



Eugene Shlatz
Director

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Education and Professional

- M.S. Electric Power Engineering, Rensselaer Polytechnic Institute
- B.S. Electric Power Engineering, Rensselaer Polytechnic Institute

Employment

- Navigant Consulting (1999 – present)
Director
- Stone & Webster Management Consultants (1994-1999) Executive Consultant
- Green Mountain Power Corp (1985-1994)
 - Assistant Vice President, Energy Planning
 - Director of Engineering and Operations
- Ernst & Whinney (1984-1985)
Supervisor
- Gilbert/Commonwealth (1980-1984)
Senior Consulting Engineer
- Westinghouse Electric Corporation (1978-1979)
Systems Analysis Engineer
- Boston Edison Company (1976-1977)
Student Engineer, Cooperative Education Program

Professional Associations

- Professional Engineer - State of Vermont
- Institute of Electrical and Electronic Engineers, Section Chairman

Eugene L. Shlatz

Mr. Shlatz is a Director in Navigant Consulting Inc.'s Energy Practice. He has over 25 years of management consulting and supervisory experience in energy delivery, electric power generation and distributed resources. Engagements he has directed include smart grid, renewable technology, asset management, reliability, benchmarking, energy efficiency, electric pricing, distributed resources, due diligence and system adequacy studies for US, Canadian, and South American utilities, equipment suppliers and government agencies. Mr. Shlatz is an expert on electric power delivery systems, and has testified before FERC and State regulatory commissions on open access, transmission expansion, DG integration, retail rates, regulatory compliance, and least-cost planning. He is a professional engineer and section chairman of IEEE. Mr. Shlatz has published numerous articles on smart grid, distributed resources, electric reliability, asset management, demand-side management, and electric pricing.

Summary of Professional Experience

Energy Practice. Responsible for consulting engagements for electric utility, government and energy supply clients. Responsible for evaluation and assessment of key energy delivery and power production and issues including:

- Emerging Technologies – renewable technology and smart grid integration, energy efficiency and technical/economic assessment of distributed resources
- Asset Management – implementation strategy, project prioritization, performance measurement, utilization and cost optimization, electric delivery system planning
- Reliability & Planning – transmission and distribution performance evaluation; target setting, remediation analysis
- Benchmarking – industry best practices, service quality standards and business process improvement



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Representative Client List and Engagements

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Smart Grid, Distributed Generation & Renewable Technologies

- » **NV Energy.** Project manager of DG and large PV integration studies for southern and northern Nevada. Responsible for technical and economic evaluation of power system impacts and integration costs, including intermittency. Testified before Nevada Commission on study results.
- » **PowerStream.** Conducted capital prioritization studies for energy delivery investments, including Smart Grid integration and automated systems. Included quantification of reliability and performance benefits associate with renewal replacement and automation.
- » **Toronto Hydro.** Project manager of comprehensive evaluation of distributed energy resources versus traditional T&D alternatives for a major urban center. Includes the technical assessment of DG systems impacts, technology integration and forecast of cost-effective alternatives.
- » **Pennsylvania Power & Light.** Lead investigator of a DOE Smart Grid Investment Grant (SGIG) project. Assessed SGIG metrics reporting and compliance as required for distributed automation systems, focusing on reliability and efficiency benefits.
- » **Exelon.** Conducted an analysis of Commonwealth Edison's Smart Grid reliability and distribution automation program. Developed predictive models to value reliability and performance benefits.
- » **Smart Grid, Multi-Client.** Project manager of a comprehensive assessment of the integration of smart grid technologies to enhance the value of distributed and central solar photovoltaic systems. The consortium included major electric utilities, suppliers and industry stakeholders.
- » **U.S. Department of Energy (DOE).** Project manager and lead investigator of numerous advanced technology and system integration (RDSI) studies, including smart grid, energy storage, DG valuation and power system integration.
- » **Consolidated Edison.** Project manager of a process and impact evaluation of CECONY's Targeted DSM program. Conducted a technical and economic assessment of DSM/DG measures designed to defer capital investments in load pockets experiencing T&D constraints.
- » **Arizona Public Service** – Lead investigator of long-term electric vehicle options analysis and system integration study. Identified barriers to stationary and mobile EV systems.
- » **Southern California Edison.** Project manager of a technical and economic study to assess the value of Distributed Energy Resources (DER) as an alternative to traditional utility investments.
- » **Massachusetts Technology Collaborative.** Provided independent technical support to a Collaborative on Distributed Generation, with key industry stakeholders and electric utilities.



