

STATE OF VERMONT
PUBLIC UTILITY COMMISSION

Case No. 8880

Joint Petition of NorthStar Decommissioning Holdings, LLC, NorthStar Nuclear Decommissioning Company, LLC, NorthStar Group Services, Inc., LVI Parent Corporation, NorthStar Group Holdings, LLC, Entergy Nuclear Vermont Investment Company, LLC and Entergy Nuclear Operations, Inc., and any other necessary affiliated entities to transfer ownership of Entergy Nuclear Vermont Yankee, LLC, and for certain ancillary approvals, pursuant to 30 V.S.A. §§ 107, 231, and 232

Order entered: 12/01/2017

PROCEDURAL ORDER RE COMMISSION’S RETENTION OF CONSULTANT

In this Order, the Vermont Public Utility Commission (“Commission”) addresses objections and comments filed with the Commission concerning the retention of a consultant and the role of such consultant as a non-testifying advisor to the Commission in this case.

Background

On October 30, 2017, the Commission provided notice to the joint petitioners in this case of its intention to allocate the cost of a consultant it planned to retain to the joint petitioners pursuant to 30 V.S.A. § 21. The Commission indicated that the consultant would be retained by the Commission, pursuant to 30 V.S.A. § 20, to assist the Commission in connection with various technical issues raised in Case 8880. The notice directed the joint petitioners to submit any objection to such allocation of costs to the Commission by November 9, 2017.

On November 8, 2017, Entergy Nuclear Vermont Investment Company, LLC and Entergy Nuclear Operations, Inc. (collectively, the “Entergy Petitioners”) made a filing with the Commission. The filing did not contain an objection to the cost allocation, but objected to the proposed retention of a consultant. The Entergy Petitioners maintain that “the role the Commission contemplates for this consultant improperly goes beyond what has traditionally

been allowed for a non-testifying consultant.”¹ In addition, the Entergy Petitioners asserted that the parties should be given an opportunity, before the Commission’s retention of a consultant, to assess whether the prospective consultant has a bias.

On November 9, 2017, the Commission issued an Order directing that any responses to the objection of the Entergy Petitioners be filed with the Commission by November 16, 2017.

Also on November 9, 2017, NorthStar Decommissioning Holdings, LLC, NorthStar Nuclear Decommissioning Company, LLC, NorthStar Group Services, Inc., LVI Parent Corporation, and NorthStar Group Holdings, LLC (collectively, the “NorthStar Petitioners”) made a filing with the Commission. The NorthStar Petitioners request that the Commission, before allocating any costs to the joint petitioners and executing a contract with a consultant, first apply the protocols established for the parties in its Procedural Order on Motion for Special Confidentiality Protocols entered June 15, 2017, and its Procedural Order re: Special Protocol for Protection of Disbursement Schedule entered on June 30, 2017, to any consultant retained by the Commission who would have access to the document subject to such Orders.

On November 16, 2017, the Vermont Department of Public Service (“Department”), the Conservation Law Foundation (“CLF”), and the New England Coalition (“NEC”) filed responses pursuant to the Commission’s November 9 Order.

On November 20, 2017, the Entergy Petitioners filed a reply in support of their objection to the retention of a consultant by the Commission. The Entergy Petitioners continue to maintain that any analysis by the Commission’s consultant should be made available to the parties and that the parties should have the opportunity to depose and cross-examine the consultant. However, the Entergy Petitioners also state that they are satisfied that the consultant that the Commission plans to retain does not have a bias that would preclude service as a consultant to the Commission in this case. Accordingly, the Entergy Petitioners conclude that, as far as they are concerned, “no further process is required” before the retention of such consultant and that “the second portion of [their] objection is now moot.”²

¹ Entergy Petitioners’ filing of 11/08/17 at 1.

² Entergy Petitioners’ filing of 11/20/17 at 1.

Discussion and Conclusions

The Commission has “the powers of a court of record in the determination and adjudication of all matters over which it is given jurisdiction.”³ In making its determinations, the Commission is not only required to adjudicate issues among parties related to a filed petition, but is also often required by statute, as in this case, to reach affirmative conclusions about whether the petition will promote the public good or be consistent with the general good of the state. As the Vermont Supreme Court has stated, the Commission “is given the task of using its discretion to weigh alternatives presented to it, utilizing its particular expertise and informed judgment.”⁴

To assist the Commission in its responsibilities, 30 V.S.A. § 19 authorizes the Commission to employ “engineers, accountants, legal counsel, and such number of clerks, stenographers, experts, and temporary employees as it deems necessary in the performance of its duties, and in the investigation of matters within its jurisdiction.” In addition, 30 V.S.A. § 20 authorizes the Commission to “retain legal counsel, official stenographers, expert witnesses, advisors, temporary employees, and other research, scientific, or engineering services” to assist the Commission in certain proceedings.⁵ The Commission retains consultants both as expert witnesses and, as in this case, as non-testifying expert advisors to perform the role of expert staff in particular proceedings.⁶

The Entergy Petitioners acknowledge that the Commission is authorized to retain both expert witnesses and non-testifying advisors, but believes that the permissible scope of a non-testifying advisor’s role has not been adequately addressed and is concerned that the role for the advisor contemplated by the Commission in this case is impermissibly broad. The Entergy Petitioners maintain that parties should have the opportunity to depose and cross-examine the consultant with respect to any analysis provided to the Commission by the consultant.

³ 30 V.S.A. § 9.

