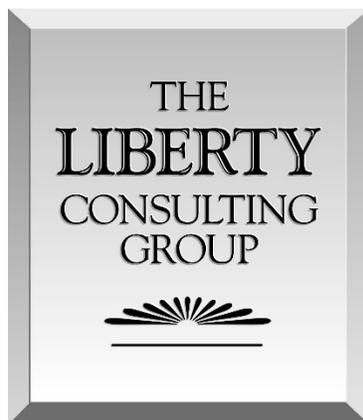


**Proposal to Provide
Outside Consulting Services to
Assist the Commission Staff in the
Analysis of ELL's
Viability Study
Entergy Mississippi, LLC**

Presented by:

The Liberty Consulting Group



August 19, 2020

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THE
LIBERTY
CONSULTING GROUP

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August 19, 2020

Louisiana Public Service Commission
Attn: Kathryn H. Bowman, Executive Counsel
602 North Fifth Street (Galvez Building) (70802)
Baton Rouge, Louisiana 70821-9154

**Re: Request for Proposals re: an Economic Viability Study of Entergy Louisiana,
LLC's Legacy Units**

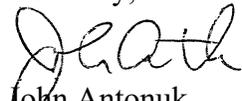
Dear Ms. Bowman:

Please find enclosed a proposal from The Liberty Consulting Group to perform Fuel Audit Services regarding Mississippi Power Company. Liberty is especially well qualified for this engagement, having served 37 U.S. utility regulatory authorities (and three in Canada) in almost 500 projects across 30+ years of service to them. We offer an exceptionally well qualified and experienced team. The core team members average over 15 years' tenure and 150 projects with us. Their breadth and depth of experience shows in Liberty's past performance of multiple reviews of utility generation unit portfolio management and operations, economics and valuation, and short- and long-range planning. The future viability of legacy units and assessing their physical condition and needs have formed a recurring part of our extensive work in examining power supply issues for utility regulators.

Liberty is pleased to propose a team that with strong qualifications and, as this proposal will demonstrate, one that has recent and relevant experience in providing very similar guidance in other jurisdictions. Our team brings extensive knowledge of the Entergy Operating Companies and Power Generation Organizations supporting them, through our previous projects in examining related issues on behalf of the Mississippi and Texas Commissions.

Liberty is grateful for the opportunity to compete for work to serve the Commission. Please let me know if you have any questions or require any further information.

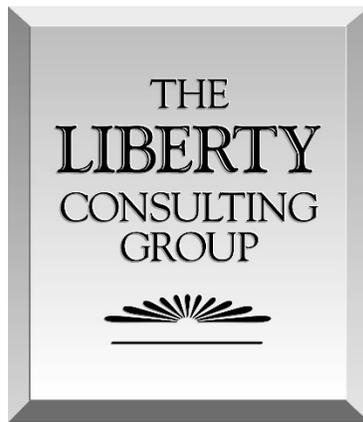
Sincerely,


John Antonuk
President

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I. Introduction and Summary

A. Work Scope and Objectives

1. Project Description

Entergy Louisiana LLC (ELL), a wholly-owned subsidiary of Entergy Corporation, is a regulated electric and gas utility serving over a million electric customers. With a generating portfolio of approximately 8,900 MW, ELL is a key member of the Midcontinent Independent System Operator (MISO). The portfolio is comprised of nuclear, coal, and natural gas assets (combined cycle, simple cycle CT, and “legacy” steam turbine units). The age and condition of the portfolio members varies widely, and is at the core of this initiative.

| Name | MW | Fuel | Year |
|--------------------------------|-----|-------------|------|
| Acadia Unit 2 (CCGT) | 534 | Natural Gas | 2002 |
| Big Cajun 2 Unit 3* | 34 | Coal | 1983 |
| Calcasieu Unit 1 (CT) | 144 | Natural Gas | 2000 |
| Calcasieu Unit 2 (CT) | 160 | Natural Gas | 2001 |
| J. Wayne Leonard Unit 1 (CCGT) | 926 | Natural Gas | 2019 |
| Lake Charles Unit 1 | 877 | Natural Gas | 2020 |
| Little Gypsy Unit 2 | 415 | Natural Gas | 1966 |
| Little Gypsy Unit 3 | 517 | Natural Gas | 1969 |
| LA Station 2 Unit 10 | 40 | Natural Gas | 1950 |
| LA Station 2 Unit 11 | 40 | Natural Gas | 1950 |
| LA Station 2 Unit 12 | 58 | Natural Gas | 1953 |
| Nelson Unit 4 | 425 | Natural Gas | 1970 |
| Nelson Unit 6* | 85 | Coal | 1982 |
| Ninemile Unit 4 | 730 | Natural Gas | 1971 |
| Ninemile Unit 5 | 744 | Natural Gas | 1973 |
| Ninemile Unit 6 (CCGT) | 553 | Natural Gas | 2014 |
| Ninemile Unit 3 (CCGT) | 241 | Natural Gas | 2002 |
| Perryville Unit 1 (CCGT) | 526 | Natural Gas | 2002 |
| Perryville Unit 2 (CT) | 152 | Natural Gas | 2001 |
| Sterlington Unit 7A (CT) | 47 | Natural Gas | 1974 |
| Sterlington Unit 3 (CCGT) | 506 | Natural Gas | 2003 |
| Sterlington Unit 4 (CCGT) | 503 | Natural Gas | 2003 |
| Waterford Unit 1 | 411 | Natural Gas | 1975 |
| Waterford Unit 2 | 417 | Natural Gas | 1975 |
| Waterford Unit 4 (CT) | 33 | Oil | 2009 |

* MW shown represent ELL's share of unit

With the addition of Lake Charles, a state-of-the-art combined cycle power plant that added 980 MW to the portfolio earlier this year, and the 2021 expected completion of the 361 MW Washington Parish peaking facility, ELL's portfolio has undergone significant modernization. With that, though, comes the need to consider the orderly and economically-optimized retirement of older, less efficient assets. This initiative is designed to provide the LPSC with expert guidance on which of the assets in ELL's portfolio should be phased out, how, and when.

2. Summary of Liberty's Proposal

Liberty is well suited for this initiative, given our role in examining Entergy supply planning and assets for the Texas and Mississippi commissions. We are very familiar with the Entergy system and its generating assets, and we have a strong grounding in MISO operations generally and Entergy's operations within MISO specifically. Our proposal will capitalize on this experience and expertise to assess the viability of each unit in ELL's portfolio. Our analysis will be based on engaging closely with ELL to provide key information on its assets while projecting market conditions and resulting economic impacts of operations with and without specific assets being tested for viability. All of this will be within the confines of the physical limitations and conditions of the assets, which Liberty will assess at a high level. In general, Liberty will use ELL's Viability Assessment as a basis of its work, verifying, validating, and critiquing as appropriate, and requesting alternative analyses and model runs as required.

The fundamental parameter that will be developed and tested for each unit is the cost of producing power. The *decision factor* in the ideal portfolio is the portfolio that results in the least cost of production. Whereas each individual generating asset has its unique operational and economic parameters, the portfolio as a whole must be optimized in order to find the least cost solution to generating MWHs. The result of this endeavor will be to develop a portfolio and resource plan that, over time, eliminates units that are no longer economically viable (beneficial to ELL). In this manner, the Commission will have insights to exactly which units should be retired on a recommended schedule.

This approach will require a coordinated effort with ELL and the organization(s) within ESI's SPO group that performs modeling and analysis on behalf of Entergy's operating companies. Liberty has worked with this group several times in the past and is knowledgeable of the people, systems, and approaches employed. The economic modeling (cost of production) will be calculated by SPO with their production cost/market models at the request of Liberty through Data Requests, for a variety of scenarios and data sensitivities. The outputs of these will serve as the basis of our review of the viability of the power plant units.

B. The Liberty Consulting Group

1. Our Firm

The Liberty Consulting Group has been serving the utility industry for over 30 years. Liberty has earned a strong reputation for service delivery, however novel, complex, or time constrained the issues it has had to address and has conducted for utility regulators more than 300 examinations of energy-utility management, operations, and supply. Liberty has an exceptional breadth of clients and strength of reputation for candor, thoroughness, and objectivity in dealing with a wide variety

of issues. Liberty has broad experience in the electricity, natural gas, and telecommunications businesses.

2. Selected Case Studies

We highlight below two recent case studies of our relevant work.

a. Competitiveness of PSNH Fossil/Hydro Fleet

Project Date: 2013

Client: New Hampshire Public Utilities Commission

Client Contact: Thomas Frantz

Client Phone Number: 603-271-2431

Project Summary:

A number of years ago, restructuring in New Hampshire led to the divestiture of some supply assets, but left the state's dominant provider of electricity (Public Service Company of New Hampshire, or PSNH) in possession of fossil and hydro assets. As gas prices fell several years ago, the fossil units moved from a strongly competitive market position to an increasingly noncompetitive one. This transition left PSNH customers taking the equivalent of standard offer service (termed "default service" in the state) paying ever higher prices relative to market. At the same time, coal units with better operating characteristics were selling for small fractions of book cost, or simply closing. Environmental risks to coal generators were also increasing. Factors such as these led the New Hampshire Public Utilities Commission to seek an examination of the short and long term competitiveness of PSNH's fleet, and of alternatives that might further or totally remove PSNH from the generation side of the business.

Working on an integrated basis with Commission Staff, Liberty conducted an analysis, completed in the past month or so, of the competitiveness of the fleet, addressing current and expected energy market conditions, the effects of increased cycling of units designed for baseload operations, potential costs associated with compliance with current and potentially increased environmental restrictions, impacts on the competitive market place, and other factors important for the Commission to consider in determining what future role might exist for utility-owned supply resources.

A copy of Liberty's testimony in this case can be found at the following link:

https://www.puc.nh.gov/Regulatory/Docketbk/2014/14-238/TRANSCRIPTS-OFFICIAL%20EXHIBITS-CLERKS%20REPORT/14-238_2016-02-04_EXH_Q.PDF

b. Entergy Texas Exit from the Entergy System Agreement

Project Dates: 2012 - 2017

Client: Public Utility Commission of Texas

Client Contact: Davida Dwyer

Client Phone Number: 512-936-7027

Project Summary:

The Entergy operating utilities find themselves in the midst of a massive transition that is changing the face of the companies. First, the Entergy utilities are becoming members in the Mid-continent

Independent System Operator, or MISO. Second, the sale of Entergy transmission assets to ITC Holdings Corp. ("ITC"), Mid South TransCo LLC, Transmission Company Texas, LLC, and ITC Midsouth LLC (together, "ITC") has been agreed to by the parties to the transaction, although it has not received all required regulatory approvals. Third, the Entergy Services Agreement ("ESA"), which has governed how the Entergy utilities work together and how costs and benefits are allocated among the companies, is in the process of diminishment and potential dissolution. Entergy Arkansas, Inc. ("EAI") and Entergy Mississippi, Inc. ("EMI") will each be leaving the ESA within the next two years, and Entergy Texas, Inc. ("ETI") has committed to give its notice to exit the System Agreement, unless otherwise ordered by the Public Utility Commission of Texas ("PUCT"), by October 31, 2013.

Liberty provided the PUCT with technical consulting services related to the compliance proceeding PUCT Docket 40979 concerning the membership of ETI in a regional transmission organization and ETI's participation in and orderly transition out of the ESA. Liberty analyzed the impact of ETI leaving the System Agreement and the earliest feasible date to do so. The ESA Transition Study includes what steps must be taken by ETI to:

- Function as an independent Load Serving Entity, including resource planning, generation operations planning and generation dispatch
- Perform economic dispatch of its generation
- Operate its transmission assets (dependent upon ETI's proposed merger of its transmission assets with ITC Holdings Corp.)
- Operate independently and perform functions that are currently provided by the Entergy System pursuant to the terms and conditions of the System Agreement.

John Antonuk directed Liberty's work in this engagement, and Dr. James Letzelter led the reviews of Power Supply issues, including efforts to develop a power supply strategy and resulting portfolio that is optimized for the needs of Texas customers. The engagement included a comprehensive evaluation of revenues and costs (for existing facilities, future planned facilities, and market alternatives) for capacity, energy, ancillary services, transmission, and for providing the organizational support necessary to transfer supply planning and operations functions from a central service company to the operating utility. Liberty provided a year-by-year analyses of costs and revenues over a more than 10 year period, comparing the Texas utility's revenues and costs under two scenarios: (a) remaining in the ESA with the other Entergy operating utilities, and (b) leaving the ESA and providing for conducting power supply and transmission on a stand-alone basis. We evaluated:

- The cost and value of ETI's existing capacity resources
- The relation of existing resources to MISO reserve requirements
- Future acquisition considerations
- The effects of termination of Purchased Power Agreements
- Costs and revenues associated with energy supply (purchases and sales) from existing and market sources
- Constraints, costs, and benefits associated with continued ESA membership
- Likely future transmission needs and costs
- Current and future capacity costs
- The organization, staffing, and control needs required to transition to stand-alone operations by Entergy's Texas operating utility

- Models of plant, capacity, energy, transmission, and other costs and revenues by multiple consultants participating in Texas regulatory proceedings addressing Entergy's proposed move to MISO and the Texas company's ESA exit.

c. Arizona Public Service's Acquisition of Four Corners Units

Project Dates: 2015

Client: Arizona Corporation Commission

Client Contact: Terri Ford

Client Phone Number: 602-542-0858

Project Summary:

Liberty completed for the Arizona Commission staff a project to examine the acquisition of an interest in one of the country's largest coal-fired generating stations (Four Corners in Arizona) made available by California's decision that effectively required Southern California Edison to divest its interest in the station. That review included an examination of short- and long-term planning issues including environmental risk, fuel economics, transmission system capability, and demand and usage growth. Liberty's review also evaluated the various rate and revenue requirement impacts resulting from the acquisition. Liberty submitted testimony on both the prudence of the acquisition and the accounting issues. The prudence testimony:

- Examined use and results of PROMOD-based modeling to assess unit economics
- Evaluated the validity of APS' analytical approach, data, and models
- Updated and confirmed the APS valuation
- Assessed APS' need for capacity
- Assessed the timing of the acquisition
- Evaluated the risks associated with the transaction
- Identified the ancillary benefits of the transaction.

A copy of Liberty's testimony in this case can be found at the following link:

<https://images.edocket.azcc.gov/docketpdf/0000154818.pdf>

3. Our Senior and Experienced Team's Unmatched Capabilities

Liberty prides itself equally on: (a) the wide and deep industry experience of its team, and (b) their long tenure with Liberty. Our approach to staffing engagements of this type concentrates on the use of long-time Liberty consultants. Our team members have also acquired very substantial, senior outside experience, with public utilities, energy companies, and state and federal utility regulatory bodies.

