

Table of Contents

1 Introduction 2

 1.1 Offering Firm 2

 1.2 RFP Conformance..... 2

2 Understanding 2

3 Methodology..... 3

 3.1 Project Initiation 3

 3.2 Analysis 4

 3.3 Testimony..... 5

 3.4 Project Schedule 5

4 Experience and Qualifications..... 5

 4.1 Experience..... 5

 4.1.1 Consultant Work Assignments..... 5

 4.1.2 Consultant Biographies 5

 4.2 Qualifications 7

5 Cost Proposal 9

 5.1 Task Assignments..... 9

 5.2 Project Cost..... 9

 5.3 Expense Estimate 10

 5.4 Labor Rate Components 10

6 Enclosures 11

 6.1 Resumes..... 11

 6.1.1 Edwin Norse 11

 6.1.2 Charles Elliott 12

 6.1.3 Michael F. Rafferty..... 14

1 Introduction

1.1 Offering Firm

Williams Consulting, Inc.
701 Market Street, Suite 106B
St. Augustine, FL 32095
Tel: 904-810-9831

Contact: Michael F. Rafferty, Vice President

1.2 RFP Conformance

Williams Consulting, Inc. confirms that it has complied with all provision contained in the RFP. Williams Consulting is currently under contract with the State of North Dakota; contract number #09-11.044 for development and implementation of an Energy Assurance Plan for the State. We do not believe that this contract will result in any conflict of interest in the Montana-Dakota Utilities Co. (MDU) Rate Increase analysis. During the development of the state's EAP, we will be in contact with MDU but this contact will be limited to their emergency operating plans and will not deal with rates in any manner. Mr. Rafferty is the project manager on the EAP and neither Mr. Norse nor Elliott has any role on that contract.

2 Understanding

The North Dakota Public Service Commission is requesting proposals from qualified firms to conduct research and analysis of MDU's rate increase application and preparing and sponsoring testimony before the Commission on behalf of Montana's ratepayers.

The North Dakota Public Service Commission regulates investor-owned utilities operating in the state of North Dakota. MDU provides gas and electric service to many ND ratepayers and is seeking to increase electric rates by 14%. This assignment is to be done on behalf of the ratepayer advocacy side of the Commission in presenting its case for the ratepayers of MDU.

MDU serves to approximately 75,350 electric and 90,000 natural gas customers in 150 communities in the State of North Dakota. Its last electric rate increase of 1.2% was granted in January 2004. MDU, along with several other utilities have been seeking potential generating resources and was committed to its participation in Big Stone II, a coal-fired power plant. Due to a number of reasons, three of the seven original participants withdrew from the project and the remaining four participants (MDU being one) were unable to secure replacement participants were not able to continue the project without additional participants. The project was ultimately cancelled. MDU had invested approximately \$9.5 Million in development and permitting cost for the Big Stone project and this is included in the overall 14% rate increase (\$15,396,303) that MDU is seeking. On April 14, 2010, the company filed an application for an interim rate increase specifically related to the Big Stone II development costs in the amount of \$7,584,309 which is to be recovered through the fuel adjustment clause over a three year period. Other components in the permanent rate increase filing include recovery of deferred generating costs for Lignite Vision 21 coal plant and the Milton Young III plant. The rate case also includes recovery of costs related to wind power development and recovery of loss of wholesale margin, transmission

additions and other cost items. One of the primary concerns is handling of the Big Stone development costs in a permanent rate increase.

Viewing this rate case from the ratepayer's perspective, we would examine a number of areas, including:

1. Justification for inclusion of all of Big Stone II development costs; and whether this should be recovered in fuel adjustment or permanent rates, including questions such as:
 - a. Were the assumptions rational at the time?
 - b. Did the estimates change materially from the time of plan to time of abandonment?
 - c. Should some of this risk be shared by the stockholder?
2. Actions MDU has taken to reduce its operating costs, including workforce reductions.
3. Actions MDU has taken to improve its debt servicing requirements
4. Propriety of purchase power agreements (through 2015).
5. Rate of return requested vs. industry average allowed rates.
6. Loss of wholesale revenues, including questions such as:
 - a. Was this anticipated?
 - b. Is it really a result of wind generation addition?
 - c. Is it likely to continue?
7. Reasonableness of IRP and its foundational assumptions
8. Fuel cost assumptions, including questions such as:
 - a. Does the cost of fuels for the projected period look appropriate?
 - b. What volatility might be expected in these, and effect on rates?
9. Depreciation/Amortization, including questions such as:
 - a. Are the levels suggested appropriate?
 - b. Is the period for wind generation depreciation appropriate?
10. Impact and reasonability of proposed class cost of service and proposed changes in rate design; separation of base fuel and purchased power fuel components and segregation of these between primary and secondary service.

