PROPOSAL TO CONDUCT A COMPREHENSIVE MANAGEMENT AND OPERATIONS AUDIT OF NATIONAL GRID USA's NEW YORK ELECTRIC & GAS UITLITIES

(Case No. 18-M-0195)

Submitted to the

New York State Department of Public Service

Three Empire State Plaza
Albany, New York, 12223

July 6, 2018

SCG
Saleeby Consulting Group

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Ms. Elizabeth Toohey
Project Manager
New York State Department of Public Service
Three Empire State Plaza
Albany, New York 12223

RE: **A Comprehensive Management and Operations Audit of National Grid USA's New York Electric and Gas Utilities - CASE 18-M-0195**

Dear Ms. Toohey:

Raymond G. Saleeby, L.L.C. (dba SCG) and its partner River Consulting Group, Inc. (RCG) are pleased to provide this proposal in response to the New York Department of Public Service's Request for Proposal to "Conduct a Comprehensive Management and Operations Audit of National Grid USA's New York Electric and Gas Utilities," dated May 17, 2018, (Case No. 18-M-0195). The firms and their team principals are nationally recognized as leading utility industry management consultants who have conducted scores of management audits for more than four decades, for utility industry and regulatory authority clients.

Recently, this partnership successfully completed two simultaneous Comprehensive Management and Operations Audits, under contract with the State of Connecticut Public Utilities Regulatory Authority, of AVANGRID natural gas utility subsidiaries in Connecticut. In addition, they were selected by the New Jersey Public Utility Commission as one of five preferred consulting firms to bid on their utility management audits.

Raymond G. Saleeby, L.L.C. (dba SCG)

SCG was formed in July 2001 as a Professional Management Consulting and Management Auditing firm focused on the utility industry. It is an SBE whose principal place of business is in the State of New Jersey. Catherine Saleeby serves as the Chairman, and Raymond G. Saleeby as the CEO and principal consultant. SCG has worked with companies to improve performance, develop strategic

planning processes, train and coach executives, conduct voluntary internal audits with a focus on core value drivers for the utility and ratepayers. SCG's proposed Engagement Manager, Raymond, served as the Utility industry head of Tier 1 Management Consulting firms, the CEO of an AMI/AMF/ Smart Energy Efficiency/Energy Services firm, and chosen "Top Fifty People in America Changing the Course of the Future in Energy." He also led one of the most-used utility Best Practices survey teams in the United States.

River Consulting Group, Inc.

RCG's principals work with electric and gas utilities to address the challenges in operating a utility business in today's competitive environment. Included are Commission-sponsored management audits which have been well received by both regulatory Commissions and utilities. Company principals cover a spectrum of expertise that range from strategic planning to tactical operations and processes, with a focus on innovating for tomorrow. Over the years, RCG principals have helped clients eliminate waste in their organizations and take advantage of strategic technological enhancements to physical T&D systems, IT, and customer-directed solutions.

SCG and RCG stand ready to discuss our proposal in detail and certify that:

- SCG/RCG and its team are committed and able to perform the work as outlined in the RFP;
- SCG/RCG and its team are in compliance with the requirements set forth in the RFP;
- We are very familiar with the orders of the NYPSC related to the REV program and related utility filings, including National Grid's DSIP, prior audits, and recent rate cases; and
- The information contained in our proposal is accurate; and the proposal is valid for 180 days from the submittal date of July 6, 2018.

Raymond (Ray) Saleeby and Robert (Bob) Grant are the primary contacts for this proposal:

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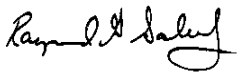
Per New York State's Public Officer's Law §87(2)(c), we are requesting that the attached proposal be treated in its entirety as confidential information. We request such exception from public disclosure until the Public Service Commission selects a winning proposal for this investigation. Public disclosure of this proposal prior to selection by the Commission would impair present or imminent contract awards for this engagement.

SCG/RCG's Team is more than an audit company; *we are a full-requirements firm identifying and solving tomorrow's issues today for utility clients and Commissions*. In addition, we staffed the proposed audit with highly qualified and industry recognized audit professionals.

We stand ready to answer any questions you and your team may have.

Yours truly,



Raymond G. Saleeby
CEO, SCG

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A COMPREHENSIVE MANAGEMENT AND OPERATIONS AUDIT OF NATIONAL GRID USA's NEW YORK ELECTRIC AND GAS UTILITIES

(Case No. 18-M-0195)

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APPENDICES

I. INTRODUCTION AND FIRM EXPERIENCE

Raymond G. Saleeby, L.L.C. (dba SCG) and its partner River Consulting Group, Inc. (RCG) are pleased to provide this proposal in response to the New York Department of Public Service's (DPS) Request for Proposal (RFP) to conduct a comprehensive management and operations audit of National Grid USA's New York Electric & Gas Utilities dated May 17, 2018, Case No. 18-M-0195 (RFP). The Audit will evaluate overall operations and management of the following National Grid's USA (NGUSA) New York utilities:

- Niagara Mohawk Power Corporation d/b/a National Grid (NMPC),
- The Brooklyn Union Gas Company d/b/a National Grid NY (KEDNY), and
- KeySpan Gas East Corporation d/b/a National Grid (KEDLI) (collectively, Utilities).

Specifically, the Audit will include a review of the following twelve Audit Elements as identified in the DPS's RFP.

- Corporate Governance
- Information Systems
- Electric Planning and Grid Modernization
- Electric Load Forecasting and Supply Procurement
- Gas Planning
- Gas Safety
- Budgeting and Finance
- Project Management
- Program Management
- Work Management
- Performance Management
- Customer Operations

Details of scope elements are provided in *Chapter II – Scope and Objectives.*

The Audit

In compliance with the requirements of PSL § 66 (19)(a), the Commission instituted a preceding to conduct a single comprehensive management and operations audit of National Grid USA's New York electric and gas utilities (NMPC, KEDNY and KEDLI). The scope has been designed to focus on *areas "which should provide the highest value, while remaining consistent with the statutory directive to review the Utilities' construction program planning and operational efficiency."* The DPS provided an excellent graphic depicting the construction program planning process (Exhibit 1).

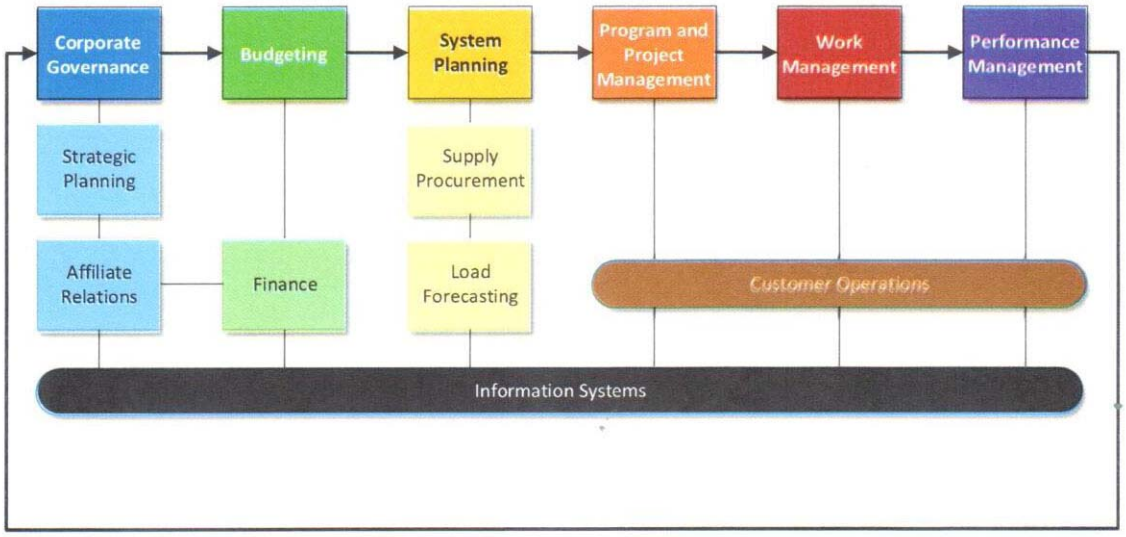


Exhibit 1 - The DPS's Construction Program Planning Process

This process is used by regulated utilities to determine annual capital budgets and identify capital projects to be completed in a cycle. While many utilities achieve the targeted capital spend, the number of projects completed in the cycle are often less than planned. This can be attributed to emergency spending, inaccurate project estimates, unexpected issues during construction (unknown variables), or inconsistent project oversight (from planning through construction). For traditional projects and setting emergency spending aside, the other causes can be managed to significantly reduce the number of occurrences. However, as utilities venture into REV-type projects, this can become more of a challenge.

In addition, the proposed audit will address follow-up issues from previous audits as well as conduct "an assessment of the Utilities' readiness to respond to the Reforming the Energy Vision initiative (REV), and closely examine how Utilities plan for and manage information systems projects."

The RFP provided a discussion on NGUSA and its New York Electric and Gas Utilities, a scope covering 12 audit elements along with the following significant issues:

- REV adoption and progress toward implementation,
- Energy Efficiency Program Data,
- Recent NMPC Rate Cases for Electric and Gas and Information Systems, Street lighting,
- Recent KEDNY and KEDLI Rate Cases,
- Recent Management and Operations Audits,
- Customer Operations, and
- Low Income Program.

Links to documentation on Management and Operations Audits and Rate Cases were provided and reviewed by SCG/RCG.

Also reviewed was the NMPC initial Distributed System Implementation Plan ("DSIP") written in accordance with the Commission's April 20, 2016 Order Adopting Distributed System Implementation Plan Guidance in Case 14-M-0101 and the DSIP-related provisions set forth in the Commission's May 19, 2016 Order Adopting a Ratemaking and Utility Revenue Model Policy Framework in Case 14-M-0101. National Grid's Benefit Cost Analysis Handbook was included as an attachment to the initial DSIP as directed in the Commission's January 21, 2016 Order Establishing the Benefit Cost Analysis Framework in Case 14-M-0101.

The Utility

National Grid USA, through its subsidiaries, operates as an electric, natural gas, and clean energy delivery company in the United States; engaging in the generation, transmission, distribution, and sale of electricity; and transmission, distribution, and sale of natural gas. National Grid supplies energy to approximately 20 million people through its electric and natural gas networks in New York, Massachusetts, and Rhode Island. The company is based in Waltham, Massachusetts. National Grid USA is a subsidiary of National Grid plc.

The overall organization of National Grid plc and its subsidiaries is shown below (Exhibit 2). The New York utilities are shown in blue and interfacing corporate entities in the United States are shown in dark grey. National Grid is an energy company with interests in the United States and United Kingdom, maintains two company headquarters – one in each country. In addition to supplying residential and business customers with safe energy, the National Grid focuses on clean energy. The New York headquarters is responsible for maintaining service to more than three million US customers. National Grid plc (stock symbol NGG) has a market capitalization of more than $37 billion with over $20 billion in revenue and approximately $3.5 billion in net income. The proposed audit will cover National Grid USA New York Electric and Gas Utilities along with the Service Company (ServCo) which operates under Service Level Agreements (SLA's) and provides services required by the utilities. Earlier this year, National Grid named John Bruckner (most recently the company's executive vice president of network operations) as its New York president.

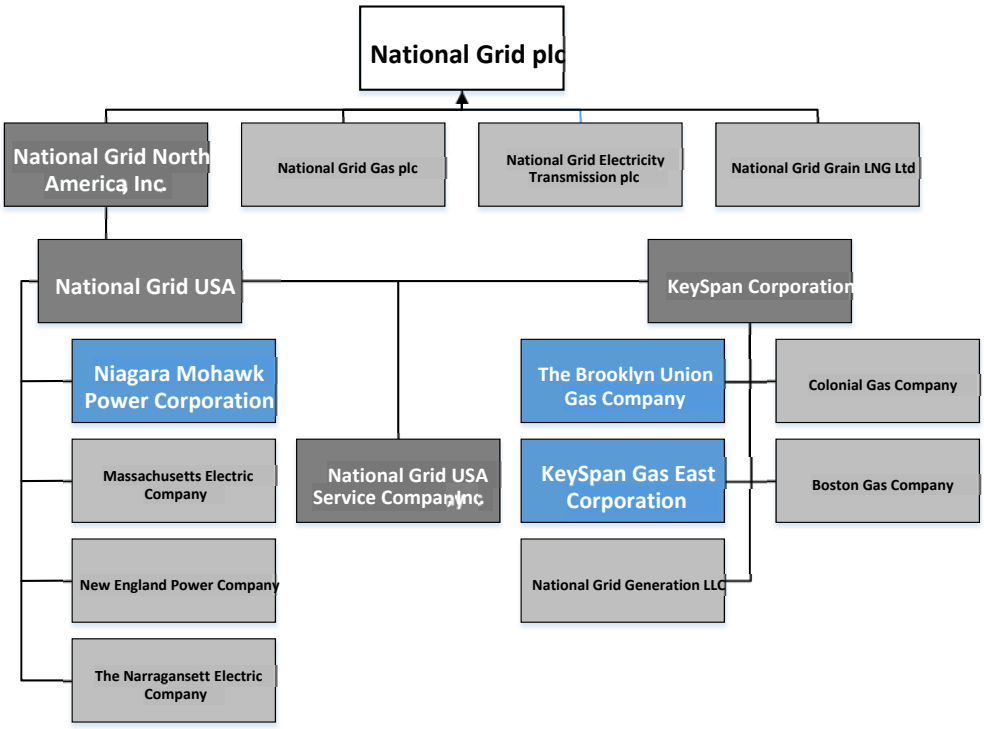


Exhibit 2 - National Grid plc Organization

The service territory of NGUSA in New York is shown below in Exhibit 3.

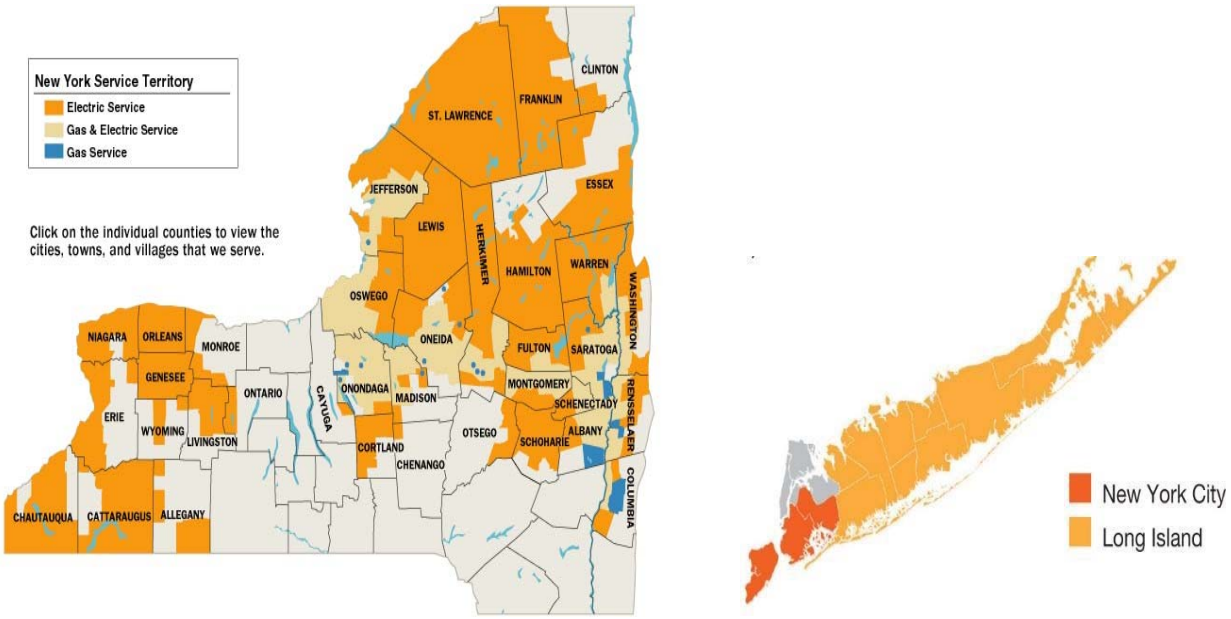


Exhibit 3 - NGUSA New York Territory

National Grid (NMPC), is Niagara Mohawk Power Corporation and is based in Syracuse, New York. It has approximately $2.8 billion in combined revenue and supplies 1.7 million electric and 600,000 gas customers in eastern, western, northern and central New York State. It has a total of 2,900 electric and 1,000 gas employees

National Grid NY (KEDNY) is the Brooklyn Union Gas Company distributing and transporting natural gas to over 1 million gas customers located in Brooklyn, Staten Island and Queens, New York, with revenues of $1.41 billion and 1,400 employees. Its headquarters is in Brooklyn.

National Grid (KEDLI) is KeySpan Gas East Corporation distributing and transporting natural gas to 537,000 gas customers in Nassau and Suffolk counties in Long Island, New York and Rockaway Peninsula in Queens, New York. It is headquartered in Hicksville, Long Island, New York. It has $.92 billion in revenue and 700 employees.

The REV Initiative and Current Status

New York State's comprehensive and innovative energy strategy - Reforming the Energy Vision (REV) (case 14-M-0101) - is Governor Andrew M. Cuomo's comprehensive energy strategy for New York. REV helps consumers make more informed energy choices, develop new energy products and services, and protects the environment while creating new jobs and economic opportunity throughout the State. It focuses on building a clean, more resilient and affordable energy system for all New Yorkers. It is perhaps the most advanced initiative of its kind in the nation. 2030 Goals include the following:

- 40% reduction in greenhouse gas emissions from 1990 levels;
- 50% of electricity from renewable sources;
- 600 trillion BTU increase in statewide energy efficiency (at source); and
- 23% decrease in energy consumption in buildings from 2012 levels.

REV has already driven growth of statewide solar market by more than 1,000 percent, improved energy affordability for 1.65 million low-income customers, and created thousands of jobs in manufacturing, engineering, and other clean tech sectors.

All six major investor owned utilities were required by the Commission to file a Distribution System Implementation Plan (DSIP). NMPC's initial DSIP was filed on June 30, 2016 to advance the objectives of the REV program.

According to this filing, the initial objectives of the DSIP are intended to be the following:

- Inform customers and stakeholders as to the existing capabilities of the Company and the compatibility of its transmission and distribution ("T&D") system with respect to the objectives of REV and the functionalities of a Distributed System Platform DSP;
- Provide information to stakeholders that may facilitate the integration of increasing penetrations of Distributed Energy Resources ("DER");
- Present a roadmap and five-year plan of potential investments to enhance the Company's DSP capabilities; and

- Address the development of the Company's DSP capabilities in four focus areas: DSP Development; Advanced Metering Functionality ("AMF"); Grid Modernization; and Cybersecurity and Privacy.

Currently, NMPC has REV Demonstration projects and other efforts in place to further the program (see 05.30.18 NMPC EAM Q1 (2018) Report, May 30, 2018). In addition, the Commission announced on April 19, 2018 four new REV actions. The decisions include the following:

- Expanding the integration of larger energy storage technologies;
- Moving forward with an upstate "energy smart" community project;
- Creating an on-line platform to make it easier to share data amongst energy companies; and making it easier for farmers to use anaerobic digesters to produce electricity.

In June 2018, National Grid USA released a blueprint for reducing greenhouse gas emissions 80 percent below 1990 levels by 2050 (called "Northeast 80x50 Pathway"). Their mid-term goal is 40% reduction in emissions by 2030. This initiative targets carbon-intensive sectors including heating, power generation and transportation as follows:

- Heating source conversion - A transformation of the heating sector, by doubling the rate of efficiency retrofits and converting nearly all of the region's 5 million oil-heated buildings to electric heat pumps or natural gas and doubling the retrofit efficiency rates.
- Power Generation - Increase renewable electricity deployment to achieve a 67% zero-carbon electricity supply.
- Transportation – participate in transforming the transportation sector yielding more than 10 million electric vehicles on Northeast roads (roughly 50% of all vehicles).
- Exhibit[1] 4 shows National Grid's current 2030 targets.

Category	Today	2030
Electricity Generation		
Solar (% of total electricity demand)	<1%	13%
Wind (% of total electricity demand)	2.5%	19%
Total renewable generation (% of total demand, including hydro)	21%	51%
Total zero-carbon generation including nuclear (% of total demand)	50%	67%
Transport		
Light- and medium duty EV adoption (% of annual sales)	<2%	100%
EV penetration (% of total light duty fleet)	<2%	50%
Total transportation electric demand (% of total electricity demand)	0%	8%
Heat		
Delivered fuel use (% of heating demand in residential buildings)	40%	10%
Natural gas use (% of heating demand in residential buildings)	55%	60%
Electric heat use (% of heating demand in residential buildings)	2%	28%
Other heating use, e.g. wood (% of residential heating demand)	3%	2%
Electric heat demand (% of total electricity demand)	2%	7%

Exhibit 4 - National Grid's 2030 Carbon Reduction Goals

[1] Source National Grid

SCG/RCG designed its team and approach to promote an in-depth analysis using highly experienced professionals. Staff members are selected by the needs of the assignment, not by who is available "on the bench." This ensures high-quality, credible, and pragmatic recommendations with lasting value that meet quantitative and qualitative parameters approved by DPS Staff.

A. Experience and Qualification of the Partner Firms

SCG/RCG assembled a set of industry-recognized and experienced professionals dedicated to delivering a high-quality product that will position NGUSA and its Utilities for the future and will significantly benefit New York customers. SCG/RCG's team is pleased to collaborate once again – this time to meet the objectives of this NGUSA and the Utilities comprehensive management and operations audit RFP, and those of the Commission and DPS Staff on behalf of the New York consumers.

SCG/RCG team firms are also proud of their independent and collective reputations for professionalism and excellence, and on our joint and practiced ability to deliver on promises made to clients. Presented below are descriptions of the two partner firms along with a combined statement of conflict and ethical conduct.

Raymond G Saleeby LLC (dba SCG)

Raymond G. Saleeby LLC is a full-service management consulting firm offering services in strategic planning, governance, financial management, facilitation, team-building and executive coaching, program and performance reviews, peer group best practices, performance measurement and balanced scorecards, process improvements and reengineering, safety and environmental auditing; facilities management, maintenance and construction management, engineering management, strategic planning and human resource management. SCG was founded in 1991 by its principal after having managed some of the largest well-known Tier 1 utility consulting practices, including Stone & Webster Management Consultants, AT&T Solutions, EDS Consulting, PA consulting, and Booz Allen & Hamilton. SCG's principal also ran one of the largest and longest running Utility Management Development Programs for ten years and served as the CEO of an AMI/AMF/Smart Grid/Energy Services firm and another major maintenance and construction firm. He has served more than 175 clients in 27 states and six foreign countries.

SCG representative engagements include the following:

- PURA: Southern Connecticut Gas Corporation (SCG) – (2016-2017) – Co-Led the comprehensive management audit of this Connecticut distribution gas utility, a subsidiary of AVANGRID. The report was published in February 2017.
- PURA: Connecticut Natural Gas Company (SCG) – (2016-2017) – Co-Led the comprehensive management audit of this Connecticut distribution gas utility. The report was published in February 2017.
- Over the years, the firm and its principal have worked with numerous public agencies, utilities, telecommunications and technology companies, and others.

- As an executive and CEO Coaching firm, SCG served as a certified CEO Chair with Vistage International bringing together successful CEOs, executives, and business owners into private peer advisory groups and guiding their desire to build stronger and more successful companies or projects. Vistage Chairs are a distinguished group of business leaders who come to the firm from a wide range of industries. CEO Chairs are all united by a desire to share their insight and expertise to educate other business leaders in their communities through executive business coaching. Further, working with the C-Suite affords SCG with unique insights in how management thinks and responds to external inputs, which is invaluable to assessing both utilities and their commitment to REV.
- SCG's widely distributed video entitled "The Audit, How to Conduct, Manage, or Prepare for a Management Audit" has been distributed and sold to chemical companies, gas & electric utilities, and nuclear facilities worldwide.
- In addition, our principal, Raymond G Saleeby, led Construction Management and Engineering Management teams covering projects valued at over a billion dollars, Managed outsourcing projects valued at over 5 billion dollars, and he served on numerous Boards including an Advanced Metering/Smart Grid Firm, an Energy Management firm, a customer meter reading service provider, a leading provider of wholesale and retail energy services, and a major management consulting firm.
- SCG's principal testified, assisted with testimony, or provided analysis and opinions of several major events including prior to SCG's formation, the principal's pre-incident analysis of Three Mile Island, the post-incident analysis of Union Carbide's management and environmental and safety programs following the leak in Institute, West Virginia, the privatization of the Central Electricity Generating Board (CEGB) in England and the breakup of AT&T. SCG has run testimony and interview training courses at several companies throughout the United States.
- Among SCG's clients, one was considered one of the best managed companies in the United States, another was subsequently described by rating agencies as best positioned for competition, and another was cited for courageous cutting-edge thinking. Our principal's talks on "Managing for a Change" and "Rethinking the Utility Business" have been called "the most memorable in terms of impact" by utility executives. Our principal has lectured on strategic planning at the Management Exchange/Public Utility Reports Seminars, at the APPA management development Program, in the University of Missouri, and at the University of Massachusetts / University of New Hampshire programs for NEPPA Utility executives, the Northeast Public Power Association, the NY Law Institute, the Edison Electric Institute, and the American Gas Association, among others. He has been quoted in numerous major and industry publications covering utility industry topics.

River Consulting Group, Inc.

RCG's principals assist electric and gas companies address the challenges of operating a utility business in today's competitive environment. RCG's principals cover a broad spectrum ranging from strategic planning to tactical operations with a focus on innovation. Over the years, RCG principals

have helped clients eliminate waste in their organizations and prepare for the future by taking advantage of strategic technological enhancements for T&D systems and IT solutions. Recently, RCG led the Yankee Gas Services (Eversource) management audit, and delivered two PURA management audits, of AVANGRID's Southern Connecticut Gas Corporation and Connecticut Natural Gas Company. Other audits over the last seven years include storm restoration efforts that have helped utilities and regulators better understand emergency restoration planning and execution during major system outage events.

RCG, which is incorporated in the State of Georgia, was founded in 1999 by the firm's principal consultant, Bob Grant. Since that time, RCG has provided a broad range of consulting services to more than 100 utilities, commissions, and municipal utilities. RCG consultants have experience assisting regulated electric utilities, and state and municipal government agencies better understand the complexities of a changing landscape and capture efficiencies needed to remain competitive. Today, RCG's primary focus is the following:

- *Management Audits* - Comprehensive audits of electric and gas utilities designed to improve the overall operational efficiency and effectiveness of the business. These evaluations included in-depth reviews of areas such as executive management, financial management, customer services, engineering, system planning, construction, T&D operations, and supply chain and support services.
- *Capital Program Audits* - designed to fully understand the entire capital program for utilities undergoing significant T&D systems modernization, circuit automation, and distributed generation integration. These audits include: understanding system planning and design, management of both contractor and company crews, and the accuracy of budgeting to actuals.
- *Work Force Management* - Designed to improve the effectiveness, safety and efficiency of the work force, RCG's approach looks not only at supervisory tools, policies, processes, performance reporting, training, and mobile systems to identify cost reductions, but also at the impacts of new technology.
- *Planning and Design* – As the core building blocks of a successful capital program, RCG is guiding companies through a process of streamlining their planning process by ensuring that the right business functions are integrated into the process at an early enough stage to accurately plan and control costs. We also work to help our clients enhance the prioritization process to allow all projects an equal and fair level of attention during the selection process. We also promote the use of equipment and construction standards and methods to facilitate improved cost control, scheduling, and construction quality.
- *Construction Management* - RCG identifies proven methods for controlling construction costs and schedules through a series of tools that include incentivized contracting, enhanced project management, focused supervision, and sound industrial engineering practices designed to identify and eliminate waste.
- *Supply Chain Management* – RCG helps clients lower inventory costs while improving material availability. Our supplier valuation services (SVS) help clients control costs on major equipment purchases while addressing quality control issues throughout the suppliers' value chain.

- *Operations Management* – Aside from the traditional operating improvement activities embraced by many utilities, RCG focuses on helping clients to understand and plan for the impacts of new mobile and digital technology on their T&D systems and resource requirements.

RCG representative engagements include the following:

- *PURA: Southern Connecticut Gas Corporation (SCG) – (2016-2017)* - Lead the comprehensive management audit of this Connecticut distribution gas utility. The report will be published in February 2017.
- *PURA: Connecticut Natural Gas Company (SCG) – (2016-2017)* - Lead the comprehensive management audit of this Connecticut distribution gas utility. The report will be published in February 2017.
- *PURA: Yankee Gas Services Company (Eversource) (YGS)* – (2014-*2015)* – Co-project managed this audit for PURA. The Final report was published in February of 2015. While there were a number of recommendations offered in the final report, one of the most significant on was on improving the project estimating process as it had broad implications on YGS's overall capital budget, customer contributions toward construction for new services, field force staffing levels, and the proper mix between capital and contractor crews.
- *Major Mid-Western T&D company* – 2014-2016, reviewed their $2.2B capital T&D systems betterment and automation program. Found that they had an outstanding capital project program that included a rigorous challenge process throughout the project development effort and allowed them to bring in their T&D projects within 10 percent of the original estimates. Opportunities were identified to improve company crew performance by as much as 30 percent. Further, we reduced delays for both company and contractor crews in receiving materials.
- *CenterPoint Energy (CNP)* – 2010 – Led an in-depth review of CNP's post-Ike restoration activities. As a result of our review, a number of recommendations were made to improve emergency restoration planning and processes. While the Company did an outstanding job of restoring 1.9-million of its 2.1-million customer outages in 18 days, there were a number of suggestions that could aid the restoration process. In addition, the RCG team evaluated CNP's distribution design and maintenance practices to confirm they complied with generally accepted industry practices. Our team prepared formal testimony that was included in a commission hearing. Neither our report nor our testimony was challenged.
- *AmerenUE/Missouri Commission* – 2010 - Ameren experienced back-to-back major wind events that required the utility to pursue restoration activities. As a result of an RCG review, a number of recommendations were made to improve the emergency restoration planning and processes. The RCG team also evaluated Ameren's distribution design and maintenance practices to confirm they complied with generally accepted industry practices. As part of this review, the Missouri commission's staff participated in an ongoing progress review of the project and commended the work of the RCG team. After the final report was submitted to the commission and its staff, RCG provided an oral review of the conclusions and recommendations to the commissioners and answered questions.

- Bonneville Power Administration (BPA) – RCG led an in-depth review of BPA's transmission plan-design-build process. The net result was a $47-million reduction in overall costs. It led to the formation of a standards group and the complete redesign of the BPA's planning function. Further, the engineering function was redesigned to produce higher quality designs using more standard equipment and designs.

The remaining chapters of this proposal describe SCG/RCG's approach, preliminary work plan, firm, staff experience, project scope and schedule.

- ***Chapter II – Scope and Objectives*** details SCG/RCG's understanding of the scope and objectives for this audit.
- ***Chapter III – Approach, Methods, and Project Management*** discusses SCG/RCG's time-tested audit approach and associated project management, including a description of key deliverables.
- ***Chapter IV – Customer Benefit Analysis*** describes our method used to justify recommendations, quantify financial impacts, offer enhancements in customer service, and reduced costs.
- ***Chapter V – Project Team and Responsibilities*** provides the structure of SCG/RCG team assignments along with the backgrounds of assigned personnel.
- ***Chapter VI – Work Timeline*** provides a complete work schedule and an elapsed time estimate for each task in the work plan.
- ***Chapter VII – Individual Experience and Qualifications*** provides relevant experiences for SCG, RCG, and project team, including resumes.
- ***Chapter VIII – Writing Sample*** provides a link to a relevant professional writing sample produced by the proposed team.
- ***Chapter IX – Conflict of Interest*** identifies potential conflicts of interest SCG/RCG or their subcontractors may have with working on this Comprehensive Management Audit of NGUSA and the Utilities.
- ***Chapter X – References*** for the two principal firms (SCG and RCG)***.***
- ***Chapter XI – Insurance Attestation*** identifies our New York State Workers' Compensation requirements, with any other permits or licenses needed*.*
- ***Chapter XII*** – **Minority- and Women-Owned Business Enterprises (M/WBE)**

II. SCOPE AND OBJECTIVES

A. Introduction

As recommended in the RFP, SCG/RCG has engaged and is prepared to manage an elite team of highly experienced utility industry professionals who have successfully worked together on other management and operations audits. The team is fully capable of providing the Commission, New York State Department of Public Service staff (DPS Staff), and both NGUSA and the Utilities valuable insights into their operations and management that will eventually produce real and measurable benefits and value for New York State ratepayers. This audit will pay particular attention to NGUSA's efforts to implement a sustainable REV program, so the DPS can fully understand the level of commitment and effectiveness provided by NGUSA and the Utilities.

Overriding objectives in the proposed audit include the following:

- Provide a quality, constructive, and balanced assessment of NGUSA's and the Utilities overall management, particularly with respect to their commitment to REV progress, including current initiatives and potential future initiatives, and their effectiveness in dealing with the twelve Audit Elements of the RFP;
- Provide an assessment of each utilities' management commitment to implementing REV, using tailored interview questions and a review of each companies' actions regarding REV and including NGUSA's DISTRIBUTED SYSTEM IMPLEMENTATION PLAN (DSIP)
- Develop the assessment through a positive process that captures the perspectives and needs of all parties with an interest in the outcomes;
- Provide actionable and relevant recommendations that may be supported by a customer benefit analysis, and enable performance improvement or opportunities for improvement to be captured for the benefit of all ratepayers and stakeholders; and
- Deliver a final report that provides a clear, independent, and objective evaluation of the gas and electric companies; demonstrates and promotes a clear understanding of all audit elements and of the NGUSA and the Utilities' construction program management, customer operations; and offers concise, beneficial recommendations that assist the Companies in improving the manner in which they control and manage performance, assets, and costs; use forecasting and information systems to support the core construction program and deliver safe, reliable, and cost-competitive electric and gas services, and customer services to their New York customers and enhancements to the REV program as a regulated electric utility organization.

The scope and objectives of the proposed comprehensive management audit have been designed to fully satisfy RFP requirements.

B. Scope & Objectives

The Commission is seeking an independent consultant to perform a comprehensive management and operations audit of NGUSA and its Utilities. The audit will be performed in accordance with the process currently used pursuant to New York State Public Service Law §66(19) as applied to audits of electric and gas investor-owned utilities.

The audit described in the RFP provides a unique opportunity for the Commission and Department of Public Service (DPS) Staff to gain valuable insight into NGUSA and the Utilities. Specifically, the Commission wants to further its understanding of NMPC commitment, efforts, and activities implementing New York's REV critical initiative. In addition, the Commission wants a clear understanding of where the gas operations are relative to pipeline safety, system planning, and advances made since the last audit.

It is a prospective review to project the impact of their operations on the performance, cost, benefits, and safety to their New York customers and their employees. The DPS would also like to understand the level of commitment of executive management to the Commission's Reforming the Energy Vision (REV) initiative and NMPC's current DSIP and potential future evolutions to support REV in New York.

SCG/RCG believes the REV Initiative is moving the energy utilities in the right direction for a more sustainable energy future. It even provides more self- determination for energy consumers. New York appears to be ahead of other states with the REV initiative and development of Value of DER tariff. New York regulatory changes will serve as a model with the innovative tariff it developed. This addresses numerous technologies and provides incentivized compensation aimed at a realistic value of DER contributions by addressing contributor location relative to the grid, when it's operating, and how much electricity it provides.

Among the issues needing resolution to further widespread adoption and achievement are the following:

- Provide third-party customer financing at favorable interest rates, with a quick approval process;
- Enlist certified suppliers who will provide near worry-free warranty service;
- Ensure the availability of certified installers who warranty their workmanship; and
- Integrate distribution systems with, yet to be produced, two-way distribution protection schemes for when penetration is sufficient to impact the safe and reliable operation of a primary voltage distribution system.
- Make progress on non-wire alternatives projects allowing utilities to defer or avoid conventional infrastructure investments by procuring distributed energy resources (DER).
- Include the use of micro grids and digital technology to address grid resiliency and the use of storage technology.

- Demonstrate support for Governor Cuomo's Executive Order #166: "Redoubling New York's Fight Against the Economic and Environmental Threats Posed by Climate Change and Affirming the Goals of the Paris Climate Agreement."

In subsequent sections of this proposal, these and other aspects of REV will be enumerated.

As mentioned in the introduction, the comprehensive management and operations audit will evaluate the overall operations and management of NGUSA and the Utilities along with common management functions provided through NGUSA and ServCo, including gas and electric business units.