Liberty offers what we consider to be a team that optimizes the benefits of:

- Beginning from a core that has long experience working together on energy audits and examinations for utility regulators
- Specialists whose specific backgrounds are specifically suited to particular elements of focus in the RFP
- Continuity in team membership and a smooth work transition from the recent and relevant work cited in this proposal.

John Antonuk, a Liberty founder, will serve Engagement Director, in order to provide for a single source of overall accountability within Liberty for assuring successful satisfaction of all project commitments. His responsibilities in fuel and energy management reviews have included many Liberty examinations of fuel and energy acquisition, dispatch, wholesale energy transactions, commodity trading, power plant operations, and fuel management. He has testified twice in support of the introduction (design, included costs, auditing, and administration) of fuel and energy adjustment clauses at Arizona Public Service Company and four times at Nova Scotia Power. He has testified as well in many other rate and rate-related proceedings, on many occasions in support of Liberty's examinations of fuel and energy procurement and management. Formerly an attorney on the staff of the General Counsel to the Pennsylvania Public Utility Commission and Assistant Counsel for Regulatory Affairs at Pennsylvania Power & Light Company, he has also managed and conducted many commission regulatory proceedings involving automatic fuel and energy cost recovery.

John managed Liberty's multi-year engagement to assist the Staff of the Public Utility Commission of Texas in evaluating the costs and benefits of ESA exit by Entergy Texas and entry into the MISO. John also directed Liberty's subsequent engagement to examine the benefits produced since departing the ESA, and the costs and benefits of remaining in MISO into the future. John also led Liberty's efforts in the other case studies highlighted above, at PSNH and at APS. He has led or directed nearly all of Liberty's substantial number of reviews of energy adjustment clauses, electric supply and gas supply at electric utilities, including:

- Unitil Maine
- Liberty Utilities New Hampshire
- Mississippi Power (three audits)
- Entergy Mississippi (four audits)
- Consolidated Edison Company of New York
- Interstate Power and Light
- Iberdrola USA
- Nova Scotia Power (four separate fuel and power audits, in addition to annual reviews)
- Duke Energy Ohio
- Arizona Public Service
- Arizona Electric Power Cooperative
- Southwestern Public Service
- Long Island Power Authority.

Dr. James ("Jim") Letzelter has over 30 years of experience in the energy and utilities industry. He has served as a management consultant, project manager, and executive in the field. Jim brings a valuable mix of technical expertise and strategic thinking. His expertise includes power generation market analysis, power plant valuation, ISO/RTO market strategy, production cost modeling and financial analysis. Jim plays a key Liberty role on assignments involving production cost modeling, transmission issues, and general power production and transaction analytics.

Jim led the analysis determining the economic viability of PSNH's generating portfolio, including a review of energy and capacity markets, asset condition, and overall financial performance. This led to the divestiture of PSNH's fossil portfolio. Jim served a primary role in Liberty's multi-year

engagement to assist the Staff of the Public Utility Commission of Texas in evaluating the costs and benefits of Entergy System Agreement exit by Entergy Texas and entry into the MISO. He also worked on Liberty's engagement to examine the benefits produced since ETL's entry into MISO, and the costs and benefits of remaining in MISO into the future. Jim led the analysis of APS's proposed acquisition of the Four Corners generating station from Southern California Edison. Jim served as the expert witness in support of the acquisition, based on his financial and risk analyses that indicated the long-term economic viability of the asset.

Prior to joining Liberty, Jim performed dozens of analyses on the economic viability of power generating assets. His work has been used for regulatory proceedings, litigation, development, asset divestiture, retirement, acquisition, and optimization. His asset valuations for these purposes totals over \$20 billion.

Jim has lead Liberty's reviews of generation, plant operations, and dispatch issues as part of our Management Review of Mississippi Power. Jim reviewed production cost models and processes in our prior fuel and energy audits of Mississippi Power for the Mississippi PSC. His work focused on the need for implementation of analytical best practices for processes and models that are used for key operational and strategic decisions. Jim is currently serving in a similar role in our current audit of Entergy Mississippi for the Mississippi PSC.

Kevin Cellars is an experienced nuclear and fossil power plant operations, construction, engineering, and project development executive. He served as vice president leading a major electric company's more than 300-person division of professional and craft personnel responsible for a fleet of fossil-fired electricity generating units. Kevin has served in a lead role in several Liberty audits involving utility generation organizations and power plant operations reviews, including those at Entergy Mississippi, Mississippi Power, Newfoundland and Labrador Hydro, and Nalcor Energy.

For Exelon, one of the country's very largest electricity generators, he has had executive responsibility for engineering and technical services for a more than 12,000 megawatt fleet consisting of coal, oil, natural gas, and hydro plants. He also served as senior performance improvement director for Exelon's efforts to design a performance improvement plant for the Oyster Creek Nuclear Power plant. This work included developing and implementing action plans for projects, outage management, engineering, maintenance, radiation protection, operations, and others. This effort led to a standard performance improvement method applied by Exelon across its very extensive fleet of nuclear stations. Serving as Vice President, Business Operations for Exelon's power business, was directly responsible for finance, information technology, supply, and facilities, leading business planning, finance, cost control, inventory control, purchasing, performance management, and IT support for all plants.

In addition to his extensive fossil generation executive and management experience, Kevin has a long and impressive career in nuclear power operations. It began in the nuclear navy, where he served as deck officer on a U. S. Navy, nuclear submarine, responsible for safe operation and supervision and operation of the nuclear propulsion plant.

Michael Antonuk served as Support Consultant or Senior Analyst in all of Liberty's recent and relevant engagements cited in this proposal, including the three case studies cited above. He has performed power plant performance benchmarking in our recent audits of Entergy Mississippi and Mississippi Power for the Mississippi PSC. Michael has also Liberty's fuel and energy supply reviews at Nova Scotia Power, described in this proposal. This includes four separate FAM audits where he undertook investigations of the relationships between utility and non-utility natural gas and power transactions, an Affiliates Audit, and multiple reviews of GRA and base cost of fuel applications. Other similar work includes review of Arizona Public Service, Arizona Electric Power Cooperative (twice), Consolidated Edison, Interstate Power and Light, NYSEG, RG&E, and Southwestern Public Service Company. He has also served as Project Coordinator and Senior Analyst for Liberty's review of procurement activities at New Jersey Natural Gas, South Jersey Gas, Elizabethtown Gas, People's Energy, and Virginia Natural Gas. These audits involved extensive reviews of natural gas sales and purchases conducted by both regulated and non-regulated entities and the

II. Liberty's Relevant Experience

A. Nationwide, Multi-Decade Service to Utility Regulators

For more than 30 years, Liberty has performed a broad array of comprehensive and focused engagements including power and energy purchases and sales, fuel and energy supply examinations, management audits, reviews of construction and O&M programs, project, and initiative expenditures and results, reliability programs and results assessments (both general and following efforts to recover from major reliability disrupting events or conditions), reviews of corporate governance in utility holding company structures, examinations and testing of affiliate transactions and cost allocations, and a wide variety of other consulting engagements. Liberty has served over two-thirds of U.S. state and Canadian provincial utility regulatory authorities, as listed in the table below.¹ Liberty has performed or is performing many projects for U.S. regulators, and has conducted management, operations, and affiliate reviews for utility authorities in Canada and in Central America.

Liberty's North American Utility Regulatory Clients

| | | | |
|----------------------|-------------|----------------|---------------|
| Alberta | Idaho | New Hampshire | Oregon |
| Arizona | Illinois | New Jersey | Pennsylvania |
| Arkansas | Indiana | New Mexico | South Dakota |
| California | Iowa | New York | Tennessee |
| Colorado | Kentucky | Newfoundland | Texas |
| Connecticut | Maine | North Carolina | Utah |
| Delaware | Maryland | North Dakota | Vermont |
| District of Columbia | Minnesota | Nova Scotia | Virginia |
| Florida | Mississippi | Ohio | Washington |
| Georgia | Montana | Oklahoma | West Virginia |
| Hawaii | Nebraska | Ontario | Wyoming |

A testament to the strength of Liberty's performance is the number of commissions that have asked the firm back to perform repeat engagements, sometimes in circumstances or on subject areas far different and more challenging than those under which Liberty first served them. The unifying attribute of Liberty's work for commissions in its long service to them lies in the ability to help them to deal with the especially difficult regulatory challenges that take place when regulatory policy intersects with complicated operations requirements. Liberty does its best work in managing the "traffic" that flows through these crossroads. Dealing with highly technical or controversial management or operations issues that fall out from important changes in regulatory policy or major unforeseen events has characterized Liberty's work for commissions.

B. Recent Liberty Resource Planning and Sustainability Engagements

Beginning more than 10 years ago, Liberty has performed many engagements addressing electric utility resource planning, both long- and short-term.

¹ These other projects include evaluating restructuring proposals and impacts, assessments of utility financial separation and integrity, merger and acquisition reviews, revenue requirements analysis, among others.

1. Arizona Public Service Acquisition of Four Corners Units 4 and 5

Liberty completed for the Arizona Commission staff a project to examine the acquisition of an interest in one of the country's largest coal-fired generating stations (Four Corners in Arizona) made available by California's decision that effectively required Southern California Edison to divest its interest in the station. That review included an examination of short- and long-term planning issues including environmental risk, fuel economics, transmission system capability, and demand and usage growth. Liberty's review also evaluated the various rate and revenue requirement impacts resulting from the acquisition. Liberty submitted testimony on both the prudence of the acquisition and the accounting issues. The prudence testimony:

- Examined use and results of PROMOD-based modeling to assess unit economics
- Evaluated the validity of APS' analytical approach, data, and models
- Updated and confirmed the APS valuation
- Assessed APS' need for capacity
- Assessed the timing of the acquisition
- Evaluated the risks associated with the transaction
- Identified the ancillary benefits of the transaction.

2. Competitiveness of PSNH Fossil/Hydro Fleet

A number of years ago, restructuring in New Hampshire led to the divestiture of some supply assets, but left the state's dominant provider of electricity (Public Service Company of New Hampshire, or PSNH) in possession of fossil and hydro assets. As gas prices began to fall in recent years, the fossil units moved from a strongly competitive market position to an increasingly noncompetitive one. This transition left those PSNH customers that take the equivalent of standard offer service (termed "default service" in the state) paying ever higher prices relative to market. At the same time, coal units with better operating characteristics were selling for small fractions of book cost, or simply closing. Environmental risks to coal generators were also increasing, producing ever stronger cost pressures and concern among nationally recognized and local environmental stakeholders. Factors such as these led the New Hampshire Public Utilities Commission to seek an examination of the short- and long-term competitiveness of PSNH's fleet, of the potential impacts of response to both current and potential environmental restrictions, and of alternatives that might further or totally remove PSNH from the generation side of the business.

Working on an integrated basis with Commission Staff, Liberty conducted an analysis of the competitiveness of the fleet. Our work provided a valuation of the power plants, addressing current and expected energy market conditions, the effects of increased cycling of units designed for base-load operations, potential costs associated with compliance with current and potentially increased environmental restrictions, impacts on the competitive market place, and other factors important for the Commission to consider in determining what future role might exist for utility-owned supply resources.

Liberty assisted the staff of the New Hampshire Governor's Office in proceedings seeking to settle prudence issues regarding the cost of scrubber installation and the divestiture of the PSNH power plants. Liberty played a key role in examining plant valuations, looking at likely capital costs and operating expenses, addressing the merits of settling the prudence issues, evaluating the benefits

of divestiture of remaining generation assets and securitizing stranded costs, and reviewing rate impacts.

3. Entergy Texas Exit from the Entergy System Agreement

Liberty assisted the Public Utility Commission of Texas (PUCT) in Entergy Texas' exit from the Entergy System Agreement. Entergy's Texas operating company (ETI) had, like its five companion companies in Arkansas, Louisiana, and Mississippi, operated under a common supply resource planning, sharing, and operation approach. PROMOD served as a foundational element of forecasting unit economics compared to expected market conditions. Our work involved extensive review of PROMOD-generated results. We are now examining the costs and benefits of ETI's having joined the Midcontinent ISO (MISO) and the projected costs and benefits (compared to alternatives) of continued MISO membership.

Changing market conditions and the entry of the Texas operating company into a new system operator (Mid-Continent Independent System Operator, or MISO) led to decisions to exit the agreement under which those Entergy operating companies have arranged for power supply for many decades. Liberty worked with the Texas Commission's staff to assess the economics of exiting the agreement, to consider the individual supply-planning needs and circumstances that the Texas operating company, and the Commission, had to address after exit, and to ensure a well-planned and executed transition path to independent operation.

Liberty provided the PUCT with technical consulting services concerning movement of ETI to a regional transmission organization and ETI's participation in an orderly transition out of the ESA. Liberty analyzed the impact of ETI's leaving the System Agreement and the earliest feasible date to do so. The ESA Transition Study addressed what steps must be taken by ETI to:

- Function as an independent Load Serving Entity, including resource planning, generation operations planning and generation dispatch
- Perform economic dispatch of its generation
- Operate its transmission assets (dependent upon ETI's proposed merger of its transmission assets with ITC Holdings Corp.)
- Operate independently and perform functions that are currently provided by the Entergy System pursuant to the terms and conditions of the System Agreement.

The engagement included a comprehensive evaluation of revenues and costs over the short- and long-terms (for existing facilities, future planned facilities, and market alternatives) for capacity, energy, ancillary services, transmission, and for providing the organizational support necessary to transfer supply planning and operations functions from a central service company to the operating utility. Liberty provided a year-by-year analysis of costs and revenues over a more than 10-year period, comparing the Texas utility's revenues and costs under two scenarios: (a) remaining in the ESA with the other Entergy operating utilities, and (b) leaving the ESA and providing for conducting power supply and transmission on a stand-alone basis. We evaluated:

- The cost and value of ETI's existing capacity resources
- Current and future capacity costs and the factors affecting them
- The relation of existing resources to MISO reserve requirements
- Future acquisition considerations

- The effects of termination of Purchased Power Agreements
- Coats and revenues associated with energy supply (purchases and sales) from existing and market sources
- Constraints, costs, and benefits associated with continued ESA membership
- Likely future transmission needs and costs
- The organization, staffing, and control needs required to transition to stand-alone operations by Entergy's Texas operating utility
- Models of plant, capacity, energy, transmission, and other costs and revenues by multiple consultants participating in Texas regulatory proceedings addressing Entergy's proposed move to MISO and the Texas company's ESA exit.

4. Interstate Power and Light Management and Operations Audit

Liberty performed a comprehensive management and operations audit of Interstate Power & Light (the Iowa electric and gas operating utility subsidiary of Alliant). The utility's future resource plans comprised a major focus of this engagement. The company was engaged in a major, long-term integrated resource planning program addressing the future of its many fossil units, using its existing IRP as one key measurement base. Liberty evaluated the company's planning to verify that it has fully considered alternatives and identified associated costs and benefits. The analysis considered the likely effects of existing and potentially added environmental restrictions on coal plants.

