee deduction and direct deposit records from two files to one electronic file, improving the overall effectiveness of the transfer of information each pay period.³¹⁰

The payroll and HR systems will be undergoing a redesign to replace the two legacy systems with new systems.³¹¹ The implementation of the HR and Payroll Connect project has begun with an expected implementation of Phase I in the third quarter of 2015. Implementation of Phase 2 is expected in the first quarter of 2016. The estimated cost of the

³⁰⁶ Response to Data Request Q-FINACCT-01-274.

³⁰⁷ Response to Data Request Q-FINGEN-01-248.

³⁰⁸ Response to Data Request Q-FINAP-01-282.

³⁰⁹ Response to Data Request Q-FINAP-01-283.

³¹⁰ Response to Data Request Q-FINGEN-01-248.

³¹¹ Interview M. DiPietro 10-16-14.

project is \$30.4 million. The four-year estimated cost savings beginning in 2016 is \$19.4 million.³¹²

Plant Accounting

Conclusion 5.3.9 *BRCS/RCG found that plant accounting operates efficiently and effectively.*

Analysis

The Company uses two systems to initiate capital work orders.³¹³ The Severn Trent Operational Resource Management System (STORMS) is a standards-based system used to initiate and track work order costs for distribution line work orders for facilities such as new service installations and the installation of pipelines. The Management Information and Budgeting (MIB) Work Order System is an activity-based/non-standards-based system used to initiate and track work order costs for general plant and software work. These types of activities do not lend themselves to a standards-based system.³¹⁴



Standard units of property are used and unitizations are performed both automatically and manually.³¹⁶ Gas meters are the only asset for which the fully installed cost is capitalized upon purchase.³¹⁷

Plant Accounting provided the following metrics for work order closings. The group was either above or on target for work order closing costs in 2013.

- Costs per work order closed = \$17.03 / Work Order Closed
- Costs per \$100,000 closed = \$97.28 / \$100K Closed³¹⁸

Conclusion 5.3.10 *BRCS/RCG found that YGS's current depreciation rates are based on a depreciation study completed in 2010.*

Analysis

In connection with its last rate case, YGS's depreciation study was commenced in August 2010 and was finished in November 2010. Foster Associates, Inc., a public utility economic consulting firm, prepared the study. Of the 22 property accounts included in the 2010 study,

³¹² Response to Data Request Q-FINANCEACCT-09-005.

³¹³ Response to Data Request Q-FINPLANT-01-290.

³¹⁴ Response to Data Request Q-FINGEN-01-251.

³¹⁵ CONFIDENTIAL Response to Data Request Q-GENERAL-1-009, Attachment 1.

³¹⁶ Response to Data Request Q-FINPLANT-01-290.

³¹⁷ Response to Data Request Q-FINPLANT-01-292.

³¹⁸ Response to Data Request Q-FINGEN-01-248.

Foster Associates recommended rate reductions for 12 accounts and rate increases for ten accounts. The study prior to the currently approved study was completed in 2006.³¹⁹

Recommendations

Recommendation 5.3.1 YGS's depreciation rates are based on a study completed in 2010. The study should be updated.

5.4 Tax

Objectives and Scope

Most public utilities are taxed in much the same way as other corporations. Therefore, a utility's corporate tax function has many of the same functional responsibilities as other corporations, including payment and reporting of federal, state, and local income taxes and property taxes among others.

Overall Assessment

The Tax Department processes ensure accurate preparation and timely submission of tax returns and are reasonable and appropriate. All income, property, sales, and franchise tax returns have been timely filed with local, state, and federal jurisdictions for 2009 through 2013. As is typical of a large corporation, NU has been subject to IRS and state jurisdictional audits of its tax filings over the last five years. The audits have either had no adjustments or had findings that did not have an impact to YGS. No operational process changes have been made in response to the audits.

The Director of Tax monitors Best in Class performance through training, seminars, and his industry contacts.

Conclusions

Conclusion 5.4.1 *BRCS/RCG found that the Tax Department is a shared service with NUSCO that is responsible for the following processes: (1) preparing the various income, gross receipts, property, and sales and use tax returns; (2) tax provisions for financial reporting of tax accruals for each quarterly close; and (3) supporting other process like budgeting, forecasting/projections, and the regulatory reporting functions. The group also supports special projects and audits as needed.*³²⁰

Conclusion 5.4.2 *BRCS/RCG found that the tax functions performed by NUSCO's tax group on behalf of the NU operating companies create efficiencies that benefit all of NU.*

³¹⁹ Response to Data Request Q-FINPLANT-01-293.

³²⁰ Interview K. Morrissey 10/23/14.

Analysis

Following the merger, the tax group was integrated and streamlined reducing headcount. NU and NSTAR still handle the preparation of sales tax returns separately. The Company plans to streamline and integrate the process.³²¹

Conclusion 5.4.3 *BRCS/RCG found that the tax group is fully staffed with all positions filled.*³²²

Analysis

The Tax group is currently staffed with 25 employees and all positions are filled.³²³

Conclusion 5.4.4 *BRCS/RCG found that YGS is part of the NU-consolidated federal income tax return.*³²⁴

Analysis

YGS is part of the NU-consolidated federal income tax return.³²⁵

Conclusion 5.4.5 *BRCS/RCG found the processes used to ensure accurate preparation and timely submission of tax returns reasonable and appropriate.*

Analysis

NU described its processes that ensure accurate preparation and timely submission of income, transactional (sales and use), personal property, and real estate tax returns.

Income Tax Process

General Ledger amounts are downloaded into tax return preparation software Corptax. These amounts are reconciled back to stand-alone company internal financial statements. Schedule M preparation and review responsibility is assigned on the basis of adjustment complexity, with higher level personnel preparing and reviewing the more complex adjustments. Provision and return amounts are tracked on a comparative consolidating schedule by legal entity. Management reviews the differences and each staff person will review the sections related to their particular company assignments. Various data including apportionment, depreciation, and credit support are reviewed for reasonableness. Schedule M adjustments are input into Corptax from source work papers and, once completed, overall stand-alone company taxable incomes are agreed to return taxable incomes per the return to provision sheets. Taxable income results (from tax return preparation software) are independently validated by preparing an Excel based taxable income calculation for all significant jurisdictions. A tax calendar is maintained by due dates to ensure filing dates are timely met.

³²¹ Interview K. Morrissey 10/23/14.

³²² Interview K. Morrissey 10/23/14.

³²³ Interview K. Morrissey 10/23/14.

³²⁴ Interview K. Morrissey 10/23/14.

³²⁵ Interview K. Morrissey 10/23/14.

Transactional Tax Process

For preparation of sales and use tax returns, the MIMs system will perform a match on invoices submitted to ensure that all taxable items have been charged taxes. If no tax was charged on an invoice, then MIMS will accrue use tax based on the tax rate on the purchase order or the direct pay rate for transactions related to Yankee Gas Services Company. MIMs identifies whether the item is taxable or not based on the commodity code selected when a purchase order is completed. The billing system posts sales tax billed to customers to a trustee account which is reconciled each month for submission of amounts to the appropriate taxing jurisdiction. Tax returns are reviewed by management. A compliance calendar is utilized on a monthly basis to ensure timely filing of returns by due dates.

Personal Property Taxes

The personal property information is extracted from the Plant Accounting System by the Powerplan Property Tax System by town on an asset level basis. The extract includes the following information: historical cost, accumulated depreciation, vintage and the town in which the asset is located. The data is summarized at the town level per the filing categories listed on the declaration, the property tax declarations are prepared, and the summary letter of values is prepared. The towns are sent, by certified mail, a signed and notarized filing consisting of the Declaration and the Summary Letter of Values.

Real Estate - Connecticut

In the State of Connecticut there are no filings required of the property owner (taxpayer) to declare the value of real property to the assessors. Valuations of real property are determined by the assessor in each of the towns for all parcels within their borders and are communicated to the property owner (taxpayer).

Every parcel of real property owned by Yankee Gas Services has the potential to be reviewed two times in each tax year; once if the parcel has undergone a revaluation and again when the actual tax bill is received.

If a revaluation has taken place in a town, an assessment change notice is generated by the town and mailed to the property owner (taxpayer). Each change notice is examined in the tax department and any change in the value is evaluated to determine whether we agree or disagree with the value. If we determine that the new value is fair, we note that in our files and are finished evaluating that parcel. If we determine that the new value is not a fair value, we begin an appeal process that may ultimately take us into court in Connecticut.

An assessment is reviewed is when the actual tax bill is received. Every tax bill has its assessment audited to our files to make sure it is what we were expecting. If there are

any differences at this point, we contact the assessor in the town to remedy the situation.³²⁶

Conclusion 5.4.6 *BRCS/RCG found that all income, property, sales, franchise tax returns have been timely filed with local, state and federal jurisdictions for 2009 through 2013.*³²⁷

Analysis

A list of all tax returns filed for calendar years 2009 through 2013 showed that all income, property, sales, and franchise tax returns have been timely filed.³²⁸

Conclusion 5.4.7 *BRCS/RCG found that, as is typical of a large corporation, NU has been subject to IRS and state jurisdictional audits of its tax filings over the last five years.*

Analysis

[REDACTED]

³²⁹

Conclusion 5.4.8 *BRCS/RCG found that the Director of Tax monitors Best in Class performance through training, seminars, and his industry contacts.*³³⁰

Analysis

In addition, the Tax Department had the Corporate Executive Board (CEB) prepare a comparison across all industries to gauge costs, headcount, and responsibilities performed by the Tax function. The comparison showed that the size of NU's tax budget and number of tax professional staff was in the middle of the sample for companies with revenue between \$5 and \$10 billion for 2011 and 2012. The results validated the level of staffing and established some parameters for management to utilize for future budgetary purposes.³³¹

Recommendations

BRCS/RCG has no recommendations for this audit item.

5.5 Cost Control Functions

Objectives and Scope

A company's financial planning process must include tools and procedures for controlling costs. The primary tool for cost control is the use of budget vs. actual variance

³²⁶ Response to Data Request Q-FINTAX-01-285.

³²⁷ Response to Data Request Q-FINTAX-01-284.

³²⁸ Response to Data Request Q-FINTAX-01-284.

³²⁹ CONFIDENTIAL Response to Data Request Q-FINTAX-01-289.

³³⁰ Interview K. Morrissey 10/23/14.

³³¹ Response to Data Request Q-FINGEN-01-251.

analysis to ensure that management is kept abreast of the Company's performance against its plan. Frequent review of actual results versus plan and the causes of significant variances from plan allow the company to make the necessary changes to reach its short- and long-term goals.

BRCS/RCG's evaluation of YGS's budget vs. actual variance process focused on the reports used by management to monitor O&M expenses.

Overall Assessment

NUSCO has an adequate financial reporting process, which provides tools for management to monitor and control costs. YGS' primary cost control is accomplished through its budget variance management process. Monthly budget vs. actual variance analyses are prepared in sufficient detail to enable management to project its financial results for the year against original plan and to make changes in the Company's operations where warranted.

Conclusions

Conclusion 5.5.1 *BRCS/RCG found that YGSs' primary cost control is accomplished through its budget variance management process.*

Analysis

Monthly budget vs. actual variance analyses are prepared in sufficient detail to enable management to project its financial results for the year against original plan and to make changes in the Company's operations where warranted.

NUSCO described the O&M budget variance management as follows:

On a monthly basis, the actual O&M results are compared to the budget and variances are analyzed. The results and the variances are discussed within the respective organizations and also rolled up to a higher level for reports that are discussed with senior executives such as the CEO and CFO. At Yankee Gas, the monthly results and variances are distributed to the management team and depending on the nature and materiality of the variances, additional discussions may take place with managers and directors. After analyzing the results and identifying the drivers behind the variances, a summary report is provided to the president and vice presidents along with a projection of any variances at year-end. The analyses, reports, and facilitation of this process for Yankee Gas are the responsibility of the Budgets & Investment Planning department.

The results and variances are discussed at different levels and in different forums including the president's staff meeting, monthly work plan meetings, COO staff meetings, and monthly performance review meetings with the Senior Team. Each organization has accountability for their budget and their results and they are expected to manage their functions within their approved budget.³³²

³³² Response to Data Request Q-BUDO&M-01-144.

The Executive Management and Operations chapters of this report address the variances and actions taken by management and operations to control costs.

Recommendations

BRCs/RCG has no recommendations for this audit item.

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6. HUMAN RESOURCES

Objectives and Scope

The Human Resources (HR) assessment covers a variety of areas, including wage and salary policies and practices; compensation programs; benefits; employee development; training and evaluation; labor relations; manpower planning; process management; diversity and EEO; and employee safety and health. Simply put, Human Resources encompasses employment and employee relations support services. The identification of employee services, the effective design of these services, and the efficient and cost effective delivery of these services are critical to YGS's ability to compete in the marketplace for talent and to retain their high-performing employees. Additionally, through effective labor relations, YGS can partner with labor leadership to deliver their customer-focused services safely, efficiently, and cost effectively.

Today's utility HR function also plays an essential role in the cost of delivery and the quality of service. The cost of labor (both employee and contractor labor) represents one of the largest components in both O&M expense and capital costs. If the employee-to-contractor mix is not optimized for the workload variations, employee labor will automatically inflate expense costs and increase customer rates. Further, as those of the baby boomer generation retire, there will be an unprecedented experience drain that will not be filled easily through normal hiring practices. Effective leadership identification and development programs along with employee training must, therefore, be in place to address the effect of this loss of knowledge and to provide for the future leadership requirements.

To determine the effectiveness and improvement opportunities associated with the utility workforce that will benefit the Connecticut utility customers, in addition to PURA criteria, BRCS/RCG will focus on the following: compensation and benefits benchmarking; labor contract barriers to flexibility and contracting, employee-to-contractor mix, EEO and affirmative action plans, and succession planning. We will divide this chapter into the following sections and address each in turn:

- Human Resources Organization
- Wage and salary policies and practices and compensation programs
- Employee Benefits including Pension Plan, 401K and OPEBs
- Development
- Training and Evaluation
- Labor and Employee Relations
- Manpower Planning
- Employee Safety
- Payroll Practices

Overall Assessment

The Human Resources organization at NU is structured to support the business strategy. Its use of Business Partners, HR individuals charged with the responsibility to translate a business unit's HR needs while maintaining consistency with NU practices, provides YGS and the

other operating companies individualized needs evaluation, while keeping the service menu consistent throughout NU. Employee safety performance, labor relations, talent drain, and legacy Human Resources Information System (HRIS) capability are HR's current challenges.

The HR team follows industry standard policies and practices and develops specific programs to address the strategic and tactical needs of the business. The majority of the work completed by the Human Resources department is of best-practice level.

Wage and salary policies and procedures and the compensation programs for executives and non-executives as well as all salaried and hourly employees are based upon standard industry practices and are administered with impartiality, expertise, and a high-level of integrity. The Compensation department, the Compensation Committee, and the independent outside executive compensation consultant design and monitor all the compensation components to help the Company remain competitive in attracting and retaining competent executives, management, professional, and hourly employees.

The Employee Benefits (including pensions, 401k and OPEB) offer a wide range of benefits that provides flexibility in meeting the changing and demanding needs of the diverse workforce marketplace. The benefit programs are integrated within an overall total rewards strategy. The Company manages its benefits programs well. The Company has changed most of its benefit programs to be consistent throughout the post-merger NU and consistent with the marketplace in an effort to control its benefit cost. HR is in the process of negotiating such changes with its unions.

The employee development strategy focuses on developing and promoting from within. Hiring is used to fill skills gaps identified in the annual succession planning assessment. In this assessment, high potential employees are identified, their associated development gaps are detailed, and a development plan is established. This process has not yet been fully completed for YGS and other parts of NU.

Training is comprised of two main components: (1) technical and compliance training and (2) organizational change and learning. Both provide an adequate array of programs for specific populations.

HR's performance evaluation and management has opportunities to improve both at the department and the Company level. The process is being changed as part of the new HRIS implementation. This new approach will provide consistency across NU and allow HR to better track progress and completion against the established schedule.

Labor Relations, staffed with experienced experts, handles union relations, negotiations, grievance processing, and company-wide disciplinary actions. New leadership in this area has brought a renewed effort to improve communication with all Union Local leadership. The group has a good working relationship with one YGS union and is enhancing the relationship with the other major bargaining unit. Labor Relations has a critical role in negotiating both YGS's benefit and sick time programs' changes to bring these programs in line with the marketplace and the rest of NU.

Workforce or manpower planning is a major impetus for NU and YGS. With the current consolidation efforts in the gas business and the expected retirements of baby boomers during

the next five years, NU has spearheaded a concerted effort to recruit younger and more diverse employees and encourage students to consider utility work as their choice of profession. They have increased their outreach effort to the community college students with technical training.

The Employment and Staffing function of the organization implements the workforce and manpower planning strategy and develops the hiring strategy consistent with these strategies and the organizational current and future needs. The Company complies with both the letter and the spirit of the law regarding ethics, diversity, and EEO (Compliance). The detailed tracking of diversity metrics has been discontinued due to the recent organizational changes and transition. The Company expects to reintroduce them in 2015. The Recruiting function supports the diversity to the point where they will hold a position open if the candidate pool isn't deemed to be sufficiently diverse.

YGS's employee safety performance has not met Company goals for the last five years, and this lack is viewed as a significant issue by its leadership.³³³ The driver safety performance has been exceptional and has been cited as such by the Company's insurance provider.³³⁴

The Payroll practices are consistent with industry standards. The process has a number of manual steps and is very labor intensive.³³⁵ Current plans to replace the time and attendance system with the capability to handle all the payroll rules associated with the labor union contract should improve the process dramatically.

Evaluation Criteria

The following evaluation criteria focused our investigation and foundation for this assessment.

- To what extent did the Company implement the 2008 recommendations?
- Are Yankee's salary, wage and compensation, benefits package and pension/OPEB/401K practices in line with those of other Connecticut utilities?
- Are Yankee's, NU's, and its affiliates' executive compensation packages reasonable for the industry and region?
- Are Yankee's development, training and evaluation techniques effective?
- Are the current labor relations status and methodology appropriate for a company the size of YGS?
- Are the productivity and utilization level of Yankee's workforces appropriate?
- Is the human resources department's capability to access personnel information and perform their assigned duties reasonable?
- Are Yankee's affirmative action and equal employment opportunity (AA/EEO) policies, procedures, and functions effective and reasonable?

³³³ Interview C. Carmody 10/14/14.

³³⁴ Interview B. BBolger 10/16/14.

³³⁵ Interview C. Carmody 10/14/14.

- Is the utility effectively using benchmarking for its total compensation for executives, supervisors, professional and hourly workers?
- How does the utility determine what training it undertakes? Is the training effective?
- Does the utility have a formalized succession planning process? Does the utility have a process to identify high-potential employees and the associated development process to address the “brain drain” associated with baby-boomer retirements? Does the utility hire experienced personnel or develop from within or both?
- Do current labor agreements contain barriers to increased productivity, increased work flexibility, and increased use of contractors?
- Is the utility effectively benchmarking its employee safety statistics and measuring the effectiveness of its safety programs?
- What role does the Pension Plan/OPEB’s and 401K play in the employment strategy?
- What employee groups are eligible to participate in the pension plan:
 - Executives?
 - Salaried?
 - Hourly?
 - All new hires?
- Do plan provisions vary by employee group?
- What are the pension plan/OPEB/401K provisions? Are they consistent with other utility offerings? Are they consistent with the various labor marketplaces? Have these provisions been benchmarked to verify consistency?
- What are the plan objectives and what support services are used to analyze performance and effectiveness in achieving these objectives?
- Is there a SERP? Who is eligible to participate? Do the customers pay for this SERP?
- Is the pension plan/OPEB/401K serving only Yankee employees? If not, is the allocation of expense to the Yankee customers appropriate?

6.1 Payroll Practices

Objectives and Scope

The HR organization is part of the shared services organization, NUSCO, for all of the NU Business Units and Corporate Units. HR provides traditional transactional services plus an array of internal strategic consulting services.

Overall Assessment

The HR team follows industry standard policies and practices and develops specific programs to address the strategic and tactical needs of the business. Contract services are used consistently with industry practices. The majority of the work completed by the HR organization

is of the best practices level. The HRIS requires updating to support the HR strategic initiatives delivery.

Conclusions

Conclusion 6.1.1 *BRCG/RCG found that the HR organization thinks, plans, and acts strategically. However, the legacy Human Resources Information System (HRIS) does not support the new HR model and the strategic rollout.*

Analysis

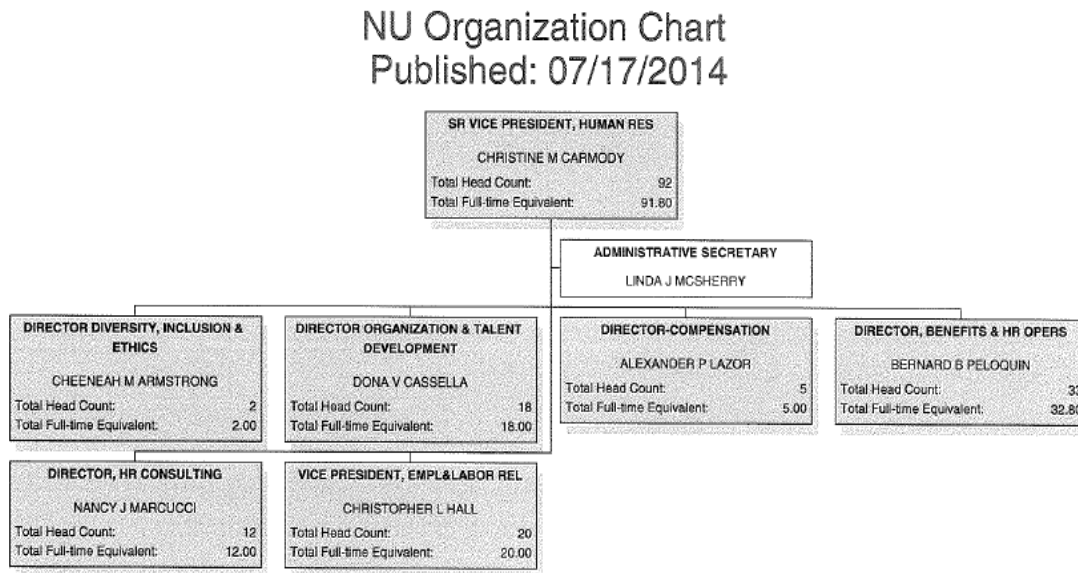
BRCG/RCG reviewed data responses and studied the Human Resources organization to determine what functions and roles are included and how the functions were organized. The analysis included scrutinizing annual plans, proxies, processes, online policies and procedures, department goals and objectives, and the online employee handbook.

The audit also covered department performance measures to evaluate the performance management system. Benchmarking studies of human resource functions and HRIS were reviewed, and budgets, cost savings, and containment methods were studied.

BRCG/RCG also analyzed processes and actions that impact employees' well-being and employment status. The audit investigated the personnel files and how HR maintains confidentiality and data safely and in compliance with federal and state human rights-related regulations. BRCG/RCG interviewed the Human Resources management team, its SVP and Directors, and the Director of NU's Safety program.

As a centralized shared service, Human Resources help NU, YGS, and the other operating companies provide human resources services to the entire organization. The SVP of HR assigns Human Resources representatives to YGS and throughout the other operating groups. The following organization chart displays NU's current Human Resources organization.

Figure 8: NUSCO Human Resources Organization³³⁶



In 2012, Human Resources was restructured to better serve the corporation and companies. HR was separated into two areas of focus: (1) organizational and cultural change and (2) the HR transactional function. Subsequently, the HR responsibilities were further centralized by removing the HR imbedded function from the operating companies and supporting them through Business Partners, centralized HR individuals charged with the responsibility to translate a business unit’s HR needs while still maintaining consistency with NU practices. The structure of the organization and the HR Consulting Service organization was developed from a strategic view of “one company, one way.”³³⁷

This organizational structure centralizes core services, allowing experts to focus on specific disciplines and core skills rather than spreading them throughout the organization. The Business Partners approach replaces the local expert with an individual charged with the responsibility to translate the business unit’s HR needs to expedite HR service delivery to address the specific business requirements while keeping the services consistent with the NU practices. At NU, Human Resources created several Centers of Excellence: Employee and Labor Relations; Organization and Talent Development; Compensation; Benefits; HR Operation; HR Consulting; and Diversity, Inclusion, and Ethics. This allowed HR to specialize and develop economies of scale by handling the work from all the companies. For instance, most of the transactional and customer-oriented services (such as personnel record retention, HRIS, and HR Service Center) fall under one Director. This organizational construct ties to what is considered industry best practice.

³³⁶ Response to Data Request Q-GENERAL-01-001.

³³⁷ Interview C. Carmody 10/14/14.

Conclusion 6.1.2 *BRCS/RCG found that the HR team is articulate, strategic, expert, and committed. They employ industry-standard HR practices and procedures. In spite of some archaic systems, such as the legacy HRIS, they provide creative, legal, and good results.*

Analysis

HR has clear, written policies, procedures, and descriptions that reside on the NuNet Intranet. The information on NuNet comprises a variety of topics, including benefits, diversity and EEO, job information learning, policies and procedures, retirement, labor relations, compensation, and a Manager Center. Augmented by a Self-Service Center, NuNet offers links to a pension calculator and travel services for making plane reservations.³³⁸

HR ensures that all new policies, procedures, and plans comply with applicable federal and state laws and guidelines, and are legally defensible if challenged. HR personnel consult monthly with NU’s Legal department concerning new and changed laws and regulations.³³⁹

HR has a mission, goals, and objectives that align with those of the business and are communicated to employees.³⁴⁰

HR has systems to handle workforce planning, hiring, talent management, competencies, and performance. For example, the Company initiated a program to attract high school students into technical training paths so that they can create a feeder pool of technical talent for the future.³⁴¹

The Workplace Survey prevails as the major means to assess how well employees’ perceptions align with the business strategy and the effectiveness of the various HR initiatives regarding employee engagement.³⁴²

The Director of Diversity, Inclusion, and Ethics uses periodic analysis and reports to show the progress that is being made in closing the employment gaps for women and minorities.³⁴³

[REDACTED]

Most HR functions coincide with best practices. However, the legacy HRIS requires workarounds due to the system’s analytical and reporting limitation.³⁴⁵

[REDACTED]

[REDACTED]³⁴⁶ The Performance Scorecard for the HR Executive contains the key HR metrics: key talent retention, workforce representation females, workforce

³³⁸ From: <https://webvpn.nu.com/NUCorporate/Depts/HR>.

³³⁹ Interview D. Cassella 10/17/14.

³⁴⁰ Interview C. Carmody 10/14/14.

³⁴¹ Interview D. Cassella 10/17/14.

³⁴² Response to Data Request Q-HR-3-007.

³⁴³ Interview C. Armstrong 10/17/14.

³⁴⁴ CONFIDENTIAL Response to Data Request Q-EXEC MGMT-03-025.

³⁴⁵ Interview B. Peloquin 10/14/14.

³⁴⁶ CONFIDENTIAL Response to Data Request Q-EXEC MGMT-03-025.

representation minorities, labor relations metrics, total work days lost, and several turnover and quality of hire metrics. These metrics cover the full spectrum of typical HR activities and are consistent with industry practices.

Recommendations

BRCS/RCG has no recommendations for this audit item.

6.2 Wage and Salary Policies and Practices and Compensation Programs

Objectives and Scope

Wage and salary policies and practices and the resulting compensation programs apply consistently to all business units of NU including YGS. They are integrated with the benefit programs to form a consistent focus on total compensation. They are appropriately guided by the need to remain competitive in attracting and retaining competent executives, management, and professional and hourly employees.

Overall Assessment

Wage and salary policies and procedures and the compensation programs for executive and non-executive, salaried and hourly employees are based on standard industry practices. The Company handles these practices with impartiality, expertise, and a high level of integrity. The Compensation department, the Compensation Committee, and the independent outside compensation consultant have designed and appropriately monitor all the compensation components.

Conclusions

Conclusion 6.2.1 *BRCS/RCG concluded that HR functions have met the intent of the 2008 Management Audit recommendations relating to Wage and Salary Policies and Practices and Compensation Practices.*

Analysis

As NU moves to the planned online employee evaluation process, it must ensure that an individual's evaluation focuses on behavior competencies and links to corporate goals and measurable objectives.³⁴⁷

Four recommendations impacted the Wage and Salary and Compensation areas regarding YGS.

7.1.1 Wage and Salary Policies and Practices (Priority: Low): Update evaluation form to ensure inclusion of competencies. This will require different evaluation forms for each different set of competencies. A new section should be added to link an individual to the corporate goals and measurements.

³⁴⁷ Response to Data Request Q-HR-01-220.