3 Methodology

We have provided comprehensive narrative statements that set out the methodology we intend to employ as described in the following sections.

3.1 Project Initiation

Following completion of contracting formalities, receipt of requested documents and confirmation of the preliminary interview schedule, we plan to hold a project kick-off meeting with the OCS. During this meeting we plan to accomplish the following activities:

1. Provide team introductions; our project team and the OCS staff members;
2. Review key issues as set forth in the scope of work with OCS staff and identify additional significant issues based on review and analysis of Company materials;
3. Proceed to conduct interviews with representative staff members from the utilities.

3.2 Analysis

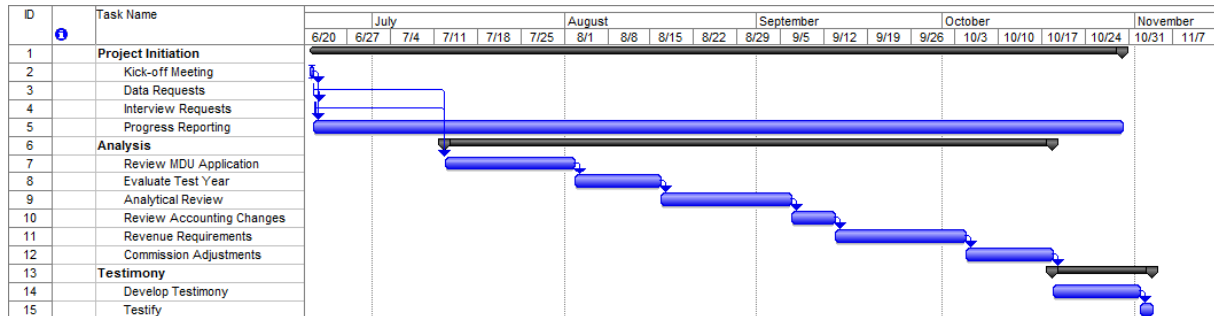
Our approach to provide consulting assistance to the Commission in connection with the revenue requirements and test year components of the upcoming proposed general rate cases is detailed in the following paragraphs:

1. Review MDU's initial application in concert with the Commission's project manager. This will include a review of direct testimony and exhibits, discovery responses as provided with the initial filing, and work papers. We will review updates to the filing(s) and relevant prior Commission Orders and Stipulations. We will review relevant orders and stipulations from other states to the extent appropriate as part of this task. This review will focus on the test year and revenue requirements and will include a review and evaluation of revenue, expense, rate base, affiliate transactions and corporate cost allocation issues.
2. Evaluation of the test year(s) proposed by MDU for appropriateness. This evaluation will seek to determine if the proposed test year(s) best reflect conditions expected during the rate effective period.
3. We will perform an analytical review of the major components of Rate Base, Operating and Maintenance Expenses, Depreciation, Taxes and Revenues, comparing the Company's proposed Test Year amounts to actual reported results for the latest 2 calendar years. Significant changes will be reviewed and explained in assessing the reasonableness of the Applicant's proposed test year amounts.
4. We will review the Applicant's most recent Form 1 and Annual Report filings to identify any significant changes in accounting or financial reporting or in the application of generally accepted accounting principles and assess the effect if any, on just and reasonable revenue requirements in the test period.
5. Generally speaking, revenue requirements (excluding net power costs) are comprised of the allowed return on rate base plus an allowance for just and reasonable expenses. Rate base is comprised of the original cost of utility plant in service plus inventories and an allowance for cash working capital, less accumulated depreciation and accumulated deferred income taxes. We will review prior Commission orders for any unresolved issues or specifically prescribed rate base treatments. We will also review significant rate base additions since the last proceeding to assess whether any conditions exist that would alter our recommended treatment of proposed rate base items.
6. The Revenue Requirements allowance for Test Year Expenses is forecast by the Company based upon historical information interpolated to a future Test Year. In some cases this is as easy as applying an index to the historical period costs. While one can argue whether the Company selected the most appropriate index, the calculation mechanics are quite transparent and replicable. In other cases, the proposed Test Year amount may be the result of complex calculations or management estimates or intentions. Our approach to review and assess the reasonableness of each Test Period expense allowance is flexible to consider the evidentiary basis put forward and assess alternative methods of making such estimates.
7. Consolidate and Commission adjustments (revenue requirements, net power costs, cost of capital, etc.) to determine the overall recommended adjustment to the Company's filing.