The company's efforts include compliance with renewables requirements and consideration of market options of varying ownership types and lengths. Liberty specifically reviewed load and energy forecasting in the context of the company's planning to design a long-term supply portfolio.

5. Consolidated Edison Management and Operations Audit (2009)

Liberty performed a management and operations audit of Consolidated Edison Company of New York for the New York Public Service Commission. This audit came in response to a commission request for detailed analysis of the forces and factors producing what has become for the company a greater-than-\$2 billion annual construction budget, as it strives to address aging infrastructure in the U. S.'s most densely populated metropolitan area. Long-term cost sustainability and planning for electricity supply formed primary focuses of Liberty's review and of its recommendations for change. ConEdison retained responsibility for securing energy for the bulk of its load. Liberty examined long-range planning, load and energy forecasting, power-supply planning and resource acquisition, and the use of wholesale power markets.

Construction program planning and execution for the company's three utility businesses (electricity, natural gas, and steam) formed a major focus of this audit. Liberty also examined governance, planning, budgeting, work-force management, contractor management, field procurement and fleet management, performance measurement, and compensation. Other focus areas included the procurement of electricity capacity, energy, and ancillary services (including hedging), and the development and management of a natural gas supply, transportation, storage, and hedging portfolio, the procurement of natural gas commodity, and the maximization of portfolio value (through, *e.g.*, off-system sales and capacity releases).

Liberty recommended and performed an audit that examined the Commission's established focus areas as elements in a cycle of inter-related functions and activities that combined to drive the utility's expenditures. This audit was also notable for its experimental approach seeking to build consensus among utility, commission, and Liberty about the most significant findings and conclusions (and particularly recommendations to address improvement needs found) while audit field work remained underway.

6. NorthWestern Energy

Liberty assisted NorthWestern Energy in the planning and development of a major, long-term infrastructure improvement plan. That work included participation in a broadly-based stakeholder group, which has been engaged with NorthWestern in a many-month process of sharing ideas about service objectives, capital and O&M programs, Smart Grid development, costs of alternative future program, and future ratemaking alternatives. Liberty's work included assistance in identifying, prioritizing, planning, budgeting, and subjecting to project-management and performance-measurement systems major infrastructure improvement needs affecting both electricity and natural gas delivery networks. The engagement included an overall assessment of U.S. infrastructure (energy and non-energy) declines, major governmental support initiatives for infrastructure improvement, Smart Grid opportunities and risks, novel utility/regulator plans for participatory infrastructure planning and cost recovery methods, the merging of urban and rural service expectations, the particular difficulties in maintaining rural reliability in normal and transient conditions, and other issues surrounding the full integration of capital and O&M planning across both short and very long horizons.

C. Recovery of Fuel, Energy, and Purchased Power Costs

Liberty's work with automatic adjustment clauses extends back twenty years, and includes examinations of clause justification, utility and structure, supporting manuals, guidelines, policies and procedures, and review of the accounting underlying such clauses.

1. Mississippi Power Company

Liberty performed three separate annual audits of fuel and energy procurement by Mississippi Power Company. The principal focuses of Liberty's audit were to:

- Assess practices for economical purchase and use of fuel and energy
- Assess contract terms and conditions and any variations from them
- Examine the prudence of power purchases, including transactions with affiliates
- Examine a sample of individual fuel and energy purchases.

Liberty's structure for these reviews encompassed the following principal areas:

Organization/Staffing/Controls Coal Procurement Coal Supply Management
Modeling & Analytics Natural Gas and Oil Purchased Power/Sales for Resale

2. Entergy Mississippi

Liberty performed two examinations of the fuel and purchased-power costs of Entergy's Mississippi electric utility subsidiary, EML. These reviews covered a two-year review period, addressing costs for the period of October 1, 2009, through September 30, 2011. EML is one of six Entergy Corporation Operating Companies that together provide regulated electric-power service in a multistate region to 2.7 million customers. EML serves 437,000 customers in 45 of Mississippi's 82 counties. Entergy owns and operates an approximately 30,000 MW generation fleet.

Liberty conducted a similar audit covering the preceding twelve-month period. The principal focuses of both Liberty audits were to:

- Assess practices for economical purchase and use of fuel and energy
- Assess contract terms and conditions and any variations from them
- Examine the prudence of power purchases, including transactions with affiliates
- Examine a sample of individual fuel and energy purchases.

3. Nova Scotia Utility and Review Board

a. Rate Change Applications

We served as experts under the direction of the Counsel to the Nova Scotia Utility and Review Board in examining a rate increase application by Nova Scotia Power, Inc. for 2013 and 2014. We reviewed fuel and energy procurement and management, power purchases and sales, renewables requirements and resources, plant operations (including cost affecting factors such as heat rate, scheduled and force outages, availability, and operations and maintenance expenses, for example), and dispatch. In this proceeding, we also examined other operations and maintenance expenses.

We preceded this most recent rate case assignment with similar reviews of fuel and energy procurement and management, power purchases and sales, renewables requirements and resources, plant operations cost forecasts in 2005, 2006, 2007, 2009, and 2012 rate cases. The work associated with the 2005 rate case led to recommended improvements in management practices; we subsequently assisted the Board in monitoring management implementation of those recommendations.

b. Developing a Rate Adjustment Mechanism for Fuel, Energy, and Purchased Power Costs

We played a central role, working with the utility and stakeholders, in developing an automatic (subject to review) adjustor for fuel, energy, and purchased-power costs. This work led to the adoption by the Nova Scotia Utility and Review Board of a Fuel Adjustment Mechanism (FAM) and a series of supporting policies, procedures, and guidance (*e.g.*, creation and continuing review and adjustment of a FAM Plan of Administration, definition of the costs elements subject to FAM recovery, and a Fuel Manual addressing fuel, energy, and power purchase/sale management and operating standards and procedures).

c. Supply Resources

We also participated in several processes (in 2009 and 2014) through which Nova Scotia Power developed, (with stakeholder review and subject to Utility and Review Board approval) Integrated Resource Plans providing a long-range view of supply resources needed to supply projected loads.

In many combined retrospective/prospective reviews of fuel, energy, and power purchases/sales procurement and management, we examined forecasted roles of existing supply resources. On other occasions, we also examined the supply, reliability, environmental/renewables compliance, and economic considerations associated with new or acquired supply resources. We also examined the reasonableness of management performance in managing capital additions (new, expanded, rebuilt) to supply resources.

These changes involved existing coal and gas supply resources and new or acquired biomass facilities. We also examined proposals for the installation of a high-voltage undersea cable to connect Nova Scotia to Newfoundland, in connection with the introduction of a large, new hydroelectric generation project in Labrador.

d. Retrospective/Prospective Audits of Fuel, Energy, Power Purchase/Sale Management

We conducted four audits (generally covering two-year periods) for the Utility and Review Board of Nova Scotia Power's management and operation of fuel and purchased-power procurement. These audits comprehensively examined forecasting, supply planning, solid and liquid fuel planning, contracting and management, power plant operations, dispatch modeling, procedures, and results, accounting, regulatory compliance (utility regulatory/environmental/renewables). Those audits resulted in testimony to the Board in support of Liberty's findings, and work with Company and Board Staff to develop Action Plans for implementation of audit recommendations.

e. Other Nova Scotia Work

For the Utility and Review Board we have also examined many other operational areas, including reviews of outage prevention and response, customer service, and executive compensation, for example.

4. Arizona Corporation Commission

a. Arizona Electric Power Cooperative and Southwest Transmission Cooperative: 2009-2010

Liberty completed for the Staff of the Commission an examination of fuel, purchased power, and plant operations policies, activities, and costs of Arizona Electric Power Cooperative, Inc. (AEPKO), based in Benson, Arizona. AEPKO operates as a non-profit electric generation cooperative to serve the needs of four all-requirements and two partial-requirements distribution cooperatives. These six members use power supplied by AEPKO to meet their needs to distribute electricity to their retail member owners, who reside and operate primarily in rural Arizona. AEPKO's customers distribute electricity to some 120,000 consumers in Arizona, California, and New Mexico.

Liberty's review included an examination of resource planning. We addressed the costs, benefits, and risks of plans incorporating continued, substantial reliance on aging fossil generation. The objective of Liberty's review was to verify that AEPCO acted prudently and reasonably in assuring both short- and long-term cost and operational effectiveness in areas related to plant operations and purchased-power-procurement. The project also examined the overall organization and decision-making structure under which AEPCO plans and manages its fuel-consuming and purchased-power resources.

We performed examinations of the fuel adjustment clause, and plant operating availability, equivalent availability, and capacity factors and impacts of any observed declines. Liberty also examined the following areas associated with an AEPCO rate filing:

- Rate Design
- Cost of Service
- Plant Operations and Engineering Analysis
- Prudence Review of Fuel and Purchased Power Policy.

Liberty completed, contemporaneously with the AEPCO work, an examination of the transmission cooperative that is owned and operated in parallel with Arizona Electric Power Cooperative (a generation cooperative). Liberty performed the following task areas associated with this rate case:

- Rate Design
- Cost of Service
- Engineering Analysis.

Our AEPCO and SWTC work included an examination of tariff provisions providing for automatic recovery of certain costs.

b. Arizona Electric Power Cooperative and Southwest Transmission Cooperative: 2013

Liberty again reviewed the costs of AEPCO and SWTC in their most recent rate cases, performing a similar scope with the addition of the major work element of Cost of Capital. Issues involving an aging, coal-fired power plant (Apache) formed a major focus of this second engagement. The same issues that, in our judgment, required a detailed planning analysis of Apache's future continued to warrant such a review. The need for such an analysis, moreover, had increased substantially, given the pendency of major expenditures to address U.S. EPA Regional Haze Program requirements for Arizona. Our review included an examination of AEPCO's work in assessing the cost impacts of compliance relative to the value of Apache, when compared with other alternatives. We again addressed the Apache (and other) issues in the context of the two cooperatives' most recent rate filings. We also examined the tariffs under which AEPCO recovered certain costs under an adjustor clause.

c. Arizona Public Service Company Fuel and Purchased Power: 2006

Liberty completed an extensive review of fuel and energy planning, procurement, and management at Arizona Public Service Company (the state's largest electric utility) for the Staff of the Commission. This audit included reviews of all physical and financial purchases of both gas and electricity, and a review of procurement relationships between the utility and an affiliate. The work also included a review of the fuel and energy adjustment cost recovery, and an evaluation of the

mechanism itself and its extensive plan of administration for possible adjustment to conform them to experience in other states and circumstances particular to the utility. Liberty provided expert testimony on the results of the audit (addressing base fuel costs and costs recovered through the clause) and on recommendations for changes to the automatic recovery mechanism.

5. Energy Clause Audits of Electric Companies for the PUCO

Over a period beginning more than 10 years ago, Liberty performed many management and performance audits of fuel policies and practices of Ohio electric utilities. Liberty performed these audits for the Public Utilities Commission of Ohio, which oversees fuel and purchased power costs recovered through an automatic adjustment clause. The audits examined whether the companies applied procurement and management practices and policies to assure availability of sufficient fuel supplies of adequate quality to permit efficient operation of generating stations at least cost. The audits examined coal, natural gas, and oil. The audits also sought to determine whether bulk power system dispatch, economy sales, and emergency and reliability transfers were conducted to promote least-cost operation. An examination of fuel or power transactions with affiliates also fell within the scope of these audits. Liberty's work also addressed whether plans and activities for compliance with the Clean Air Act Amendments were reasonably designed and cost-effective. The Commission has used the reports of these audits in regular Electric Fuel Clause (EFC) hearings to address the reasonableness and accuracy of recovery from utility customers.

The companies whose management and operations Liberty examined across its long period of service for the Ohio Commission include:

*American Electric Power Cincinnati Gas & Electric Cleveland Electric Illuminating
Duke Energy Ohio Monongahela Power Ohio Edison
Ohio Power Toledo Edison*

6. Southwestern Public Service Company

Liberty conducted an audit for the New Mexico Public Regulation Commission of Southwestern Public Service Company (SPS) that included a management review of the prudence of SPS' transactions under the Renewable Energy Credit tracker as conditionally approved by the Commission, and a financial review of both revenues and expenses in order to provide an analysis of any under-recovery or over-recovery. Similarly, Liberty performed an evaluation of SPS' fuel-clause process and regulations and a financial audit of fuel-clause computation. Reviews of purchases of coal, natural gas, oil and purchased power; power plant operations; line losses; and cost allocation and assignment were also performed.

7. Northeast Utilities

Liberty completed an audit of accuracy and prudence of costs that Public Service Company of New Hampshire recovers through its fuel and energy adjustment clause for the New Hampshire Public Utilities Commission. The major focus of this work was on coal contracts and coal management.

8. LIPA Evaluation of Fuel and Purchased Power Cost Adjustment

Liberty was selected by the Long Island Power Authority (LIPA) to conduct an independent evaluation of LIPA's recovery of costs through its Fuel and Purchased Power Cost Adjustment (PPFAC) clause. This evaluation included an examination of:

- The reasonableness of costs recovered
- The accuracy of the costs recovered through the PPFAC clause
- Board Authorization of the clause
- Comparison to other clauses.

9. Gas Cost Adjustment Audits for the PUCO

Liberty also audited natural gas procurement and portfolio management for the Public Utilities Commission of Ohio (PUCO) for more than 10 years. The scope of these management/performance audits routinely included supply planning, organization, staffing and control, gas acquisition strategy and transactions, transportation, affiliate transactions, balancing, regulatory management, and response to changes in regulation. Liberty audited the following LDCs for the PUCO:

CG&E Columbia Gas of Ohio Duke Energy Ohio
East Ohio Gas Eastern Natural Gas Pike Natural Gas
Vectren

D. Power and Natural Gas Supply

Our recent, substantial work in power and energy purchasing follows a very long record of service to utility regulators in the area. Liberty has for many years been the U. S.'s leading examiner of fuel and energy purchases and sales by public utilities. These examinations have routinely required us to examine how utilities have structured and executed competitive solicitations for power and energy and for the fuels used for electricity generation. We have been performing such reviews for some twenty years and for many utility regulators across the country. They have come in the context of reviews solely addressing these issues, and as part of more general management and operations audits that made power, energy, and fuel procurement a special area of focus.

| Utility | Commission | Utility | Commission |
|----------------------------------|--------------|----------------------|------------------|
| <i>ELECTRIC UTILITIES</i> | | | |
| AEP | Ohio | Kentucky Utilities | Kentucky |
| Allegheny Energy | Pennsylvania | Monongahela Power | Ohio |
| Arizona Electric Power Coop | Arizona | Nova Scotia Power | Nova Scotia |
| Arizona Public Service | Arizona | NU/Public Service NH | New Hampshire |
| Central Hudson G&E | New York | NY Power Authority | New York |
| Cincinnati G&E | Ohio | NYSEG | New York |
| Consolidated Edison | New York | Ohio Edison | Ohio |
| Duke Energy | Ohio | Ohio Power | Ohio |
| East Kentucky Power Coop | Kentucky | Rochester G&E | New York |

| Interstate P&L | Iowa | Toledo Edison | Ohio |
|-----------------------------|---------------|---------------------------|-------------|
| <i>GAS UTILITIES</i> | | | |
| Utility | Commission | Utility | Commission |
| Arkansas Western Gas | Arkansas | NJR/New Jersey NG | New Jersey |
| CG&E | Ohio | NYSEG | New York |
| Columbia Gas | Kentucky | Peoples Energy | Illinois |
| Columbia Gas | Ohio | Pike Natural Gas | Ohio |
| Connecticut Natural Gas | Connecticut | Rochester G&E | New York |
| Consolidated Edison | New York | SJI/South Jersey Gas | New Jersey |
| Delta Natural Gas | Kentucky | Southern Connecticut Gas | Connecticut |
| Duke Energy | Ohio | Union Light, Heat & Power | Kentucky |
| East Ohio Gas | Ohio | United Cities Gas | Tennessee |
| Eastern Natural Gas | Ohio | Vectren | Ohio |
| Interstate P&L | Iowa | Virginia Natural Gas | Virginia |
| KeySpan | New Hampshire | Western Kentucky Gas | Kentucky |
| KN Energy | Wyoming | Yankee Gas | Connecticut |
| Louisville Gas & Electric | Kentucky | | |

E. References for Liberty's Prior Work

We have listed below references for our prior work. If additional references are requested, we would be happy to provide them.