Based on the RFP, our scope of work provides for an assessment of NGUSA and the Utilities' efficiency and effectiveness in meeting their mission, performance goals, and managing customer and regulatory expectations. Where appropriate, opportunities for improvement will be provided.

The scope of work is designed to address the following core issues and audit elements:

1. Corporate governance and the eight criteria;
2. Information Systems and the seven criteria;
3. Electric planning and grid modernization and the twelve criteria;
4. Electric load forecasting and supply procurement and the six criteria;
5. Gas planning and the five criteria;
6. Gas safety and the eight criteria;
7. Budgeting and finance and the five criteria;
8. Project Management and the five criteria
9. Program Management and the four criteria;
10. Work Management and the one criteria;
11. Performance management and its two criteria; and
12. Customer Operations and its nine criteria.

C. General Audit Activities

1. Create a set of initial data requests (many of these will be requested prior to our Audit kick-off meeting) designed to capture data and information relative to the Audit Element and the RFP defined audit evaluation criteria.
2. Review the Audit Element and their tasks and initial data requests based on input from DPS Staff review of our proposal and the structured Staff input process.
3. Review prior audit recommendations and initial data request responses related to Section functions. Identify missing data, evaluate quality and completeness, and engage management as needed.
4. Review initial data request responses related to the specific Audit Element. Identify missing data, evaluate quality and completeness, and engage management as needed.

5. Develop, schedule, and conduct initial high-level interviews to clarify and verify understanding of the specific Audit Element and related processes, policies, and principles at National Grid USA electric and gas utilities and their affiliates.
6. Develop the individual Audit Element chapter outline, next level of interview guides, and data requests.
7. Coordinate with all SCG/RCG audit teams to determine the extent of Company coordination and consistency of assumptions, strategies, and execution of the corporate mission, strategies, objectives, goals, and plans.
8. Determine how utility management assesses the success of their efforts and strategies. Review the KPI's for each Section and determine if REV changes are being incorporated into the overall planning process and KPI's.
9. Compare the overall Audit Element principles, methods, and processes to leading practices.
10. Complete analysis of the Audit Element including cost implications, where possible.
11. Verify facts.
12. Prepare the Audit Element Task Report.
13. Submit the Task Report for SCG/RCG quality review.
14. Incorporate the Task Report(s) into the draft final report as a chapter.

D. Audit Elements

The above twelve Audit Elements and their associated evaluation criteria and work tasks are expanded upon below.

1. Corporate Governance

Background

Corporate Governance broadly can be described as the rules, policies values, practices, processes, and culture by which a company is directed and controlled. It involves balancing the interests of the stakeholders of National Grid USA, its New York electric and gas utilities, their parent and affiliates, their customers, the regulatory authorities, the government, and the communities they serve. This area will include a review of National Grid USA's New York electric and gas utilities' Corporate Governance including their mission, objectives, goals, and planning as well as the Governance influence, appropriateness, and role of the utilities parent companies, the National Grid USA Service Company (ServCo) and their affiliate companies. By extension this effort will allow the team to understand management's willingness to continue its REV activities with the appropriate level of commitment and its capacity for adapting to change.

A focus for all critical areas under the Corporate Governance Audit Element (including all sub-elements) will be to determine that NGUSA and its Utilities operate under a set of rules, values,

culture, controls and direction that are transparent, ethical and meeting its commitments with sound governance practices, corporate oversite, appropriate resource allocation, integrity and trust. It is not good enough to have a written mission statement and written practices and strategic plans if they are not communicated, supported by executive leadership, followed, and serve to align all elements of the utilities' operations, expenditures, performance metrics, and business interests including those of their corporate Parents, Boards, affiliate relationships, and all stakeholders. Our team has had extensive experience assessing Corporate Governance, especially in companies with structures similar to National Grid plc and NGUSA, and recognizes true alignment and will seek alignment and balance of goals, a decision-making process that is effective, a strategic planning process that creates value and aligns with the interests of stakeholders, yields ethical behavior and a system of policies, procedures, accountabilities, and controls that is consistent with the true needs of all stakeholders. It is important to understand that all members of the team are charged with the responsibility of testing the impact of governance deep in each of the study areas.

Importantly, the ambitious REV strategy has had a significant impact on utilities throughout New York State. NGUSA's commitment to this far-reaching strategy will be examined thoroughly to assure REV goals are achieved, which include making energy more affordable, building a more resilient energy system, empowering New Yorkers to make more informed choices, creating new jobs and business opportunities, improving the existing initiatives and infrastructure, supporting cleaner transportation, cutting greenhouse gas emissions, protecting New York's natural resources and helping clean energy innovation grow.

National Grid provided its initial Distributed System Implementation Plan (DISP) on June 30, 2016 in accordance with the Commission's April 20, 2016 Order: Adopting Distributed System Implementation Plan Guidance in Case 14-M-0101 and the DSIP-related provisions set forth in the Commission's May 19, 2016 Order Adopting a Ratemaking and Utility Revenue Model Policy Framework in Case 14-M-0101. In addition, on April 19, 2018, the NYPSC wisely expanded REV strategies to integrate energy storage devices, boost the upstate energy smart community, develop an energy data-sharing platform, and helps farmers gain better renewable energy options. As previously mentioned, New York is far ahead of other states with both its REV initiative and the development of its Value of DER tariff.

How NGUSA has progressed with planned initiatives and commitment made to evolving REV strategies will be assessed throughout, along with Corporate Governance influence.

The Corporate Governance Audit Element will include a detailed review of the activities of the Board and its committees such as, but not limited to Audit, Nominations, Remuneration, Finance, and the Safety, Environment and Health Committees. Of course, corporate governance issues of parents and acquired regulated utilities must be assessed to ensure initial commitments relative to acquisitions are met, that parent and subsidiary boards are contributing to and not limiting utility goals and performance; that risks, and performance are appropriately identified and managed and the utilities are influenced in a manner constructive to the utility regulated responsibilities.

Corporate Governance Evaluation Criteria & Tasks

1.1. Determine if the Utilities' corporate governance structure and executive management approach appropriately support New York operations and demonstrate commitment to REV, grid modernization, and other regulatory objectives.

i. Evaluate the policies, rules, culture and practices that the various Boards and corporate and utility executive groups use to establish how the New York electric and gas utilities are directed, controlled and operated.

ii. Assess the influence, commitment and support that the governance structure is providing to REV including the grid modernization, the current REV plans by NMPC and newly developed NYPSC REV strategies.

iii. Evaluate the governance structure and all executive management ability to contribute positively to the utilities' goals, effective performance and cost appropriateness.

iv. Determine if the move to greater non-wired alternatives (NWA) has gained acceptance and support of the governance structure.

v. Assess how corporate governance, the organizational structure and internal affiliated relationships influence the construction program planning and implementation process.

vi. Assess performance criteria and the data that the governance units use to determine utility effectiveness and the appropriateness relative to the utilities' responsibilities.

vii. Determine if the Boards have established appropriate arrangements to ensure that they have access to all such relevant information, advice and resources as is necessary to enable them to carry out their roles effectively.

1.2. Assess changes to the organizational structures of NGUSA and the Utilities since the most recent management audit.

i. Evaluate organization and staffing modifications made since the last audit for the utilities as well as for their parent and interfacing affiliated organizations such as ServCo.

ii. Examine the internal and external contractor resources being used to ascertain appropriate staffing levels are being maintained efficiently and cost effectively.

iii. Evaluate the suitability and changes in spans of control and the reporting relationships to the executive management and the parent company.

iv. Assess whether the use of internal or external contractors or service levels has changed since the last audit and if the changes were necessary and consistent with the needs of the utilities. Assess the contractor selection process.

1.3. ***Assess change management processes as they relate to grid modernization efforts.***

i. Thoroughly assess the grid modernization strategies and the plans impact on NMPC, NGUSA and the affiliates.

ii. Evaluate how changes are communicated, managed and supported by the governance elements. Determine if the process is appropriate given the nature and extent of these changes.

iii. Evaluate management's real commitment and depth of understanding regarding the scope of grid modernization efforts.

iv. Determine if the corporate governance components and the employees' attitudes and behaviors are supportive and understanding of these basic changes, grid modernization and NWA, that are being put into play.

v. Determine if the utilities' change management processes and resources (e.g., training, communications, transition management) have been designed to accomplish the objectives of REV and grid modernization. Evaluate adequacy and consistency with the needs.

1.4. Determine the extent to which best practices, resources, and expertise of the affiliated utilities, NGUSA, and National Grid plc are shared with the Utilities.

i. Determine the extent of which best practices are being identified and applied by the NGUSA and National Grid plc organization and assess how best practices are communicated and shared with the New York gas and electric utilities.

ii. Evaluate whether the efficient use of resources by affiliated organizations, whether internally via SLAs or contractor agreements, is also shared as lessons are learned.

iii. Determine if the expertise of affiliated organizations are shared when appropriate and can be leveraged.

iv. When best practices, resources or affiliate expertise are shared, determine if adoption by the utilities was done with due care and appropriately. Given the knowledge, information, and expertise of the parents and affiliated companies, determine how well the Utilities capture and take advantage of these best practices and expertise.

1.5. Determine the extent to which Enterprise Risk Management programs and internal controls regarding financial and non-financial risk areas provide adequate ratepayer protection at the Utility and state level.

i. Evaluate whether the utilities' Enterprise Risk Management programs and internal controls are appropriate and designed to identify potential events or issues that would threaten the Utilities' business, continuity of operations and the interests of the ratepayers and other stakeholders.

ii. Assess how and how often risks are identified and their consequences are determined and if appropriate contingency plans are developed or methods are found to minimize threats.

iii. Evaluate the utilities' strategies and tactics to mitigate both financial and non-financial risk and how these strategies and tactics are planned and implemented.

iv. Determine how well the utilities monitor changes and identify new risks including but not limited to REV initiatives, AMF implementation and non-wired strategies.

1.6. Evaluate the effectiveness of the current processes and internal control procedures governing affiliate transactions, including Service Level Agreements, to ensure accountability and proper cost allocation.

i. Review and evaluate the appropriateness and effectiveness of the process and controls governing affiliate relationships and SLAs to provide sufficient protection for New York ratepayers.

ii. Determine the types and magnitude of transactions with affiliates, and assess how these transactions are managed, controlled, and validated.

iii. Evaluate the internal policies regarding affiliate transactions including SLAs.

iv. Determine how individual transactions aggregate across businesses and determine how these are monitored and reported by the utilities and affiliates.

v. Examine who determines how to value an affiliate transaction or SLA and what methodology is used to determine value.

vi. Examine how intercompany agreements are developed and determined to be appropriate and maintained.

1.7. Evaluate how the Utilities assess, review, and respond to tips, anonymous or otherwise, from employees and contractors.

Background

All utilities should want to hear from their employees or contractors when issues surface, risks become evident or if compliance issues are involved when tips could alert senior management to a correctable deficiency. Frequently, these tips remain anonymous, but a reasonable approach to investigate information provided should be in place.

i. Evaluate the environment or culture and if it encourages or stifles communication or tips from employees or contractors.

ii. Review the formal or informal process applied by the utilities to assess, review and respond to this kind of information.

iii. Determine how well the utilities and their parents react organizationally, from a leadership and governance standpoint when information surfaces from and employee

or contractor. Determine if investigations are objectively performed and if issues adequately resolved.

1.8. Assess the strategic planning processes, including the linkage of programs to strategic goals, the roles of NGUSA and National Grid plc, and the extent to which the strategic planning function is incorporated with other planning activities and performance management processes.

Background

Strategic planning is an organization's process of defining its strategy, or direction, and making decisions on allocating resources. An environmental scan, input from numerous resources and visionary thinking contribute to developing strategies. Strategic planning has two basic purposes: an entrepreneurial purpose to ensure the long-term vitality of the organization by giving it direction, vision and goal setting; and a sense of challenge and aimed at improving performance. Strategic planning also has an operational purpose focused on making the utility far more efficient and effective.

i. Evaluate how strategic planning is performed; assess the process, the participants, information accessed and the relevance of their approach.

ii. Evaluate how strategic imperatives are developed, assessed and, if appropriate, planned, monitored and implemented.

iii. Evaluate the details of specific strategic projects.

iv. Evaluate how utility individual strategic plans and goals link to parent plans and the appropriateness of this linkage.

v. Assess how strategies are communicated and linked to tactical plans, and determine if appropriate goal setting and monitoring supports developed strategies.

vi. Determine if the Corporate Strategic Plan is an influence for all major decisions and consistent with the needs of the Utilities including its commitment to REV.

vii. Determine if the utilities use their strategic plans to effectively allocate resources, give employees a better understanding of utility goals and objectives, establish future performance standards, and encourage management to acknowledge the political, regulatory, technological, social and economic factors that influence utility businesses.

Proposed Staffing Assignment

Audit Element Staff Assignment -- Corporate Governance	
Lead Consultant	Ray Saleeby
Consultant(s)	Grant, Fandos, Willoughby, Sommerer

Exhibit 5 - Corporate Governance Staffing

2. Information Systems

This audit element will be focused on determining how well National Grid USA Service Company's (ServCo) Information Systems projects are identified, prioritized across all operating companies and support services organizations, selected, planned, developed, managed and implemented. We will review how post-implementation assessments are completed and how the results are used to improve project planning and implementation. We will review the accuracy of cost/benefit estimates and their impact on project budgeting. We will also review the project budget under and over-run authorization process.

Background

The Niagara Mohawk's electric and gas rates include Information Services ("IS") capital investments that are owned by the ServCo and allocated to the Company in the form of rent expense. Rent expense includes the return on, and the amortization and depreciation of, current IS capital investments along with incremental IS capital investments that are forecast for the Rate Years. The incremental IS capital investment is $90 million in Rate Year One, $90 million in Rate Year Two, and $96 million in Rate Year Three. These costs do not include IS costs associated with the Company's Gas Business Enhancement (GBE) Program. Additionally, KEDNY and KEDLI rates include IS capital projects.

The National Grid DISP acknowledges it is essential information management capabilities be designed with certain key data principles in mind. Per their DSIP, the proposed National Grid Enterprise Information Management technology tools and capabilities are organized into several interrelated domains, as shown below as Exhibit 6, Figure 4-17 of their DSIP. We will assess the appropriateness and effectiveness of this Enterprise Information Management program.

Information Systems Evaluation Criteria & Tasks

2.1. Determine if the Utilities' information systems effectively support current utility operations.

Background

In Task 2.1, the team will identify how each operating company identifies potential IS needs and how such needs are communicated for consideration by IS. This will be accomplished through the following:

i. Identify the individual(s) at each Utility responsible for their IS systems, issues and needs.

ii. Determine the perceived user satisfaction with the IS services they have available to their operations.

iii. Identify business solutions not yet support by IS.

iv. Determine the consistency of use of IS resources across the NGUSA Utilities.

v. Determine how effective the IS resources have been in any operational change management efforts.

2.2. Determine the adequacy of the Utilities' short and long-term information system plans, and if these plans support REV-related requirements, and if they will provide synergies across NGUSA which will benefit New York ratepayers.

Background

As discussed under Audit Topic 4 below, NMPC has filed with the Commission their DSIP outlining their approach and road map to meeting REV objectives. A major component of that Plan is the integration of their Information and Operating Technology (IT/OT Integration). This integration and the targeted proposed Architecture are presented in the following diagram[2] (Exhibit 6):

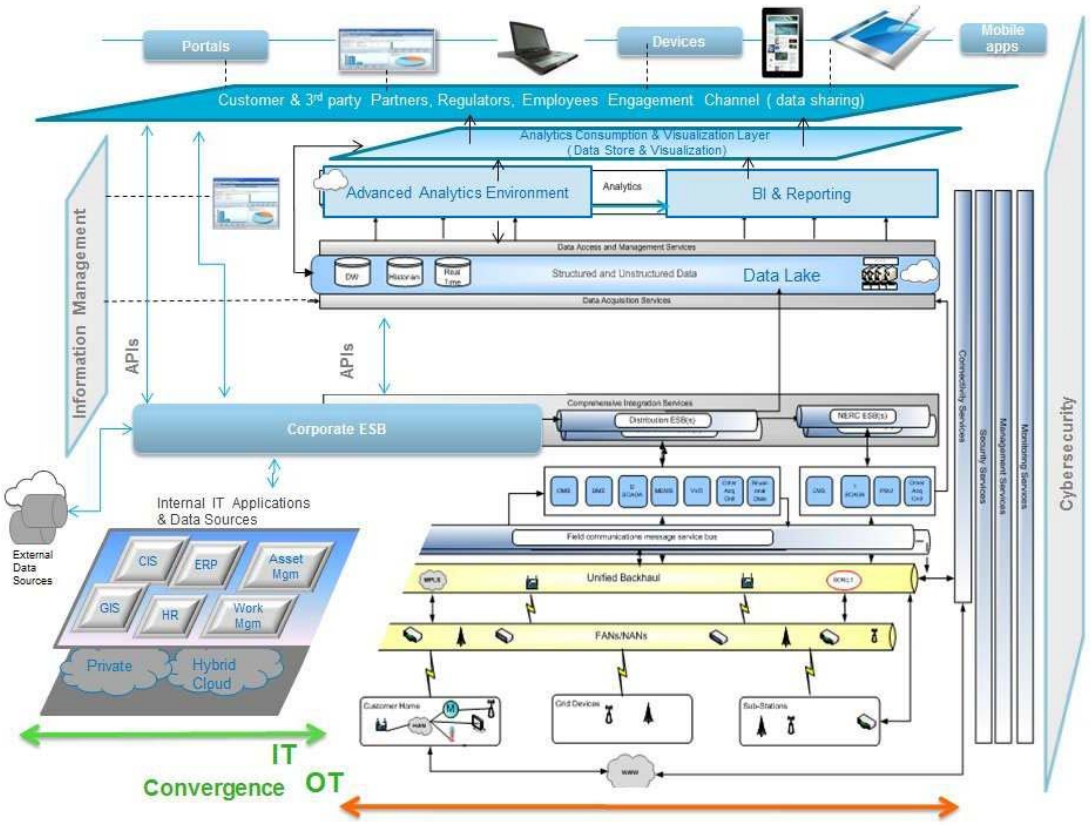


Exhibit 6 - NGUSA's Proposed DSP Architecture

This Integration and other DSIP IS requirements will be the focus of this Audit Topic. We will:

[2] NGUSA's DSIP, p93, Figure 4-16

i. Identify the plans, schedule and budgets for the above noted Integration.

ii. Determine if such plans, schedule and budgets are consistent with the DSIP and the Rate Plans.

iii. Identify where such IS plans have not been implemented across all NGUSA IS platforms.

iv. Identify opportunities for synergies by implementing such IS plans.

v. Determine if NGUSA is adopting the architecture included in the DSIP. Determine the major challenges to a company-wide build-out.

vi. Evaluate any plans to address the build out and identify potential challenges.

vii. Determine if the budget for this IS plan is well defined with deliverables, milestones, performance targets and goals. Determine to what extent the budget has been incorporated into the capital budget.

viii. Determine if the Integrated Data Management Implementation Timeline is realistic and supportive of the DSIP needs to both the Company and its potential partners.

ix. Evaluate the National Grid Enterprise Information Management Technology Tools and Capabilities.

2.3. Evaluate how Utilities select, consider alternatives, prioritize, determine the scope of, and implement information systems projects.

i. Identify the methodology and process used by each Utility to put forth a potential IS project. Determine if the process is consistent across all NGUSA Utilities. Identify the criteria required to compare competing projects.

ii. Determine how each Utility receives the IS support to provide a sufficiently detailed project scope for IS consideration.

iii. Identify the criteria for process(es) used and individual(s) responsible to identify IS projects that will receive final consideration for funding and future implementation.

iv. Determine what approvals are required for a project to be selected for implementation.

v. Identify how the post-implementation assessment, if any, is incorporated into the above IS project selection process.

2.4. Assess the adequacy and transparency of information provided to the Department related to information systems project selection, prioritization, and schedule, budget, and rate plan adherence.

i. Identify the required IS project information to be provided to the Department.

ii. Identify the IS project information currently provided, and the feedback methodology used to communicate such information to the Department.

iii. Identify the gaps in IS project reporting to the Department in terms of project selection, prioritization schedule, budget, and rate plan adherence.

iv. Analyze the effectiveness of such mechanisms in meeting the Department's transparency needs.

v. Recommend changes, if needed, in the content and/or schedule of IS project information provided to the Department.

2.5. Assess the effectiveness of the benefit/cost framework and accuracy of the process(es) employed by the Utilities to estimate costs and savings for decision-making regarding information systems.

i. Identify the methodology and process used to determine the benefits and costs associated with IS projects.

ii. Identify methods used by management to manage the costs, minimize over-runs, manage scope creep, and achieve the benefits of IS projects.

iii. Determine if there is a formal back casting of completed IS projects' costs and benefits, and capturing lessons learned.

iv. Compare a sample of completed IS projects to determine the effectiveness of the Utilities' IS project management.

v. Identify Utility initiatives to improve IS project management and/or benefit/cost estimation.

vi. Identify the process used to apply post-project assessment learning to future projects.

2.6. Review the Gas Business Enablement project, including an assessment of how the Utilities plan to implement the project and a determination if the project will achieve the intended goals in a cost-effective manner.

Background

Since the Gas Business Enablement (GBE) program, is a major long-term investment in NGUSA's gas business to enhance compliance, improve customer service, rate case strategy and performance, this newly created project will be a significant undertaking for their business. They plan to standardize and simplify their operational processes, upgrade the associated IS systems, build on their compliance programs in a rapidly changing external environment, develop and enhance how they use technology in the field, and ensure they have the right talent and resource plans in place to successfully deliver their gas products and services to their customers. In light of this strategy, we will:

i. Identify the IS components of the GBE project in terms of benefits, cost, project scope and implementation schedule, and individuals responsible for its success.

ii. Identify the GBE project goals, schedule and how they are intended to be accomplished through the planned IS components.

iii. Determine if the IS components planned design, development and implementation schedule are consistent with the GBE development and implementation schedule.

iv. Determine if each GBE IS component is planned to be completed to meet the GBE schedule.

v. Assess whether each GBE IS component project scope and plans are consistent with the GBE implementation requirements.

vi. For each IS component currently planned for design and development, review the alternative approaches being considered and confirm the solution was consistent with a cost-effective approach.

2.7. Determine the status of KEDNY's Customer Information System conversion and if customer billing errors are occurring as a result of this conversion.

i. Understand management's approach to managing this project.

ii. Determine current progress against plan, schedule and budget.

iii. Identify management's plans to address identified gaps in project status.

iv. Determine if there are outstanding issues that must be resolved before system acceptance.

v. Identify management's plan for and results of testing of billing accuracy post-conversion.

vi. Review the billing complaint numbers before and after conversion.

Proposed Staffing Assignment

Audit Element Staff Assignment – Information Systems	
Lead Consultant	Joe DeVirgilio
Consultant(s)	Fandos, Jacobs, Saleeby, Sommerer

Exhibit 7 - Information Systems Staff

3. Electric Planning and Grid Modernization

This audit element will be focused on determining how well Niagara Mohawk Power Corporation d/b/a National Grid (NMPC) is transitioning to an Integrated Electric System Planning (ESP) hybrid model through existing strategies, policies, processes, structure, and management. ESP is the cornerstone on which electric system design, load flows, and operations are based. It is critical to understand how decisions are reached, and capital infrastructure determined. ESP enables NMPC to address T&D system needs using projected load changes/shifts while satisfying system reliability and capital budget constraints.

Background

Around 2011-13, the electric power industry introduced the concept of Distribution Automated Switching (DAS), allowing distribution utilities to minimize the impact of outages, leading to measurable improvements in SAIDI. For the first time, DAS marked the ability of SCADA control to manage and optimize power flows on physical distribution lines, not just at substations. Now, DAS is being implemented in looped distribution systems. However, when power substations lose too many supply circuits, the value of DAS diminishes. However, advances in Distributed Energy Resources (DER) have the potential to improve the responsiveness of DAS.

A newly added dimension to ESP is the impact of New York's REV program, which offers significant impacts on total energy requirements, transmission requirements, distribution loading and protection, and associated operating practices. The SCG team will evaluate NMPC's technology adoption, responsiveness to the REV program, and potential impacts to the Company's T&D asset base.

New York is an active participant in the national movement from traditional generation sources to renewables, including distributed generation. The reward for this shift is the potential for non-wired alternatives (NWA) to reduce peak day loads, reduce transmission and distribution congestion, provide cleaner energy via reduced emissions, and produce more favorable energy rates. However, this requires changes to system planning practices per the following: variability of source output, reverse power flows which challenge conventional protection schemes and safety concerns. Potential benefits include a reduction in distribution substation and circuit requirements, and reduced transmission congestion due to de-centralized sources bringing generation closer to load centers.

The challenge for system planners is to determine typical generation patterns for renewables (solar and wind) and incorporate the stochastic energy patterns into planning models, allowing for what-if planning scenarios to ensure adequate energy for peak periods. Models must be derived from typical sunshine and available wind patterns backed by measured interval data. System planners must understand diverse and unique generation characteristics.

Electric Planning & Grid Modernization Evaluation Criteria & Tasks

3.1. Assess the ability of DER, including energy efficiency, to meet forecasted capacity requirements on the NMPC distribution system and the effectiveness of any efforts to enable these technologies to fill these needs.

In 3.1, the team will evaluate how NMPC includes the influence of DER. This will be accomplished through the following:

i. Review NMPC's ESP and DER assumptions used to determine system requirements.

ii. Understand how these assumptions were derived.

iii. Evaluate system planning models and criteria used to determine if DERs are appropriately considered, including energy efficiency.

iv. Evaluate the impact of reducing traditional T&D investments resulting from DER opportunities.

v. Determine how NMPC is promoting DERs to help offset critical system investments.

vi. Evaluate the cost of implementing DSP and DSIP and ensure allocations will mutually benefit customers and DER participants.

3.2. Evaluate the processes used to collect and analyze information regarding the performance of DERs with respect to expected performance, including energy efficiency program realization rates.

Here the team will collect information associated with monitoring DER initiatives that are planned or underway. This effort will proceed as follows:

i. Review NMPC's strategies, objectives, goals, policies, and evaluation tools for DER initiatives.

ii. Develop an understanding of management's commitment to DER and associated actions.

iii. Assess current performance against NMPC's stated goals, objectives, and as-submitted to the Commission.

iv. Determine if the monitoring program is sufficient to provide actionable information which can be used to judge success and indicate where new strategies may be required.

v. Evaluate the energy efficiency program realization rates and determine if they are adequate to achieve stated goals.

3.3. Evaluate NMPC's processes for managing billing and tracking billing credits associated with VDER.

i. Develop an understanding of the policies, processes, and procedures for calculating VDER billing and tracking of billing credits.

ii. Determine if current methods fairly reflect the true billings and credits associated with individual projects.

iii. In the event there are concerns around the billings and credits, determine the root causes of the concerns.

3.4. Assess how NMPC is preparing for the implementation of its planned DSP/DSIP platform.

i. Evaluate policies and processes associated with the planned DSP/DSIP platform implementation.

ii. Assess where NMPC is in the process of implementation and associated schedule.

iii. Determine if the process is well thought out and provides adequate monitoring against the defined goals and objectives.

iv. Develop a clear understand of management level of commitment to the program and how it manifests itself throughout the organization.

v. Identify potential roadblocks which could stall the efforts.

3.5. Assess the efforts by which NMPC is evaluating the potential effects of large scale penetration of DER and future potential load drivers on its capital programs and planning practices.

Background

By NMPC's own admission in their DSIP filing, these physical system challenges must be overcome:

- *"Only 0.3% of customers have interval meters;*
- *Only 50% of the Company's distribution substations and feeder circuits have interval metering;*
- *More than 50% of the distribution line miles operate below 5 kV and as such have limited capacity to host significant DER; and*
- *There is limited two-way communication with distribution equipment located outside of the substation.*[3] *"*

These challenges are not inconsistent with what we have seen in other utilities, however many urban utilities have already begun the modernization of their distribution systems. NMPC has some ways to go, particularly around the challenge associated with operating fifty percent or more of its distribution below 5 kV. Upgrading to a 15 kV system will require time and extensive capital to achieve the desired results.

[3] From NMPC's DSIP, page 5

i. Evaluate the process and criteria used to extrapolate small-scale results into large-scale expected results.

ii. Determine how NMPC will identify potential customers for the services to be offered.

iii. Understand determinates and methods used to extrapolate results.

iv. Determine if the assumptions are reasonable to support the projections.

v. Ensure there are adequate tools and measures to track the projects and offer insights on the results.

vi. Determine if the process is well thought out and provides for adequate monitoring against defined goals and objectives.

vii. Ensure there is a formal feedback loop to continually test results and assumptions of penetration projections.

3.6. Determine how NMPC is planning for the development of DSP capabilities, including platform service offerings which will generate utility revenue.

i. Evaluate how NMPC plans to package and monetize DSP offerings.

ii. Evaluate management methods for creating revenue opportunities.

iii. Understand packaging assumptions and drivers that buyers are expected to respond to favorably.

iv. What types of incentives will NMPC offer to create sales for these offerings?

v. Understand the mix of front-loaded pricing along with re-occurring charges to create an on-going value stream.

vi. Determine how NMPC will offer ongoing maintenance services to ensure peak performance of systems and potential saving to customers.

3.7. Review NMPC's efforts to develop more granular marginal cost of service estimates for planning valuation and DER valuation purposes.

i. Understand management's approach to creating a reasonable set of pricing tools.

ii. Evaluate how NMPC plans to balance costs and margins to create more attractive potential customer offerings.

iii. Evaluate management methods for creating revenue opportunities.

iv. Understand packaging assumptions and drivers that buyers are expected to respond to favorably.

3.8. Assess NMPC efforts to disseminate available local hosting capacity data to potential DER providers.

Background

Here we will examine NMPC's approach to collecting, managing, and disseminating local hosting capacity data for potential DER providers. The information/data shared must be accurate and detailed enough to allow DER providers to make informed decisions on potential opportunities. We will also determine if appropriate policies and procedures governing shared information are in place, and if additional commercial terms are needed. Data transparency must be reasonable but also balanced against T&D system security concerns.

i. Evaluate NMPC's approach to data collection, management, and dissemination to potential DER partners.

ii. Evaluate if the companies are providing the right data in a timely fashion to support DER providers.

iii. Evaluate security and ease of data access to outside approved DER providers.

3.9. Assess NMPC's REV Demonstration Project development process, including a review of the process for contracting with third parties, risk-sharing with third parties, and the use of REV Connect in selecting projects.

i. Evaluate the decision process for selecting REV demonstration projects.

ii. Understand the use of REV Connect in selecting projects.

iii. Evaluate the decision process for selecting third party partners.

iv. Review the standard contracts to ensure they contain the necessary elements that protect parties and ensure on-going support.

v. Determine if there is adequate risk sharing defined in the contracts.

3.10. Assess NMPC's Non-Wires Alternative project development and selection processes, including a review of evaluation criteria and ongoing oversight of such projects once they are operational.

i. Understand NMPC's Non-wired Alternatives (NWA) program.

ii. Evaluate the program's selection and criteria development.

iii. Determine if EPRI has been contacted to provide support for NWA projects.

iv. Review management's decision process and commitment to offering or supporting NWA projects.

v. Understand the monitoring of NWA projects and the post -evaluation of benefits being derived.

3.11. Review the benefit/cost framework used by NMPC in electric system planning and prioritization to determine its effectiveness and compliance with Commission requirements.

i. Evaluate the decision process for determining which ESP projects should be included in the capital infrastructure budget.

ii. Evaluate the cost/benefit framework being applied to all capital ESP decisions. This must include financial, risk mitigation opportunities to reduce or shift loads, and system performance and reliability elements.

3.12. Evaluate NMPC's bidding process and determine if the process is appropriately transparent and competitive.

i. Review the bidding process to understand whether it is sufficiently transparent and competitive.

ii. Evaluate a small sample of recent projects to verify the level of transparency and competitiveness.

Proposed Staffing Assignment

Audit Element Staff Assignment – Electric Planning & Grid Modernization	
Lead Consultant	Bob Grant
Consultant(s)	Willoughby, DeVirgilio, Kreus, Jacobs, Sommerer

Exhibit 8 - Electric Planning Staff

4. Electric Load Forecasting and Supply Procurement

If ESP is the cornerstone of the T&D systems, electric load forecasting is the foundation for ESP, energy supply, and NMPC's REV planning and execution efforts. Load forecasting is critical when assessing the need for additional T&D facilities. Load forecasting also has a significant impact on supply planning as it provides the basis for determining energy supply procurement. This is especially important to understanding future energy supply requirements as the REV program progresses and more DER and NWA are installed.

Background

The load forecasting process is evolving in New York to support REV initiatives. No longer will all power come from distant power plants, but rather a mix of traditional large-scale stations and distributed energy resources (DER). These sources will be augmented by demand response (DR), and NWA such as energy efficiency (EE) programs, electric vehicle (EV) energy storage programs, conservation voltage reduction/regulation (CVR), and other NWA opportunities. As such, forecasters need new tools to accurately assess the overall impact on total load requirements. These tools need to allow for very granular changes in load requirements at distribution and transmission levels. Further, the forecasting tools need to have a means for identifying when these resources and NWAs will begin to gain acceptance in the marketplace and lower the requirements for traditional forms of generation. Therefore, REV makes New York less dependent on fossil fuels while advancing environmental stewardship. This audit element will focus on how NMPC identifies and manages these challenges, so the Company can effectively forecast load requirements and forestall the need for additional T&D plant capital expenditures. Load forecasts can also be used to stimulate third-party DER projects. Future capital expenditures should include more sophisticated planning/forecasting tools; e.g., databases; software; energy storage models; sensor data and control operations on distribution circuits, DER, and energy storage facilities.

With the potential for wide-scale adoption of wind energy and solar, the planner must be able to plan for the impact of these stochastic systems. NMPC has filed, June 30, 2016, with the Commission their DSIP which is their approach and road map to meeting the REV objectives.

This audit element focuses on the simulation models used to forecast both total energy requirements as well as the impact of these new resources. It also will look closely at how management uses this information to advance REV objectives, involve third party providers, and make improved decisions regarding DER penetration and future energy contracting.

SCG will evaluate the load forecasting policies, processes, procedures, and models in the new REV environment per the following (from the RFP):

- Evaluate changes to NMPC's electric load forecasting process since the previous management audit.

- Determine NMPC's status implementing the load forecasting methodology changes detailed in its DSIP filing, evaluate the timeliness of the planned changes, and assess the adequacy and accuracy of the resulting forecasts.
- Evaluate how system-wide and substation-specific load forecasting are incorporated into the planning process, assess the accuracy of those forecasts at the system-wide and substation level, and review NMPC's hierarchical synchronization process.
- Determine to what extent NMPC has incorporated probabilistic approaches into the forecasting process as described in NMPC's DSIP filing.
- Evaluate NMPC's means and methods for collecting load data that is disaggregated by time and location, and progress against related plans described in NMPC's DSIP filing.
- Evaluate NMPC's financial and physical hedging practices as they relate to electric supply.

Electric Load Forecasting and Supply Procurement Evaluation Criteria & Tasks

4.1. Evaluate changes to NMPC's electric load forecasting process since the previous management audit.

This initial task sets the stage for understanding how well NMPC meets REV objectives through their electric forecasting efforts. Specifically, our team will evaluate the following.

i. Understand the current forecasting processes (there are six specific forecasts[4]), which according to the DSIP already consider the impact of EE, DR, DG, and EV. Here we want to understand the extent to which these critical areas are being covered.

ii. Evaluate the forecasting staff's training and readiness.

iii. Evaluate NMPC changes to its electric load forecast policies, processes, procedures, and models. The new model forecasts will be "Bottom-Up", "Top-Down", and Integrated forecasts vs. the old method of "Top-Down.[5]"

iv. Evaluate if NMPC is achieving the level of dynamics believed to be necessary to create a model consistent with real world REV execution.