3.3 Testimony

As specified in the RFP, we will prepare written testimony and present effective oral testimony at the Commission’s technical hearing.

3.4 Project Schedule



4 Experience and Qualifications

4.1 Experience

WCI proposes a small but highly experienced project team for this assignment. We have structured the project team with a Responsible Officer/Project Manager overseeing the work effort of our subject matter experts. In addition to rate case specific experience, our team possesses significant operating experience, market experience, experience in developing and reviewing capital budgets, IRPs, financing costs, wind energy and other factors pertinent to this case. We have summarized the specifics of the proposed project team in the table below and we have provided brief biographies for each proposed consultant. Full professional resumes are attached in Section 6.

4.1.1 Consultant Work Assignments

Name	Title	Work Assignment	Hours
Michael Rafferty	Responsible Officer/Project Manager	Project oversight and management	38
Edwin Norse	Consultant	Rate increase analysis	152
Charles Elliott	Consultant	Rate increase analysis	152
Total			342

4.1.2 Consultant Biographies

Edwin A. Norse has over 39 years of utility and consulting experience. As CFO of Green Mountain Power and Assistant General Manager of Burlington Electric he participated in and provided testimony for revenue requirements, cost of service, cost of capital, and rate of return (or TIER) requirements, over a 27 year period. He also had oversight of all aspects of budgetary and financial oversight, including coordination with commercial banking, investment banking, rating agency presentations, and outside auditor services. In both instances he was responsible for the accounting and budgetary systems and the performance of each. At Burlington Electric he was responsible for power supply resources as well, and for a period of three years at GMP was responsible for that function and negotiation of mitigation contracts with Hydro Quebec. Subsequent to that, as the Special Master for the Vermont Public Service

Board, He has also worked on valuations of propane and oil assets, and consulting with a cooperative, also as outlined above. He took part with another consultant in a gas distribution plant study, and the WECC strategic planning process, also described above. He has had extensive experience with startup companies, including the securing of initial capital and the planning and start-up of a successful electric energy retail company and a successful Chinese pharmaceutical marketing and distribution company. Relevant assignments include:

- ◆ Provided testimony for revenue requirements, cost of service, cost of capital, and rate of return (or TIER) requirements at Green Mountain Power.
- ◆ Responsible for the accounting and budgetary systems and the performance of each at Green Mountain Power.
- ◆ Power supply resources and mitigation contracts at Burlington Electric.
- ◆ Special Master for the Vermont Public Service Board covering asset valuation.

Charles Elliott has over 40 years of broad utility experience ranging from engineering through rate design and cost analysis. During his 29 years with Green Mountain Power Corporation he rose in responsibility ultimately leading the pricing and tariff administration function as Manager. As a consultant, he has direct experience in the transmission rate area having provided services to a number of New England utilities. Relevant assignments include:

- ◆ For the Vermont Electric Cooperative, Johnson, VT, he developed a Transmission Service Level Tariff for an Industrial Customer Class and provided testimony and exhibits before the VT Public Service Board. He also performed tariff analysis and Tariff merger proposal for the Vermont Electric Cooperative takeover of Citizens Utilities VT Electric Division.
- ◆ For Citizens Utilities Co. Vermont Electric Division, Newport, VT., he performed Transmission Service Level Tariff analysis for industrial customer classes. He analyzed Industrial Customer load characteristics for development of load control, energy efficiency and/or economic development tariffs, and he analyzed ISO-NE Standard Market Design Programs impact on Citizens Utilities customers.

Michael F. Rafferty is an experienced executive, manager and consultant with over 35 years of experience both in the electric utility industry and in management and engineering consulting. He has worked extensively for clients domestically in the US and equally for clients and governments internationally. He has managed consulting teams and corporate departments and has very strong team-building skills and is adept at managing and motivating diverse resources. His qualifications include load forecasting, integrated resource planning, electric transmission and distribution planning; budget forecasts; benchmarking; staffing; economic studies; strategic planning studies; marketing studies; and professional training and development. He holds a BS degree in Electrical Engineering from the Ohio State University in Columbus, Ohio and has completed the requirements for a MS in Electrical Engineering at the New Jersey Institute of Technology in Newark, New Jersey. Highlights of his career include:

- ◆ Managed and served as task leader for a number of operational assessment assignments for electric utilities, including regulatory commission mandated audits. These assessments covered management, organizational and staffing issues as well as technical performance areas and focused on identifying causal factors for failure or sub-par performance and developing realistic

and achievable improvement recommendations.