Sam Banfield
Newfoundland and Labrador
Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road
St. John's, Newfoundland A1A5B2
Phone: 709-726-1154
sbanfield@pub.nl.ca

Steve Frink, Director, Gas & Water Division
New Hampshire PUC
21 Fruit Street, Suite 10
Concord, NH 03301
Phone: 603-271-6019
Steve.Frink@puc.nh.gov

Terri Ford
Chief of Telecom and Energy
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007
602-542-0858
tford@azcc.gov

III. Liberty's Outline of Plan of Action

A. Outline of Plan of Action

Reviewing ELL's forthcoming Viability Study, which the Company proposes will address the very questions posed by the initiative sought by this RFP, will form a cornerstone of our work on this engagement. We will evaluate the reasonableness, accuracy, and propriety of the key elements of the study (assumptions, data, scenarios, decision factors). We have broad and close familiarity with the analytics that drive resource decisions for Entergy's operating companies, having reviewed them extensively in the context of ETL's ESA exit and MISO entry and multiple fuel audits of EML. In the former, for example, we assessed the impacts of ESA departure on the Jurisdictional Separation Agreement (JSA) that impacted current and former units associated with EGSL/ELL (Nelson, Willow Glen, Lewis Creek, and Sabine. For all of these analyses we worked with Entergy's SPO organization that handles modeling for the operating companies from The Woodlands, TX.

For this initiative, we will provide a thorough review of ELL's Viability Study, and identify all observed critical issues which require examination and verification. Based on these observations, we will request re-runs of the key model runs ELL uses to support its study, review base and revised outputs, and develop a revised/recommended retirement schedule. This will be done according to the following outline:

Economic and Modeling Analytics

1. Obtain the ELL Viability Study and review
 - a. Key assumptions
 - b. Approach
 - c. Findings
 - d. Conclusions
2. Obtain key workpapers, notes, and assumptions upon which the study was developed
3. Interview and review documentation on the approach used including dispatch models/production cost models
4. Review all key model data inputs:
 - a. Load and load growth
 - b. Fuel market prices
 - c. Unit operating parameters
 - i. Capacity
 - ii. Heat rate(s)
 - iii. Ramp rate
 - iv. Minimum load
 - v. Minimum run time
 - vi. Startup costs
 - vii. Availability factor
 - d. Unit economic parameters
 - i. Fuel delivered cost
 - ii. Variable O&M cost
 - iii. Total dispatch cost

- iv. Fixed O&M cost
- v. Emissions-related costs
- vi. Capital costs
5. Review model outputs
 - a. Total system costs
 - i. Total \$
 - ii. Total \$/MWh
 - b. Unit-specific costs
 - i. All-in \$/MWh cost
 - ii. Dispatch \$/MWh cost
 - c. Review recommended retirements relative to model results
 - d. Review unit costs relative to market prices
6. Request alternative scenarios for model runs
 - a. Varying key scenarios and data sensitivities as identified
 - b. Under specific "forced" retirements as identified in the "unit condition" assessment defined below
7. Review outputs of revised model runs
8. Request additional runs as needed
9. Identify final model outputs for Liberty conclusions
10. Produce report identifying primary, secondary, and other candidates for retirement
11. Develop a schedule to perform asset retirements
12. Provide testimony on findings and conclusions
13. Provide regulatory/hearing support as needed.

Unit Condition Assessment

Our work will also closely assess the physical condition of ELL's legacy units. This review will consider the physical limitations, degradation of performance, required capital expenditures, and reliability of each legacy unit. We will do so under the lead of a former senior manager with broad experience in managing and operating large generating fleets. These elements will be tied to economics (cost of portfolio supply) and will therefore be factored into the viability assessment. Specifically, Liberty's requests and subsequent reviews will include (but not necessarily be limited to) the following within the larger work plan defined above:

1. Any material condition reports/assessments performed by the company
2. Any material condition assessments performed by third party consultants
3. GADS data such as capacity factor, availability factor with explanations for times of unit unavailability, and EFORD. Data to be provided for the last five years to review the trend.
4. Reports on all outages to include causes of the outage, duration, original duration vs. actual duration, causes for any delays, major work performed, and types of the outage (planned vs. forced) for the last two years
5. Maintenance backlogs both CMs and PMs for the last five years for trend analysis
6. Budgets (both capital and O&M) for the last three years
7. Staffing levels for the last three year
8. Any plant life extension studies performed.

B. Project Work Steps

This section identifies the work steps generally applicable to the work in task areas, and describes the methods that Liberty will use to conduct the assessment.

1. Pre-Hearing Phase

a. Orientation Meeting with Staff

This essential early step will acquaint our team members with the Commission Staff who will play key roles during the study. This step will provide an opportunity to begin the interchange that will lead to common understandings of the details of Liberty's work methods, and Staff's preferred methods for coordination of our work activities. In addition, this step will provide an early opportunity to begin the interchange with the Company, so that Staff and Liberty can make their expectations known.

Where Staff identifies: (a) particular areas where it will actively participate, or (b) specific matters of interest, Liberty will incorporate them into its baseline and subsequent detailed work planning. Liberty's team leadership also realizes that, at a later stage of the project, Staff may identify additional areas where its active participation in the study has become appropriate.

This study step will also establish the necessary protocols for communications between Liberty's auditors, Staff, and the Company, including those for document exchange, advance notice of particular task steps, and other, similar activities. Liberty will work with established and preferred methods Staff has in place for requesting interviews and documents, the treatment of information that the utility deems proprietary, and notice requirements.

The Liberty team will require substantial support from Company resources. The Company will have to provide efficient and timely access to documents, facilities, and employees. To address these requirements effectively, without unduly disrupting normal business, the Company will likely favor an organized system of contact for the study. This step will allow negotiation of necessary protocols. It will also include efforts to facilitate the first exchange of substantive information about the study.

b. Data Gathering

Liberty's will design its first data-gathering steps to collect basic information that addresses the subjects of this engagement's scope. This information provides essential background for generating interview plans and the more focused data requests that will follow. Liberty's schedule assumes generally a 10-business-day response time for data requests. Liberty will review the responses prior to any informal meetings with Staff and ELL, in order to assure that they begin immediately to focus on the issues of significance to the audit's scope and purposes.

If appropriate and approved by Staff, in order to assure responsiveness to baseline information requests, without burdening the responders unnecessarily, Liberty will discuss its needs with Company representatives knowledgeable about organization and transaction-information systems and response capabilities. These discussions will not cause the elimination of any significant information from review, but will assure that the initial response process is not unduly delayed by

attention to requests that will prove particularly difficult or take especially long to fulfill. This approach is particularly important given the short duration for the completion of this audit.

As appropriate, and approved by Staff, Liberty will engage with ELL in formal discussions in order to clarify any requests, responses, or questions regarding modeling assumptions and outputs. These discussions will inform follow-up requests for updates to the model runs summarized in section III.A above.

2. Testimony, Hearings, and Post-Hearing Support Phase

Following the provision of our final results materials, Liberty's team will support the Staff through the Testimony, Hearing, and Post-Hearing phases of the case. Our work here will come at the direction of Staff, and we will focus our efforts on the specific items Staff requests of our team, such as:

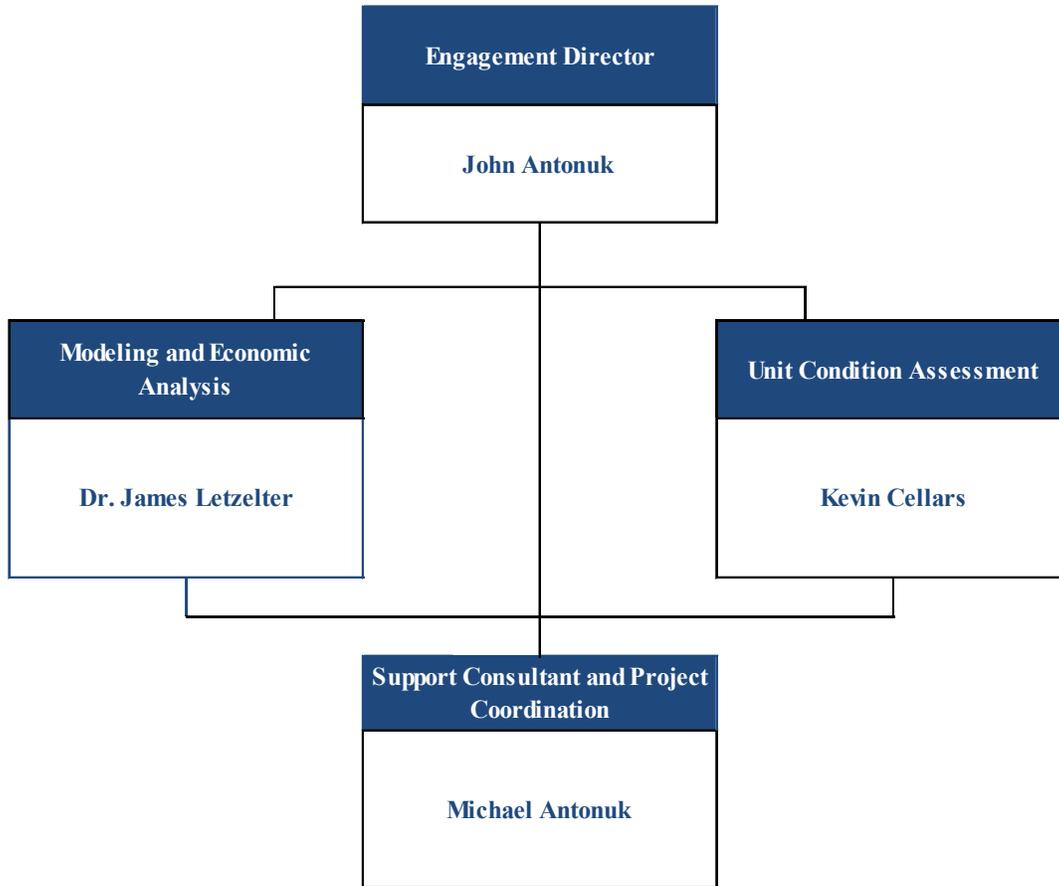
- Reviewing and responding to rebuttal testimony of ELL
- Preparing direct and cross examination questions for Staff use at Technical Conferences, Hearings, or other such meetings
- Assisting in preparation activities for Hearings, Trials, and other such matters, including activities such as the cross examination of witnesses, the drafting of pleadings and motions, and the review and analysis of any stipulation terms.

3. Meeting Attendance

Liberty's team will be available at Staff's request to participation in requested project-related meetings, conference calls, conferences with Commission and Staff members, and be available to attend Business and Executive Sessions at Staff's request.

C. Work and Team Structure

The following organization chart shows the assignment of these areas among Liberty's team members.



D. Preliminary Schedule

The following diagram sets forth Liberty's proposed schedule for this engagement. It follows the steps set forth in Section III.A. This schedule is subject to modification based on the needs of the Staff and the scheduling of any activities as part of the opening of a formal proceeding.

Proposed Work Schedule

| | Sept. 2020 | Oct. 2020 | Nov. 2020 | Dec. 2020 | Jan. 2021 | Feb. 2021 |
|---|---------------|--------------|--------------|--------------|--------------|--------------|
| Start Date: September 1, 2020 | ▼ | | | | | |
| Pre-Hearing • Orientation Meeting with Staff • Data Gathering • Modeling and Analysis | ■ | ■ | ■ | | | |
| Testimony, Hearings, and Post-Hearing Support • Activities and scheduled determined by Commission case schedule | | | ■ | ■ | | |
| Meeting Attendance • As requested by Staff and Commission | | | ■ | ■ | | |

IV. Capabilities and Experience of Liberty’s Team

A. Senior, Highly Experienced Team That Works Together Often

Liberty proposes a very senior team for the performance of this evaluation. The core members average over 15 years with Liberty. The firm’s president and a founder of Liberty, who has substantial experience in providing expert analysis and testimony in fuel clause design, costs, and prudence, will serve as project director. Individual task leads will provide dedicated leadership in responding to each of the RFP’s requirements. These exceptionally well-qualified consultants form the core of Liberty’s resources for examining matters related to the recovery by electricity suppliers of fuel and energy costs through automatic adjustment clauses.

| Consultant | Role | Years | Projects |
|-----------------|--------------------------------|-------|----------|
| John Antonuk | Engagement Director | 33 | 400+ |
| Jim Letzelter | Modeling and Economic Analysis | 9 | 52 |
| Kevin Cellars | Unit Condition Assessment | 2 | 4 |
| Michael Antonuk | Support Consultant | 18 | 200+ |

B. John Antonuk: Engagement Director

John Antonuk will serve as Engagement Director and oversee all aspects of Liberty’s work. John has had overall responsibility for nearly all of Liberty’s management examinations for public service commissions, conducted over a period of more than 25 years. He has managed or directed:

- More than 20 general management and operations audits for utility regulators, which have included reviews of governance, executive management, and key technical, operations, and support areas
- More than 30 focused audits, which have addressed affiliate relationships, engineering, operations, fuel and energy management, customer service, or other areas.