⁴ *In re Petition of Twenty-Four Vermont Utilities*, 159 Vt. 339, 357 (1992); *see, also, In re Vermont Elec. Power Co., Inc.*, 179 Vt. 370, 376 (2006).

⁵ The Commission may allocate the costs in retaining additional personnel in particular proceedings to the petitioners as provided in 30 V.S.A. § 21.

⁶ *See, for a similar example of the retention of a non-testifying advisor, Docket 6460, Petitions of Vermont Electric Power Company, Inc. and Green Mountain Power Corporation for a Section 248 CPG, authorizing construction of the Northwest Vermont Reliability Project, Order of 4/08/04 at 2:*

In this proceeding, the [Commission] has retained an expert on the issue of engineering, and is in the process of hiring an expert on land use issues (including aesthetics). These experts will serve in an advisory capacity only, and will not provide testimony.

The Department recognizes the Commission's authority to retain an expert advisor for consultation during this case and requests that the Commission more specifically define the parameters and role of the advisor. CLF and NEC support the retention of a consultant by the Commission. However, CLF expects that "the Commission would provide the parties with any information that the consultant produces upon which the Commission would rely."⁷ NEC believes that "the consultant's proposed role appears to require pre-decision disclosure to the parties of the data, assumptions, methodology, analysis and conclusions that the consultant will provide to the Commission, with opportunity for cross-examination and rebuttal."⁸

First, we want to make clear that the Commission has explicit statutory authority to retain expert advisors for the purpose of assisting the Commission in this proceeding.⁹ Second, the contractual engagement of an expert advisor in this case is at the discretion of the Commission and, unlike a cost allocation that may be challenged pursuant to 30 V.S.A. § 21(a)(1), is not subject to review. Based upon the parties' filings, no party has objected to the cost allocation under Section 21. Rather, the parties' filings have raised concerns about the retention and use of a consultant in this case. Although the retention of the consultant is authorized by statute and is within the Commission's discretion, the parties' comments clearly indicate that it would be useful for the Commission to clarify for the parties the intended role of the Commission's consultant.

The advisory role contemplated for the retained consultant will be the same in this proceeding as that typically performed by staff employed by the Commission. The consultant will assist the Commission in identifying issues and areas for further inquiry so that the Commission may seek clarifications and additional evidence from the parties in advance of or at the technical hearing.¹⁰ In addition, the consultant will assist the Commission in assessing the reliability and credibility of technical evidence within the scope of its expertise. This is the same

⁷ CLF filing of 11/16/17.

⁸ NEC's filing of 11/16/17.

⁹ See 30 V.S.A. § 20(a)(1) and (b)(2), (3), & (4). As the Department observes in its filing, authority for the retention of an expert advisor is also provided under 30 V.S.A. § 20(a)(1)(E).

¹⁰ As has been done in past, it is possible that the Commission's consultant, as Commission staff often does, may ask questions of witnesses at the evidentiary hearing to help in developing the record on which the Commission will base its determinations. For example, Dockets 5700 & 5702, *Investigation of proposed Vermont price regulation plan and proposed interim incentive regulation plan of New England Telephone and Telegraph Company and Petition of Department of Public Service for an Investigation of the Company's Rates* (proceedings involved use of Commission-retained consultant to question witnesses at consolidated evidentiary hearings held in 1994).

role that Commission staff with expertise in areas such as engineering, accounting, finance, and environmental science might play in this and other cases.¹¹ Any analysis or report by the Consultant will be provided to and used by the Commission solely for the purposes of identifying issues and areas for further inquiry and evaluating the reliability and credibility of technical evidence provided by the parties.

The Commission will rely solely on the evidence in the record (based on the admitted testimony of the parties' witnesses and exhibits) in any findings the Commission makes. The Commission will also not make findings based on any independent analysis of the record evidence by the consultant or based on spreadsheets, data, or programs not in evidence.¹²

Accordingly, the Commission sees no more basis for making available to the parties any of the consultant's work product than it would in the case of analyses performed by its staff. The proposed consultant, like Commission staff, will not provide any evidence in this case, and, accordingly, communications between the consultant and the Commission will not be subject to discovery or cross examination by the parties.

Because of requests for this information, the Commission has advised parties as to the identity of the consultant the Commission proposes to retain, GDS Associates, Inc. ("GDS"). The individuals at GDS who are expected be primarily involved in this engagement are Dr. William R. Jacobs, Jr. and Richard A. Polich. GDS provided the Commission with summaries of the backgrounds of Dr. Jacobs and Mr. Polich, which are attached to this Order for the information of the parties.

The contract with GDS will include provisions to protect the confidentiality of information provided to GDS. In particular, the contract will provide that if the Commission "requests that the Contractor review any un-redacted documents that are subject to a Protective Order or have been designated by a party as containing allegedly confidential information (including documents subject to special protocols), the Contractor will enter into such non-

¹¹ By analogy to the role law clerks perform for judges, the Entergy Petitioners argue that "the Commissioners are better able to pass independent judgment upon recommendations of Commission staff than upon recommendations of a specialized decommissioning consultant." Entergy Petitioners' filing of 11/8/17 at 3 (fn. 3). However, the Commission, unlike a court, employs non-lawyer staff with technical expertise and, therefore, has substantial experience in assessing the recommendations of technical advisors.

¹² See *In re Petition of Twenty-Four Vermont Utilities*, 159 Vt. 339, 345-346,350 (1992).