- ◆ Managed and conducted a number of business continuity and disaster preparedness reviews for clients both in the energy, government and general business sectors.
- ◆ Responsible officer for a leading utility management development program, where he managed the program for over six years and participated as a lecturer on diverse topics. Designed, developed and delivered tailored executive training programs for a number of domestic and international clients.

4.2 Qualifications

Firm/Government Agency Name: Vermont Public Service Board	
Contact Person: Ennis Gidney	Phone: 802-828-2358
Title: Former Chief Accountant	
Address: 120 State Street Montpelier, VT 05602	
	Consultant: Norse
Project Description and Completion Date: CFO – Green Mountain Power - Testimony before the Board on Rate Base, Cost of Capital, Cost of Service, issues over a 13 year period, during which this individual was Chief Accountant to the Board	

Firm/Government Agency Name: Maine Public Utilities Commission	
Contact Person: Ralph Howe	Phone: (207) 287-1371
Title:	Email Address: ralph.howe@maine.gov
Address: 242 State Street State House Station 18 Augusta, ME 04333	Consultants: Rafferty & Williams
Project Size, Complexity, Scope and Duration: Comprehensive review of Central Maine Power’s distribution system planning, design, operations and maintenance. Included a physical field condition assessment of the distribution system with a focus on vegetation management and staffing.	

Firm/Government Agency Name: City of Ocala, FL	
Contact Person: Matt Brower	Phone: 802-828-2358
Title: Assistant City Manager	Consultant: Norse, Rafferty, Williams
Address: 2100 NE 30 th Avenue Ocala, FL 34470	
Project Description: Evaluation of operational efficiency and review of purchase power contract and costs through the Florida Municipal Power Agency (FMPA). This included a review of FMPA’s project ownership and fuel price hedging strategies.	

Firm/Government Agency Name: Green Mountain Power Corporation	
Contact Person: Steven Terry	Phone: 802 398 8111
Title: Former Senior Vice President	Consultant: Elliott
Address: Worth Mountain Consulting 68 Court Street, Middlebury, VT 05753	
Project Description:	

RFP PU-10-124 – MDU Rate Increase Application Analysis

Mr. Elliott was Manager of Pricing and Tariff Administration at Green Mountain Power Corporation during which time Steven Terry was Senior Vice President of Corporate and Legal Affairs and directly responsible for his position.

Firm/Government Agency Name: Citizens Utilities Company ,Vermont Electric Division	
Contact Person: Gary Kellogg	Phone: 928 505 7333
Title: Former VP and Gen. Manager	Consultant: Elliott
Address: Partnership for Economic Development 314 London Bridge Road, Lake Havasu City, AZ 86403	
Project Description: Mr. Elliott Developed Transmission Service Level tariff, and load control, energy efficiency, and economic development tariffs for industrial customers. Analyzed ISO-NE Standard Market Design Programs impact on Citizens Utilities Customers. During this time Mr. Kellogg was VP and General Manager.	

5 Cost Proposal

5.1 Task Assignments

Task Name	Rafferty	Norse	Elliott	Total
Project Initiation	30	8	8	46
Kick-off Meeting	4	4	4	12
Data Requests	1	2	2	5
Interview Requests	1	2	2	5
Progress Reporting	24			24
Analysis	0	112	112	224
Review MDU Application		32	32	64
Evaluate Test Year		16	16	32
Analytical Review		32	32	64
Review Accounting Changes		8	8	16
Revenue Requirements		16	16	32
Commission Adjustments		8	8	16
Testimony	8	32	32	72
Total Hours	38	152	152	342