> *"The vision for Load and DER forecasting in the future establishes a comprehensive, unified, simulation environment that provides a spatial and temporal view of load and DER growth (both existing and future) at any given point in time and with any system design to support planning, energy procurement, customer engagement, operations, system process, assets, and efficient energy utilization optimization. This will entail developing a power-flow feeder model for each distribution feeders and probabilistic and predictive hourly load shape models for every customer, as well as probabilistic and predictive models for all current and future DER installations. The feeder and customer models will receive input from DER growth models for each type of DER as well appropriate environmental models (e.g., weather, cloud cover models based on*

[4] From NMPC's DSIP, page 45

[5] From NMPC's DSIP, pages 45-48

satellite cloud imagery, and solar radiance). Individual DER market growth models will produce probabilistic and predictive views of rooftop solar PV, non-rooftop solar PV, active and passive DR, EE, EVs, and storage growth on an individual customer basis. These customer level load and DER forecasts with then coupled with electric system models of distribution, substation and transmission thereby enabling a fully uniform and integrated simulation environment that supports both top-down and bottom-up perspectives of market and load growth."[6]

v. Determine how NMPC will achieve the "Tighter" coordination between forecasting and planning.

vi. Evaluate the ability to deliver expected benefits and outputs of the forecasting process. Specifically, the four benefits expected from the new forecast model paradigm:
   a. "Breadth – expansion of view;
   b. Depth – refinement of scale in terms of time, space, functional detail, activities, etc.;
   c. Accuracy – temporal & level accuracy of loads; and
   d. Functionality Enablement,"[7]

4.2. Determine NMPC's status implementing the load forecasting methodology changes detailed in its DSIP filing, evaluate the timeliness of the planned changes, and assess the adequacy and accuracy of the resulting forecasts.

i. Understand the time table for NMPC changes to its electric load forecast policies, processes, procedures, and models.

ii. Evaluate NMPC's approach to predicting the entrance of DER and NWA on the distribution system.

"National Grid's most recent load forecast estimates low growth (0.1% annually) over a fifteen-year horizon considering the economic outlook and increasing adoption of EE and DG.

Over the next fifteen years EE is expected to reduce the system peak by 0.4% annually and DG (predominantly solar photovoltaic ("PV")) is expected to reduce the system peak by 0.7% annually."[8]

iii. Evaluate the methods, assumptions, and tools used to create these estimates.

iv. Evaluate, were possible, third party sources that can corroborate penetration estimates and timelines.

[6] From NMPC's DSIP, page 47

[7] From NMPC's DSIP, page 47

[8] From NMPC's DSIP, page 6

4.3. Evaluate how system-wide and substation-specific load forecasting are incorporated into the planning process, assess the accuracy of those forecasts at the system-wide and substation level, and review NMPC's hierarchical synchronization process.

i. Using much of the information obtained in 4.2, the team will conduct closer review into the load forecasting at and below the substation level.
ii. Evaluate where this granular data originates by conducting interviews with system planners and field management to determine sources and means for incorporating the data into forecasts at feeder and substation levels.
iii. Evaluate the tools used to gather the data.
iv. Evaluate the decision processes used to accept and incorporate information into the forecasting and planning models.
v. Determine if third-party data gathered through NMPC's open DER web tools are adequately represented in the models. Understand the confidence level NMPC system planners and forecasters ascribe to the data provided.

4.4. Determine to what extent NMPC has incorporated probabilistic approaches into the forecasting process as described in NMPC's DSIP filing.

Per NMPC's statement below, there may not have been significant progress as of the issuance date of the DSIP. Since then, NMPC may have begun the effort to obtain the necessary tools to incorporate probabilistic forecasting tools.

> *"Advancements in load and DER forecasting are necessary in order to enhance load and DER forecasting both temporally and geographically. System load forecasting in the future will be a very detailed and data-intensive probabilistic integration of economic modeling, weather normalization, modeling of customer response to numerous market offerings, and T&D system capabilities. An analytics platform and a number of new tools, models, and intensive cloud computing capabilities will need to be utilized in the development of new forecasting processes.[9]"*

i. Using much of the information obtained in 4.2, the team will conduct closer reviews of the load forecasting process at and below the substation level.
ii. Discover how much progress NMPC has made in identifying, procuring, and implementing probabilistic forecasting tools.
iii. Understand requirements for obtaining needed forecasting tools.
iv. Understand NMPC's approach to integrating probabilistic forecasting tools into the new forecasting process highlighted in the DSIP.
v. Discuss the value of selected tools.

4.5. Evaluate NMPC's means and methods for collecting load data that is disaggregated by time and location, and progress against related plans described in NMPC's DSIP filing.

i. Evaluate existing methods for collecting granular level load data prior to REV.

[9] From NMPC's DSIP, page 7

ii. Evaluate changes to the data collection process to meet REV objectives as discussed in the DSIP.
iii. Identify new data sources.
iv. Determine what tools are being used to collect and store load data.

4.6. Evaluate NMPC's financial and physical hedging practices as they relate to electric supply.

i. Understand NMPC's electric supply financial and physical hedging practices prior to REV.
ii. Identify changes made or in the process of being completed to reflect the needs of the REV program.
iii. Understand how NMPC applies hedging solutions, and under what conditions.

Proposed Staffing Assignment

Audit Element Staff Assignment – Electric Load Forecasting & Supply Procurement	
Lead Consultant	Bob Grant
Consultant(s)	Willoughby, Kreus, Saleeby, Jacobs

Exhibit 4 – Electric Load Forecasting & Supply Procurement Staff

5. Gas Planning

Background

The gas planning function is the foundation of a gas utility; it ensures that there is adequate gas and capacity available to all the franchise's customers during the peak day. Depending on the location there is also the consideration of pipeline capacity with can limit the amount of gas available to the utility. In some cases, the utilities must consider storing gas either above ground as Liquefied gas or below ground. Also, the companies will have to consider pipeline spurs or branches to address gas-fired generation and city gates (take points) for feeding and balancing the gas distribution system. The Gas Planning Audit Element covers the following topics:

- Organization and staffing,
- Policies and processes,
- Forecasting models,
- Gas supply procurement,
- Hedging practices,
- Distribution system design,
- Distribution SCADA,
- Replace versus repair,
- Gas and electric coordination, and
- Asset management.

In addition to the above gas planning needs to coordinate with the marketing function to ensure adequate capacity is available to allow for system expansion into unserved areas and new customers.

During this audit the DPS would like the following five sub elements to be evaluated.

Gas Planning Evaluation Criteria & Tasks

5.1. Assess the models and inputs used to develop short- and long-term gas forecasts and determine the extent to which back casts are utilized to determine the accuracy of the forecasting function.

Background

As in the electric forecasting function, gas forecasting is the foundation for gas supply, pipeline requirements and distribution system design. Gas load forecasting has the objective of ensuring that the Utilities accurately forecast customer loads. Specially, gas forecasting affects supply reliability, procurement costs, gas system planning and design, impacts the regulatory, and functions. In general, the amount of gas used by individual customers and the send out in the gas distribution system is weather and season dependent. There are commercial and industrial customers whose gas consumption is more impacted by the processes they use as well. Now gas load forecasts must include the impacts of increased

energy efficiency and customer consumption trends. Load forecasts need to be verified against actual consumptions. This is referred as back casting which allows actual usage to be compared to the model's output. This process has been greatly enhanced by the addition of SCADA measurements out on the individual distribution lines and branches. Typically, SCADA will measure flow, pressure and temperature out on the distribution system.

Core to creating a dependable forecast is the model(s) used to create the forecast. Then comes the quality and granularity of data used in the model(s). The greater the granularity the better the model can depict the needs of specific distribution lines. Added to the mix is the need to capture the results of marketing initiatives as well as, expected natural growth due in part to regional and local economics. In general, modelling requires both engineering and probabilistic components to yield a reasonable future picture of the gas requirements. To accomplish the review in this sub element we will apply the following tasks:

i. Identify the model(s) used to build the natural gas forecast. Determine if the models use both engineering and probabilistic means to projecting future load requirements. Typically, forecasts will include: Design day, Peak versus off-peak, Near-term forecasts (next year), Mid-term forecasts (five-year), and Long-term forecasts (10 or 20-year).
ii. Review the criteria applied to the different forecasts developed for gas sales, customer demand, and reliability purposes.
iii. Determine the relationship between the various forecasts developed for gas sales, customer demand, and reliability.
iv. Evaluate data validity used to develop short- and long-term gas forecasts by understanding data source limitations. Many forecasting functions have a good working knowledge of data sources and may include assumptions (probabilities) of value in the models.
v. Understand how sales and reliability are integrated into the forecasts.
vi. Evaluate the modeling and data acquisition processes including steps, key participants, data validation, short- and long-term planning horizons (which can vary by area and region), etc.
vii. Understand how forecast assumptions regarding, load types (residential, commercial and industrial-firm, off-peak or seasonal, and interruptible) are made.
viii. Evaluate how back casting is performed (Frequency, methods, by whom). Determine the sensitivity to variations and the process for changing the model(s).

5.2. Evaluate the convergence between the gas planning and electric planning functions as it relates to gas-fired electric generation.

Background

This is a critical intersection between gas and electric as the need for more natural gas-fired generation grows due to: large campuses or business parks seeking to offset some of their electric energy and demand costs, peaking units to address loss of traditional generation, load balancing and growth. In areas where electric transmission is highly congested, they can relieve or off-set some of this congestion by moving the source closer to the load centers.

Coordination, particularly in the same company, must happen initially in the concept-planning effort and continue through the entire plan-design-build process. As soon as electric planning identifies the need for a natural gas-fired generator there needs to be notification to gas planning function to see if the pipeline capacity is available or if new capacity is needed to support the demand. As one might expect, a pipeline extensions or additions by require a longer lead time that a package natural gas-fired generator. Finally, there needs to be continuous contact during the operation of the new plant to allow gas forecasting to adjust their forecasting to ensure there is adequate supply available and conversely less gas when the plant is down for maintenance.

This sub element of the audit will include the following tasks:

i. Review the utility's strategies, policies, and processes which identify what, when, and where coordination between gas planning/supply and electric planning/operations should happen.
ii. Determine the level of formality which communications happens.
iii. Determine the coordination and communications presently in place between gas and electric planning functions.
iv. Identify additional beneficial coordination and communications between the gas and electric planning and operations.

5.3. Assess the readiness, capability and possible impediments to meeting increasing natural gas load, and possible alternatives to new long-term projects like pipeline capacity, including the ability of conservation, temporary compressed natural gas facilities, demand response or other programs to meet peak load requirements in the future.

i. Determine the process for identifying new long-term capital projects to increase capacity, support conservation efforts, increase storage to manage future natural gas growth.
ii. Identify recent examples where the process works and where there were issues with the process.
iii. Determine in those areas where issues surfaced, identify the cause and potential solution if possible.

5.4. ***Evaluate the effectiveness of gas hedging methods (physical and financial), strategies, and processes.***

Background

Hedging is a risk management tool that allows better control pricing and supply caused by volatility in natural gas prices or extreme usage tightening periods. Over the last couple of decades, price spikes occurred along with a general tightening of the supply demand balance in gas markets resulting in higher natural gas prices leading to higher prices for gas consumers. Recently, natural gas market prices have been depressed due to supply availability and more pipeline and storage capacity availability.

Natural gas is now an influencer in some electric markets due in part to the increased use of gas-fired generation. This growing demand is introducing volatility in natural gas prices which impact retail natural gas customers pricing as well as contributing to the retail electricity prices. These market changes are driving utilities to hedge natural gas prices and supplies to minimize the risk. This audit sub element includes the following tasks:

i. Understand current NYSPSC policies and incentives governing utility hedging practices.
ii. Review the Utilities supply and pricing strategies and policies with respect to hedging natural gas costs and supplies.
iii. Determine the percentage of gas volumes subject to hedging and over what time periods hedges are applied.
iv. Compare the Utilities policies with standard practice of other New York regulated utilities.
v. Determine the effectiveness of the Utilities hedging strategies and policies as compared to stated objectives and other New York regulated gas utilities.
vi. Analysis hedging gains and losses; and
vii. Analysis hedging costs and ultimate value.
viii. Understand the Utilities extent of engagement in open hedges or market price and commodity risk positions.
ix. Understand the Utilities' willingness to accept commodity and price risks.

5.5. Determine the extent to which the Utilities incorporate the consideration of Non-Pipe Solutions as well as both traditional and non-traditional demand response techniques into their gas planning processes.

i. Understand the Utilities efforts to engage in Non-Pipe Solutions (NPS) to offset demand.
ii. Evaluate the strategies, policies, and processes used to identify and select NPS opportunities.
iii. Evaluate the depth the Utilities have gone to support NPS.
iv. Determine if there are any pilots on the horizon or in process of installing.
v. Evaluate whether the projects have an adequate monitoring program in design or application. Are expectations for success defined?
vi. Determine how the NPS identified are being integrated into the gas planning models and processes.

Proposed Staffing Assignment

Audit Element Staff Assignment – Gas Planning	
Lead Consultant	Bob Grant
Consultant(s)	DeVirgilio, Kreus, Saleeby

Exhibit 9 - Gas Planning Staff

6. Gas Safety

This audit element will be focused on determining how well NGUSA NY Gas Utilities (Gas Utilities) manage their gas safety program elements as set forth in 16 CRR-NY Part 255.

Background

In 2013, the Commission retained an independent auditor to conduct a management and operations audit of the gas operations of the NGUSA NY Gas Utilities (Case 13-G-0009). The Final Report found the Utilities had performed well overall in providing gas service in a reliable manner but that there were numerous areas for improvement in their findings and recommendations.

The Commission adopted updates to existing metrics based on recent performance in the areas of leak-prone pipe removal, leak management, damage prevention, emergency response, and gas safety. NMPC will enhance gas safety through six programs that include the distribution of residential methane detectors, initiatives aimed at pipeline damage prevention, and enhanced first responder training programs. Furthermore, NMPC will invest approximately $138 million to replace 150 miles of leak-prone pipe over the term of the rate plan.

The New York State Department of Public Service (NYSDPS) issued a Request for Proposals (RFP) in Case 13-M-0314 for an independent consultant to perform a focused operations audit of the accuracy of data submitted to the New York State Public Service Commission (NYSPSC or Commission) by nine New York utilities in the subject areas of electric interruption, gas safety, and customer service during the years 2009 through 2013. Overland Consulting "Operations Audit of the Accuracy of New York State Utilities' Self-Reported Data Gas Safety Report", date April 2015, covers the gas safety subject area. Objectives of the audit, were:

- Assess the completeness and accuracy of the gas safety metrics reported by each utility to the NYSPSC and the reasonableness and consistency of the methods and procedures employed to calculate the metrics.
- Assess the adequacy of internal controls and procedures governing the processes of gathering data used in gas safety metrics, and calculation and reporting of the metrics.
- Given the methods and procedures employed in calculating and reporting the metrics, assess the comparability of gas safety metrics among the nine utilities.
- Evaluate the continuing need for the metrics currently being reported by the utilities and the potential for additional metrics to measure gas safety.
- Evaluate additional gas safety metrics maintained by the utilities for internal use, not currently reported to the NYSPSC, and their suitability for addition to the group of metrics that are reported to the NYSPSC.

On May 18, 2018, the NYSPSC announced that natural gas utilities will be required to disqualify inspectors of plastic fusions on natural gas pipes who had previously approved a

visually unacceptable fusion until the inspector has been fully retrained and requalified. Utilities will also be required to inspect other work completed by any fuser and inspector who completed or passed a fuse that is later deemed a visually failing fuse from the date that fuse was made or inspected. In addition to new inspection requirements, all major gas utilities will be required to develop and submit quality assurance and control programs. The programs will propose, for Department approval, standards that each utility will use to determine the need for re-digs and inspection of completed projects when on-site inspections have shown such re-digs of completed work by fusers and inspectors are necessary.

The findings and implementation of the associated recommendations regarding Gas Utilities' operations in the above noted Management Audits, the recent Rate Case Settlements and the recently announced requirements will form the baseline for the assessment of the following Audit Tasks.

Gas Safety Evaluation Criteria & Tasks

6.1. Assess the leak prone pipe replacement programs, including flood zone management, risk models, and other factors used to determine mains to be replaced, verification that high-risk pipes are replaced, and the program's impact on total system leaks.

i. Identify and assess the process(es), programs and systems used by the Gas Utilities to identify, plan and schedule the replacement of leak prone gas pipe.

ii. Identify and assess the process(es), programs and systems used by the Gas Utilities to identify, plan and schedule the protection of or replacement of gas pipe as part of their flood zone management program.

iii. Identify the source of resources used to perform the formal leak program.

iv. Confirm that all Gas Utilities are using the same approach to replacement of leak prone gas pipe.

v. Evaluate the robustness of factors, beyond the Class 1, 2, 2a, and 3 type leaks, incorporated in the risk prioritization decision making process.

vi. Analyze the results of the replacement of leak prone gas pipe from the perspective of total system leaks.

vii. Confirm the field work completion of the identified high-risk leak prone gas pipe.

viii. Confirm the accuracy of the reported gas safety metrics as they relate to the replacement of leak prone gas pipe.

6.2. Evaluate the process used to track and report unit costs that are tied to positive incentives related to leak prone pipe.

i. Identify the process(es), procedures and systems used by each Gas Utility to track and report unit costs.

ii. Identify differences in how each Gas Utility tracks and reports.

iii. Evaluate such processes for accuracy and improvement opportunities.

iv. Determine how this information is used to manage pipe replacement.

6.3. Assess the Utilities' Incident Investigation processes used to comply with Pipeline Safety Regulations and Best Practices.

i. Identify and assess each Gas Utility's Plan to comply with the requirements of 16 CRR-NY 255.827 -Facility Failure Investigation. This Part 255 Section includes the requirement that: "Each operator shall establish procedures to analyze each failure or accident for the purpose of determining its cause and to minimize the possibility of a recurrence."

ii. Identify any benchmarking each Gas Utility has completed to identify best practice approaches to incident investigations.

iii. Identify any changes that are planned and/or recently implemented to improve the Gas Utility's Plan.

iv. Identify differences in the Plans at each Gas Utility.

v. Determine if the Utilities are achieving their targets for repairing type 1 and 2 leaks.

vi. Develop improvement opportunities.

6.4. Evaluate the Utilities' record of gas safety violations and determine what, if any, systemic improvements are warranted.

i. Identify and review the recent history of gas safety violations at each Gas Utility.

ii. Identify any tends in such history.

iii. Review each Gas Utility's action plans and associated changes to gas safety requirements to eliminate past gas safety violations.

iv. Determine the method(s), if any, that each Gas Utility's management is held accountable for eliminating gas safety violations.

v. Complete the evaluation and identify process improvement opportunities.

6.5. Evaluate the onboarding, training, and qualifying of contractors performing construction of the Utilities' pipeline facilities and operations and maintenance on the Utilities' pipeline facilities.

i. Identify each Gas Utility's methods utilized for onboarding, training, and qualifying of contractors.

ii. Identify differences in methods utilized by each Gas Utility.

iii. Identify any benchmarking performed to identify best-in-class methods.

iv. Identify any improvements planned and/or implemented in such methods.

v. Review the completion records associated with these methods and validate the accuracy of such qualifications.

vi. Evaluate the methods and identify improvement opportunities.

6.6. Evaluate the training and qualifying of the Utilities' workforce performing construction of the Utilities' pipeline facilities and operations and maintenance on the Utilities' pipeline facilities.

i. Identify each Gas Utility's methods used for training and qualifying of the Utilities' workforce.

ii. Identify differences in methods used by each Gas Utility.

iii. Identify any benchmarking performed to identify best-in-class methods.

iv. Identify any improvements planned and/or implemented in such methods.

v. Review the completion records associated with these methods and validate the accuracy of such qualifications.

vi. Identify who is allowed to perform welds under what conditions.

vii. Evaluate the methods and identify improvement opportunities.

6.7. Assess the inspection, quality control, quality assurance, and oversight of contractors performing construction of the Utilities' pipeline facilities and operations and maintenance on the Utilities' pipeline facilities.

i. Identify and assess each Gas Utility's methods used for inspection, quality control, quality assurance, and oversight of contractors.

ii. Identify differences in the quality management methods used by each Gas Utility.

iii. Identify any benchmarking performed to identify best-in-class management methods.

iv. Identify any improvements planned and/or implemented in such methods.

v. Confirm implementation of the new requirements for inspectors of plastic fusions.

vi. Evaluate a sample of such inspection reports and confirm the appropriate follow-up actions were taken on any identified deficiencies.

vii. Identify any occurrence where a contractor was placed on notice as a result of unacceptable quality performance and what follow-up action management implemented to verify future contractor compliance.

viii. Identify improvement opportunities.

6.8. Assess the inspection, quality control, quality assurance, and oversight of the Utilities' workforce performing construction of the Utilities' pipeline facilities and operations and maintenance on the Utilities' pipeline facilities.

i. Identify and assess each Gas Utility's methods used for inspection, quality control, quality assurance, and oversight of the Utilities' workforce.

ii. Identify differences in the quality management methods used by each Gas Utility.

iii. Identify any benchmarking performed to identify best-in-class management methods.

iv. Identify any improvements planned and/or implemented in such methods.

v. Confirm implementation of the new requirements for inspectors of plastic fusions.

vi. Evaluate a sample of inspection reports and confirm the appropriate follow-up actions were taken on any identified deficiencies.

vii. Evaluate any occurrence where supervision was placed on notice as a result of unacceptable quality performance and what follow-up action management implemented to verify future compliance.

Proposed Staffing Assignment

Audit Element Staff Assignment – Gas Safety	
Lead Consultant	Joe DeVirgilio
Consultant(s)	Jacobs, Grant

Exhibit 10 - Gas Safety Staff

7. Budgeting and Finance

Background

Budget and financial operations of the utilities will be reviewed relative to policies, procedures, controls, and leading practices. The financial planning process should establish controls in the 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. We will review the budget process and evaluate the focus on budget formulation, approval, control, variance, and procedural adherence as well as lessons learned and paths to improvement. Accounting functions should 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. The internal audit function must be well-organized, properly staffed, employing reasonable processes, and leveraging information-technology-based tools to improve productivity, measure its performance, and track the organizations' progress. Additionally, the treasury function must focus on maintaining corporate liquidity, managing capital structure, and assuring certain aspects of risk are managed to maintain a satisfactory debt rating.

Responsible control of finances depends on a budget process that is comprehensive, realistic, thorough, supported by management, and understood by employees. It sharpens the understanding of objectives, provides a true picture of company direction, and supplies required information for managing well, helping avoid the surprises that can hobble successful realization of goals.

The capital and O&M budgeting processes should complement the corporate mission and planning process and establish what the financial resource commitments are toward providing safe and reliable service. It should include the financial management controls, establish metrics for performance evaluation on both company and personnel levels, facilitate decision-making, facilitate investor relations, establish priorities for construction capital, and provide a tool for management to organize and implement key initiatives as well as control costs through review and approval of appropriate functions in the process.

Organizational responsibilities for planning priorities and budgeting allocations must be reasonable and appropriate. Executive and senior management must be appropriately involved in the development of budgeting guidelines and periodic budget reviews and approvals for the company. Actual expenditures must be tracked in comparison to the budget expenditures in sufficient detail to allow management to control spending and allocate its resources wisely.

The focus of our assessment will be in budget development (including method, prior- year data, problem-solving necessities, forecast promotion, and customer satisfaction), budget approval, budget communication, budget tracking, budget reporting, and problem mitigation. In both the areas of capital and O&M budgeting, we will assess the process for

determination of need, approval levels, reporting, and steps to ensure maintaining budget integrity. Further, we will examine not only the thoroughness of the documented budget process but also whether that process is employed as documented.

Budgeting and Finance Evaluation Criteria and Tasks

7.1. Evaluate the Utilities' capital budgeting processes, including the roles of the NGUSA and National Grid plc Boards of Directors, project selection, project prioritization, and status and variance reporting.

i. Evaluate the entire capital budgeting process, time table and organizational responsibilities including those of NGUSA, National Grid plc and the various Boards for project selection and planning priorities and budgeting allocations to determine if it is reasonable, appropriate, and well defined.

ii. Assess parent, executive and senior management efforts to balance the needs of the electric and gas businesses in the budgeting process.

iii. Review current projects and the selection process to assess to determine if the capital budgeting process is developed applying reasonable roles of all organizational elements.

iv. Review status and variance reporting systems and controls and processes used to monitor and manage projects and their budget.

v. Determine if budgeting is formally linked to strategic initiatives.

7.2. Evaluate whether the Utilities are utilizing the most cost-effective means to procure goods and services.

i. Review the procurement process and determine if approval levels are appropriate and that the bid process is cost effective and both reasonable and appropriate.

ii. Evaluate the vendor selection and performance criteria.

iii. Understand how new vendors are identified and selected for new goods and services.

iv. Determine, given the numerous organizational elements under NGUSA, and National Grid plc, if appropriate leverage is applied to procure goods and services (for example quantity discounting) and best practices among affiliates are applied by the electric and gas utilities.

v. Determine if deviations to bid process are allowed and, if so, under what circumstances.

vi. Evaluate the methods used to determine price reasonableness; cost analyses should be performed and documented as a sound business practice.

vii. Determine if purchasing works diligently to keep its policies and procedures current and capable of yielding cost-effective results.

7.3. Assess each Utility's Pension & Other Post-Employment Benefits plan asset investment strategy, considering risk, ability to meet obligations, and diversification of assets.

i. Evaluate the benefit plan investment strategy and determine how investment decisions are made and the diversification used.

ii. Determine how asset investment strategies are optimized to maximize value.

iii. Evaluate the reasonableness of investment strategies' methods and systems. Evaluate the appropriateness of diversification to limit risk.

iv. Assess the Corporate and utility's pension fund investment policies and procedures to ensure that assets required to appropriately support current and future obligations are invested in a cost-effective manner, seeking to maximize return within acceptable levels of risk,

v. Determine if asset allocation of the funds have a proper investment mix between asset classes.

vi. Determine if procedures and guidelines defining risk reasonable.

vii. Determine if the fund manager selection process is appropriate and reasonable and the effective oversite is applied.

viii. Determine if the Utilities use an Investment Advisor and review such Advisors periodic reports to the Investment Committee(s).

ix. Compare the Investment Strategy between Utilities and identify differences and associated rationale.

x. Identify individual(s) responsible for re-balancing investment assets consistent with the Plans' Investment Policy Statement.

7.4. Determine whether the Utilities are using the most cost-effective means to issue securities (e.g., optimal corporate level at which to issue debt, SEC registered vs 144A or private placement).

Background

The amount of money that is required to obtain capital from different sources, called cost of capital, is crucial in determining a utility's optimal capital structure. The cost of debt capital is simply represented by the interest rate required by the lender. The cost of equity financing requires a more complicated capital asset pricing model, or CAPM calculation. This calculation is based on the stock market's risk-related rate of return and risk-free rate, as well as the stock's beta value. By considering the returns generated by the larger market, as well as the individual stock's relative performance (represented by beta), the cost of equity calculation reflects the percentage of each invested dollar that shareholders expect in returns.

i. Asses the decision-making process, the organizational responsibilities and methods used to determine the need for capital, the best source of funds and whether it should be debt or equity financing.

ii. Determine if prudent business strategies are employed to determine the best mix of debt and equity financing and yielding the best funding at lowest cost.

iii. Evaluate the method used to determine weighted average cost of capital.

iv. Determine the levels of SEC registered securities, private placement 144A offerings or regulation D offering and who, how and why those decisions are made and are they appropriate and cost effective; typically, in the private capital market Rule 144A and Regulation D are the dominant offering methods. Rule 144A offerings are predominantly debt while Regulation D offerings are mainly equity.

v. If private placement offerings are employed, determine whether investor restrictions or offering limits are reasonable

7.5. Evaluate how the Utilities interact with credit rating agencies (e.g., are the credit rating agencies aware of the additional revenue opportunities associated with EAMs).

Background

On May 19, 2016, the New York State Public Service Commission issued an order adopting a framework for a ratemaking and utility revenue model under the REV initiative. The Order was meant to be major step forward in providing a framework for utilities to generate revenue as distributed system platform (DSP) providers under REV. While classic rate-setting mechanisms were suitable for centralized power systems, the new method seeks to create a regulatory model that better aligns the interests of utility shareholders and customers; aligning utility financial incentives with customer interests. In addition to the traditional cost-of-service revenue stream, utilities can now also receive earnings from the other sources: Market facing platform activities like facilitating critical services by DSP users, alternatives that reduce capital investment, transitional outcomes-based performance measures. Further Earnings Adjustment Mechanisms (EAMs) which was outlined in the PSC order as a transitional outcome-based performance measure in the transition toward mature markets. These EAM activities include system efficiency, energy efficiency, improving interconnection cooperation with renewable projects, and customer engagement regarding innovative programs. These EAMs are near-term measures to develop customer savings to develop market-enabling tools. However, Platform Service Revenues (PSRs) are also a new form of utility revenue related to operating and enabling distribution-level markets; displacing infrastructure projects with non-wired alternatives. Gaining approval of PSR projects and its pricing and allocating revenue among shareholders and ratepayers has been outlined by the PSC and enables monopoly services to be differentiated from services provided by third parties. Given the new utility marketplace and the REV program a new relationship and communications with credit ratings agencies are clearly critical.

i. Evaluate the methods currently used to communicate to and update credit ratings agency understanding of the new utility revenue models and its regulatory framework.

ii. Evaluate the utilities credit rating trends over the last five years, the changes in their risk profile and whether there was effective, timely and necessary engagement with credit rating agencies.

iii. Determine if any factors typically used by ratings agencies (Timely cost recovery, favorable tariff-setting procedures, transparency/stability/predictability and

independence/autonomy) have been detrimentally impacted with the EAM and PRC related revenues, did the utility become aware of the impact and what appropriate course of action was taken, if at all.

iv. Determine if the electric and gas utilities are working with the agencies to understand the factors that are impacting their rating. In addition, have they developed a collaborative relationship with regulators and other parties to ensure that all understand the impacts on certain rulings on the cost and access to capital or agency declaring "deteriorated regulatory environment".

Proposed Staffing Assignment

Audit Element Staff Assignment – Budgeting and Finance	
Lead Consultant	Ray Saleeby
Consultant(s)	Jacobs, DeVirgilio

Exhibit 11 - Budgeting & Finance Staff

8. Project Management

Background

There are several objectives associated with the implementation of an effective project management program, including:

- A robust project justification and prioritization process, consistent with portfolio management concepts and aligned with corporate strategies. The portfolio management concept suggests that depending upon the project type, differing means of justification are appropriate;
- Effective individual project planning including appropriate scope definition, project estimation based upon compatible units or standards, and realistic schedules also based upon the use of estimating standards;
- Schedule management across a portfolio of projects considering limitations of resources, and project component dependencies;
- Effective project controls to manage project cost and schedule, considering timely reporting of actual costs incurred, frequent re-estimation of project completion costs, tight control and challenges of contractor change requests and any other cost overruns or underruns, and appropriate use of project schedule and cost contingencies; and
- Timely project completion information including as-built project details to allow for accurate booking of costs.

Project Management Evaluation Criteria & Tasks

8.1. Evaluate how the Utilities identify and select capital projects, consider alternatives, and memorialize which projects move forward and which do not.

i. Examine the process used to initiate a project and the "gates" used to review, justify and approve a project.

ii. Review and assess any automated tools used to manage the project evaluation lifecycle.

iii. Determine whether the methods of justification vary based upon project type (e.g., regulatory or safety required, discretionary projects, etc.).

iv. Examine the process used to consider project alternatives and whether project solutions are challenged by individuals or committee.

v. Determine how budget targets are set and influence the selection of projects for the portfolio.

8.2. Evaluate how capital projects are prioritized and scheduled, including a review of the variables considered in this process.

i. Review and assess the scoring process used by the Utilities to prioritize projects.

ii. Examine any automated tools used to assist the prioritization of projects (including Primavera which NGUSA indicated it would be using).

iii. Review the data inputs to determine whether it is easy to "game" the system to enhance the project scoring.

iv. Review and assess the team of individuals responsible for reviewing the project submittals and the scoring provided.

v. Consider how priority model weightings are impacted by concepts of economics and consistency with strategic objectives. Also consider how the New York State REV objectives are considered in project prioritization decisions.

vi. Examine whether Asset Management concepts are used in prioritizing projects.

vii. Review the tools used to prepare project schedules and adequately consider available resources and project component dependencies.

8.3. Evaluate the methods used to control capital project costs, scope expansion, and schedule adherence.

i. Review the staffing used to support project management including project cost and schedule analysts.

ii. Determine whether the personnel have proper qualification for project management and controls.

iii. Examine the span of control for project managers – the quantify and size of projects assigned to each project manager.

iv. Examine the timeliness and accuracy of reports providing actual project costs and project progress.

v. Examine if and how the information provided on actual costs and project progress are used to estimate "to go" and project completion costs.

vi. Review the rules applied for reporting of estimated project overruns or underruns.

vii. Determine whether early indications of project overruns or underruns follow the guidelines and where appropriate are reconsidered or authorized by funding committees.

viii. Determine how project priorities are adjusted during the year based upon performance of projects underway or based upon unanticipated events.

ix. Working with team members reviewing work management, review and assess the process used to scrutinize requests for project scope changes, whether initiated by contractor or by the Utilities.

x. Identify the metrics used to measure overall project control performance on cost and schedule.

xi. For all of the above, select a sampling of actual projects to review the controls applied to the specific projects – note this will not be a statistically representative selection of projects, but rather reviewed for illustrative purposes.

8.4. Assess the adequacy and transparency of information provided to the Department related to capital project selection, prioritization, and schedule, budget and rate plan adherence.

i. Review all reports provided internally to the project management group and externally to company management on project cost and schedule performance.

ii. Examine projects with cost overruns and underruns to consider when the management team was notified of the potential for a project overrun or underrun.

iii. Consider how project contingencies are managed and whether projections of cost underruns result in the release of funds to be used for other projects or other purposes.

iv. Regarding project selection, justification and prioritization, the extent to which management assumes a role in this process will be reviewed as part of Task 8.2.

8.5. Determine the extent to which project estimating processes and systems support the development of accurate estimates for project selection, budget development, and customer estimates, including an assessment of the impact of project estimating enhancements implemented subsequent to the previous management audit and rate cases.

i. NGUSA committed to a number of enhancements to its project estimating process. This included the establishment of the Estimating Center of Excellence (ECoE), along with the use of a work breakdown structure (WBS) and cost breakdown structure (CBS). Examine the extent to which these processes and resources have been established and used.

ii. Conduct an assessment of estimating accuracy on actual projects for the full calendar year 2017 and select an earlier year to perform the same analysis and compare results. Our team will also compare estimating accuracy results to the findings of the prior management audit where estimating accuracy was examined.

iii. Examine the process used to estimate customer projects and the implementation of CIAC (contributions in aid of construction). Include the consideration of estimating accuracy on customer projects.

Proposed Staffing Assignment

Audit Element Staff Assignment – Project Management	
Lead Consultant	Ray Saleeby
Consultant(s)	Jacobs, Kreus

Exhibit 12 - Project Management Staff

9. Program Management

Background

Programs are setup to control repetitive type projects. The program approach allows these repetitive type efforts to be designed using common methods, practices and equipment. In addition, they can be more uniformly controlled by management. A traditional well-established Program Management function embodies both a methodology and framework for selecting, defining, and managing large capital and O&M projects. Programs by their very nature are multi-year efforts to address concerns or enhancements to the T&D systems. There are generally two major funding buckets, capital and O&M, and all programs compete for the finite resources in one or the other bucket. In this competition, for resources, programs must clearly define scope, cost, scope and schedule. By their very existence Programs are multi-year efforts which may include:

- Capital examples:
  - Upgrading distribution feeders from 5 kV to 15 kV or 34.5 kV depending on the load growth and now DER programs;
  - Distribution pole replacement;
  - Distribution feeder automation for better control and isolation of line faults;
  - Adding in more granular control of SCADA;
  - DER and Non-wired Alternatives;
  - Meter upgrades to AMR or AMI;
  - Substation upgrades; and
  - Upgrading transmission oil or air type breakers with SF6 breakers.
- O&M examples:
  - Distribution feeder fuse replacements;
  - Distribution substation transformer maintenance;
  - Distribution insulator replacement;
  - Street lamp replacement;
  - Transmission substation maintenance; and
  - Vegetation management.

This audit element focuses on NGUSA's and the Utilities philosophy, approach, methodology, execution, and quality control which embodies the following general stages:

- Program Selection,
- Procurement contracts,
- Initiation and planning,
- Priority setting and scheduling,
- Execution and QA, and
- Capturing both accounting (closing) and physical data/information.

It will be of value to understand which programs exist at the NGUSA or Utilities levels. At the NGUSA level this would be one indicator of institutionalizing common engineering and operations solutions across all the Utilities. In any case, programs impact a number of

functional areas which must work together to commence and maintain programs over their lives. Generally included in this group of functions, one would expect the following functions having some level of involvement even if it is only tangential:

- System Planning and engineering,
- Operations or contracting,
- Supply chain (Procurement and Stores),
- Accounting,
- Quality Assurance (QA),
- Project management, and
- Customer service/marketing.