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Asset Management

- » **Horizon Utilities.** Technical and advisory support for asset management framework initiatives. Includes gap analysis and implementation of asset management strategies and evaluation methods. Addressed infrastructure alternatives of upgrades using AM-based approaches.
- » **First Energy.** Responsible for implementing asset management processes and capital prioritization models for 6 operating companies in three jurisdictions. Project leader for model development and applications, technical review and overall quality assurance.
- » **Seattle City Light.** Responsible for conducting a benchmarking and gap analysis of the power supply and energy delivery business units. It included a business case analysis to support implementation of asset management methods and new AM organization.
- » **Pepco/Conectiv (PHI).** Responsible for an asset management and prioritization assessment of capital improvement and O&M programs for three states and the District of Columbia. It included developing asset prioritization methods for transmission, distribution and IT programs.
- » **Entergy.** Responsible for an asset management and prioritization assessment of Entergy's capital improvement programs for six jurisdictional utilities in 5 states. It included developing asset-specific prioritization methods for transmission and distribution programs.
- » **PacifiCorp.** Responsible for an asset management and prioritization assessment of PacifiCorp's capital improvement programs for six jurisdictional utilities in 6 states. It included developing asset-specific prioritization methods for transmission and distribution and IT programs.

Reliability, Benchmarking and Electric System Planning

- » **Toronto Hydro Electric System, Limited (THESL).** Performed a long-range planning study for THESL's radial and network downtown distribution system. Evaluated capital expansion versus CDM needed to serve downtown Toronto for 20 years.
- » **Sulphur Springs Valley Electric Cooperative (SSVEC).** Project manager of an independent Feasibility Study of delivery alternatives, including new transmission, distributed generation, energy efficiency, energy storage and renewables. Expert witness support before AZ commission.
- » **Austin Energy.** Performed a benchmarking and gap analysis of performance measures of AE's energy delivery organization.
- » **Ameren Services.** Conducted a review and predictive assessment of distribution reliability. A methodology was developed to apply fact-based methods to allocate reliability expenditures.
- » **American Electric Power.** Conducted a review and predictive assessment of distribution reliability. Applied fact-based methods to prioritize investment decisions and to quantify risk.



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- » **National Grid.** Conducted a system review and predictive assessment of distribution reliability. A strategic methodology was developed to predict system outage performance based on system attributes, equipment performance and historical reliability.
- » **Potomac Electric Power Company (PHI).** Conducted an investigation and benchmarking of PEPCO's T&D system, including transmission and distribution infrastructure. Prepared recommendations to enhance performance and reduce outage risk.
- » **Dominion – Virginia Power.** Project manager and lead investigator of a comprehensive technical review and risk assessment of secondary networks. Reviewed and analyzed engineering standards, planning criteria, operations and maintenance, and construction methods.

Regulatory and Pricing

- » **Canadian Utility (Confidential) – Confidential study to assess the value and strategic benefits of the acquisition of electric utility energy delivery assets.** Included a technical and economic assessment of key regulatory and acquisition risk factors to support a recommendation.
- » **Progress Energy.** Project manager of a best practices and compliance review of fixed asset charging practices. Reviewed methods, systems and practices used to record fixed assets for Florida and the Carolinas to support proposed changes filed with state commissions and the SEC.
- » **Citizens Utilities/Vermont Electric Cooperative.** Supported numerous Certificate of Public Good (CPG) applications before the Vermont Public Service Board (VPSB). Expert witness for technical, environmental, and costing studies.
- » **Vermont Department of Public Service (VDPS).** Conducted research and prepared sections of the Twenty-Year Electric Plan, including the impact of the independent system operator (ISO) and regional transmission organization (RTO) initiatives on Vermont's transmission providers.
- » **Potomac Electric Power Company (PHI).** Project manager of a benchmarking study of storm hardening measures. Assessed the impact of hardening options on reliability and performance. Also assessed service quality (SQI) measures and performance-based rate (PBR) mechanisms.
- » **Citizens Utilities (Vermont Electric Division).** Project manager for a T&D Audit mandated by the Vermont Public Service Board. Reviewed T&D plant accounting systems and processes, and provided recommendations for improvement.
- » **Massachusetts Department of Telecommunications and Energy (MDTE).** Project manager of a stray voltage assessment of jurisdictional utilities. Identified causes of stray voltage and provided recommendations to mitigate future events, including action and improvement plans.