Company Status as of July 31, 2014: The 2008 Performance Management System was used until second quarter 2012. Post-merger a simplified form was used to capture employee performance until NU determined a one-company approach. In 2013, NU resumed the use of the 2008 System for employee performance reviews based upon goals and competencies.³⁴⁸

BRCs/RCG believes that the evaluation forms meet the requirements of the recommendation.

7.1.2 Wage and Salary Policies and Practices (Priority: Low): Show weighting of criteria on evaluation form or create separate pamphlets for each attribute (similar to the Safety Call to Action).

Company Status as of July 31, 2014: Formal weighting of goals and competencies was used until second quarter of 2012. Post-merger forms and systems eliminated the need for formal weighting to provide maximum flexibility within each NU business, including Yankee Gas.

BRCs/RCG believes that this recommendation is no longer applicable in light of post-merger practices. NU's performance review process has eliminated formal weightings. However, the form still requires the individual's business goal measure and behavior competency categories to be evaluated.³⁴⁹

7.1.3 Wage and Salary Policies and Practices (Priority: Medium): Continue to update all position descriptions in the same format to ensure all tasks or responsibilities and reporting relationships are captured.

Company Status as of July 31, 2014: Yankee Gas has continued to review and update job descriptions reflecting primary duties and responsibilities. As Yankee Gas continues to look at the organization post-merger, new and modified descriptions will be developed.

BRCs/RCG believes that the position descriptions are updated as required. YGS has continued to review and update job descriptions reflecting primary duties and responsibilities. As YGS continues to look at the organization post-merger, new and modified descriptions are emerging based on a quick review of sample descriptions.

7.2.1 Compensation Programs (Priority: Low): Document the rationale behind the conclusions of the committee that determines the percentage payout levels and figures.

Company response: See 2013 NU Annual Incentive Plan Performance Assessment.

BRCs/RCG believes that this recommendation is being addressed. NU completed a detailed Annual Incentive Plan Performance Assessment for 2013.³⁵⁰ The document provides the details associated with the level of performance for each metric included in the Plan. The

³⁴⁸ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 1.

³⁴⁹ Response to Data Request Q-HR-01-220.

³⁵⁰ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, Attachment 2.

Plan included financial and operational performance goals and operating metrics by business unit.

Conclusion 6.2.2 *BRCS/RCG found that YGS's salary, wage, compensation strategy, and policies and procedures are consistent with industry experience and practice.*

Analysis

The compensation strategy is to focus on total compensation, or "Total Rewards," which includes the value of employee benefits. HR has spent the last three years standardizing the Total Rewards program across all companies.³⁵¹ NU has consolidated all compensation work under one approach and uses benchmarking with the other Connecticut utilities and similarly sized utilities to ensure their pay practices are consistent with the marketplace in which they expect to find and attract future employees.

Regular and periodic compensation studies³⁵² are performed at least annually for all those of Director level and above. The other salary positions are reviewed on a three-year cycle.³⁵³

There is a compensation strategy and associated policies in place and used to direct the compensation practices.³⁵⁴

The leadership responsible for the compensation programs, the data analysis, and the compensation advice is very experienced and well grounded in all aspects of compensation practices. The leadership is included in all strategic compensation discussions and has full access to the Board's compensation committee and the CEO in regard to compensation.

Employee communications in the future will include the new focus on Total Rewards and specifically the value of employee benefits.³⁵⁵

Conclusion 6.2.3 *BRCS/RCG found that YGS's, NU's, and other affiliates' executive compensation packages are reasonable for the industry and region.*

Analysis

NU performs annual compensation studies by an independent third party on all the executive positions. The compensation committee of the NU Board is provided this information to guide their compensation decisions regarding the CEO and the other top NU officers. Likewise, the CEO is provided such data to guide his compensation decisions regarding the rest of the officers. The detailed discussion of the executive compensation is provided in the 2014 NU Proxy Statement.³⁵⁶

³⁵¹ Interview C. Carmody 10/14/14.

³⁵² CONFIDENTIAL Response to Data Request Q-HR-01-202.

³⁵³ Interview A. Lazor 10/14/14.

³⁵⁴ Response to Data Request Q-HR-01-203.

³⁵⁵ Interview A. Lazor 10/14/14.

³⁵⁶ NU 2014 Proxy Statement: Pages 24-46, Executive Compensation Section.

All executive compensation is performance-based consistent with the needs of the customer and shareholder. However, NU does not include executive compensation in utility expenses for ratemaking purposes.³⁵⁷

Conclusion 6.2.4 *BRCS/RCG found the utility is effectively using benchmarking for its total compensation for executives, supervisors, professional, and hourly workers.*

Analysis

NU uses appropriate contract compensation consultants, surveys, and databases to support the various compensation recommendations. [REDACTED]

[REDACTED]³⁵⁸

Conclusion 6.2.5 *BRCS/RCG found NU compensation policies and practices to be consistent with good business and utility practices.*

Analysis

NU uses a 4-Band approach to compensation of the non-officer salaried employees: Individual Contributor, Technical Leader/Field Supervisor, Manager, and Director. The market range for each level is updated annually. The 2012 Compensation benchmarking of all positions shows that NU was at 103% of market for their salaried non-Director or higher levels. The level of compensation within each band is based on the employee’s performance against previously determined goals, metrics, and competencies.³⁵⁹

Employee evaluations for non-union employees are completed annually and become the source document for identifying high potential talent and development needs of individuals included in the succession plan.

Based on the experience of BRCS/RCG, the components of compensation (base salary and variable or incentive pay) for YGS salaried employees is consistent with utility industry practices.

HR has appropriate approval of all compensation decisions at YGS.

Conclusion 6.2.6 *BRCS/RCG found HR has limited means in place to monitor and control implementation of compensation practices.*

³⁵⁷ Interview A. Lazor 10/14/14.

³⁵⁸ CONFIDENTIAL Response to Data Request Q-HR-01-202.

³⁵⁹ Interview A. Lazor 10/14/14.

Analysis

The legacy HRIS is an old and outdated system with limited capability to track and report status of implementation of various compensation decisions.³⁶⁰ Some workarounds have been put in place to provide pre-formatted data extraction opportunities.

Recommendations

BRCS/RCG has no recommendations for this audit item.

6.3 Employee Benefits Including Pension Plan, 401K, and OPEBs

Objectives and Scope

This section focuses on the health and welfare benefit programs and retirement programs, including the pension plan, 401k plan, and OPEBs (other post-employment benefits). These benefits are available to executives, management, professional, hourly, and bargaining unit employees.

Overall Assessment

NU's employee benefit offerings for health, welfare, and retirement plans are consistent with industry practices and competitive with the marketplace to attract and retain current and future talent. Negotiations with YGS union locals is needed to complete the benefit plan alignment. Additionally, future changes will have to be made to any plan deemed to be a "Cadillac plan" to reduce the exposure to the 2018 Excise Tax.

Conclusions

Conclusion 6.3.1 *BRCS/RCG concluded that the HR function has met the intent of the 2008 Management Audit recommendations relating on Employee Benefits.*

Analysis

One recommendation impacted YGS's Employee Benefits area:

7.3.1 Employee Benefits (Priority: Medium): Yankee Gas should continue to benchmark all portions of its benefits program to ensure that they stay competitive. This includes components of the program that are offered as well as examining other options that can be used to entice new recruits. These offers may include: flexible work schedules; job scope rotation; four-day, 10-hour work weeks; educational opportunities; career planning; and spousal employment assistance programs.

Company Status as of July 31, 2014: The NU Benefits group continues to benchmark benefits programs to ensure that benefits offered to all NU employees, including Yankee Gas employees, are competitive in the industry. The Company's comprehensive benefits

³⁶⁰ Interview A. Lazor 10/14/14.

package includes a new Health and Welfare program which was redesigned in January 1, 2013 as follows:³⁶¹

- Restructured the medical programs which include three distinct health plans and including a Consumer Driven Health Plan with an Health Savings Account;
- Realigned the prescription drug program;
- Restructured the dental plan offerings to include two distinct plans;
- Improved vision plan benefit;
- Enhanced basic life insurance benefit for non-represented employees with supplemental buy-up opportunities for all employees;
- Restructured sick and disability program with buy-up opportunities for non-represented employees; and
- Voluntary benefit programs including auto, home, life and legal benefits.

In addition, all new employees are eligible for comprehensive defined contribution plan that provides 401(k), Roth, after-tax and catch up employee contributions, a company match on up to 3% of employee contributions and additional K-Vantage contributions based on age and years of service. Employees have a choice of 20 fund options and a brokerage link account.

The company does offer the opportunity for flexible schedules for some positions, as well as provides educational opportunities such as rotational programs, leadership training, and tuition reimbursement.

It is important to note that employee benefits are a mandatory subject of bargaining for represented employees.

Conclusion 6.3.2 *BRCS/RCG found most of YGS's benefits package and pension/OPEB/401k practices are in line with those of other Connecticut utilities, but the sick time benefits for YGS union employees is an exception. Additionally, NU still has an exposure to the 2018 Excise Tax associated with any plan deemed to be a "Cadillac Plan." Future changes will have to be made to avoid this exposure.*

Analysis

The Employee Benefits (including Pensions, 401k, and OPEB) need to include a wide range of benefits that provides flexibility in meeting the changing and demanding needs of the diverse workforce marketplace. The benefit programs are integrated within an overall total rewards strategy. The Company manages its benefits programs well. The Company has changed most of its benefit programs to be consistent throughout NU and consistent with the marketplace in an effort to control its benefit cost. It is in the process of negotiating such changes with its unions.

The standardization of health and welfare programs for NU non-union employees has been completed. Three tiers of Health Benefits Plans are being offered: High Preferred Provider

³⁶¹ Response to Data Request Q-HR-01-199.

Organization (PPO), Mid PPO, and High deductible with Health Savings Account (HAS). The union employees, including YGS's unions, are being brought into these plans as the union contracts are being negotiated. New carrier contracts were put in place effective 1/1/2013. These carriers provide the opportunity for employee self-service, reducing and eventually eliminating any in-house support for all benefit and retirement programs. NU still has an exposure to the 2018 Excise Tax associated with any plan deemed to be a "Cadillac Plan." Future changes will have to be made to avoid this exposure.

Other Post-Employment Benefits (OPEBs) have been changed to align them with the active employee health and welfare offerings.

All new employees are eligible only for the defined contribution profit-sharing 401k plan. Existing employees were given the option to convert from the traditional defined benefit pension plan. The 401k match is \$1 for \$1 up to 3%. The Plan is administered by Fidelity and is fully self-serviced. There is no Supplemental Employee Retirement Plan (SERP).

Lost-time benefits is an area of concern. Management believes the existing union benefits contribute to excess absenteeism. New short-term and long-term disability plans (STD and LTD) and administrators have been put in place. Some progress has been seen in reducing the lost time rate. The unions are being brought into the new programs as each contract is renegotiated.

The benefit offerings, the OPEBs, the retirement plan offerings (traditional pension, profit sharing 401k, and the 401k) are all consistent with the industry practices. NU has taken steps to transition their offerings and the associated carriers to either control the growth in cost or reduce cost to the Company.

Conclusion 6.3.3 *BRCS/RCG found the legacy Human Resources Information System (HRIS) limits HR's ability to quickly access personnel and benefit information, does not lend itself to any complex analysis, and reduces the ability for them to perform their assigned duties.*

Analysis

The current NU legacy HRIS is not compatible with NSTAR's legacy HRIS. Neither system supports high-level analytics.³⁶² A short-term fix has been put in place to extract some system-wide data. A new HRIS, called WorkDay, is currently being configured, along with a new time and attendance system called WorkForce. The new HRIS is expected to be operational by the second quarter of 2015. The other system will follow.³⁶³

The legacy HRIS is a limiting factor in HR's ability to perform detailed analytics. Additionally, the lack of access and integration between the two legacy HRIS systems has resulted in a large degree of duplication and additional manual effort.³⁶⁴ As such, workarounds have been put in place to provide some needed capability.

³⁶² Interview C. Carmody 10/14/14.

³⁶³ Interviews B Peloquin 10/14/14, S. Lasor 10/14/14.

³⁶⁴ Response to Data Request Q-IT-03-009.

Recommendations

Recommendation 6.3.1 BRCS/RCG recommends that the Company complete the negotiations with the YGS union locals to complete the transition of YGS hourly employee benefits, benefit carriers, and sick-time benefits to a level consistent with the rest of the NU employees.

Recommendation 6.3.2 BRCS/RCG recommends that the Company accelerate the HRIS implementation and subsequent utilization to eliminate the workarounds created in the old HRIS.

6.4 Employee Development

Objectives and Scope

Employee Development strategy is to develop and promote from within. Hiring is used to fill skills gaps identified in the annual succession planning assessment. The one major exception to this is the hiring of the new YGS President and Operations management team, which includes the Vice President and several of the newly restructured Director positions.

In YGS's annual employee development assessment, high-potential employees are identified, their associated development gaps are detailed, and a development plan is established. The initial cycle of this process has not been fully completed for YGS and other parts of NU.

Overall Assessment

The NU employee development process, including succession planning and talent identification is consistent with industry best practices. However, implementation at YGS has not been effective.

Conclusions

Conclusion 6.4.1 *BRCS/RCG found NU has a well-defined formal succession planning process that integrates talent identification and employee development. The approach is consistent with best practices. The process includes the identification of high-potential employees and the associated development process to address the "brain drain" associated with baby-boomer retirements.*

Analysis

Development is integrated with Succession Planning and Evaluation. NU and YGS have completed the first succession planning exercise since the merger.³⁶⁵ NU leadership is still reviewing the results of that exercise and has yet to reach the lower levels of YGS or have all the associated development plans completed.³⁶⁶

³⁶⁵ Interview C. Carmody 10/13/14.

³⁶⁶ Response to Data Request Q-HR-01-207.

As part of the succession planning process, high-potential individuals are being identified. They have the potential to fill leadership roles and will have specific development plans tailored to address the gaps in their skills or experiences. HR has the responsibility to drive this process. It has yet to be completed.

HR has also identified the need for supervisory development and is putting in place a Supervisory Forum to improve the transition of supervisors from union to management.

In addition, HR has introduced a “Leading from the Middle” program for middle managers. The program includes a capstone project from their areas of responsibility or issues they want to solve. These project results are then presented to their Directors.

In the area of Organizational Development, HR just completed an Employee Engagement Survey. The results demonstrate that employees love the work they do and the people they work with. However, they feel communications are lacking.³⁶⁷

Conclusion 6.4.2 *BRCS/RCG found HR’s management and control of the performance evaluation and process need to improve both at the department and the Company level.*

Analysis

Employee evaluations for non-union employees are completed annually and become the source document for identifying high-potential talent and development needs of individuals included in the succession plan.

The performance evaluation process is being changed as part of the implementation of an online employee evaluation process. This new approach will provide consistency across NU and provide HR with the tools to better track progress and completion against the established schedule and consistency in application across of NU.

Conclusion 6.4.3 *BRCS/RCG found YGS’s succession planning and associated development planning and implementation has not been completed.*

Analysis

NU has put in place an integrated succession planning, talent identification, and development process. The process has only begun to be implemented at YGS.

Interviews with YGS operating personnel found the supervisory talent had come from professional positions rather than from the union ranks. The new supervisors have received limited supervisory training. HR has plans for additional supervisory training. However, with the recent management changes currently underway, the training has not been scheduled.

Recommendations

Recommendation 6.4.1 BRCS/RCG recommends that the Company implement, at YGS, NU’s succession planning and talent identification and development process, including methodology to evaluate effectiveness and consistency between operating districts.

³⁶⁷ Interview D. Cassella 10/17/14.

6.5 Training and Evaluation

Objectives and Scope

Employee training responsibility is divided into three areas: enterprise training, compliance training, and technical or on-the-job training. HR is responsible for both enterprise and compliance training. Each business unit is responsible for their specific technical training.

Overall Assessment

Employee training coordinated, developed, and/or delivered by HR is effective.

Conclusions

Conclusion 6.5.1 *BRCS/RCG concluded that the HR function has met the intent of the 2008 Management Audit recommendations on Training and Evaluation functions. However, with the continuing consolidation of the gas business, YGS needs to bring their training in line with NU practices.*

Analysis

There were two 2008 recommendations that impacted YGS's Training and Evaluation areas. Although the intent of the recommendations has been met, the training results during the consolidation of the gas business have not been consistent with NU's practices.

7.4.1 Training and Evaluation (Priority: Medium): To better coordinate the overall training effort, NU should consider establishing an ad hoc committee or forum with the objective of communicating and integrating the various training philosophies and methodologies.

Company Status as of July 31, 2014: With the merger of the two companies, the training functions have been combined and provide comprehensive training for leadership/supervisor, customer service, environmental and operational training for field employees. The Training and Compliance organization relies on periodic (ad-hoc) meetings with Enterprise training with open lines of communication regarding roles, responsibilities and training philosophies. This includes methodology (instructor led v. E-learning), approach (lesson plans for sustainability v. One time training), orientation topics, refresher for management, leadership training, Emergency planning training, etc. The training organizations continue to work closely in developing consistent training approaches and communications with employees.

BRCS/RCG believes that the training responsibility integration at NU has been completed.

7.4.2 Training and Evaluation (Priority: High): A formal feedback loop from the Yankee employee and contractor construction and maintenance activities quality control program needs to be developed. This feedback should be a critical component of any future curriculum development.

Company Status as of July 31, 2014: Training agendas for future classes continue to be developed via committee with input from Operations, Safety, QA/QC and Engineering. The Training department leads Training Opportunity Partnership (TOP) meetings that discuss pertinent topics and issues found in the field. Trainers also have goals of conducting a number of field visits in order to obtain direct knowledge of the concerns of the workers. Feedback forms from training also play an important role in the development of future classes.

BRCS/RCG believes that this recommendation has been addressed.

Conclusion 6.5.2 *BRCS/RCG concluded that the enterprise training is developed and conducted using leading practice techniques.*

Analysis

Enterprise training consists of both content development and delivery of new-hire training. Most of this is delivered through pre-employment-required, home-study, online modules or initial-hire classroom group training. The content includes topics, such as corporate overview, what’s important about the business, how does business make money, safety-first message, and business unit or craft orientation. At present, union leadership involvement is limited. This impacts the Company’s ability to integrate the union’s expectation of a new employee into the initial orientation and ensure there is alignment between the Company and the union leadership.

Conclusion 6.5.3 *BRCS/RCG found the Compliance training is completed annually.*

Analysis

Compliance training, including sexual harassment, hotline, business conduct, and conflict of interest training, has been completed annually, as required.³⁶⁸

Recommendations

BRCS/RCG has no recommendations for this audit item.

6.6 Labor and Employee Relations

Objectives and Scope

Labor and Employee Relations is staffed with experienced experts, who handle union relations, negotiations, grievance processing, and company-wide disciplinary actions. New leadership in this area has brought a renewed effort to improve communication with all Union Local leadership. The group has a good working relationship with one YGS union and is enhancing the relationship with the other major bargaining unit. Labor Relations has a critical

³⁶⁸ Response to Data Request Q-HR-13-002.

role in negotiating both YGS's benefit and sick time programs' changes to bring these programs in line with the marketplace and the rest of NU.

Overall Assessment

Labor relations are conducted at YGS professionally, with knowledgeable professionals and access to appropriate legal counsel. The YGS union contracts do not contain any barriers to productivity, staffing, or the use of contractors, even when contracting out work that is currently or was previously performed by union employees. However, some current benefit programs need to be renegotiated to bring them into alignment with the NU benefit cost-containment strategy.

Conclusions

Conclusion 6.6.1 *BRCS/RCG concluded that the Labor Relations function has not fully satisfied the intent of the 2008 Management Audit recommendations on employee safety. Although YGS has taken proactive steps to address the issues leading to employee injuries, the inconsistent application of these steps by the District leadership leaves in question the commitment to change.*

Analysis

One 2008 recommendation impacted the Labor Relations area regarding YGS:

7.5.1 Labor Relations (Priority: High): The NU/Yankee Gas approach to safety focused primarily on being reactive (as opposed to proactive) to an employee safety event. Consistent discipline is not necessarily going to correct some of the more deeply embedded safety issues. It is recommended that Yankee Gas' safety program take a total process perspective to safety. This recommendation needs to work in concert with recommendation 7.6.1.

Company response: YG continues to embrace a proactive approach to managing their safety performance beginning with a senior management team that is highly engaged. YG has an integrated safety management team structure that involves employees from all parts of the organization. Over the past 5 years, YG has implemented many progressive initiatives to address our leading injury cause (strains and sprains) and continues to address its safety culture emphasizing personal accountability, compliance and looking out for one another. Safety related discipline is administered as appropriate when other measures fall short.

BRCS/RCG believes that the employee safety effort at NU has gotten much more proactive and is introducing new approaches to keep safety in front of every employee. However, BRCS/RCG observed two YGS district offices reflecting two different approaches to employee safety communication and the reduction of employee injuries. This inconsistency did not demonstrate acceptance of a planned and proactive approach to eliminating employee injuries or the sharing of best practices among YGS districts or NU business units.

Conclusion 6.6.2 *BRCS/RCG determined that the NU labor relations organization is staffed with experienced professionals and provides a dedicated labor professional to handle YGS's two labor contracts.*

Analysis

The labor relations leadership is new to the NU organization. There is one experienced Labor Relations Manager assigned to both YGS union locals.

There have been a minimum number of grievances that have gone to the third step or arbitration. These results are better than utilities of similar size.

The labor relations strategy is focused on improving union/management relations. To this end, a set of guiding principles are being developed for dealing with the union employees and the union leadership. These principles will focus on facts versus emotion and intend to have a business case for any changes being requested of the union. In the end, this will allow both parties to be held accountable for their actions.

The HR Business Partnership approach is a work-in-progress as it relates to labor relations.

Conclusion 6.6.3 *BRCS/RCG found that the labor agreements do not contain barriers to increased productivity, increased work flexibility, and increased use of contractors.*

Analysis

The YGS labor contracts have no barriers to productivity, staffing, or the use of contractors and the contracting out of work previously performed by union employees. The labor agreements contain very few work rules and no barriers to productivity, improvements in work methods, or use of contractors. Management has full rights to decide the number and mix of employees needed to perform the work. This is unusual in utility labor agreements and should contribute to lower costs for the same quality of work.

The recently negotiated union construction roving workforce is consistent with the actions at other utilities to try to make the union workforce competitive with the contractors.³⁶⁹

YGS negotiations are currently in process. Standardization of the benefit plans and changing the lost-time plans are YGS's objectives. YGS's sickness and absence benefits are excessive and need to be aligned with the rest of the organization.³⁷⁰

Conclusion 6.6.4 *BRCS/RCG found the current labor relations status and methodology is appropriate for a company the size of YGS.*

³⁶⁹ Response to Data Requests Q-HR-01-195 and 196.

³⁷⁰ Interview G. Choiniere 10/16/14.

Analysis

Two union locals cover YGS’s represented employees. There is a combined contract with consistent provisions across the two locals. NU has assigned a dedicated labor relations representation to each local, thus providing consistency in dealing with the respective union leadership. The result of this activity is a relatively low number of grievances, all being settled in third step or arbitration.

Conclusion 6.6.5 *BRCS/RCG determined that communications with the union leadership are not done on a regular or formalized basis and lead to misinformation and confusion on the union employees’ part.*

Analysis

There is only one formalized company-union committee dealing with employee safety. There are no regularly scheduled meetings between YGS management or NU Labor Relations leadership and the union leadership. Communications with the union leadership are not planned or scheduled. Union leadership is left to speculate regarding management’s intent.

YGS’s management, NU labor relations leadership, and the union employees all expressed a need for more communication on a regular basis. Additionally, communication and information flow to the union employees from management need to be improved and have a consistent message from district to district. Management stated they plan to perform appropriate benchmarking of wage data and what other utilities are getting done in their negotiations.³⁷¹

Conclusion 6.6.6 *BRCS/RCG concluded that NU has met the intent of the 2008 Management Audit recommendations relating to Employee Absenteeism. However, union employee absenteeism at YGS has not been brought under control.*

Analysis

The 2008 Management Audit included the following recommendation:

7.7.1 Employee Absenteeism (Priority: Medium): Yankee Gas should proactively engage in benchmarking where the compared peer data is consistent, so that other company leading practices would be helpful to its own performance improvement efforts.

Company Status as of July 31, 2014: Since the 2012 merger between NU and NSTAR, the Corporate Performance Management Group (CPM) provides benchmarking support to the company. At minimum, several key operational benchmarking studies are performed each year in addition to numerous smaller studies focused on specific functions or aspects of the business.

CPM works with Yankee Gas to participate in the annual AGA Operations Study and the PSE&G Gas Peer Panel Study. Both studies provide comparisons across several business dimensions including FTEs, spending, operational and safety performance.

³⁷¹ Interview C. Hall 10/16/14.

During the year, CPM coordinates the process to obtain other information from other utilities by initiating and responding to more focused, smaller surveys designed to share information between utilities as it relates to specific practices. These smaller surveys can result in follow up meetings or conference calls between utilities to learn more.

Results from benchmarking studies and follow up or ongoing discussions with other utilities are used within YG during their business planning meetings. They are one input to the planning process, and are used to outline business needs for the future.

YGS-represented employee absenteeism (sick time) for 2013 averaged 10.52 days per FTE and through 9 months of 2014, they are averaging 9.47 days per FTE.³⁷² The non-standard sick-time benefits provided in the labor agreements support this high level of utilization.

Conclusion 6.6.7 *BRCS/RCG found that all employment-related activities, including hiring, promotions, demotions, discipline, and terminations are reviewed and approved by HR prior to implementation.*

Analysis

HR makes all employment offers and coordinates all start dates with the initial introductory training for all new employees.

All discipline-related activities are centralized. No discipline actions, up to and including terminations, are taken without HR approval and direct involvement with the employee.

All employee policies and guidance memos are available to employees on NU's intranet. This is consistent with best practices. The associated employee communications are coordinated with Corporate Communications.

Recommendations

Recommendation 6.6.1 BRCS/RCG recommends that the Company seek opportunities to renegotiate changes to the YGS union contract provisions to provide for more management control over employee sick time utilization.

³⁷² Response to Data Request Q-HR-03-001.

6.7 Manpower Planning

Objectives and Scope

Workforce or Manpower Planning is a major focus for the Company. With the expected retirements of baby boomers during the next five years, Northeast Utilities has spearheaded a concerted effort to recruit younger and more diverse employees and encourage students to consider utility work as their choice of profession. They have increased their outreach effort to the community college students with technical training.

Overall Assessment

NU takes a proactive approach to manpower planning by analyzing their workforce and anticipating their current and future staffing needs, taking into account leadership needs, skills gaps, and diversity goals. Their practices use best-in-class approaches to talent identification and management. Such practices include early identification of high-potential employees, utilizing engineers as first-level operating supervisors, and identifying future talent needs and either developing those talents internally or specifically targeting hiring to address that need.

Conclusions

Conclusion 6.7.1 *BRCS/RCG found that NU's staffing strategy to select talent from within the entire organization and selectively hire to fill current leadership of skills gaps is reasonable.*

Analysis

The Employment and Staffing section of the organization implements the workforce and manpower planning strategy and develops the hiring strategy consistent with these strategies and with the organizational current and future needs.

Workforce and staffing planning is centralized under the Director of Organization and Talent Development. They perform an annual analysis of staffing needs, which includes a review of potential retirements, a review of the “age bands” of their employee mix, and input from the Business Partners feedback on each business unit’s anticipated needs. From this assessment, potential sources of talent are identified, such as college recruiting for professional positions or community colleges or trade schools for entry-level technical or hourly worker positions.³⁷³ The EEO/AA needs are also factored in to the recruiting requirements and positions are held open if a sufficiently diverse candidate pool has not been identified. The staffing strategy is to promote from within and hire from outside when the talent need is identified.³⁷⁴

With the recent merger, the succession planning and talent assessment work has been the focus of their manpower planning effort, identifying the leadership needs to manage the

³⁷³ Interview D. Cassella 10/17/14.

³⁷⁴ Interview C. Carmody 10/13/14.

new organization and selecting the individuals internally to fill these positions or recruiting the talent where gaps exist.

In the case of YGS, the leadership team had yet to be identified and assigned to their new positions.