This audit will focus our review on the application of Program Management approach and methodology applied to the traditional capital and O&M programs now applied to EE and DR. Specifically, for NGUSA or the Utilities to enforce the level of management and control over external contractors working on customer premises there needs to be a well-designed contract between the Utilities and installing contractors. Depending on the property ownership, there may be a need for a contract with the owner as well. Without a formal well-defined contract, it will be difficult to enforce quality control and potential the ongoing data gathering efforts. Many state commissions will have the utilities draw up standard contracts to be used for such work. It is still important that the contracts have the necessary clauses which allow the utilities to manage quality control or access to ongoing data retrieval. Consistent with the normal program management, there will need to all the elements previously described above. Quality assurance (QA) and quality control (QC) will need to work in concert with municipal and state guidelines and inspections. An important note here is that the utilities need to define a clear line for liability acceptance. Here risk management should have a major role in clarifying the utilities potential liability.

Program Management Evaluation Criteria & Tasks

9.1. Assess the management of the Utilities' Energy Efficiency programs, including a review of procedures for collecting, reporting, remediation of data errors, the impact of data errors on the planning process, and QA/QC procedures for ensuring data quality.

i. Identify the Energy Efficiency programs currently in place and gather relevant information (number of years in existence, purpose, impact (Benefits)of programs, cost) about each.

ii. Identify proposed programs in response to DER efforts. Gather similar information on each.

iii. Determine if date collection on existing programs is being gathered accurately. If necessary, understand why data gathering is flawed and the reasons for the issues.

iv. Review the process and management of data collection, retention and reporting to better understand the source of issues surrounding these programs.

v. Understand the impact of any data gathering or management errors.

vi. Identify missing data that could potential help management/partners make better decisions in the future.

vii. Identify actions taken to improve data gathering and management.

viii. Determine if existing QA/QC processes and tools are adequate for management to base future program decisions.

9.2. Assess the Utilities' contracting procedures with, and process evaluations of, third-party Energy Efficiency vendors.

i. Determine if either NGUSA or the Utilities maintain information on EE vendors performance against expectations is adequate, how the contracts were prepared to provide reasonable safeguards for installation performance, quality of material used, and mitigation of downstream problems with problematic installations.

ii. Responsiveness of third party EE vendors to installation schedules and issues with completed installations.

iii. Determine how NGUSA/the Utilities handle the resolution of issues with vendors.

iv. Determine if there are established and appropriate penalties and remedies for inadequate performance or responses by vendors.

9.3. Evaluate how energy efficiency and demand response programs are coordinated with, and incorporated into, forecasting and planning processes.

i. Determine if EE and DR programs have well defined and measurable benefits.
ii. Evaluate how management captures ongoing benefit data and shares it with the forecasting and planning functions.
iii. Determine how this data is applied to forecasting and used by planners to design distribution systems.
iv. Determine if the information and data benefits forecasting and planning functions.

9.4. Assess NMPC's processes and procedures for managing, tracking, and maintaining its street lighting assets.

i. Evaluate the process for gathering and maintaining street lighting information.
ii. Evaluate how management uses this information to improve DR and EE efforts.

Proposed Staffing Assignment

Audit Element Staff Assignment – Program Management	
Lead Consultant	Bob Grant
Consultant(s)	Willoughby, Kreus, Jacobs

Exhibit 13 - Program Management Staff

10. Work Management

Background

Work management is the ability to initiate, plan, schedule, execute, track, quality control, and closeout individual projects. Work Management is the process by which utilities manage their work force in performing O&M and capital work. Work management will be impacted by union rules regarding when workers can work, reporting locations, to some extent what work they can perform, and the daily availability of individual crew members. Work management is also impacted by the quality of supervision, the availability of materials, materials staging, the scheduling of work down to weekly and daily plans.

This audit element examines the policies, procedures, and management capabilities to execute this process; specifically, recommended changes in the previous individual utility management audits. For electric capital work similar to line extensions, substation upgrades, new services, and pole replacements. Electric O&M work, similar to vegetation management, refusing, line repairs and switch and substation maintenance. Gas capital work similar to pipe replacement, new services, and valve replacement. Gas O&M work is similar to gas leaks detection, leak repairs, value maintenance, and underground value station maintenance. We will also assess and evaluate the utilities' odor and gas leak investigation processes to comply with Pipeline Safety Regulations and leading practices.

For both the electric and gas utilities, the respective industries have made significant strides, in equipment modernization to minimize both time and personal injuries, minimize windshield times for non-emergency type work, work planning, scheduling and formal quality assurance programs. I/T systems have advanced from static planning software to mobile field applications which can provide real-time information including; two-way communications for work orders and emergency work, and GPS tools for tracking vehicles. Successful work management programs have the following attributes in common independent of gas or electric work types:

- Well defined and understood work management processes;
- Formal training for both supervisory and field personnel;
- Clearly defined expectations;
- A formal means for prioritizing high-risk asset repair or replacement.
- Long- and short-term scheduling tools to allow work to be performed by need dates but permit exception reporting with management approvals.
- Integration of contractors into the process
- Appropriate strategy, process, and action plan for dealing with both blue-sky and major emergency outages or disruption of services.
- Continuous improvement programs to refine the processes as new equipment, systems and field investigations reveal opportunities;

- Ensuring the right material, in the right place, at the right time;
- Coordination with switching crews to minimize planned outages and crew delays;
- An integrated mobile work management system or systems that integrate the process, field resources and other planning and material supply systems;
- System integration with customer, asset management, and performance systems;
- Formal metrics reporting process which has visibility to both management and the field forces; and
- Ties to quality assurance program.

Work Management Evaluation Criteria & Tasks

This audit element will focus its efforts on understanding how the recommended changes in each of the utilities' audits have been handled. Further, where possible, the use of common software tools and procedures.

10.1. Assess changes to work management processes implemented subsequent to previous management audits.

Background

The list of relevant recommendations includes:

- ***Integrate supply procurement and energy portfolio management into the business planning processes.*** (NMPC) This is critical to managing project schedules and ensuring long-lead time materials (equipment) are ordered for delivery consistent with the work schedule without incurring additional changes.

- ***Complete implementation of improvements to the work management program for field forces as identified in the collaborative process. Improvements required include establishing an internal distribution construction workforce, completing the remaining three elements in the EDOT work management initiative, improving its work time standards, and tracking all 29 value metrics for measuring field force productivity. (Refers to Findings X-1, X-23, X-24, and X-25)*** – Will review these closely. There is a debate within the industry for establishing a construction force over using traditional crews and contractors. We will investigate this further to understand the specific needs identified by the auditor.

- ***Deliver preliminary annual work plans, especially for mandatory projects, to the construction work forces 90 days prior to the start of the fiscal year so that materials can be ordered, and staffing/resource schedules prepared in a timely manner. (Refers to Finding X-10).*** *The company's response is to study this further.* We will evaluate NMPC progress on achieving this recommendation. The ability to deliver work plans well in

advance allows field supervision and planners adequate time to schedule the project to meet the desired installation date.

- ***Separate the EDOT project into elements and evaluate them as individual projects in the business planning process, rather than treating them as an on-going mega project. At a minimum, integrate the current EDOT into the business planning and performance management process. (Refers to Finding X-18).*** We will validate NMPC's efforts to date to implement this recommendation.

- ***Review the practicality of the new storm response plans to ensure that NMPC ratepayers will be provided with timely and qualified services in the event of a storm emergency. (Refers to Finding X-24)*** We will verify the progress made on the storm response plan to support this recommendation. In the past we have found through our extensive storm work, that management decisions made at the onset of a storm event can have significant impact on the restoration timeliness.

- ***Develop and implement, within the existing work management processes and systems, a program to track and manage crew and individual worker productivity.*** Gas Utilities- studying recommendation – This is becoming an issue in a number of utilities today, despite the significant advances in work management and mobile systems.

- ***Develop a manpower planning program.*** Gas Utilities- studying recommendation. We will investigate the progress made and identify potential road blocks.

Proposed Staffing Assignment

Audit Element Staff Assignment – Work Management	
Lead Consultant	Joe DeVirgilio
Consultant(s)	Jacobs

Exhibit 14 - Work Management Staff

11.Performance Management

Background

Achieving corporate goals for a large utility or any operating organization requires broad alignment across the entire company. Effective performance begins when the board of directors and executives establish a mission, vision, values and/or goals for the utility. Goals need to be measurable, controllable, and require a reasonable level of effort to achieve.

Senior management must begin to break these goals down into annual goals with functional targets for their teams to begin to build plans to achieve. External benchmarking might be used to challenge the team to new ideas for increased performance. Functional goals and plans need to be simple, published and shared with the teams charged with executing plans to achieve them. Appropriate KPI's should be identified and on a regular basis progress and results need to be made available for intra-company publication.

As part of this process, aligning the interests of employees with that of the corporate goals can be accomplished by linking employee compensation to performance. Appropriate incentives or rewards should be applied to the goals and presented when targets are met or exceeded. Conversely, when targets are not met, management should have the relevant information to take corrective action.

SCG/RCG recently conducted an enterprise-wide audit for a large utility and in the area of Performance Management identified that indeed good measurements or KPI's were in place, well communicated and part of each employees' or most management teams' compensation package which are all positive. However, it was determined that a very high percentage of employees were earning or exceeding their annual incentive payouts. Upon further review, our team discovered that the targets required little to no performance improvement and were predicated on achieving historical standards of performance. Our report recommended more "stretch" incentives in order to enhance corporate performance.

11.1. Determine how internal reporting mechanisms, employee performance standards, and incentive compensation programs are used to promote corporate goals, grid modernization, safety and reliability standards, and Commission objectives.

i. Request and obtain all written policies, procedures or practices in the areas of employee performance and incentive compensation programs at the operating companies and evaluate if the performance measures used by their management teams are linked to the corporate goals, grid modernization, safety and reliability standards, and Commission objectives.

ii. Throughout key functional interviews by the audit team, investigate the use and applicability of goals and incentive compensation for achieving goals in the identified areas.

iii. Develop an understanding of how all performance management systems, applications, and procedures are used by National Grid USA's New York electric and gas utilities to organize, track or monitor performance and results of operations for each utility.

iv. Obtain comprehensive listings of the performance measures that are tracked and monitored by management at all Utilities. Included in these listings should be any positive or negative consequences for achieving or not achieving a specific level of performance. Determine if the KPI's used to evaluate qualification for incentives for each group are adequate and effective.

v. Determine how the companies connect individual, team, and utility performance to employee incentives and overall compensation.

vi. Obtain a copy of appropriate performance management reports that are utilized by National Grid USA's New York electric and gas utilities for the most recent fiscal year.

vii. Evaluate the effectiveness and appropriateness of the incentive compensation program and its oversight.

viii. Assess how the Utilities' management determine whether corrective action is necessary when goals and objectives are not met.

ix. Evaluate whether the Utilities follow through in taking appropriate corrective action when goals and objectives are not met.

x. Based on a review of executive and non-executive management incentive compensation plans, determine the weightings assigned to various categories of corporate goals (e.g., safety, reliability, customer service, grid modernization, financial, etc.) which are used in the computation of incentive compensation.

xi. Based on a review of executive and non-executive management incentive compensation plans, determine whether any corporate goals serve as triggers for the release of employee payouts.

xii. Assess whether incentive compensation goals are realistically within the control of employees or provide limited or no challenge to achieve.

xiii. Through review of the requested documents and various interviews, we will assess whether the incentive compensation plan design for National Grid USA's New York electric and gas utilities adequately promotes corporate goals, grid modernization, safety and reliability standards, and Commission objectives.

11.2. Determine the adequacy of the Utilities' use of benchmarking to compare its performance with affiliated utilities, similarly-situated utilities, and other relevant organizations.

i. Request and obtain a copy of all benchmarking reports (internal and external) that are or were available to the Utilities for the past two years.

ii. Determine how the Utilities' use of industry best practices drives operational performance and improvement.

Proposed Staffing Assignment

Audit Element Staff Assignment – Performance Management	
Lead Consultant	George Fandos
Consultant(s)	DeVirgilio, Jacobs, Saleeby

Exhibit 15 - Performance Management Staff

12. Customer Operations

Background

From a customer's perspective, Customer Service is the utility. The customer's satisfaction is 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 critical Utility processes and policies for customer operations and new business services – and the management of its employees in these areas – is necessary.

New York utilities' performance will be measured against the protections provided in New York's HEFPA for the 2018 Audit. The consumer protections in New York's Home Energy Fair Practices Act (HEFPA, 16 NYCRR Part 11) and the commercial customer rules in 16 NYCRR Part 13 include requirements for services provided by the Utilities to their customers.

The primary subject areas described in these acts include:

- Service application and initiation – The rules require residential and non-residential services to be provided within specified timeframes (e.g., in most cases within five business days of meeting service conditions for residential applicants). The rules also address what may be required as conditions to qualify for service.
- Service deposits – The rules define the circumstances under which utilities may require deposits, the amounts that may be collected, and the period over which customers may pay. The rules also require utilities to pay customers interest on the deposits they hold.
- Service usage measurement (metering) – Metering rules establish limits on the number of consecutive usage estimates utilities may make without obtaining (or making additional efforts to obtain) a meter reading. The rules also address the provision of meter readings by customers and a customer's right to pay for billing differences between estimated and actual usage in installments.
- Service billing and payment – A large part of the HEFPA and equivalent commercial rules is devoted to utility billing, collection and payment processes. Topics addressed include the content of bills, rules governing back-billing for usage that was not properly metered or billed when consumed, late payment charges, the amount of time customer have to pay bills before they are considered late, budget (levelized) billing plans, and deferred payment arrangements.

- Involuntary service disconnection and restoration – These include rules specifying the conditions, limitations and circumstances under which utilities may initiate disconnection for non-payment of bills or service theft, and related customer notice requirements and rights. The rules also cover service restoration procedures following disconnection.

Although there are some differences between the New York rules applicable to residential and commercial customers, the rules from each Part address the same subjects and issues, and many automated and procedural controls should apply to both residential and non-residential customers, with relatively minor differences. This means that audit tasks covering most NYCRR subject areas can be conducted simultaneously for residential and commercial customers.

12.1. Examine the adequacy and effectiveness of each utility's internal controls related to the Home Energy Fair Practices Act and Energy Consumer Protection Act – Rules (16 NYCRR Part 11).

12.2. Examine the adequacy and effectiveness of each utility's internal controls related to the Rules Governing the Provision of Service by Gas, Electric and Steam Corporations to Nonresidential Customers (16 NYCRR Part 13).

Key audit tasks include the following, for each utility, for both sections 12.1 and 12.2:

i. Review and assess the customer service environment, including the organizations and their management, staffing, use of contract labor, information systems and the degree of integration between the Utilities' customer service management, staffing and systems.

ii. Review the metrics reported to the NYSPSC and maintained internally, as they relate directly or indirectly to NYCRR rules. Among metrics that may relate indirectly to the New York rules are customer satisfaction and customer complaints to the NYSDPS, and the trends in these metrics over time.

iii. Evaluate the adequacy of customer service policies and procedures and employee training as they relate to New York consumer protection rules.

iv. Evaluate the controls and procedures in place at each utility as they relate to each key area of the rules applicable to residential and nonresidential customers, including:

   a. Service application and initiation
   b. Usage measurement and estimation
   c. Billing and payment
   d. Involuntary disconnection and service restoration

Our audit team will review the automated and procedural controls the Utilities have in place for each major HEFPA subject area. Given that HEFPA and equivalent commercial customer rules are highly detailed, the audit will consider rule materiality; that is, the number of utility customers affected by each rule, the consequence of utility non-compliance, and in some cases the potential dollar amounts involved.

12.3. Examine the effectiveness and efficiency of the Utilities' Budget Billing processes (both manual and automated) relating to customer overpayment/underpayment of bills under the program.

i. Review the Utilities' budget billing plans and customer information system usage for leveling and estimation routines for reasonableness and consistency with HEFPA and equivalent commercial customer rules. Determine whether all categories of customers specified in the commercial rules are eligible as specified in 16 NYCRR 13.6(b).

12.4. Examine the effectiveness and efficiency of scheduling routine field work to ensure goals of service quality and customer satisfaction are achieved, and to prevent service interruptions at the incorrect service address.

A utility's field work scheduling and dispatch processes have the potential to facilitate or inhibit compliance with specific HEFPA rules, including requirements relating to the time between service application and service initiation, the time between mailing of final termination notices and service disconnection for non-payment, and the time it takes to have service restored after disconnection for non-payment. In addition to compliance with HEFPA, the utility field crew scheduling processes have the potential to affect customer satisfaction in a variety of areas not directly specified in the HEFPA rules, including customer and public safety.

i. We will review each utility's procedures and processes relating to scheduling and dispatching field work other than meter reading. This will include an evaluation of each utility's work scheduling systems. The evaluation will consider whether the Utilities' scheduling procedures and processes:

• Take into account the requirements of HEFPA and related commercial rules (e.g., a requirement that residential accounts have service established within five business days of meeting service conditions).
• Field collection and non-pay disconnection procedures are non-discriminatory with respect to geographic areas identified for collection/disconnection activity when accounts reach a given past-due age.
• Field work is prioritized in a way that takes safety into account.
• The utilities include field activities in customer surveys and properly consider and adjust scheduling procedures when and if surveys identify areas for improvement.

12.5. Review and assess the applications and procedures regarding NMPC's electric life support equipment program.

i. We will review the Utilities' applications and procedures regarding NMPC's electric life support equipment program for reasonableness and consistency with HEFPA rules.

12.6. Examine the efficiency of the Utilities' processes related to enrolling customers in the Low-Income Affordability Program and their accuracy related to providing the appropriate discount.

i. We will request each Utilities' reporting over the prior 12 months for customers enrolled in the Low Income Affordability Program.

ii. We will determine how the Utilities' build awareness for the Low-Income programs across their customer segments.

iii. These reports will be sampled for adherence to proper enrollment and receiving the appropriate discount.

12.7. Determine how missed appointment credits are detailed, accounted for, and applied to residential and non-residential customer accounts.

i. We will request each Utilities' reporting over the prior 12 months for missed appointment occurrences and the accounting for them for both residential and non-residential customers.

ii. Analysis will be undertaken and reported on to determine if the accounting and application of credits are in compliance.

12.8. Assess the accuracy and thoroughness of information provided to customers by call center, contact center representatives, and assess related trainings and tools.

i. Review all training materials and available tools for CSRs in Utility call centers. Determine if call centers are under the same management and training organizations or run independently.

ii. Listen in on a sample of calls across various call types and centers.

iii. Review recent customer call surveys to evaluate the customer perception of accuracy for the information provided. Evaluate the incidence of customers re-calling for the same issue within a short period of time.

iv. Assess the information provided by CSR's while on calls to support their customer calls to determine consistency with other data sources such as the company website, IVR, bills or other documentation.

12.9. Examine the new service request process, including the application itself and the Contribution in aid of Construction process.

i. Review all new service request processes across the Utilities and review with the management teams.

ii. Review the application (all mediums) to evaluate whether it is in compliance.

iii. Review the Contribution in aid of Construction processes for each of the Utilities.

Proposed Staffing Assignment

Audit Element Staff Assignment – Customer Operations	
Lead Consultant	George Fandos
Consultant(s)	DeVirgilio, Jacobs

Exhibit 16 - Customer Operations Staff

III. APPROACH, METHODS, & PROJECT MANAGEMENT

This chapter provides a discussion of SCG/RCG's approach and philosophy related to management audits. It includes an in-depth description of the process used to assure compliance with the required scope of work, including how the audit will be planned, implemented, supervised, and managed, and the philosophy behind the approach.

A. Introduction

SCG/RCG's approach is designed to perform a comprehensive management and operations audit of NGUSA and its Utilities in an efficient and effective manner, with the least disruption to utility operations. This results in adherence to the audit schedule and while producing meaningful results. Key elements of the process are as follows:

- Create a formal work plan with clearly defined deliverables;
- Use of *only* experienced, *senior* professionals, who possess a combination of professional maturity, utility knowledge, audit work experience, and have a previous working relationship with the engagement director, project manager, or Lead Consultant;
- Use of both quantitative and qualitative data to evaluate actual performance;
- Develop conclusions consistent with generally-accepted auditing standards, which require thorough documentation of facts supporting the findings;
- Review the impact of conclusions reached in one area and assess how they affect other areas (cross-cutting issues), and determine how overall performance may be improved through a clearer understanding of those connections;
- Use of a formal, interlocking, quality control process to ensure accurate results;
- Maintain work papers in a manner that supports efficient and thorough documentation of the findings;
- Use a senior editor to ensure reports are clear and consistent; and
- Ensure concerns of commission staff are addressed.

The philosophy behind this approach is simple: It rests on a conviction that open and constructive communication between audit parties produces the strongest conclusions and the most effective recommendations. An independent and objective audit will be performed, whose success depends on effective communication between all parties. As a result, the audit will be conducted as follows:

- Maintain open and positive communications with all parties to improve results by minimizing factual, logical, and process errors, and to ensure there are no surprises;
- Incorporate DPS Staff concerns into the work plan as needed;
- Work jointly with DPS project managers to develop a clear and concise work plan embodying DPS Staff objectives;

- Coordinate schedules with the DPS Staff and NGUSA and Utility Audit Teams for interviewing personnel; and
- Conduct bi-weekly briefings with DPS staff to ensure they are informed of audit activities and preliminary observations.

B. Audit Approach

SCG/RCG's approach is built on a five-stage process that includes: planning and orientation; fact-finding and analysis; conclusion and report development; recommendation development; and the development of a final report. These stages are outlined below.

Stage I - Planning and Orientation

The objectives of Stage I are:

- Understand the audit objectives and scope;
- Incorporate DPS Staff expectations;
- Finalize contractual, project reporting, and other administrative processes;
- Understand current operations, organization, and key management processes of NGUSA and its Utilities; and
- Develop and gain approval of a detailed work plan (the "Work Plan") by October 2018.

The SCG/RCG Engagement Director and Project Manager will meet with DPS Staff and utility entities' project managers to complete logistical and contractual arrangements, which will include policies and processes for the following:

- Requesting and tracking interviews and data;
- Setting and meeting agreed-to response times;
- Managing confidential information;
- Adhering to auditing standards;
- Managing working papers and documentation requirements;
- Identifying additional DPS Staff issues or concerns; and
- Managing quality control and reporting processes.

A positive audit atmosphere is fostered, and understandings are advanced if NGUSA and Utilities and the ServCo[10] Service organization commit to the delivery of critical information (business, process, organization, and operations) as early as possible in Stage I. To further this objective, the following activities will be performed during the orientation stage:

- Present an initial set of data requests to the entities to be delivered prior to the beginning of on-site interviews, which will be immediately reviewed;

[10] SCG understands that ServCo is unregulated, however it is critical to the reviews of several of the Elements.

- Attend the utilities' audit kick-off presentations and, where practical, conduct initial executive interviews;
- Schedule and conduct additional interviews;
- Issue a follow-up request for additional documents;
- Review and analyze all the initial data and information received;
- Meet with DPS Staff to understand emerging issues and concerns;
- Refine the initial work plan to reflect this new information; and
- Obtain the approval and commitment of DPS Staff to proceed with the refined work plan.

Initial interview guides and schedules will be prepared once an orientation meeting has been scheduled by NGUSA and the team has begun to review the initial data requests. Based on recent audit work, we expect a number of the common functions will have been centralized at NGUSA, the Utilities, or ServCo, reducing the number of required senior management interviews.

The RFP set August 2019 for the consultant to issue a draft report. Chapter VII (Work Timeline) contains SCG/RCG's proposed schedule, which is consistent with page 4 of the RFP.

To facilitate schedule adherence and allow the audit team to refine the work plan more quickly, SCG/RCG will provide NGUSA and Utilities with an initial data request, which will give individual SCG/RCG team members a deeper understanding of the entities' approach to delivering reliable and safe electric and/or gas service. *SCG/RCG's ability to meet the proposed schedule will require both NGUSA and the Utilities to be responsive to data and interview requests on a timely basis.* To that end, SCG/RCG recommends a turnaround time of three business days as the standard for supplying standard utility reports and existing data. Delivery times will be negotiated for specially-requested analysis, reports, and data. Experience has repeatedly shown this approach to result in on-time delivery of high-quality work products.

Stage II - Fact Finding and Analysis

During Stage II, primary data gathering, and analysis will be performed for each Audit Element identified in RFP Section 3.1 and identified in Chapter II (Scope & Objectives). A review of the initial data request is also performed. This process will incorporate the following activities:

- Develop a task report outline of potential issues to be addressed for each Audit Element and other areas identified by the DPS Staff or SCG/RCG during Stage I activities;
- Review and enhance the criteria for each audit element (See, Chapter II - Scope and Objectives for a list of initial criteria developed and work tasks for each Element);
- Develop a set of questions and data requirements to support the formation of findings and conclusions addressing each of the potential Elements area criteria;
- Identify and request individuals or positions for interviews that will allow the audit team to better understand the strategic deployment, policies, and processes used to conduct business;

- Prepare interview guides to be distributed to intended interviewees, allowing adequate preparation time to facilitate a smooth and accurate transfer of information;
- Determine if DPS Staff wish to attend specific interviews or have more detailed participation in the analysis process;
- Document all interviews in standardized, accessible, summary formats using Microsoft Word;
- Issue additional data requests to facilitate deeper understandings;
- Perform and document field observations;
- Perform data samplings to quantitatively evaluate criteria;
- Arrange for additional or follow-up interviews;
- Review assembled data against criteria for each issue, and form a set of initial findings applying known industry practices and comparisons;
- Reference findings against data responses and interview summaries;
- Draft initial conclusions;
- Subject conclusions to the SCG/RCG quality verification process;
- Conduct three-party, fact-verification sessions;
- Review results with DPS Staff members; and
- Prepare and forward task reports.

Depending on the subject area, some of the above steps may be combined or rearranged to facilitate a more complete understanding of a process or issue. It is important to understand the task report outline is critical to managing both the schedule and budget. This permits Lead Consultants and their teams to focus on what is most important for specific Element analysis. In this manner, only required data is gathered, and the interviews remain focused, and allows the leads to identify other opportunities as they emerge during the discovery effort.

It is SCG/RCG's policy to focus team attention on critical and substantive issues. In this manner the utilities' management can focus post-audit efforts on the implementation of recommendations that will yield greatest returns for New York customers.

Stage III - Conclusion and Report Development

Although this is normally part of Stage II, it is called out here as a separate stage to accommodate an additional review of the conclusions by Quality Committee. This committee, which is comprised of the team's most senior consultants, is charged with ensuring the quality of each conclusion and recommendation meets DPS Staff audit standards. The Engagement Director will also rely on this committee's feedback when analyzing the overall continuity of all audit conclusions relative to DPS Staff's stated objectives.

During Stage III, the following activities will also be performed:

- Complete task report outlines that contain findings and preliminary conclusions;
- Convert the completed outlines into task reports that contain the following information:
    - Description of the task and the audit element or area;
    - Description of industry leading practices;
    - Evaluation criteria and metrics used, if applicable;
    - Description of the NGUSA and Utilities' performance in the element or area; and
    - Findings and conclusions, including detailed supporting annotations;
- Perform a quality verification review on each task report by key senior members of the SCG/RCG team, including identification of items requiring further analysis;
- Edit completed task reports for clarity and consistency; and
- Forward completed task reports to the DPS Staff for review, comment, and release when Staff concurs with the report.

Task reports approved by the DPS Staff will be assembled into an overall report framework by the SCG/RCG editor without recommendations. A "General Health" statement will be provided for each chapter and individual sections as appropriate. A "General Health" statement is a concise and frank condition summary.

A "reasonable person" test will be applied to all conclusions to ensure recommendations are sound, fair, cost-effective, and consistent with leading practices and existing regulations. A defined "quality control and verification" process will also be used to ensure work products meet client requirements.

To further ensure quality and objectivity, a Quality Committee will be formed comprised of the most senior consultants to review and discuss findings, conclusions, and recommendations.

The quality control and verification process includes the following:

- Formal team meetings on project start-up;
- Attendance (in person or remotely) by all team members at the utility' orientation sessions;
- Preparation of draft and final work plans for each Element by the Element Lead Consultant with assistance from supporting consultants engaged for that area, including formal written signoffs;
- Development of a detailed style sheet for the draft and final reports by the audit editor;
- Approval of the draft and final work plans for each audit Element by the Project Manager, Engagement Director, and editor, including formal written signoffs;
- Ongoing document tracking and reporting by the editor and Project Manager;
- Approval of each interview summary by the Lead Consultant and Project Manager;
- Formal cross-cutting team meetings led by the Project Manager;
- Approval of each task report by the Project Manager, Engagement Director, and editor;

- Approval of the draft report by the quality committee and editor, including formal written signoffs;
- Approval of each "straw" recommendation by the Project Manager and Engagement Director; and
- Approval of the final report by the quality committee and editor, including formal written signoffs.

Stage IV - Recommendation Development

During Stage IV, the audit team will develop recommendations that satisfy conclusions approved by the DPS Staff. SCG/RCG recognizes its responsibility in developing independent recommendations; however, there may be areas where collaboration with DPS Staff, NGUSA and its Utilities may accelerate acceptance and implementation. It is important to obtain NGUSA and Utility support for these recommendations, so the benefits may be expeditiously delivered to customers.

The audit team will meet with DPS Staff and NGUSA and its Utilities to build workable recommendations that NGUSA and the Utilities can implement as soon as practical. This collaboration is critical for developing meaningful recommendations and reasonable timelines. The following activities will be performed:

- Reach consensus on conclusions and order of value;
- Develop recommendation options for each conclusion or group of conclusions, including the performance of an initial cost-benefit analysis;
- Present to the DPS Staff, NGUSA and its Utilities as a starting point for discussion;
- Conduct frank and open discussions with both NGUSA and Utility management; and
- Refine the recommendations and perform cost-benefit analyses, where applicable.

The cost-benefit analysis will use a combination of performance metrics and physical cost information depending on the Audit Elements recommendations being evaluated. In some instances, it is very likely the ultimate recommendation value will be a performance improvement that would mean better service to the customer, but no tangible dollar savings. A more detailed discussion of the cost-benefit analysis approach is included in Chapter IV (Customer Benefit Analysis).

Key outcome measures for internal evaluation of this audit task are: (1) each delivered recommendation must be founded on solid conclusions that are data-driven; (2) each delivered recommendation must serve, at a minimum, the best interests of the NGUSA and Utilities' customers; and (3) no recommended solution will cost utility customers more to implement than it can deliver in measurable and meaningful results. These are the only criteria the Commission will accept when presented with the final audit report.

Stage V - Develop Final Report

During Stage V, SCG/RCG will assemble a draft of the final report in a form that is consistent with the twelve Audit Elements presented in the RFP, and any additional areas of review that are requested or approved by DPS Staff. The draft report will be reviewed by DPS Staff first and, subsequently, by NGUSA and its Utilities for the verification of facts.

Each element or area will be presented in the following chapter format:

- Introduction, which includes a description of the subject area and its importance to NGUSA and its Utilities. Included will be the criteria used to evaluate the subject.
- General Health Statement, which is SCG/RCG's overall opinion of the current status of the Audit Elements or area being presented compared to leading practices or other accepted performance measures.
- Chapter-by-Chapter Discussion of Individual Conclusions and Recommendations (as agreed to by all parties), which will include an introductory description of Audit Elements; properly annotated discussion of the supporting conclusions, findings, and facts; a cost-benefit discussion and analysis, as appropriate; and recommendations.

In addition to the Audit Elements chapters, an executive summary and a recommendation roadmap will be included in the final report.

C. Methods

The methodology behind SCG/RCG's management audit proposal is built on the following five essential elements:

- **Facts.** Facts are data or other information that can be reasonably proved as an actual depiction of some characteristic of NGUSA and its Utilities. Generally, these come from one or more of the following sources:
    - Hard financial, reliability, staffing, or other performance data that is non-disputable;
    - Interview results that are captured and are verifiable by data, observations, or other interviews; and
    - Physical observation of field or process related activities.
- **Findings.** A finding is reached after reviewing a summary of facts and depicts the auditor's best judgment based on a reasonable analysis.
- **Conclusions.** A conclusion is a determination reached after reviewing a summary of findings, which requires the auditor to form an overall opinion about a specific Element based on analysis against relevant criteria and industry leading practices and suggests some form of action.
- **Recommendations.** A recommendation is an actionable and prescriptive statement based on a number of conclusions and a form of cost/benefit analysis and is generally time-bound.
- **Communication.** Communication speaks to the overall quality of the facts, findings, conclusions, and recommendations that are the outcome of a properly executed audit.

Accurate retrieval of facts serves as the basis for developing findings, conclusions, recommendations and measurable results. SCG/RCG requires multiple sources for fact verification. It is the responsibility of the Project Manager and Lead Consultants to ensure reasonable support exists for all the facts presented in the audit report. The Engagement Director will participate in all reviews to promote consistent results that align with DPS Staff objectives.

SCG/RCG embeds factual references within the draft report as footnotes to allow for efficient documentation. This is an essential quality verification tool to ensure report accuracy, minimize errors and, ultimately, help to create confidence in the recommendations. Depending on DPS Staff practices or requirements, footnotes may be removed in the final report.

SCG/RCG will be responsible for developing findings, conclusions, and recommendations subject to the approval of DPS Staff. Should the utilities be restricted or unwilling to collaborate on a specific recommendation, SCG/RCG will independently develop appropriate and reasonable recommendations for review by the DPS Staff and present the most promising to NGUSA and its Utilities.

Another critical component of conducting an effective management audit is the approach used to conduct interviews, data sampling, cost/benefit analyses (covered in Chapter IV), and the organization of data elements. The methodologies used are presented below.

D. Interview Technique

With a task report outline in hand, audit team members develop a list of questions necessary to gain insights into each of the Elements being evaluated. These questions will be assembled into interview guides used to manage the individual interviews. These questions are also used to identify additional data requests before the interview.

Interviewees will be provided with an interview guide summary one week in advance of the interview, so they may adequately prepare complete and responses. Interviewees will be advised that additional Elements may be covered during the interview process as issues unfold.

Further, SCG/RCG encourages the individuals being interviewed to present samples, flowcharts and other documentation to support their answers. The goal the interview is to gain a fair, accurate and complete picture of the facts to produce high-quality findings. DPS Staff is also encouraged to attend and observe interviews in person or by telephone.

Interview guides will be customized to the level and special duties of the individual who will be interviewed to ensure a productive session. As an example, the audit team will discuss strategy and policy with senior-level managers while focusing on processes at supervisory and line levels. In this manner, it is possible to test the validity and effective implementation of management strategies or policies all the way through the organizational chain to determine the true value and effectiveness to the utilities.

The audit team will be asking many of the same questions to NGUSA and its New York Utilities' employees to determine the level of consistency across all organizational units. The resulting analysis will yield significant insights into the commitment of NGUSA and its Utilities to deliver consistent services at the lowest possible cost and best value.

E. Sampling Techniques

Data sampling will be done to quantify impacts to the business and validate what the audit team is being told by NGUSA and Utility personnel. Sampling methodology depends on the Elements, but in all cases, the following procedure will be used:

- Identify data sources required to address and test the criteria stated in the task report outline;
- Determine if the sampling will be by past performance data, process review, or physical observation;
- Determine sampling techniques and representative sample populations using the population that best reflects the full range of available data (e.g. for Capital projects our team looks at a five-year sample of projects including the initial estimate and the final close-out cost to determine accuracy);
- Obtain approval from both the Lead Consultant and Project Manager as part of SCG/RCG's quality verification process;
- Request the data from the Company or arrange for physical observations;
- Analyze the sample data and develop findings; and
- Validate the findings by comparing and contrasting those findings with other information sources, such as interview notes.

Sampling data may:

- Represent a range of capital projects or maintenance programs by both type and dollar value;
- Represent capital projects at different stages in the life cycle;
- Cover a specific period of time, e.g., five years of historical budget and actual data;
- Represent electric T&D operations;
- Back-cast load and supply forecasting to verify accuracy of the tools, methodologies, or strategies used;
- Depict major capital spent on vendors or service companies and contractors; and
- Represent staffing and retirement trends.