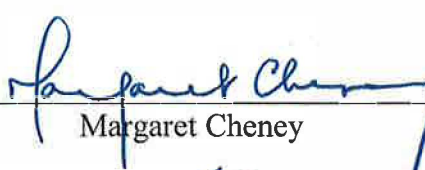

disclosure and document return and destruction commitments as the [Commission] deems appropriate.”

In addition, before allowing any person at GDS (other than Dr. Jacobs and Mr. Polich) to have access to the disbursement schedule of the NorthStar Petitioners (which schedule is subject to special protocols among the parties approved by the Commission in its Orders of June 15 and June 30, 2017), the Commission will first notify the parties as to the identity of such person.

Any party that continues to have objections related to the Commission’s proposed retention of a technical advisor or the role of such consultant in this case may make a motion for the reconsideration of this Order on or before December 8, 2017.

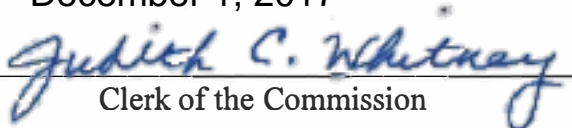
SO ORDERED.

Dated at Montpelier, Vermont, this 1st day of December, 2017.

| | | |
|--|---|----------------|
| |) | |
| |) | PUBLIC UTILITY |
| |) | |
|  |) | |
| Margaret Cheney |) | COMMISSION |
| |) | |
|  |) | |
| Sarah Hofmann |) | OF VERMONT |

OFFICE OF THE CLERK

Filed: December 1, 2017

Attest: 
Clerk of the Commission

Notice to Readers: This decision is subject to revision of technical errors. Readers are requested to notify the Clerk of the Commission (by e-mail, telephone, or in writing) of any apparent errors, in order that any necessary corrections may be made. (E-mail address: puc.clerk@vermont.gov)

EDUCATION

Master of Business Administration, University of Michigan, 1990
Bachelor of Science, Mechanical Engineering, University of Michigan, 1979
Bachelor of Science, Nuclear Engineering, University of Michigan, 1979

ENGINEERING REGISTRATION

Professional Engineer in the State of Michigan

PROFESSIONAL MEMBERSHIP

National Society of Professional Engineers
American Nuclear Society
American Society of Mechanical Engineers
Association of Energy Engineers Senior Member

PROFESSIONAL EXPERIENCE

Mr. Polich has more than 30 years' experience as an energy industry engineer, manager, and leader, combining his business and technical expertise in the management of governmental, industrial and utility projects. He has worked extensively in nuclear, coal, IGCC, natural gas, green/renewable generation. Mr. Polich has developed generation projects in wind, solar, and biomass in Australia, Canada, Caribbean, South American and United States locales. His generation experience includes engineering of systems and providing engineering support of plant operations. Notable projects include the Midland Nuclear Project and its conversion to natural gas combined cycle, start-up testing support for Consumers' coal-fired Campbell 3, Palisades nuclear steam generator replacement support, Covert Generating Station feasibility evaluation, and a Lake Erie offshore wind project. He also has extensive experience in utility rates and regulation, having managed Consumers Energy's rates group for a number of years. In that function his responsibilities included load and revenue forecasting, overseeing the design of gas and electric rates and testifying in regulatory proceedings. Mr. Polich has testified in over thirty regulatory and legislative proceedings.

Mr. Polich has been involved in the nuclear industry since 1978. While at GDS, Mr. Polich has provide Utah Associated Municipal Power System project cost analysis for a small modular nuclear power project. He has also provided decommissioning assessment analysis on St. Lucie Nuclear, and Grand Gulf Nuclear projects. He was hired as part of the design engineering team for the Erie Nuclear Plant by the design engineering firm, Gilbert Commonwealth. Key responsibilities were the design of systems and component specifications associated with the nuclear steam supply systems (NSSS) and steam turbine thermal cycle. Worked directly with Babcock and Wilcox on NSSS design and ancillary system specifications. Mr. Polich was also senior engineer on the Midland Nuclear project, responsible for oversight of Bechtel design engineering and interfacing with NSSS vendor Babcock & Wilcox on ancillary systems. His responsibilities also included negotiation with the Nuclear Regulatory Commission on new regulation requirements. Mr. Polich's role evolved into onsite engineering as a project trouble shooter at the Palisades Nuclear Plant.

SPECIFIC PROJECT EXPERIENCE

NUCLEAR PROJECT EXPERIENCE

St. Lucie Nuclear Plant – Provided a risk assessment, decommissioning funding study and ownership evaluation for City of Vero Beach. This included review of project maintenance history, steam generator replacement project, analysis of decommissioning needs and funding and assessing current value of Vero Beach's ownership share.

Grand Gulf Nuclear Project – Assessed the adequacy of decommissioning funding and funding level for the grand Gulf Nuclear plant for Cooperative Energy. Project purpose was to assess changes in decommissioning funding rates and to determine if sufficient funds would be available for plant decommissioning.

Consumers Energy Midland Nuclear Plant – Responsible for overseeing EPC contractor design and construction of primary and secondary nuclear systems. Included review of systems for compliance with Nuclear Regulatory Commission regulations. Key projects included:

- Leading team to analyze plant and determine best methods for compliance with new CFR Appendix R Fire Protection rules
- Design of primary cooling system pump oil collection and disposal systems.
- Oversight of redesign of component cooling water systems.
- Analysis of diesel generator capability to meet emergency shutdown power requirements.
- Primary interface with Dow Chemical for steam supply contract.