[REDACTED]

³⁷⁵

Conclusion 6.7.2 *BRCS/RCG found that NU's affirmative action and equal employment opportunity (AA/EEO) policies, procedures, and functions are effective and reasonable.*

Analysis

EEO/AA compliance and reporting is centralized under the Director of Diversity, Inclusion and Ethics. The YGS organization's results are reported under three EEO reports.³⁷⁶ No adverse impacts were reported for two of the report areas, and one or two adverse impacts were reported in the Berlin area.³⁷⁷ The NU diversity activities have received recent recognition:

- The *Greater New England Minority Supplier Development Council* has named NU as its Local Corporate Member of the Year in 2013 and 2012
- NU received the Council's 2012 Advocate of the Year Award
- In 2012, NU was honored by *Summit International* with a Creative Excellence Bronze Award for its workplace diversity and inclusion report called, "Diversity at NU"
- NU was recognized for creating the Supplier Development Academy with the University of Connecticut in 2011 and establishing a mentor/protégé program for minority business owners³⁷⁸

The Company complies with both the letter and the spirit of the law regarding ethics, diversity, and EEO (Compliance).³⁷⁹ High-level metrics are included in the monthly executive reports.³⁸⁰ However, the detailed tracking of diversity metrics has been discontinued due to the recent organizational changes and transition. They are expected to be reintroduced in 2015. The Recruiting area supports the diversity to the point where they will hold a position open if the candidate pool isn't deemed to be sufficiently diverse.

³⁷⁵ CONFIDENTIAL Response to Data Request Q-EXEC MGMT-03-025.

³⁷⁶ Response to Data Request Q-HR-01-197.

³⁷⁷ Interview C. Armstrong 10/17/14.

³⁷⁸ NU website 2009-2013 Awards and Recognition.

³⁷⁹ Response to Data Requests Q-HR-01-197 and 198.

³⁸⁰ Response to Data Request Q-HR-03-008.

Recommendations

Recommendation 6.7.1 Reestablish detailed reporting of Affirmative Action performance by organizational unit to senior leadership of YGS.

6.8 Employee Safety

Objectives and Scope

Employee safety is the responsibility of local supervision and each employee. It is audited and supported by the Safety Department and the Director of Safety.

Overall Assessment

YGS's employee safety performance has not met Company goals for the last five years and is viewed as poor by its leadership. Driver safety performance, however, has been excellent and has been cited by the Company's auto insurance provider.

Conclusions

Conclusion 6.8.1 *BRCS/RCG concluded that the HR function has not met the intent of the 2008 Management Audit recommendation on Employee Safety. Since the employee accident performance at YGS has not improved, it leaves in question why seeking input from best-in-class performers would not be an effective course of action.*

Analysis

One 2008 recommendation impacted YGS's Employee Safety area:

7.6.1 Employee Safety (Priority: Medium): Yankee Gas should review the operations of utilities that are first quartile performers to help determine why their safety programs are so successful as compared to its own. Once gaps are identified, Yankee Gas should develop an appropriate implementation plan.

Company Status as of July 31, 2014: Although there are no formal safety benchmarking studies from the past 5 years, YG regularly interacts with other high performing gas utilities via the American Gas Association (AGA) and Northeast Gas Association conferences and through a network of relationships with utility safety professionals. On occasion, YG will share safety related information directly with other utilities (most recently with PECO). A visit with Duke Energy (Gas) in Cincinnati, OH is currently being scheduled.

BRCS/RCG believes that the employee safety benchmarking has not been viewed by NU as a tool to identify ways to improve their employee safety performance and eliminate employee injuries. BRCS/RCG observed two YGS district offices reflecting two different approaches to employee safety communication and the reduction of employee injuries. This inconsistency did not demonstrate acceptance of a planned and proactive approach to eliminating employee injuries or the sharing of best practices among YGS districts or NU business units.

Conclusion 6.8.2 *BRCS/RCG concluded that the Safety department inclusion in the Operations Services organization is not consistent with industry practices and may need reassessment.*

Analysis

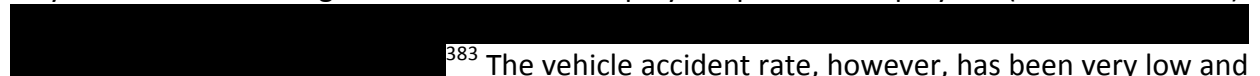
The Safety organization typically is part of the Human Resources organizations. NU has included it as part of the Operations Services organization, which also includes Engineering Services, Vegetation Management, Training, and Compliance and Corporate Transportation.³⁸¹ Since the group provides an audit, guidance, and investigative role, this alignment with a service providing organization appears to be misplaced. Additionally, with the difficulty NU and specifically YGS, is having in changing its safety culture, this organizational alignment within the operating organization could be contributing to the lack of organizational results.

Conclusion 6.8.3 *BRCS/RCG determined that the employee safety performance has not met management expectations over the past five years and varies across YGS's operating areas.*

Analysis

Employee safety is the responsibility of local supervision and each employee. It is audited and supported by the Safety Department and the Director of Safety. The approach to employee safety is the Sponsor-Target-Agent model, where the safety representative is the Agent of the operations leadership Sponsor. As a result, this Department is within the Operations Services organization. This reporting approach is different from that of most organizations where safety is part of the HR organization.

The employee safety performance (as measured by DART³⁸²) at YGS has fluctuated significantly from a low in 2010 of 2.87 per 100 employees requiring restrictive duty or days away from work to a high in 2013 of 5.27 employees per 100 employees (see table below).

³⁸³ The vehicle accident rate, however, has been very low and was cited by NU's insurance carrier, Liberty Mutual, as best-in-class. Yankee Gas received Liberty Mutual Gold Safe Driving Awards in 2009 and was recognized in 2008. On September 12, 2011, the *Northeast Gas Association (NGA)* awarded Yankee Gas an Excellence in Safety Recognition Program Award for initiatives that resulted in significantly reducing injuries.³⁸⁴

³⁸¹ Response to Data Request Q-GENERAL-01-001-SP02.

³⁸² Days Away/Restricted or Job Transfer Rate.

³⁸³ Interviews B. Bolger 10/16/14, C. Carmody 10/14/14, and CONFIDENTIAL Response to Data Request Q-EXEC MGMT-03-025, p.6 of 40.

³⁸⁴ NU website 2009-2013 Awards and Recognition.

Table 17: YGS Safety Metrics³⁸⁵

Year	DART Rate Target	DART Rate Actual	PMVA Rate Target	PMVA Rate Actual
2009	4.00	3.16	3.00	1.78
2010	2.90	2.87	1.78	3.05
2011	2.39	4.04	1.78	1.63
2012	2.77	3.97	1.61	2.38
2013	3.37	5.27	2.50	2.41
2014	3.04	3.79	2.50	2.29

OSHA DART Rates are the number of employee injuries requiring restricted duty or days away from work per 100 employees. PMVA is Preventable Motor Vehicle Accidents.

YGS’s executive team expressed concern over the poor employee safety performance. They described the problem is an aging workforce and issues associated with strains and sprains.³⁸⁶ The Safety Department has one employee assigned the responsibility for field reviews of YGS. Additional “safety blitzes” have been performed to try to identify issues with the field operations that are contributing to the poor performance.

YGS uses limited duty assignments for injured employees to reduce the impact of the injury on operations and get the employee back to work sooner. The daily tailboard discussions must include a safety review and are documented and reviewed by supervision. During the field safety reviews, 15-20% of these documents present an opportunity for safety coaching.³⁸⁷ Some of the operating locations use more formalized stretching programs and third-party contract muscle massage to prevent strain and sprain-type injuries. Additionally, the agenda for safety meetings and the posting of safety-related results vary from location to location.

NU does not use periodic safety benchmarking to identify companies with best-in-class performance. However, they have reached out to two similarly sized companies with excellent OSHA statistical performance. Both use in-house medical professionals to address medical treatment type injuries. No other external reviews have been done.

YGS is beginning to implement soft skills training for supervisors similar to what is advocated in the OSHA Partnership approach. The results are expected to improve supervisory interpersonal skills and assist in coaching employees to employee safety improvement and

³⁸⁵ Response to Data Request Q-HR-01-193.

³⁸⁶ Response to Data Request Q-KICKOFF-016, Attachment.

³⁸⁷ Interview B. Bolger 10/16/14.

awareness. Additionally, a Hazard ID program has been initiated: “See something- Fix it-Report it,” with the best catches receiving an award.

NU self-insures their workers’ compensation claims. As such, they don’t have access to the assessment tools and advisory services that a third-party insurance carrier uses to assist in improving YGS’s safety performance. Rider Mash has recently been conducting employee focus group sessions to improve YGS’s safety culture. Additionally, during the past year, the safety focus has been on engaging employees, regular communications, and table-top exercises around real safety issues recently identified in the field.

Recommendations

Recommendation 6.8.1 BRCS/RCG recommends that the Company adopt a benchmarking culture in Safety to identify top-performer practices within and outside the utility industry through both industry contact and safety consultant experts.

Recommendation 6.8.2 BRCS/RCG recommends that the Company reevaluate the organizational alignment of the Safety organization within Operation Services through a review of best practices.

6.9 Payroll Practices

Objectives and Scope

YGS’s payroll practices are consistent with industry standards. The process has a number of manual steps and is very labor intensive.³⁸⁸ Current plans to replace the time and attendance system with the capability to handle all the payroll rules associated with the labor union contract should improve the process dramatically.

Overall Assessment

The payroll practices are consistent with older utility processes with limited field force access to computers. Newer payroll software and time-capture technology may provide opportunities to eliminate manual parts of the current process and reduce the labor requirement associated with the current time collection and payroll processing.³⁸⁹

Conclusions

Conclusion 6.9.1 *BRCS/RCG found the time and attendance collection and processing practices are consistent with those of utilities having similar penetration of computers in their field operations. The time and attendance process has a number of manual steps and is labor intensive.*³⁹⁰

³⁸⁸ Interview C. Carmody 10/14/14.

³⁸⁹ Interview S. Hussey 11/3/14.

³⁹⁰ Interview C. Carmody 10/14/14.

Yankee Gas Response: The Company generally agrees with this conclusion. However, the Company does employ a mobile hand-held device, Mechanical Resource Time System (MERTS) for field employees. MERTS allows field employees to enter their time directly into the device, thus, eliminating the need for time entry clerks. MERTS is linked to the COLT system allowing supervision to approve time each week. Despite the use of MERTS, supervisors still need to manually review time codes for proper compliance with union contracts, which is time consuming.

BRCs/RCG Reply: Comment noted.

Analysis

Time, attendance, and time codes for field hourly employees are provided on paper to administrative employees for entry into COLT (Corporate On-Line Time) System. All other hourly and salaried employees who have access to computers enter their own time weekly into COLT.

Each Monday, the Payroll Department uploads the time data into the Payroll IT System. This is done directly, with minimum human interaction. The running of the payroll to produce the employees' payment is done in several steps, each with its own control or check to verify the payroll on a macro basis is in line with what was expected.

Conclusion 6.9.2 *BRCs/RCG found that supervisory review and approval process is working well and has kept the payroll errors to a minimum.*

Analysis

Supervisors are responsible for checking, correcting, and approving weekly the time data for their direct reports. Management did not express any concerns with supervisory oversight and approval of time sheets in terms of either accuracy of the time and attendance data or contributing to a delay in time sheet processing.

Conclusion 6.9.3 *BRCs/RCG determined that payroll processing of time data requires a minimum amount of data checking and correction.*

Analysis

The Manager of Payroll is responsible for the accuracy of the payroll and the timely delivery of all employee payments. He has the authority to stop or delay the process if he feels there is an accuracy problem. BRCs/RCG found that the payroll process produced a limited level of errors that required corrections.

Conclusion 6.9.4 *BRCs/RCG found the use of payroll direct deposits is high for an organization that does not require all employees to use it.*

Analysis

In excess of 90% of employees receive their payroll payment as a direct deposit. NU encourages direct deposits, but does not require it.³⁹¹ This high level means that employees, and, in particular, field employees, spend little or no time on paydays going to the bank, which could cause extended lunch periods.

Conclusion 6.9.5 *BRCS/RCG determined that the payroll and time collection system does not support efficient payroll processing.*

Analysis

The COLT system is a twenty-year old NU developed IT system. It runs on the mainframe computer and requires IT support to make any changes. In light of the IT strategy change to off-the-shelf packaged software that is not supported with in-house resources, a replacement Payroll and Time and Attendance System is under review and specification. It is being put in place in conjunction with the new HR System. Its expected in service date is January 1, 2016.

Recommendations

Recommendation 6.9.1 BRCS/RCG recommends that the Company explore opportunities to reduce the manual steps and the labor intensity in the time and attendance processing through an upgrade of the associated IT and COLT systems.

³⁹¹ Interview S. Hussey 11/3/14.

7. CUSTOMER SERVICE

Objectives and Scope

From a customer's perspective, Customer Service is the utility. The customer's satisfaction is generally driven by the credibility of employees and the quality of their results in reading the meters, rendering bills, and answering the customer's inquiries. Therefore, a review of the utility's processes and policies for meter-reading, collections, call center, billing, and new business services – and the management of its employees in these areas – is necessary. During major emergency events, such as 2012's Super Storm Sandy, Customer Service must coordinate its information on a near-real-time basis, with the Incident Command Center (ICC) or Emergency Operations Center (EOC), to provide useful, appropriate, and consistent responses to customer inquiries.

Customer-focused activities include the following:

- Customer satisfaction needs to keep pace with the current day's highly informed customers.
- Financial support programs must be adequate for poverty level customers.
- Call center service and credit and collection policies need to be aligned with the realities of the current Connecticut economy.
- Meter reading and billing accuracy need to be virtually error free.
- Customer self-service technologies (telephone, cell phone, internet, and web-based social media and "push" technologies) must be incorporated into the customer experience strategy.
- Control over customer experience recognized to reside in YGS.

To address these concerns, this chapter is divided into the following sections:

- Call Center operations
- Credit and collections and low income programs
- Meter reading and AMR
- Billing practices
- Customer satisfaction and customer experience
- Customer self-service technologies

Overall Assessment

YGS customer calls are handled through the NU Windsor Call Center along with CL&P customer calls. This call center is using best-in-class technology and techniques to provide real-time monitoring of the call center performance. The call center management effectively uses these tools to achieve the expected performance levels.

YGS's credit and collections function is integrated with CL&P processing. The credit and collections function has outsourced the handling of all collection calls. Additional opportunities exist to outsource non-core collection work. The effectiveness of the collection effort has deteriorated over the past several years as measured by the increase in YGS's residential

accounts receivable. NU uses a number of low-income programs. However, some of these programs are not available to YGS customers.

NU and YGS are using current AMR technology, and the customers are benefiting in higher accuracy rates. The Company reads 99.3% of meters on the first day of reading schedule. Exceptions relate to ERT failures or delays in meter change-out paperwork processing. These exceptions have resulted in an increase in estimated bills.

BRCs/RCG concluded that the NU billing processes are using leading practices that result in timely and accurate billing and remittance processing.

According to J.D. Power, satisfaction with residential gas utilities has improved for a third consecutive year, but there still remains a great deal of work to achieve the first quartile status its sister company, the old NSTAR Gas, enjoys. In fairness to YGS, part of the issue could be tied to CL&P's performance during Super Storm Sandy.

YGS is continually looking for ways to expand its use of self-service technologies to keep pace with the evolving customer demographic preferences.

Evaluation Criteria

The following evaluation criteria form the principal areas of investigation and the foundation for this chapter.

- To what extent did the Company implement the 2008 audit recommendations?
- Are call center performance statistics on par with those of other CT utilities?
- How are customer satisfaction metrics trending?
- Where satisfaction is below the peer group, what are the major causes for deficiency and are there plans in place to improve?
- Are there adequate financial support programs for poverty level customers?
- How has the current Connecticut economy shifted the Company's customer service and credit and collection policies?
- How as the company's AMR meters changed YGS performance in meter reading accuracy and billing?
- Are customer self-service technologies (telephone and cell phone, internet and web-based, social media and "push" technologies) being used?
- How effective are customer service and communications during major emergencies?
- How are the public messages being coordinated with other corporate functions responsible for speaking with the public?
- Does the Company have adequate systems for customer billing, accounts receivable, and collections in place to safeguard assets as well as to record, summarize, and report the financial results?

7.1 Call Center

Objectives and Scope

The Call center must be positioned to handle a wide variety of customer inquiries efficiently and effectively. Call centers must be staffed with trained customer service representatives (CSR) who understand the company policies and can offer the right level of customer empathy. Further, there needs to be a clear balance among call time, the time spent on a call with a customer, and ensuring that the customers issue are resolved to their satisfaction. For a number of years CSRs were heavily incented to complete calls in under three minutes. The results of this efficiency policy were customers making repeated calls to get the answers they needed. Enlighten utilities realized that setting an artificial efficiency time-limit on calls just created more calls, so they revised their policy to more of a “one call resolution.”

Today’s call centers rely on multiple means of handling customer inquiries, specifically, CSRs, interactive voice recognition (IVR), email, and social media. Well established call center operations drive a significant level of their calls through the automated solutions, but offer an easy way to get to a CSR, when necessary. Also, these operations have a means to escalate “problematic” calls to a higher level.

CSRs will have on-going training to ensure they possess the level of knowledge to address any customer issue and situation effectively. Management will have the ability to monitor CSR performance to ensure the level of responses meets their quality standards.

During times of emergencies, the Call center will have means to expand its call handling ability through both automated and additional CSRs.

Overall Assessment

YGS customer calls are handled through the NU Windsor Call Center along with CL&P customer calls. This call center is using best-in-class technology and techniques to provide real-time monitoring of the call center performance. The call center management effectively uses these tools to achieve the expected performance levels.

Evaluation Criteria

The following evaluation criteria focused on the call center:

- To what extent did the Company implement the 2008 audit recommendations?
- Are call center performance statistics on par with those of other CT utilities?

Conclusions

Conclusion 7.1.1 *BRCS/RCG concluded that call center function has met the intent of the 2008 management audit recommendations.*

Analysis

The 2008 Management Audit included the following recommendation:

8.1.1 Call Center Activities (Priority: Medium): NU should capture, analyze and chart call-center cost and productivity operational data to better understand and influence the costs associated with obtaining high levels of service.

Company Status as of July 31, 2014: The Customer Experience Organization monitors both costs and call center performance metrics on a monthly basis. Overall Customer Experience costs are monitored and projected on an on-going basis throughout the year. Call center performance metrics such as telephone service level, average speed of answer, and first call resolution are reviewed and monitored as necessary to ensure customers are provided a proper level of service. The Company continues to track and review this information monthly.³⁹²

BRCS/RCG believes that NU is collecting call center data and effectively using it to manage performance levels in the call center.

The performance statistics that are monitored regarding call center performance include service level (percent of calls answered within 30 seconds) and abandoned rate.³⁹³ An important distinction here is that the new post-merger Company policy is to resolve the customer's issue during the call; thus call time is measured but not used as a metric.

The call center that handles the YGS calls uses real-time call center performance monitoring. BRCS/RCG observed this operation and verified the capability and use in the active control of staffing and resources applied to call handling to meet performance objectives. This provides them the opportunity to match staffing with workflow, including telephone answering, to meet their performance metrics. Both service level and abandoned call rates have shown steady improvement over the last several years (refer to table below).³⁹⁴

8.1.2 Call Center Activities (Priority: Medium): Yankee should consider conducting an in-depth study regarding the pros and cons of expanding its appliance service contract program. The study should address appliance service contract expansion from both a company and regulatory perspective.

Company Status as of July 31, 2014: The appliance service business at Yankee Gas currently has 15,000 customers – less than the 25% target described in 2007. Growth in this business is possible, but very expensive with the high cost of labor and parts and the impact on compliance and safety related tasks assigned to the same workforce. The introduction of high efficiency equipment has added additional complexity to the business, requiring workers to be not only gas equipment experts but also knowledgeable in electrical and computer systems. The training requirement to develop this level of expertise is substantial and constant as new equipment is introduced. Finally, with the complexity of equipment the number of repair parts have increased and Yankee Gas cannot financially justify stocking this material, resulting in many customer visits becoming a multi-day event as we wait for parts to come in from

³⁹² CONFIDENTIAL Response to Data Request Q-GENERAL-01-009.

³⁹³ Response to Data Request Q-CUSTOMER SERVICE-01-224.

³⁹⁴ Response to Data Request Q-CUSTOMER SERVICE-01-224.

suppliers. These extra visits take away again from our core safety and compliance responsibility.

With Yankee’s current focus on compliance and safety activities, the company goal is to provide superior service at a reasonable cost for those customers who wish to continue their affiliation with Yankee Gas – but the company does not intend to grow the business and increase the number of complicated, high efficiency customers.³⁹⁵

BRCS/RCG believes that YGS’s decision to maintain the appliance service business at its current level and not actively grow it is reasonable.

Conclusion 7.1.2 BRCS/RCG found that the Windsor, CT, Call Center that handles YGS customer calls uses best-in-class real-time workforce management techniques and third-party call monitoring.

Analysis

The call center in Windsor, CT has a call center operations center that monitors the center’s operations against performance metrics as discussed previously. This approach to management has resulted in improving performance. The table below shows the improving performance.

**Table 18: YGS Call Center Performance Statistics
2009 - 2013 and YTD
Audit Request BRCS-01 -- Q-CUSTOMER SERVICE-01-224**

Year	Total Calls Offered	Rep Handled Calls	Tech Handled Calls	Calls Abandoned	Rep ASA	Total ASA	Ave Handle Time	Service Level (30 sec)	Percent Abandon
2009	634,545	312,020	246,016	76,509	243.1	135.9	381	65.1%	12.1%
2010	711,712	394,616	217,019	100,077	284.1	183.3	383	55.7%	14.1%
2011	679,472	445,176	217,220	17,076	49.9	33.6	352	81.9%	2.5%
2012	587,483	387,327	186,877	13,279	38.8	26.2	339	83.6%	2.3%
2013	616,179	414,646	190,150	11,383	27.9	19.2	357	85.5%	1.8%
YTD July 31 2014	365,955	255,113	104,330	6,512	20.7	14.7	381	87.7%	1.8%

Additionally, call center customer satisfaction ratings are ranging from 79 to 86% ratings over the past five years.³⁹⁶

³⁹⁵ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009.

³⁹⁶ Response to Data Request Q-CUSTOVER SERVICE-01-226.

The call center management also uses a third-party call monitoring service. The contractor scores ten calls per representative per month. The Lead Representative uses this scoring to provide developmental feedback to the representative.³⁹⁷

Additionally, the center measures, through post-transaction surveys, first call resolution results. This is a new initiative intended to boost customer satisfaction scores.

Conclusion 7.1.3 *BRCS/RCG found that the call center handling YGS customer calls expanded the number of agents capable of taking YGS calls and appropriately supplemented its staff with contract services. As a result, YGS customer calls receive the same level of answering performance as any other NU customer in Connecticut.*

Analysis

The past practice at the Windsor Call Center was that a subset of agents was trained to handle YGS calls. YGS calls were routed to these agents. Following the outsourcing of in-bound collection calls, the call center increased the number of agents in the call center by training the former agents working on collections to handle both electric and gas customer calls. The center's management also used the integration of the collection agents as an opportunity to cross-train all agents to handle both YGS and CL&P calls. Additionally, the call center has the technical capability to transfer overflow customer calls to either another NU call center or a contract call center.³⁹⁸ This has resulted in additional resources available to handle YGS calls.

Conclusion 7.1.4 *BRCS/RCG found that the call center has a process in place to ensure YGS emergency customer calls are immediately routed to the dispatch organization irrespective of the call volume being handled by the call center.*

Analysis

All gas and emergency calls are received by the IVR and once the customer designates that the call relates to an emergency, the call is routed directly to the gas operations dispatch organization. In the case where a customer call does get to an agent, the agent makes the transfer to the dispatch organization. The agent then personally verifies receipt of the call, closing the emergency call loop.³⁹⁹

Recommendations

BRCS/RCG has no recommendations for this audit item.

³⁹⁷ Interview T. Simas 10/15/14.

³⁹⁸ Interview C. Mahan 10/24/14.

³⁹⁹ Interview C. Mahan 10/24/14.

7.2 Credit & Collections and Low-Income Programs

Objectives and Scope

A separate group of approximately seventy-five agents at NU's Windsor Call Center handle YGS's collections. YGS's collection process is integrated with the CL&P collection process. YGS field collections activities are the responsibility of the Meter and Service Department. Field collectors do not take payments but rather direct or connect customers to a payment resource for payment or payment arrangement to prevent a shut-off of service. All low-income programs are developed and administered by the credit and collections organization.

Overall Assessment

YGS's credit and collections are integrated with CL&P processing. The credit and collection function has outsourced the handling of all collection calls. Additional opportunities exist to outsource non-core collection work. The effectiveness of the collection effort has deteriorated over the past several years as measured by the increase in YGS's residential accounts receivable. NU uses a number of low-income programs. However, some of these programs are not available to YGS customers.

Evaluation Criteria

The following evaluation criteria focused our investigation and foundation for this assessment:

- Are there adequate financial support programs for poverty-level customers?
- How has the current Connecticut economy shifted the Company's customer service and credit and collection policies?

Conclusions

Conclusion 7.2.1 *BRCS/RCG concluded that the credit and collections policies and practices are innovative and administered to take into account the current realities of the Connecticut economy. However, opportunities exist to improve collection effectiveness.*

Analysis

The credit and collections process contains three aspects:

- Channels and tools for reaching customers
- Continuous improvement efforts of the credit and collection process
- Eroding collections

In this regard, NU's collection practices have focused on these three elements as discussed further below. The results over the past 5 years have been mixed.

Table 19: Credit and Collections Results⁴⁰⁰

2009		2010		2011		2012		2013		2014	
Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars
15,563	\$2,501,340	18,177	\$2,756,364	17,853	\$2,854,107	17,577	\$2,963,300	15,922	\$2,683,196	16,627	\$1,874,304
8,327	\$1,572,552	6,773	\$893,085	6,476	\$852,710	7,396	\$1,017,332	7,329	\$1,055,367	6,032	\$976,425
3,374	\$608,316	3,704	\$590,098	3,340	\$527,138	3,668	\$609,962	3,798	\$672,453	3,595	\$778,755
12,481	\$13,295,008	9,512	\$9,233,518	8,925	\$8,729,686	9,803	\$8,479,692	11,122	\$10,249,856	14,864	\$14,592,110
39,745	\$17,977,216	38,166	\$13,473,065	36,594	\$12,963,641	38,444	\$13,070,286	38,171	\$14,660,872	41,118	\$18,221,594
Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars
2,422	\$2,581,101	2,541	\$1,113,443	1,835	\$1,102,857	1,901	\$534,433	1,997	\$625,060	2,177	\$506,902
976	\$293,474	807	\$312,761	372	\$168,305	433	\$88,148	466	\$82,462	377	\$122,834
437	\$413,034	190	\$186,424	130	\$94,262	202	\$227,224	160	\$126,505	128	\$76,360
1,411	\$3,839,524	437	\$1,873,744	253	\$1,961,585	296	\$1,109,650	214	\$1,128,564	341	\$537,603
5,246	\$7,127,133	3,975	\$3,486,372	2,590	\$3,327,009	2,832	\$1,959,455	2,837	\$1,962,591	3,023	\$1,243,699
Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars	Account	Dollars
17,985	\$5,082,441	20,718	\$3,869,807	19,688	\$3,956,964	19,478	\$3,497,733	17,919	\$3,308,256	18,804	\$2,381,206
9,303	\$1,866,026	7,580	\$1,205,846	6,848	\$1,021,015	7,829	\$1,105,480	7,795	\$1,137,829	6,409	\$1,099,259
3,811	\$1,021,350	3,894	\$776,522	3,470	\$621,400	3,870	\$837,186	3,958	\$798,958	3,723	\$855,115
13,892	\$17,134,532	9,949	\$11,107,262	9,178	\$10,691,271	10,099	\$9,589,342	11,336	\$11,378,420	15,205	\$15,129,713
44,991	\$25,104,349	42,141	\$16,959,437	39,184	\$16,290,650	41,276	\$15,029,741	41,008	\$16,623,463	44,141	\$19,465,293

BRCS/RCG found that NU is using a wide range of collection practices—outsourced, in-house, and automated resources—to address the increased number of delinquent accounts.

All in-bound customer collection calls are handled by a third-party call center or by using the IVR for a payment arrangement. Outbound collection calls are still handled in-house.⁴⁰¹

The Company provides a dedicated credit and collections team to collect past due balances and assist customers with options to pay arrearages via payment plans and an arrearage forgiveness program. Dedicated residential & business call centers are established to assist customers with billing questions and provide information on energy efficiency and programs.

Security deposits may be requested and collected, based on the evaluation of customers’ ability to pay, from both residential and commercial customers in order to mitigate the impact to bad debt. At account initiation, commercial customers may be required to pay a security deposit. Both commercial customers and residential customers may be required to pay a security deposit as terms of a credit reconnection of service. Customers may also be required to pay a security deposit when they have three or more consecutive unpaid bills. All deposits may be held until the customer demonstrates twelve consecutive months of good payment

⁴⁰⁰ Response to Data Request Q-CUSTOMER SERVICES-04-004.