F. Deliverables

The audit process will generate a large number of documents and work plans through the delivery of the final report. Documents and plans will need to be available to the DPS Staff during (via Dropbox) and after completion of the audit (via Private RCG Server.) The following deliverables will be provided:

- ***Work Plan*.** SCG/RCG will work closely with DPS Staff during the creation of an initial audit work plan. During the process of developing that plan, DPS Staff comments, suggestions, and concerns will be integrated into the document. SCG/RCG's project manager will be

responsible for submitting initial and final draft work plans to the project manager for the DPS Staff. In addition to the items included in the RFP scope for the work plan, SCG/RCG will include the tools it proposes to use to analyze data and findings, and a detailed schedule of with objectives and milestones associates with each audit element. DPS Staff approval of the work plan will signal the SCG/RCG team to begin Stage II work. Because no successful plan is ever static, but rather a dynamic tool which adapts to circumstances, the audit work plan may be modified during the course of the audit if SCG/RCG finds a significant issue with ramifications to customers that was not covered in the work plan, and DPS Staff agrees that the issue merits a modification to the original plan.

- ***Status Updates and Reporting*.** The final work plan will define a schedule for the audit team to provide formal report briefs to DPS Staff members and others identified by the project manager. These formal progress reports will include emerging and crosscutting issues, activities performed for the month, and anticipated activities for the coming month. These sessions can be by teleconference.
- ***Briefings*.** The audit team will provide mid-point briefings to DPS Staff members on the progress of the audit and will identify emerging issues, findings, preliminary conclusions, and assessments. These briefings can be conducted in person, by telephone, or with written reports as requested by the DPS project manager. In all cases, the briefings will be documented and become part of the audit work papers.
- ***Draft Reports.*** The preliminary schedule for delivery of the initial draft audit report is August 2019 as set forth in Chapter VII-Work Plan of this proposal. This initial draft report will be reviewed by DPS Staff. SCG/RCG will edit the initial draft and present a revised initial audit report to DPS Staff, who will authorize SCG/RCG to send it to NGUSA and Utilities for review for accuracy and confidentiality.
- ***Final Report.*** A final report is scheduled to be delivered to the DPS Staff by September 2019. DPS Staff will document SCG/RCG's evaluation of each aspect of the audit work scope, as outlined in the RFP and in this proposal. All audit work papers will be made available for DPS Staff review on DVDs. DPS Staff will approve the final report. SCG/RCG recognizes it is required to assist with public statement hearings, settlement discussions, or in such other fashion as may be necessary in accordance with PAL §1020-f(bb) (4). Since this potential work is undefined, we will perform it at the standard rates included in the proposal.

In addition to the deliverables set forth in the RFP, SCG/RCG will be preparing and maintaining the following documents:

- ***Data Requests.*** The audit team will generate written requests for documents and other data that will be distributed by the SCG/RCG project manager. These document requests will clearly identify the data, analysis, or documents being requested, and the individual or department that has been requested to provide it. Data requests will be assigned a unique number for document-tracking purposes and will be maintained as audit work papers.
- ***Data Request Report.*** This metric report will identify requested data and documents; that have been requested; the date of the request; NGUSA and its Utilities individual or

department responsible for responding to the request; the agreed-to delivery date; and the date of delivery. SCG/RCG will use NGUSA own document tracking system or its own Microsoft Excel-based tool. SCG/RCG will accommodate the utilities preference in this regard but strongly recommends that only one system be used for tracking audit requests.

- ***Interview Requests & Summaries.*** Formal interview request forms also serve as records of the request. All interview requests will be assigned a unique number. This approach supports an organizational system that permits the audit team to track the utility responsiveness and provides a formal reference to track the task and document findings in draft and final reports. SCG/RCG also will prepare formal interview summaries that include unique document reference numbers, the name of the individuals interviewed, the individual's title and affiliation, the interviewer, the interview date and time, interview facts and observations; potential issues; and any follow-up required, including the preparation of subsequent data requests. Typed summaries will become a permanent part of the audit work papers. As a general rule, SCG/RCG does not include findings or conclusions in interview summaries.
- ***Interview Schedules.*** A weekly document presenting a schedule of upcoming interviews and observation visits will be provided to the DPS Staff, NGUSA, and the Utility program managers. The notice will contain the names of the individuals to be interviewed, the names of the interviewers, the areas of focus, and the dates, times, and locations of the interviews. SCG/RCG reserves the right to conduct observation visits without specifying the date or time determined for that visit. This potent tool allows SCG/RCG consultants to form clear opinions about actual management practices that may not be observable during planned visits.
- ***Task Reports.*** SCG/RCG will complete regular task reports for each of the twelve audit elements. The task reports will be provided to the DPS Staff project manager and will form the basis for draft reports to follow. Task reports give the DPS Staff an early and informal look at the issues and conclusions that are being developed by members of the SCG/RCG team.
- ***Project Management Reports.*** A monthly progress report that includes person-days expended during the past month and any audit-related expenses will be provided to the DPS Staff project manager by the 10th day of the following month. This report will record this information by activity and individual team member. It will be presented alongside the approved work plan and budget and will calculate the percentage completed at that point in time. Any deviations, delays, or remediation needs will be captured in this monthly report.

All of the above documents, together with analyses and any other information gathered as part of the audit will comprise the engagement working papers. Consistent with the requirements set forth in the RFP, these documents will be organized into a neat and concise electronic package and will be provided to the DPS Staff along with the final report.

G. Project Management

Effective project management begins with a logical, effective, and efficient work plan that is clearly understood and accepted by the parties. The Engagement Director and Project Manager will be responsible for crafting and managing the overall work plan. In engagements of this

magnitude, the Project Manager will be assigned to devote reasonable effort to managing both the audit costs and schedule using acceptable project management tools.

SCG/RCG's Project Manager is responsible for the day-to-day execution of the work plan and schedule, while the Engagement Director focuses on the development of the central issues, budget management, and the management of key relationships. Both the Project Manager and Engagement Director have a long and productive working relationship relative to management audits assignments.

A key aspect of SCG/RCG's approach to process control is to limit contact for audit process decisions to the Project Managers assigned by SCG/RCG and its client, which in the case of this audit is a representative assigned by DPS Staff, who is SCG/RCG's primary client, and an additional representative assigned by the Company. SCG/RCG welcomes DPS Staff and NGUSA personnel as active participants in the audit review process and will work through its Project Manager to accommodate requests throughout the course of the audit.

The Project Manager will also make any or all SCG/RCG team members available to DPS Staff to discuss emerging issues, as needed. A positive audit experience for all parties will result from using quality audit tools and experienced consultants, together with maintaining open and honest communication between project managers. SCG/RCG understands travel and time limitations of DPS Staff and will make every effort to use webinars and conference calls as much as possible.

A significant benefit to this approach is that it prevents in by encouraging an open, ongoing, informal dialogue throughout. SCG/RCG also has pulled together an experienced team of professionals who understand how to minimize the disruption to a client's normal activities and when it is important to reach out with information or for advice.

SCG/RCG will rely heavily on a knowledgeable and experienced Engagement Director and Project Manager, whose responsibilities include the following:

- Clearly define the tasks to be performed for each audit element and assign those tasks to the most experienced team member where that experience is necessary to outcome quality;
- Determine, with the aid of the Lead Consultants, what must be studied, what facts must be gathered to support credible and verifiable findings; and how those facts should be gathered;
- Determine dependencies, and implement the plans and discipline that will underscore the successful operating of an efficient construction program feedback loop in order to ensure that a comprehensive audit is completed;
- Identify duplication of tasks across areas of study before they take place, and assign single responsibility for the performance of related analytical tasks;
- Determine the effort levels required to gather, analyze, and report on each element under study, and to manage the process in conformance with the work plan and audit budget;
- Conduct regular sessions with the audit team to cross-cut issues, and to report findings to the DPS Staff;

- Manage the schedule to ensure milestones are met and momentum is maintained;
- Discover and report budget variances (time and expenses) to expedite and implement corrective actions;
- Review findings and conclusions for completeness and proper documentation;
- Ensure working papers are managed and identified according to established outcome standards, which will require, at a minimum, that they be clear and neat; complete and accurate; assigned a control number; identifiable by source; and digitally backed up;
- Ensure an audit trail is maintained at all times;
- Prepare and submit recommended adjustments to the work plan should developments warrant; and
- Conduct ongoing discussions and meetings with the audit team and DPS Staff to minimize surprises.

The Project Manager will be responsible for conducting bi-weekly briefings, by conference call or webinar /with the project manager selected to represent DPS Staff and his assigned audit team. At a minimum, these briefings will follow this agenda:

- Summary of the team's progress, including audit metrics;
- Discussion of emerging issues, observations, preliminary findings, and potential conclusions, when appropriate;[11]
- Discussion of open data or interview requests;
- Review of process issues encountered; and
- Discussion of budget versus earned progress status.

In conducting this audit, the SCG/RCG team will perform all work in a professional manner and in accordance with accepted government auditing standards.

[11]SCG/ RCG recommends that discussions involving highly sensitive issues take place as independent conference calls that would be scheduled pursuant to the directions of the project managers for the DPS Staff.

IV. CUSTOMER BENEFIT ANALYSES

SCG/RCG will apply a thorough analysis of expected benefits, anticipated costs and risks of each recommendation. Once our conclusions are accepted by the DPS and initial recommendations are developed, it has been our practice to work with the utilities involved to determine or best estimate the Present Value of all one-time and ongoing costs and savings where feasible and compare these quantified components along with relevant risks with the current method, if available. In addition, we will provide our templet to display qualitative benefits as well. Typical templets used are shown at the end of this section however these could be modified if the utilities themselves have their own standardized CB templets, assuming all components are appropriately considered. The final recommendation's Customer Benefit analysis will be included in our final report in an addendum.

The following is a general discussion regarding our philosophy and approach:

The logic to customer benefit analysis focuses on the customer. It is ultimately for the customer's benefit, either through reduced costs or improved performance, or less risk that audit recommendations are proposed and advocated. Therefore, fully analyzing the determined recommendation to ensure its projected benefit for the customer makes abundant sense.

For each recommendation, we work with each utility to analyze our preliminary recommendations to ensure the recommendation is appropriate from a customer benefit standpoint. While in the assessment, benefit is weighed against cost; the goal is to be able to balance the measure of a recommendation's cost reductions with increase in service benefit. Pursuing cost reduction alone may cause inappropriate service, performance, and reliability issues. Pursuing service benefit alone may increase disproportionately the cost burden. A broad-spectrum approach to the analysis, wholly accounting for all contributing factors, is necessary in evaluating potential recommended modifications to management and operations for the benefit of the customer.

We will clearly to thoroughly evaluate the recommendation of all potential costs (one-time, ongoing, financing, periodic) to implement the SCG/RCG recommendation along with the anticipated benefits. The net results (PV of positive benefits less subtracted costs) determine whether the recommendation provides the advantages hoped for and are enough to support any identified risks involved.

To evaluate its recommendations for customer benefit SCG/RCG will follow this procedure in working closely with the Utilities or utility involved:

Defining the recommendation

This step will be derived from the regular auditing function. As company activity is evaluated, auditors may determine steps to improve effectiveness and/or cost reductions to improve performance.

Determining desired objective

The improvement action must clearly point to a desired direction and effect.

Determining the means to realize desired objective

The improvement action may require a series of subordinate but interrelated actions in order to move toward realization of the improvement.

Determining elements of impact

The several elements necessary for evaluation may be grouped in a past-present-future construct. These categories include those costs, benefits, and risks (1) that had been involved in the company's ongoing management and operations, (2) that are necessary to effectuate the change, and (3) that would become the company's revised ongoing management and operating practice.

We use Present Value calculations to define all costs and benefits, where feasible, but also provide appropriate qualitative costs and benefits as well.

Measuring the Recommendation in summary

Once all factors involved have been identified and their actual costs, benefits, and associated risks defined, converting (as much as possible) all elements and factors into quantifiable measure will aid in assessing the overall impact of the recommendation.

i. Gathering costs
ii. Determining benefit value
iii. Quantifying risk

Evaluating the Customer Benefit Advantage

Once all measurable quantifications have been made, determination may be assessed based on the soundness of the recommendation as to justification, feasibility, and beneficial effect.

i. Typical Associated benefits

- *a. Increased efficiencies and/or productivity*
- *b. Improved reliability*
- *c. Reduced expenses*
- *d. Reduced capital requirements*
- *e. Reduced FTEs*
- *f. Improved practices and processes*
- *g. Improved schedule adherence*
- *h. Improved work quality*
- *i. Optimized organizational structures*
- *j. Service enhancement*
- *k. Improved performance*
- *l. Good management*

ii. Associated risks

- *a. Of not implementing*

b. Of implementing

To enhance "buy-in," SCG/RCG will request, review, and test the utilities' cost-benefit template (model) for reasonableness and completeness, including standard assumptions for inflation, overhead costs, and other non-specific inputs. The cost-benefit analysis will be computed using our own or NGUSA's template, if appropriate, for ease of communication. The SCG/RCG consultants will apply their specific utility experience to apply the benefit component considerations to the individual recommendations. In the event NGUSA and Utilities do not have a formal template, SCG/RCG will prepare one, similar to the ones shown below. Certainly, we will compare alternatives such as doing nothing or selecting another option that maybe evident.

Our typical Cost Benefit templets are shown on the following pages. The first is the Quantifiable templet, the second is our Qualitative & Management templet.

Costs	Today	Year 1	Year 2	Year 3	Year 4	Year 5
Implementation Costs						
e.g.: Labor						
Equipment						
System						
Financing						
Other						
Ongoing Costs						
e.g. Labor						
O&M Costs						
Other Payments						
Tangible & quantifiable Other						
Total Costs						
Future Value	$					
Present Value (x%)	$					
Benefits						
Quantified						
e.g.: Labor Saved						
Contractor savings						
Equipment Saved						
Energy Saved						
Tangible & quantified other						
e.g.: Improved resiliency						
Reduced safety issue						
Reduced liabilities						
Qu Reputation benefit						
Risk reduction x probability						
Total Benefits						
Future Value	$					
Present Value (x%)	$					
NET Benefit-Cost	$					

Exhibit 17 - Quantifiable templet

Qualitative/Management Templet	
Recommendation	
Priority	
Objective	
Responsibility	
Suggested Timing	
Non-Quantifiable Costs	e.g.: Safety, Reputation, Compliance, turnover
Non-Quantifiable Benefits	e.g.: Diversity, Morale, Improved response time
Risks with implementation	
Risks without Implementation	

Exhibit 18 - Qualitative & Management templet

V. PROJECT TEAM AND RESPONSIBILITIES

This chapter identifies the Engagement Director and Project Manager who will work with Staff, NGUSA and the Utilities on the day-to-day activities for this audit. SCG/RCG recognizes that the Engagement Director and Project Manager are responsible for the efficient conduct of the audit. The chapter provides an organization chart that shows the lead and support consultants for the twelve Audit Elements.

A. Team Leadership

Both the Engagement Director and Project Manager have worked together for over 40 years and act as one on assignments like this comprehensive management audit.

Raymond G. Saleeby, President & CEO of SCG, will serve as Engagement Director for this SCG/RCG audit team. He will also be Lead Consultant responsible for *1-Corporate Governance, 7-Budgeting and Finance* Audit Elements, and 8-Project Management and serves on SCG/RCG's three-person Quality Review Committee for this audit

Robert M. Grant, President of RCG, Inc., will serve as Project Manager for the SCG/RCG audit team. He also has been assigned Lead Consultant responsibility for the 3-*Electric Planning and Grid Modernization, 4-Electric Load Forecasting and Supply Procurement, 5-Gas Planning, and 9-Program Management* and serves on SCG/RCG's three-person Quality Review Committee for this audit

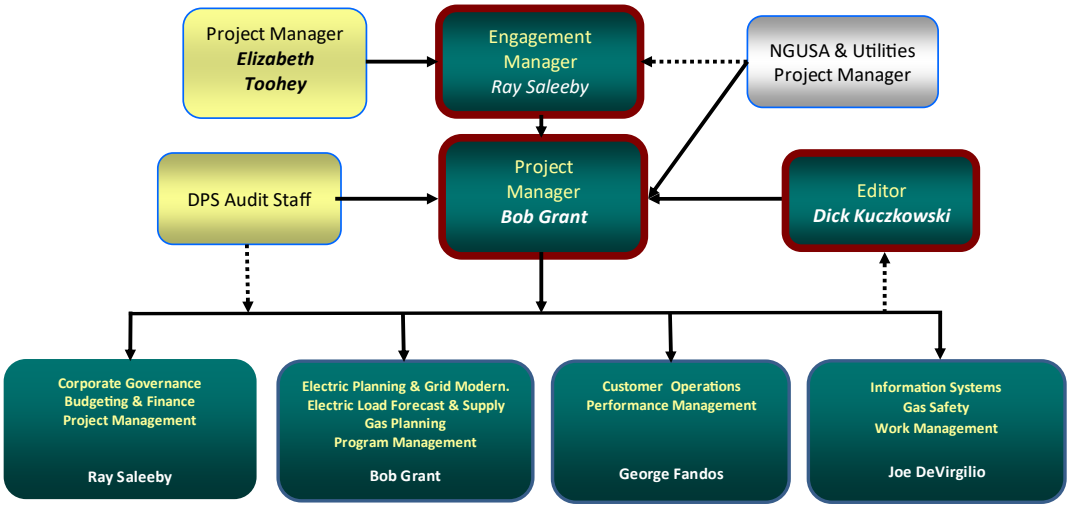
B. Organization Structure and Team Assignments

The Exhibit on the next page is an organization chart for the proposed SCG/RCG team; it shows how each of SCG/RCG's interdisciplinary team members is assigned to ensure the successful execution of the comprehensive management audit.

A Quality Review Committee has been assembled and given responsibility for reviewing all work products with the sole objective of verifying the accuracy and appropriateness of conclusions and recommendations that will be produced by team members.

What makes this work is the members' organic desire to understand what is being discovered in the Audit Elements. Both Ray and Bob receive calls for crosscutting issue sessions regularly throughout the audit process. As soon as issues are identified, team members request a session to review the issues and understand what other team members are experiencing in their area. As a prime example, our audit team members reviewing goals and scorecards in their respective areas were seeing emerging issues with the stretch goals in a recent management audit. A session was arranged to review this set of concerns to better understand if this was a specific function's issue or a more global issue within the company. As a result of this session, the Team Lead responsible for Human Resources did a focused review of Scorecards and found that the stretch goals were not true stretch goals and that the reward systems were inadequate to create the incentive for individuals to achieve the results. This led to a series of recommendations to change the Scorecard process and incentives used to achieve them. It also pointed out a significant shortcoming in senior management attitude toward achieving excellence.

The following Exhibit shows SCG/RCG proposed team. Several senior consultants shown in the box below the team diagram will participate across a number of the Audit Elements and are fully capable of leading many of these Elements.



Kreus	Kreus	Jacobs	Kreus
Jacobs	Jacobs	DeVirgilio	Jacobs
Fandos	Willoughby	Saleeby	Fandos
Willoughby	Sommerer		Saleeby
Grant	DeVirgilio		Grant
	Saleeby		

Quality Review Committee Member

Exhibit 19 - Proposed Project Team

Audit Topics	NGUSA and Utilities Management Audit										Total
	Saleeby	Grant	Fandos	DeVirgilio	Jacobs	Willoughby	Kreus	Sommerer	Kuczkowski	JGrant	
PREPERATION & ORIENTATION MEETING	80.0	80.0	60.0	60.0	40.0	40.0	40.0	16.0	24.0	20.0	460
1. Corporate Governance	428.0	188.0	200.0			32.0		56.0	15.0	10.0	929
2. Information Systems	16.0		152.0	236.0	24.0			40.0	15.0	20.0	503
3. Electric Planning & Grid Modernization		320.0		24.0	64.0	456.0	88.0	168.0	15.0	20.0	1155
4. Electric Load Forecasting & Supply Procurement	48.0	104.0			40.0	120.0	32.0		10.0	10.0	364
5. Gas Planning	40.0	136.0		56.0			40.0		10.0	10.0	292
6. Gas Safety		48.0		224.0	112.0				15.0	20.0	419
7. Budgeting & Finance	280.0			120.0	56.0				15.0	20.0	491
8. Project Management	24.0				264.0		48.0		10.0	10.0	356
9. Program Management		120.0			32.0	96.0	64.0		10.0	10.0	332
10. Work Management				48.0	56.0				6.0	8.0	118
11. Performance Management	56.0		96.0	80.0	24.0				12.0	12.0	280
12. Customer Operations			400.0	168.0	40.0				24.0	12.0	644
Cost Benefit Analysis	60.0	60.0	54.0	60.0	40.0	40.0	45.0	20.0			379
PROJECT MANAGEMENT	227.0	211.0	96.0	97.0	32.0	24.0					687
ADMINISTRATIVE & SUPPORT									120.0	60.0	180
Total Hours	1259	1267	1058	1173	824	808	357	300	301	242	**7589**

Exhibit 20 - Team Assignments & Hours

The above Exhibit provides the SCG/RCG's Team Committed Hours Matrix; it shows the hours each consultant, both Lead and Support consultants, and the time assigned to each Audit Elements. It also reflects the Audit Elements where each consultant will be assigned. The two last white columns to the right are our Editor and Administrative staff hours.

VI. Work Timeline

This chapter provides a schedule for implementation and completion of the NGUSA and its Utilities comprehensive management and operations audit.

A. Introduction

In addition to providing a first-class team of highly effective management consulting professionals, SCG/RCG is proud of its reputation for completing projects on schedule and within budget. SCG/RCG consistently completes its assignments ahead of the client's requested schedule and is absolutely confident that it has assembled a team with the appropriate expertise and experience to perform the highest quality job possible in the time frame allotted by the Commission. The DPS Staff can rely on the same competent delivery standards that SCG/RCG routinely provides to all its clients.

B. Schedule

The anticipated start date for this comprehensive management audit would be October 2018 based on information contained in the RFP. SCG/RCG's proposed schedule is to deliver the requested draft work plan in November 2018, and draft report and final reports to the DPS Staff August 2019 and September 2019. In order to achieve an efficient transfer of information between audit stakeholders and the SCG/RCG team, a staggered schedule for the commencement of audit activities for each of the twelve Audit Elements and at each of NGUSA's New York Electric and Gas utilities is strongly recommended.

By adopting the recommended staggered approach, SCG/RCG is able to achieve its information transfer goals while, at the same time, providing the DPS Staff with adequate time to digest and discuss SCG/RCG's observations thoroughly. This approach also minimizes any disruptions that may accompany the audit work relative to NGUSA and its Utilities and its normal operations.

The following Exhibit provides SCG/RCG's initial, recommended schedule for the completion of a comprehensive management audit that comports with the DPS Staff's overall schedule objectives, as set forth in the RFP.

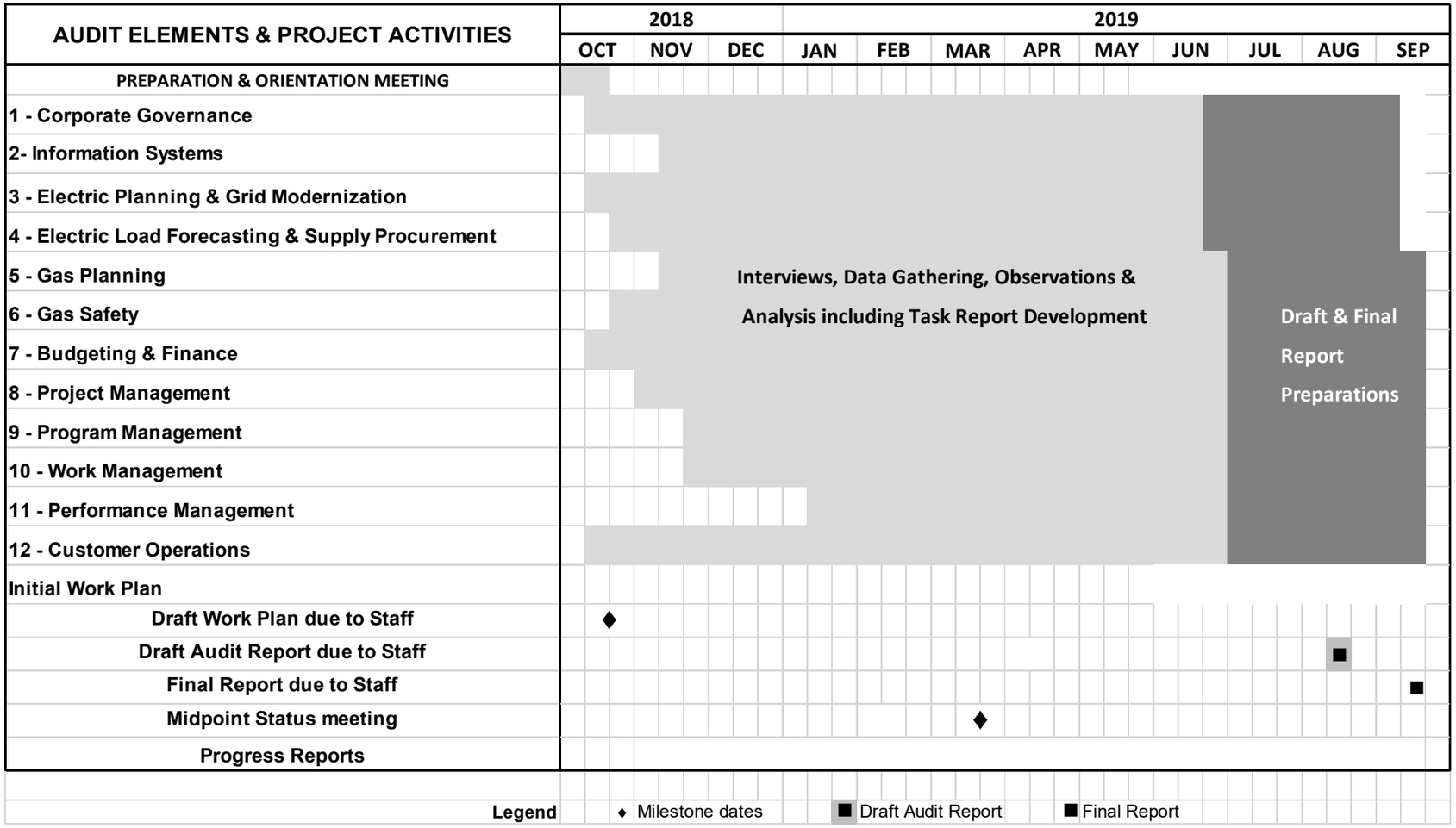


Exhibit 21 - Proposed Work Plan Schedule

The schedule presented in the previous Exhibit is intended to provide the DPS Staff with a comprehensive overview of SCG/RCG's proposed approach. The monthly project update calls with the DPS are not shown on this Exhibit to allow the critical milestone dates to show clearly. Further it is the practice of SCG/RCG to periodically conduct "Team Crosscutting Issues" sessions. These sessions are normally conducted as conference calls to discuss the emerging issues and better understand their causes. The majority of these sessions will be via conference call, but we will conduct several while on site. The timetables for these are flexible and reflect the engagement director's, project managers', or lead consultants' need to understand emerging issues.

As an example, in one of our recent management audits, we discovered a significant emerging issue with respect to project estimating and actual times to complete. The consultants working noticed a wide deviation in estimating costs to actual costs, well outside of what we normally expect the acceptable variation found in other utilities. A "Team Crosscutting Issues" session was arranged, and the issue was discussed by the team. As a result of this call, the team determined the following:

- Inadequate database of the service territory's geology, meaning future design could not benefit from experience of the crews or contractors when estimating a project;
- Local community knowledge for post-restoration work and flagging requirements were not maintained in a formal database, as a result work orders didn't properly reflect these critical elements in the cost determination;
- Crew composition for assignments did not reflect what was truly required for the particular work order in a number of instances;
- Project setup and execution was not modified to reflect the crew composition and the order of the project execution, causing idle time by the crews;
- Crew supervision was passive and not proactive, which compounded the overruns; and
- The issued work orders didn't include the target man-hours removing any management or engineering expectations for completing the work.

Through the "Team Crosscutting Issues" session with team members responsible for capital budgeting, labor relations, I/T, engineering and planning, and field operations the breadth of the issue was finally understood.

"Team Crosscutting Issues" sessions, while scheduled, are most effective when they organically occur during the course of the management audit effort.

VII. INDIVIDUAL EXPERIENCE AND QUALIFICATIONS

This chapter provides an introduction to SCG and RCG and its team members, along with summaries of relevant engagements performed that are consistent with the scope of work presented in the RFP. Client reference information has also been included.

A. Introduction

The SCG/RCG team is no ordinary team of management auditors. Recognizing that the overall quality of audit results is inextricably tied to the overall quality of the auditors assigned to the team, SCG/RCG has strategically recruited and selected team members who are widely known for their expertise and understanding of the areas that they will be assigned to evaluate.

All SCG/RCG team members have been guiding utility professionals through the rapidly evolving markets and environment of the modern U.S. utility industry for many years now. As a result, the SCG/RCG team brings proven and unprecedented skill sets to this audit that align specifically with the audit element areas defined in the RFP. In fact, many SCG/RCG team members are currently performing leading-edge work in their specific specialties. SCG/RCG's role is to provide its extensive experience in the performance of management audits to the team, NGUSA and its as Utilities and DPS Staff in order to cost-effectively and accurately capture all the benefits that can be gleaned from such a comprehensive and regular management and operations audit.

B. Experience and Qualifications of Individual Consultants

SGG/RCG strives to produce the highest quality work product possible; one that accurately and concisely reflects NGUSA and its Utilities current work environment and provides clear direction for moving forward. Management audits, in general, and this audit in particular, are extremely complex with many interrelated and moving parts. Managing an engagement of this magnitude takes a highly-experienced Engagement Director, Project Manager, and Lead Consultants; all of whom share a strong record of delivering quality, complex projects on schedule and on budget to the satisfaction of the client.

SCG/RCG's team has been specifically structured to meet the requirements of this audit in a manner that embraces audit goals and objectives for an evaluation of the Audit Elements and Generic Issues identified in the RFP. This team is comprised of firms and individuals who are highly qualified to achieve the outcomes set forth in this proposal, who possess the knowledge and tools required to support a superior outcome and have the required depth of understanding of the evolving nature of the New York and other states electric and gas utility industry. The team's skill set is presented in the following Exhibit.

AUDIT ELEMENTS / STAFF	Saleeby	Grant	DeVirgilio	Fandos	Kreus	Jacobs	Willoughby	Sommerer
1. Corp. Governance	●	●	●	●				
1.1 Governance Structure & Executive Management	●	●	●	●				
1.2 Organizational Change	●	●	●	●				
1.3 Change Management with Respect to REV	●			●				
1.4 Best Practices	●	●	●	●	●	●	●	●
1.5 Enterprise Risk Management	●		●					
1.6 Affiliate Transactions	●		●			●		●
1.7 Utilities Response to Tips	●		●					
1.8 Strategic Planning	●	●	●	●				
2. Information Systems		●	●	●	●	●		
2.1 Effectivenes of Information Systems		●	●	●	●	●		
2.2 Information Systems Planning w/REV			●	●		●		
2.3 IS Project Selection	●		●	●				
2.4 Transpanency in IS Projects			●	●				
2.5 IS Decision Making and C/B			●	●	●			●
2.6 Gas System Enablement Project			●			●		
2.7 KEDNY's CIS Conversion		●	●	●				
3. Electric Planning & Grid Modernization		●	●	●			●	
3.1 Assess DER to Achieve Forecast Projections	●	●	●		●		●	
3.2 DER Information Collection Capability		●		●		●	●	
3.3 Evaluate NMPC's billing for VDER			●	●			●	
3.4 NMPC DSP/DSIP Platform Implementation	●	●	●	●		●	●	
3.5 Impact of NMPC's Large Scale DSP/DSIP		●		●	●		●	
3.6 Impact of NMPC Platform Service Offerings		●		●	●		●	●
3.7 NMPC's Marginal Costs of Service Estimates			●	●	●			●
3.8 NMPC Ability to Host DER Capacity Data			●	●				
3.9 NMPC's Demonstration Project Development		●		●			●	
3.10 NMPC's NWA Efforts		●	●				●	
3.11 NMPC's C/B Framework for System Planning		●	●		●		●	●
3.12 NMPC's Bidding Process	●		●		●			
4. Electric Load Forecasting & Supply Procurement		●	●		●		●	
4.1 NMPC's Changes to Electric Forecasting		●	●				●	
4.2 Changes to NMPC's Load Forecasting Methodology		●			●		●	
4.3 NMPC's Forecasting Granularity		●	●				●	
4.4 NMPC's Use of Probabilistic Tools		●	●		●			
4.5 NMPC's DSIP Data Collection & Manangement		●	●	●			●	
4.6 NMPC's Financial & Physical Hedging Practices	●				●		●	
5. Gas Planning		●	●					
5.1 Assess Models for Gas Forecasting		●	●		●			
5.2 Convergence of Gas & Electric Planning		●	●				●	
5.3 Understands Utilties Readiness for Future Gas Loads		●			●			
5.4 Gas Hedging Effectiveness	●				●			
5.5 Understand the use of Non-Pipe Solutions		●	●					
6. Gas Safety		●	●					
6.1 Assess Leak Prone Pipe Replacement		●	●			●		
6.2 Unit Cost Process			●			●		
6.3 Utilties' Incident Investigtion Process		●	●			●		
6.4 Utilities Gas Safety Records		●	●		●			
6.5 Contractor Selection, Training & Onboarding		●	●		●			
6.6 Utilities Qualifing & Training Workforce		●	●					
6.7 Gas Construction and O&M Inspection and QA		●	●					
6.8 QA of Utilities' Workforce for Construction and O&M		●	●					
7. Budgeting & Finance	●		●		●			
7.1 Capital Bugeting Process	●							●
7.2 Cost Effectiveness of Goods & Services Procurement	●				●	●		
7.3 Pension & Other Post-Employment Benefits	●		●					
7.4 Utilities Use and Issuing of Securities	●		●					
7.5 Assess Utilities' Interaction with Credit Agencies	●							●
8. Project Management	●	●	●	●	●	●	●	
8.1 Capital Projects Identification & Selection	●	●	●		●	●	●	
8.2 Capital Projects Prioritizing & Scheduling	●	●	●	●	●	●	●	
8.3 Captial Project Management	●	●	●	●	●	●	●	
8.4 Adequacy or Transparency CapEx Projects	●			●	●			
8.5 Developing Accurate Estimates	●			●	●		●	
9. Program Management	●	●	●	●			●	
9.1 The Utilities management of EE programs		●	●	●			●	
9.2 Contracting EE vendors	●	●	●	●				
9.3 Incorporating EE and DR into Forecasting & Planning		●	●				●	
9.4 NMPC's Street Ltg. Asset Management		●	●					
10. Work Management		●	●		●	●		
10.1 Work Mgmt. Changes Since Last Audit		●	●		●	●		
11. Performance Management	●		●					
11.1 Employee Performance & Comp. Programs	●		●					
11.2 Utilities' Benchmarking Adequacy	●		●					
12. Customer Operations			●	●				
12.1 Adequacy of HEFPA & ECPA Utilities' Controls			●	●				
12.2 Rules Governing Provision of Services	●		●	●				
12.3 Budget Billing Processes		●	●	●				
12.4 Scheduling Routine Field Work & Customer Sat.		●	●	●	●			
12.5 NMPC's Electric Life Support			●	●				
12.6 Enrolling Customers into LAP			●	●				
12.7 Management of Missed Appointment Credits			●	●				
12.8 Accuracy of Provided Information to Customers			●	●				
12.9 New Service Requests		●	●	●				

Exhibit 22 - Proposed Team Skill Sets

A summary of the experience and qualifications of all proposed consultants, including the specific areas to which each will be assigned, is presented below. More detailed professional résumés are provided for each SCG/RCG team member in ***Appendix A***.

SCG/RCG Audit Managers

Raymond G. Saleeby, President & CEO of SCG, will serve as Engagement Director for this SCG/RCG audit team. He will also be Lead Consultant responsible for *1- Corporate Governance and 7-Budgeting and Finance Audit Elements and 8-Project Management* and serves on SCG/RCG's three-person Quality Review Committee for this audit. He recently completed two managements for PURA, the Southern Connecticut Gas Corporation and Connecticut Natural Gas Company, both part of AVANGRID, as the project manager and Co-Director for both. Since 1978 Raymond has conducted both commission-mandated and voluntary management audits for well over 40 gas and electric utilities, and most recently serves as an Executive Coach, Strategic Planning Consultant, Financial management and Leadership Development professional and for a variety of industries. He is a CEO peer to peer group leader encouraging and supporting engaged CEO's personal and professional growth. He also designed and implemented the industry's first constructive audit preparation program. His career spans over four decades of utility consulting, auditor training, utility executive development training, c-level executive management and practice leadership. He was a principal at Booz-Allen & Hamilton, President of a Utility Practice at EDS, Managing Partner at AT&T Solutions, and an EVP and BOD member at Stone & Webster and Group VP at Oracle. He was awarded "Top 50 people in America Changing the Course of the Future of Energy" by New Energy Magazine. He was also the CEO of three companies, one an AMI/AMF/SMART Grid/Energy Services firm, another a maintenance and construction firm and another a wireless vehicle tracking firm. He serves on the Board of Energy New England. He is a degreed and licensed Marine Engineer from SUNY Maritime College with an MBA in Finance from NYU Graduate School of Business.