Ohio Edison Company Erie Nuclear Project – Design engineer responsible for the design, equipment specifications, bid evaluations and regulatory licensing for nuclear steam supply system and ancillary systems. Key projects included:

- Project Thermal Analysis
- Development of NSS valve specifications
- Major equipment bid Proposal Evaluation and recommendations

Interface with Babcock & Wilcox on NSSS Design

RATES & REGULATORY

GDS associates, Inc. – Managing Director

SunEdison – Docket No. 2015-0022, regarding the Hawaiian Electric Company, Inc. and NextEra Merger

Presented evidence regarding NextEra’s regulatory practices in Florida through its affiliate, Florida Power and Light (FPL), that indicated it would not be in the best interest for Hawai’i to approve the merger. This project involved significant research into Hawai’i energy policy, past parties of Hawaiian Electric Company (HECO), the Hawai’i renewable energy markets and operations of NextEra and its affiliates.

North Dakota Public Service Commission Staff – Case No. PU-16-666 MDU Generatl Rate Case

Provided testimony on behalf of the North Dakota Public Service Commission Staff regarding return on equity, cost of capital, revenue requirement, and generation resource costs.

North Dakota Public Service Commission Staff – Case No. PU-15-96 NSP Determination of Prudence

Provided testimony on behalf of the North Dakota Public Service Commission Staff regarding analysis and recommendation concerning Northern States Power’s (“NSP”) need for additional generation resources.

Consumers Energy - Supervisor of Pricing and Forecasting

Managed the group responsible for setting and obtaining regulatory approval for the company’s electric and gas rates. Developed new approaches to electric and natural gas competitive pricing, redesigned electric rates to simplify rates and eliminate losses and defined new strategies for customer energy pricing. Negotiated new electric supply contracts with key industrial electric customers resulting in over \$800M in annual revenue. Testified in multiple regulatory proceedings.

EOS Energy Options & Solutions – Consulting Company

Provided testimony for multiple clients in both Detroit Edison and Consumers Energy in over 30 regulatory proceedings. Testimony topics included rates, public policy and deregulation. Also testified in several legislative proceedings in both Michigan and Ohio, addressing energy policy. Provided expert witness

testimony in Massachusetts regarding wind energy projects.

NATURAL GAS COMBINED CYCLE EXPERIENCE

Consumers Energy – 1,560 MW Midland Cogeneration Venture

Member of a small team selected to investigate the feasibility of converting the mothballed Midland Nuclear Plant into a fossil fueled power plant. Established new plant configuration that repowered the existing nuclear steam turbine with natural gas fired combustion turbines and heat recovery steam generators. Developed the new thermal cycle and heat rate, determined how to supply steam to Dow chemical for cogeneration, developed models for projecting plant performance, defined which portions of the nuclear plant were useful in the new combined cycle plant and forecasted project economics.

Nordic Energy – (2) 1,150 MW IGCC Projects

Project Manager for the development of two IGCC projects proposed to Georgia Power and Xcel Energy in response to RFPs. Responsibilities included establishing thermal cycles, equipment selection, site selection, supervising engineering, developing project proforma and proposals.

Nordic Energy – 230 MW Power Barge

This unit was to be located on the Columbia River near Portland Oregon. Lead the project development team responsible for securing equipment, designing the power plant, design of barges, assessing site feasibility, developing project economics and interconnection applications.

Teekay Corporation – Gas to Wires Project

Feasibility study for the development of ship mounted gas turbine power units (including combined cycle) to be fueled with LNG. Performed research into power station configuration, on-ship LNG storage, LNG fuel transfer stations and project economics.

RENEWABLE ENERGY EXPERIENCE

Matinee Energy – Utility Scale Solar Developer

Engineering design and project development consultant for utility scale solar photovoltaic projects. Development activities include site selection, equipment specifications, financial analysis and preparation of proposals. Also responsible for engineering and securing electrical interconnection.

Windlab Developments USA – Wind Power Developer

Responsible for greenfield development of the US platform for wind energy projects east of the Mississippi. Developed the company's engineering protocol for wind project design and construction, responsible for managing engineering design and construction of projects, and established six wind power projects (750 MW). Responsible for negotiation of Power Purchase Agreements, electrical interconnection studies, interface with Midwest ISO and submitting Generation Interconnection Application.

TradeWind Energy - Wind Power Project Developer

Project developer for 800 MW of wind power projects in Michigan and Indiana. Introduced new project management methods to the development process which resulted in savings of over \$200,000 annually on each project.

Third Planet Windpower – Wind Power Project Developer

Engineering and project management consultant to support the startup of new wind power company. Established engineering standards used for selection of wind project equipment and project construction, analysis tools for evaluating projecting wind project power production, and performed project economic modeling.

Noble Environmental Power – Wind Power Project Developer

Electric transmission system consultant on the development of several wind power projects. Supported Noble's decisions on transmission grid interconnect and negotiate interconnection agreements.

ENERGY EFFICIENCY EXPERIENCE

Arkansas Energy Office – Weatherization Assistance Program Evaluation

Evaluated the performance and operations of Arkansas's Weatherization Assistance Program. This included review of program effectiveness, program operations, energy efficiencies attained, adequacy of energy efficiency measures and subcontractor performance.

CLEARResult – Arkansas Energy Efficiency Programs

Energy efficiency operations and program support for 400% increase in Arkansas energy efficiency programs. Developed processes for data collection, field staff deployment and job assignments.