⁴⁰¹ Interview: S. Eberman 10/24/14.

history. Residential customers that have verified financial hardship may have their deposit waived or refunded.

The Company provides outreach to customers via bill inserts, letters, calling campaigns, events, and referrals to Community Action Agencies (CAA) to educate customers on additional resources available to them, to code the customer's account hardship, and to enroll the customer into an arrearage forgiveness program.

Accounts that meet the criteria established in CT Title 16, Sec. 16-262c "Termination of utility service for nonpayment" are routed through the Company's disconnect process which uses both a disconnect notice and outbound calls to attempt customer notification of the potential for disconnect due to nonpayment and to allow the customer to make payment on their account. Customers who do not make the required payment, or are ineligible for a payment plan, or decline a payment plan or participation in the Matching Payment Program, and continue to meet the requirements for service termination set in Sec.16-262c, may have their gas service interrupted.

In cases where the regulations do not permit the termination of service due to nonpayment, the Company may pursue legal action to remedy the arrearage. In cases where access to the Company's equipment may not permit the termination of service due to nonpayment, the Company may attempt to terminate service at the street, if applicable, or move Company equipment to a location where it is accessible.

When a customer's service ends, the Company issues a final bill to the customer. Should the account remain unpaid, an outbound call is placed that enables customers to make their payment through the Company's IVR either during or subsequent to the call. If these attempts to secure payment are unsuccessful, the final billed account is transmitted to the early placement/pre-write off collection agency.

If the early placement agency is unsuccessful in its collection efforts, the account is written off 120 days after the final bill date. Once the account is written off, it is forwarded to the primary stage collection agency to continue collection attempts.⁴⁰²

BRCS/RCG found that NU is continuously seeking innovative and reasonable methods to improve its credit and collection effectiveness. Over the last several years, the Credit and Collections organization has taken actions to improve collections performance through enhanced processes, technology initiatives, and strategic staffing with the overall goal of reducing bad debt expense.

In 2010, NU embarked on a long-term initiative to implement strategies and actions to improve collections performance in the following ways:

- Minimizing risk through effective account set up processes
- Optimizing payment arrangements/options
- Leveraging the disconnect process

⁴⁰² Response to Data Request Q-CUSTOMER SERVICE-01-229.

- Maximizing recovery on late-stage and written-off accounts

Effective Account Setup: As new customers establish service with YGS, an identity verification process is in place to ensure that the Company has accurate records and mechanisms in place to mitigate potential fraud. In 2010, the Company partnered with Experian, one of the three major credit bureaus, to implement a robust ID verification process to confirm a customer’s identity. In addition, a secondary process was put in place to validate customer identification for those customers that did not have a credit report on file with Experian, referred to as “unbanked” customers. This process increased the percentage of positively verified customers from 74% to 85%.

Managing Customer Delinquency: YGS created an internal credit risk scoring model that uses the customer’s unique account history and payment performance in order to better match collections to the specific customer.

In addition to collecting security deposits on commercial customers, in 2012, YGS began collecting deposits for non-hardship residential customers that had been shut off for nonpayment. The Company holds the residential customer’s deposit for a period of 12 months, assuming they maintain on-time payments during this period, consistent with the process in place for commercial accounts. A refund is issued to the customer at the end of this period. Should the customer become delinquent and have service disconnected, the deposit is applied to the delinquent balance, mitigating any further impact to the Company’s bad debt expense.

To improve the payment arrangement success rate, the Company developed a standardized approach for payment arrangement terms based upon the customer’s individual circumstances and payment history.

The Company also implemented an automated outbound calling campaign that contacts disconnect-eligible customers at least twice before the disconnect order is sent to the field. This process, known as “Press 1 to Pay” allows the customer the opportunity to make a payment in the IVR either at the time of the call or subsequent to it, and eliminate service interruption. Given the success of this technology, the approach was expanded to customers with unpaid final bills, with broken payment arrangements, and in the Matching Payment Program. Credit representatives also perform manually dialed calls to delinquent commercial customers early in the disconnect process to establish payments/payment arrangements and avoid service disconnection.

Leveraging the disconnect process: Historically, credit representatives manually reviewed and selected accounts for disconnect on a daily basis. To improve efficiency, technology enhancements have been implemented to automate the generation of field disconnect orders, thereby enabling credit representatives to better service inbound/outbound customer calls, handle sensitive and hard to access locations, and pursue alternate collection actions, including legal collections.

To address hard-to-access/“can’t get in” (CGI) locations, a comprehensive process was implemented that focused on identifying chronic CGI locations, contacting landlords, relocating meters from inside to outside, and pursuing legal solutions for these locations.

Maximize Recovery on Late Stage and Written-Off Accounts: To maximize recovery on unpaid final bill and written off accounts, in 2010, the Company conducted an extensive search for third-party collection agencies that would yield increased recoveries on inactive customer accounts. A tiered approach to collections on these accounts begins with a pre-write off (early placement) collections stage, focusing on unpaid final bills. If this agency is not successful in recovering the unpaid balance, the account is written off and sent to the next outside agency for collections following a pre-determined path (primary, secondary, and late stage) until the account reaches the statute of limitations on collections. A dedicated analyst oversees and manages the third-party agency process.

The Company also uses a legal collections process for situations where this approach might be more successful, including chronic CGI customers that refuse to provide the Company with access to the meter, receiverships, medical customers that have the means but refuse to pay, etc. Several outside legal firms are retained for this scope of work.

In early 2014, a software solution was implemented to aid in the overall collection agency management process. Work is underway to leverage this tool for managing the legal collections portfolio as well.

Collections Call Management: In early 2014, the Company initiated a partnership with a third-party collections expert to handle credit-related collections calls. This arrangement provides flexibility to implement new business solutions using the latest technology, while engaging experts who specialize in credit-related work. Engaging a credit third-party partner allows the Company to increase its focus on customer care transactions, reduce costs, and help the credit team focus on managing those customers that require special handling.

Continued investment in and training for internal resources will occur for a variety of value-added services such as business centers, live chat, social media response, hot-line team, new customer connections, energy management solutions, and distributed generation.⁴⁰³

Conclusion 7.2.2 *BRCS/RCG found that the effectiveness of collections of YGS residential accounts has deteriorated over the past several years and opportunities exist to further outsource non-core collection activities to provide resources for core collection activities to improve collections.*

Analysis

The account receivable (A/R) balances for YGS's residential customers have increased from approximately \$13 million at the end of 2011 to \$18 million through 10 months of 2014. The 2014 A/R balance has improved in 2014 from the \$22 million level at the end of July.⁴⁰⁴

⁴⁰⁵

⁴⁰³ Response to Data Request Q-CUSTOMER SERVICE-01-231.

⁴⁰⁴ Response to Data Requests Q-CUSTOMER SERVICE-01-230 and –Q-CUSTOMER SERVICES-04-004.

⁴⁰⁵ CONFIDENTIAL Response to Data Request Q-CUSTOMER SERVICES-04-005.

The non-core collection activities are currently being reviewed to identify functions that may be more effectively performed through an outsourced arrangement. These functions represent approximately 45 FTEs of work. This transition will require IT process and C2 system change support.

⁴⁰⁶

Conclusion 7.2.3 *BRCS/RCG concluded that NU uses a wide variety of low-income programs to assist qualifying customers in paying and staying current with their bill payments. However, not all of these programs have been made available to YGS customers.*

Analysis

Pursuant to Connecticut General Statutes §16-262c (b)(5), all Connecticut utilities file an annual joint Arrearage Forgiveness Program. This filing describes the companies' special payment plans for qualifying customers struggling with their bills. YGS participates in Matching Payment Program (MPP) as described in the joint filing.⁴⁰⁷ YGS does not currently have a NUSstart program, but Customer Care is looking into expanding the program to YGS customers in the future.⁴⁰⁸

Recommendations

Recommendation 7.2.1 BRCS/RCG recommends that NU should continue to pursue the identified collection improvement opportunities to reduce the number of YGS accounts in arrears.

Recommendation 7.2.2 BRCS/RCG recommends that consideration should be given to expand the use of the NUSstart program to YGS customers.

7.3 Meter Reading and AMR

Objectives and Scope

YGS's Meter Reading is part of a combined operation with reading CL&P electric meters. Meters are read automatically using the ITRON MVRS through drive-by radio frequency technology.

Overall Assessment

NU and YGS are using current AMR technology and the customers are benefiting in higher accuracy rates. The Company reads 99.3% of schedule. Exceptions relate to ERT failures or delays in meter change-out paperwork processing. These exceptions have resulted in an increase in estimated bills.

⁴⁰⁶ CONFIDENTIAL Response to Data Request Q-CUSTOVER SERVICES-04-007.

⁴⁰⁷ Response to Data Request Q-CUSTOMER SERVICES-04-002.

⁴⁰⁸ Response to Data Request Q-CUSTOMER SERVECES-01-232.

Evaluation Criteria

The following evaluation criteria focused on meter reading and AMR:

- To what extent did the Company implement the 2008 audit recommendations?
- How have the Company's AMR meters changed YGS performance in meter reading accuracy and billing?

Conclusions

Conclusion 7.3.1 *BRCS/RCG concluded that YGS has met the intent of the 2008 Management Audit recommendations. However, recent performance requires further focus on field practices that are contributing to an increase in estimated bills.*

Analysis

The 2008 Management Audit included the following recommendation:

8.3.1 Meter Reading (Priority: Medium): Yankee should consider conducting an in-depth study of the causes and potential remedies for the rapidly escalating number of transactions associated with gas meter rebills.

Company Status as of July 31, 2014: In 2008 a new Customer Central billing system (C2) was implemented. As a result of the new system, tracking and edit checks were tightened allowing quicker review of accounts and possible meter issues. The Billing department tracks daily any account that has not billed on cycle and works closely with district offices to insure proper metering/equipment is in place or repaired for accurate billing.⁴⁰⁹

The re-bills issue has been resolved. However, “no reads” continue to cause delays in billing or estimated bills being issued. The number of “no reads” that drive billing delays or estimated bills were reduced following the implementation of C2 System. In 2009, the percent of estimated bills was 0.64%. This percentage was reduced to 0.3% by the end of 2012. However, the percent of estimated bills has increased to 0.53% through the end of July 2014. Field response to ERT failure and timely processing of meter changes has contributed to this erosion in performance.

Conclusion 7.3.2 *BRCS/RCG concluded that the meter-reading function accurately reads most meters on their appropriate cycle. However, the number of estimated bills has increased over the last two years due to “no reads” and requires a review of the field activities that are contributing to this reduction in performance.*

Analysis

The meter reading function reads all residential meters and all but 6000 daily demand meters using Encoder Receiver Transmitters (ERTs) and drive-by technology. These demand

⁴⁰⁹ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009.

meters are read using analog telephone lines.⁴¹⁰ The Company reads 99.3 % of the ERT meters schedule. The target is 99.1%.⁴¹¹

Barriers to on-time reading are ERT failures and delayed processing of meter change-out paperwork. The meter-reading function does not perform either of these functions.

Any failures to read a meter on-time will result in an estimated bill. Estimated billings have been found to be a customer “dissatisfier” in other utilities. Estimated billings for YGS have increased from 0.33% in 2011 to 0.53% in 2013 of total bills. Through July 2014 the rate is still at the 0.53% level.⁴¹²

Recommendations

Recommendation 7.3.1 BRCS/RCG recommends that the Company ensure that the processes for identifying and prompt repairing of failed ERTs are efficient and timely. Further, the timely data updating associated with meter change-outs should be reviewed for improvements that contribute to lowering the number of estimated billings due to “no reads.”

7.4 Billing Practices

Objectives and Scope

The three components to billing practices are billing, bill printing, and bill and remittance processing. YGS's customer billing is done through NU's “C2” customer service system (CIS). Billing performs the bill calculation and produces the billing data. Bill printing ensures the bills are printed on time and accurately. Bill and remittance processing advances the customer payments and associated deposits of this cash to NU banking accounts.

Overall Assessment

BRCS/RCG concluded that the NU billing processes are using leading practices that result in timely and accurate billing and remittance processing.

Evaluation Criteria

The following evaluation criterion focused on meter reading and AMR:

- How have the Company's AMR meters changed YGS performance in meter reading accuracy and billing?

Conclusions

Conclusion 7.4.1 *BRCS/RCG found that most bills are printed within one day of the meter reading.*

⁴¹⁰ Response to Data Request Q-CUSTOMER SERVICE-01-233.

⁴¹¹ Interview D. Comer 10/15/14.

⁴¹² Response to Data Request Q-CUSTOMER SERVICE-01-234.

Analysis

YGS's billing is processed by NU's Windsor Center. The meter data is uploaded to the C2 system each day of the meter reads. That night the billing calculation is processed, and the bills are printed the following day and mailed. The bills are printed and inserted for mailing in-house. As discussed in section 7.3 Meter Reading above, the major cause of delayed billing is that meter reading data is not available at the time of bill calculation. There has not been a study completed to determine if there is any value to outsourcing the bill printing and mailing operations.⁴¹³ All billing changes in both format and bill calculations are tested by the Strategy, Technology, and Support Department.

Conclusion 7.4.2 *BRCS/RCG found that the bill and remittance processing is using industry leading practices, resulting in timely and accurate customer payment cash processing.*

Analysis

NU uses three methods to receive customers' payments: lock boxes for check payments; online programs for payments using credit cards, ACH, and EFT; and walk-in centers for customer cash payments. Third-party contractors provide all of these methods. The customer payment cash is balanced twice a day against the bill processing data.⁴¹⁴

Recommendations

Recommendation 7.4.1 BRCS/RCG recommends that the Company perform a study to determine if there is a more cost-effective solution to in-house bill printing, inserting, and mailing.

7.5 Customer Satisfaction and Customer Experience

Objectives and Scope

Customer satisfaction is a key performance indicator for many utilities when combined with safety, profitability, and ROE. Many gas utilities use the J.D. Power company survey for gas utilities. The survey has now been used in the industry for thirteen years. This survey tests six aspects of a customer's experiences, including billing & payment, price, corporate citizenship, communications, customer service, and field service.

Overall Assessment

According to J.D. Power, satisfaction with residential gas utilities has improved for a third consecutive year:

Although average gas bill amounts have increased due to the colder-than-usual winter, natural gas utilities have offset the negative effect by improving engagement with their customers," said Andrew Heath, director of the energy practice at J.D. Power. "That

⁴¹³ Interview: L. Carloni 10/15/14.

⁴¹⁴ Interview: L. Carloni 10/15/14.

engagement isn't just about the bill and responding to customer service questions, but it's also about effective communication on topics that matter to customers and demonstrating leadership in the local community.⁴¹⁵

Evaluation Criteria

BRCS/RCG applied the following evaluation criteria to the customer satisfaction and customer experience review:

- How are customer satisfaction metrics trending?
- Where satisfaction is below that of the peer group, what are the major causes for deficiency and are there plans in place to improve?
- How effective are customer service and communications during major emergencies?
- How are the public messages being coordinated with other corporate functions responsible for speaking with the public?

Conclusions

Conclusion 7.5.1 *BRCS/RCG concluded that YGS has trended flat in their J.D. Power Customer Satisfaction ratings and stayed in the middle of their regional peers' rankings. Management has a good understanding of where YGS ranks according to each of the six criteria and has put in place similar management practices as those that advanced NSTAR Gas from 3rd quartile to 1st quartile in the same period.*⁴¹⁶

Analysis

YGS's customer operations leadership and their team have focused on those elements where YGS lags their peers to improve the overall satisfaction. YGS lags the regional average in the areas of billing, payment, and corporate citizenship. They are at the average point for price, and in the first or second quartiles for customer service (1st quartile), field service (1st quartile), and communications (2nd quartile). It is difficult to identify in one year why there is much movement in any direction. In the same year, with comparable management practices, NSTAR Gas moved from 3rd quartile to 1st quartile. There is a concern on the part of YGS management that these lower satisfaction ratings may, in part, be influenced by YGS's sister company, CL&P's performance during Super Storm Sandy.

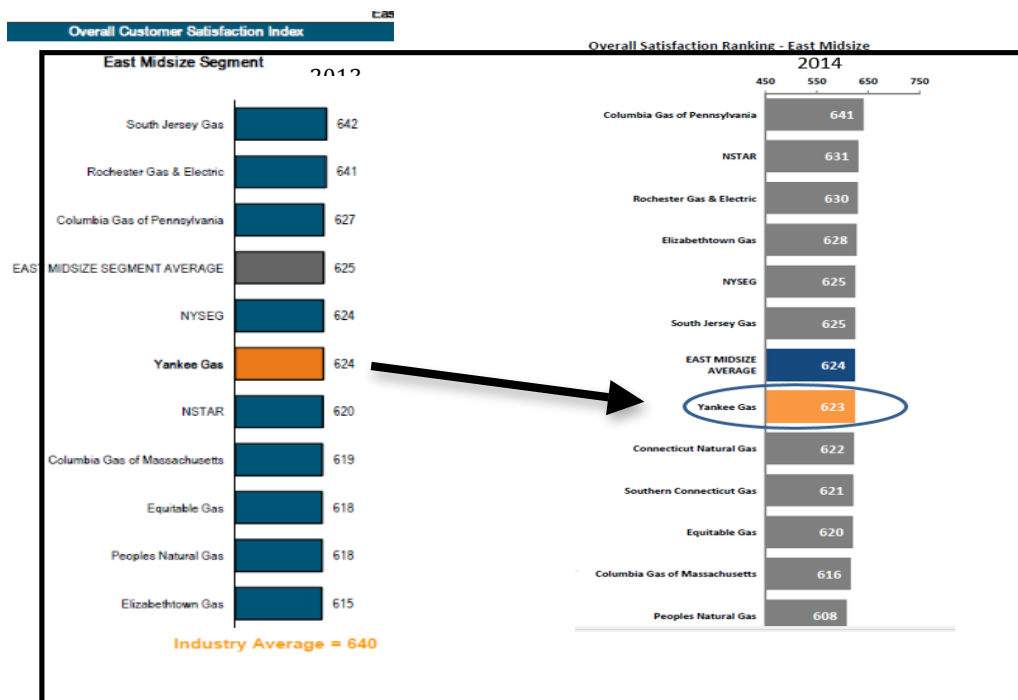
Management is staying very focused on the quarterly results and looking at the more detailed questions raised on the surveys to better understand how customers feel about YGS. In any given year or set of quarters, without anything major happening, it is difficult to discern what causes much change in satisfaction levels overall or even within a category.⁴¹⁷ Additionally, YGS customer service has been conducting after-call surveys with customers to identify any movement in sentiment in a much shorter period than quarterly.

⁴¹⁵ [JD Power Gas Utility 2014 Results.](#)

⁴¹⁶ Response to Data Request Q-CUSTOMER SERVICE-03-019, Attachments 1, 2, 4, and 5.

⁴¹⁷ Interview P. Conner 10/15/14.

Figure 9: Overall Customer Satisfaction Index⁴¹⁸



Conclusion 7.5.2 BRCS/RCG found that, in 2013, overall customer satisfaction lags the regional peer group average by 2.5%. In 2014, YGS moved to the regional average for the East Midsize gas companies.

Analysis

YGS lags the regional averages in two areas: corporate citizenship and billing and payments.⁴¹⁹ Within the corporate citizenship category, BRCS/RCG found that NU has satisfactory programs in areas such as charitable and civic involvement, energy efficiency and environmental programs, and maintenance of a safe gas system. YGS customers must not be aware of these programs or tie them to the YGS brand.

The three main areas within the billing and payments category that are in the lower 3rd or 4th quartiles regard the presentation of the bill: usefulness of the information, finding the exact amount to pay, and finding the payment due date. These all relate to the bill’s layout and presentation. Bill payment options were on par with other regional gas peers.

The customer operations team is building out a Digital Roadmap⁴²⁰ that focuses on continually improving the customer experience and moving the organization from one that is reactive to one that is proactive. The report determined that the Digital Customer Experience could influence up to 54% of customer satisfaction areas.⁴²¹ The initial phase, culminating in

⁴¹⁸ Response to Data Requests Q- CUSTOMER SERVICE -03-019 Attachment 2, page 1, and Q- CUSTOMER SERVICE -03-019 Attachment 5, page 1.

⁴¹⁹ Response to Data Request Q-Q- CUSTOMER SERVICE -03-019, Attachments 5.

2015, will be to consolidate corporate websites for the different Company brands to a single one with the most requested customer interactions easily found and simple to use. Subsequent phases will continue to enhance digital channels, including web chat, eNewsletters, and mobile.

Conclusion 7.5.3 While *BRCS/RCG was not aware of any major emergencies since the merger, the organization appears to be well positioned for any such event.*

Analysis

BRCS/RCG conducted many interviews within the Corporate Relations and Customer Operations groups and heard of no reason for concern regarding emergency customer service or communications. Discussions were held about NU electric company outage communications and customer service, and we expect that those practices are sufficient for supporting a major gas event.

Conclusion 7.5.4 *BRCS/RCG found that YGS coordinates across functions in speaking with the public in the areas of public events, corporate activities, energy conservation, and safety.*

Analysis

Corporate relations coordinates message development and delivery (see External Relations chapter) across the corporation by working with the customer-facing groups, such as customer service, energy efficiency, community relations, gas operations, and corporate communications. Promotions and public announcements posted by the Company were reviewed for the recent past and are clear and timely. As some customers (a subset choosing unsatisfied on survey instruments such as J.D. Power) appear to be unaware of YGS/NU programs in which they have an interest, the Company needs more focus on where customers may go to get information and when they are most likely to see it.

Recommendations

Recommendation 7.5.1 BRCS/RCG recommends that the Company conduct a re-design of the residential bill to help customers more quickly identify the amount due, when the payment is due, and other information on the bill. Simplifying the bill may raise the satisfaction level and may reduce some inbound phone calls regarding information on the bill that is unclear.

Recommendation 7.5.2 BRCS/RCG recommends investigating bill presentation technologies that may include personalized messaging and a digital pathway to other NU/Yankee resources available through the website, social media, or future technologies. Creating an enhanced eBill with not only similar redesign as mentioned above, but also with an interactive capability (taking advantage of YGS's high customer adoption rate for eBills), will continue to make this option attractive to customers for lowering printing and distribution costs.

⁴²⁰ Response to Data Request Q- CUSTOMER SERVICE -03-013, NU Digital Roadmap Overview.

⁴²¹ Response to Data Request Q- CUSTOMER SERVICE -03-013, NU Digital Roadmap Overview.

Recommendation 7.5.3 BRCS/RCG recommends that YGS conduct deeper research to gain customer insight into where their customer base gets information about corporate citizenship and other Company programs. As part of understanding where they will be exposed to this information, it will also be valuable to understand when the best time for them to receive it is. The research should seek to understand how the information might be delivered, in addition to traditional methods, looking at social media, text, and other digital channels. This could raise awareness and improve customer satisfaction with the corporate citizenship survey questions as well as expose them to more utility programs that would be of value to them.

Recommendation 7.5.4 BRCS/RCG recommends more comprehensive, proactive notifications be offered to customers via their channel preference (e.g., social media, text, outbound calls, and/or email) to provide personalized notifications of interruptions of service, financial alerts and confirmations, and usage alerts as available. Providing proactive alerts builds value in the utility and further expands self-service adoption, while providing the customer the feeling that they are being cared for by the utility.

7.6 Customer Self-Service Technologies

Objectives and Scope

Most, if not all, industries today have provided and continue to provide their customers with many options for handling their requests and transactions. As the younger generations' preferences change, it is important for service providers to offer simple, consistent, and effective transactional support through newer self-service channels, such as mobile technology, text, web sites and social media in addition to the more traditional channels of a centralized call center and IVRs.

Overall Assessment

YGS is continually looking for ways to expand its use of self-service technologies to keep pace with the evolving customer demographic preferences.

Evaluation Criteria

The following evaluation criterion focused on self-service technologies:

- Are customer self-service technologies (telephone and cell phone, internet- and web-based, social media and “push” technologies) being used?

Conclusions

Conclusion 7.6.1 *BRCS/RCG found that NU and YGS are well positioned for continuing to expand their self-service technologies to improve their customers' experience and hold expenses in check.*

Analysis

YGS residential customers are in line with NU customers in handling 58% of their transactions via the web in 2014. This number is expected to rise to nearly 70% by 2025.⁴²² These numbers are up from 2002 when 74% of the transactions were via the phone. CSR-handled transactions in 2014 have now dropped to 22% of total transactions.⁴²³ One of the digital roadmap's guiding principles projects that they will offer five channels "exquisitely well."⁴²⁴ The five core digital channels include the Web, Mobile Apps, Mobile Web, Text, and IVR/Call Center.

The remaining guiding principles are well thought out and put in place a good direction for extending a customer's most requested transactions onto newer, self-service channels that are more convenient for them.

All of these channels are either in place or under development. Additionally, social media channels in place include Twitter, Facebook, and YouTube.

Recommendations

BRCS/RCG has no recommendations for this audit item.

⁴²² Interview J. Cain 10/16/14.

⁴²³ Interview P. Conner 10/15/14.

⁴²⁴ Response to Data Request Q- CUSTOMER SERVICE -03-013, NU Digital Roadmap Overview.

8. EXTERNAL RELATIONS

Objectives and Scope

The review of external relations focused on the effect of YGS's management of the methods by which YGS relates to its various stakeholders (i.e., customers, regulators, communities, media, and investors) in the fulfillment of corporate goals and objectives.

The examinations assessed media relations, corporate communications, regulatory affairs, and governmental relations groups and their contributions to the effectiveness of external relations. The assessment included a review of messages placed in the public domain through various channels currently in use.

External relations has seen an unprecedented change in just the last five years as social media moved from being an amusing diversion to a requisite for communicating with the Company's external stakeholders. Customers, policymakers, and investors have come to expect highly accurate and consistent information instantly when critical events occur, and utilities now need to provide near real-time information to their customers, investors, and policymakers. Providing real-time information goes well beyond the external relations function and now touches every operating unit in the company. Disasters like 2012's Super Storm Sandy highlight the importance for continually updating the various public and governmental agencies. Additionally, the current nature of much heavier proactive communications and promotions with customers includes taking into consideration areas such as energy efficiency programs, how/where to pay bills, and corporate citizenship. These types of messages and promotions are prime candidates for leveraging social media campaigns along with the more traditional awareness-building methods of billing inserts, web pages, and call center interactions.

Media relations, corporate communications, regulatory affairs, and governmental relations for all NU operating companies, including YGS, function under the centralized management of NU Corporation's Senior Vice President of Corporate Relations.⁴²⁵

Overall Assessment

YGS demonstrates effective management of timely message development, administration, and distribution both externally and to employees. Media relations manages message distribution across many of the traditional channels of communications, such as the call center, physical documents, and mass media, but also has begun to take advantage of newer channels by which younger customers seek more timely information, including social media and corporate websites. Since these functions were centralized post merger, more experienced management and competent resources now support YGS customers across geographies (with specific community responsibilities). However, more work on external relations' effectiveness remains to be achieved, as reported in the Customer Satisfaction section of the Customer Services chapter. While NSTAR has moved into the first quartile of JD

⁴²⁵ DR – Q-01-001 Attachment 1 – Corporate Organization Chart

Power's satisfaction survey results, YGS remains in the third quartile in part due to poor ratings on corporate citizenship.

Evaluation Criteria

BRCS/RCG applied the following evaluation criteria to the external relations review:

- Does the media strategy address all channels of communications and are they tied to specific external stakeholders?
- Does the Company make adequate use of social media tools to keep its investors, customers, and policy-makers informed?
- How are non-external relations business operations incorporated into the external relations strategic plan?
- Are employees fully aware of the significance of providing near real-time information and properly incented to do this as part of their jobs?

Conclusions

Conclusion 8.1.1 *BRCS/RCG found that YGS, working as a part of the NU Corporate Relations group, creates messages and coordinates their distribution across all channels of communications, working in conjunction with other YGS and NU organizations.*

Analysis

Media Relations has developed good relationships with media in their selected markets and seeks them out not only during major events, but also in non-critical times to develop relationships and trust. By doing this, they are able to control the story and delivery of most information before the media asks for it.

Corporate communications coordinates well with the media relations team and other corporate functions as well to deliver these messages via the websites, internally to other customer-facing organizations, and even directly to employees through various channels to ensure coordinated messaging both externally and internally.