Robert M. Grant, President of RCG, Inc., will serve as Project Manager for the SCG/RCG audit team. He also has been assigned Lead Consultant responsibility for *3-Electric Planning and REV Preparations, 4-Electric Load Forecasting and Supply Procurement, and 5-Gas Planning, and 9-Program Management Audit Elements* and serves on SCG/RCG's three-person Quality Review Committee for this audit. Over the past two decades, Bob has performed 14 comprehensive management audits of utilities. He is currently completing two management audits for PURA, AVANGRID's Southern Connecticut Gas Corporation and Connecticut Natural Gas Company as the Engagement Director for both. In 2015 he completed the Yankee Gas Services (Eversource Energy) management audit both a co-project manager and Lead Consultant in several areas. He is highly qualified to act in the roles of project manager for this audit and lead consultant and will lend his significant experience to all parties throughout the audit effort. Bob began his career with Boston Edison (Eversource Energy), where he gained valuable insights into utility operations, system planning, marketing, and the complex requirements of T&D assignments. In addition, he designed and managed a number of thermal energy storage projects which were co-sponsored by EPRI. Since leaving Boston Edison, Bob has managed the North American utility practice for

two large consulting firms and has served as an officer and/or senior executive consultant for KEMA, Inc., AT&T Solutions, Stone & Webster, and Booz Allen Hamilton.

SCG/RCG Lead Consultants

In addition to Ray Saleeby and Bob Grant, whose Lead Consultant roles are described above, the following professionals have been selected to lead teams charged with the evaluation of each of the twelve Audit Elements.

George Fandos *proposed Audit Element Section 11-Performance Management, and 12 – Customer Operations Lead Consultant,* brings over 30 years' experience as an executive level management consultant and service as an operational executive. His passion and focus have always been on the customer; from marketing to selling to service and support, he has built and consulted with organizations whose aim is to communicate effectively and raise or maintain high levels of satisfaction. He has helped utility customer service and corporate communications organizations define long-range strategies, create messaging goals, and develop comprehensive metrics and processes to track progress toward those. In 2016, he completed two management audits for PURA, the Southern Connecticut Gas Corporation and Connecticut Natural Gas Company as the Lead for Customer Service, Communications, and Regulatory for both. In 2015, he completed the Yankee Gas Services (Eversource Energy) management audit Lead Consultant for Communications and Regulatory and supported the Customer Service function. Consulting projects undertaken for his clients have focused on design and deployment of centralized customer service operations; process and organizational change management; customer experience design; development of multi-channel customer strategies; and emergency assessments of customer-facing functions. Mr. Fandos has helped utility organizations better understand customer expectations and use this insight to design both employee experiences and the experiences customers have through outage communications, the use/pay experience, and service initiation. He has worked with utility companies in the development of a channel strategy that optimizes both customer interactions and shareholder returns.

Joseph J. DeVirgilio, Jr.– will serve as the Technical Lead in the 2-Information Systems, 6-Gas Safety, and 10-Work Management, audit areas. Mr. DeVirgilio is President of Suncoast Management Consultants, LLC and a Senior Consultant with River Consulting Group, Inc. He has been part of consulting teams performing management audits, reviews of Information System project planning, budgeting and implementation, emergency plans, H/R, security and other support services reviews, capital spending reviews and operations improvement initiative. He is a retired senior utility executive and has been working in the natural gas and electric utility industry for over 44 years. His experience spans a wide variety of consulting and executive responsibilities in both the regulated natural gas and electric T&D business and the unregulated energy business, including: natural gas and electric T&D operations, construction and maintenance, work management planning and reporting, process re-engineering, I/T, H/R, purchasing and stores, security and other support services. He has 13+ years of experience in field engineering, metering and testing, field crew management, operations management, and executive responsibility for the T&D operations and customer services organization. For 20+

years he has held the CIO role and lead the Utility I/T Steering Committee responsible for the review and approval of all I/T projects and the capital and expense annual budgets. He has 25+ years of experience as an H/R and support services executive with responsibility for all aspects of the function, including executive compensation, labor negotiations and security. He has formal training in mentoring and mediation. He formerly held a Professional Engineering license in NYS for 30 years.

Remainder of the Team

In addition to our lead consultants are our supporting consultants, who are fully capable of acting as a Lead consultant should the need arise. They all have the similar extensive backgrounds to the Leads.

Morris Jacobs has served the utility industry as a management consultant for more than thirty-four years. He has supported electric, gas, water and telecommunications companies, and his projects have spanned virtually all utility industry business units, including generation, transmission and distribution, meter to cash, and support services. Mr. Jacobs has worked with executive teams on corporate strategy and "balanced scorecard" performance management, and he has worked with union and non-union field level employees to help them identify and implement improvement opportunities. He has served as an expert witness on financial and economic matters and on the ratemaking process.

Mr. Jacobs has conducted dozens of public utility commission mandated management audits. He has also worked directly for utility companies to identify and implement process improvements and performance management systems. Relevant to this audit, Mr. Jacobs has recently conducted capital program reviews for several utility companies including a full lifecycle program review for an electric transmission and distribution company. This review included an assessment of all phases of the capital program including project proposal, review and approval, project prioritization, cost estimation and schedule planning, project execution and project close. Many years ago, Mr. Jacobs further conducted a cross industry planning and budgeting best practice study.

Regarding work conducted for New York utilities in the last five years, Mr. Jacobs has been working on several projects for the New York Power Authority (NYPA) since 2015, including capital project justification and prioritization and the delivery of training in financial acumen for more than 300 employees. More recently, Mr. Jacobs has been working on the integration of the New York Canal Corporation with NYPA, transferred from the New York Thruway Authority.

His expertise includes:

- Strategy Implementation and Performance Management – Has been a subject matter expert on converting corporate strategies to tangible directives, largely through the use of "balance scorecard" methodologies, and a value-oriented approach to resource allocation. He has also has managed best practices and benchmarking studies.

- Process Improvement/Operational Excellence – Managed the process improvement practice for a boutique consulting firm he co-owned. Facilitated numerous process improvement teams resulting in substantial economic benefits to his clients. Improvement teams managed include entire generation function for a hydro operator, operation and maintenance teams in distribution operations, resource deployment teams, planning and budgeting teams, meter to cash teams, energy efficiency, and activity-based management teams.

- Resource Optimization and Capital Program Management – Managed multi-industry best practices study on planning and budgeting and worked with numerous companies on reengineering their planning and budgeting processes consistent with best practices, aligning resource allocation decisions around value creation and corporate strategies.

Randal Kreus has been working in the utility industry for about 35 years. His experience spans a wide variety of audit, business management, operational, financial, and strategy development engagements. He has also helped numerous major utilities redesign their business organizations to reflect changing regulatory, public policy, and competitive environments. Randy has led or participated in a number of full management audits and led numerous more focused management engagements. He believes management audits provide a window into the business and operations of a utility. He is currently completing two management audits for PURA, the Southern Connecticut Gas Corporation, and Connecticut Natural Gas Company as the Lead for Construction and Reliability. Some audits are required by State Commissions or other government agencies; others are at the request of executive management in order to understand how to improve their business model. He has participated in the following audits:

- Long Island Lighting Company – Public
- Union Electric Company – Public
- Columbia Gas of Ohio – Public
- Central Illinois Public Service Company – Public
- Big Rivers Electric Cooperative – Public
- Consolidated Edison – Public
- Large Midwest Electric Utility – Confidential
- Large Combination Utility – Confidential
- Large Public Power Utility – Confidential

He managed many projects to improve management processes in most aspects of electric and gas utility operations. He facilitated numerous process improvement teams resulting in substantial economic benefits for clients. Improvement teams managed include generation maintenance, operation and maintenance in distribution operations, resource deployment teams, planning and budgeting teams, energy efficiency teams, and engineering teams.

Worked on numerous asset and workforce management projects in generation, transmission and distribution, customer services, and other utility functions.

Has assisted many clients with the evaluation and control of large and programmatic capital investment outlays. These projects have included the entire life cycle of capital programs from conceptual project design, to project review and selection, through final design, construction, and closeout.

Ronald D. Willoughby, P.E., is an Executive Consultant with over 40 years of experience in the following relevant areas to this management audit; 3-Electric Planning and Grid Modernization Planning, 4- Electric Load Forecasting and Supply Procurement: Systematic and incremental addition of smart grid devices, with technology, performance, and cost central to the planning process. 2. Renewables Integration and Impact on Utility Grid: Power system analysis/operation, architecture, configurations, distributed generation strategies, market analysis, portfolio analysis, wind power and PV integration. 3. Advanced Protection, Automation & Control: Application of sensors, communication packages, sectionalizing equipment, controllable VAR sources, voltage control, expert systems, demand, and energy reduction strategies. 4. Distribution Substation Design and Specifications Review: Modular Integrated Transportable Substation (MITS) application, design, specification, and implementation; renewables integration; volt/VAR control; substation upgrades; and distribution automation and system protection strategies. Ron's role will be to understand how the utilities are planning for the future DER penetration on the distribution systems and assess management's commitment to redesigning their critical operating systems to meet the emerging technical challenges. He has work for numerous first-tier technology and consulting firms. Earned U.S. Software Patent 6549880 for Improving Reliability of Electrical Distribution Networks (2003). Has more than more than 50 publications relating to electric power systems analysis and operation. He achieved an Honorary Professional Degree of EE – University of Missouri-Rolla MSEE Power Engineering – Carnegie-Mellon University.

J. *Scott Sommerer, CPA* has been working for and consulting with regulated and non-regulated businesses for 36 years. He has worked in the rates and regulatory departments of natural gas and telecommunications companies for 13 of those years and recently was a Director of Regulatory Compliance and Strategy. Work in these departments included creating and critiquing rate cases and cost studies. In this regard, Scott has worked with marginal cost-based presentations, fully distributed cost-based presentations and Total Element/Service Long Run Incremental Cost based presentations.

Scott has also performed as an employee and as a consultant in the areas of business case development, business valuation, budgeting and forecasting, depreciation studies and internal auditing. This background has developed further his knowledge of cost allocation/marginal costing, economic life studies and financial controls. Scott has a background in petitioning regulators, negotiating with regulatory staff and lawyers, communicating with auditors and presenting to senior executives.

Richard Kuczkowski, PhD, Editor and specialist on municipal matters, has 40 years of extensive, multifaceted experience in communications/corporate communications, a very broad range of editorial/writing assignments, training, and consulting in utility industry and environmental/low-

level radioactive waste areas. He completed editing two management audits for PURA, the Southern Connecticut Gas Corporation and Connecticut Natural Gas Company and did the same for the Yankee Gas Services (Eversource) management audit in 2015. Highlights and significant projects include: technical writing in medical research and other areas, many reports for utilities, and articles for Public Utilities Fortnightly; business seminar and continuing professional education program development in product tampering, utility issues, R&D management, and development and overall management of Stone & Webster's 3-week Utility Management Development Program for promising utility managers; safety analysis reports, health physics reports, environmental impact statements, etc.; CEO speeches and reports on storm restoration and 9/11 terrorist recovery for New York City's Metropolitan Transportation Authority, as well as public reports on a range of metropolitan transportation and related issues. He was most recently Associate Chief, Editorial Services at New York City's Metropolitan Transportation Authority, and has been Assistant Vice President at Stone & Webster Management Consultants, and Senior Project Administrator for Dames & Moore. He has spoken on utility issues at North East Power Association's Certificate Program, Iowa Utility Association Management Conference, training programs for General Electric's and IBM's utility practice staffs, the World Energy Council's Regional Forum in Romania, and in a video produced to guide utilities in their preparations for management audits. He holds a PhD (with Distinction) and MA (with High Honors) in English from Columbia University and BA (Summa Cum Laude in Cursu Honorum) in English from Fordham University, and is a member of Phi Beta Kappa.

Janice P. Grant, Administrator, will receive, review, and approve all T&E reports from the Team in accordance with the contract. She will be responsible for managing both accounts payable and receivable. She works closely with our outside accountant. She is currently performing these same functions for the two PURA management audits, the Southern Connecticut Gas Corporation and Connecticut Natural Gas Company.

VIII. Writing Sample

We chose this sample because it was an audit completed in 2017 by the same leadership and team we propose to do this National Grid USA New York Electric and Gas Utilities. All our team members have worked on both electric and gas utility assignments and audits for decades.

Please see: http://www.ct.gov/pura/lib/pura/gas/CNG_Mgmt_Audit_Report.pdf

IX. CONFLICTS of INTEREST

Both SCG and RCG do not have a conflict of interest or the appearance of a conflict of interest with respect to performing a management audit of NGUSA and its New York Electric and Gas Utilities. Our principals, partners, or subcontractors have not previously performed any work for either NGUSA or its New York Utilities, and do not have any existing contracts or agreements with them nor with any affiliates within the last five years.

In addition, both SCG and RCG and its principals, partners, or subcontractors do not have any existing current or past contracts with organizations representing NGUSA and its New York Electric and gas Utilities.

Has the consulting firm, any of its subsidiaries or subcontractors, conducted any audits, such as management, operations, storm review, fuel adjustment clause, audit preparation services, etc., within the last five years for NGUSA and the Utilities or any electric, gas utilities under the jurisdiction of the New York State Public Service Commission?

Yes _____ No X____

It is the policy of SCG and RCG, its partners and subcontractors to adhere to the highest business, professional and ethical standards. Further, SCG and RCG, its partners and subcontractors shall not offer any gift, favor, or gratuity of any value, or make any offer of employment to any officer or employee of NGUSA and the Utilities, or to any Commissioner or DPS Staff member either during the audit or within two years following its completion. We understand that violation of this restriction may result in immediate termination of services, and may ban SCG and RCG, its principals, partners, or subcontractors from future consideration by the Commission.

X. REFERENCES

A. River Consulting Group, Inc.

RCG's principal has over 45 years of experience in the energy utility sector. During that time, he has conducted numerous management audits both public and private utilities around the world. Below are recent audit references for work presented to clients and their respective commissions.

- ***Public Utilities Regulatory Authority*** *(PURA)* [2016-2017] For the state of Connecticut's PURA RCG has completed both the Southern Connecticut Gas Corporation and the Connecticut Natural Gas Company comprehensive management audits. RCG was responsible for all planning, engineering and design, construction of the gas system, review of executive management, strategic planning, Operations including both the distribution and LNG plants, capital project planning, estimating and construction, customer services, support services, and gas supply. Significant recommendations were made in several areas including project estimating, standards and field force management.

  PURA Contact:
  Mr. Thomas Sholtes
  Program Manager
  New Britain, CT
  (860) 827-2845
  Thomas.Sholtes@ct.gov

- ***Public Utilities Regulatory Authority*** *(PURA)* [2014-2015] For the state of Connecticut's PURA RCG along with another consulting firm performed the Yankee Gas Services (Eversource Energy) comprehensive management audit. RCG was responsible for all planning, engineering and design, construction of the gas system, review of executive management, strategic planning, Operations including both the distribution and LNG plant, capital and O&M budgeting, customer service, media, human resources and information technology. Significant recommendations were made in several areas including project estimating.

  PURA Contact:
  Mr. Thomas Sholtes
  Program Manager
  New Britain, CT
  (860) 827-2845
  Thomas.Sholtes@ct.gov

- ***Bonneville Power Administration*** *(BPA)* [2005-2009] - RCG's principal helped refine the transmission Plan-Design-Build process that addressed identifying and cost/benefit analysis of transmission projects. One result of this effort was the elimination or

postponement of identified transmission construction projects, which did not meet the new criteria identified in the redesigned process.

Responsible Official:
Mr. Jim Hallar
Program Manager
Portland, OR
(360) 771-6697

B. Raymond G Saleeby LLC (dba SCG)

Raymond G Saleeby LLC (dba SCG) CEO has well over 40 years of experience working with electric and gas utilities throughout the world. In addition to managing and conducting scores of audits, as the principal, he served as a utility strategic planning expert, and an executive coach to utility executives and ran the largest and longest running Utility Executive Management Development program for ten years. His testimony experience covers management and operations audits, IT audits, Safety and environmental audits, and cost management and control. Prior to starting SCG, the principals ran several of the largest utility consulting practices in the United States.

- ***Public Utilities Regulatory Authority*** *(PURA)* [2014-2015] For the state of Connecticut's PURA SCG along with RCG performed two comprehensive management audits. SCG was responsible for managing both projects and also covering strategic planning, corporate governance, budgeting and finance, performance management and construction, review of executive management, merger efforts, human resources, and organization. Significant recommendations were made in several areas including project estimating and budgeting and governance.

  PURA Contact:
  Mr. Thomas Sholtes
  Program Manager
  New Britain, CT
  (860) 827-2845
  Thomas.Sholtes@ct.gov

- ***Energy New England (ENE 2000 – Current)*** SCG's principal has served for 18 years on the Board of Directors of the electric and gas energy management firm co-owned by 12 municipal utilities with its headquarters located in Foxborough, Massachusetts. His efforts included Risk Management, Strategic Planning, Executive Management and Coaching, Performance review, financial management and auditing.

  Responsible Official:
  John Tzimorangas, CEO
  Energy New England
  jtzimoranges@energynewengland.com
  508 698 1234

- ***CodeGreen Solutions*** SCG's principal was introduced to and evaluated the energy solutions of this firm during and after his years as CEO of Remco Maintenance. The firm is a premier sustainability, renewables and energy management business. CodeGreen creates actionable solutions to drive improvements in complex buildings throughout the US. Given that buildings account for 39% of greenhouse gas emissions, their work dovetails considerably with components of the New York REV initiative. Our principal who worked with over 2000 New York building owners interfaced considerably with CodeGreen to help build those clients an environmentally and economically just and sustainable future.

  Responsible Official:
  Peter L DiCapua
  Chairman Emeritus
  CodeGreen Solutions
  peterldicapua@gmail.com
  646 599 5778

XI. INSURANCE ATTESTATION

We are aware of New York State Workers' Compensation Law §57 and §220 requiring that any business applying for permits, licenses, or contracts with New York State provide evidence of appropriate workers' compensation and disability benefits insurance coverage. We hereby attest that we understand and will conform to the mandatory insurance requirements and we will provide documentation of such to the Department upon selection to perform the audit.

XII. MINORITY- AND WOMEN-OWNED BUSINESS ENTERPRISES

No current MWBE Certification in New York.

APPENDIX A - RESUMES

Raymond G. Saleeby

Position:	President & CEO SCG Engagement Director
Years of Experience:	50
Education:	B. of Engineering (Marine) 1967 SUNY Maritime College MBA (Finance) 1977 New York University Graduate School of Business

Key Qualifications:

Raymond Saleeby has been an engineer, construction manager, management consultant, management auditor, and top-level corporate executive for 45 years. He has led major utilities and energy management consulting practices for much of his life. He was the Managing Partner of Utilities & Energy Industries at AT&T Solutions, where he headed their Bridgewater, New Jersey office. Prior to joining AT&T Solutions, he was President and principal of EDS Management Consulting Services Utilities & Energy Group General Management Practice. At Stone & Webster Management Consultants Inc. Saleeby was an Executive Vice President and member of the Board of Directors. In addition, he was a Principal at Booz-Allen & Hamilton, Inc., Group VP at Oracle, and Project Manager & Principal Engineer at Ebasco Services. During the Dot.Com era, Ray was the President & CEO of MyUtility.com including Utility.Com and First Point Energy.

Saleeby has lectured extensively on utility management issues for the Management Exchange/Public Utility Reports seminars, the American Public Power Association's University of Missouri Management Program and the Northeast Public Power Association, the NY Law Institute, the Edison Electric Institute and the American Gas Association, among others. He led Stone & Webster's Utility Management Development Program, which trained thousands of utility executives from all 50 states. He was awarded "Top 50 People in America Who are Changing the Course of the Future in Energy" by New Energy Economy magazine. He has been an advisor to a King, an expert witness, and led world-wide management reviews including at Three Mile Island, for Union Carbide's leak, and 40 corporate management audits.

He provided professional counsel to senior executives at over 100 companies including IBM, GE, and The NY Practicing Law Institute and as a CEO/PEER Group Chair with Vistage International. Ray serves or has served successfully on numerous Boards of Directors.

He led or served as a key consultant on some of the most significant management audits since the application of audits within the utility industry and has been credited with helping establish the utility audit process in use today. He is the Co-Engagement Director finalizing two large regulatory authority utility management audits in Connecticut for AVANGRID's Southern Connecticut Gas and Connecticut Natural Gas.

Selected Professional Experience:

Management Audits

For two decades, he has been a management consulting industry practice and thought leader on utility management auditing. He has managed or conducted scores of voluntary and commission mandated audits, trained hundreds of professionals in management audit processes and skills, developed and implemented formal audit programs for utilities, environmental, safety and insurance groups. In addition, he has designed and implemented one of the most highly acclaimed pre-audit preparation and planning programs available to the industry. His videotape entitled "The Audit, How to Conduct, Manage or Prepare for a Management Audit" has been distributed and sold to chemical, gas & electric utilities and nuclear facilities worldwide. Some of his audit/performance evaluation and improvement clients include:

Connecticut Natural Gas	Consolidated Edison
United Illuminating	City of Groton, Department of Utilities
Union Carbide	American Nuclear Insurers
CEGB	Omaha Public Power District
Atlantic City Electric	GPU
PPL	Connecticut Municipal Electric Exchange
Long Island Lighting	Pennsylvania Electric Company
Kansas Gas & Electric	Los Angeles Department of Water & Power
Philadelphia Gas Works	Jersey Central Power & Light
Washington Gas Light	City of Westfield, Department of Utilities
Consumers Power	South Carolina Gas & Electric
TVA	Kansas City Power & Light
South Jersey Gas	Central Illinois Electric Company
Bermuda Electric	Electric Utility of Cyprus
Consumers Gas	Ontario Energy Board
General Public Utilities	...and others

Pre-Management Audit Counsel

In order to help both the commission and the utility to apply a constructive and accurate management audit Mr. Saleeby developed and implemented the first Management Audit Pre-Audit Counsel efforts in the U.S. His work included strengthening the utilities planning for the audit, preparing the data and information required, enhancing its communications with the chosen consultant and the commission, structuring policies and procedures to allow the audit to be conducted efficiently and with all resources made available and generally training the employees to enable an open environment and constructive result. His pre-audit counsel work included gas and electric utilities, major construction projects, and water utilities.

Other Major Consulting Projects

- He managed the startup and successful operations of two major management consulting practices and evaluated and planned several new corporate ventures in a variety of industries.

- He was responsible for the major management consulting effort involving the multi-year review of AT&T's network quality, security, reliability, and main office infrastructure. This work has become the basis of AT&T's Business Continuity / Disaster Recovery practice.
- He ran the worldwide Marketing and New Business Development Department of a large consulting company yielding an increase in client bookings and company profitability during each of six years in that position. His responsibilities included pricing, market positioning, strategic planning, sales and marketing, consulting skills training and customer service & client relations.
- He testified, assisted with testimony, or provided analysis and opinions of several major events including his pre-incident analysis of Three Mile Island, his post-incident analysis of Union Carbide's management and environmental and safety programs following the leak in Institute, West Virginia, the privatization of the Central Electricity Generating Board (CEGB) in England and the breakup of AT&T. He has run testimony & interview training courses at several companies throughout the United States.
- He was responsible for the development of several new initiatives addressing several clients' significant responses to the evolving deregulated utility business. Issues ranged from the establishment of a national energy brand, the design of utility one-stop concepts, the move to customer value management, the development of electronic commerce and internet/intranet strategies, the "smart box on the side of the house," retail energy trading and call center customer care, futurizing for growth and the structure of new paradigm breaking business ventures. He was the responsible for AT&T's involvement with EnergyOne and has AT&T's BMD utility industry issue leadership role.
- Overall responsibility for the development and market acceptance of a fully integrated back office offering to the energy, telecommunications, and other industries. This new business became AT&T Solutions' exclusive solution brought to market with CitiBank's Universal Card Services.
- For one of the largest utilities in the United States, he managed a project, which involved the development and implementation of one of the first performance monitoring/incentive compensation programs. It was developed using activity-based management techniques and has been widely acclaimed and is still in use today as originally formulated. The client has credited this program with savings of more than 50 million dollars in every two-year period.
- He served as the Senior Officer-in-Charge and the driver for, and a lead participant in the analysis and formation of new utility customer service, energy management, telecom and other products and services ventures. These include ventures involving some of the largest electric and gas utilities in the U.S. as well as those that may also include AT&T.
- He is credited with the invention of a major boiler furnace implosion protection system currently installed and in use by numerous utility operating companies.

- For GPU and its three operating companies, he designed, managed and implemented a benchmarking/best practices effort, which was trademarked as the PEER program and used at several other utility companies. The program initially focused on generating facility operations at six client plants, included the visit and analysis of more than 10 best practice plants and resulted in the implementation of 90% of the recommendations. The effort had a payback as high as 120:1.
- He participated in the development and implementation of a major Gas Safety review program applied at LDC and Pipeline Companies in the domestic United States.
- For over a decade, he has led numerous utilities in the development and implementation of a strategic planning process and the evaluation and creation of strategic values and vision statements. He served as a trainer, facilitator and catalyst for change and worked with clients to develop creative strategic plans, supportive projects and implementation and control methodologies. Among his clients, one was considered among the best managed companies in the United States, another that was subsequently described by rating agencies as best positioned for competition and another that was cited for courageous cutting-edge thinking. His talks on "Managing for a Change" and "Rethinking the Utility Business" have been called "the most delightful and memorable in terms of impact" by utility executives. He has lectured on strategic planning at the Management Exchange/Public Utility Reports Seminars, at the APPA management development Program in the University of Missouri, and at the University of Massachusetts / University of New Hampshire programs for NEPPA Utility executives.
- He taught modern utility management methods/strategic planning and reengineering of the utility business at the IBM Management Consulting utility training program and at the General Electric Utility leadership training program.
- For a major international congeneric conglomerate, he conducted a comprehensive acquisition study, which focused on the development of acquisition criteria, the assessment of a wide range of products, market sectors, markets and companies leading to the successful negotiation and acquisition of the target company.
- For the Saudi Arabian Government's Royal Commission, he developed the entire utility infrastructure management plan as well as the management information systems/communication systems plan for the two industrial cities of Jubail and Yanbu. The plans included Strategic Direction, project management, financing, regulation, utility staffing, information and resource requirements, priority setting, and organizational structure and load and capacity forecasting/targeting.
- He was responsible for the overall conceptual design and operations management philosophy, as well as, the detailed plant operations and instrumentation and control design for a 650m MW coal facility that has since been among the best operating in the United States and was subsequently replicated in another State. His effort included responsibility for a $350 million-dollar budget, the development, engineering and

implementation of the plant philosophy and strategies, cost control and evaluation, management, planning and execution of the project, establishment of budgets, forecasts, schedules and resource requirements, allocation of labor and the review of cost and value implications. He was responsible for the development of proposals for both domestic and international power plants, and the technical and economic evaluation of vendor proposals.

- He conducted numerous significant and highly successful studies related fleet management, generation, transmission and distribution operations and engineering management, nuclear program management, organizational design (involving SBUs, separation of the nuclear function or innovative corporate structures), benchmarking, process reengineering, emergency planning, maintenance and work force management, facilities management, customer service, environmental management for some of the largest and most progressive companies in the world. Without exception, each effort resulted in the client's expansion of the project, implementation of recommendations and subsequent and accomplishment of savings opportunities.
- Managed a team in the development of a major storm restoration plan for a large east-coast utility. The plan focused on storms, which would cause the loss of power to 50% of the company's customers for more than 72 hours. In addition, allows the utility to handle upwards of 300 foreign crews.
- He managed or participated in numerous comprehensive evaluations of materials management, inventory control, ABC/ABM, purchasing and accounts receivable processes and systems resulting in the achievement of considerable savings or service level improvement involving the redesign of processes, reduction of inventory, application of Best Practices and new technology and the selection of and implementation management of new systems. Participated in the review of the material management function in a major Fortune 10 company. The results of that study identified savings amounting to $44,000,000 annually. His efforts involved utilities, oil companies, manufacturing concerns, airlines and process companies.
- He managed number ground breaking/precedence setting consulting efforts for a variety of industries and worked as an advisor to major law firms, Corporate Boards and executive management on number of highly sensitive and confidential issues.
- He managed a globalization effort for a major international company that included the assessment of various markets and the comprehensive evaluation of nine fossil generating units in Argentina.
- For Philip Morris he designed and implemented an energy audit/ energy conservation review and program resulting in the achievement of significant savings, utility partnership and the design and application of new processes.
- Developed and implemented several cutting-edge systems or programs at domestic and international utility client firms aimed at reducing O&M costs and improving performance

including a multi-module maintenance and work force management system, a zero-based budgeting system, activity-based costing, availability and thermal efficiency monitoring and control program, a corporate-wide internal customer satisfaction measurement program.

- Responsible Officer for numerous business process reengineering, business transformation and activity-based costing efforts at both electric and gas utilities covering finance and accounting, utility operations, underground residential distribution, purchasing and materials management, customer service and other cross-functional processes.
- Responsible for the overall strategic advisory assistance and the information and technology strategy for the Board of Directors of the newly formed billion-dollar State Owned Energy Company in New Zealand. This new entity has been formed to provide the country with a market-oriented, competitive electric and gas system. He developed and gained acceptance for the terms of reference including the organization's vision and an organizational design concept that represented a radical departure from the traditional monopoly utility structure and gained full acceptance of the Board of Directors. He remains a key advisor to the building of this new company.
- For the Ontario Energy Board, he was responsible officer for a review and audit of Consumer's Gas Strategic Management Information Plan. This assessment resulted in the identification of significant savings opportunities and culminated in providing constructive testimony for the advantage of all stakeholders.

Professional Experience:

SCG President & CEO Management Consulting Firm Established in 1991

- He serves as a utility industry management consultant, strategic planner, performance improvement specialist and corporate turn-around professional.
- He is currently the Engagement Director of two concurrent mandated Utility Management Audits being finalized
- He is a CEO Coach and is a CEO Chair and Trusted Advisor for Vistage International helping company CEOs to grow their businesses successfully. As an executive coach he provides leadership training and business coaching to CEOs and Executives to help them significantly strengthen their business, apply technology and thrive with the use of peer-to-peer groups, benchmarking, best practices and goal setting and goal achievement.
- As SCG he formerly owned an AMI/AMF/SMART Grid company and has evaluated planning and execution of major programs at numerous utilities.

- His work with ConEd Solutions (formerly ProMark) resulted in the name change and he helped form the strategy that resulted in their successful business today.
- Served as an Executive Rainmaker for IBM engaging utility CEOs throughout the US about technological innovation within their utility, best practices, change management and step change performance excellence.

Remco Maintenance & Restoration, 2005-2012 President & CEO and Equity Owner

- Under his leadership the firm became the largest and most respected brand in its industry. It grew by 34%, 38% and 22% and more in 7 years and moved from 19% to 33% market share in a field of 28 competitors.
- Led the sale of Remco's eight largest contracts in its 80-year history
- Led the firm to become the only in its industry to be listed by ENR as a Top 50 Specialty Contracting Firm, nationwide.
- Significantly beat the company's stretch targets annually
- Successfully led the industry-wide negotiations for the union contracts
- Credited with changing the industry by bringing it to a "new level of professionalism and integrity."

PA Consulting Group 2003-2005 Partner & CEO of StarCom Wireless

- Member of PA's Management Group led an IT Services practice
- Managed a Utility PEER Best Practice Program
- Built practice to include Financial Services, Energy and Telecom Industries
- Chairman of the Firm's Fortune 500 BD & Marketing program

Oracle Corporation, 2003 Group Vice President-Strategic Accounts

- Exceeded targets and grew bookings by 380%, exceeded profitability goals
- Managed a high-performance team and 214 accounts
- Industries: Financial Services, Retail, Telecom, and Professional Services
- Position eliminated due to planned consolidation

FirstPoint Corporation: Parent & Subsidiaries MyUtility, Inc., Utility.com, 2000-2003

- President & CEO, Co-Founder
- Successfully completed three rounds of financing and acquired several firms
- Awarded as one of the most effective industry leaders in the U.S.
- Acquired two companies and grew the firm valuation to $100 million in one year

- Relocated the firm's headquarters to Portland, Oregon

AT&T Solutions, 1995 to 2000 Head of the Bridgewater, NJ Office

- Managing Partner, Worldwide: helped build revenue from $0 to $7 billion
- Responsible for marketing, image development, sales and execution
- Achieved target results yielding >200% bonus annually
- Ran a course at the NY Practicing Law Institute on the "Art of Closing the Deal"
- Successfully started two companies (development, marketing, execution)
- Exceeded annual sales quota of approximately $530 million annually

EDS, 1994-1995 President of Strategic & General Management Services Practice

- Principal-in-Charge Bedminster, New Jersey Office
- Created the leading practice in the firm with 120 consultants fully billable
- Led the gas, electric, water and environmental practices

Stone & Webster Management Consultants, Inc. 1979-1994

- Executive Vice President of Marketing & Sales grew revenue by and margin far beyond corporate goals; became the youngest Member of the Board of Directors
- Consistently the highest revenue and sales producer for 10 years
- Managed and was the key lecturer at the company's Management Development Program and General Electric's Leadership programs.
- Company spokesperson on Management Issues. "Awarded Top Consultant."
- Member of a team from a of multi company/multi discipline task force designated and readied to assist at Chernobyl with management and technical issues following the nuclear disaster and Union Carbide's leaks in West Virginia and India.

Booz-Allen & Hamilton, Inc. 1976-1979

- Principal; served as a General Management Services Division core team leader & managed major Energy & Environment Division & M&A client projects.
- Client billability among the highest in the firm - 117%.