ECONOMIC IMPACT ASSESSMENT

Michigan Department of Environmental Quality - Economic Impacts of a Renewable Portfolio Standard and Energy Efficiency Program for Michigan

Project Manager for this report which focused on the economic impact of renewable portfolio standard and energy efficiency programs on the State of Michigan. The evaluation used in this report encompassed using integrated resource planning models, econometric modeling and electric pricing models for the entire State of Michigan.

West Michigan Business Alliance - Alternative and Renewable Energy Cluster Analysis

Prepared the report provided a road map for Western Michigan businesses to establish new business in the renewable energy industry.

POWER PURCHASING AND TRADING

Nordice Energy LLC - Vice President

Established an innovative energy trading floor, created customer metering and billing systems that enabled Nordic to be the first non-utility company to supply electricity to retail customers in Michigan.

POWER PROJECT EXPERIENCE:

Detroit Edison St Clair Power Station – Performed coal combustion analysis associated with conversion Powder River Basin coal. Work included pulverizer mill performance testing, boiler combustion analysis on new coal, and unit performance analysis.

Consumers Energy Campbell 3 - Supported start-up efforts of this 800 MW pulverized coal power plant. Part of team that performed analysis of boiler data and determined the cause of superheater failure. Also part of team to analyze performance test data for warranty evaluation.

Consumers Energy Weadock Plant – Design oversight and specified various plant upgrades during major maintenance outage. Included replacement of high pressure superheater, design of new steam supply pipes, valve specifications and supported plant restart.

Consumers Energy Midland Nuclear Plant – Responsible for overseeing EPC contractor design and construction of primary and secondary nuclear systems. Included review of systems for compliance with Nuclear Regulatory Commission regulations. Key projects included:

- Leading team to analyze plant and determine best methods for compliance with new CFR Appendix R Fire Protection rules

- Design of primary cooling system pump oil collection and disposal systems.
- Oversight of redesign of component cooling water systems.
- Analysis of diesel generator capability to meet emergency shutdown power requirements.
- Primary interface with Dow Chemical for steam supply contract.

Consumers Energy Midland Cogeneration Venture – Part of team to assess and develop design for converting nuclear plant to gas combined cycle project. This included researching and developing scenarios for project funding and regulatory approach Primary responsibilities included:

- Developing new thermal cycle that best utilized existing steam turbine and supply steam to Dow Chemical.
- Determining which existing assets could be utilized in new plant and determining the original construction value of these assets.

PAPERS & PUBLICATIONS

Engineering and Economic Evaluation of Offshore Wind Plant Performance and Cost Data, 2011, Produced for the Electric Power Research Institute, KEMA, Inc.

FERC's 15% Fast Track Screening Criterion, 2012, Paper reviewing the FERC 15% screening criteria for electrical interconnection, KEMA, Inc.

Island of Saint Maarten Sustainable Energy Study, 2012, Produced for the Cabinet of Ministry VROMI, KEMA Inc.

A Study of Economic Impacts from the Implementation of a Renewable Portfolio Standard and an Energy Efficiency Program in Michigan, 2007, Produced for the Michigan Department of Environmental Quality

Alternative and Renewable Energy Cluster Analysis, 2007, Produced for the West Michigan Strategic Alliance and The Right Place

COURSES & SEMINARS

Association of Energy Engineers – Certified Energy Manager
Green Building Council – Associated LEED Certification Training
CLEAResult Leadership Academy

COMMUNITY SERVICE AND ACTIVITIES

Bicycling, hiking and cross-country skiing
Instrument-Rated Private Pilot
Habitat for Humanity
Scoutmaster
Soccer coach and referee
Volunteer work for disaster relief and building homes in Mexico

EDUCATION

Ph.D., Nuclear Engineering, Georgia Tech 1971
MS, Nuclear Engineering, Georgia Tech 1969
BS, Mechanical Engineering, Georgia Tech 1968

ENGINEERING REGISTRATION

Registered Professional Engineer

PROFESSIONAL MEMBERSHIP

American Nuclear Society
National Society of Professional Engineers

EXPERIENCE SUMMARY

Dr. Jacobs has over thirty years of experience in a wide range of activities in the electric power generation industry. He has assisted the Georgia Public Service Commission staff in development of energy policy issues related to supply-side resources and in evaluation of applications for certification of three combustion turbine peaking projects and assists the staff in monitoring the construction of these projects. He has also assisted in providing regulatory oversight related to an electric utility's evaluation of responses to an RFP for a supply-side resource and subsequent negotiations with short-listed bidders. He has provided technical litigation support and expert testimony support in several complex law suits involving power generation facilities. He monitors power plant operations for GDS clients and has provided testimony on power plant operations and decommissioning in several jurisdictions Dr. Jacobs has provided testimony before the Georgia Public Service Commission, the Public Utility Commission of Texas, the North Carolina Utilities Commission, the South Carolina Public Service Commission, the Iowa State Utilities Board, the Louisiana Public Service Commission, the Florida Public Service Commission, the Indiana Regulatory Commission the New Jersey Board of Public Utilities and the FERC. Dr. Jacobs has provided assistance to GDS clients including development of RFP's for supply-side resources, evaluation of responses to RFP's, and development and analysis of power purchase agreements.

PROFESSIONAL EXPERIENCE

GDS Associates, Inc., 1986-Present

As Principal, Dr. Jacobs directs GDS' nuclear plant monitoring activities and has assisted clients in evaluation of management and technical issues related to power plant operation and design. He has evaluated and testified on combustion turbine projects in certification hearings and has assisted the Georgia PSC in monitoring the construction of the combustion turbine projects. He has assisted the Georgia PSC staff in overseeing the evaluation and negotiation related to an electric utility's request for proposals for supply side resources. Dr. Jacobs has evaluated nuclear plant operations and provided testimony in the areas of nuclear plant operation, construction prudence and decommissioning in five states. He has provided litigation support in complex law suits concerning the construction of nuclear power facilities.