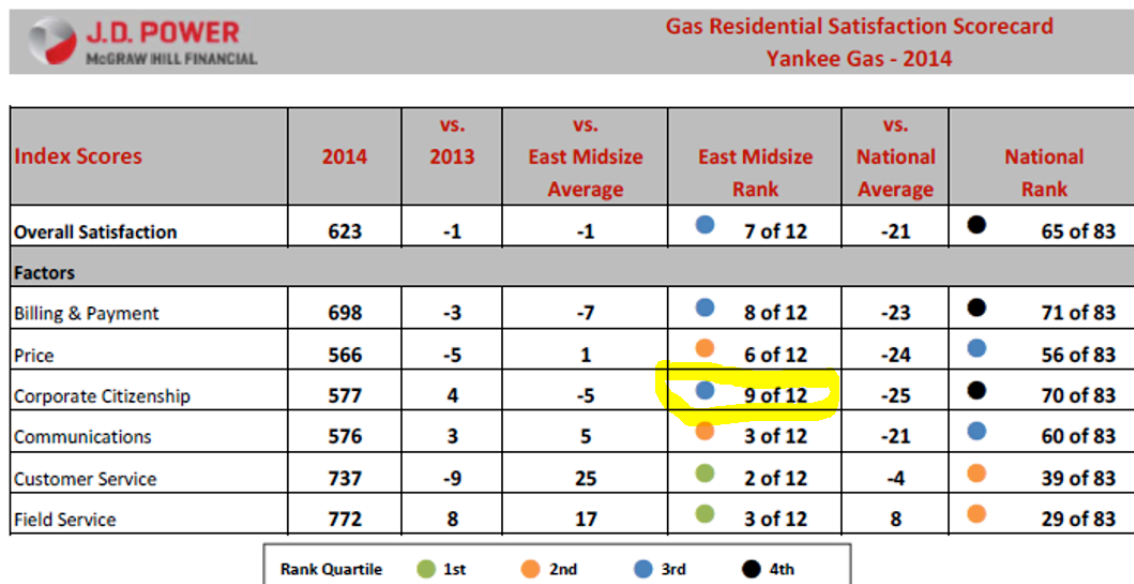
Community and government relations⁴²⁶ coordinates distribution within the state of Connecticut to regulators, governmental agencies, municipalities, and communities as needed. This function has pre-assigned contacts by state and geography in order to build relationships for providing trusted input during large-scale events and collaborating on larger projects, such as gas pipeline when centered in a specific geography.

As reviewed in the Customer Satisfaction section of the Customer Services chapter, a few of the dissatisfying experiences expressed in the JD Power survey were in regard to

⁴²⁶ Interview J. Hunt 11/20/14.

Corporate Citizenship. These included low satisfaction with or low awareness of the corporation’s charitable efforts, energy efficiency programs, and other community efforts.

Figure 10: J.D. Power Gas Residential Satisfaction Scorecard - YGS⁴²⁷



Conclusion 8.1.2 BRCS/RCG found that YGS, in conjunction with NU Corporate Relations, has put in place good social media tools to keep its stakeholders informed. This is accomplished through consistent collaboration across relevant YGS departments to craft effective messages for external delivery, advance YGS’s best interests where possible, and assist customers when the opportunity arises.

Analysis

To assess the use of Social Media within the Yankee Gas customer base, BRCS/RCG conducted in-depth interviews with Corporate Relations executives; reviewed documents requested from and provided by the Company; and reviewed corporate websites, YGS/NU social media channels, and the messaging/postings of those sites.

Since the merger, media relations has taken a proactive approach in managing the external messages being delivered for Yankee Gas, whether during an outage, regarding gas expansion, or in promoting programs and energy-efficient ideas. Prior to the merger, the approach had been more reactive, waiting on the media or customers to request information directly. A proactive approach takes control of the story by initiating the flow of information from the company, developing the story that the utility wants to tell.⁴²⁸

The media relations team has assignments among the various communities throughout Connecticut and with the key media contacts in each community. Working with community

⁴²⁷ Response to Data Request Q- CUSTOMER SERVICE -03-019 Attachment 5.

⁴²⁸ Interview C. Pretyman, 10/15/14.

relations within NU, the team develops critical messages during emergencies or promotional messages and delivers them to authorities or media contacts in measured, timely fashion.

When communicating with customers, the Company employs a synchronized line of thought in its message development, which is communicated across the Company as well as delivered externally for promotional information or situational updates as needed. In addition to the traditional media, messages are delivered through call center leadership to ensure Customer Service Representatives provide a unified message. Additionally, the Company broadcasts these messages via social media channels, at present Twitter and Facebook,⁴²⁹ to those customers who have followed or “liked” the YGS and/or other NU sites. The messages delivered include the following topics and have been provided on a regular, but not overwhelming, basis in 2014:

- Energy efficiency/conservation messages
- How-to videos for the homeowner
- Gas safety year round or seasonally
- Corporate announcements, such as office openings or senior positions
- Utility programs and services available
- Yankee in the news, i.e., Wilton expansion posts

Corporate NU has used social media across all of the operating companies, developing the capability for creating innovative and interesting messages. Currently, NU’s sites have approximately 68,000 Twitter followers and more than 35,000 likes on Facebook. NU corporate also has the capability of producing high-quality YouTube videos for customer viewing that can be posted on YouTube or posted via Twitter and Facebook. A relatively new FLICKR site has been developed with good photography of Connecticut scenery and YGS assets. The numbers of followers and likes for Twitter and Facebook are low for many companies, but not that far behind other gas utilities. Electric utilities that offer good and timely messaging have many more followers mostly picked up during outages. CL&P, for example, has more than 23, 000 followers.

Social media is used very effectively both inside and outside the industry to communicate proactively with younger or more technologically engaged customers. These channels will continue to grow both in size and effectiveness. Alternatively, many customers continue to have their main contact with the utility through their monthly bill. Whether through paper or electronic delivery, this monthly touchpoint can be effective in communicating many of the items mentioned above when done, as NU does, in a simple, eye-catching manner.

BRCS/RCG also observed direct message responses via social media for those customers requesting updates or complaining about power being shut off. Today’s customers expect companies to be watching for their posts and even responding to many of them.

⁴²⁹ Interviews C. Pretyman 10/15/14 and J. Cain 10/15/14.

As the various communications channels converge for YGS and NU, a digital roadmap has emerged, transitioning the business toward embracing the objectives of improving customer satisfaction through personalized, preferred channels.⁴³⁰ The roadmap provides a number of guidelines, including message uniformity across channels, customer control over channel preference, and proactive addressing of customer needs. A majority of customers within NU is choosing to interact through digital channels (NU/YGS customers are currently interacting at nearly 60% through the Internet). This number will surely grow, and the digital roadmap provides guidance for ensuring customers quickly receive presentations of what is most important to them. As part of this strategy, the corporation will go from six websites to one⁴³¹ and have the most important customer requests easily found, including view bill, pay bill, outage information, and ways to save money.⁴³²

External relations for YGS has no responsibilities in regard to Investor Relations. YGS is a wholly owned subsidiary of NU.⁴³³ YGS's financing derives from equity contributions from the parent, a revolving credit facility, intercompany loans, and long-term debt agreements.⁴³⁴ Investor relations on behalf of YGS concentrates on maintaining access to the financial markets for commercial paper and the placement of long-term debt and is, therefore, largely focused on the rating agencies. The Finance chapter of this report addresses the Treasury group's relationship with rating agencies. Other than the shares owned by the parent, YGS has no other investors with whom it must maintain solid investor relations.

Conclusion 8.1.3 *BRCS/RCG found that the corporate relations groups (media relations, corporate communications, and government affairs) work in close conjunction with other customer-facing organizations, preparing focused and effective messages as well as developing forward-thinking messaging and promotions strategies.*

Analysis

During major events, the media relations and corporate communications functions also provide the internal YGS external communications functions. They are responsible for getting up-to-date information, creating messages, and coordinating with customer-facing groups, such as the call center, websites, social media, and executive speakers. During major events, they also supply coaching, as needed, for executives to stay on message and deliver the message effectively.⁴³⁵

On a day-to-day basis, corporate communications, in conjunction with media relations and human resources, distributes daily, weekly, and quarterly newsletters to the employee

⁴³⁰ Response to Data Request Q- CUSTOMER SERVICE -03-013, Digital Roadmap Overview.

⁴³¹ Interview J. Nolan 10/14/14.

⁴³² Interview J. Cain 10/15/14.

⁴³³ Response to Data Request Q-GENERAL-01-006, Attachment 7, p. 7.

⁴³⁴ Response to Data Request Q-GENERAL-01-006, Attachment 7, pp. 12-13.

⁴³⁵ Interview C. Pretyman 10/15/14 and M. Norton 10/15/14.

workplace as well as to their homes. Topics include employee stories, corporate direction, local messages, and many others.⁴³⁶

One of the topics communicated is the constant reinforcement of safety considerations. These newsletters contribute toward better awareness of the Company's safety management and quality management programs, as recommended in the 2008 audit report. Corporate communications has also created various key safety messages, reinforced by management and these newsletters on a regular basis. Two examples of such messages (which also provide additional encouragement in the detailed support presented with them) are "Education, Motivation and Influence" and "Safety Is Not Just About You."⁴³⁷

Conclusion 8.1.4 *BRCS/RCG found that the Company's external relations teams have developed good connections with various field and community functions to gain up-to-the-minute insight if a critical event arises.*

Analysis

Media relations and corporate communications have regular working relationships with many of the functional, YGS organizations from which they can receive real-time information for dissemination. These connections occur during major events between groups, like community relations and gas operations, as well as on a proactive basis in developing messages to take to the market in support of YGS strategic and day-to-day messaging.

Our auditors observed an example of such interaction in the orchestration and successful promotion of the Wilton expansion through the local and state media as well as on the website and through social media. The efforts included weekly meetings (which continue today for further gas expansion throughout the state) with cross-functional YGS teams that had an active part in the expansion, including customer care, gas operations, community relations, corporate communications, regulatory affairs, and energy efficiency.⁴³⁸

During the course of this audit, both senior managers and senior executives listed customer support and efficiencies of doing business among the top three priorities. Good proxies for this include the regular surveys that are conducted and the JD Power's quarterly surveys. The summarized results for these instruments are communicated throughout the organization through the use of employee newsletters, regular town hall meetings, and regular manager-employee meetings.⁴³⁹

Recommendations

Recommendation 8.1.1 BRCS/RCG recommends that the Company expand efforts to attract social media to increase the number of followers. This will provide more consistent and timelier communications to those customers choosing to follow. This will also contribute to improved

⁴³⁶ Interview M. Norton 10/15/14.

⁴³⁷ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009, 2008 Audit Plans.

⁴³⁸ Interview P. Zohorsky 10/14/14.

⁴³⁹ Interview M. Norton 10/15/14.

awareness of what NU and YGS are doing in the community and should contribute to overall customer satisfaction. This will require further analysis on how to and when to promote these channels in order to heighten adoption rates.

Recommendation 8.1.2 BRCS/RCG recommends that the Company's Customer Operations and Customer Services groups, working in conjunction, should identify how to better promote and build awareness of NU/YGS community programs, charitable participation, energy effectiveness, etc. to address low customer satisfaction in the area of the JD Power's survey results for 2014.

Recommendation 8.1.3 BRCS/RCG recommends that the Company deliver employee newsletters (and notifications of a new publication available) via social media in the distribution of daily and monthly news, in addition to current methods. Initially only a minority may take advantage of this tool, but the numbers will increase as many no longer lose connection because the paper copy of the newsletter remains in the office.

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9. SUPPORT SERVICES

Objectives and Scope

In any major corporation, sound and effective business practices dictate that duplicated functions across various organizations should be centralized to minimize costs and redundancy. This centralization allows the organization to take advantage of shared synergies, buying power from vendors/suppliers, standardization of processes and practices, and other efficiencies. These support services form an essential core group of functions that can produce large-scale productivity in a streamlined, centralized approach. But care must be taken in providing these services that the distance to the customer (both in physical and bureaucratic terms) does not result in a degradation of service to either the company service user or the customer/ratepayer.

BRCS/RCG's review of the Support Services functional area encompassed examination of the following seven sub-categories:

- Risk Management
- Legal
- Facilities Management
- Materials Management, including procurement/supply chain and warehouse operations
- Transportation
- Information Technology
- Records Management

The BRCS/RCG team reviewed whether each area listed above has clear definition of role and responsibilities and includes well-documented policies and procedures that captured institutional knowledge of current practices. Further, each area (as discussed below) had a specific set of evaluation criteria or tests that the Team evaluated to determine if the specific function is operating effectively and efficiently. For example, in the materials management area, the audit team evaluated whether the purchasing group conducts effective management of all aspects of the procurement process, including vendor qualifications, contract negotiations, pricing, and adjustments.

Overall Assessment

BRCS/RCG found that the Company's Support Services organization generally provides support services in an appropriate manner, managing functions through policies and procedures, ensuring knowledgeable personnel, and developing and implementing plans coordinated with Company goals.

The Company's risk management organization has guidelines and process documents that are thorough and organized with proper attention to detail. The Enterprise Risk Management (ERM) Group provides a reasonable and appropriate means to ensure awareness and addressing of risk for the integrated business units. The goals and objectives involved in the Company's risk management are reasonable and are adequate to focus attention on the department's functional roles. However, BRCS/RCG believes a formal, written mission

statement would help the ERM Group maintain a cohesive focus beyond current management communication.

BRCS/RCG found that the Company's Legal Department, while having operational information, has it contained in various document types (memos, guidelines, etc.). The variety of form does not provide the most efficient means for ensuring that department personnel follow these policies, procedures, and guides. On the other hand, the Facilities organization has well-organized and comprehensive operational documentation.

Based on our review of the transportation services' guiding documentation, goals, objectives, and performance measurement, BRCS/RCG believes that the Company manages its transportation services adequately.

Evaluation Criteria

BRCS/RCG identified three main criteria for the evaluation of each of the Support Services area sub-categories:

- Does the Company have adequate departmental policies and procedures for each area?
- Are departmental goals and objectives clear, measurable, and realistic?
- Does the Company review performance metrics for each of the departments within Support Services?

Conclusions regarding these criteria are noted in each of the sections that follow.

9.1 Risk Management

Objectives and Scope

The Risk Management review involved those aspects of the Company's ability to manage the legal and insurance claims made against the Company. The success of managing business, legal, and insurance claims made against a company depends to a large degree on risk management—the identifying of risks, gathering of related information, defining characteristics of such risks, planning for them, and establishing contingencies or counter-measures when and where required. Risk management must constantly adapt to the changing business environment and potential business opportunities.

Overall Assessment

Based on our review of risk management guiding documentation, goals, objectives, and performance measurement, BRCS/RCG believes that the Company manages its risk adequately in reference both to insurance and claims as well as regarding the integrated business risks of the business units. However, BRCS/RCG recommends that the ERM Group develop a formal, written mission statement to maintain operational focus beyond current management communication.

Conclusions

Conclusion 9.1.1 *BRCs/RCG found that the Company has adequate departmental policies and procedures for risk management.*

Analysis

The Company divides its risk management activity based on two primary areas of risk: (1) claims and insurance and (2) business risk. The NUSCO claims and insurance group is responsible for the property/liability insurance related activities pertaining to all Northeast Utilities affiliates, including YGS. The Enterprise Risk Management Group manages business risk. The ERM Group facilitates on an ongoing basis risk evaluations by all major business units and corporate and shared services functions as well as project risk evaluations associated with large capital projects. The ERM Group communicates the results of risk assessments, response plans, and the status of such plans to key stakeholders in the organization, the NU Risk Committee (comprised of senior officers and directors), the Senior Team, and the Finance Committee of the NU Board of Trustees, as appropriate. The ERM program is aligned and integrated with key business processes and other assurance functions within the company, such as Internal Audit, Compliance, and Claims and Insurance. The Director, Enterprise Risk Management, also oversees credit risk management.

BRCs/RCG reviewed policies and procedures regarding the Company's risk management. ERM provides risk assessment for

- Property damage
- Service Equipment
- First-Party Claims
- Loss Exposure

The Guidelines for Property Damage Claims⁴⁴⁰ were initially approved in 2005 and last reviewed on in 2014. The purpose for the guidelines is to document the conditions and circumstances for which negligence and civil liability claims against NU, NUSCO, and the operating companies, including YGS, are paid. The guidelines pertain to service equipment failures and other distribution system events, such as plastic failures, hot-line clamp, primary conductor falls and burns, etc. These guidelines do not address widespread system outages and claims resulting from weather, scheduled outages, system voltage reductions, transmission or primary voltage equipment failure, and external forces, except where otherwise noted within the guidelines.

The General Guidelines for First-Party Claims, initially approved in 2010 and last reviewed in 2014, provide step-by-step activity for reviewing claims for damages to operating company property. The guidelines detail the activity of the Claims Analyst, Claims Assistant, and

⁴⁴⁰ Response to Data Request Q-RISK MGMT-01-311, Attachment 1.

the Sundry Billing department, including procedure for claims not paid and settlements negotiated.⁴⁴¹

The Company also provided the process to identify loss exposures for the purpose of risk assessment and control. This process was initially approved in 2010 and last reviewed in 2014.⁴⁴²

Finally, The NU ERM program is a detailed, corporate-wide, stakeholder-inclusive, continuous process through which the enterprise's principal risks are identified, assessed for impact, likelihood and other measures, catalogued, assigned ownership, evaluated for response plans (which are developed as required), monitored, and communicated.

BRCS/RCG found the guidelines and process documents to be thorough and organized with proper attention to detail. The Enterprise Risk Management Group provides a reasonable and appropriate means to ensure awareness and addressing of risk for the integrated business units.

Conclusion 9.1.2 *BRCS/RCG found that the Company has adequate departmental goals and objectives for risk management; however, no formal, written mission statement exists for Enterprise Risk Management.*

Analysis

As indicated, the Company's risk management is divided between (1) claims and insurance, overseen by the Claims and Insurance Department and (2) business risk for which the Enterprise Risk Management group has responsibility. Regarding claims and insurance, goals and objectives include the following:⁴⁴³

1. Negotiate broad insurance contracts, implement and monitor insurance programs
2. Provide risk analysis and direction during contract negotiations
3. Manage insurer/broker interaction with the Company
4. Investigate and resolve all First- and Third-Party claims in an expeditious and cost-effective manner
5. Create and maintain a customer-focused culture that results in improved customer service and satisfaction
6. Provide comprehensive, timely and accurate responses to requests from internal and external customers
7. Manage litigated claims
8. Provide regulatory agencies with requested reports and information

The ERM Group also provided its goals for review. Overall, the ERM Group seeks to continuously advance an Integrated Assurance Process by focusing on the following:⁴⁴⁴

⁴⁴¹ Response to Data Request Q-RISK MGMT-01-311, Attachment 2.

⁴⁴² Response to Data Request Q-RISK MGMT-01-311, Attachment 3.

⁴⁴³ Response to Data Request Q-RISK MGMT-01-308, Attachment 3.

⁴⁴⁴ Response to Data Request Q-RISK MGMT-04-015.

1. Continue to enhance linkages between ERM, the Finance Committee, Internal Audit, Legal Compliance, Accounting/Budgeting, and Financial Planning
2. Continue to refine the Key Risk Indicator process including tracking and reporting
3. Improve the identification and tracking of emerging risks
4. Enhance the evaluation and tracking of risks to major capital projects

The Enterprise Risk Management Group has no formal, written statement regarding mission.⁴⁴⁵

BRCS/RCG found the departments’ goals and objectives to be reasonable groupings to focus attention on their functional roles. However, BRCS/RCG believes a formal, written mission statement would help the ERM Group maintain a cohesive focus beyond current management communication.

Conclusion 9.1.3 *BRCS/RCG found that the Company does ensure awareness of a goals-to-performance link in its oversight of the risk management groups.*

Analysis

The Claims and Insurance Department has established several key performance indicators to help ensure that its goals and objectives are realized:⁴⁴⁶

1. Meet all major insurance policy renewals at competitive premiums while maintaining broad coverage
2. Resolve property damage claims brought by the System Companies against others while maintaining a closing ratio of 1:1 (no increase in backlog)
3. Resolve third-party claims brought by others against the System Companies while maintaining a closing ratio of 1:1 (as many claims closed as new claims entered during the year)
4. Place reserves on new third party liability claims within 90 days of notice of claim
5. Monitor average third-party claims processing time

The Claims and Insurance Department’s performance metrics are reviewed monthly. Some reported achievements for YTD 2014 include the following:

Table 20: Claims and Insurance Performance⁴⁴⁷
2014 YTD – January through July

	(a) Objective	(b) Score	(c) Comment
1	1st Party Closing	108%	>100 reflects closing of prior period items
2	3rd Party Closing	102%	>100 reflects closing of prior period items
3	3rd Party Processing	31	Average # of days
4	Insurance Renewals	100%	Target: 95%

⁴⁴⁵ Interview S. Weber 10/16/14.

⁴⁴⁶ Response to Data Request Q-RISK MGMT-01-308, Attachment 1.

⁴⁴⁷ Response to Data Request Q-RISK MGMT-01-308 Attachment 2.

The ERM Group also continuously reviews performance in relation to its goals. Customer satisfaction surveys form the basis for the group’s primary performance metric. These satisfaction surveys are taken at the conclusion of risk workshops facilitated by the Enterprise Risk Management Group. The results of these surveys are compiled and reviewed on an ongoing basis during the year as risk workshops are conducted. Additionally, credit risk is measured based on turnaround—how long it takes in days to provide the requester feedback.⁴⁴⁸

The ERM group conducts informational exchange with the Enterprise Risk Management group of the Company’s outside auditors, Deloitte, LLP.⁴⁴⁹ Additionally, the Director, Enterprise Risk Management, took the initiative to create a new ERM committee within the Edison Electric Institute (EEI). EEI is an association representing all U.S. investor-owned electric companies. The EEI ERM committee conducts a survey of the top thirty risks, for gas and electric companies, which NU uses to compare with the Company’s own identified risks.⁴⁵⁰

BRCS/RCG found that the risk management groups provide adequate attention to performance of department goals and objectives.

Recommendations

Recommendation 9.1.1 Although the ERM Group is able to state clearly its function and goals, BRCS/RCG believes that a formal, written mission statement would help maintain the cohesive focus of the group and recommends that the group develop such a mission statement.

9.2 Legal

Objectives and Scope

The utility’s legal function supports a wide range of the business functions of the utility. These functions include regulatory filings and issues at the local, state, and federal levels for the approval of rates; environmental permitting and compliance; financing and financial reporting; litigation for claims against the utility or against outside parties; business functions such as purchasing, human resources, corporate governance and compliance; and other issues as they may evolve.

Overall Assessment

The Company’s legal function is centralized within the Legal Department of NUSCO under the Senior Vice President and General Counsel.

Based on our review of the legal department’s guiding documentation, goals, objectives, and performance measurement, BRCS/RCG believes that the Company manages its legal affairs adequately. However, department processes are not kept in a single-formatted written and organized manner. BRCS/RCG recommends that the Legal Department develop a

⁴⁴⁸ Interview S. Weber 10/16/14 and Response to Data Request Q-RISK MGMT-04-016.

⁴⁴⁹ Interview P. Lembo 10/22/14.

⁴⁵⁰ Interview P. Lembo 10/22/14.

definitive set of organized and commonly formatted written processes and policies for its department operation to ensure thorough and consistent communication throughout the organization both now and in the future.

Conclusions

Conclusion 9.2.1 *BRCS/RCG found that, from review of legal affairs process and procedural documentation, the Company appears to manage its legal affairs adequately; however, the documentation for its processes and policies should be definitively written and maintained as one commonly formatted and organized source.*

Analysis

The Company Legal Department does not have policies independent from general Company policies.⁴⁵¹ However, the Company did provide specific documents for the department regarding its inclement weather guidelines (in the form of a memo) and its Outside Counsel Retention Procedure.

When asked specifically for guidelines for the use of in-house or outside legal services, the Company responded with several memos and a guideline.⁴⁵² BRCS/RCG found that while the information contained in the various memos and guidelines appeared comprehensive to their subject, the variety of form does not provide the most efficient means for ensuring that department personnel follow these policies, procedures, and guides. Additionally, department policies that are kept in the form of memos are more susceptible to information loss than are a single-sourced, documented manual or collection of all department policies and procedures written in a common format for easy reference. With such a collection, institutional knowledge may be kept as personnel turnover occurs, and also more easily revised as the need arises in the future.

Conclusion 9.2.2 *BRCS/RCG found that the Company has adequate departmental goals and objectives for risk management.*

Analysis

The Legal Department has nine categories of business goals and one category of leadership goals:⁴⁵³

1. Achieve Favorable Legal/Regulatory Results
2. Strategic and Operational Support
3. Support Systems and Operations Strategies
4. Support Labor and Employment Strategies
5. Support Corporate, Governance and Compensation Goals
6. Effective Corporate Compliance Program
7. Enhance Value of Internal Audit

⁴⁵¹ CONFIDENTIAL Response to Data Request Q-LEGAL-01-315.

⁴⁵² CONFIDENTIAL Response to Data Request Q-LEGAL-01-319.

⁴⁵³ CONFIDENTIAL Response to Data Request Q-LEGAL-01-316.

8. Federal Regulatory and Legislative Support
9. SVP and General Counsel Budget

The one leadership category of goals is Employee Engagement.⁴⁵⁴

BRCS/RCG found that the detail behind each of the Legal Department’s goal categories is comprehensive and reasonable.

Conclusion 9.2.3 *BRCS/RCG found that the Company does ensure awareness of a goals-to-performance link in its oversight of the Legal Department.*

Analysis

The Company provided Performance Scorecards for the Legal Department, highlighting the metrics upon which performance was measured. Performance metrics are arranged according to listed categories of Employee, Operational Excellence, Financial, Quality Legal Service & Increase Efficiency, Strategic Advice & Legal Support, Corporate Compliance Program, Legal Department Integration, Corporate Governance, Internal Audit & Physical Security, and Federal Regulatory Affairs.⁴⁵⁵

Department performance is graded annually.⁴⁵⁶ Performance grading for the past three years was provided, and the performance was generally very good.⁴⁵⁷

Recommendations

Recommendation 9.2.1 BRCS/RCG recommends that the Legal Department develop written processes and policies to ensure thorough and consistent communication throughout the organization for both current and future reference. Areas to be covered by these procedures should include, but are not limited to, the following: office operations, notification of potential legal risks to senior management, and control and use of external legal services.

9.3 Facilities Management

Objectives and Scope

An effective facilities management process includes the documenting of services, planning of strategy, and monitoring compliance to provide realization of expectations and a holistic view for continuous improvement. The BRCS/RCG team reviewed the Company’s post-merger facilities plan, including plans for space utilization, consolidation, and out-sourcing of functions, such as janitorial and yard services.

⁴⁵⁴ CONFIDENTIAL Response to Data Request Q-LEGAL-01-316.

⁴⁵⁵ CONFIDENTIAL Response to Data Request Q-LEGAL-01-317.

⁴⁵⁶ CONFIDENTIAL Response to Data Request Q-LEGAL-01-318.

⁴⁵⁷ CONFIDENTIAL Response to Data Request Q-LEGAL-01-318.

Overall Assessment

Based on our review of the facilities management guiding documentation, goals, objectives, and performance measurement, BRCS/RCG believes that the Company manages its facilities adequately. During our visit to the Berlin, CT campus, our visitor offices were located in an area that had a significant amount of empty space that was going unutilized. This is likely due to the impacts of the merger and the initiative to review all facilities and move employees as necessary in order to reduce the overall number of facilities in the long term. Nonetheless, PURA Staff may want to review the utilization of office space when it reviews the service company allocations in the next rate case.

Conclusions

Conclusion 9.3.1 *BRCS/RCG found that the Company has adequate policies and procedures for facilities management.*

Analysis

Facilities Management monitors and maintains YGS service center facilities with a work force shared with CL&P. There are three facility supervisors and 14 unionized Building Maintenance Mechanics (dual licensed - HVAC and Electrical) that make up this shared work force. Preventative facility maintenance is scheduled through the NU Plant Maintenance Manager System (PMMS) and is tracked and recorded by the Facility Supervisors, PMMS Coordinator, and Manager - Facilities Operations.

Company Facilities are secured through an enterprise-wide security system that is monitored in a central station located at NU's administrative campus Berlin, CT.

The Company provided its Preventive Maintenance Handbook and Emergency Evacuation Procedure in response to a request for policies and procedures.⁴⁵⁸ Additionally, BRCS/RCG also reviewed the Company's Policy for Office Space⁴⁵⁹ and the Security Access and Monitoring policy.⁴⁶⁰ The Company also provided its process for real estate planning.⁴⁶¹

BRCS/RCG found that the Preventive Maintenance Handbook is well organized and comprehensive. The Emergency Evacuation Procedure is detailed and thorough as well. All documentation related to facilities management appears to be adequate.

Conclusion 9.3.2 *BRCS/RCG found that the Company has adequate departmental goals and objectives for facilities management.*

Analysis

The facilities management organization has no specific list of goals and objectives other than to provide a safe working environment for employees, while managing and maintaining

⁴⁵⁸ Response to Data Request Q-FACILITIES MGMT-01-322, Attachments 1 and 2.