John managed Liberty’s multi-year engagement to assist the Staff of the Public Utility Commission of Texas in evaluating the costs and benefits of ESA exit by Entergy Texas and entry into the MISO. He also directed Liberty’s subsequent engagement to examine the benefits produced since departing the ESA, and the costs and benefits of remaining in MISO into the future. John also led Liberty’s projects which evaluated PSNH generating units and APS’ acquisition of Four Corners Units 4 and 5. He has led or directed nearly all of Liberty’s substantial number of reviews of energy adjustment clauses, electric supply and gas supply at electric utilities, including:

Highlights of John’s recent work for regulatory commissions includes:

- Liberty Utilities Gas Division’s Integrated Resource Plan for its New Hampshire service territory, and its proposals for incremental gas-supply capacity.
- Rate mitigation work for the Newfoundland and Labrador Board of Commissioners of Public Utilities in examining potential rate mitigation opportunities at Newfoundland and Labrador Hydro.

- A two-phased management review of Mississippi Power Company, which included examinations of management, staffing, costs, and resources of the utility's customer service and field operations functions, as well as a review of affiliate costs.
- Review of the governance, financial, and operating consequences of the more than \$18 billion acquisition of the largest Texas electricity delivery utility (Oncor) by NextEra Energy.
- Entergy Texas's exit from Entergy's multi-state, multi-operating company approach to system planning and operation, and systems planning changes needed to support stand-alone operation by Entergy Texas.
- Review of Pacific Gas & Electric's use of risk assessment to drive electricity safety expenditures; included a review of the basis for identifying required programs, initiatives, and resources (with safety broadly defined to include an extensive range of generation and distribution infrastructure design, operations, and maintenance needs).
- Newfoundland electricity reliability and outages; included a review of organization and staffing of the separate generation/transmission and distribution entities that provide service across Newfoundland and Labrador.

The breadth of John's work for public service commissions is shown by the following highlights:

- Manager or director of management and operations audits of:
 - Three New York electric and gas utilities
 - All three Connecticut natural gas LDCs
 - All three New Jersey natural gas LDCs and one electric utility
 - A Tennessee natural gas LDC
 - A Pennsylvania electric utility
 - Two audits of the largest New Hampshire electric utility
 - State operations of two major RBOCs
- Sale by Verizon of its northern New England land line business
- Code-of-conduct compliance audits of all four New Jersey electric utilities
- Public Service Electric & Gas: Affiliate cost assignment and allocation; corporate structure
- Merger Compliance/Affiliates Audit of Duke Energy Ohio
- Fuel and Energy Procurement and Affiliates audits of Nova Scotia Power
- Baltimore Gas & Electric: Development of code of conduct to manage relationships, information sharing, joint services between utility and non-utility segments (provided testimony before the Maryland Public Service Commission)
- Acquisition of UniSource (Arizona) and Portland General Electric (Oregon) by private equity firms
- All Delaware Electric Utilities: Review of restructuring filings, including code-of-conduct provisions
- Personal advisor to commissioners of the District of Columbia on restructuring and on transmission-line siting
- Northeast Utilities: Affiliate cost assignment and allocation (provided testimony before the New Hampshire Public Utilities Commission)
- Virginia Power: Affiliate cost assignment and allocation, corporate structure and governance relating to non-utility business segments
- K N Energy: Gas transportation and supply contracts from an affiliate of a local gas distribution utility in Wyoming.

John received a bachelor's degree from Dickinson College and a juris doctor degree from the Dickinson School of Law (both with honors). He has spoken on a variety of utility issues before a number of panels sponsored by NARUC's committees and regional associations, state bar associations, and as an invited panelist before the U.S. FERC commissioners on utility financial matters.

John Antonuk has testified many times in support of Liberty's work. The occasions include:

1. Arizona: Fuel audit, base costs of fuel and power supply adjustor of the state's largest utility, serving Phoenix and other areas of the state
2. Arizona: AEPCO Rate Case, fuel audit, base costs of fuel and power supply adjustor
3. Arizona: Proposed acquisition of a large electric and gas utility by a private equity firm
4. Florida: Transmission line construction necessity
5. Illinois: Prudence of fuel procurement and management by Central Illinois Power
6. Illinois: Cost and rate impacts of failure to meet good utility practice in T&D capital and O&M projects and activities of Commonwealth Edison
7. Illinois: Presentation to the full commission of the results of Liberty's investigation of an \$8 billion accelerated gas main replacement program by the gas company serving Chicago
8. Maryland: Code of conduct issues involving Baltimore Gas & Electric
9. Maryland: Support of findings and conclusions of comprehensive management audit of a Verizon predecessor (C&P Telephone)
10. Massachusetts: Affiliate transactions of NStar (formerly Boston Edison)
11. Maine: Forensic audit of CMP's meter and billing systems and customer service
12. Maine: Capital program, reliability, prudence
13. New Hampshire: Restructuring of state's largest electric utility (Northeast Utilities subsidiary PSNH) including comprehensive valuation of generation assets (considering availability, costs, revenues)
14. New Hampshire: Proposed merger of Consolidated Edison and Northeast Utilities
15. New Hampshire: Proposed acquisition of Verizon wireline business in Vermont, New Hampshire, and Maine by FairPoint Communications
16. New Hampshire: Divestiture of utility-owned generating fleet and securitization of stranded costs
17. New Jersey: In-camera and public presentations of assessments of: (a) consequences for a state gas utility of holding company financial reverses, and (b) results of a comprehensive audit of management and operations and of affiliate transactions
18. Newfoundland/Labrador: Assessment of management actions in generation, transmission, distribution, and customer service management leading to and connected with major system outages.
19. Nova Scotia: Cost and rate impacts of fuel and purchased power procurement and management in four base rate cases since 2004
20. Nova Scotia: Addressing propriety of adoption, readiness for, and design of a fuel adjustment mechanism
21. Nova Scotia: Necessity and propriety of a proposed biomass cogeneration (electricity production and steam for paper manufacturing)
22. Nova Scotia: Utility revenue requirements associated with executive compensation, vegetation management, storm preparation and response, and fuel and energy management prudence

23. Oklahoma: UNE price proceedings
24. Oregon: Portland General Electric acquisition
25. Pennsylvania: Cost and rate impacts associated with findings of comprehensive management audit of West Penn Power Company
26. Tennessee: Support of findings and conclusions of comprehensive management audit
27. Texas: Proposed acquisition of Oncor, an electric transmission and distribution utility serving about ten million Texans by NextEra Energy, billed as the world's largest utility
28. Texas: Following the Public Utility of Texas' rejection of the acquisition by NextEra, the proposed acquisition of Oncor by Sempra Energy
29. Texas: Proposed acquisition by Oncor of facilities and operations of another Texas transmission utility
30. Texas: Proposed acquisition of the electric transmission and distribution utility serving Oncor by Sempra Energy
31. Virginia: In-camera presentations regarding the results of an ongoing investigation into the source of an open feud between the boards and the senior executives of Virginia's largest energy utility and those of its holding company
32. Virginia: Pricing of unbundled telecommunications elements and terms of wholesale interconnection agreements
33. Numerous Qwest region state commissions: Before state commissions in the Qwest region to address the status and results of Liberty's audit of performance measures and its reconciliation of the differences between Qwest and CLEC measurement of performance data.

C. Dr. James Letzelter: Lead Consultant – Modeling and Economic Analysis

Dr. Letzelter has over 30 years of experience in the energy and utilities industry, having served as a management consultant, project manager and executive. He began his career with Resource Management International as an analyst, and worked as a senior consultant of Metzler & Associates. Jim was a Principal of Hagler Bailly Consulting, Managing Director of Platts Research & Consulting, and President of GenMetrix. Jim brings a valuable mix of technical expertise and strategic thinking. His expertise includes power generation market analysis, power plant valuation, ISO/RTO market strategy, production cost modeling and financial analysis. Jim is leading Liberty's reviews of generation, plant operations, and dispatch issues as part of our Management Review of Mississippi Power.

Jim has served in key roles in Liberty's work in examining utility Power Supply, Load Forecasting, and Dispatch. This includes projects for the Mississippi Public Service Commission, examining both Entergy Mississippi and Mississippi Power, Nova Scotia Power (on multiple occasions), Atlantic City Electric, and Pepco.

For Liberty, Jim plays a key role on assignments involving production cost modeling, transmission issues and general power analytics. Jim led Liberty's prudence review of Arizona Public Service's acquisition of Four Corners Units 4 and 5 for the AZCC, and offered testimony in support of that work. Jim led Liberty's review of dispatch and power purchases and sales at Mississippi Power. He served key roles in Liberty's recent work for the NHPUC evaluating the competitiveness of

PSNH's fossil and hydro fleet, and served in a key role in Liberty's review for the Public Utility Commission of Texas concerning Entergy Texas' exit from the Entergy System Agreement. Jim provided comprehensive audit services of Entergy's production cost models and processes in Liberty's fuel and purchased power audit. In this engagement, Jim assessed all the models and processes associated with the Entergy's Monthly Energy Plan, the Weekly Procurement Process, and the Next- and Current-Day processes.

Jim received a B.S. degree in Electrical Engineering from Clarkson University, an M.B.A. from the University at Albany, and a Doctorate in Law and Policy from Northeastern University.

D. Kevin Cellars: Lead Consultant – Unit Condition Assessment

Kevin is an experienced nuclear and fossil power plant operations, construction, engineering, and project development executive. He served as vice president leading a major electric company's more than 300-person division of professional and craft personnel responsible for a fleet of fossil-fired electricity generating units.

For Exelon, one of the country's very largest electricity generators, he has had executive responsibility for engineering and technical services for a more than 12,000 megawatt fleet consisting of coal, oil, natural gas, and hydro plants. He also served as senior performance improvement director for Exelon's efforts to design a performance improvement plant for the Oyster Creek Nuclear Power plant. This work included developing and implementing action plans for projects, outage management, engineering, maintenance, radiation protection, operations, and others. This effort led to a standard performance improvement method applied by Exelon across its very extensive fleet of nuclear stations. Serving as Vice President, Business Operations for Exelon's power business, he led efforts to create was directly responsible for finance, information technology, supply, and facilities, leading business planning, finance, cost control, inventory control, purchasing, performance management, and IT support for all plants.

In addition to has extensive fossil generation executive and management experience, Kevin has a long and impressive career in nuclear power operations. It began in the nuclear navy, where he served as deck officer on a U. S. Navy, Nuclear Submarine, responsible for safe operation and supervision and operation of the nuclear propulsion plant.

Kevin began his utility nuclear career with BG&E, where he served as maintenance superintendent, outage manager, nuclear engineering manager, and procurement supervisor.

Kevin has served Exelon Nuclear in a number of management capacities:

- Quality Assurance Director, with responsibility for four sites
- General Manager, Operations Support, with responsibility for operations, chemistry, environmental, safety, radiation protection, and rad waste. Developed standardized business plans and processes for all functional areas in six months. In addition, provided excellent operational support to the fleet in all functional areas.
- Engineering Director, with responsibility for all design processes for 17 Exelon nuclear units.

Kevin holds a bachelor's degree in mathematics and economics and he holds a master of science degree in project and engineering management from Johns Hopkins University. He has completed INPO-accredited Senior Reactor Operator (SRO) Certification Training Program, and authored "How to Lead a Process Improvement Effort," published by the American Management Association.

E. Michael Antonuk: Support Consultant and Project Coordinator

Michael Antonuk has served as Support Consultant and Senior Analyst in all of Liberty's recent and relevant engagements included in this proposal, including the three highlighted case studies. Michael has performed generation unit performance benchmarking in our recent audits of Entergy Mississippi and Mississippi Power for the Mississippi PSC, in addition to our examinations of generating units of Arizona Public Service, Nova Scotia Power, and Newfoundland and Labrador Hydro. Michael has also assisted in Liberty's fuel and energy supply reviews at nearly two dozen electric and natural gas utilities. This includes four separate Nova Scotia Power FAM audits where he undertook investigations of the relationships between utility and non-utility natural gas and power transactions, an Affiliates Audit, and multiple reviews of GRA and base cost of fuel applications. Other similar work includes review of Arizona Public Service, Arizona Electric Power Cooperative (twice), Consolidated Edison, Interstate Power and Light, NYSEG, RG&E, and Southwestern Public Service Company.

Michael's other power supply work includes reviews of Duke Energy Ohio, Arizona Electric Power Cooperative, and Southwestern Public Service Company. This work has also included the performance of coal price benchmarking analyses.

Michael has also served as Project Coordinator and Senior Analyst for Liberty's review of procurement activities at New Jersey Natural Gas, South Jersey Gas, Elizabethtown Gas, People's Energy, and Virginia Natural Gas. These audits involved extensive reviews of natural gas sales and purchases conducted by both regulated and non-regulated entities and the controls systems related to these transactions. Michael has participated in over 50 Liberty engagements in the gas, electric, water, and telecommunications sectors, assisting in reviews of affiliate relationships, fuel procurement, EDECA, executive compensation, and utility finance issues.

Michael holds a B.A. in finance from Lehigh University.

V. Proposed Fees

The following table shows the detailed hours and cost breakdown for each of Liberty's team members. Liberty's organization chart of the project can be found in Section III.D, and summaries of team member roles, and past experience in similar audit roles can be found in section IV of this proposal. Liberty has included all-inclusive rates for each proposed team member.

The following table shows the detailed hours and cost breakdown for each of Liberty's team members. Liberty's organization chart of the project can be found in Section III.A, and summaries of team member roles, and experience in similar audit roles can be found in section IV of this proposal. Liberty has included all-inclusive rates for each proposed team member.

| | J. Antonuk <i>Engagement Director</i> | J. Letzelter <i>Lead Consultant</i> | K. Cellars <i>Lead Consultant</i> | M. Antonuk <i>Support Consultant</i> | Total |
|--|---|---|---|--|--------------|
| Pre-Hearing Phase | 80 | 288 | 120 | 40 | 528 |
| Testimony, Hearings, and Post-Hearing Support Phase ¹ | 80 | 184 | 40 | 40 | 344 |
| Meeting Attendance ² | 24 | 24 | 24 | 16 | 88 |
| <i>Total Hours</i> | 184 | 496 | 184 | 96 | 960 |
| <i>Rate</i> | \$310 | \$295 | \$295 | \$200 | |
| <i>Fees</i> | \$57,040 | \$146,320 | \$54,280 | \$19,200 | |
| <i>Project Cost Estimate</i> | \$276,840 | | | | |

¹ Estimated levels

² Estimated hours; actual levels to be determined by Commission and Staff requested level of participation

VI. Offer to Serve and Statement on Lack of Conflicts

This proposal constitutes an offer to provide the services described in this proposal under the terms and conditions hereof. This offer shall remain in effect through the close of business on December 18, 2020, and, in the event it is accepted, its terms and conditions, except as may be modified by any final contract, shall continue in force thereafter till completion of all Liberty's responsibilities hereunder or under the RFP to which it responds. Liberty indicates its agreement to be bound by the terms of this offer by the signature of its duly authorized officer, which appears below.