Institute of Nuclear Power Operations (INPO), 1985-1986

Dr. Jacobs performed evaluations of operating nuclear power plants and nuclear power plant construction projects. He developed INPO Performance Objectives and Criteria for the INPO Outage Management Department. Dr. Jacobs performed Outage Management Evaluations at the following nuclear power plants:

- ⦿ Connecticut Yankee - Connecticut Yankee Atomic Power Co.
- ⦿ Callaway Unit I - Union Electric Co.
- ⦿ Surry Unit I - Virginia Power Co.
- ⦿ Ft. Calhoun - Omaha Public Power District
- ⦿ Beaver Valley Unit 1 - Duquesne Light Co.

During these outage evaluations, he provided recommendations to senior utility management on techniques to improve outage performance and outage management effectiveness.

Westinghouse Electric Corporation, 1979-1985

As site manager at Philippine Nuclear Power Plant Unit No. 1, a 655 MWe PWR located in Bataan, Philippines, Dr. Jacobs was responsible for all site activities during completion phase of the project. He had overall management responsibility for startup, site engineering, and plant completion departments. He managed workforce of approximately 50 expatriates and 1700 subcontractor personnel. Dr. Jacobs provided day-to-day direction of all site activities to ensure establishment of correct work priorities, prompt resolution of technical problems and on schedule plant completion.

Prior to being site manager, Dr. Jacobs was startup manager responsible for all startup activities including test procedure preparation, test performance and review and acceptance of test results. He established the system turnover program, resulting in a timely turnover of systems for startup testing.

As startup manager at the KRSKO Nuclear Power Plant, a 632 MWE PWR near Krsko, Yugoslavia, Dr. Jacobs' duties included development and review of startup test procedures, planning and coordination of all startup test activities, evaluation of test results and customer assistance with regulatory questions. He had overall responsibility for all startup testing from Hot Functional Testing through full power operation.

NUS Corporation, 1973 - 1979

As Startup and Operations and Maintenance Advisor to Korea Electric Company during startup and commercial operation of Ko-Ri Unit 1, a 595 MWE PWR near Pusan, South Korea, Dr. Jacobs advised KECO on all phases of startup testing and plant operations and maintenance through the first year of commercial operation. He assisted in establishment of administrative procedures for plant operation.

As Shift Test Director at Crystal River Unit 3, an 825 MWE PWR, Dr. Jacobs directed and performed many systems and integrated plant tests during startup of Crystal River Unit 3. He acted as data analysis engineer and shift test director during core loading, low power physics testing and power escalation program.

As Startup engineer at Kewaunee Nuclear Power Plant and Beaver Valley, Unit 1, Dr. Jacobs developed and performed preoperational tests and surveillance test procedures.

Southern Nuclear Engineering, Inc., 1971 - 1973

Dr. Jacobs performed engineering studies including analysis of the emergency core cooling system for an early PWR, analysis of pressure drop through a redesigned reactor core support structure and

developed a computer model to determine tritium build up throughout the operating life of a large PWR.

SIGNIFICANT CONSULTANT ASSIGNMENTS

City of Houston – Assisted the City of Houston and the CPL Steering Committee in analysis of outages at the South Texas Nuclear Project to reconcile fuel costs. PUCT Docket No. 26195

Georgia Public Service Commission – Assisted the Georgia PSC staff in evaluation of Integrated Resource Plans presented by two investor-owned utilities. Review included analysis of purchase power agreements, analysis of supply-side resource mix and review of a proposed green power program.

State of Hawaii, Department of Business, Economic Development and Tourism – Assisted the State of Hawaii in development and analysis of a Renewable Portfolio Standard to increase the amount of renewable energy resources developed to meet growing electricity demand. Presented the results of this work in testimony before the State of Hawaii, House of Representatives.

Georgia Public Service Commission - Assisted the Georgia PSC staff in providing oversight to the bid evaluation process concerning an electric utility's evaluation of responses to a Request for Proposals for supply-side resources. Projects evaluated include simple cycle combustion turbine projects, combined cycle combustion turbine projects and co-generation projects.

Millstone 3 Nuclear Plant Non-Operating Owners – Evaluated the lengthy outage at Millstone 3 and provided analysis of outage schedule and cost on behalf of the non-operating owners of Millstone 3. Direct testimony provided an analysis of additional post-outage O&M costs that would result due to the outage. Rebuttal testimony dealt with analysis of the outage schedule.

H.C. Price Company – Evaluated project management of the Healy Clean Coal Project on behalf of the General Contractor, H.C. Price Company. The Healy Clean Coal Project is a 50 megawatt coal burning power plant funded in part by the DOE to demonstrate advanced clean coal technologies. This project involved analysis of the project schedule and evaluation of the impact of the owner's project management performance on costs incurred by our client.

Steel Dynamics, Inc. – Evaluated a lengthy outage at the D.C. Cook nuclear plant and presented testimony to the Indiana Utility Regulatory Commission in a fuel factor adjustment case Docket No. 38702-FAC40-S1.

Florida Office of Public Counsel - Evaluated lengthy outage at Crystal River Unit 3 Nuclear Plant. Submitted expert testimony to the Florida Public Service Commission in Docket No. 970261-EI.