5.2 Project Cost

	Rafferty	Norse	Elliott	Total
Task Name/Rate	\$160	\$160	\$160	
Project Initiation	\$4,800	\$1,280	\$1,280	\$7,360
Kick-off Meeting	\$640	\$640	\$640	\$1,920
Data Requests	\$160	\$320	\$320	\$800
Interview Requests	\$160	\$320	\$320	\$800
Progress Reporting	\$3,840	\$0	\$0	\$3,840
Analysis	\$0	\$17,920	\$17,920	\$35,840
Review MDU Application	\$0	\$5,120	\$5,120	\$10,240
Evaluate Test Year	\$0	\$2,560	\$2,560	\$5,120
Analytical Review	\$0	\$5,120	\$5,120	\$10,240
Review Accounting Changes	\$0	\$1,280	\$1,280	\$2,560
Revenue Requirements	\$0	\$2,560	\$2,560	\$5,120
Commission Adjustments	\$0	\$1,280	\$1,280	\$2,560
Testimony	\$1,280	\$5,120	\$5,120	\$11,520
Total Fees	\$6,080	\$24,320	\$24,320	\$54,720
Expenses	\$743	\$2,613	\$2,943	\$6,298
Total Project	\$6,823	\$26,933	\$27,263	\$61,018

5.3 Expense Estimate

	Units	Rafferty	Norse	Elliott	Total
Trips		1	3	3	7
Days		1	5	5	11
Airfare	\$500	\$500	\$1,500	\$1,500	\$3,500
Hotel	\$100	\$100	\$500	\$500	\$1,100
Meals	\$75	\$75	\$375	\$375	\$825
Auto	\$60			\$300	\$300
Misc	10%	\$68	\$238	\$268	\$573
Total		\$743	\$2,613	\$2,943	\$6,298

5.4 Labor Rate Components

	Rafferty	Norse	Elliott
Base Compensation	\$75	\$75	\$75
Profit	\$55	\$55	\$55
Overhead	\$30	\$30	\$30
Bill Rate	\$160	\$160	\$160
Utilization Average	0.9%	3.5%	3.5%
Utilization Peak	70%	20%	65%

6 Enclosures

6.1 Resumes

6.1.1 Edwin Norse

Williams Consulting, Inc.

Consultant

2009 - Present

- Efficiency and Effectiveness Evaluation for a municipal utility

Norse Associates

Principal

1999 - Present

- Consultation on Strategic Planning issues for a reliability council.
- Consultation on financial and power supply matters for an electric cooperative.
- Initiation of a consulting firm that specializes in valuation, negotiation for purchase or sale of assets, strategies involving business expansion or mergers, and business recovery.
- Various utility consulting work in power supply, financial issues, rating agency presentations, rates, and expert testimony.
- Valuation/Negotiation services for a client relative to acquisition of a publishing business.
- Valuation/Inquiry relative to an oil acquisition/divestiture.
- 5 Year Plan/Valuation of Assets/Lease of Excess Capacity for small Catholic college reorganization.
- Assistance with financial and planning issues for a retail energy services company
- Work outs with three universities.

Special Master

1999 – 2003

(Appointment by Vermont Public Service Board as Special Master for oversight during the probationary period of 1999 – 2002 of Citizens Utilities as set forth in Orders in Dockets # 5841/5859)

Probationary elements included all facets of accounting, both FERC and GAAP, oversight of evolution and correction of systems to supply consistent and accurate managerial and regulatory accounting information, oversight of an audit of the entirety of the transmission and distribution assets, underlying assumptions relating to least cost planning, subsidiary systems relating to demand sight management activities and At 248/250 reviews [Public Service Board and Regional Environmental planning processes], as well as Capital Budgeting processes and accounting; hiring and supervision of experts in various fields of accounting and engineering, as required.

Green Mountain Power Corporation (GMP) *(an electric utility serving about 1/3 of Vermont with 83,000 customers and \$276 million in assets, \$179 million in revenues)*

Vice President, Chief Financial Officer and Treasurer

1984 -1998

- Responsible for the financial performance of GMP.
- Independent auditor, regulatory and rating agency relationship responsibility as it related to the finances of GMP during this period.
- Responsibility for all controller and treasury functions, including budgets, forecasting, plant, general accounting, financial systems, etc.
- Initiated and achieved securing “A” ratings for GMP from Standard & Poor’s, Moody’s, and Duff & Phelps in middle to late 1980’s.

- Maintenance, with occasional review and change of all commercial and investment banking relationships, including lines of credit, debt, preferred, and equity issuances, etc.
- Coordinated and led over \$36 million of issuances of equity, \$7 million of preferred, and \$81 million of debt securities in the market.
- Ten years in which utility consistently earned equal to its allowed rate of return, and achieved lowest rates of any major investor-owned electric utility serving New England.