Current or Past Professional Affiliations:

- Member of Board of Directors of ENE, a New England Energy Service Company
- American Society of Mechanical Engineers
- American Nuclear Society

- American Management Association
- Association of Energy Engineers
- Building Owners and Managers Association (BOMA)
- Association of Building Owners (ABO)
- Co-Chairman National Juvenile Diabetes Foundation
- Development Board Member, Mount St. Mary's Academy
- NYU & SUNY Maritime College Alumni Associations
- Foundation Board of LaGuardia College in New York
- Member of the Board, Unity Healthcare

Professional Publications:

- "The Future is Now: Technology Creates an E-Conomy" subject of this article published in Power Online
- "Business Perspectives on Governance Issues in Alliances and Joint Ventures" published within the PLI book titled "Business Restructuring-Negotiating, Structuring and Documenting the Deal"
- "Alliances & Joint Ventures and The Art of Negotiating the Deal," Practicing Law Institute, Faculty Speaker
- "E-Conomy – The New Challenge", Keynote Speaker 12th Annual AMRA Symposium
- "New Alliances in the Energy Industry," practicing Law Institute
- "Strategic Marketing for the New Energy Marketplace" and "Lessons Learned from Deregulated Businesses" presented at the EUC/Metzler conference
- Featured in a cover article titled "Consultants with Clout." Integration Management
- "Building Customer Value and Relationships through Telecom & Energy Company Alliances," presented as conference co-chair at the Strategic Research Institute Strategic Alliances conference
- "Utility Business Transformation," "Change Management" and "Value Chain Engineering" lectures at the NEPPA's Certificate in Public Utility Management program at the University of New Hampshire
- "Rethinking and Reengineering Your Business: Strategies for Change & Success Beyond 1995," presented and keynoted at an AGA/EEI conference

- "Competitive Consulting," interviewed for this article published in Independent Power Magazine
- “Plaudits for Your Audits,” published in AGA Monthly
- “Changing Nature of The Utility Industry,” first presented at the Northeast Public Power Association/ University of Massachusetts Utility management program
- “Harnessing Today’s Challenges,” presented at the Utility Risk Management seminar
- “Generating Value in A Competitive Marketplace,” co-authored and presented at the annual American Public Power Association’s Conference
- “Strategic Planning for a Public Power Company,” presented at the American Public Power Association’s Executive Development Program
- “Rightsizing and Other Approaches to Organizational Efficiency,” presented at the American Public Power Association Annual Human Resource Meeting
- “The Environmental Audit-The Process as A Management Tool,” presented at the Annual Environmental exposition
- “The Reality of Our Competitive Environment-- Downsizing, Delayering and Process Busting,” presented at the Society of Gas Lighting
- “Environmental Auditing,” presented at USICO’s Risk Annual Management Conference
- “The Management Audit: A Key Risk Reduction Tool,” presented at the AICHE Chemical Risk Management Symposium
- “Utility Strategic Planning,” Symposium leader and instructor for Public Utility Reports and Management Exchange Seminars/Courses
- “Measuring Management Performance,” Stone & Webster Utility Management Development Program
- “Incentive Regulation and Its Impact on Operations,” presented at an Availability, Performance and Capacity Enhancement Seminar
- “Managing Change in Today’s Competitive Environment” Strategic Planning Magazine
- “Managing for a Change,” presented to the Maryland-District of Columbia Utilities Association Fall Conference
- “Market Research, New Technologies and Utility Response: Critical market Plan Elements” presented at the Utility Marketing Conference, Public Utility Reports & The Management Exchange

- "Market Planning: Identification and Segmentation" and "Planning Under Time and Conflict Pressures," presented at Public Utility Reports & Management Exchange Conferences
- "Incentive Compensation-A Management Strategy," co-authored and presented at Stone & Webster's Executive Conference
- "Improving Electric System Performance & Performance Audits," presented to the Inter-American Development Bank
- "The Utility Industry: Issues, Impacts & Future Direction," presented at the National Electric Manufacturers Association Economic Forecast Seminar
- "Strategic Planning-Managing and Applying the Process," presented at the Public Utility Reports Conference
- "Strategic Planning: A Utility Focus," presented at the Stone & Webster Executive Conference
- "Incentive Plan Benefits Workers, Utilities," Electrical World
- "What's in It for Me? Motivating Plant Management Through Real Incentives,", Booz-Allen & Hamilton Publication
- Numerous presentations on Customer Service & Customer Satisfaction, Organizing for Effectiveness, Cost Containment & Reduction and Current Utility Issues

Robert M. Grant

Position:	President Project Director
Years of Experience:	48
Education:	B.S./1970/Electrical Engineering/Lowell Technological Institute, Lowell, MA American Management Association for Marketing and Planning, Finance, and Strategic Planning

Key Qualifications:

Bob Grant has been working in the utility industry for over 40 years. His experience spans a wide variety of consulting engagements, audit, business management and strategy development. He has also helped numerous major utilities redesign their business organizations to reflect the changing regulatory environment. He is the Co-Engagement Director for two Connecticut Gas utility management audits; Connecticut Natural Gas Corporation and Southern Connecticut Gas Company: In 2015 he was the Engagement Director for the Eversource management audit in Connecticut. Mr. Grant has led or participated in a number of full management audits and led numerous more focused management engagements. Between 2008 and 2009 led three major audits of utility performance during major storm events. These audits were all submitted to commissions for review. In one case answered questions posed by the Commissioners. He has also been an officer and/or senior executive consultant for KEMA, Inc., AT&T Solutions, Stone & Webster and Booz, Allen, & Hamilton.

Selected Professional Experience:

Management Audits

Management audits provide a window into the business and operations of a utility. Some audits are required by State Commissions or other government agencies; others are at the request of executive management in order to understand how to improve their business model;

- Southern Connecticut Gas Corporation - Public
- Connecticut Natural Gas Company – Public
- Yankee Gas Services (Eversource) - Public
- Bermuda Electric Light Company, Ltd. - Confidential
- Public Utility District No. 1 of Chelan County - Confidential
- Groton Department of Public Utilities - Confidential
- Electricity Authority of Cypress - Confidential
- Central Electric Generating Board, Great Britain - Confidential
- Louisville Gas & Electric Company - Public

- Orange & Rockland Utilities – Public
- Kansas –Nebraska Natural Gas - Confidential

Thermal energy storage and energy efficiency projects

- Performed an in-depth study of Megatherm, pressurized-hot water storage system. The study showed significant customer savings due to the storage of high temperature water, charged at night and used during the day to heat a major hotel in the Boston Area. BECO created special off-peak rate and metering arrangement to accommodate these types of peak demand reduction systems.
- Sold. planned, and monitored several deep heat projects in the Boston Edison territory. All projects delivered the calculated results and created very satisfied customers. At on factory location, employees reported in improvement in their leg joints as a result of work above the heated concrete slab. The same metering and rates as the Megatherm system technology were used with the same results.
- Summer-winter energy pond constructed under an industrial building. The summer heat of rejection from the heat pump was captured and stored in the underground pond creating an enormous energy store for use during the winter months. This was also an EPRI project because it was the first of its kind in North America. The energy use for heating and cooling the building was greatly reduced creating significant savings for the building owner. The project was monitored for two years.
- The Key Stone Building project - used a runaround heat pump system which in the winter months moved heat from the interior spaces to the outer spaces of the building to maintain comfortable temperature in the winter. The energy savings, and total usage estimated by me we within three percent of the actual usage levels.
- Developed a number of innovative lighting schemes using the latest technologies to reduce energy usage by lighting and also reduce heat gains as well.

Major Emergency Restoration Planning Comprehensive Audits

- Performed an in-depth investigation of the restoration activities of a major Northwestern combination utility's major winter storm event that impacted a significant portion of its customers for over 11 days. The final report offered recommendations to improve the plan and enhance transmission right of way maintenance. Some of the technology enhancements around metering proved to be problematic at the onset of the restoration effort. The report was used in the very next rate case.
- For a major mid-Western combination utility performed an in-depth review of its restoration activities as a result of a unique set of summer wind events that caused significant outages to a major portion of their system. Working in conjunction with the Commission Staff and the utility, it was determined that the overall strategy was

reasonable but there were a number of tactical improvements necessary. Further, it was determined that ARM solutions were less practical during the onset of the restoration effort, but beneficial during the final stage. An oral presentation was made to the PSC Commissioners. The Commission staff and company executives were appreciative of the presentation.

- For a major Texas combination utility led the comprehensive review of the Company's post Ike hurricane restoration efforts. Ike had caused 98% of the Company's customers to be without power for up to 18 days. The final report was used as evidence in the Commission approval of $650M in capital expense recovery. In addition, the report addressed design and maintenance standards.

Planning

- Directed an island utility in developing its first strategic plan. The plan evolved out of our previously conducted management audit, which I managed. As a result, the plan focused the management team on improving quality and making major improvements in the way it does its business. In addition, the planning efforts led to the formation of two new entities -- an energy services company (ESCO) and a local telephone company. Led their planning efforts for four years.
- Directed the development of an aggressive strategic plan for a major New England municipal electric and water utility. While the plan dealt with improving certain internal processes, its major focus was expansion of its service territory and finding customers for its services. As a result, the Company purchased the last independent electric utility in the state, effectively increasing its revenue by a factor of 1.5. Current planning efforts are directed at creating new sources of revenue. As a result of planning, management has purchased a bottled water business. A key initiative underway is to enter the broadband business. Have led their strategic planning for over ten years.
- Directed the development of a strategic plan for a western combination electric and gas utility. This was an aggressive plan designed to pre-position the utility for open access. In addition, the plan addressed moving into related non-utility businesses.
- Designed a successful strategic plan to aid in reducing the need for additional new generation capacity. This plan enabled the utility to redirect access loads that aggravated its peak load.
- Prepared several energy management plans (EMP) to permit clients to respond appropriately to the changing energy supply situation. For a national retail chain, the EMP permitted the selection of the most effective energy opportunities for reducing operating costs.
- Led a team that evaluated the impact of distribution design and maintenance practice to determine the impact on the level of storm damage. As a result, the Company is making changes to their maintenance practices.

- Determined for a major secondary network utility the cause of insufficient response to a major outage restoration. Recommended significant changes to their ERP to promote quicker management restoration decisions. Redesigned the entire underground restoration analysis process.

Business Transformation & Reengineering

- Managed an engagement to develop a comprehensive set of policies and procedures for a medium sized water and electric utility. As part of this engagement, the team related all policies and procedures to corporate goals and regulations. Developed and built a format database of related policies and procedures to specific regulations at the local, state and federal level. The system also provides a means for tracking proposed legislation and all permitting processes.
- Reengineered a medium-sized municipal utility's entire organization. The company provides natural gas, electric and water service to its customers. As a result, management has been able to reduce its management complement by 35%.
- Managed the reengineering of the operations organization for a major mid-western, combination gas and electric utility. Reduced the number of district offices by 45% while improving overall response time to the customer and eliminating 30% of the management positions. Several customer processes were also reengineered leading to a 30% reduction in clerical personnel.
- Managed an organization redesign of a major island utility's engineering function to be more customer/project driven. The final organization was delivered and now has a wider more effective span of control. In addition, we redesigned the process for estimating generation and T&D projects.
- Managed an in-depth audit of a major Southeastern utility's Environmental Department. This review included the legal function, since the environmental group was part of their legal department.
- Designed a functional organization structure to combine 20 utilities into a single company in Western Saudi Arabia and is now known as SECO in the Western Region.

Operational Engagements

- Completed an assessment of a major first PWR nuclear construction program for Great Britain’s government-owned nuclear power generation business.
- Managed a PSC-mandated phase-two management audit for a major combination utility. We focused on the potential economic savings and improved service created by centralizing the customer service function.

- Managed an industrial engineering study to improve a transmission and distribution department's trouble and dispatching operations. Results included consolidation of five dispatching centers into one with more efficient trouble crew operations.
- Managed engagements to identify opportunities for several major gas distribution companies to improve their customer service and marketing activities, resulting in more efficient and cost-effective operations.
- Designed and implemented a reliability-based budgeting system for two large urban electric utilities, one in California and the other in Texas, to improve T&D maintenance and system reinforcement project planning.

Transmission & Distribution

- Managed the development of a major storm restoration plan for a large east-coast utility. The plan focused on storms, which would cause loss of power to 50% of the company's customers for more than 72 hours. It also allows the utility to handle up to 300 foreign crews.
- Led the review of the T&D business unit a major Midwestern combination utility that had been cutting costs for eight years. As a result of this $500,000 engagement we were able to identify an additional $13M in savings by restructuring non-core activities of the 740 plus line organization.
- Directed the development of a multi-level storm plan for a major southwestern electric utility. The emergency restoration plan was designed to handle any level of storm that might be experienced by the company. Every role and key decision process was clearly defined. All three divisions and upper management accepted the resulting plan.
- Provided technical and strategic advice for the emergency plan developed for a combination gas and electric utility located in the Mid-West.
- Managed a benchmarking effort for a Canadian utility's transmission maintenance function. Resulted in a reduction of its maintenance costs by $15M annually.
- Developed a transportation model to estimate the appropriate fleet size for a major utility in Saudi Arabia, which was incorporated into their annual planning exercise.

Work Management

- Managed the development of a uniform work management process for an island utility. The process is now being used in both T&D and generation. It allows for the formal planning and scheduling of work, as well as the monitoring of the work performed.
- For a major Midwestern combination utility, identified business practice improvements to the generation capital budget yielding an eighty-one-million-dollar savings in construction costs on an eight hundred-million-dollar construction plan.

- Developed and implemented a simple work management system for a generation department. The system was built in Microsoft Access and designed to be extremely user friendly so that non-technical foremen and management can easily use the system.

Supply Chain

- Directed the first global supplier evaluation effort to help a major utility client select the transformer vendor with the lowest qualified price equipment. The evaluation looked at 18 international vendors and recommended the two that offered the least risk to the utility. This evaluation prepared the utility to address its vendor selections for a new 500kV transmission line in front of the state commission.
- Directed a $100,000 engagement to assist a medium sized gas LDC on the East Coast to gain control over its supply chain operations. In this engagement we identified a 33% reduction in inventory levels. The second work stream helped management better align with its major suppliers and form alliance programs.
- Managed a review of the material management function for a major Fortune 100 energy company. The results of the study identified savings approaching $44M annually.
- Designed a Materials organization for a major Western Saudi Arabia utility. As part of this assignment, designed the material forecasting process and inventory management methodology.
- Directed an engagement to install a mainframe (D&B) materials system in Saudi Arabia. Directed the set-up and implementation of a full-scale training program for all aspects of the system. In addition, we developed all the policies and procedures necessary for using the system.
- Directed an inventory reduction engagement for a major Northeast generation and transmission company that led to recommending a 17% reduction in a $68M inventory. We developed a custom software-modeling tool to identify slow and obsolete material. In addition, provided direction on how to minimize excess inventory.
- Managed an engagement for a mid-western combination utility that identified a 27% inventory reduction in T&D related materials. As part of this effort, provided the tools needed to reduce the inventory through aggressive inventory practices.

Customer Care & Multimedia Call Centers

- Supported the installation of a new CIS/CRM solution for the deregulated environment for a major Texas utility. Reviewed and modified procedures and processes to reflect the significant changes due to the new software. Developed policies consistent with the regulations and the needs of the business as defined by marketing and customer service functions.

- Directed the transformation of a combination gas and electric Northeast utility's traditional call center into a multimedia contact center for the coming deregulated environment. The company wanted to be more customer-centric while ensuring appropriate controls over cost and quality. Designed high-level architecture for a fully integrated operation using computer telephony integration (CTI) and interactive voice response (IVR) technologies to more efficiently serve the customer. Recommended significant changes to supervisory and agent training efforts and a strategy for web enabling the call center.
- Directed a significant effort to create the first multi-media call center for a Dutch combination distribution utility. This utility had scattered walk-in and small call centers located throughout their service territory and were trying to adequately serve 2,000,000 customers. Our efforts helped them define the future of customer care and provided them with a plan to achieve the desired results using a virtual- multi-media contact center, while saving $1M annually. The system is now designed to yield a level of customer service, which will become the cornerstone of their differentiation strategy.
- Directed an engagement to help a major Canadian electric utility consolidate 54 call center operations into 6 centers. As part of this effort, we developed a transition plan to move the existing call center operation from a cost centered, inbound operation to a strategic asset providing both inbound and telemarketing services. We identified the most appropriate staffing levels to ensure that customer-driven metrics can be met with a well-managed small work force. The project saved $2.5M.
- Managed the preparation of a detailed plan for converting a traditional customer service operation into a 21st century, customer-centric operation for a major mid-western gas and electric utility. The plan includes operational and process changes as well as a detailed Change Management program. The Company implemented all the recommendations. According to the CFO, the resulting savings are estimated to improve earnings per share by 20%.
- Managed a centralization of a customer phone contact function for a major western electric utility. The company had 55 phone centers located throughout the state. This consolidation resulted in a 55% reduction in staff with more efficient and effective phone coverage.
- Developed a long-range plan for the Consumer Business Function of a major Northeastern natural gas LDC. The plan detailed the mission, objectives, and goals to be achieved which included the consolidation of several remote offices. The resulting savings exceeded $20M annually.

Professional Experience:

River Consulting Group, Inc.: Present

- President

KEMA, Roswell, Georgia: 2005 to 2010

- Vice President Operational Excellence 2008 to 2010
- Director Field Force Effectiveness & Global Supply Chain 2005 to 2008

River Consulting Group, Inc.: 1999 to 2005

- President

James Martin & Company: 1998 to 1999

- Vice President, North American Utilities Practice

AT&T Solutions, Utility and Energy Practice: 1996 to 1998

- Client Partner, North American Utilities Practice Leader

EDS Management Consulting Services: 1995 to 1996

- Principal

Stone & Webster Management Consultants, Inc.: 1980 to 1995

- Vice President

Booz, Allen & Hamilton, Inc.: 1978 to 1980

- Senior Consultant

Boston Edison Company: 1970 to 1978

- Senior Engineer

Professional Affiliations:

Editorial Advisory Board of Hart's Energy Markets Magazine

Institute of Electrical and Electronic Engineers

American Management Association for Marketing and Planning

North American Society for Corporate Planning, Inc.

Professional Publications:

"From Brick & Mortar to Technology Enabled Strategy," presented at the EEI Annual Convention, June 15, 1999, in Long Beach.

"Using Technology as a Strategy Driver," presented at the EEI Semi-annual Strategic Planning Conference, March 1999, in Tampa.

"Competitive Marketing Strategies for Utility Companies," presented at the International Quality & Productivity Center conference, May 1997, in Chicago.

“Performance Audits as An Improvement Tool,” presented at the Tenth Annual Regulatory Educational Conference, April 1996, in Canada.

“The Future of Customer Service,” presented at the Reengineering Utility Call Centers Conference, August 1995 in Chicago.

"Benchmarking - The Second Generation" - Stone & Webster Management Consultants, Utility Executive Course, 1994.

"Benchmarking Purchasing Case Study" - Stone & Webster Management Consultants, Utility Executive Course, 1994.

"Planning for Resource Allocation,” Stone & Webster Management Consultants, Utility Executive Course, 1993-4

“AMI’ Role in Emergency Restoration,” Automation 2008 Conference, Atlanta, GA

“Incorporating Public Communications into your Business Continuity Plan,” EUCI, St. Louis, October 2008

“Why Forensic Analysis?” 2008 Energy Connections Conference, Florida Municipal Electric Association, Orlando, November 2008

“Utility Experience Shows AMR Could Support Outage Management,” KEMA publication, April 2008

Joseph J. DeVirgilio, Jr.

Position:	President, Suncoast Management Consultants, LLC Senior Consultant, River Consulting Group, Inc. Former Gas & Electric Utility Executive
Years of Experience:	44
Education:	B.E./Electrical Engineering/Stevens Institute of Technology, Hoboken, NJ M.E./Electric Power Engineering/ RPI, Troy, NY

Key Qualifications:

***Joseph J. DeVirgilio, Jr.*,** Senior Consultant**,** is president of Suncoast Management Consultants, LLC and a utility consultant with River Consulting Group, Inc. He has been part of consulting teams performing management audits, reviews of emergency plans, H/R, security and other support services reviews, capital spending reviews and operations improvement initiative. He is a retired senior utility executive and has been working in the natural gas and electric utility industry for over 44 years. His experience spans a wide variety of consulting and executive responsibilities in both the regulated natural gas and electric T&D business and the unregulated energy business. He has formal training in mentoring and mediation. He formerly held a Professional Engineering license in NYS for 30 years.

Selected Professional Experience:

Management Audits

Joe has participated in broad management audits for regulatory commissions and led the study teams in the subject areas of HR, IT, Call Center Operations, Collections, Billing, Meter Reading, Field Operations, and others for clients including: Southern Connecticut Gas, Management Audit, 2016; Connecticut Natural Gas, Management Audit, 2016; and Yankee Gas, Connecticut, Management Audit, 2014-2015.

He also has 20+ years of experience in participation, planning, preparation and execution of the utility side of management audits in both general and subject specific audit. He has been the executive responsible for the utility response for over 15 years.

Gas T&D Operations, Engineering and Management

Joe has 13+ years' experience performing hands-on design and installation management of gas distribution steel and 80 and 125 lb. plastic systems and O&M on gas transmission systems and the gas metering testing and installation. Additionally, he has designed and managed the installation of two gas metering test facilities.

I/T

Joe has had over 20+ years of experience as the utility CIO and the Chair of the utility I/T Steering Committee. In these roles, he has had review and approval responsibility for all I/T projects and the annual capital and expense budgets and expenditure reviews. This Committee also approves the 5-year I/T strategic plan.

Corporate Mission, Objectives, Goals and Planning

Joe has been a member of a corporate Strategic Planning Committee and has several years of experience in developing a strategic plan and ensuring goal alignment throughout the utility and other business unit organizations.

Capital & O&M Budgeting

Joe has had more than 5 years P&L business responsibility and 30+ years of capital and O&M budget development and execution responsibility for the various management and executive areas of a utility business. He also has extensive experience in labor management and the impact of labor/contractor decision management on budget outcomes.

Program and Project Planning

As an operations manager and again as the I/T executive, Joe has had many years of experience in long term program and project planning and outcome assessment. His experience with the impact of planning on Capital & O&M Budget controls will add value into this assessment.

Performance & Result Management

Joe has 10+ years of experience as the lead executive responsible for utility performance improvement and the work management system. He has training in Q/P Assessment, Q/P Team Leadership and Making Quality Happen at the first levels.

H/R

He has 25+ years of experience as an H/R executive with responsibility for staffing, labor and employee relations, labor negotiations, executive and salaried employee compensation and benefits, security and safety. He managed the successful labor negotiations process with two

IBEW locals. He created, updated and managed the implementation of the utility's "Strike Plan". He was the plan administrator for the pension and the 401k plans. He has selected and implemented 3rd party providers for both plans. He has implemented a new executive incentive plan and administered it since inception. He has put in place EEO/AAP plans and successfully implemented the plans. He has identified and implemented a very successful "high potential employee" (HPE) selection and development program including executive mentoring.

Security

Joe has 25+ years' experience as the utility security executive. He was responsible for the post-9/11 utility security review and NYS PSC directed security audit implementation. He had sole responsibility for the hiring and direct management of the Security Director.

Professional Experience**:**

2013 - Present **Sarasota Memorial Health Care System:** Director, current Chairman

2011 - Present **Suncoast Management Consultants, LLC:** President

2011 - Present **River Consulting Group, Inc.:** Senior Consultant

2010 **United Way of Dutchess County:** CEO

1973 - 2010 **CH ENERGY GROUP, INC.**
CENTRAL HUDSON GAS & ELECTRIC CORPORATION
CENTRAL HUDSON ENTERPRISES CORPORATION (CHEC)
284 South Avenue, Poughkeepsie, NY 12601

1/05 -12/10 **Executive Vice President - Corporate Services and Administration**
Senior Corporate Officer and member of the Executive Team of CH Energy Group, Inc. Director of Central Hudson Gas & Electric Corp ("Central Hudson") and Central Hudson Enterprises Corp ("CHEC")

Executive Responsibility for the Griffith Energy Services, Inc., a wholly owned fuel oil distribution subsidiary.

Executive responsible for establishing and executing corporate policy and objectives and associated implementation of the related processes for the following areas of responsibility for Central Hudson:

Information Technology; **Corporate Communications, Media Relations, Governmental Affairs and Economic**

Development; **Human Resources Purchasing & Stores**; **Fleet Management**; **Office Services**; **Facility Operation & Maintenance**; and **Corporate Quality and Process Re-engineering**.

Corporate Executive Committee membership: Chairperson: I/T Steering Committee. Member of the Capital Resource Allocation Committee.

03/05 -12/10 **Director, Central Hudson Gas & Electric Corp**

03/02 -12/10 **Director and Executive Vice President – CHEC, Griffith Energy Services and SCASCO**

11/98 -12/24 **Senior Vice President - Corporate Services and Administration**
Corporate Executive Committee membership: Chairperson: I/T Steering Committee and the Retirement Income, 401K and VEBA Plans Administrative Committees. Member the Capital Resource Committee.

5/88 -11/98 **Vice President - Human Resources and Administration**

4/86-5/88 **Assistant Vice President – Gas & Electric Customer Services & T&D Operation**

3/84-4/86 **Manager – Corporate Services & I/T**

3/82-3/84 **Manager – Gas & Electric Customer Services Field and Call Center Operation**

3/79-3/82 **District Superintendent – Catskill Gas & Electric T&D Operation**

6/73-3/79 **Engineering Assignments – Gas and Electric Field Engineering, Gas Meter Engineer and Gas Testing facility supervisor**

Professional Affiliations:

3/80 – 12/11 **Professional Engineer**, New York State, License No. 057637

1988 -2008 Regional Utility Group – IBEW Companies in NY and NJ - Central Hudson's Representative

George M. Fandos

Profession:	Senior Consultant
Years of Experience:	30
Education:	B.S./Economics and Mathematics/Vanderbilt University

Key Qualifications:

George Fandos brings over 30 years of experience as an executive level management consultant and service as an operational executive. His passion and focus have always been on the customer; from marketing to selling to post-sale support, he has built and consulted with organizations whose aim is to help customers solve problems with company products and services in a profitable manner. He has spent major portions of his career with IBM, where he was the North American Practice Leader for the Customer Service practice area; eLoyalty, where he was Senior Vice President of operations for this customer strategy and CRM systems integrator; Realeum, where he was Chief Customer Officer for this services firm; and The Westcon Group, where he was VP Global Practice for this $4 billion distribution company.

Consulting projects undertaken for his clients have focused on customer experience design, customer communications, sales execution, process improvement, technology enablement and change management, predominantly in customer facing organizations. More specifically, a sampling of his efforts includes the design and deployment of centralized customer service operations; assessment and development of strategic operating plans across multiple industries and functions, multiple contact center improvement engagements focused on people, process and technology; process and organizational change management; customer experience design; development of multi-channel customer strategies; and analysis of trends in consumer buying behaviors and satisfiers.

He has worked with utility customer service, credit & collections, billing, meter reading, complaints, marketing, and corporate communications organizations to define long-range strategies, create messaging goals, improve operations, and develop comprehensive metrics and processes to track progress toward those. He has also worked with utilities and other industry leaders in the areas of corporate governance, change management, strategic roadmaps and strategic planning.

Mr. Fandos has worked with utilities to help them better understand customer expectations and use this insight to design both employee experiences and the experiences customers have through outage communications, the use/pay experience, service initiation, low-income program administration, and more recently work strategically with senior leadership to prepare for upcoming disruptive technologies, such as DER, Solar, batteries, etc. He has also worked with utility companies in the development of a channel strategy that optimizes both customer

interactions and shareholder returns, across call centers, billing messaging, social media, IVRs, web, text and mobile.

Mr. Fandos graduated Phi Beta Kappa from Vanderbilt University with a Bachelor of Science in Economics and Mathematics. He is currently a candidate for a Master of Business Administration, Finance.

Selected Professional Experience:

- He has participated in broad management audits for regulatory commissions and led the study teams in the subject areas of Customer Service, Corporate Communications, Marketing, Collections, Billing, Meter Reading, Complaints, Corporate Governance and Strategy, and others for clients including,
  - Southern Connecticut Gas, Management Audit, 2016
  - Connecticut Natural Gas, Management Audit, 2016
  - Yankee Gas, Connecticut, Management Audit, 2014-2015
  - CenterPoint Energy, Texas, Emergency Response to Hurricane Ike, 2008-2009
- Facilitated and led the development of a cross-channel strategy for this large, Southern utility with nearly 3 million customers across channels that include call centers, IVR, the web, text, social media and interactive billing statement. This effort assisted the utility in developing a plan to raise JD Power's customer satisfaction levels while at the same time optimizing O&M costs.
- Led the corporate governance and strategy efforts for a large project and strategic 5-year initiative for a large Southern electric utility.
- Led the design of critical customer experience design interventions for a large mid-western electric utility focused on the commercial business sector.
- Worked on the development of a customer strategy with a Midwestern, gas utility focused on the re-design of billing statements, increase energy efficiency programs and other factors and/or messaging influencing customer behavior.
- Led a multi-year effort with a Southeastern electric & gas utility in a redesign and consolidation of their call centers; including process design, organizational improvements and a refreshing of the major technology systems.
- Worked with a large southwestern public utility on a post-storm assessment where over 2 million customers' power was lost. Lead the efforts in evaluating their customer service and communications execution.

- Led a multi-year change initiative with a Western U.S. gas utility in the re-design of their service center and customer facing operational environment. The project resulted in consolidated operations and highly improved, more efficient business processes through the introduction of new information technology, all while improving customer satisfaction.
- Led a multi-year effort to assist a major appliance manufacturer to consolidate multiple operating call centers into a single center. Efforts included re-design of management operating systems, organizational and staffing models, process/call handling activities and a re-architecture and custom development of a new technology platform including desktop, IVR, CTI, database integration, and knowledge management. The project resulted in 50%+ productivity improvements.
- Led an activity-based costing engagement for a multi-billion-dollar retailer in their customer service function identifying change opportunities to reduce 50% of operating costs. Prior to the engagement, projections for accommodating growth were to triple the size of the staff. The majority of the benefits were realized through detailed route cause analysis and call avoidance or the movement of inquiries to a self-service platform.
- Worked with a large, mall retailer in gaining an understanding of their customers' experience from marketing through in-store purchases, including product usage and service. Helped them gain insight into the customer's view of their product and how it impacts their lives in order for the retailer to design an organization, processes, and measurements that exceed customer's expectations.
- Led the efforts with a large Energy distribution company in the development of a sales playbook and licensing program with their distribution customers across North America.
- Worked with a distribution company to develop and deploy a corporate strategy and infrastructure in support of multiple channels including call center, the web, and chat. This included a feedback mechanism to assess customer turnover, satisfaction and revenue growth.
- Worked with a major regional bank to assess and understand various customer segments' buying and servicing requirements. Mr. Fandos also assisted in the deployment of various product changes, service strategies and infrastructure developments to achieve objectives.

Work History:

River Consulting Group, Clayton, Georgia: 2010 to Present

Senior Associate

Customer Innovations, Atlanta, Georgia: 2009 to Present

Managing Principal

The James Agency, Atlanta, Georgia, Management Consultants: 2003 to 2009

President

Realeum Corporation, Alexandria, Virginia: 2000 to 2003

Chief Customer Officer

eLoyalty Corporation, Chicago, Illinois: 1996 to 2000

Senior Vice President, Eastern Operations

IBM Corporation, Stamford, Connecticut: 1981 to 1996

Marketing Management, Principal, Customer Service Practice Leader

Morris Jacobs

Position: Senior Consultant
Years of Experience: 35
Education: BS -- Business/Finance and Economics University of Chicago,
MBA – Finance/Economics University of Chicago Graduate School of Business (now Booth School of Business)

Key Qualifications:

Morris Jacobs has served the utility industry as a management consultant for 35 years. He has supported electric, gas, water and telecommunications companies, and his projects have spanned virtually all utility industry business units, including generation, transmission and distribution, meter to cash, and support services. Mr. Jacobs has worked with executive teams on corporate strategy and "balanced scorecard" performance management, and he has worked with union and non-union field level employees to help them identify and implement improvement opportunities. He has served as an expert witness on financial and economic matters and on the ratemaking process. Finally, he has managed functional teams and served as solution architect for technology implementations.

Areas of Expertise

- **Strategy Implementation and Performance Management** – Has been a subject matter expert on converting corporate strategies to tangible directives, largely through the use of "balance scorecard" methodologies, and a value-oriented approach to resource allocation. He has also has managed best practices and benchmarking studies.

- **Process Improvement/Operational Excellence** – Managed the process improvement practice for a boutique consulting firm he co-owned. Facilitated numerous process improvement teams resulting in substantial economic benefits to his clients. Improvement teams managed include entire generation function for a hydro operator, operation and maintenance teams in distribution operations, resource deployment teams, planning and budgeting teams, meter to cash teams, energy efficiency, and activity-based management teams.

- **Process/Technology Change Solution Architect/Functional Management** – On several projects has represented "the business" during technology enhancements or new application implementation. This has included the development of request for proposals and managing vendor selection as well as supporting the solution design to best meet business process requirements.

- **Facilitation, Coaching and Problem-Solving** – Worked extensively with executive teams, mid-level management teams and teams comprised of field level employees. Created and delivered training in team effectiveness techniques and process improvement methodologies. Also served as personal coach to executives to improve communication effectiveness and performance management.

- **Resource Optimization and Capital Program Management** – Managed multi-industry best practices study on planning and budgeting, and worked with numerous companies on reengineering their planning and budgeting processes consistent with best practices, aligning resource allocation decisions around value creation and corporate strategies.

- **Asset and Workforce Management** -- Managed a team of sixty consultant and client resources to developing functional requirements for a new workforce and asset management system, employing Maximo, ESRI GIS and Ventyx for mobile dispatch and work completion. More recently, managed a team to conduct a "Phase 0" analysis to determine future state requirements for a new work and asset management system and roadmap for implementation.

- **Rate case and litigation support** – Served as expert witness or supported rate case work in construction and planning prudence, affiliated transactions, performance-based ratemaking, economic damages, and defense of utility positions in regulator mandated operations improvement audits.

Selected Project Experience

- **Northeast Generation and Transmission Company** – Provided financial acumen training to over 300 employees including power plant managers to better understand the drivers of financial performance. Created the framework for enhancements to the capital budgeting process for increased focus on generating value adding investment. Facilitated first sessions for the development of asset strategies, again consistent with economic value adding investments. Co-led efforts to integrate a new business unit into the organization with a focus on Operations and operational improvements.

- **Midwest Electric Distribution Company** – Conducted a lifecycle review of the capital program planning and management process including planning, budgeting, resource forecasting, project estimation, project management, schedule and assignment of work, materials management, and field execution and close. Numerous process improvement opportunities were identified expected to generate several millions of dollars a year in cost savings.

- **Southcentral Electric and Gas Utility** – Served as solution architect for the development of a web-based "front end" application to work on top of SAP to support planning and scheduling of fleet maintenance and repairs. The solution included the installation of

kiosks in the garage bays with touch screen interface to allow fleet technicians easy access to work order information. Also developed new reporting tools to allow the business to conduct queries and develop reports without requiring IT support. Additionally, worked with the distribution operations organization on the development of productivity analyses for field crews. Finally, developed business requirements for planning and scheduling process enhancements for distribution field management, prepared a request for information (RFI) and coordinated the consideration of vendor solutions.

- **Southeast Gas Distribution Company** – Served as Project Manager to develop an Implementation Roadmap for supporting enhanced distribution system integrity management. The core solution included implementation of a new work and asset management system for all work (transmission, distribution, field customer service), mobile scheduling, dispatch and work completion, and enhanced GIS capabilities. The Roadmap development included a current state analysis, future state model development, gap analysis and implementation roadmap development along with budgets, resources, and a business case. In the detailed design phase, managed the effort to create detailed process models outlining the process changes and how technology was going to be engaged to meet the business process requirements. These processes flows were used for identifying the configuration requirements for the new technology.

- **Midwest Gas Distribution Company** – Helped this utility company develop a new energy efficiency organization (from scratch) in response to new legislation mandating the offering of energy efficiency programs to its customers. Developed the business model and process models customized for this client to best meet the legislative requirements.

- **Southcentral Electric Utility** – Redesigned the process used to select vendor implementers for this company's Energy Efficiency organization, providing greater confidence in the vendor selection process to management. Also provided training and guidance to energy efficiency program managers to enhance vendor management, performance measurement and reporting, and forecasting.

- **Western Gas & Electric Utility** – Co-managed (along with a client project manager) a team of consultant/client resources to investigate opportunities to improve the company's "meter to cash" process. Millions of dollars of savings opportunities were identified in cost reduction, improved customer service, and a reduction in working capital requirements.

- **Northeast Gas & Electric Distribution Company** – Managed a team of sixty client and consultant resources in developing functional requirements for a new workforce and asset management system. The challenges included transforming work practices of

three different companies, which were brought together through mergers, into one common set of practices.

- **Southcentral Electric Utility** – Managed the vendor selection process for a new Energy Efficiency Program Management application, including selecting candidate vendors, developing the request for proposal, evaluating the bids, interviewing the finalists, selecting the vendor, and finally managing the contract development process.

- **Southcentral Electric Utility** – Led a project to build a new procurement/vendor selection process for the Energy Efficiency organization as they engage third party program implementers. Also provided organizational recommendations to close process performance gaps and provided management training to energy efficiency program managers.

- **Northwest Hydro Operator** – Managed a multi-year process reengineering project that spanned generation, distribution, water/wastewater, and power operations. Also worked with the generation business unit to develop a strategic plan, succession plan, and a "balanced scorecard."

- **Southeast Gas Distribution Company** – Facilitated two process improvement teams in Field Operations, including operation and maintenance practices and resource utilization. The teams comprised of union and non-union field personnel developed improvement recommendations providing millions of dollars in savings.

- **Midwest Gas Distribution Company** – Worked with this company to reengineer the planning, budgeting, and measurement process. Also worked with a team of executives in the development of corporate strategies, and the development of performance measures using the "balanced scorecard" framework.

- **Midwest Gas Distribution Company** – Served as Project Manager for a project designed to help this gas distribution company establish Activity Based Management to support strategic business decision-making and provide a framework for budgeting.

- **Northeast Electric Utility** – Served as project manager for a project designed to assist the company develop a performance based ratemaking structure, in preparation for a rate case filing. The project included the facilitation of employee teams whose purpose was to develop candidates for performance measures and targets.

- **Multiple Clients** – Managed several multi-company leading practices and benchmarking studies. One study focused on strategic and business planning, and resource management, involving interviews with fifty companies across industries. Another study focused on leading practices in performance based ratemaking design and implementation.