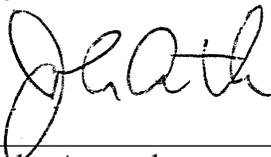
Neither Liberty nor any of its employees or contractors has had any relationship with Entergy Louisiana for the last ten years. Liberty has worked and continues to address Entergy-related matters on behalf of the Staffs of other regulatory commissions, including:

- Our current and prior work on behalf of the Public Service Commission, examining fuel and purchased power and power plant operations at Entergy Mississippi in five reviews.
- Our prior work on behalf of the Staff of the Texas Public Utility Commission matters associated with the departure of Entergy Texas from the ESA and its joining of MISO.

Neither Liberty nor any of its employees or contractors has any other relationships or work engagements that constitute a conflict of interest or that could appear to constitute such a conflict. Liberty presently has no interest and shall not acquire any interest, direct or indirect, that would conflict in any manner or degree with the performance or services required. Liberty has not retained any person or agency on a percentage, commission or other contingent arrangement to secure this contract.

Accepted for:
The Liberty Consulting Group
1451 Quentin Road Suite 400, #343
Lebanon PA 17042-9576

by:



John Antonuk
President
This 19th day of August 2020

Appendix A: Liberty Resumes



| | |
|---------------------------|------|
| John Antonuk | A-2 |
| Dr. James Letzelter | A-10 |
| Kevin Cellars | A-18 |
| Michael Antonuk | A-23 |

John Antonuk

Areas of Specialization

Executive management; management audits and assessments; service quality and reliability management and measurement, utility planning and operations; litigation strategy; management of legal departments; human resources; risk management; regulatory relations; affiliate transactions and relations; subsidiary operations; and testimony development and witness preparation.

Relevant Experience

Electricity

Engagement Director for Liberty's management and operations audit of Atlantic City Electric for the New Jersey Board of Public Utilities.

Engagement Director for Liberty's management review of Mississippi Power for the Mississippi Public Service Commission.

Engagement Director for Liberty's rate mitigation review of Newfoundland and Labrador Hydro for the Board of Commissioners of Public Utilities.

Engagement Director for Liberty's forensic audit for the Maine Public Utility Commission seeking to identify the root causes of a customer billing complaints following conversion of its customer information system to a new platform.

Engagement Director for Liberty's focused management audit of the Customer Service function of Liberty Utilities New Hampshire. This review included an extensive focus of all elements of this function, in addition to examinations of Information Technology and Corporate Support Services, Vendor Relationships, Accounting, Business Planning, and Capital and O&M Budgeting. Subsequent to the completion of this audit, Liberty performed follow-up assessments of Customer Service performance and Planning and Budgeting to assess the effectiveness of corrective actions implemented in response to our audit recommendations.

Project Manager and witness on audits of fuel (primarily coal and natural gas) procurement and management practices of Nova Scotia Power, a review of the merits and mechanics of a company-proposed automatic recovery method for energy costs, and an audit of affiliate relationships (including coal, electric power, and natural gas procurement activities) performed for the Nova Scotia Utility and Review Board. Liberty has assisted the Nova Scotia Utility and Review Board in other reviews of Nova Scotia Power regarding storm outage and response, in rate cases, and in various other proceedings.

Engagement Director for Liberty's review the prudence of management decisions and actions of Newfoundland and Labrador Hydro concerning Island outages experienced during the winters of 2013 and 2014. This project sought to determine the costs related to these decisions and actions.

Project Manager for Liberty's prudence review of Arizona Public Services' acquisition of Four Corners units 4 and 5 on behalf of the Arizona Commission. That review included an examination of short-and long-term planning issues including environmental risk, fuel economics, transmission system capability, and demand and usage growth. Liberty's review also evaluated the various rate and revenue requirement impacts resulting from the acquisition.

Engagement Director for two Liberty audits for the Mississippi Public Service Commission of Mississippi Power Company's management and operation of fuel and purchased-power procurement. Responsible for reviews of fuel-oil and natural-gas contracting and management, including price-risk management, and the functioning of Fuel Cost Recovery and Energy Cost Mechanisms.

Engagement Director for Liberty's integrated work with New Hampshire Commission Staff on an analysis of the competitiveness of the Public Service New Hampshire's generating fleet. This work provided a valuation of the power plants, addressing current and expected energy market conditions, the effects of increased cycling of units designed for baseload operations, potential costs associated with compliance with current and potentially increased environmental restrictions, impacts on the competitive market place, and other factors important for the Commission to consider in determining what future role might exist for utility-owned supply resources.

Engagement Director for Liberty's review of electric system infrastructure, supply, and generation at Newfoundland Power and Newfoundland Hydro for the Board of Commissioners of Public Utilities.

Project Director and lead consultant for Executive Management and Governance and Human Resources on Liberty's management and operations audit of Pepco for the District of Columbia Public Service Commission.

Engagement Director for Liberty's review of Entergy Texas's exit from Entergy's multi-state, multi-operating company approach to system planning and operation; and systems planning changes needed to support stand-alone operation by Entergy Texas for the PUCT.

Engagement Director for Liberty's review of Pacific Gas & Electric use of risk assessment to drive electricity safety expenditures; included a review of the basis for identifying required programs, initiatives, and resources for the California Public Utilities Commission.

Project Director and lead consultant for Corporate Planning on Liberty's management and operations audit of Iberdrola SA/Iberdrola USA/NYSEG and RG&E for the New York Public Service Commission.

Project Director and lead consultant for Governance and Senior Management on Liberty's management and operations audit of Interstate Power and Light for the Iowa Utilities Board.

Project Director and lead consultant on Liberty's management and operations audit of the electricity, natural gas, and steam operations of ConEd for the New York Public Service Commission.

Project Director on Liberty's benchmarking analysis of Arizona Public Service for the Arizona Corporation Commission. This study covered a ten-year audit period and benchmarked Arizona Public Service's performance with the following metrics: Operational Performance, Cost Performance, Financial Performance, Affiliate Expenses, and Hedging & Risk Management.

Project Manager for Liberty's comprehensive, detailed affiliate relationships and transactions audit of Duke Energy Carolinas for the North Carolina Utilities Commission staff.

Project Manager for the performance of Liberty's audit for the Delaware Public Service Commission of a diagnostic audit of the affiliate costs borne by Delmarva Power, a member of the multi-state holding company, PHI. This review included an examination of the central services organization structure and operations, the procedures and methods used to allocate and assign costs and test work to verify that execution of methods and procedures conforms to company procedures and to good utility practice.

Project Manager for Liberty's work for NorthWestern Energy to formulate long-range integrated infrastructure plans for its multi-state electric and natural gas distribution utilities. This project includes consideration of how to incorporate "Smart Grid" technology into infrastructure plans in a manner that will enable the Company to roll out new capabilities and services as technology makes them available, without undue acceleration of capital spending as uncertainties in this new marketplace become resolved.

Project Manager for Liberty's audit of Arizona Electric Power Cooperative for the Arizona State Corporation Commission which included reviews of fuel procurement and management, bulk electricity purchases and sales, power plant management, operations and maintenance, energy clause design and operation, and other issues affecting the prudence, reasonableness, and accuracy of costs that pass through the fuel and energy clause.

Project Manager for Liberty's audit of Southwest Transmission Cooperative for the Arizona Commission, a companion examination of the transmission cooperative that is owned and operated in parallel with Arizona Electric Power Cooperative (a generation cooperative). Among the issues examined in this audit were line losses.

Project Manager for Liberty's audit of East Kentucky Power Cooperative, which included examinations of Governance, Planning, Finance, and Budgeting. Liberty performed for the Kentucky Public Service Commission an examination of governance at a generation and transmission cooperative serving 16 distribution cooperatives across the state. This study came in the wake of significant financial difficulties and also addressed planning, budgeting, financial, and risk functions and activities.

Project Manager for Liberty's audit for the Virginia State Corporation Staff of Potomac Edison Distribution System Transfer. Liberty examined the public interest questions associated with the transfer by an Allegheny Energy's utility operating subsidiary (Potomac Electric) of all of its electricity distribution operations business and facilities in Virginia to two rural electric cooperatives.

Project Manager for Liberty's audit of the fuel and purchased-power procurement practices and costs of Arizona Public Service Company for the Arizona Corporation Commission. Liberty completed audits relating to fuel procurement and management and on rate and regulatory accounting for related costs at Arizona Public Service Company for the Arizona Corporation Commission.

Project Manager for Liberty's audit of Duke Energy Carolinas for the North Carolina Utilities Commission. Scope included compliance with regulatory conditions and code of conduct imposed by the Commission after the merger with Cinergy, and affiliate transactions and cost allocation methods.

Project Manager for Liberty's audit of affiliate transactions of Nova Scotia Power on behalf of the Nova Scotia Utility and Review Board.

Project Manager for Liberty's audit for the New Jersey Board of Public Utilities of the competitive service offerings of the state's four major electric companies. Scope included corporate structure, governance, and separation, service company operations and charges, inter-affiliate cost allocations, arm's-length dealing with respect to a variety of code-of-conduct requirements, and protection of customer and competitor proprietary information.

Project Manager and witness for the staff of the Arizona Corporation Commission addressing the merits of the proposed acquisition of UniSource by a group of private investors.

Project Manager and witness before the Oregon Public Utility Commission addressing the merits of the proposed acquisition of Portland General Electric by a group of private investors.

Engagement Director for Liberty's provision of engineering and technical assistance to the Vermont Public Service Board in connection with review of public necessity and convenience related to the Northwest Reliability Project, which would add a major new 345kV transmission plan to provide an additional source of electricity to serve Vermont's major load growth in its northwest region. The project involved transmission reinforcements at lower voltages and significant substation upgrade work. The proceedings had numerous public, private, and government interveners, who raised issues regarding project need, available electrical alternatives, routing and design, and electromagnetic radiation.

Project Manager for Liberty's support for the New Hampshire Public Utilities Commission in its charge to oversee the divestiture of the Seabrook nuclear plant as part of a major restructuring settlement. The sale produced record high compensation for nuclear facilities in the country.

Project Manager and witness for Liberty's assessment of fuel procurement, affiliate transactions, and automatic adjustment clause implementation for the staff of the Nova Scotia Utility and Review Board in rate case of Nova Scotia Power.

Project Manager for Liberty's engagement on behalf of Boston Edison to examine the company's affiliate relations, including issues of the valuation of assets transferred to an affiliate. Testified in proceedings before the Massachusetts Department of Telecommunications and Energy (formerly the Department of Public Utilities) on several telecommunications issues, including: (a) development of competition, and legislative and regulatory-policy changes supporting it, (b) electric-utility entry into telecommunications markets, (c) costs, prices, and market value of network elements, (d) requirements of the Telecommunications Act of 1996, (e) assessment of compliance with commission orders, company procedures, and service agreements regarding limits on affiliate interactions, (f) inter-company loans, guarantees, and credit support among utilities and their affiliates, (g) accounting for affiliate transactions, (h) obligations to allow nondiscriminatory access to network infrastructure to third parties, and (i) cost pools, overhead factors, and allocation of common costs among utility and non-utility affiliate activities and entities.

Project Manager for Liberty's major consulting engagement for the New Hampshire Public Utilities Commission. Liberty examined management, operations, and costs at Public Service Company of New Hampshire/Northeast Utilities, which is engaged in the operational and cost-accounting separation of its network into segments, for the purposes of restructuring service offerings to allow competition in certain aspects of electric-energy supply. This engagement included an assessment of valuations of nuclear and fossil units, as well as supply contracts with independent-power producers. Liberty also assisted in efforts to settle rate case and restructuring disputes involving, among other issues, stranded costs associated with power plants. The scope of Liberty's work included the development of plans and protocols for power plant (fossil, hydro, and nuclear) and power supply contract assets, as well as the oversight of activities associated with asset auctions.

Engagement Director for Liberty's evaluation of corporate relations and affiliate arrangements of Dominion Resources, Inc. and Virginia Power for the Virginia State Corporation Commission. This project addressed all significant aspects of corporate governance, operating relationships, and affiliate arrangements between the two entities.

Project Director for all aspects of Liberty's comprehensive management and operations audit of West Penn Power Company for the Pennsylvania Public Utilities Commission. Managed focused reviews of the Company's affiliated costs, power dispatch and bulk power transactions, customer services, finance, and corporate services. Presented testimony before the PAPUC on behalf of the Office of Trial Staff regarding the results of the audit in West Penn's rate case.

Lead Consultant for affiliate relations for Liberty's assignment of providing assistance to Delmarva Power & Light Company in developing and implementing self-assessment and continuous-improvement processes.

Served as advisor to the administrative law judge of the Delaware PSC responsible for hearing cases regarding the implementation of the new law that restructures the electric-utility industry in Delaware.

Engagement Director for nuclear plant performance-improvement projects that Liberty conducted for Duquesne Light Company, Centerior Energy, Nebraska Public Power District, and Pennsylvania Power & Light Company (PP&L).

Engagement Director for a Liberty assignment for Florida Power Corporation, regarding a proposal by the Tampa Electric Company to construct transmission lines to serve the cities of Wauchula and Fort Meade, Florida. Liberty's testimony helped convince the Florida Public Service Commission that Tampa Electric Company's proposed line was uneconomic.

Directed Liberty's engagement to assist a regional electric generation and transmission cooperative, whose members' combined operations make it a major competitor in the state's electricity business, to conduct its first-ever comprehensive and formal strategic-planning process.

Natural Gas

Engagement Director for Liberty's management audit of WGL's PROJECT*pipes* for the District of Columbia Public Service Commission.

Engagement Director for Liberty's operational audit of utility staffing levels of each New York electric and gas utility for the New York Public Service Commission.

Engagement Sponsor for Liberty's investigation of Peoples Gas of Chicago's Accelerated Main Replacement Program for the Illinois Commerce Commission.

Project Manager for Liberty's review of Connecticut's program to produce a major expansion of natural gas availability and use by all three of its natural gas utilities for the PURA.

Project Manager for Liberty's examination of safety programs and activities of NiSource's Maine subsidiary Northern Utilities for the Maine Public Service Commission.

Project Manager for Liberty's focused and general management audits of NJR, New Jersey Natural Gas, and affiliates for the New Jersey Board of Public Utilities. This project included detailed examinations of affiliate relationships, governance, financing and utility ring-fencing, compliance with New Jersey EDECA requirements for affiliate separation, protection of confidential information, non-discrimination against third-party competitors with utility affiliates, and other code-of-conduct issues. Personally performed the reviews of governance, EDECA requirements compliance, and legal services.

Project Manager on a major focused audit of Peoples Gas/Integritys that Liberty performed for the Illinois Commerce Commission. Audit topics included natural gas forecasting, portfolio design and implementation, gas purchase and sale transactions, controls, organization and staffing, asset management, off-system sales, storage optimization, and all other issues related to gas supply over a period of eight years.