United States Trade and Development Agency - Assisted the government of the Republic of Mauritius in development of a Request for Proposal for a 30 MW power plant to be built on a Build, Own, Operate (BOO) basis and assisted in evaluation of Bids.

Louisiana Public Service Commission Staff - Evaluated management and operation of the River Bend Nuclear Plant. Submitted expert testimony before the LPSC in Docket No. U-19904.

U.S. Department of Justice - Provided expert testimony concerning the in-service date of the Harris Nuclear Plant on behalf of the Department of Justice U.S. District Court.

City of Houston - Conducted evaluation of a lengthy NRC required shutdown of the South Texas Project Nuclear Generating Station.

Georgia Public Service Commission Staff - Evaluated and provided testimony on Georgia Power Company's application for certification of the Intercession City Combustion Turbine Project - Docket No. 4895-U.

Seminole Electric Cooperative, Inc. - Evaluated and provided testimony on nuclear decommissioning and fossil plant dismantlement costs - FERC Docket Nos. ER93-465-000, et al.

Georgia Public Service Commission Staff - Evaluated and prepared testimony on application for certification of the Robins Combustion Turbine Project by Georgia Power Company - Docket No. 4311-U.

North Carolina Electric Membership Corporation - Conducted a detailed evaluation of Duke Power Company's plans and cost estimate for replacement of the Catawba Unit 1 Steam Generators.

Georgia Public Service Commission Staff - Evaluated and prepared testimony on application for certification of the McIntosh Combustion Turbine Project by Georgia Power Company and Savannah Electric Power Company - Docket No. 4133-U and 4136-U.

New Jersey Rate Counsel - Review of Public Service Electric & Gas Company nuclear and fossil capital additions in PSE&G general rate case.

Corn Belt Electric Cooperative/Central Iowa Power Electric Cooperative - Directs an operational monitoring program of the Duane Arnold Energy Center (565 Mwe BWR) on behalf of the non-operating owners.

Cities of Calvert and Kosse - Evaluated and submitted testimony of outages of the River Bend Nuclear Station - PUCT Docket No. 10894.

Iowa Office of Consumer Advocate - Evaluated and submitted testimony on the estimated decommissioning costs for the Cooper Nuclear Station - IUB Docket No. RPU-92-2.

Georgia Public Service Commission/Hicks, Maloof & Campbell - Prepared testimony related to Vogtle and Hatch plant decommissioning costs in 1991 Georgia Power rate case - Docket No. 4007-U.

City of El Paso - Testified before the Public Utility Commission of Texas regarding Palo Verde Unit 3 construction prudence - Docket No. 9945.

City of Houston - Testified before Texas Public Utility Commission regarding South Texas Project nuclear plant outages - Docket No. 9850.

NUCOR Steel Company - Evaluated and submitted testimony on outages of Carolina Power and Light nuclear power facilities - SCPSC Docket No. 90-4-E.

Georgia Public Service Commission/Hicks, Maloof & Campbell - Assisted Georgia Public Service Commission staff and attorneys in many aspects of Georgia Power Company's 1989 rate case including nuclear operation and maintenance costs, nuclear performance incentive plan for Georgia and provided expert testimony on construction prudence of Vogtle Unit 2 and decommissioning costs of Vogtle and Hatch nuclear units - Docket No. 3840-U.

Swidler & Berlin/Niagara Mohawk - Provided technical litigation support to Swidler & Berlin in law suit concerning construction mismanagement of the Nine Mile 2 Nuclear Plant.

Long Island Lighting Company/Shea & Gould - Assisted in preparation of expert testimony on nuclear plant construction.

North Carolina Electric Membership Corporation - Prepared testimony concerning prudence of construction of Carolina Power & Light Company's Shearon Harris Station - NCUC Docket No. E-2, Sub537.

City of Austin, Texas - Prepared estimates of the final cost and schedule of the South Texas Project in support of litigation.

Tex-La Electric Cooperative/Brazos Electric Cooperative - Participated in performance of a construction and operational monitoring program for minority owners of Comanche Peak Nuclear Station.

Tex-La Electric Cooperative/Brazos Electric Cooperative/Texas Municipal Power Authority (Attorneys - Burchette & Associates, Spiegel & McDiarmid, and Fulbright & Jaworski) - Assisted GDS personnel as consulting experts and litigation managers in all aspects of the lawsuit brought by Texas Utilities against the minority owners of Comanche Peak Nuclear Station.

PSB Case No. 8880 - SERVICE LIST

Parties:

William James Brotherton
Abenaki Nation of Missisquoi
100 Grand Avenue
Swanton, VT 05488
william@brothertonlaw.com

(for Abenaki Nation of Missisquoi)

Lawrence Christopher Company
Windham Regional Commission
139 Main Street Suite 505
Brattleboro, VT 05301
ccampany@windhamregional.org

(for Windham Regional Commission)

David G Carpenter
Facey Goss & McPhee PC
PO Box 578
RutlandRutland, VT 05702
dcarpenter@fgmvt.com

(for Town of Vernon Planning and Economic
Development Commission)

Nathaniel Custer
Wilmer Cutler Pickering Hale & Dorr, LLP
1875 Pennsylvania Avenue NW
Washington, DC 20006
nathaniel.custer@wilmerhale.com

(for Vermont Department of Public Service)

Richardson P Daniel
Tarrant, Gillies & Richardson
P.O. Box 1440
Montpelier, VT 05601
drichardson@tgrvt.com