Green Mountain Energy Resources & Green Mountain Propane Gas *(start up and subsidiary operations of GMP)*

- GMER – secured initial investment capital and partnership for this retail start up.
- GMPG – Operating Officer responsible for its return to profitability and ultimate sale.
- Mountain Energy – treasurer of wind energy subsidiary.

Burlington Electric Department

Assistant General Manager

1975-1983

- Oversight of all financial, power supply, customer service, general service, credit, stores and inventory functions, and the operations in absence of General Manager.
- Responsible for power purchases and sales.
- \$70 million financing of J.C. McNeil wood/oil/gas fired unit and wood supply evolution.
- Negotiations with Ontario’s Hydro and most New England utilities for joint ownership and power contracts.
- Responsible for all revenue requirements, including rate applications through a three step process of Commission, City Governance and Vermont Public Service Board.

Administrative Assistant

1970-1975

- Responsible for rates, financial planning, intra-utility functions, power supply planning and various functions. During this period, assisted in maintaining rates below other investor utilities in Vermont.

6.1.2 Charles Elliott

Mr. Elliott has over 40 years of utility and consulting experience. He is an analytical Engineer with great enthusiasm for following the direction suggested by data analysis; he is adept at pulling together information from diverse groups and resources; researching all probable circumstances; and coordinating and managing the development of projects. He has repeatedly given expert testimony on project results before local, state and federal regulatory agencies. He has held increasing responsible positions throughout his career based on his ability to get things done.

He functions efficiently as a committee of one, as the leader of a team or of multiple teams with different responsibilities. His ability to bring people to agreement and to initiate and lead the activities indicated by the consensus is the value he brings to a project or an organization.

PROFESSIONAL HISTORY

Consultant – Utility Cost Analysis and Rate Design

1999 – Pres.

Green Mountain Power Corp. Colchester, VT

1970 – 1999

- Manager of Pricing and Tariff Administration
- Manager of Rates

- Rate Engineer
- Substation Design Engineer

Littleton Water and Light Department, Littleton, NH
Assistant Superintendent

1969

SELECTED ACHIEVEMENTS

- Responsible for the company's Fully Allocated Class Cost of Service Studies and Rate Design Studies for each rate case filing. Coordinated and scheduled the work involving all accounting and operating departments of the company and up to three outside consultants necessary to complete the studies. Organized the individual projects into an orderly sequence so that work necessary to be completed first was done in time for those that required the information for further studies. The studies' results were consistently accepted by the Regulatory Boards as valid for the setting of utility rates.
- Negotiated settlement positions of the companies Fully Allocated Class Costs of Service Study and Rate Design results with Economists and Technical Experts representing Consumer Groups and Industrial Advocates in Regulatory Agency legal proceedings
- As the Chairman of the Witness Training Task Force of the Electric Council of New England (ECNE) managed the combined activities of the ECNE staff, six lawyers, four professional volunteers and a paid outside consultant to present the two day Witness Training Task Force course on an annual basis. This resulted in the annual training of 20 New England professional personnel in the techniques of being an Expert Witness in legal proceedings representing their employer's interest.
- Liaison to the IT Department for Billing System Software Development. Frequent Rate Design changes necessitated the continuous modification of the company's Billing System. Responsible for explaining to IT personnel the Rate Changes, the mathematical algorithm necessary for correct billing, data base requirements, and availability of customer usage (metered) data. Responsible for working with IT personnel to determine the most cost effective solution, such as permanent change to Billing Software, Separate PC based special arrangement or other temporary solution. Monitored the effectiveness of the IT Departments changes to assure that billing was accurate, timely and understood by the customer.
- As Project Manager, Negotiated a pilot study with three large ski areas to study ways in which the ski areas could reduce the electric utilities cost of providing electricity by changing the time or manner in which they operated the ski areas. The study lasted for three years and resulted in an "Interruptible – Dispatchable Rate" that was offered to all commercial and industrial customers. This resulted in about \$100,000 per year savings to the utility company which was shared on a 50% basis with the customers, reducing customer costs by \$50,000 per year.
- Analyzed and evaluated the impact on customer electric usage patterns of six different rate designs as the Project Engineer for a Federal Energy Administration (FEA) Research Grant. Gathered metering data and evaluated the results for costs effective ways to influence electric customer usage patterns in a manner that reduced the utilities costs of providing electric

service. Determined that customers responded most readily to Time-of-Day rate designs. This resulted in the FEA expanding the research on Time-of-Day rate design to a national basis.