⁴⁵⁹ Response to Data Request Q-FACILITIES MGMT-01-327.

⁴⁶⁰ Response to Data Request Q-FACILITIES MGMT-01-328.

⁴⁶¹ Response to Data Request Q-FACILITIES MGMT-01-329.

the facilities in a cost-effective manner. This is a worthy goal, and detailing objectives to reach and maintain the goal is important. The Company did provide specific objectives by which realization of its organizational goal could be reached:⁴⁶²

1. Efficient utilization of space
2. Provide a safe and comfortable work environment for employees
3. Comply with building code requirements
4. Complete preventive and corrective work orders
5. Manage facility capital projects

BRCS/RCG found that the goals and objectives adequately framed the facilities management responsibilities.

Conclusion 9.3.3 *BRCS/RCG found that the Company does ensure awareness of a goals-to-performance link in its oversight of facilities management.*

Analysis

The Company's facilities management performance metrics generally include the following:⁴⁶³

1. Building Operations and Management of Capital Projects
2. Safety Performance
3. Budget Compliance
4. Emergency Response Planning and Support
5. Environmental Compliance

All performance targets were met or exceeded in 2011-2013.⁴⁶⁴

An additional strategic goal was added in 2013: to develop a facilities plan to enable effective integration and operational efficiencies and to reduce the footprint from NU's then-current state of 111 facilities and 5 million square feet. Involved in this task was to develop a comprehensive inventory of facilities, including factors relating to conditions, costs, commitments, and occupancy. The plan was to establish a cross-functional team and steering committee to ensure all key operational needs were met, and to develop a multi-year plan and recommendation.

The work conducted to realize this strategic goal resulted in meeting target performance, and, as a result, YGS closed down five facility locations, consolidating or relocating functions.

BRCS/RCG found that the performance matched the goals of facilities management adequately.

⁴⁶² Response to Data Request Q-FACILITIES MGMT-01-323.

⁴⁶³ Response to Data Request Q-FACILITIES MGMT-01-324.

⁴⁶⁴ Response to Data Request Q-FACILITIES MGMT-01-325.

Recommendations

BRCS/RCG has no recommendations for this audit item.

9.4 Materials Management

Objectives and Scope

An integral part of a utility's ability to provide adequate service to its customers in a safe and reliable manner resides in its maintenance and capital programs. Additionally, the utility must respond to its customers and any potential delivery problems with its facilities in a timely and efficient manner.

In order to accomplish these objectives, operating personnel rely on the purchasing and stores (materials management) functions to procure the necessary materials and services and store and issue them in a controlled manner. Customers, regulators, and shareholders expect a utility to cost effectively procure needed materials and services and keep only those materials on hand that are of the type and quantity appropriate for the business. In order to adequately address all the key supply chain functions, the company must have formal policies and procedures to procure goods and services, manage strategic inventory and availability of materials, and ensure adequate stocking levels consistent with future demands.

In this section, it is appropriate to break down the supply chain⁴⁶⁵ function into its two key component parts: Purchasing (or Procurement) and Warehouse/Stores, including inventory management. Each area is reviewed below.

To evaluate the effectiveness of the Company's supply chain, which includes both procurement and materials management, Blue Ridge issued data requests and interviewed several key Company personnel involved in those functions.⁴⁶⁶ Included in those interviews were the Vice President - Supply Chain, Environmental Affairs, Property Management;⁴⁶⁷ Director-Material Logistics;⁴⁶⁸ Manager – Corporate Procurement;⁴⁶⁹ and the Materials Management Regional Supervisor.⁴⁷⁰ In addition, Blue Ridge auditors toured the central storeroom and one satellite facility to gain an understanding of how material is stored and issued and of the security surrounding the material.

With respect to the merger of NSTAR and NU, Supply Chain is a department that was affected by the merger. The Company merged the existing legacy departments into one Supply Chain and Materials Logistics Department under NUSCO.

⁴⁶⁵ For ease of reference, we will use the term – Supply Chain to refer to Yankee Gas's materials management function as that is the term that Yankee Gas uses. Where required, the term Purchasing and Stores will be used to differentiate between those two functions within YGS's Supply Chain organization.

⁴⁶⁶ At the time of the interviews, the Director of Procurement Position was vacant.

⁴⁶⁷ Interview E. Angley 10/16/14.

⁴⁶⁸ Interview E. Greim 10/16/14.

⁴⁶⁹ Interview R. Avery 10/16/14.

⁴⁷⁰ Field Visit Notes J. Rocci 12/19/14.

Overall Assessment

Overall, Yankee Gas’s Supply Chain (Procurement and Materials Management, including stores) effectively and efficiently manages the Company’s purchasing dollars. Materials Management effectively stores and moves materials and supplies to meet the needs of operating personnel. Like any supply chain function, opportunities for improvement exist, and Yankee Gas is aware of these areas, taking steps to address them.

Evaluation Criteria

As mentioned at the outset of this chapter, three overall evaluation criteria exist for all sections of Support Services:

- Does the Company have adequate departmental policies and procedures for each area?
- Are departmental goals and objectives clear, measurable, and realistic?
- Does the Company review performance metrics for each of the departments within Support Services?

Materials Management review includes two additional evaluation criteria:

- Are purchasing approval levels, documentation, vendor selection and performance, and bid process compliant to established policies and procedures?
- Are the materials management warehouse facilities and space utilization, inventory turnover and stock levels, reorder point determination, within expected norms?

Conclusions

Conclusion 9.4.1 *BRCS/RCG found that the Company has adequate policies and procedures for YGS’s procurement and materials processes. However, these policies and procedures could be enhanced to further emphasize the importance of the procedures.*

Analysis

Procurement

The BRCS/RCG team reviewed YGS’s Procurement policies and procedures.⁴⁷¹ After the merger, the Company combined the legacy company procedures into one common set of working procedures. These procedures were last updated in March 2014. Divisions of the set of procedures include such areas as objectives, exceptions, and the policies and procedures themselves. Subsections within the policies include areas concerning competitive bidding and the use of Diverse Suppliers, defined as Small Businesses (SB), Small Disadvantaged Businesses (SDB), Women-Owned Small Businesses (WOSB), Service Disabled Veteran Businesses (SDVB), Veteran Owned Small Businesses (VOSB), and Historically Underutilized Business Zone Businesses (HUBZ), all of which are businesses to which YGS provides the “Maximum

⁴⁷¹ Response to Data Request Q-SUPPLY CHAIN-01-154

Practicable Opportunity” to provide goods and services to the Company.⁴⁷² In addition, the policies include sections on contracting, including non-competitive bids and the circumstances when such bidding is permitted.

The policies and procedures document includes a section titled “Principles and Standards of Ethical Supply Management Conduct.” This section, which is advocated by the Institute of Supply Management, contains statements of ethical conduct that employees should adhere to:

1. Avoid the intent and appearance of unethical or compromising practice in relationships, actions, and communications.
2. Demonstrate loyalty to the employer by diligently following the lawful instructions of the employer, using reasonable care and granted authority.
3. Avoid any personal business or professional activity that would create a conflict between personal interests and the interests of the employer.
4. Avoid soliciting or accepting money, loans, credits, or preferential discounts and the acceptance of gifts, entertainment, favors, or services from present or potential suppliers that might influence, or appear to influence, supply management decisions.
5. Handle confidential or proprietary information with due care and proper consideration of ethical and legal ramifications and governmental regulations.
6. Promote positive supplier relationships through courtesy and impartiality.
7. Avoid improper reciprocal agreements.
8. Know and obey the letter and spirit of laws applicable to supply management.
9. Encourage support for socially diverse practices.
10. Conduct supply management activities in accordance with national and international laws, customs and practices, your organization's policies, and these ethical principles and standards of conduct.
11. Develop and maintain professional competence.⁴⁷³

In general, these policies and procedures are typical, albeit concise, compared to other procurement procedures the auditors have reviewed. The procedures generally cover the basics and provide adequate guidance to YGS buyers and operations personnel who need to procure materials, supplies, and services for YGS. However, two elements could enhance these policies and procedures and strengthen their importance.

First, the procedures should show that the Vice President of Supply Chain formally reviewed and approved the policies and procedures. Nowhere in the document does it show who reviewed and/or approved the procedures. In the interview with the Vice President of

⁴⁷² Response to Data Request Q-SUPPLY CHAIN-01-154, page 5 of 10

⁴⁷³ Response to Data Request Q-SUPPLY CHAIN-01-154, page 10 of 10

Supply Chain, she acknowledged that she reviewed and approved the latest version. However, she noted that she was unaware whether they had been signed. Having a senior management signature on these procedures would help ensure accountability and remove any significant doubt whether the policies and procedures are, in fact, the policies of the Company. This would clearly highlight accountability and be a visible representation that these documents are in fact the Company's authorized policies and procedures that should be adhered to.

Second, while covered in other aspects of the procurement function, the approval authorities should be listed in these policies and procedures. The Company's computer purchasing system⁴⁷⁴ has these buying/approval authorities built into them such that no employee can buy above their approved limits and that there is a routing chain that the purchase order has to follow for approval (and subsequent payment). However, formally documenting and specifying these limits and authorities in the policies and procedures would remove any ambiguity as to who can order materials and services. The audit team found that these approval authorities are documented in other procedures, specifically NU's Delegation of Authority Policy.⁴⁷⁵ However, listing them within the approved Supply Chain procedures would provide an easier point of reference (i.e., one would not have to search in multiple documents for important information such as who has to approve a particular purchase.)

Materials Management

BRCS/RCG requested and reviewed YGS's Warehouse Procedures for the Company's Central Warehouse and the Warehouse Procedures for Yankee Gas Field Store Rooms.⁴⁷⁶ Within these procedures are individual sections that cover areas such as the following:

- Store Room – Issuing, Receiving, and Returning Materials
- Inventory – Taking Inventory Counts, and Reconciling Variances
- Requesting a Catalog ID for a New Item
- Reviewing Material Reservations and Determining Supply and Demand⁴⁷⁷

These procedures provide detailed work steps the employee should take to complete the specific task in each section. For example, with respect to issuing material, the procedures specify the following steps.

Issuing Store Room Material:⁴⁷⁸

⁴⁷⁴ NU will be replacing its legacy purchasing system during 2015. The goal of the project will be to replace legacy NU and NStar supply chain programs with a single system thereby providing a uniform platform from which all operating companies can operate. The project is expected to cost \$25 million. See response to Data Request Q-Interviews-03-030

⁴⁷⁵ Response to Data Request Q-MATERIALS MGMT-01-343 page 5

⁴⁷⁶ Yankee Gas consolidated the Waterbury Storeroom to the main warehouse facility for NU in March of 2014.

⁴⁷⁷ Response to Data Request Q-MATERIALS MGMT-01-334.

⁴⁷⁸ Response to Data Request Q-MATERIALS MGMT-01-334 page 5 of 12

(Only authorized Yankee Gas field personnel may remove material from the store room as needed, with proper sign-out.) Note: if an ID badge is inoperable, the employee should immediately contact his/her supervisor.

1. Authorized personnel swipe ID badge in the card reader or unlock the gate with key if card reader is not in use.
2. Scan “Finish” before you start. (This will ensure that any previous job is cleared out before you begin.)
3. Scan bar code on your ID badge.
4. Scan the location facility from label sheet.
5. Scan MIB (Management Information and Budgeting) account or enter the proper Work Order Number. (See Accounting sheets for bar codes – Please Note: some MIB accounts have 2 bar codes; you must scan both.
6. Scan the bar code on the piece of material or shelf.
7. Input quantity (check bin label for proper units to use).
8. Press the yellow “Enter” key.
9. Remember to press the “Enter” key after each quantity; failure to do so will result in this number appending to the next stock code, and an error will occur.
10. Repeat steps 5 and 6 for each piece of material.
11. When done, scan “Finish.”
12. Are Account numbers correct? If so, press F1.
13. Return the scanner to the docking station.

Other areas within the procedures are equally detailed. The team found these procedures to be adequate to identify and stipulate what actions should be taken within the warehouse and storeroom functions. However, these procedures should also be approved by a member of senior management with a visible notation on the document to include a signature and date.

Conclusion 9.4.2 *BRCS/RCG found that the Company has sufficient department goals and objectives for Supply Chain and uses appropriate metrics to monitor the Department’s success in meeting those goals and objectives. However, the Monthly Report to the Vice President Supply Chain should include the specific procurement goals, objectives, and metrics.*

Analysis

Procurement

The BRCS/RCG team reviewed YGS’s goals and objectives related to the procurement/purchasing functions to determine if they are clear, measureable, and realistic. Further, we requested and reviewed the Company performance metrics specific to YGS’s Supply Chain which contained the metrics for Procurement.

The Company provided several management performance metric reports that contain within them goals and objectives and related performance metrics associated with the procurement function among other areas. For example, the Chief Administration Officer (CAO) Performance Package contained goals and metrics for the Procurement area, including Percentage of Procurement Contracts Competitively Bid, Percentage Spend with Diversity Suppliers, Investment Recovery, Negotiated Savings, and Cost Savings.⁴⁷⁹

As of the September 2014 report, for the metrics associated with Procurement, the Company was on track to meet or exceed the goals. We should note that these goals and the related metrics were not broken down by operating company. Therefore, it was not possible to determine what impact YGS had on the attainment of any of these goals at a corporate level. Understandably, this report's purpose is at corporate level and meant for senior management. As such, we found that this CAO Performance Package Report provides sufficient insight related to procurement and whether the goals and objectives are being met.

With respect to Yankee Gas Procurement goals, objectives, and metrics, the Vice President – Supply Chain, Environmental Affairs, Property Management receives a monthly report which provides detailed information of activity and progress toward goals within Supply Chain. Again, this report covers all operating companies within the merged NSTAR-NU company. However, YGS is discussed numerous times throughout the document. For example, the report highlights that the Company developed a detailed spend report for an audit (presumably this audit) which shows Yankee Gas purchase orders from 2009 to YTD July 2014.⁴⁸⁰ Further, there is an entire section devoted to Supply Chain prepared by the Manager – Corporate Procurement.

This section of the report covers areas such as Diversity, Distribution Standards Consolidation, Major RFPs or Contracts in Progress or Completed, Supplier Reviews, ERP Support, Training, and Professional Development. In sections of this report, progress on specific performance metrics are discussed in graphic or paragraph formats. In addition to this monthly report,

[REDACTED],⁴⁸¹ allowing the Supply Chain Management team would facilitate a review of the progress and allow the Company's Supply Chain management team to make an assessment of Procurement's progress toward its goals on a regular basis.⁴⁸²

Materials Management

Similar to its request for goals and objectives related to the procurement/purchasing functions, the BRCS/RCG team requested and reviewed YGS's goals and objectives related to the materials management (warehouse/storeroom) function to determine if they are clear,

⁴⁷⁹ The CAO report contained goals and metrics for all areas under the span of control of the Chief Administration Officer for NU.

⁴⁸⁰ Response to Data Request Q-SUPPLY CHAIN-03-029 Attachment 1 –see example at page 33

⁴⁸¹ CONFIDENTIAL Response to Data Request Q-EXEC-MANAGEMENT 03-026

⁴⁸² Response to Data Request Q-SUPPLY CHAIN-03-029 Attachment 1 – page 2

measurable, and realistic.⁴⁸³ Further, we reviewed the Company performance metrics specific to YGS's Supply Chain, which contained the metrics for Materials Management.⁴⁸⁴

The Company provided a list of the goals and objectives and performance metrics. These goals, which are typical for the materials management function, include the following:⁴⁸⁵

1. Provide service and maintain inventory within approved financial budget
 - a. Maintain approved complement
 - b. Control overtime and labor premiums
 - c. Control invoice and material costs
2. Provide a safe and environmentally compliant working environment
 - a. Provide and ensure safety training, procedures and compliance
 - b. Maintain and ensure all environmental regulations
3. Provide material and supplies to company crews in a timely and efficient manner
 - a. Maintain appropriate inventory levels for planned and unplanned work
 - b. Provide adequate supplier replenishment processes
 - c. Maintain appropriate customer service levels
4. Maintain inventory compliance and maintenance
 - a. Maintain accurate inventories
 - b. Safe guard and ensure inventory condition

With respect to the performance metrics for Materials Management, the Company provided a list of three items that it tracks with respect to materials management: Inventory Turns, Inventory Accuracy, and Slow Moving Inventory Reduction. However, in discussions with Materials Management personnel and review of other documentation, the Audit Team learned that other metrics are tracked as well: inventory value, labor costs, and safety.

The Audit Team reviewed several performance reports provided by the Company, including inventory value, inventory turns, and inventory accuracy counts. In addition, the Supply Chain Management team demonstrated in interviews that they regularly monitor performance of materials management.

The Audit Team's review of these performance metrics showed that the Company has made certain improvements in these metrics (i.e., inventory level). The table below shows the value of inventory at each of YGS's facilities that store the Company's materials and supplies. It is important to note again that in March 2014, YGS moved its storeroom at the Waterbury Facility to NU Corporate Warehouse in Berlin. The Company has maintained the facility code 'WCW' for recordkeeping and designation purposes.

⁴⁸³ Response to Data Request Q-MATERIALS MGMT-01-335

⁴⁸⁴ Response to Data Request Q-MATERIALS MGMT-01-336

⁴⁸⁵ Response to Data Request Q-MATERIALS MGMT-01-337.

Table 21: Inventory Value

Yankee Gas Company Inventory Value - 2012, 2013 and YTD November 30, 2014									
Facility	Facility Desc	YE 2012	YE 2013	YTD November 30, 2014	Change YTD '14 to '12	Percent	Change YTD '14 to '13	Percent	
ANS	ANSONIA AREA WORK CENTER	\$21,896.49	\$12,417.38		(\$21,896.49)	-100%	(\$12,417.38)	-100%	
ASA	ANSONIA M&S STOREROOM	\$17,087.99	\$17,346.67		(\$17,087.99)	-100%	(\$17,346.67)	-100%	
DNL	DANIELSON M&S STOREROOM (883)	\$5,304.75	\$5,103.26	\$6,947.31	\$1,642.56	31.0%	\$1,844.05	36.1%	
DNS	DANIELSON AREA WORK CENTER	\$30,619.67	\$28,528.34	\$29,332.34	(\$1,287.33)	-4.2%	\$804.00	2.8%	
EWN	EAST WINDSOR AREA WORK CENTER	\$61,843.85	\$51,225.55	\$48,271.04	(\$13,572.81)	-21.9%	(\$2,954.51)	-5.8%	
EWR	EAST WINDSOR M&S STOREROOM (882)	\$34,159.53	\$37,027.99	\$38,208.28	\$4,048.75	11.9%	\$1,180.29	3.2%	
HMC	HENKELS & MCCOY WAREHOUSE	\$25,908.71	\$26,957.38	\$43,711.11	\$17,802.40	68.7%	\$16,753.73	62.1%	
LNG	LNG GAS PLANT	\$555,926.58	\$496,917.28	\$544,647.63	(\$11,278.95)	-2.0%	\$47,730.35	9.6%	
MER	MERIDEN AREA WORK CENTER	\$93,516.77	\$88,034.10	\$75,886.38	(\$17,630.39)	-18.9%	(\$12,147.72)	-13.8%	
MRD	MERIDEN M&S STOREROOM	\$35,303.36	\$33,212.65	\$34,693.29	(\$610.07)	-1.7%	\$1,480.64	4.5%	
NRW	NORWALK AREA WORK CENTER	\$105,699.53	\$69,681.85	\$72,506.35	(\$33,193.18)	-31.4%	\$2,824.50	4.1%	
NTG	NEWTOWN M&S STOREROOM	\$20,809.89	\$21,111.83	\$22,193.77	\$1,383.88	6.7%	\$1,081.94	5.1%	
NTY	NEWTOWN AREA WORK CENTER - YG	\$41,077.65	\$38,456.84	\$41,714.11	\$636.46	1.5%	\$3,257.27	8.5%	
NWK	NORWALK M&S STOREROOM	\$22,313.90	\$25,322.25	\$15,118.82	(\$7,195.08)	-32.2%	(\$10,203.43)	-40.3%	
TRN	TORRINGTON M&S STOREROOM (880)	\$26,378.53	\$25,502.86	\$24,633.97	(\$1,744.56)	-6.6%	(\$868.89)	-3.4%	
WBY	WATERBURY M&S STOREROOM	\$45,371.51	\$41,968.20	\$52,996.70	\$7,625.19	16.8%	\$11,028.50	26.3%	
WCW	WATERBURY CENTRAL WAREHOUSE	\$1,996,111.13	\$1,540,147.80	\$1,423,911.15	(\$572,199.98)	-28.7%	(\$116,236.65)	-7.5%	
WEG	EAGLE STREET AREA WORK CENTER	\$0.00	\$0.00	\$62,556.32	\$62,556.32	NA	\$62,556.32	NA	
WTD	WATERFORD M&S STOREROOM	\$14,870.45	\$13,701.62	\$10,389.04	(\$4,481.41)	-30.1%	(\$3,312.58)	-24.2%	
WTF	WATERFORD AREA WORK CENTER	\$35,716.66	\$35,645.34	\$35,715.72	(\$0.94)	0.0%	\$70.38	0.2%	
	TRUCK STOCK	\$210,899.41	\$204,034.84	\$197,706.28	(\$13,193.13)	-6.3%	(\$6,328.56)	-3.1%	
	Total	\$3,400,816.36	\$2,812,344.03	\$2,781,139.59	(\$619,676.77)	-18.2%	(\$31,204.44)	-1.1%	
Source: Q-INTERVIEWS-008									
*The company only retains this information for two years plus the current year									

From this information, the Company has made improvements in the inventory level and has reduced the value by 18% from the levels in 2012.

With respect to inventory turns, the Company provided the following information by commodity group.

**Table 22: Yankee Gas Inventory Turns
By Commodity Group**

YEAR	2012	2013	2014 YTD
Commodity	Turn	Turn	Turn
Pipe	3.560	3.436	2.281
Valve	2.286	1.811	2.120
Fitting	1.219	0.898	1.457
Manifold	2.625	3.123	2.627
Regulator	2.316	2.872	2.472

Company managers stated that maximizing and improving these turn rates is a priority.⁴⁸⁶ From this information, the Company has room to improve and reverse the trend in areas where the turns are decreasing.

⁴⁸⁶ Higher turn rates mean that inventory is not sitting in stock. Reducing excess inventory lowers carrying costs and as such is more efficient and less costly to ratepayers.

One way to improve turns is to reduce *Slow Moving Inventory (SMI)*. YGS currently has a program to reduce this type of inventory. It is mentioned in both the CAO Monthly and the Supply Chain reports. The Company reported that it had an overall goal for all of NU of reducing SMI by \$15.7million. As of August 31, 2014, they had achieved \$10.2 million for all NU operating companies.⁴⁸⁷

With respect to inventory accuracy,⁴⁸⁸ YGS provided current information from its most recent accuracy counts by warehouse/storeroom.⁴⁸⁹ In discussions with Company personnel, accuracy rates less than 90% represent an area of concern and in need of management attention. The table below shows the accuracy rates and value of the discrepancies found during the counts of the inventory.

**Table 23: YGS Inventory Accuracy by Location
November 2014**

Facility	Accuracy Rate (Percent)	Value of Inventory	Variance Amount
DANIELSON AREA WORK CENTER	91.00%	\$ 32,030.24	\$ 2,890.90
EAST WINDSOR AREA WORK CENTER	99.10%	\$ 46,641.81	\$ 417.56
HENKELS & MCCOY WAREHOUSE	97.10%	\$ 26,701.42	\$ 767.91
LNG GAS PLANT	97.50%	\$ 551,638.12	\$ 13,636.98
MERIDEN AREA WORK CENTER	99.10%	\$ 92,563.36	\$ 874.85
MERIDEN M&S STOREROOM	77.70%	\$ 91,838.06	\$ 20,451.40
NEWTOWN AREA WORK CENTER - YG	93.00%	\$ 47,491.03	\$ 3,324.61
WATERBURY CENTRAL WAREHOUSE	94.50%	\$ 2,223,013.47	\$ 122,600.03
EAGLE STREET AREA WORK CENTER	81.00%	\$ 183,567.29	\$ 34,963.71
WATERFORD AREA WORK CENTER	84.10%	\$ 43,866.41	\$ 6,991.12
	93.80%	\$ 3,339,351.21	\$ 206,919.07
Source: Q-INTERVIEWWS-010 Attachment 1			

This table shows that the Meriden M&S Storeroom and Eagle Street and Waterford Area Work Centers fall below the Company’s stated goal of 90% accuracy. From discussion with Warehouse personnel, the Company is putting in corrective actions, including re-training of operating personnel especially in locations which have self-service storeroom facilities.

During a tour of one of the Company’s field locations’ storerooms, the Company provided an overview of the storeroom operation at the Meriden M&S Storeroom. The storeroom was locked but operating personnel can access it with their id badges should they need materials and supplies. The Company visibly posts procedures for operating personnel to record issuance of materials and supplies. The storekeeper for this location is there periodically during the day as he travels to other locations. That leaves the storeroom often unattended

⁴⁸⁷ Response to Data Request Q-SUPPLY CHAIN-03-29 Attachment 1 Page 11

⁴⁸⁸ Inventory accuracy is determined by physically counting materials in the warehouse and storerooms.

⁴⁸⁹ Response to Data Request Q-INTERVIEWS-010 Attachment 1

(but it is secured). The Company is aware that the unattended storeroom is likely contributing to the sub-par accuracy counts and plans on having training during 2015 for operating personnel to improve performance.⁴⁹⁰



Photo: Meriden Storeroom – Posted instructions and Bin Area

Conclusion 9.4.3 BRCS/RCG found that Company takes reasonable measures such that its policies and procedures are adhered to.

Analysis

The BRCS/RCG team requested and reviewed exception reports for information such as information related to purchasing approval levels, documentation, vendor selection and performance, and bid process compliant to established policies and procedures. In addition, we interviewed Supply Chain managers to determine how they ensure compliance with departmental purchasing policies and procedures.

For example, the audit team reviewed the “No Bid” contracts less than \$50,000 for 2009 to 2014. Examples of commodities that would be no bid include police service - \$84,000, repair services - \$86,000, and paving services - \$37,808. In total, these and other random purchases with values less than \$50,000 totaled \$1.5 million in 2013 and \$1.03 million (YTD July 2014).⁴⁹¹ The Audit Team did not observe any entry that would give reason to believe that purchasing policies were not being adhered to.

With respect to contracting and vendor selection/performance, YGS’s various policies and procedures delineate the process for selecting and contracting with a vendor. Further, the Company’s purchasing system provides safeguards and compliance requirements that would take considerable effort to circumvent. The Audit Team did not observe any information, either in reports or through the interview process, which would indicate that procedures for contracting, vendor selection, and performance rating were being circumvented.

⁴⁹⁰ Response to Data Request Q-INTERVIEWS-012

⁴⁹¹ Response to Data Request Q-SUPPLY CHAIN-01-157

Conclusion 9.4.4 *BRCS/RCG found that materials management warehouse facilities and space utilization are within expected norms.*

Analysis

The BRCS/RCG team toured the Company’s main storeroom in Berlin and found the area clean and well-kept. Stockhandlers have easy access to the areas and the process for completing pick lists for jobs is conveniently located within the space. It should be noted that Yankee Gas’s main storeroom now occupies a portion of NU’s main Berlin Warehouse, having moved from the Waterbury Service Center in March 2014.

Figure 11: Yankee Gas Main Area of Berlin Storeroom



Figure 12: Bin Aisle



Figure 13: Outside Storage - 2" Pipe



The Audit Team reviewed the Company's obsolete inventory program as presented in management reports and found them to be beneficial in reducing unnecessary costs.

Recommendations

Recommendation 9.4.1 An appropriate member of YGS's senior management should formally approve the Company's Procurement and Warehouse Policies and Procedures. Further, the Procurement procedures should specify the buying and approval authorities by title.

Recommendation 9.4.2 The Company should include Procurement Goals and Performance Metrics (Month and YTD) in the Supply Chain monthly report.

Recommendation 9.4.3 Yankee Gas should continue its efforts to improve turn rates and inventory accuracy. The training program for operating personnel at field locations should be solidified and implemented during 2015.

9.5 Transportation

Objectives and Scope

The objective of transportation review is to evaluate the overall effectiveness of a utility's management of fleet vehicles and equipment to ensure the following: (a) minimum capital costs, (b) minimum operating costs, (c) maximum fleet utilization, and (d) maximum effectiveness of maintenance and repair, including preventive maintenance programs. This audit concentrated on those areas that ensure awareness of operational goals and performance according to those goals.

Overall Assessment

Based on our review of the transportation services guiding documentation, goals, objectives, and performance measurement, BRCS/RCG believes that the Company manages its transportation services adequately.