(for Entergy Nuclear Operations, Inc.) (for
Entergy Nuclear Vermont Investment
Company, LLC)

Joshua Diamond
Vermont Office of the Attorney General
109 State Street
Montpelier, VT 05609-1001
joshua.diamond@vermont.gov

(for Vermont Office of the Attorney General)

William Driscoll
Associated Industries of Vermont
wdriscoll@aivt.org

(for Associated Industries of Vermont)

Jennifer Duggan, Esq.
Office of General Counsel, Vermont Agency
of Natural Resources
1 National Life Drive, Davis 2
Montpelier, VT 05620
Jen.Duggan@vermont.gov

(for Vermont Agency of Natural Resources)

James Dumont
PO Box 229
Bristol, VT 05443
dumont@gmavt.net

(for New England Coalition on Nuclear
Pollution, Inc.)

Felicia H. Ellsworth
Wilmer, Cutler, Pickering, Hale and Dorr, LLP
60 State Street
Boston, MA 02109
Felicia.Ellsworth@wilmerhale.com

(for Vermont Department of Public Service)

Jordan Gonda
Vermont Agency of Natural Resources
1 National Life Drive
Davis 2
Montpelier, VT 05620
Jordan.Gonda@vermont.gov

(for Vermont Agency of Natural Resources)

Mark Gordon
Wilmer Cutler Pickering Hale & Dorr, LLP
60 State Street
Boston
Boston, MA 02109
mark.gordon@wilmerhale.com

(for Vermont Department of Public Service)

Bonnie Heiple
Wilmer, Cutler, Pickering, Hale and Dorr, LLP
60 State Street
Boston, MA 02109
Bonnie.Heiple@wilmerhale.com

(for Vermont Department of Public Service)

Stephanie Hoffman, Esq.
Vermont Department of Public Service
112 State Street
Montpelier, VT 05620-2601
steph.hoffman@vermont.gov

(for Vermont Department of Public Service)

Richard Holschuh
Elnu Abenaki Tribe
117 Fuller Drive
Brattleboro, VT 05301
rich.holschuh@gmail.com

(for Elnu Abenaki Tribe)

Robert C. Kirsch
Wilmer, Cutler, Pickering, Hale and Dorr, LLP
60 State Street
Boston, MA 02109
Robert.Kirsch@wilmerhale.com

(for Vermont Department of Public Service)

Kyle Landis-Marinello
Vermont Office of the Attorney General
109 State Street
Montpelier, VT 05609-1001
kyle.landis-marinello@vermont.gov

(for Vermont Office of the Attorney General)

Sandra Levine, Esq.
Conservation Law Foundation
15 East State Street
Suite 4
Montpelier, VT 05602
slevine@clf.org

(for Conservation Law Foundation)

Christopher Looney
WilmerHale
60 State Street
Boston, MA 02109
christopher.looney@wilmerhale.com

(for Vermont Department of Public Service)

John Marshall, Esq.
90 Prospect Street
P.O. Box 99
Saint Johnsbury, VT 05819-0099
jmarshall@drm.com

(for Entergy Nuclear Operations, Inc.) (for
Entergy Nuclear Vermont Investment
Company, LLC)

James Porter, Esq.
Vermont Public Service Department
Vermont Public Service Department
112 State St
Montpelier, VT 05620
james.porter@vermont.gov

(for Vermont Department of Public Service)

Janet Rasmussen
Town of Vernon Planning Commission
52 Southern Heights Drive
Vernon, VT 05354
janetrasmussen1@aol.com

(for Town of Vernon Planning and Economic
Development Commission)

Ingrid Scholze, Esq.
Quinn Emanuel Urquhart & Sullivan, LLP
51 Madison Avenue, 22nd Floor
New York, NY 10010
ingridscholze@quinnemanuel.com

(for Entergy Nuclear Operations, Inc.) (for
Entergy Nuclear Vermont Investment
Company, LLC)

Roger Longtoe Sheehan
Elnu Abenaki Tribe
Elnu Tribe Headquarters
5243 VT Route 30
Jamaica, VT 05343
gitceedadann@yahoo.com

(for Elnu Abenaki Tribe)

Ellyde R. Thompson
Quinn Emanuel Urquhart & Sullivan LLP
51 Madison Avenue
22nd Floor
New York, NY 10010
ellydethompson@quinnemanuel.com

(for Entergy Nuclear Operations, Inc.) (for
Entergy Nuclear Vermont Investment
Company, LLC)

Sanford I. Weisburst
Quinn Emanuel Urquhart & Sullivan, LLP
51 Madison Avenue
22nd Floor
New York, NY 10010
sandyweisburst@quinnemanuel.com

(for Entergy Nuclear Operations, Inc.) (for
Entergy Nuclear Vermont Investment
Company, LLC)

Joslyn L. Wilschek, Esq.
Wilschek Iarrapino Law Office, PLLC
35 Elm Street
Suite 200
Montpelier, VT 05601
Joslyn@ilovt.net

(for NorthStar Nuclear Decommissioning
Company, LLC) (for NorthStar Group
Services, Inc.) (for NorthStar
Decommissioning Holdings, LLC) (for LVI
Parent Corp.) (for NorthStar Group Holdings,
LLC)

Jeffrey C. Wimette
International Brotherhood of Electrical
Workers, Local 300
3 Gregory Drive
South Burlington, VT 05403
jcw@ibewlocal300.org

(for International Brotherhood of Electrical
Workers, Local 300)