- Took responsibility for resolving a disputed bill for an Engineering Study between the electric company and an out of state engineering firm. After discussing the study with both company and engineering firm technical personnel, discovered that the problems resulted from a miscommunication as to the meaning of essential numeric technical data provided by the company. With this issue resolved, the engineering firm was able to revise and correct the study results; the company accepted the results and made final payment. Avoiding a lawsuit.
- Developed Pole Attachment Tariff, Power Line Communication, System cost analysis, rate Comparison Studies, and Environmental Clean-Up Surcharge Tariff for Green Mountain Power Cooperation.
- Developed Annualized Rate Designs for all major rate classes converting the previously Winter/Summer Differentiated Rates to level rates for all 12 months for GMP.
- Performed Transmission Service Level Tariff analysis for industrial customer classes; Analyzed Industrial Customer load characteristics for development of load control, energy efficiency and/or economic development tariffs; and Analyzed ISO-NE Standard Market Design Programs impact on Citizens Utilities customers for Citizens Utilities.
- Developed a Transmission Service Level Tariff for an Industrial Customer Class and provided testimony and exhibits before the VT Public Service Board and Performed tariff analysis and Tariff merger proposal for the Vermont Electric Cooperative take-over of Citizens Utilities VT Electric Division for Vermont Electric Cooperative.

EDUCATION

- Bachelor of Science in Electrical Engineering, University of Vermont Burlington, VT
- Professional Engineers License, State of Vermont

PROFESSIONAL MEMBERSHIPS

Member of Rate and Regulatory Committee	1977 - 1997
Chair	1987 - 1989
Chaired Witness Training Task Force	1990 - 1997
Electric Council of New England, New Bedford, MA	
Member of Economic Regulation and Competition Committee	1995 – 1999
Edison Electric Institute, Washington, DC	

6.1.3 Michael F. Rafferty

An experienced executive, manager and consultant with an international background in energy efficiency, disaster recovery, information systems, project management, utility planning, financing, and organizational management services. Qualifications include load forecasting, integrated resource planning, electric transmission and distribution planning; budget forecasts; benchmarking; staffing; economic studies; strategic planning studies; marketing studies; and professional training and development. Strong team-building skills and adept at managing and motivating diverse resources

Employment Record

2003 - present Williams Consulting, Inc.
2000 – 2003: PA Consulting Group, Inc.
1998 - 2000: Stone & Webster Management Consultants, Inc.
1997 - 1998: T&L Computer Systems, Inc.
1994 - 1997: Advanced Systems Group International, Inc.
1978 - 1994: Stone & Webster Management Consultants, Inc.
1973 - 1977: American Electric Power Service Corporation

Education

BSEE, 1974, The Ohio State University
MSEE (in progress) New Jersey Institute of Technology

Membership in Professional Societies:

I.E.E.E. – Institute of Electrical and Electronic Engineers
GITA - Geospatial Information and Technology Association

Career Highlights

Operations Reviews and Audits

2009/2010 – Project Manager for an on-going study for the City of Ocala to evaluate the city electric department’s operational efficiency and effectiveness and to evaluate the city’s full requirements contract with FMPA.

2009 – Project Manager for a review of Questar Gas Company’s gas gathering and processing contracts on behalf of the Utah Division of Public Utilities. This study included arms-length determination of relationships, costs, pricing and performance over the past five years with a particular focus on cost of service rate spike experienced in 2007.

2008 – Project Manager for an audit and analysis of distribution line extension costs and their derivation for Central Maine Power on behalf of the Maine Public Utilities Commission.

2007 – Conducted and managed two engagements on behalf of the Utah DPU: first provided assistance to the DPU in studying and resolving a customer complaint action against Rocky Mountain Power (a unit of PacifiCorp) and second, a review of prior recommendation implementation for PacifiCorp (Rocky Mountain Power).

2005/2006 – Conducted and managed a distribution plant evaluation for Central Maine Power on behalf of the Maine Public Utilities Commission. This effort included a review of reliability performance, system design and planning, vegetation management and a physical condition assessment of the distribution system.

2005/2006 – Participated in a due diligence review led by Jacobs Consultancy of the proposed Exelon-PSE&G merger on behalf of the New Jersey Board of Public Utilities. This assignment covered a thorough review of the customer service functional area and resulted in preparation of direct filed testimony.

2005 – Provided litigation support for PacifiCorp for a federal district court case and a Wyoming Public Utilities Commission filing relative to claimed losses due to outages suffered over a period of five years.