Conclusions

Conclusion 9.5.1 *BRCS/RCG found that the Company has adequate policies and procedures for transportation.*

Analysis

The Company provided procedures and other documentation related to Part Controls, QC review Program, Fleet Management Use manual, and Yankee Road Side Assistance.

BRCS/RCG found that each of the procedures and/or manuals provided detailed appropriate activity regarding transportation operational activity.

Conclusion 9.5.2 *BRCS/RCG found that the Company has adequate departmental goals and objectives for transportation.*

Analysis

Transportation resources for CL&P and YGS are managed in one organization. The following list includes the focus areas for this management:⁴⁹²

1. Employees
2. Emergency Preparedness
3. Operations
4. Financial
5. Customers

The goal of Transportation is to maintain a safe, reliable, environmentally responsible fleet while being recognized in the industry, as cost-competitive. Transportation seeks to promote personal ownership for working safely, while offering a stimulating atmosphere that encourages employee development through continued education to improve knowledge and skills to work efficiently as a team, creating a sense of pride and achievement.

Key deliverables of this effort are to⁴⁹³

1. Maintain, repair, and report availability of the fleet
2. Manage and provide oversight of services performed by vendors (repairs, fueling, dielectric testing, body work) set expectations for timely service and authorize payments

⁴⁹² Response to Data Request Q-TRANSPORTATION-01-357.

⁴⁹³ Response to Data Request Q-TRANSPORTATION-01-357.

3. Provide oversight and manage O&M and capital budgets for CL&P and Yankee Gas. Optimize the replacement of vehicles and seek opportunities to extend vehicle life cycles without compromising reliability
4. Encourage and influence vehicle standardization to achieve optimal performance to users relative to safety, work practices, efficiency, and low operating costs

BRCs/RCG found that the transportation goals and objectives adequately pertained to the responsibilities of the department.

Conclusion 9.5.3 *BRCs/RCG found that the Company does ensure awareness of a goals-to-performance link in its oversight of transportation activity.*

Analysis

Performance reviews for the last three years were provided for the performance metrics.⁴⁹⁴

Although some of the results indicated unsatisfactory results, the concentration on the metrics and follow-up of results prove that the Company is focused on improving performance.

Recommendations

BRCs/RCG has no recommendations for this audit item.

9.6 Information Technology

Objectives and Scope

BRCs/RCG examined the Company's information technology (IT) function. The IT organization is part of the NUSCO centralized service organization. As such, all of YGS's IT services are provided through this organization.

Overall Assessment

NU's IT is organized appropriately and consistent with its strategy. It has access to senior leadership to ensure IT solutions are consistent with corporate strategies and the strategic needs are receiving appropriate priority of resources. Leading cyber security measures have been implemented to protect against unauthorized access to sensitive information and/or systems. Periodic internal and external audits are performed to confirm the adequacy of the cyber security measures.

Evaluation Criteria

The IT review examined whether current systems applications allow the Company to implement its strategic objectives effectively, whether NU's cyber security has been effective, and whether IT systems are meeting the SARBOX general computer control requirements.

⁴⁹⁴ Response to Data Request Q-TRANSPORTATION-01-359.

Besides the three major evaluation criteria for all sections of Support Services, one additional criterion relates to information technology:

- Are the Company’s IT technology and major systems effective?

Conclusions

Conclusion 9.6.1 *BRCS/RCG concluded that YGS’s IT function has met the intent of the 2008 Management Audit recommendations.*

Analysis

The 2008 Management Audit specified four recommendations that impacted the IT function serving YGS.

10.1.1 Information Systems (Priority: Low) We recommend that Yankee Gas enhance measures to ensure alignment with IT standards and good communications between Corporate IT and the meter shop IT group.

BRCS/RCG believes that the actions taken by YGS have aligned its meter shop practices with the corporate IT requirements. As YGS moves forward with the integration of its organization into a combined (NSTAR and YGS) gas operations, it will need to maintain conformance with IT standards. The System Operations chapter discusses NU’s recent consolidation of meter testing to the most cost-efficient shop, which is located in Massachusetts. Now, all gas meters are tested in one place in the most cost efficient manner. Further, the supporting IT systems are better aligned with the needs of the meter shop to ensure both a cost-efficient operation as well as being fully compliant with the requirements of both Connecticut’s and Massachusetts’s regulations.



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The 2008 audit included this recommendation:

10.1.2



BRCS/RCG believes that the cost-allocation methodology developed took into account the reduced scope of YGS’s conversion to new customer service system, *CustomerCentral* (C2.)



⁴⁹⁵ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009.

[REDACTED]⁴⁹⁶ This allocation process was validated by BRCS in their *Prudence Investigation of the Connecticut Light & Power Company Customer Information System Planning and Implementation of CustomerCentral* completed in 2009. Therefore there were no changes in allocation made post the completion of the project.

As YGS moves forward with the integration of its organization into a combined gas operations, it will need to continue to monitor the cost allocation methodology to reflect any changes required.

10.1.3 [REDACTED]

BRCS/RCG found that the recommended CIO position has been established and filled. In 2012, YGS created a vice president and CIO position in a restructured IT organization. NU's IT leadership change and the subsequent organizational restructuring was completed by the end of June 2014.

10.1.4 [REDACTED]

BRCS/RCG believes that the IT organization is using benchmarking and other opportunities to identify best-in-class practices. The new CIO and the subsequent reorganization have brought the continuous search for best practices into the day-to-day operational practices.

[REDACTED]⁴⁹⁷. In addition, a security assessment was conducted by KPMG.⁴⁹⁸

The IT function today is undergoing the next level of restructuring by outsourcing a significant portion of its work while retaining those elements that NU deems strategic. There is more discussion on this topic later in this section.

Conclusion 9.6.2 *BRCS/RCG concluded that the Company has adequate departmental policies and procedures for IT. These policies and procedures address the appropriate aspects of IT, including extensive information on cyber security.*

⁴⁹⁶ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009.

⁴⁹⁷ CONFIDENTIAL Response to Data Request Q-GENERAL-01-009.

⁴⁹⁸ Response to Data Request Q-IT-01-298.

Analysis

Following the consolidation of the IT leadership, the IT strategy was changed. The delivery of executable solutions is now under one IT support model for all of NU. To this end, the operation of NU’s server farm and software coding, maintenance, and development were all outsourced. Additionally, the number of outsourcing contractors was reduced from six to two. The end result was a staffing reduction of 220 FTEs. However, the IT assets remained under the control of NU. This transition to the use of “off the shelf” IT solutions, where a company’s processes are altered to be compatible to the solution, results in the adoption of best-in-class processes and facilitates easy upgrades of the core systems. Customization and its associated labor-intensive maintenance are eliminated.⁴⁹⁹

IT’s Disaster Recovery procedures are reviewed annually and updated as needed. Disaster drills are also conducted periodically, including staffing and operating from the Alternate Energy Control Center (AECC).⁵⁰⁰

Cyber security at NU includes the industry-leading components. They use multiple levels of firewall protection, providing isolation from Internet access to vital data. They limit internal access to data based on level in organization and job-related needs. They require complex passwords and periodic password changes. They perform regularly scheduled penetration testing.

Communications with employees regarding the importance for security, their responsibilities, and current issues starts at the time of hire through an on-line training module, is guided with appropriate policies and procedures, and continues daily through their electronic Newsletter, NU Today.⁵⁰¹

NU has 24/7 monitoring in place using an industry-recognized managed security service provider. YGS’s systems are monitored as part of this effort. YGS has not experienced any data breaches or compromise of their systems.⁵⁰² Additionally, a third-party auditor does cyber penetration testing from the Internet annually. Only low-risk findings have been identified, assessed, and addressed as recommended. All other internal systems are tested less frequently based on the IT and Audit teams’ recommendation for inclusion in the annual audit plans.

NU’s system has various hardware and software systems in place to monitor activity control and/or block access to sensitive information and the policies and procedures to guide NU’s daily IT system operations use.⁵⁰³

Conclusion 9.6.3 *BRCS/RCG concluded that the IT goals and objectives are clear, measurable, and realistic.*

⁴⁹⁹ Interview K. Kountze 10/14/14.

⁵⁰⁰ Interview K. Kountze 10/14/14.

⁵⁰¹ Response to Data Request Q-IT-01-297.

⁵⁰² Response to Data Request Q-IT-02-017.

⁵⁰³ Response to Data Request Q-IT-02-017.

Analysis

In September 2013, IT leadership presented a Strategic Sourcing Initiative to restructure and refocus the IT organization to better align its capabilities to the future needs of NU and its operating companies. The expectations of the goals and objectives of this initiative are clear and measurable.⁵⁰⁴ Examples of the goals for IT include

- Need to expedite integrating to “one IT”
- Need to move towards industry best practices and industry standard solutions
- Need to have access to a greater resource pool
- Need to keep in-house staff working on core business needs
- Need to meet current skill set challenges
- Need to reduce costs

These goals are clearly and widely communicated so that the responsibilities of every employee involved are identified. The organizational change implementation was completed as planned in June 2014. The progress toward goal attainment is reported monthly as part of the Senior Team Priorities Report.⁵⁰⁵

Conclusion 9.6.4 *BRCS/RCG concluded that Company regularly communicates and reviews performance metrics for IT.*

Analysis

The NU Senior Team’s monthly 2014 Performance Review clearly defines the key IT Initiatives and the current progress toward completion. This gives the IT Initiatives top-level focus and organizational clarity. Additionally, internal and external audits have been completed annually on the SCADA and business systems to ensure security and access is consistent with internal policies and in compliance with GAP, SARBOX, and federal and state requirements.⁵⁰⁶ IT leadership periodically updates the Board of Directors on NU’s cyber security.

Conclusion 9.6.5 *BRCS/RCG concluded that the Company’s IT technology and major systems are effective in addressing the strategic needs of the business.*

Analysis

YGS follows the IT project prioritization and approval process as established for NU. The CIO or her designee must approve all IT projects. A formal process exists through which every project is reviewed and compared with other IT requests. The Business Partner begins the process by submitting a project for consideration to IT. IT accumulates all requests and the IT project management office (PMO) ranks them based on the business strategy and needs across NU, whether the project is the right project to do and can actually be completed within a reasonable timeline. IT then submits their recommendation to senior leadership as part of the annual IT budget. If a project is approved as part of the IT budget, the Business Partner

⁵⁰⁴ Response to Data Request Q-IT-03-027.

⁵⁰⁵ Response to Data Request Q-EXEC-03-025.

⁵⁰⁶ Response to Data Request Q-FINANCE-03-024.

completes a Project Authorization Form (PAF) for final approval. Once approval is obtained and the funding made available, the project team proceeds with the implementation.⁵⁰⁷

Conclusion 9.6.6 *BRCS/RCG concluded that YGS has access to IT project funding and support.*

Analysis

The IT project identification and authorization process provides YGS equal opportunity and access to IT project funding as with any NU company. The process uses a common set of criteria for consideration of all IT projects.⁵⁰⁸ Given the project need, consistency with the business's strategy, cost benefit, and business executive support, a YGS IT project can compete on an equal basis for IT funding.

Recommendations

BRCS/RCG has no recommendations for this audit item.

9.7 Records Management

Objectives and Scope

In the area of Records and Information Management (RIM), BRCS/RCG reviewed the Company's manuals, policies, procedures, and practices related to the protection of the infrastructure and computer networks associated with the Company's electronic information. Records Management is the responsibility of IT, and, therefore, much of this discussion has already been recorded in the IT section above. Because the IT is part of the NUSCO centralized service organization, all of YGS's Records Management services are provided through that organization.

Overall Assessment

BRCS/RCG has found that the Company's Records Management functions appropriately. Policies and procedures exist to order activity, and internal controls ensure the proper emphasis toward operational performance in accuracy, security, and control.

Evaluation Criteria

As mentioned at the beginning of this chapter, the evaluation criteria for all Support Services areas included the following:

- Does the Company have adequate departmental policies and procedures for each area?
- Are departmental goals and objectives clear, measurable, and realistic?
- Does the Company review performance metrics for each of the departments within Support Services?

⁵⁰⁷ Response to Data Request Q-IT-02-020.

⁵⁰⁸ Response to Data Request Q-IT-03-009.

Regarding Records Management, these evaluation criteria may be further divided into five sub-sections: Policies & Procedures, Best Practices, Communication, Compliance, and Performance. Detailed evaluation criteria within each of these sub-sections include the following:

Policies & Procedures

- Has the Company implemented security measures to protect against data breaches as well as protecting the integrity of the data, customer information, etc.?
- Who is minding the store front (firewall) and how?
- How does the Company respond to threats?
- Is there a clear definition of roles and responsibilities?

Best Practices

- Do they have a well-documented policy and procedure that captures the institutional knowledge of current practices?

Communication

- Is the Company efficient in its Records Management?
- Does the department provide adequate control of records?

Conclusions

Conclusion 9.7.1 *BRCS/RCG concluded that Records Management’s policies and procedures are adequate.*

Analysis

According to the Company’s RIM Policy, NU is “committed to accurately preparing and maintaining company information, confidential information and records in accordance with applicable laws and regulations. NU protects company information and records from unlawful and unauthorized access, acquisition, use or destruction within and outside the company.”⁵⁰⁹

NU’s RIM policy includes the necessary information for proper adherence to responsible records management:⁵¹⁰

- Guidelines – Expectations for confidentiality, ownership, protocols, safeguarding, and conformity are highlighted in this section.
- Types of information – Definitions of specific classes of information (such as Confidential Business Information, Confidential Personal Information, and Protected personal Information) are delineated as well as the identifying definition of what records are. Records retention is also discussed.

⁵⁰⁹ Response to Data Request Q-Records Mgmt-02-005 Q-Records Mgmt-02-005 Attach 1.pdf (RIM Policy).

⁵¹⁰ Response to Data Request Q-Records Mgmt-02-005 Q-Records Mgmt-02-005 Attach 1.pdf (RIM Policy).

- Process – Processes in regard to confidential information, disposition of records, loss of records, breach of confidentiality, and other records management activity are provided.
- Critical Infrastructure Protection (CIP) Policy

Regarding records management security, firewalls, and response to threats, the IT section provides discussion of the Company's activity in these areas.

Conclusion 9.7.2 *BRCS/RCG concluded that Records Management policies and procedures maintain a best practices approach in operation.*

Analysis

Although the latest extensive study involving an assessment of NU's IT Security function and its services occurred in 2008 (several years prior to the announced merger with NSTAR), the results of the study allowed the Company to reorganize and better align the IT security services to "best practices." In 2009, IT senior management approved the implementation of Option D: Build CIS Capabilities, Source Internally and Outsource. The option was least costly to implement and, at the same time, provided the Company the best gain in improvement of services. The IT Security function gets audited extensively throughout the year by various internal and external organizations to assess the on-going effectiveness of their program.⁵¹¹

Thus, while there has not been an extensive assessment study of security in the past few years, the concentration internal audit focus on the effectiveness of the programs appears to adequately address operational practices.

Conclusion 9.7.3 *BRCS/RCG concluded that Records Management performs properly.*

Analysis

Much of the efficiency and control of documents is discussed in the IT section of this report since it is the IT department which holds responsibility for Records Management.

The Company monitors RIM compliance through several different avenues:

- Internal Audit
- Records Maintenance
- Reported Incidents

The last RIM audit was performed in 2012 by NU's Internal Audit Department. The overall conclusion for the program was "Controlled," which is defined as "Internal control systems are functioning in an acceptable manner to provide reasonable assurance that management's control objects are being achieved. If opportunities for improvement are noted, they are considered minor in nature and have been communicated to management."⁵¹²

Maintenance of records is performed annually during the first quarter of each year. A batch delete process identifies all documents that have met their retention limit and are not on

⁵¹¹ Response to Data Request Q-IT-01-298.

⁵¹² Response to Data Request Q-Records Mgmt-02-008.

a litigation hold. A workflow process is integrated with Legal’s Litigation Hold Order application, which identifies employees who are affected by the hold and/or if an employee on litigation hold is terminated from the Company. This is a safeguard to protect the required on-hold documentation in order to maintain documentation as required in an eDiscovery request and/or compliance with regulated and legal requirements.⁵¹³

Per the RIM policy, any confidential information breaches and/or improper disclosures are to be reported (whether by employees or external parties) to the following:

- NU management
- IT Support Center
- NU Compliance hotline⁵¹⁴

Any reported incidents/breaches are handled in accordance with NU’s Incident Response Plan. For any such report, a designated Incident Response Team (IRT) is assembled to ensure that the issue is addressed appropriately including, but not limited to response efforts regarding the following:

- To control the issue
- To contain and mitigate the extent of the exposure
- To communicate to all appropriate parties as needed⁵¹⁵

The Company notes, “To the best of our knowledge and information, there have not been any breaches of Yankee Gas confidential information, as defined under Connecticut Law, in the last three years.”⁵¹⁶

Thus, based on the Company’s responses, the departmental goals and objectives, as identified in procedural documents are adequate and support records management intent.

Recommendations

BRCS/RCG has no recommendations for this audit item.

⁵¹³ Response to Data Request Q-Records Mgmnt-02-008.

⁵¹⁴ Response to Data Request Q-Records Mgmnt-02-008.

⁵¹⁵ Response to Data Request Q-Records Mgmnt-02-008.

⁵¹⁶ Response to Data Request Q-Records Mgmnt-02-010.

10. SPECIAL TOPICS

Objectives and Scope

As mentioned in the Introduction chapter to this report, the RFP identified twenty-seven special topics as special areas of focus to be examined in this audit. Of these, most were included in the seven chapters (report chapters 3 through 9) evaluating the interconnected study areas of Executive Management, System Operations, Finance, Human Resources, Customer Services, External Relations, and Support Services. However, BRCS/RCG selected six of the twenty-seven special topics, grouped into two categories based on the correlation of their activity and assessment, to discuss separately in this chapter. BRCS/RCG chose these special topics for separate attention due to their relationship, in the case of Affiliate Transactions and Cost Allocation, with the NU/NSTAR merger, and, in the case of Hurdle Rate and CIAC, with the Docket No. 13-06-02 decision regarding concerns in those areas.

Overall Assessment

Because of the distinct issues grouped in this chapter, overall assessments for each are provided in their separate sections below.

Evaluation Criteria

Evaluation criteria for each categorical area are provided separately in the sections below.

10.1 Affiliate Transactions & Cost Allocation

Objectives and Scope

YGS is a subsidiary within Northeast Utilities, Inc. As such, much of the common costs that NU's service company provides will be allocated to Yankee Gas. In addition, there may be services that affiliates, such as Connecticut Light and Power, could provide and then charge Yankee Gas. This area will review whether there are appropriate controls governing the costs that are charged to Yankee Gas.

Overall Assessment

The Company operates a robust cost-allocation process that emphasizes direct charging but includes fully detailed allocation procedures recorded in the affiliate service agreement and the cost allocation manual.

Based on our review of affiliate transactions, including cost allocation, BRCS/RCG believes that the shared services organization (NUSCO) properly charges for services both in its direct charges and its cost allocations. However, while the program is well documented and sophisticated, additional internal auditing and verification processes could provide additional assurance to YGS that costs are appropriate.

Evaluation Criteria

BRCs/RCG identified eleven main criteria for the evaluation of affiliate transactions and cost allocation. One of those eleven had multiple parts (five sub-criteria). This report groups those criteria into three categories: Proper Guidance, Proper Control, and Proper Application. *Proper Guidance* will include review of those Company documents that describe how affiliate transactions, including cost allocations, are to be conducted to ensure that appropriate governance exists. *Proper Control* will cover review of how the Company ensures that affiliate transactions and cost allocations are being performed according to Company documentation. *Proper Application* will include review of whether allocated costs are appropriate.

The evaluation criteria in their categories include the following:

Proper Guidance Criteria

- Does the Company have a cost allocation manual and has it been properly vetted and audited for reasonableness and compliance to Authority rules and regulations?
- Does the Company maintain formal and effective cost allocation policies, procedures, and related manuals that apply approved costing principles for transactions?
- What is the policy regarding the use of direct charges versus allocation for services obtained from or provided to affiliates?

Proper Control Criteria

- Is there clear executive responsibility for monitoring and controlling affiliate transaction policies and procedures?
- Are there adequate controls in place to prevent affiliate transaction abuses?
- Are management time distributions used by the utilities and their affiliates to charge for services to and from affiliates validated regularly?

Proper Application Criteria

- What kind of affiliate transactions does NU engage in with YGS and subsidiaries:
 - Are the common cost-allocation factors reasonable?
 - Are affiliate transactions priced in/out at reasonable costs?
 - Are there effective internal controls in place for managing and controlling levels of service and costs of services between and among regulated and non-regulated entities? If so, are they being applied?
 - Are the companies permitted to utilize the most cost-effective means to procure goods and services?
 - Is YGS paying an appropriate share of the parent company's costs and is employee time being fairly allocated?
- Are methods of allocating overhead costs appropriate and reasonable?
- Do overhead charges align with the business unit's use of the service function?

- Are controls regarding cost allocation and assignment, and other affiliate transactions, effective?
- Has the Company demonstrated that services obtained from and provided to affiliates are comparable to those of qualified providers and obtained at favorable terms and conditions on a service-by-service basis?

Conclusions

Conclusion 10.1.1 *Proper Guidance - BRCS/RCG found that the Company has an adequate cost allocation system and policies and procedures for affiliate transactions; however, the cost allocation manual could provide additional information.*

Analysis

The Northeast Utilities Service Company (NUSCO) is the service company of NU that provides shared services to the various business units. Shared services include certain administrative, legal, accounting, purchasing, and other services for the benefit of the operating companies of the NU system.⁵¹⁷

The Service Agreement between NUSCO and YGS governs their service relationship.⁵¹⁸ Within that agreement are listed the types of services provided by NUSCO to affiliates.⁵¹⁹

- Accounting: Accounting and related services, including, without limitation, preparation of financial reports and preservation of records.
- Auditing: Auditing and related services, including without limitation, providing planned audits, investigations, external audit activities, Sarbanes-Oxley compliance, and special audits, including preparation of reports and recommendations.
- Business Continuity and Emergency Response Services: Business continuity planning, emergency response and related services, including, without limitation, services related to disaster recovery, weather events and emergency maintenance and restoration of utility company services and mobilization of personnel and equipment.
- Communications: Communications and related services, including, without limitation, executive communications, customer and enterprise employee communications, media relations and regulatory communications, operating company and transmission communications, and communications to investors, financial analysts, rating agencies, and investment firms.
- Conservation & Load Management Services: Conservation, load management, and related services, including, without limitation, supporting various energy-efficiency and conservation programs for residential, commercial/industrial, and municipal customers and providing affiliates with tracking, analysis, and reporting on electric and natural gas programs and budgets.
- Construction: Construction, maintenance, and related services, including, without limitation, provision of equipment and services for gas and electric systems and infrastructure construction and maintenance.

⁵¹⁷ Response to Data Request Q-EXECUTIVE-01-023, Attachment 1-1.

⁵¹⁸ Response to Data Request Q-EXECUTIVE-01-026, Attachment 1.

⁵¹⁹ Response to Data Request Q-EXECUTIVE-01-026, Attachment 1.

- Corporate Matters and Corporate Records: Corporate and related services, including, without limitation, corporate matters of affiliates, corporate regulatory filings, financing, regulatory compliance, contracts, claims and litigation, shareholder and investor relation services, corporate record keeping, services related to shareholder and director meetings.
- Customer Relations: Utility customer services, including, without limitation, customer call center operations, metering operations, billing services, credit and collection services, revenue stream operations, information technology, and systems operations.
- Demand Side Management: DSM program design, project managements, and monitoring and evaluation services; technical advice and assistance in preparing responses to RFPs.
- Electrical and Gas Plant Operations and Maintenance: Comprehensive services relating to ongoing and maintenance of electric and gas generating, transmission, and distribution facilities.
- Energy Supply: Energy supply and related services, including, without limitation, planning, procurement of fuel, electricity and natural gas, contract negotiation and administration, and management of renewable energy programs.
- Engineering: Civil, mechanical, electrical, environmental, and other engineering services; technical advice, design, installation, supervision, planning, research, testing, operation of communications, and operation and maintenance of specialized technical equipment.
- Enterprise Risk Management: Enterprise risk management services, including, without limitation, assisting businesses with prioritizing, developing mitigation strategies for monitoring, and reporting on their strategic, financial, operational, and major capital project execution risks.
- Environmental: Environmental and related services, including, without limitation, environmental compliance, management, remediation and site assessment, and training.
- Facilities: Facilities and related services, including, without limitation, property acquisition, property maintenance, property disposition, documentation and recordkeeping of property inventories and valuations, and other facilities information.
- Finance/Business Planning: Corporate finance and related services, including, without limitation, financial analysis, cost analysis, budgeting, and tax planning.
- Human Resources: Human resources and related services, including employee ethics, compensation, recruiting, hiring, and orienting new employees, diversity and Affirmative Action, performance management, leadership development and training, wellness, labor relations, and employee benefits.
- Information Technology: Information technology services, including, without limitation, IT technical support, business process support, document management, software and hardware disbursement and support, web development, application development, project management, network access and support, information security, streaming media, and computer recycling services.
- Insurance: Insurance and related services, including, without limitation, development, placement, and administration of insurance coverages, claims, and valuations.
- Legal: Legal services, including, without limitation, legal services related to corporate governance, finance, transactional activities, regulatory proceedings and appeals, and commercial litigation.
- Marketing: Marketing services and expertise related to natural gas, DSM, electric transportation, and other services.

- Policies and Procedures: Services related to the development, implementation, and training of policies, procedures, standards, guidelines, and related information.
- Procurement and Stores: Procurement and related services, including, without limitation, procurement and storage of materials, supplies and equipment, contracting of services, strategic sourcing, commodity planning, utilization of diverse suppliers, and sustainability review of products and services in support of affiliates’ business objectives.
- Rates: Review, design, interpretation, analysis, and other services regarding rates and special contracts for sale of gas and electricity.
- Regulation: Analysis of laws, rules and regulations, and recommendations for action thereunder; handling of matters with regulatory and governmental authorities; preparation of applications, registrations, and periodic reports; analysis and compliance with environmental requirements.
- Taxes: Services regarding federal, state, and municipal taxes, preparation of returns, and handling of audits and claims by taxing authorities.
- Transportation: Transportation and related services to manage, maintain, and provide all support for affiliates’ vehicle assets – the fleet vehicles and heavy equipment motor pool.
- Treasury and Statistical: Services regarding financing to meet affiliate capital requirements, both short and long-term, determination of capital needs, investment management, lender relations, credit risk assessments, treasury operations, and preparation of financial and statistical reports.
- Other Services: Such other services as are requested from time to time.

The NUSCO Cost Allocation Manual (CAM) describes the NUSCO 99 Allocation System by which costs are allocated to YGS. The designation “99” is the charge accounting unit (CAU) associated with a multiple company allocation (as opposed to a direct charge to only one company). All costs allocated (not directly charged) to YGS flow through the NUSCO 99 process. At the time NUSCO employees incur costs, the responsible NUSCO employee identifies the appropriate subsidiaries/segments on whose behalf the costs were incurred. As each invoice, time sheet, or other source system item is processed, the accounting is applied to the individual transaction. For time reporting, employees enter their time into COLT (Corporate Online Time) by Cost Control Center (CCC), activity, and CAU. The NUSCO 99 Allocation System takes any costs charged to CAU 99 and assigns them to the appropriate subsidiary/segment based on the rate codes established for that CCC and activity/FERC account.⁵²⁰

The Company intends allocation of costs only when the NUSCO activity is being provided for more than one company. The CAM provides guidance on how to use the system and discusses the importance of direct charging the subsidiary/segment whenever possible. It is only when direct charging is not possible, due to the work benefitting multiple companies, that the CAU 99 is used in order to allocate costs.⁵²¹

The NUSCO 99 Allocation System is used to assign costs from NUSCO to the appropriate subsidiaries/segments using the CAM-defined methodologies and rate codes. There are

⁵²⁰ Response to Data Request Q-EXECUTIVE-01-023, Attachment 1-1.

⁵²¹ Response to Data Request Q-EXECUTIVE-01-023, Attachment 1-1.

multiple methodologies (19 defined in the CAM) and multiple rate codes (141 defined in the CAM) that are used to ensure that the method of distributing costs among transaction-identified companies/business segments is appropriate.⁵²² The Company also provided detailed descriptions of the allocation methodologies and a matrix of the rate codes associated with each methodology.⁵²³ The FERC accounts to which activities are mapped, determine which rate code the functional profile will use. The Rate Codes determine the allocation for the charges to the specific FERC accounts. All of the data is housed within MIBS (Management Information and Budgeting System).⁵²⁴

Conclusion 10.1.2 Proper Control - BRCS/RCG found that, while indications exist assuring stakeholders that the Company's cost-allocation and affiliate transactions are appropriate, improvement could be made with regard to additional verification activities.