Project Manager for Liberty's focused and general management audits of SJI, South Jersey Gas, and affiliates for the New Jersey Board of Public Utilities. This project included detailed examinations of affiliate relationships, governance, financing and utility ring-fencing, compliance with New Jersey EDECA requirements for affiliate separation, protection of confidential information, non-discrimination against third-party competitors with utility affiliates, and other code-of-conduct issues. Personally performed the reviews of governance, EDECA requirements compliance, and legal services.

Project Manager for Liberty's work with staff of the Virginia State Corporation Commission to evaluate the services of an affiliate providing gas portfolio management services under an asset management agreement with Virginia Natural Gas, an operating utility subsidiary of Atlanta-based AGLR.

Project Manager for Liberty's focused audit of NUI Corporation and NUI Utilities. This audit included a detailed examination of the reasons for poor financial performance of non-utility operations, downgrades of utility credit beneath investment grade, and retail and wholesale gas supply and trading operations. Also examined performance of telecommunications, engineering services, customer-information-system, environmental, and international affiliates. The audit included detailed examinations of financial results, sources and uses of funds, accounting systems and controls, credit intertwining, cash commingling, and affiliate transactions, among others. Liberty's examination included very detailed, transaction-level analyses of commodities trading undertaken by a utility affiliate both for its own account and for that of utility operations.

Project Manager for Liberty's comprehensive management audit of United Cities Gas Company for the Tennessee Public Service Commission. Responsible for the focused reviews of affiliate interests, executive management and corporate planning, and vehicle management.

Lead Consultant in Liberty's management audit of Connecticut Natural Gas Company for the Connecticut Department of Public Utility Control (DPUC). Responsible for reviews of organization and executive management and legal management.

Lead Consultant in Liberty's management audit of Southern Connecticut Gas Company for the DPUC. Responsible for organization and executive management, affiliates, and legal management. Included valuation of a major, rate-based LNG facility being offered for sale.

Other Companies

Set up and managed service and facilities section of the PP&L Regulatory Affairs Department. Counseled utility management on regulatory and legislative matters. Litigated rate related and facility construction proceedings before agencies and the courts.

Attorney for the PA PUC. Assigned as counsel to the Commission's Audit Bureau in developing a comprehensive management-audit system. Negotiated contracts for the first commission-ordered management audits in Pennsylvania. Revised Commission organization and practice to conform to regulatory-reform legislation.

Testimony

Please see Section IV.B of Liberty's proposal for a detailed list.

Education

J.D., with academic honors, Dickinson School of Law

B.A., cum laude, Dickinson College

Dr. James Letzelter

Areas of Specialization

Utility planning and operations; production cost modeling; financial analysis; energy market assessment; transmission system and ISO analysis; power market strategy; asset valuation; management audits and assessments; litigation support; risk analysis and risk management.

Relevant Experience

The Liberty Consulting Group

Lead Consultant for Liberty's management and operations audit of Atlantic City Electric on behalf of the New Jersey Board of Public Utilities. Led Liberty's review of Cybersecurity and Market Conditions.

Currently serving as Lead Consultant on Liberty's evaluation on behalf of the New Hampshire Public Utilities Commission of the Liberty Utilities' Integrated Resource Plan to determine the reasonableness of planning processes and analyses, addressing factors including load growth, system planning, and supply planning, and their use to justify significant capital expenditures for a new pipeline and a very large LNG facility designed to increase the availability of capacity and supply.

Lead Consultant for Liberty's management review of Mississippi Power for the Mississippi Public Service Commission.

Lead Consultant for Liberty's rate mitigation review of Newfoundland and Labrador Hydro for the Board of Commissioners of Public Utilities.

Led Liberty's prudence review of Arizona Public Services' acquisition of Four Corners Units 4 and 5 on behalf of the Arizona Corporate Commission. That review included an examination of short-and long-term planning issues including environmental risk, fuel economics, transmission system capability, and demand and usage growth.

Lead Consultant for Liberty's integrated work with New Hampshire Commission Staff on an analysis of the competitiveness of the Public Service New Hampshire's generating fleet. This work provided a valuation of the power plants, addressing current and expected energy market conditions, the effects of increased cycling of units designed for baseload operations, potential costs associated with compliance with current and potentially increased environmental restrictions, impacts on the competitive market place, and other factors important for the Commission to consider in determining what future role might exist for utility-owned supply resources.

Lead Consultant on Liberty's review for the Public Utility Commission of Texas concerning Entergy Texas' exit for the Entergy System Agreement.

Served as Lead Consultant in two Liberty audits for the Nova Scotia Utility and Review Board of Nova Scotia Power Inc.'s management and operation of fuel and purchased-power procurement. Responsible for reviews of load forecasting, economic dispatch, and cooperative dispatch.

Lead Consultant for Liberty's two fuel and purchased power audit of Mississippi Power providing comprehensive audit services of the Company's production cost models and processes for the Mississippi Public Service Commission. Assessed Load Forecasting and Economic Dispatch

Lead Consultant for Liberty's fuel and purchased power audit of Entergy Mississippi providing comprehensive audit services of Entergy's production cost models and processes for the Mississippi Public Service Commission. Assessed all of the models and processes associated with the Entergy's Monthly Energy Plan, the Weekly Procurement Process, and the Next- and Current-Day processes.

Lead Consultant for Liberty's work as Technical Consultant for the Delaware Public Service Commission in 2013, 2014, 2015, and 2016 auctions SOS auction monitoring. Liberty provided pre-bid monitoring included monitoring of announcements, bidder communication, bidder certification, bid system training, and bid system performance and market assessment. Bid day monitoring included live monitoring of the auction on-site, verification of bids, notification of winners, and contract signing.

Lead Consultant on Liberty's management and operations audit of Pepco for the District of Columbia Public Service Commission. Led Liberty's review of Power Supply.

Generation & Transmission Operations

Provided a renewable power developer with consulting support on placement of assets with respect to transmission topography. Study used to select connection points and predict bus-level power prices.

Performed an assessment of transmission constraints for a merchant generator for use in an asset valuation study. Used transmission constraint information to predict long-term power price implications, and the ability to move power to alternative markets.

Developed a power market price model based on dispatch costs, including transmission constraints and costs for a merchant power generation company.

Risk Analysis & Asset Portfolio Assessment

For a renewable energy development company, developed a sophisticated financial risk analysis model used by the client to bid on power project RFPs and to acquire capital from equity investors. Provided ongoing risk modeling and overall financial and market intelligence support.

For a power trading organization, developed a custom market intelligence tool to extract data from an industry standard forecasting package to meet the specific needs of energy traders.

Performed efficient frontier analyses incorporating probabilistic market forecasts for a wholesale generator. Potential generator additions were analyzed including expected means, standard deviations and the corresponding correlations of key inputs such as fuel price and demand. These forecasts were then utilized to determine the expected revenues and variance of the revenues to determine both existing system risk profile and the resulting risk profile for each addition.

For a merchant generating company, developed and deployed asset valuation tools utilizing correlated probabilistic market information. This provides a measure of intrinsic and extrinsic value to potential acquisition/development projects.

For a public power authority, performed a comprehensive risk analysis on the issue of nuclear plant life extension (NUPLEX) for the client's asset. Developed a risk management simulation tool to manage data and produce projections of future plant profitability under varying market, cost and regulatory scenarios. The work product was successfully employed by the client to make an informed decision on a major investment.

For a merchant generating company, developed and implemented a risk analysis and risk management tool for dealing with the uncertainty of emissions regulations. Implemented the model for the client and successfully led the organization through the maze of issues, including capital allocations, plant operations and investments that they faced.

Power Price Forecasting & Market Assessment

For an investment bank syndicate, provided critical power market assessments for use in a major energy bankruptcy case. On behalf of the official creditor's committee, provided power price forecasts, power market assessments, fuel market reviews and power plant financial assessments. Work product was successfully used in litigation.

For a merchant generating company, led the power market price forecasting initiatives related to power plant acquisition and development. Guided the analytical team in development of scenarios, model and data validation, and overall quality of results to be used for major investment and financing decisions in the U.S.

For a turbine manufacturer, performed power market assessments for a major turbine manufacturer. Developed forecasts of energy, capacity, and ancillary service prices to be used to define the place in the market for an emerging turbine technology.

For a European investment bank consortium, provided a detailed, comprehensive market assessment of global power markets to review the market for power generation turbines. With substantial investment in turbine manufacturers, the consortium relied on the expertise to make changes to their investment portfolios and shore up risk-plagued securities.

For a merchant generating company, provided market price forecasts to be utilized in the development and acquisition of power plants. Included forecasts of energy, capacity and ancillary services prices.

Asset Valuation, Acquisition & Development Support

For a merchant generating company, provided comprehensive power plant acquisition support. Managed market assessment process, provided asset valuations, defined acquisition price and assisted in property tax negotiations. Also highlighted the value of the asset with respect to asset re-powering opportunities.

For a merchant generating company, led the analytical efforts behind the acquisition of portions of three nuclear power plants. Included market comparable assessment, decommissioning fund valuation, and materials and supplies inventory valuation.

For a merchant generating company, provided a comprehensive financial and market analysis of re-powering opportunities for the client's older asset base. Included detailed assessment of market conditions and expected returns for various re-powering opportunities.

For a merchant generating company, successfully developed and deployed software to determine generating asset intrinsic and extrinsic value. Program utilizes probabilistic market price output from Aurora. Program also develops equilibrium market pricing for long-term time frame.

For a G&T co-op, provided a thorough asset valuation study to assess the impact of market uncertainties and financing parameters on the organization's asset values. Successfully provided the client with recommendations for potential divestiture and regulatory initiatives.

For a merchant generating company, provided a massive market assessment in support of a corporate power plant acquisition initiative. Included development of a detailed financial and valuation model for the client to use in future asset acquisition studies.

For a turbine manufacturer, provided a power market assessment and financial analysis to assess the viability of a new class of combined cycle units for the U.S. power markets. Included a comprehensive scenario analysis of fuel prices, load growth, emissions regulations and transmission constraints.

Model Implementation, Validation & Development

For a power market model vendor, provided support mapping generator assets in the client's proprietary model to generators in PowerWorld in order to enable locational marginal price assessment.

For an energy trading company, developed a custom interface for the AURORA electric power market model to seamlessly integrate within the client's analytical framework. Included data development and model validation, and custom report development.

For a merchant generating company, managed the overall process for transitioning the resource planning and forecasting department to AURORA. Included full data development, training, interface development, testing and validation. Successfully converted the business process to an AURORA-based system.

For an energy data provider, performed full audit review and validation of the client's power price forecasting processes. Reviewed input and output parameters for all national power price forecasts to improve the organizations accuracy and credibility.

For a merchant generating company, developed a customized power price forecasting tool to provide acquisition and development support, restructuring support and general corporate financial forecasts. Developed data sets for the model and provided training and validation.

For a regulated utility, developed a customized power price forecasting tool to provide acquisition and development support, restructuring support and general corporate financial forecasts. Developed data sets for the model and provided training and validation.

Emissions Analysis

For a merchant generating company, developed an enterprise-wide strategy for managing emissions constraints for the generating asset portfolio. Developed a probabilistic assessment model to consider plant operations, emission rates, control technology options, market forces and potential and existing emissions constraints. Deliverables resulted in a cohesive strategy and lobbying campaign for favorable regulations.

For a merchant generating company, performed a risk analysis of greenhouse gas regulation impacts on a potential fossil-fired asset portfolio acquisition. Deliverables included a detailed assessment of financial and asset value implications of various regulatory scenarios.

For a merchant generating company, provided an assessment of emissions regulations impacts on potential asset acquisitions. Included a market assessment of abatement technology costs and operating parameters, and a review of potential emissions regulations scenarios.

For an industrial chemical company, assessed the market for consumable chemicals to be used by emission control technologies. Client had an opportunity to take a position in supplying chemicals and needed an understanding of the regulatory and market conditions to support the investment.

Regulatory & Litigation Support

For a regulated electric & gas utility, provided regulatory and market analysis support in a contentious issue between competing utilities related to marketing and promotional practices. Assessed potential damages and rate impacts of regulatory decisions on the issue.

For a regulated electric & gas utility, performed a gas cost of service study to be use in a major rate case. Developed a proprietary model for cost allocation and financial implications.

For a regulated electric & gas utility, performed a massive cost of service study for a wholesale rate case brought before FERC. Implemented FERC's ECOS software and performed full study for a consortium of legal experts and consultants engaged in the case. The study led to a favorable resolution of issues.

For a regulated electric & gas utility, developed a custom ROE Calculation model to be used in rate-setting. The model captured highly complex algorithms into a manageable user interface. The model was approved by the state utility regulator and was successfully implemented.

For a regulated electric & gas utility, provided litigation support in a major utility restructuring proceeding. The project including development of exhibits, preparation of witnesses, developing testimony and cross-examination, and performing power market analyses.

Emerging Energy Technology Support

For a renewable energy development company, provided overall corporate development and supported the acquisition of investment capital.

For an emissions control technology company, provided comprehensive support for commercialization of a newly patented NOx control technology. The project included a detailed market assessment, development of a financial analysis tool for customer proposals, acquisition of venture capital and strategic planning for the company. All aspects of the project were highly successful.

For an energy technology company, provided market assessment and strategic support for an emerging energy conservation technology company. The company used advice to seek capital and market the products.

Publications & Presentations

“U.S. Power Markets Overview: An Issues Overview and Enhanced View of Eastern Markets,” May 6, 2008, Gerson Lehman Group speaker sponsorship

“Economics of Coal-Fired Generation,” March 2007, Goldman Sachs private speaker sponsorship

“Power Risk Management: Environmental Economics,” 2007, Goldman Sachs private speaker sponsorship

“Predicting Long-Term Energy Prices with OptQuest: The GenMetric Model,” May 3, 2006, Crystal Ball User Conference

“Using the Efficient Frontier,” January 18, 2006, Internationally-broadcast Web Conference sponsored by Decisioneering

“Building the Perfect Generation Portfolio,” September 2005, Public Utilities Fortnightly

“Finding the Efficient Frontier: Power Plant Portfolio Assessment,” June 13, 2005, Crystal Ball User Conference

“The Efficient Frontier and Power Plant Portfolio Analysis,” September 2004, EPIS Electric Market Forecasting Conference

“Power Asset Transactions: Regulatory Risks,” June 24, 2004, Infocast Buying Selling & Investing in Energy Assets 2004

“Power Generation Asset Valuation,” June 17, 2004, Crystal Ball User Conference

“Assessing Risk in a Changing Market,” March 29, 2004, Platts Global Power Markets

“Our Energy Future,” January 14, 2004, NET 2004 Conference

“Our Transmission Future,” January 14, 2004, NET 2004 Conference

“Models Matter: The Art of LMP,” November 6, 2003, Platts Electric Market Design Conference

“Risk Management Panel Discussion” Moderator, September 2002, EPIS Electric Market Forecasting Conference, Skamania, WA

“Venture Capital” Panel Moderator, December 3, 2001, Strategic Research Institute Energy Investor’s Summit

“Leveraging AURORA: Modeling New Resource Development,” November 13, 2001, EPIS Electric Market Forecasting Conference

“Optimizing Emissions Compliance: Emerging Technologies & Multi-Pollutant Regulation,” July 26, 2001, Coal-GEN 2001

Letzelter, James C., Public Utilities Fortnightly, “The New Venture Capitalists: Utilities Go Shopping For Deals,” December 2000

“Power Plant Emissions: Modeling Market Implications,” September 22, 2000, EPIS Electric Market Forecasting Conference

“Emissions Modeling for Optimum Compliance,” July 1999, Infocast SIP Call Conference

Letzelter, James C., Public Utilities Fortnightly, “Surviving the SIP Call: Fossil Plant Economics Under NOx Control,” May 1, 1999

“Managing Emission Limit Changes: Challenges & Opportunities,” January 29, 1999, CBI Merchant Plant Conference

Letzelter, James C., Power Finance & Risk, “The Impact of NOx Limits on U.S. Energy Markets,” January 11, 1999

“Valuation of Electric Generating Assets,” May 27, 1998, Gas Daily Conference

Letzelter, James C. and Axelrod, Howard A., Resource Magazine, “Risk Analysis in Resource Planning,” Summer 1992 issue

Education

LP.D., Northeastern University

M.B.A., State University of New York at Albany

B.S.E.E., Clarkson University

Kevin Cellars

Areas of Specialization

Executive level experience in power plant operations, construction, engineering, and project development.