Management Audit Experience

- **Pennsylvania Public Utility Commission** -- Lead Consultant in a focused management audit of the Pennsylvania operations of National Fuel Gas Company. This review included an assessment of NFG's planning and budgeting process.

- **Illinois Commerce Commission** -- Lead Consultant in a focused management audit of Central Illinois Light Company, responsible for financial management systems. This review included an assessment of the company's planning, budgeting and performance measurement processes.

- **Massachusetts Department of Public Utilities** -- Lead Consultant in the focused management audit of Commonwealth Electric Company, responsible for the review of the control of capital and operating costs. This review included an assessment of capital budgeting justification and prioritization procedures.

- **Missouri Public Service Commission** -- Lead Consultant in the focused management audit of Associated Natural Gas Company, a division of Arkansas Western Gas, responsible for the review of budgeting and cost control procedures.

- **Trinidad and Tobago Electricity Commission** -- Lead Consultant in the management audit of the electric utility system in the areas of corporate and strategic planning, security services, and other administrative functions.

- **Pennsylvania Public Utility Commission** -- Lead Consultant in the management audit of Philadelphia Electric Company in the areas of corporate planning, generation and transmission planning, fuels management, rates, general counsel, transportation, building operations and real estate.

- **New York Public Service Commission** -- Lead Consultant in the management audit of the Long Island Lighting Company in the areas of Corporate Planning, Transportation, Building Operations, and Real Estate Management. The Corporate Planning review included responsibility for our assessment of generation expansion planning, financial planning, load forecasting, conservation and load management programs, and the consideration of cogeneration.

- **Missouri Public Service Commission** -- Lead Consultant for the management audit of Union Electric Company in the area of Fossil Fuels Management. Scope of audit included review of fuel contracts, comparative analysis of fuel costs at the mine and transportation costs, review of fuel oil and coal inventory policy, review of mix between contract and spot fuel, and mix between low sulfur and high sulfur coal, and review of fuel requirements forecasting process.

- **Texas Public Utility Commission** -- Senior Consultant in the management audit of Houston Lighting and Power Company. Responsibilities included completing various economic analyses to support major findings and conclusions. Also participated in the audit of fuels management, which included a review of the economics of the utility's fuel subsidiary.

- **Connecticut Natural Gas Company and Southern Connecticut Natural Gas Company** – completed two management audits.

Professional Experience

- **Jacobs & Associates, Inc.** – Independent Consultant serving the utilities industry, 2013 to present
- **CSC** – Director in Utilities Industry Group, 2010 to 2013
- **Bass & Company Management Consultants** – Senior Management Consultant, 2007 to 2010 (Firm acquired by CSC in 2010)
- **IBM Global Business Services**– Associate Partner, Utilities Industry Practice, 2006 to 2007
- **Jacobs & Associates, Inc.** – Independent Consultant serving utilities industry, 2000 to 2006
- **Navigant Consulting** – Director, 1997 to 2000
- **AUC Management Consultants** – Co-Owner, 1994 to 1997 (Firm acquired by Navigant Consulting in 1997)
- **Arthur Young/Ernst & Young** – Senior Manager in National Utilities Consulting Group, 1984 to 1994
- **Sargent & Lundy Engineers** – Economic Analyst, 1979 to 1984

Education

- M.B.A., Economics and Finance, University of Chicago, 1979
- B.A., Economics, University of Chicago, 1978

Randal E. Kreus

Position:	Managing Consultant for Support Services
Years of Experience:	35
Education:	B.S.E./1978/Industrial & Systems Engineering/University of Michigan-Dearborn, Dearborn, MI M.S.E./1981/Industrial & Systems Engineering/University of Michigan-Dearborn, Dearborn, MI M.B.A./1985/Harvard Business School, Boston, MA

Key Qualifications:

Randy Kreus has been working in the utility industry for about 35 years. His experience spans a wide variety of audit, business management, operational, financial, and strategy development engagements. He has also helped numerous major utilities redesign their business organizations to reflect changing regulatory, public policy, and competitive environments. Mr. Kreus has led or participated in a number of full management audits and led numerous more focused management engagements.

Selected Professional Experience:

Management Audits

Management audits provide a window into the business and operations of a utility. Some audits are required by State Commissions or other government agencies; others are at the request of executive management in order to understand how to improve their business model.

- Long Island Lighting Company – Public
- Union Electric Company – Public
- Columbia Gas of Ohio – Public
- Central Illinois Public Service Company – Public
- Big Rivers Electric Cooperative – Public
- Large Midwest Electric Utility – Confidential
- Large Combination Utility – Confidential
- Large Public Power Utility – Confidential
- Connecticut Natural Gas Company
- Southern Connecticut Gas Company

Pre-Management Audit Counsel

This value-added work typically consists of audit training sessions, high-spot reviews, formulating needed audit policies and procedures, developing audit strategies. Managed or participated in pre-management audit engagements with the following companies.

- Kentucky Utilities
- Commonwealth Edison
- Large Electric Utility – Confidential

Planning

- Has been a subject matter expert on translating corporate strategies to discrete project initiatives. This generally includes extensive research in available options, the development of conceptual and then investment grade business cases, and detailed project implementation plans.
- Worked extensively with executive teams, mid-level management teams and teams comprised of field level employees. Created and delivered training in team effectiveness techniques and process improvement methodologies. Also served as personal coach and mentor to executives to improve communication effectiveness and performance management.
- Provided detailed support in anticipation of upcoming rate case and other proceedings before various state public service commissions and the Federal Energy Regulatory Commission.
- Worked with clients on many projects to test the assumptions and analyses underlying strategic investments in significant generation, transmission, distribution, energy services, and other initiatives.
- Has assisted many clients with the evaluation and control of large and programmatic capital investment outlays. These projects have included the entire life cycle of capital programs from conceptual project design, to project review and selection, through final design, construction, and closeout.
- Has assisted many clients with the evaluation and control of large and programmatic capital investment outlays. These projects have included the entire life cycle of capital programs from conceptual project design, to project review and selection, through final design, construction, and closeout.

Business Transformation. Reengineering, and Operational

- Managed many projects to improve management processes in most aspects of electric and gas utility operations. Facilitated numerous process improvement teams resulting in substantial economic benefits for clients. Improvement teams managed include generation maintenance, operation and maintenance in distribution operations, resource deployment teams, planning and budgeting teams, energy efficiency teams, and engineering teams.
- Worked on numerous asset and workforce management projects in generation, transmission and distribution, customer services, and other utility functions.

Transactional

- Participated in or managed many projects involving strategic initiatives such as new business lines, generation and transmission investments, etc.
- Supported clients with many due diligence efforts on various asset acquisitions, new ventures, complementary business lines, and large utility projects.
- Provided extensive economic and financial modeling consulting to evaluate potential investments
- Helped negotiate large contracts for fuel supply, capacity and energy, etc.

Professional Experience:

Customer Care Network, Inc.: 1998 to Present
President

ScottMadden, Inc.: 1988 to 1998
Partner

Arthur Young and Company: 1985 to 1988
Manager, National Utilities Group

Detroit Edison Company: 1979 to 1983
Engineer

Registered Professional Engineer: 1982
Michigan

Ronald D. Willoughby, PE

Position:	**Executive Consultant**
Years of Experience:	40+
Education:	Honorary Professional Degree of EE – University of Missouri-Rolla (Renamed Missouri University of Science & Technology) Post Graduate Studies – Carnegie-Mellon University MSEE Power Engineering – Carnegie-Mellon University BSEE – University of Missouri-Rolla Professional Engineer (PE) License – Pennsylvania

Key Qualifications:

Distribution Grid Modernization Planning: Systematic and incremental addition of smart grid devices, with technology, performance, and cost central to the planning process.

Conservation Voltage Reduction (CVR): Using smart grid data points and controllable VAR sources to regulate distribution voltages in near real time to reduce demand, lower peaks (kW), and save energy (kWh).

Transmission & Distribution Planning: Power flows, reliability analysis, transient stability, long-term stability, load shedding, reconfiguration schemes, contingency analysis, root cause analysis, distributed generation, and energy storage strategies. Protection and coordination; systematic replacement/upgrade strategies; special protection systems (SPS).

Renewables Integration and Impact on Utility Grid: Power system analysis/operation, architecture, configurations, distributed generation strategies, market analysis, portfolio analysis, wind power and PV integration.

Advanced Protection, Automation & Control: Application of sensors, communication packages, sectionalizing equipment, controllable VAR sources, voltage control, expert systems, demand, and energy reduction strategies.

Distribution Substation Design and Specifications Review: Modular Integrated Transportable Substation (MITS) application, design, specification, and implementation; renewables integration; volt/VAR control; substation upgrades; and distribution automation and system protection strategies.

Patents & Publications

Earned U.S. Software Patent 6549880 for *Improving Reliability of Electrical Distribution Networks* (2003)

More than 50 publications relating to electric power systems analysis and operation

Project Types

Distribution Grid Modernization Planning: Systematic and incremental addition of smart grid devices, with technology, performance, and cost central to the planning process.

Conservation Voltage Reduction (CVR): Using smart grid data points and controllable VAR sources to regulate distribution voltages in near real time to reduce demand, lower peaks (kW), and save energy (kWh).

Renewables Integration: Main substation, collector systems, protection & control.

Power System Energy Use: Technical and non-technical loss evaluation and improvement measures, with specific expertise in island power systems.

Power System Automation: Application of sensors, communication packages, sectionalizing equipment, and SCADA system to achieve automation performance targets.

Power System Reliability: Preventive actions and sectionalizing strategies to achieve reliability performance targets.

Power System Protection: Protection & coordination; systematic replacement/upgrade strategies

Root Cause Analysis (RCA): For unexplained electric power system events.

Knowledge Management: Use cases for technical procedures associated with power system analysis/operation, expert systems, architecture, configurations.

Project Management: Transmission analysis, distribution analysis, system protection, and reliability improvement.

Training: Workshops on power system design, reliability, stability, and operation.

Representative Project Experience

Conservation Voltage Reduction (CVR)

- Technical lead for study commissioned by DOE for a comprehensive study across the USA on CVR, including deployment strategies, costs, benefits, barriers, and potential solutions, through a broad market outreach effort.

- Co-founder of a CVR Industry Consortium to guide CVR research, work with industry groups, develop policy recommendations, promote implementation strategies, and document the results.

- Project Manager and Technical Lead for Commonwealth Edison Company (ComEd) feasibility study to quantify energy and demand savings using distribution Voltage Optimization techniques. Objectives: 1) Minimize cost by initiating feeder upgrades to achieve minimum performance thresholds. 2) Maximize energy savings by optimizing performance while staying within Total Resource Cost (TRC) constraints.

- Co-Instructor of CVR workshop customized to meet specific ComEd engineering and energy efficiency department needs.

Advanced Protection, Automation, & Control for Transmission & Distribution

- Led EPC and turnkey solutions in support of electric utility companies for electrical distribution automation, medium voltage modular substations (distribution centers), and wind farm electrical distribution systems (from the base of the turbine towers through interconnection to the utility grid); 1985-1988.

- Co-Chaired (with the Director of R&D at We-Energies) Distribution Vision 2010 LLC (DV2010), a consortium of Investor Owned Utility (IOU) companies. Mission: To create and execute a roadmap of equipment and service requirements important to cost-effectively operating a reliable electric distribution system; 2002-2006. DV2010 was accountable to CEOs and CFOs of member utilities.

- Invited by the Director of Power & Energy Initiative at the University of Pittsburgh to be an Instructor for a graduate course on Smart Grid Technologies & Applications. Subject: Substation Automation and Protective Relaying; on-going.

- Participated in U.S./Canada Power Outage Task Force led by the Department of Energy (DOE), Natural Resources Canada, and the North American Electric Reliability Council (NERC) created to study the blackout of August 14, 2003, the largest electrical outage event in U.S. history.

- Led comprehensive Root Cause Analysis (RCA) for PJM executive management in response to a July 1999 low voltage condition stemming from record peak loading conditions on the bulk transmission system. Proactive corrective measures prevented future occurrences.

Renewables Integration and Impact on Transmission & Distribution Systems

- Invited by Prime Minister of Curacao to represent USA in 1st Annual Durable Energy Conference in Curacao to address renewables integration issues for the transmission and distribution system; March 2012.

- Invited by CEOs of Wind-2-Power-Systems (W2PS) and Hudson Energy to represent USA for conference in Madrid to cover PV integration, grid integration, energy storage, and DC infrastructure issues; February 2012.

- Invited by CARILEC to chair two sessions on Transforming the Electricity Grid at the Renewable Energy Forum, St Thomas, US Virgin Islands; September 2011. CARILEC represents CEOs, COOs, and CFOs for 33 island utilities in the Caribbean.

Transmission & Distribution Planning

- Led distribution grid modernization planning efforts, focused on systematic and incremental addition of smart grid devices, with technology, performance, and cost central to the planning process

- Led EPC and turnkey solutions for electric distribution automation, medium voltage modular substations (distribution centers), and wind farm distribution systems (from base of turbine towers through interconnection to utility grid). Accountable for success of these focused areas when measured against sales and margin goals, internal and external budget constraints, and overall customer satisfaction. Routinely augmented internal direct staff with external resources according to project needs. Matrix managed project teams to effectively utilize project resources.

- Co-founder of industry-wide consortium focused on strategic, business, regulatory, and technical issues associated with Conservation Voltage Reduction/Regulation (CVR) at investor-owned utilities, electric cooperatives, and municipals.

- Managed commissioning and public relations for comprehensive distribution line installation in the city of Smolensk, Russia. Project was collaborative effort between US Trade & Development Agency (TDA) and Cooper Power Systems (CPS); 2002-2004.

- Developed distributed CVR measures to conserve energy and reduce overall losses without compromising end-user reliability or power quality.

- Developed emergency generation integration strategies for major industrial complexes in the USA.

- Conducted comprehensive seminar on electric power systems for the Ministry of Water and Power in Peking, China; 1984.

- Performed international power systems studies on power flow, transient stability, shunt compensation, load shedding, motor starting, loss formula development, short circuit, and protective device coordination; 1974-2000. Interfaced with Engineering Planning Managers.

- Led projects sponsored by the Pacific Power Association (PPA) for power system energy analysis and loss reduction on 20 islands in the South Pacific, 10 with US-style power systems, and 10 with European-style power systems. Interfaced directly with CEOs and PPA throughout study.

- Taught Westinghouse Advanced School on Power System Stability; 1980-1988.

Professional Development Activities

NERC Compliance; IEC 61850; DMVP (DMEDI) Process Improvement; Professional Development Seminars on Management (Management Grid, Management Techniques, Team Building); Interpersonal Skills; Time Management; Managing the Software Project; Sales Techniques; SPIN Sales Training; Pricing Strategies; Finances; Technical Writing; Safety; Problem Solving & Decision Making; IEEE Seminars on Relay Coordination and Reactive Power Control; Root Cause Analysis; Reliability Analysis; Intellectual Property; Environmental Compliance; Corporate Ethics; Toastmasters International

Company Affiliations

Willoughby Consulting, Raleigh, NC (2012 to Present)
Executive Consultant, Electric Power Systems Planning & Operation - Owner
Modular distribution substation application, specification, and implementation. Quantifiable Conservation Voltage Reduction (CVR) assessments for energy efficiency energy savings (kWh) and peak power reduction (kW); CVR application strategies. Emergency backup power supply needs assessment and solution strategies for large industrial/commercial facilities. Portfolio analysis, go-to-market strategies, and operations support related to electric power systems. Specific service areas include transmission and distribution planning, renewables integration strategies, energy efficiency measures, system protection strategies, distribution automation schemes, data management, and business plan development.

ABB, Inc. (ABB), Raleigh, NC (2016 to Present)
Executive Consultant - Contract
Advisory services related to distribution grid modernization planning efforts involving systematic and incremental addition of smart grid devices, with technology, performance, and cost central to process.

Advanced Microgrid Solutions (AMS), San Francisco, CA (2015 to Present)
Executive Consultant - Contract
Advisory services regarding business strategy, competitive intelligence, and energy services pricing strategies related to the company's business development efforts.

Applied Energy Group (AEG), New Brunswick, NJ (2012 to 2015)
Principal, Executive Consultant - Contract
Energy efficiency (savings) analysis methods, project procurement, and project execution. Innovative applications of existing technologies to advance the art. Industry-wide investigations. Direct responsibility for project teams, including subcontractors.

Dell Innovation Services, Peoria, IL (2012 to 2014)
Vice President, Electricity Transmission & Distribution - Contract
Design and apply substations (including modular) for emergency power supply. Develop electrical site one-line diagrams and associated loading profiles. Conduct power demand audits.

KEMA, Raleigh, NC (2006 to 2012)
Vice President, Electricity Transmission & Distribution
Strategic leadership of the U.S. technical T&D practice in North America, focusing on client issues related to electric power system T&D planning, asset management, protection and reliability, advanced technology applications, and future power systems. Direct responsibility for team of 30 professionals.

Cooper Power Systems, Franksville, WI (1989 to 2006)
Director, Industrial Development & Technical Services Marketing; Manager, Systems Integration Solutions; Director, Thomas A. Edison Technical Center; Manager, Systems Engineering Group
Technical solution development for electrical distribution automation, substations, distribution operating centers, and wind farm integration. Accountable for sales, margins, budget, and customer objectives. Directed project teams to matrix manage overall resources (which included marketing, sales, and engineering staffs) to promote services, identify opportunities, and secure business. Participated in strategic alliances and acquisitions. Managed high power laboratory (500 MVA short circuit generator), high voltage laboratory (2 million volts), and full materials laboratory, with direct responsibility for a team of 110 professionals. Managed group responsible for Modular Integrated Transportable Substation (MITS) application, design, specifications, implementation, and support (69 kV and below) (10 MVA and below).

Westinghouse Advanced Systems Technology, Pittsburgh, PA (1974 to 1988)
Manager, Transmission Planning Section; Manager, T&D Software Services
Responsible for a staff of 8 involved in the application of technical transmission and distribution software, including marketing and customer service.

Black & Veatch Consulting Engineers, Kansas City, MO (1971 to 1974)
Coop student while with the University of Missouri - Rolla

Professional Memberships

- IEEE – Life Senior Member
- IEEE Volt-VAR Task Force – Member
- IEEE Power Engineering Society – Senior Member
- IEEE Industrial Applications Society – Senior Member
- Phi Kappa Phi – Member
- Eta Kappa Nu – Member

- Tau Beta Pi – Member
- Kappa Kappa Psi – Member
- Wake County NC – *Precinct Election Official*

Professional Recognition

2016 Achieved **Life Member** status for the Institute of Electrical and Electronics Engineers (**IEEE**).

2012-18 Invited **Instructor** for University of Pittsburgh graduate course on *Smart Grid Technologies & Applications*. Subject: *Substation Automation and Protective Relaying*.

2013 Co-Founder of an industry-wide ***CVR Consortium*** focused on increasing energy savings by resolving strategic, business, and technical issues preventing more wide-spread deployment by electric utility companies.

2012 Earned ***Order of the May*** honors recognition from Carnegie-Mellon University for more than 10 years of continous and consistent support. Citation includes these words: "This special order honors those who embody all the best characteristics for which the society was originally founded in 1947."

2011 Invited **Chairman**, 2 Sessions, *Transforming the Electricity Grid*, **Carilec Renewable Energy Forum**, September 20-21, St. Thomas, US Virgin Islands.

2003 Awarded ***Honorary Professional Degree of Electrical Engineering***, University of Missouri-Rolla, based on "outstanding professional and personal achievements"

2003 Elected **President**, *Academy of Electrical & Computer Engineers*, University of Missouri-Rolla

2001 Elected VP, *Academy of Electrical & Computer Engineers*, University of Missouri-Rolla

2001 Co-Chair, Steering Committee to develop **Distribution Vision 2010 LLC (DV2010)**, consortium of Investor Owned Utility (IOU) companies

2001 Appointed **Chairman**, Technical Paper Committee, USA National Committee, **CIRED**

2000 Appointed to ***Industry Advisory Council***, Rensselaer Polytechnic Institute (RPI), Troy NY

1998 Appointed to ***Industrial Liason Council (ILC)*** for the College of Engineering and Applied Science, University of Wisconsin-Milwaukee

1997 Elected to ***Academy of Electrical & Computer Engineers***, University of Missouri-Rolla for "outstanding contributions to the profession of electrical engineering and for leadership in the community and profession." Requires minimum 20 years experience to qualify.

1991 Selected for **USA Trade Mission** on Electric Power to East Germany. Represented USA electric distribution equipment technologies. [E & W Berlin concrete wall fell Nov 1989]

1989 Appointed to ***Industry Advisory Council***, University of Missouri-Rolla

1985 *Westinghouse* ***Engineering Achievement Award*** for "high level technical contribution to the development and implementation of profitable engineering courses in the Electric Utility and Industrial markets."

1985 Awarded ***Senior Member*** status for the Institute of Electrical and Electronics Engineers (**IEEE**)

1984 Elected *Chairman* of the only **Quality Circle** in operation at Westinghouse Advanced Systems Technology (AST)

1982 Appointed to first ***Engineering Advisory Council*** for Westinghouse AST

1978 Earned ***PROFESSIONAL ENGINEER (PE) License*** from the Commonwealth of Pennsylvania

1972 Received *Outstanding Bandsman* award from Kappa Kappa Psi honors band fraternity

1969 **Valedictorian** and **Student Council President**, Grandview Senior High School

J. Scott Sommerer, CPA

Position:	Independent Consultant
Years of Experience:	36
Education:	B.S. in Economics, 1978, Phi Beta Kappa Arizona State University MBA (Finance) 1981 Indiana University Graduate School of Business

Key Qualifications:

J. Scott Sommerer, CPA has been working for and consulting with regulated and non-regulated businesses for 36 years. He has worked in the rates and regulatory departments of natural gas and telecommunications companies for 13 of those years and recently was a Director of Regulatory Compliance and Strategy. Work in these departments included creating rate cases and cost studies and critiquing these studies as an intervener in regulatory proceedings. In this regard, Scott Sommerer has worked with marginal cost-based presentations, fully distributed cost-based presentations and Total Element/Service Long Run Incremental Cost based presentations.

Scott Sommerer has also performed as an employee and as a consultant in the areas of business case development, business acquisition, business valuation, budgeting and forecasting, depreciation studies and internal auditing. This background has developed further his knowledge of cost allocation/marginal costing, economic life studies and financial controls. Scott has a background in petitioning regulators, negotiating with regulatory staff and lawyers, responding to auditors and presenting to senior executives

Starting with a natural gas transmission company, Mr. Sommerer was trained in rate of return regulation and the Uniform System of Accounts for natural gas companies. He gained familiarity with take or pay arrangements and capital planning in a utility. His work included all calculations for the purchased gas adjustment mechanism on customer bills as well as the effects of capital plans on revenue requirements.

Mr. Sommerer next worked in the telecommunications customer premise equipment business. This was a relatively recently deregulated industry at the time as AT&T was forced to allow non-Western Electric equipment to connect to its network. Mr. Sommerer functioned as a regional financial analyst budgeting the marginal cost of products and services as well as budgeting for balance sheets and cash flows and providing related variance analysis.

Mr. Sommerer then went to work for AT&T in its Financial Regulatory Matters department at a time when all of AT&T's long-distance services were rate of return regulated. During this period, he was the financial partner on a team including legal and external affairs. Together this team filed economic and legal arguments which resulted in price cap pricing for AT&T intrastate services in South Dakota and complete cessation of price regulation in Iowa and Nebraska of

intrastate services. In addition, the team used economic arguments and financial analysis in rate case proceedings to lower the access prices AT&T was paying local companies on intrastate calls.

Mr. Sommerer went on to an extensive career at AT&T in several financial areas including internal audit, fixed asset management and business case development.

After a period of working as an independent consultant on Sarbanes Oxley and valuation matters for several companies, Mr. Sommerer assumed a Director level position for a rate of return regulated rural telephone company. In this position Mr. Sommerer gained experience in managing regulatory filings with the New York Department of Public Service, the New York Department of Taxation and Finance, the New Jersey Board of Public Utilities, the Federal Communications Commission and municipal governments in New York and New Jersey. Mr. Sommerer also served on the Board of Directors of the New York State Telecommunications Association.

Currently, Mr. Sommerer is an independent consultant performing financial analysis of utilities.

Selected Professional Experience:

- He has created cost analysis of video business and led effort to obtain regulatory withdrawal from this unprofitable line of business. Created marginal cost and avoidable cost presentation for Corporate Board. Also used analysis to petition and negotiate withdrawal with New Jersey Board of Public Utilities, New York Public Service Commission and municipalities.
- Drafted petition and responded to all public utility commission data requests regarding effort to restructure telephone public utility and form a holding company. Worked alongside regulatory attorneys and negotiated with commission staff to successfully get approval.
- Performed research for the valuation of a telephone company in bankruptcy as a consultant.
- Developed a superior variance analysis process for telecommunications revenues incorporating access minutes, transmission speeds and midyear price changes.
- Responded to internal control requirements regarding revenue recognition for financial reporting by writing narrative of processes, establishing documentation for source documents used, explaining reconciliations between billing systems and call processing systems.
- Led effort to conform with FCC rules on allocation of overhead expense in cost studies and brought together accounting and general management personnel to discuss approaches after formation of a new holding company with a service company. Defended new allocation technique for overhead and related revenue requirement impacts.
- Led effort for regulatory approval of acquisition of an unregulated telecommunications company. Wrote draft of petition. Responsible for all discovery responses to commission questions.

- Led effort to increase price of New Jersey telephone services 300%. Wrote draft of petition sent to New Jersey Board of Public Utilities to request price increases. Responded to commission staff requests and negotiated a settlement with Office of Rate Counsel.

- Lowered property taxes by filing for economic obsolescence and negotiating with New York State Department of Taxation and Finance.

- Performed analysis of special taxes and surcharges assessed telecommunications services and made necessary changes by working with billing IT professionals.

- Worked on cutover of billing system for telecommunications service to an external vendor with IT personnel and examined parallel test results prior to giving ultimate approval.

- Responded to data request from FCC by investigating possibility of using external I/S vendor. Examined test results from vendor and negotiated contract with them to perform needed output for data request.

- Led interface with external independent auditors for substantially 25% of corporate revenues and successfully explained and defended revenue recognition of subsidies received as a telecommunications provider.

- As a consultant for a Voice Over Internet Protocol telecommunications corporation recovering from bankruptcy status, documented revenue recognition process by interviewing “C” level executives and preparing Sarbanes Oxley required narrative.

- As a consultant for a medical device company, gathered evidence and judged control effectiveness based on tests. Tested controls for cash management, inventory, procurement, tax payments, entity wide controls, and capital expenditures.

- As a consultant for an investment company, created database for administration and monitoring of all processes and controls of a major business unit

- As a consultant for a retailer compiled, tested and presented retail client's policies and procedures for corporate governance and entity wide controls to address independent auditor concerns.

- As a consultant for a valuation firm determined the valuation of a privately-held telephone company, by using firm's database to select comparable data and using firm's prescribed format for basis of final report.

- Worked as part of a group to ascertain if acquisition of certain assets from another telecommunications provider would add value to AT&T, defined several scenarios for various asset groups and related network savings, assisted with development of cash flow models and market-based models for valuation under several scenarios, created presentation for higher management.

- Worked as part of three-person team to assure top management would see business cases which are comparable. Result was creation of a uniform way to treat tax depreciation, operating cash flow and working capital in financial models.

- Monitored conversion efforts and verification testing on a cutover from a legacy depreciation system to a customized ORACLE based system. Ultimately approved cutover to the first group depreciation module ORACLE had ever developed for a utility.

- Audited the capital approval and expenditure processes for a telecommunications network and documented them adequately for independent auditor approval of related internal controls.

- Audited the real estate management by network operations focused on lessee and lessor situations. Prepared an audit report which outlined management billing errors as a lessor costing the company money.

- Provided financial backup for filings as part of a regulatory team in the Midwest. The team met its objectives of lessening and eliminating price regulation in several states. Also produced financial analysis on filings of telephone access providers that resulted in successful intervention in rate cases and lowered access costs paid.

- Successfully implemented a change in budgeting for a telecommunications equipment and maintenance provider from a bottom up to a top down approach.

Work History:

JSS Advisors Independent Consultant, Bernardsville, NJ, 2015 to Present

- Providing regulatory, internal financial control and valuation advice to businesses in the northeast

Alteva Inc. (Known as Warwick Valley Telephone Company) Warwick, NY 2007 to 2014

Director, Regulatory Compliance and Strategy

Manager Regulatory and Fixed Assets Reporting

- Created financial statements for filing with 4 regulatory bodies
- Performed cost studies for company management and government regulators
- Established and performed controls regarding revenue assurance and carrier billing activities
- Prepared revenue and expense budgets and monthly variance analysis for carrier revenues, government mandated surcharges and fees, and amortization and depreciation
- Position eliminated due to acquisition of Alteva, Inc. by out of state company

JSS Advisors Independent Consultant, Bernardsville, NJ, 2004 to 2007

- Providing, internal financial control and valuation advice to businesses in the northeast

AT&T, Bedminster, NJ 2000 to 2004

Finance Manager

- Responsible for preparing over 20 business cases annually involving software development and capital expenditures. All cases developed with NPV, ROI and sensitivity analysis. Marginal and fixed cost development.
- Prepared acquisitions analysis of local telephone companies related to corporate plans for nationwide offering of local telephone service to business customers

AT&T, Bedminster, NJ 1997 to 2000

Manager, Depreciation Studies

- Responsible for annual economic life studies
- Responsible for documentation of depreciation rates in a group depreciation context for auditors and corporate controller approval
- Responsible for calculating $3.5 Billion annual depreciation budget and monthly results

AT&T, Short Hills, NJ 1994 to 1997

Internal Auditor

- Financial audits of Network expenses and capital expenditures and sales of facilities

AT&T, Basking Ridge, NJ 1991 to 1994

Financial Analyst Consumer Services Business Unit

- Analysis of revenue and expense allocations to the Business unit

AT&T Chicago, IL 1987 to 1991

Financial Analyst Financial Regulatory Matters

- Preparation of financial results based on state specific regulatory reporting
- Examined the impact of regulatory changes on financial results
- Provided financial support for regulatory petitions and interventions in 3 states

Wheelabrator International, Mishawaka, IN 1986 to 1987

International Accountant

- Performed all monthly consolidating entries for 5 international subsidiaries

ROLM, Houston TX 1983 to 1985

Financial Analyst

- Responsible for budgeting and forecasting for three sales and service locations

- Budgeting for departmental overhead, marginal cost of service, revenue and balance sheets
- Capex and headcount budgeting

United Gas Pipe Line, Houston TX 1982 to 1983

Rate Analyst

- Accounting for refunds to customers
- Forecasts of rate change impacts on revenues
- Forecasts of purchased natural gas prices
- Forecast of capital expenditures impact on revenue requirements

Current or Past Professional Affiliations

- Financial Executives International
- Financial Executives Networking Group
- Member of Board of Directors of New York State Telecommunications Association
- Member of Board of Directors of Baroque Orchestra of New Jersey
- New Jersey Society of CPAs
- American Institute of Certified Public Accountants
- National Association of Certified Valuators and Analysts

Richard J. Kuczkowski

Position:	Consultant Former Communications Executive
Years of Experience:	40
Education:	Columbia University: PhD (with Distinction), English & Comparative Literature; MA (with High Honors) Fordham College: BA (summa cum laude in cursu honorum) Williamsburg Development Institute Phi Beta Kappa

Key Qualifications:

Extensive, multifaceted experience in communications/corporate communications, a very broad range of editorial/writing assignments, training, and consulting in utility industry and environmental/low-level radioactive waste areas. Highlights and significant projects include:

- Technical writing in medical research and other areas, many reports for utilities, and articles for Public Utilities Fortnightly.
- Business seminar and continuing professional education program development in product tampering, utility issues, R&D management, and development and overall management of Stone & Webster's 3-week Utility Management Development Program for promising utility managers; training programs in utility issues and industry concepts for General Electric's and IBM's utility practice staffs.
- Safety analysis reports, health physics reports, environmental impact statements, etc.
- CEO speeches and reports on storm restoration and 9/11 terrorist recovery for New York City's Metropolitan Transportation Authority, as well as public reports on a range of metropolitan transportation and related issues.
- Work on utility ERPs and audits includes emergency planning and reports for Long Island Lighting, Texas Utilities, and Southern Indiana Gas & Electric.

Professional Experience:

- 2010-present Consultant in communications and writing, editorial services and development
- 2000-2010 Metropolitan Transportation Authority (NYC): Associate Chief, Editorial Services

1999-2000 American Craft Museum (NYC; now Museum of Art & Design): Associate Development Officer

1998-1999 Foundation of the University of Medicine and Dentistry of New Jersey (Newark): Associate Director of Development

1997-1998 Consulting & Contract Assignments, including Lyda Associates (nutrition newsletters & consulting), AT&T Solutions (White Paper on maintaining customer relationships in the age of electronic commerce), Millennia Group (evaluation and recommendations for improvement of design and content of seminar on responses of utility industry to deregulation; recommendations for marketing seminar), Stone & Webster Management Consultants (writing and editing newsletter for natural gas industry)

1985-1997 Stone & Webster Management Consultants, Inc. (NYC): Assistant Vice President

1984-1985 Dames & Moore (White Plains, NY): Senior Project Administrator

1983-1984 Dominican College (Blauvelt, NY): Director, Continuing Education

1981-1983 Professional Education Center (NYC): Program Development Director

1979-1981 Columbia University (NYC): Coordinator, Centennial Activities and Alumni Relations

1971-1979 Bronx Community College (NYC): Assistant Professor

1968-1970.1 Columbia University (NYC): Instructor

Publications & Presentations:

"The Need to Communicate," 10th Annual Utility Risk Management Seminar, Lake Tahoe, Nevada

"Lessons Learned from the US Deregulation Process," World Energy Council Forum, Neptun, Romania

"Why Won't They Listen?" 7th Annual Utility Risk Management Seminar, Mystic, Connecticut

Day-long module on presentation skills for North East Public Power Association's Certificate Program

"The Audit: What You Must Know to Perform, Manage, or Survive an Audit," video training program; developed content & presented modules on effective audit report writing to create an interest in and commitment to positive change

"Writing Proposal Letters That Sell," "Presentations to Clients," etc. Stone & Webster Management Consultants Training Program

"Effective Presentations: Speaking for Your Company," Utility Management Development Program, Iowa Utility Association Management Conference

"Effective Writing," Utility Management Development Program, Dynamion Society (Stone & Webster Engineering Corporation

Over 100 pieces in various publications (including The Nation, Commonweal, Gadget, New York Arts Journal, Library Journal, St. Louis Literary Supplement, etc.)

Janice P. Grant

Position:	RCG Corporate Secretary, Project Administer Former Human Resources Executive
Years of Experience:	40
Education:	M.Ed. Counseling Northern University, Boston, MA B.S.Ed. Spanish University of Georgia, Athens, GA

Key Qualifications:

Is the Corporate Secretary for the River Consulting Group, Inc. Currently, acting as the Project Administer for two Connecticut Gas Management Audits.

Skilled in all aspects of career consulting and counseling including coaching, assessment, designing and implementing successful career development programs. Specific areas of expertise include development of effective resumes, written communication, development of target job markets, networking strategies and helping clients adapt to corporate restructuring and change. Regular guest speaker at career fairs and for government agencies in the Atlanta area.

Additional expertise in Human Resource Management including Employee Relations, Recruitment, Policy Development and Compensation.

PROFESSIONAL EXPERIENCE

2010-Present Corporate Secretary and Project Administer, River Consulting Group, Inc.

Currently managing two Connecticut management audits for PURA, including Southern Connecticut Gas Corporation and Connecticut Natural Gas Company

1992 – 1996 Outplacement Consultant with EnterChange, Inc. in Atlanta Georgia.

Clients included major corporations, e.g. Coca-Cola, Turner Broadcasting, Cox Communications, Mohawk Carpets, BellSouth, Equitable Insurance, Kraft and Heinz Foods.

1978 – 1991 Human Resource Management in the Computer Industry.

Melita International, Inc. Norcross, Georgia

	Harris Lanier Corporation	Atlanta, Georgia
	AGS Computers	Newark, New Jersey
	Software AG of North America	Reston, VA
Prior to 1978	Seven years in public and private education at the secondary and college level	
Writing Experience	Training manuals	
	Policy and procedure manuals	
	Compensation and job evaluation manuals	
	Employee handbooks and newsletters	

Education

M.Ed.	Counseling	Northeastern University, Boston, MA
B.S.Ed.	Spanish	University of Georgia, Athens, GA