Analysis

Two aspects to control exist related to company programs. One aspect is whether company personnel comply with the company program. The other aspect is whether the company program complies with company management intention. To assess whether Company personnel comply with the cost-allocation process as described in the CAM, proper training should be in place, information regarding use of the system should be accessible by all users, and the data entering the system should be validated and verified periodically.

The Company's cost allocation-system is detailed and sophisticated. Understanding it, however, is not left to the Company's accounting experts. The CAM is straightforward and accessible. The other time charge systems are likewise accessible.⁵²⁵ Additionally, NU provides training as part of its supervisor management training program, called SuperVision. Within SuperVision, the Management Information and Budgeting System is discussed, including training on the NUSCO 99 Allocation System (the system by which services for multiple-companies are charged). The training explains the use of the Charge Accounting Unit 99, the code used for assigning costs based on the Functional profile for the Cost Control Center. Training is thorough with adequate time for questions and answers provided.⁵²⁶ NU also has an Intranet site that provides self-service information to all Company employees. That site also has a link, on multiple pages, to the Company's Management Information and Budgeting System Code Block Manual, which includes the NUSCO 99 Allocation System Manual.

Should any employee violate policies of cost allocation or other affiliate transaction compliance, those violations would be handled through the Company's human resource procedures. The Company also maintains an anonymous call-in number for employees to communicate violations of the Company's code of conduct.⁵²⁷

⁵²² Response to Data Request Q-EXECUTIVE-01-023, Attachment 1-1.

⁵²³ Response to Data Request Q-COST ALLOC-01-372, Attachment 1.

⁵²⁴ Response to Data Request Q-EXECUTIVE-01-027.

⁵²⁵ Response to Data Request Q-EXECUTIVE-01-023.

⁵²⁶ Response to Data Request Q-EXECUTIVE-01-024.

⁵²⁷ Response to Data Request Q-COST ALLOC-01-370.

Regarding affiliate transactions, the NU companies are also subject to state and federal affiliate rules that govern the relationship between a distribution company and its competitive affiliates. The core principles of the affiliate rules are to ensure that a distribution company does not subsidize or provide an unauthorized benefit to its affiliates. NU provides training in affiliate rules throughout its system. To satisfy the specific training requirements in FERC Order 717 Standards of Conduct, for example, all NU function groups utilize a computer-based training module offered by the Edison Electric Institute. Additionally, NU's internal Intranet (NUnet) dedicates a portion of the site to policies, procedures, and manuals. Within that section is a page that contains the various state and federal affiliate regulations.⁵²⁸

To assess whether the cost allocation-program complies with management intention, BRCS/RCG requested copies of any audits of the CAM performed within the past five years. The Company replied that there were no audits or reviews performed on the CAM during the last five years. There were also no external audits related to cost-allocation among affiliates in the past three years. The last SEC audit conducted on the shared service organization was in 2005.

BRCS/RCG has found that the program and procedures in place for cost allocation and affiliate transactions are detailed and comprehensive. We have further found that the detail within the cost-allocation program itself and the training and availability/accessibility to system information should be sufficient to support proper use of the system. However, there appears to be a distinct lack of follow-up to ensure that such is the case. The cost-allocation manual and process are not being audited regularly. Additionally, no follow-up validation or verification of use of charge accounting unit code 99 that designates multi-company allocations was noted.

Conclusion 10.1.3 Proper Application - BRCS/RCG concluded that the Company applies reasonable costs for services.

Analysis

BRCS/RCG reviewed the affiliate transaction records for YGS for 2011 through YTD 2014. The Company files documentation for the accounting records with the annual code of conduct filing pursuant to Connecticut Agencies Regs 16-47a-1 to 16-27a-12.⁵²⁹

Much of the BRCS/RCG assessment of the appropriateness of the Company's affiliate transactions and especially the cost allocation of the services of NUSCO to YGS focus on whether these services are performed at a cost comparable to the cost YGS could obtain those same services apart from NUSCO. The first step in this assessment was to determine whether the services from NUSCO were comparable to those of other qualified providers. BRCS/RCG requested from the Company a description of how the Company ensures that services by NUSCO to YGS are comparable to what YGS could expect from other companies providing those same services.

The Company responded by stating that the services provided by NUSCO to YGS were primarily labor and outside services. Regarding labor, the Company indicated that the Human

⁵²⁸ Response to Data Request Q-AFFL TRANS-01-379.

⁵²⁹ CONFIDENTIAL Response to Data Requests Q-EXECUTIVE-01-025 and Q-EXECUTIVE-01-026.

Resources department ensured that NUSCO pays market-based wages. This is confirmed by comparison of market information with both new hires and resignations. Additionally, NUSCO labor is charged to YGS at cost (without any markup). Therefore, in-house labor would necessarily be at least as competitive as the market, while in most cases better.⁵³⁰

NUSCO does obtain the services of outside contractors for specific support. The Company's procurement policies and procedures ensure that NUSCO obtains the right product or service from a vendor at a competitive price.⁵³¹

In response to benchmarking or other studies of industry peers in the past five years, the Company provided a study that compared shared services costs with other similarly structured organizations (i.e., utilities owned by a parent who provides shared and allocated services). Companies in the comparison were said to have come from across the country; however, the names of the companies were not disclosed, and so it was impossible to draw informative conclusions concerning NUSCO's relative positioning, [REDACTED]

⁵³²

Regarding cost mark-ups and overheads for affiliate transactions, all affiliate transactions and services are provided at cost. There is no mark-up or mark-down on affiliate transaction costs.⁵³³ The overhead rate on cost allocations is calculated by taking the sum of payroll taxes, insurance costs, pension and other benefit costs, NUSCO Rents, NUSCO Depreciation, and the NUSCO Rate of Return and dividing it by NUSCO labor. The non-productive time overhead rate is calculated by taking the total non-productive labor divided by productive labor.⁵³⁴

The Company provided BRCS/RCG with NUSCO charges to YGS for 2011 through YTD 2014.⁵³⁵ A summary table appears below.

⁵³⁰ Response to Data Request Q-COST ALLOC-01-374.

⁵³¹ Response to Data Request Q-COST ALLOC-01-374.

⁵³² CONFIDENTIAL Response to Data Request Q-COST ALLOC-01-376.

⁵³³ Response to Data Request Q-AFFL TRANS-01-377.

⁵³⁴ Response to Data Request 01-COST ALLOC-01-371.

⁵³⁵ CONFIDENTIAL Response to Data Requests Q-EXECUTIVE-01-25, Attachments 1, 2, and 3 and CONFIDENTIAL Q-EXECUTIVE-01-026, Attachment 1.

Table 24: NUSCO Charges to YGS (2011 - YTD 2014)

	(a)	(b)	(c)	(d)	(e)
	Department	2011	2012	2013	YTD 2014
1	Accounting Total	2,518,228	2,256,223	2,287,285	1,134,962
2	Benefits Total	4,560,493	0	0	0
3	Business Services Group Total	1,467,417	0	0	0
4	CEO Total	209,099	101,280	17,987	5,060
5	CFO Total	88,296	0	0	0
6	Chief Compl Off	0	25,479	19,922	8,000
7	CL&P / YG PRES Total	1,418,590	10,848	72,046	65,492
8	Claims & Insurance Total	135,621	0	0	0
9	Communications Total	714,177	318,096	355,367	221,009
10	Community Relations	0	378,106	0	0
11	Competitive Business Total	0	0	0	0
12	Corporate Purchasing Total	521,288	0	0	0
13	Corporate Relations	0	0	28,118	36,147
14	Corporate Secretary & Board Total	310,913	250,093	206,001	150,337
15	Corporate Strat & Env Affairs	0	128,015	57,406	26,090
16	Customer Group	0	8,708,675	9,280,905	5,659,220
17	Emergency Preparedness	0	0	0	97,198
18	Employee Costs	0	5,599,006	3,251,528	2,045,778
19	Energy Supply	0	0	56	707,279
20	Enterprise Planning & Development Total	135,170	0	0	0
21	Enterprise Risk Management Total	73,737	0	0	0
22	Environmental Services Total	800,033	0	0	0
23	EVP - Chief Financial Officer	0	24,298	-3	0
24	EX VP Util Ops	0	94,172	78,176	47,713
25	Exec Chief Administrative Officer	0	0	70,014	42,758
26	Exec VP + COO Total	563,829	0	0	0
27	Facilities Management Total	1,500,388	0	0	0
28	Fed Leg Affairs	0	81,069	64,167	35,614
29	Financial Planning Total	476,113	266,058	222,871	81,821
30	Gas President	0	0	0	827,010
31	General Counsel	0	912,196	877,763	511,285
32	Government Affairs - Fed Total	115,377	0	0	0
33	Government Affairs - State Total	305,185	0	0	0
34	Government Affairs - Total	0	0	295,027	129,885
35	Human Resources Total	1,208,010	1,018,008	743,655	474,982
36	Information Technology Total	7,068,053	7,381,217	6,712,077	3,430,129
37	Internal Audit & Security	415,789	483,988	334,059	241,965
38	Internal Rent Overhead Total	1,102,969	-981,713	0	0
39	Investor Relations Total	91,756	84,687	91,033	69,771
40	Legal Total	1,155,831	0	0	0
41	Media Relations	0	37,959	35,437	68,222
42	Misc - Other	-8,618,401	-7,487,688	-4,705,693	-1,489,290
43	NUSCO Depreciation Total	846,185	993,177	978,173	659,810
44	NUSCO Rents	0	0	928,692	582,321
45	Operations Services	0	0	834,388	876,064
46	Overhead Insurance Total	26,998	67,296	42,067	17,933
47	Pension Total	3,773,275	4,649,740	4,296,268	1,969,354
48	Rate of Return Total	252,827	0	0	0
49	Real Estate Total	47,935	0	0	0
50	Regulatory Affairs & Comm	3,141	253	75	189,979
51	Regulatory Poliy FERC	0	50,730	47,505	19,628
52	Shared Services Total	67,314	0	0	0
53	State & Reg Affairs	0	308,911	0	0
54	Supply Chain, Env Affairs & Property Mgmt	0	0	2,202,373	1,334,106
55	Transmission President	567	952	-171	11,477
56	Treasury	319,147	480,193	339,191	187,980
57	Utility Customer Services Total	8,277,810	0	0	0
58	Utility Group Services Total	718,747	0	0	0
59	Utility Group Transmission Projects Total	155,912	0	0	0
60	VP - Integration Planning	0	31,427	17,636	0
61	VP - SC, RE, & Prop Mgmt	0	3,799,022	0	0
62	VP BFS & CPM	0	388,719	841,715	613,663
63	VP Northernpass	0	40,496	0	0
64	VP Ops & Safety	0	927,743	0	0
65	VP Rates & Rev Req	0	1,127,150	397,977	127,622
66	VP Shared Services	0	76,681	0	0
67	VP Transmission Strategy & Operations Total	2	0	0	0
68	YG President	0	36	0	0
69	Grand Total	\$32,827,820	\$32,632,599	\$31,321,093	\$21,218,372
70	2014 Annualized				\$36,374,352
71	% Increase/decrease from previous year		-0.59%	-4.02%	16.13%

BRCS/RCG has found that the fact that the Company participated in industry comparison of shared services costs was a good step toward ensuring maintenance of proper rates.

Regarding the comparison of year-to-year NUSCO charges, the greater than 16% increase from 2013 to annualized 2014 is a matter of concern. Annualization does not take into account the possibility that charges may not be linearly spread throughout the year, and, therefore, more charges may have occurred in the first half of 2014 than will occur in the second half. However, considering that merger savings should be realized in 2014 from the merger with NSTAR, the 2013 to 2014 difference in NUSCO charges should be examined once all actual charges are recorded by the end of the year.

Recommendations

Recommendation 10.1.1 BRCS/RCG recommends that the Cost Allocation Manual include more detailed information concerning the specific services provided by NUSCO to the operating utilities (such as found in the Service Contract between Northeast Utilities Service Company and Yankee Gas Services Company).

Recommendation 10.1.2 BRCS/RCG recommends that the internal audit group schedule an audit within the next year (and include an audit on a three-year cycle) to review the cost allocation manual and process and other affiliate transactions to ensure (1) that actual practice does comply with the governing documentation and (2) that the governing documentation does indeed cover all current activity.

Recommendation 10.1.3 BRCS/RCG recommends that a validation and verification process be developed to randomly check the use of the CAU 99 for multi-company allocations to ensure that work performed was correctly allocated.

Recommendation 10.1.4 BRCS/RCG recommends that the Company continue to participate in additional industry studies or develop their own peer group analysis of shared services costs to ensure appropriate levels of service costs.

Recommendation 10.1.5 BRCS/RCG recommends that an internal audit be performed on NUSCO charges after the close of 2014 to ascertain the difference in year-to-year charges and, if significant, the explanation for the difference.

10.2 Hurdle Rate & CIAC

Objectives and Scope

A hurdle rate is the minimum rate necessary for minimum profitability. Cost, sales, and revenue estimates are the most important components of conducting a Hurdle Rate analysis. Although the Company has not performed an internal audit on its Hurdle Rate model for several years, it has performed some analysis in a post mortem report on load and capital cost estimates. The Company's compiled data revealed that typically the Company's load estimates are higher than actuals, often by greater than 25%, and its capital cost estimates are usually lower than the actuals by at least 20%.

In its decision in Docket No. 13-06-02, dated November 22, 2013, the Authority determined these inaccurate estimates unacceptable. Particularly troublesome for the Authority was the realization that the Company had been monitoring the inaccuracies, recommended changes for improvement, implemented those changes, and still found no improvement in the estimates. The Authority was concerned that significant inaccuracies in the estimates may have resulted in a significant number of customers either paying contributions in aid of construction (CIACs) when they were not needed or not paying CIACs when they should have.

In July 2014, as part of Docket 13-06-02RE01, the Company engaged in collaboration with the Connecticut Department of Energy and Environmental Protection, the Office of Consumer Counsel, and the other two local distribution companies in Connecticut to specifically address the regulatory oversight and disclosure criteria for project variances. A comprehensive set of new controls were proposed to the Authority in December 2014, and on January 20, 2015, the Authority issued a ruling that approved these new controls for the duration of the 10-year Gas Expansion Program.

Overall Assessment

The Company has addressed previous issues regarding inaccurate estimates involved in the Company's hurdle rate. The resultant model and practice appear reasonable.

Evaluation Criteria

To investigate the Company's hurdle rate analysis and CIACs, BRCS/RCG established the following evaluation criteria:

- What is the process by which the Company forecasts costs and sales used in the hurdle rate financial analysis for new customers?
- Has the Company implemented any actions in the past year to address and/or correct the level of inaccurate estimates? If so, have the actions proven effective?
- Has the Company determined whether 2014 customers who have paid CIAC did so when they should not have? If so, how many customers paid when they should not have, and what was the amount?
- Has the Company determined whether 2014 customers who have not paid CIAC should have? If so, how many customers did not pay who should have, and what was the amount?
- Does the Company have any additional actions planned to correct the level of inaccurate estimates?

Conclusions

Conclusion 10.2.1 *BRCS/RCG found that the Company's hurdle rate financial analysis is adequate for its purpose.*

Analysis

The Hurdle Rate is a net present value calculation the Company uses to determine whether installing a service line or main extension for a customer or set of customers will be an economical investment over a given timeframe. The Company's hurdle rate model is designed with a 25-year payback period, no requirement to run a hurdle rate test for customers that are located less than 150 feet from an existing main, and a portfolio view approach to hurdle rate modeling projects in a common geographical area. This portfolio view approach includes three to five years of forecasted revenues in the hurdle rate analysis to capture anticipated customer conversions not initially supported by firm commitments at the time of signing, and an adjustment to the imputed revenues in the hurdle rate model to account for societal benefits of limited expansion projects.

The hurdle rate analysis is necessary to ensure that new customer additions made by the Company are not unduly subsidized by existing customers. If the customer does not pass the hurdle rate analysis, that customer would be required to pay a CIAC to be served. Therefore, a hurdle rate seeks to provide reasonable assurances that the revenues expected to be produced by the new customer will exceed costs, including a return of and on investment.

The Authority's Order, dated November 22, 2013, in Docket No. 13-06-02 identified concerns with inaccurate estimates in the hurdle rate. In view of those concerns, the Authority ordered that the Company hire a professional auditor or an outside consultant to review and audit the hurdle rate estimation inaccuracies. The Company complied with this order, hiring Sussex Economic Advisors, LLC. A report was subsequently issued in July 2014 identifying approximately nineteen recommendations, of which the Company is mobilizing a series of initiatives to review and implement.

Additionally, in July 2014, as part of Docket 13-06-02RE01, the Company engaged in collaboration with the Connecticut Department of Energy and Environmental Protection, the Office of Consumer Counsel, and the other two local distribution companies in Connecticut to specifically address the regulatory oversight and disclosure criteria for project variances. A comprehensive set of new controls were proposed to the Authority in December 2014, and on January 20, 2015, the Authority issued a ruling that approved these new controls for the duration of the 10-year Gas Expansion Program.⁵³⁶

Conclusion 10.2.2 *BRCS/RCG found that the Company collected CIAC from customers that met the Company's criteria for when customers are supposed to make a commitment to a project to serve them. Further, we did not find any instance in which a customer did not pay when CIAC was required.*

Analysis

The Company's tariffs contain the policies where circumstances / conditions require a CIAC. Section 3.4 of the Companies' Rules and Regulations states, "The Company may require a

⁵³⁶ Response to Data Request Q-HURDLERATE-12-002.

contribution from customers if supply of new service or additional load does not result in sufficient financial support of required capital or operating expenses."⁵³⁷

There is not a policy or procedure in regard to waiving a CIAC, therefore CIAC's may not be waived.⁵³⁸ To determine the amount of required CIAC, the Company uses a hurdle rate analysis.⁵³⁹ The Company tracks CIAC payments in a contract tracking report.⁵⁴⁰

⁵³⁷ Response to Data Request Q-CIAC-02-001.

⁵³⁸ Response to Data Request Q-CIAC-02-002.

⁵³⁹ Key assumptions for the hurdle rate analysis were set forth in the November 22, 2013, Decision in Docket No. 13-06-02, PURA Investigation of Connecticut's Local Distribution Companies' Proposed Expansion Plans to Comply with Connecticut's Comprehensive Energy Strategy.

⁵⁴⁰ Response to Data Request Q-CIAC-02-033.

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Appendices

Appendix 1 – Abbreviations and Acronyms

Appendix 2 – Yankee Gas Comments

Appendix 1 - Abbreviations and Acronyms

AA	- Affirmative Action
ACD	- Automated Call Distributor
ACH	- Automated Clearing House
AE	- Account Executive
AFUDC	- Allowance for Funds Used During Construction
AGA	- American Gas Association
AIP	- Annual Incentive Program
AMI	- Advanced Metering Infrastructure
AMR	- Automated Meter Reading
AMS	- Asset Management System
ANI	- Adjusted Net Income
ANSI	- American National Standards Institute
APM	- Accident Prevention Manual
BACG	- Business Area Control Group
Blue Ridge	- Blue Ridge Consulting Services, Inc.
BSC	- Business Solutions Center
C&I	- Commercial and Industrial
C&LM	- Conservation and Load Management
C2	- CustomerCentral, the customer service system
CAM	- Cost (or Corporate) Allocation Manual
CaPP	- Capital Project Approval Policy and Procedures
CAU	- Charge Accounting Unit
CBA	- Collective Bargaining Agreement
CBM	- Condition Based Maintenance
CCC	- Cost Control Center
CCM	- Connecticut Conference of Municipalities
CCNC	- Completed Construction Not Classified
CDPUC	- Connecticut Department of Public Utility Control
CE	- Customer Experience
CEAB	- Connecticut Energy Advisory Board
CEAP	- Connecticut Energy Assistance Program
CEEF	- Connecticut Energy Efficiency Fund
CEO	- Chief Executive Officer
CFM	- Corporate Financial Model
CFO	- Chief Financial Officer
CHRO	- Connecticut Human Rights Organization
CIA	- Certified Internal Auditor
CIS	- Customer Information System
CL&P	- Connecticut Light and Power Company
CLE	- Continuing Legal Education
CM	- Circuit Manager
COE	- Center of Excellence

COLT	- Corporate Online Time
CONVEX	- Connecticut Valley Exchange
COO	- Chief Operations Officer
CPA	- Certified Public Accountant
CPM	- Corporate Performance Management
CRM	- Customer Relationship Management
CRMS	- Corporate Records Management System
CSR	- Customer Service Representative
CTA	- Call-to-Action
CWIP	- Construction Work In Progress
D&I	- Diversity and Inclusion
DA	- Decision Analysis
DART	- Days Away Restricted Transferred
DDI	- Development Dimensions International
Department	- Department of Public Utility Control
DIF	- Difficulty/Importance/Frequency
DOE	- Department of Energy
DOT	- Department of Transportation
DPUC	- Department of Public Utility Control
DRM	- Department Records Manager
DSCADA	- Distribution Supervisory Control and Data Acquisition System
DSEM	- Distribution System Engineering Manual
EAP	- Employee Assistance Program
EBE	- Economic and Business Development
ECMB	- Energy Conservation Management Board
EDI	- Electronic Data Interchange
EDS	- Electronic Dispatch System
EEO	- Equal Employment Opportunity
EIA	- Energy Independence Act
EOC	- Emergency Operations Center
ERM	- Enterprise Risk Management
ERMC	- Executive Risk Management Council
ERP	- Enterprise Resource Planning
ERP	- Emergency Restoration Program
ERT	- Electronic Receiver Transmitter
FASB	- Financial Accounting Standards Board
FD	- Fair Disclosure
FERC	- Federal Energy Regulatory Commission
FFO	- Funds from Operations
FTE	- Full Time Equivalent
G/L	- General Ledger
GAAP	- Generally Accepted Accounting Principles
GIS	- Geographic Information System
GIS	- Graphical Inventory System

HIPAA	- Health Insurance Portability and Accountability Act
HR	- Human Resources
HRA	- Health Reimbursement Account
HRIT	- Human Resources Information Technology
IA	- Internal Audit
IAD	- Internal Auditing Department
IBEW	- International Brotherhood of Electrical Workers
IIA	- Institute of Internal Auditors
IR	- Investor Relations
ISACA	- Information Systems Audit and Control Association
ISO	- Independent System Operator
IT	- Information Technology
ITIL	- Information Technology Infrastructure Library
IVR	- Interactive Voice Response
JIT	- Just in Time Training
KPI	- Key Performance Indicators
KRA	- Key Result Area
LIHEAP	- Low Income Home Energy Assistance Program
LTIC	- Long-term Incentive Compensation
MARC	- Management Associated Results Company, Inc.
MDS	- Mobile Dispatch System
MIBS	- Management Information and Budget System
MIMS	- Materials Information Management System
MIS	- Management Information System
MPP	- Matching Payment Program
MVRS	- Multi-Vendor Reading System
NARUC	- National Association of Regulatory Utility Commissioners
NEO	- Named Executive Officers
NSTAR	- NSTAR Company
NU	- Northeast Utilities
NUCHRIS	- Northeast Utilities Corporate Hours Information System
NUERP	- Northeast Utilities Emergency Response Plan
NUNet	- NU Intranet
NUSCO	- NU Service Company
O&M	- Operation and Maintenance
OCCap	- Operating Companies Capital Program
OCRC	- Operating Company Review Committee
OJT	- On the Job Training
OPEB	- Other Post-Employment (Retirement) Benefits
OSHA	- Occupational Safety and Health Administration
OTD	- On Time Delivery
PCB	- Polychlorinated biphenyls
PES	- Performance Enhancement System
PMVA	- Preventable Motor Vehicle Accident

PSNH	- Public Service of New Hampshire
PTMS	- Performance and Talent Management System
RaCC	- Risk and Capital Committee
RCG	- River Consulting Group, Inc.
RCM	- Reliability-Centered Maintenance
RCRC	- Regulated Company Review Committee
RFP	- Request for Proposal
RIM	- Records and Information Management
RM	- Records Manager
RMC	- Risk Management Council
RMS	- Route Mean Square
ROW	- Rights of Way
RSU	- Restricted Share Units
RTO	- Recovery Time Objective
S&P	- Standard & Poor's
SAT	- Systematic Approach to Training
SAU	- Source Accounting Unit
SBC	- Standards of Business Conduct
SCADA	- Supervisory Control and Data Acquisition
SEC	- Security and Exchange Commission
SERP	- Supplemental Executive Retirement Plan
SERT	- Skills Enhancement Refresher Training
SIRS	- Safety Incidence Report System
SLA	- Service Level Agreement
SOC	- System Operations Center
SOX	- Sarbanes-Oxley
SPCC	- Spill Prevention, Control, and Countermeasure
SSR	- Shared Services Roundtable
STORMS	- Severn Trent Operational Resource Management System
T&D	- Transmission and Distribution
T2F	- Time to Fill
TDRP	- Transmission and Distribution Reliability Performance
TOU	- Time of Use
TRACS	- Tracking Regulated Activities and Calendar System
UGCap	- Utility Group Capital Program
UOMA	- Utilities Operations and Management Analysis
UPIS	- Utility Plant in Service
UTG	- Utility Group
VOC	- Voice of the Customer
VP	- Vice President
WMS	- Work Management System
WPP	- Winter Protection Program
WRAP	- Weatherization Residential Assistance Partnership
YGS	- Yankee Gas Services

YTD - Year to Date
ZIP - Zero Incident Program

Appendix 2 – Yankee Gas Comments

The following are the specific comments that Yankee Gas had on the report. Each comment is included at its respective position within the report along with the BRCS/RCG reply. Editorial comments provided by the Company were incorporated in the draft to the extent that they only clarified the statement(s) and did not alter the findings, conclusions or recommendations.

COMMENTS ON CONCLUSIONS

Conclusion 4.3.12 *BRCS/RCG found that YGS uses the more costly open-trench construction over the boring method for the majority of plastic and coated steel pipe in its expansion program; this will aid better maintenance but drive installation cost up.*

Management Response: The Company disagrees with this conclusion. Please provide citation on installation costs.

BRCS/RCG Reply: In work with a confidential client the Auditor did an analysis of trenching versus directional boring and found that directional boring was the lower cost option. However, this client was not in CT. The exception to this would be in urban areas where there are significant services tied to the main. In suburbs where the density of services is much lower than boring would be more cost effective.

Conclusion 4.4.3 *BRCS/RCG concluded that the Company's budgeting and scheduling of construction projects is adequately undertaken and performed, but certain improvements could support cost efficiencies. Further, it appears the State of Connecticut requires all excess spoils to be tested and sent to approved landfills*

Management Response: Edits provided above.

Conclusion 4.5.4 *BRCS/RCG concluded that QA/QC (a recently added organization) is staffed by non-company personnel and oversees only contractor construction activities and does not address in-house construction work. There are a number of senior YGS mechanics on limited duty, who already possess the skills and technical knowledge to be QA/QC inspectors, and therefore could be QA/QC inspectors if the Company wanted to staff the department with some or all employees rather than contractors.*

Management Response: Eversource is evaluating the QA/QC program and will be introducing internal inspectors as well as performing inspections on company work crews.

Conclusion 4.5.6 *BRCS/RCG concluded that YGS is outsourcing the majority of construction work and a number of other functions that could be impacting its system's knowledge base.*

Management Response: Outsourcing construction may not impact system knowledge base. The reference to other outsourced functions requires a reference in order to evaluate.

Conclusion 4.5.10 *BRCS/RCG concluded personnel safety on the job is problematic; the number of lost-time accidents is low, but the number of soft tissue injuries is high, particularly in the senior mechanics. More importantly, this situation reflects badly on the overall culture of YGS with regard to safety as well as impacts the O&M budget.*

Management Response: Management has under taken numerous initiatives to address safety performance. Some of the actions taken include, safety incident analysis involving a cross section of management employees, leadership attendance at local monthly safety committee meetings, involvement of bargaining unit employees in executive safety committee meetings, initiation of an annual safety speaker series, conducting of safety stand-ups and stand-downs, and utilization of an outside consultant to conduct a safety culture assessment.

Conclusion 6.9.1 *BRCS/RCG found the time and attendance collection and processing practices are consistent with utilities having similar penetration of computers in their field operations. The time and attendance process has a number of manual steps and is labor intensive.*

Management Response: The Company generally agrees with this conclusion. However, the Company does employ a mobile hand-held device, Mechanical Resource Time System (MERTS) for field employees. MERTS allows field employees to enter their time directly into the device, thus, eliminating the need for time entry clerks. MERTS is linked to the COLT system allowing supervision to approve time each week. Despite the use of MERTS, supervisors still need to manually review time codes for proper compliance with union contracts, which is time consuming.