Reliability Reviews and Benchmarking

2004 – *Managed and conducted* an engagement to provide an independent review and comments on a series of reports prepared by PacifiCorp in response to a winter storm outage that affected up to 190,000 customers over an 8 day period. The assignment included a comprehensive analysis of the report with focus on conclusions and recommendations and the level of completeness and conformance with the terms of reference. We prepared professional opinions regarding the conclusions and recommendations contained in the report, and offered additional conclusions and recommendations with supporting rationale, analysis, and/or industry comparisons as appropriate.

2003 - *Managed and Conducted* reliability review for Eskom in South Africa to determine causal factors and develop mitigating recommendations to improve their reliability performance. This included regional workshops and focused interviews, a detailed document/report review and benchmarking Eskom against several comparable panels of electric utilities worldwide.

2002 – 2003 - *Participated* in PA’s annual utility Transmission and Distribution Benchmarking program as a special advisor.

2002 - *Managed and Conducted* Reliability Certification reviews for Southern California Edison, NorthWestern Energy and Orlando Utilities Commission. 2001. *Managed* a Reliability Certification review for Texas Utilities Electric & Gas. 2000. *Participated* in a reliability certification review for the Northwestern Corp. This involved a consistency and accuracy review of reliability data collection, development and reporting, both internally and to external entities.

2001/2002 - *Conducted* a review of the expected impact of implementing a new outage management system (OMS) on reliability indices for a major East Coast electric utility as part of a Service Guarantee study in connection with their merger with another east coast utility. This involved a detailed review of outage reporting processes and data analysis to identify areas where implementing the new OMS would improve data accuracy and measuring the impact on reliability indices to provide appropriate adjustment factors for future service level requirements and/or performance based rates

2001 - *Participated* in a technical cause analysis review for a major east-coast utility related to underground distribution system failures and manhole explosions in a large city.

Utility System Planning

2009 – *Responsible Officer* for a natural gas gathering transportation agreement review of Questar Gas Company on behalf of the Utah Department of Public utilities. The focus of this review is to examine escalated costs in the late 2007 period and to review these agreement costs which are a part of the system non-gas (SNG) rate in pass through filings.

2007-2009 – *Project Manager and Expert Consultant* contracted through King Abdulaziz College to evaluate and specify load forecasting models and methods for the Saudi Electric Company both at the system level and at the regional/local levels for the six Distribution Companies. This involved a detailed review of existing forecasting models, process and capabilities and specification of state-of-the-art models and processes tailored to the specific physical and work environment in the Kingdom.

Training and Development

2000/2003 - *Delivered* a number of internal training courses at PA Consulting Group, Inc., including “Top Down Thinking”, “Effective Presentations” and “Selling Professional Services.” Participated in a development of a web-based training program for internal deployment covering the utility industry.

1994/1995 - *Developed* and presented a three-day training course on Geographic Information Systems fundamentals, project development and management to the Egyptian Electricity Authority under United Nations sponsorship. This course was repeated four times.

1994 - *Developed* and conducted a one-day seminar on electric transmission pricing.

1985/1990 - *Responsible Officer and Program Director* for Stone & Webster's Utility Management Development Program, held twice annually. Was responsible for day-to-day program direction as well as curriculum selection.

Business Continuity Audits and Assessments

1999 - *Project Manager* for Year 2000 Program Audits for the City of San Antonio, Texas and the San Antonio Water System.

1999 - *Consultant* on a Year 2000 review audit for a major Canadian electric utility.

1999 - *Information Technology Consultant* on a Year 2000 contingency planning study for a major water and sewer utility.

1999 - *Contingency Planning Expert* and project lead for a large metropolitan gas distribution utility.

1999 - *Contingency Planning Expert* and project lead for an international government-owned telecommunications utility.

1998 - *Project Manager* on Concord Management, Inc.'s Year 2000 audit.

Information Systems

2001 - *Participated* in development of a request for proposal for a major west coast gas utility for developing new and replacement applications for map and gas distribution facilities and conversion of existing CADD-based drawing files to a GIS platform.

1995 - *Participated* in a GIS feasibility study for Yankee Energy Corporation.

1993/1994 - *Engaged* as database integration specialist to the Egyptian Electricity Authority, under United Nations funding, for a comprehensive Geographical Information System development covering the EEA's high voltage transmission system working in an Intergraph MicroStation and Oracle environment.