Professional Experience

The Liberty Consulting Group

- Lead Consultant for Liberty's review of the Reliability and Resource Adequacy Planning of Newfoundland and Labrador Hydro
- Lead Consultant for Liberty's review Rate Mitigation review of Nalcor, Newfoundland and Labrador Hydro, Newfoundland Power, responsible for reviews of generating facilities owned by each entity

PSEG Corporation

- Managing Director/Vice President Construction/Engineering/Projects/Development

Executive level position. Lead a division of craft and professional personnel of greater than 350 people responsible for all construction, engineering, project, and mobile maintenance support for a fleet of diversified fossil fuel power stations. Report directly to the President of the company. Successfully completed a major back-end technology project for one of our major coal stations. This was a \$500M project that was completed on time and within budget. Presently in charge of another back-end technology project and construction of nine peaking plant projects in Connecticut and New Jersey (>\$1B). Also responsible for all other construction projects, engineering, and outage maintenance at power stations throughout the fleet. Also responsible for Development of new generation for the Fossil Company. Responsible for the construction of two 1X1 CCGT plants. The plants are under two different contract structures, an EPCM and an EPC structure. Both plants within 10 percent of budget and within 30 days of original schedule.

Exelon Corporation

- Senior Director Special Projects

Report directly to the President of Fossil Power. Responsible for Special strategic projects. Lead on the merger of Exelon Power with a nationally recognized merchant generation company. Lead for the operation and mitigation of plants to satisfy market power issues for the merger.

- Senior Performance Improvement Director

Special assignment to Nuclear. Responsible for the analysis and development of the action plan for the performance improvement at the Oyster Creek Nuclear Power plant in all 23 functional areas. This included, developing and implementing action plans for Projects, Outage Management, Engineering, Maintenance, Radiation Protection, Operations, and others. This analysis methodology and implementation was considered a strength by INPO and has become a standard methodology for the fleet.

- Vice President Fossil Engineering and Projects

Led an organization of engineers and technical personnel to support the Exelon Power Fossil fleet of over 12000 MWe of diverse generation including Hydro, Coal, oil, pumped storage, and gas power plants. Responsible for equipment performance programs and all technical issues relating to all plant equipment throughout the fleet. Responsible for all major projects, equipment overhauls and major modifications in the plant outages.

- Vice President and Lead Fossil Merger Officer

Led the effort to merge the Fossil Power Company of Exelon Corp. with that of PSEG Fossil. This consisted of leading a multifunctional team from both companies to develop a new organization, synergies and cost savings, business plans, and processes and procedures for the merged organization. Led the team to work with financial analysts to value all the assets and inventory and to create the first year operating budgets. This effort resulted in a proposed new Fossil Power company that was doubled in size to over 24000 MWe. The proposal was subsequently approved in total by senior management.

- Chief Operating Officer, Sithe International NY, NY

Special assignment. Led the operation of the Sithe International power plants. Responsible for operation and completing construction of two 260 MWe circulating fluidized bed boilers (TEG I and TEG II) located in Tamuin Mexico. Responsible as COO for the subsequent commercial operation of the facility. Also responsible for operating 15 other fossil plants while creating a plan to sell, shutdown, or dismantle the plants and exit Sithe Energies, Inc. The plants met the COD deadline. Successfully negotiated the settlement of all construction claims resulting in a reduction of claims from \$160M to a zero dollar settlement. As COO, operated these plants meeting all power supply and financial commitments to both the offtakers and lending institutions.

- Vice President, Business Operations, Exelon Power

Led the effort to integrate and develop the business infrastructure for the newly-created Exelon Power Company. This integration created a fossil power company of "Exelon Power". Subsequently promoted to Vice President, Business Operations. Responsible for the development and standardization of the Exelon Power business model. Also directly responsible for finance, information technology, supply, and facilities for the company. This includes business planning, finance, cost control, inventory control, purchasing, performance management, and IT support for all plants. Performed as the lead for the

acquisition of a major northeast power plant. This included an analysis of the asset from an environmental, technical, financial, operational, legal, and HR perspective.

- Director, Quality Assurance, Exelon Nuclear

Led a staff of approximately fifty professionals across the four sites in the Mid-Atlantic operating region. Responsible for all quality assurance for the Exelon Mid-Atlantic Operating Region. Re-designed the workflow from continuous assessments to program audits and continuous performance assessments.

- General Manager, Operations Support, Exelon Nuclear

Led a staff of approximately 35 corporate professionals. Responsible for the following functional areas across Exelon's ten nuclear sites; operations, chemistry, environmental, safety, radiation protection, and rad waste. Developed standardized business plans and processes for all functional areas in six months. In addition, provided excellent operational support to the fleet in all functional areas.

- Director, Engineering, Exelon Nuclear

Led a staff of approximately twenty corporate professional personnel. Responsible for all design processes for Exelon Corporation's ten nuclear power plants (17 units). Led overall engineering efforts to define and implement standard engineering processes across the former PECO and ComEd fleet of plants. The engineering integration effort was subsequently used as the model for the corporation.

- Director, Engineering Programs, Exelon Nuclear

Led a staff of approximately twenty corporate professionals. Responsible for the following areas across Exelon's ten nuclear power plants; MOVs, AOVs, ISI, Reactor Vessel Programs, welding, and non-destructive examination. Led overall effort to manage these programs to improve consistency across one fleet and meet our regulatory requirements.

Baltimore Gas and Electric Company (BGE)

- Calvert Cliffs Nuclear Power Plant, Lusby, Maryland - - Manager/Nuclear Engineering

Led a permanent staff of about 190 professional engineering personnel. Responsible for Design support for Calvert Cliffs including Fuel Design and all plant modifications. Led an overall engineering functional assessment effort to improve the site engineering organization business function performance. As a result of the engineering improvement effort, we simplified the engineering change process to umbrella changes under a streamlined equivalent change process. INPO rated engineering as excellent with no outstanding issues. This was accomplished with continual reductions in the engineering O&M budget.

- Superintendent/Nuclear Maintenance

Led a permanent staff of approximately 300 personnel and a contractor staff of about 100-500. Responsible for all planning, scheduling and performance of maintenance, modifications and outages performed at Calvert Cliffs Units 1 and 2 power plant. Implemented a performance turnaround of the maintenance business. Implemented an on-line maintenance process that resulted in a maintenance schedule adherence of greater than 95 percent. This was identified as a strength during the December 1995 INPO inspection, representing a reversal of declining performance in Maintenance in less than one year in the position. All of the above was accomplished while reducing the 1996 actual Maintenance O&M expenditures by approximately \$5 million. The Site Vice-President recognized Maintenance as the most improved business function on site.

- General Supervisor, Design Engineering

Led a permanent staff of approximately 110 engineers and technicians. Responsible for the overall design of the plant and all modifications to the plant. Led an overall modification process re-engineering effort. This included a complete re-write of the engineering change process. A total of about ten engineering change procedures were consolidated into a single engineering procedure. In addition, a total of about 30 qualification cards were reduced to four with all being placed into one procedure. Savings to date are approximately \$8 million, or a 40% reduction in O&M costs.

- General Supervisor, Procurement Services

Created and led a permanent staff of about 70 professionals responsible for purchasing, contracting and material management activities for the plant. Purchased \$60 million of parts and services annually and managed a warehouse of \$40 million of inventory. Led a re-engineering of the purchasing and material management business functions at Calvert Cliffs. First year savings were a 20% reduction (\$1 million) in O&M costs, coupled with a 90% (90 days to 7 days) reduction in order process cycle times. This effort is currently used as the site model in leadership training for all BPI teams at Calvert Cliffs. New process and organization resulted in a decrease of backlog orders from >1,000 to <30 in 90 days and have remained at this level. Parts delays are no longer an issue at Calvert Cliffs.

- Senior Engineer, Mechanical Design Engineering

Responsible for modification activities and mechanical design engineering in support of the plant. Designed and implemented all modifications on schedule. Introduced and qualified PC-based pipe stress analysis techniques to the unit, resulting in significant savings by performing stress analyses in house.

- Outage Manager

Responsible for planning, scheduling and coordinating all maintenance refueling outages for the Calvert Cliffs Power Plant. This involved scheduling and coordinating thousands of work activities amongst approximately 20 work groups of greater than 1000 workers.

Directed five refueling outages and numerous maintenance outages. Planned, scheduled and implemented second shortest outage in company history.

- Consultant - Energy Consultants, Inc.

Senior engineer responsible for the development of courses in radiation safety, thermodynamics and physics and the training of shift technical advisors in the above courses.

- Officer of the Deck, U. S. Navy, Nuclear Submarine U.S.S. Sea Devil SSN 664

Responsible for safe operation of submarine under commanding officer. Also responsible for supervision and operation of the Nuclear Propulsion Plant as a qualified Engineering Officer of the Watch (EOOW).

Education and Training

Master of Science, Project and Engineering Management, Johns Hopkins University Whiting School of Engineering, Baltimore, MD

Bachelor's Degree, Mathematics and Economics, Minor in Physics, Ohio Wesleyan University, Delaware, Ohio (member of Pi-Mu-Epsilon, National Mathematics Honorary Society)

Associates Certificate in Accounting

Completed an in-house INPO-accredited Plant Management Senior Reactor Operator (SRO) Certification Training Program

Completed the INPO Senior Plant Management Course

Graduate of The Rutgers University Effective Management Training Program

Authored a book titled "How to Lead a Process Improvement Effort" - - Published by the AMA

Michael Antonuk

Areas of Specialization

Energy data system analysis and research, project management and business planning.

Relevant Experience

Senior Analyst on Liberty's management and operations audit of Atlantic City Electric for the New Jersey Board of Public Utilities. Responsibilities included Liberty's examinations of compliance with affiliate relationships rules.

Senior Analyst and Project Coordinator for Liberty's rate mitigation review of Newfoundland and Labrador Hydro for the Board of Commissioners of Public Utilities.

Senior Analyst and Project Coordinator on Liberty's management audit of WGL's PROJECTpipes for the District of Columbia Public Service Commission.

Senior Analyst and Project Coordinator on investigation of Peoples Gas of Chicago's Advanced Main Replacement Program for the Illinois Commerce Commission.

Senior Analyst on Liberty's management review of Mississippi Power for the Mississippi Public Service Commission.

Senior Analyst on Liberty's benchmarking analysis of Arizona Public Service for the Arizona Corporation Commission. This study covered a ten-year audit period and benchmarked Arizona Public Service's performance as compared to various other U.S. utilities.

Senior Analyst and Project Coordinator on the following Liberty management and operations audit, providing project management support, analytical support, as well as assisting in several audit task areas:

- Liberty's Staffing Study of all New York electric and gas utilities for the New York Public Service Commission.
- Liberty's management and operations audit of Pepco for the District of Columbia Public Service Commission.
- Liberty's management and operations audit of Alliant Energy for the Iowa Utilities Board.
- Liberty's management and operations audit of the electricity, natural gas, and steam operations of Iberdrola SA/Iberdrola USA/NYSEG and RG&E for the New York Public Service Commission.
- Liberty's management and operations audit of the electricity, natural gas, and steam operations of ConEd for the New York Public Service Commission.
- Liberty's management and operations audits for the New Jersey Board of Public utilities of Elizabethtown Gas/AGLR, New Jersey Natural Gas/NJR, South Jersey Gas/SJR, and Elizabethtown Gas/ETG.

Senior Analyst on five audits of fuel procurement and management practices for the Mississippi Public Service Commission. Responsible for Liberty's transaction sampling of fuel and power purchases and sales.

Senior Analyst on three audits of fuel procurement and management practices of Nova Scotia Power, a review of the merits and mechanics of a company-proposed automatic recovery method for energy costs, and an audit of affiliate relationships (including coal, electric power, and natural gas procurement activities) performed for the Nova Scotia Utility and Review Board.

Senior Analyst for Liberty's management/performance audit and financial audit of coal procurement and management of Duke Energy Ohio for the Public Utilities Commission of Ohio (PUCO).

Senior Analyst in an audit of the fuel and purchased-power procurement practices and costs of Arizona Public Service Company for the Arizona Corporation Commission. Responsible for reviews of the gas and power transactions of the utility and a wholesale marketing affiliate.

Senior Analyst on Liberty's management and operations audit of Columbia Gas of Ohio for the Public Utilities Commission of Ohio.

Project Coordinator and Senior Analyst on Liberty's focused management and affiliates audit of People's Energy/Integrays for the Illinois Commerce Commission. Responsible for reviews of natural gas transactions of two regulated utilities, a retail energy affiliate, and a wholesale marketing affiliate.

Analyst for Liberty's work with staff of the Virginia State Corporation Commission to evaluate the services of an affiliate providing gas portfolio management services under an asset management agreement with Virginia Natural Gas, an operating utility subsidiary of Atlanta-based AGLR. Analyzed commodity trade transaction and accounting information for gas purchases and sales by an affiliate conducting trades for utility and non-utility operations. Reviewed and assessed controls systems related to transactions and sharing of value between the utility and the affiliates.

Performed research and analysis as part of Liberty's audit of the competitive service offerings of New Jersey's four main electric companies on behalf of the New Jersey Board of Public Utilities, focusing on cost allocation issues and compliance with the separation guidelines within the New Jersey Energy Competition Standards.

Education

B.S. in Business and Economics, Finance Major, Lehigh University