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Previous consulting experience and responsibilities while employed at Stone & Webster, Ernst & Whinney, Gilbert/Commonwealth and Westinghouse include:

- » **Entergy (Gulf States Utilities).** Lead investigator of a Commission-mandated Service Quality Assessment. Developed and applied state-of-the-art methods to identify cost-effective performance improvements using predictive reliability and cost optimization methods.
- » **Ontario Hydro (Hydro One).** Project Manager of a comprehensive post-event assessment of the January 1998 Ice Storm that impacted northeastern U.S and Canadian utilities. Analyzed and provided recommendations for emergency preparedness and storm hardening.
- » **New Brunswick Power.** Project manager of a technical audit and benchmarking of NB Power's T&D business unit. Conducted benchmark survey; analyzed the T&D organization, cost of services, efficiency, O&M practices, design and planning criteria, IT and system operations.
- » **Commonwealth Edison.** Project manager of a T&D technical audit in response to a complaint initiated by the Illinois Attorneys' General office. Reviewed T&D operations, resource allocation and methods, reliability and performance, T&D planning and design standards.
- » **BC Hydro.** Project manager of a benchmarking study and assessment of BC Hydro's T&D business unit. Examined candidate organization structures and business unit service offerings.
- » **Pennsylvania Public Utility Commission.** Principal investigator of a comprehensive audit of a major utility (Pennsylvania Power & Light). Investigated power supply planning, construction, fossil operations, customer services, marketing and energy services, and economic development.
- » **Consolidated Edison.** Project manager of a locational generation capacity requirements study. Conducted reliability studies using multi-area simulation models. Represented the company as an expert witness on its Competitive Opportunities, Transition Planning and Support filing.
- » **Privatization and Independent Reviews – South America.** Conducted independent technical and economic reviews for 4 privatized electric utilities (Luz del Sur, Edenor, ESPA, Edelnor). Developed tariff and pricing framework and service quality standards mandated by national law.
- » **Transmission Open Access.** Project manager or principal investigator for open access tariff development. Included rates and ancillary services, tariff development, and expert witness support for Tampa Electric, NISource, GMP, Dairyland Power, and Velco.
- » **Holyoke Gas & Electric.** Project manager of a cost of service study designed to produce unbundled rates for production, transmission, and distribution services. The study included a technical analysis of production expansion/reinforcement options.



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- » **Northern Indiana Public Service Company.** Provided ongoing assistance in a wide range of cost of service and related technical support. Responsibilities include development and training of retail and wholesale COS models, unbundled costs, ancillary services, and regulatory support.
- » **Barbados Power and Light.** Project manager of a short and long-term Transmission and Distribution Planning Study. Prepared load forecast and system expansion plans.
- » **Plains Electric & Generation Cooperative.** Project manager of a Power Cost Study. Evaluated generation additions, joint participation units, and purchase power options.
- » **Northern States Power.** Conducted a technical and economic feasibility study of a cogeneration project. Responsible for developing risk-adjusted pricing strategies.

Responsibilities while employed at Green Mountain Power include:

- » **Engineering and Construction.** Directed the ongoing review and evaluation of major engineering and construction requirements. Implemented comprehensive improvements to the power delivery system, and improved system reliability and performance by 35 percent.
- » **Capital Improvements.** Responsible for implementing multi-year programs to improve system reliability, performance, and efficiency. It included transmission and distribution lines, new and rebuilt substations, new control and monitoring systems, and protection systems.
- » **Preventative Maintenance.** Instituted programs to improve the performance of transmission, distribution, and generating equipment, maintenance practices and procedures. Managed an extensive maintenance program that included generation, substations and protective relaying.
- » **Integrated Resource Planning.** Integrated Resource Planning (IRP). Responsible for developing long-term resource plans, including demand side management. Testimony before state agencies resulted in a finding that the plan was consistent with state least cost planning criteria.
- » **Demand Side Management.** DSM Program Management - Directed the planning and implementation of residential, commercial and industrial DSM programs. Responsibilities included program administration, design, marketing, evaluation, and regulatory support.
- » **Storm Procedures.** As the Company Storm Officer, directed the development and implementation of Storm Procedures. Revised plans, conducted comprehensive drills with state agencies, and expanded internal and external resources available to restore service.
- » **Hydroelectric Relicensing and Compliance.** Directed programs to improve the performance and condition of hydroelectric plants. It included audits to identify cost-effective efficiency improvements. Implemented safety programs for federally licensed projects. Served as chief negotiator on minimum flow issues, water quality, aesthetics, archeology and impoundment.



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Testimony and Appearances as an Expert Witness

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<u>Case Description</u>	<u>Company</u>	<u>Year</u>	<u>Docket</u>	<u>Jurisdiction</u>
Certificates of Public Good				
Transmission Line Construction Authorization	SSVEC	2010	E-01575A	Arizona
Northern Loop Transmission Upgrades	Velco/CUC	2004	6792	Vermont
Substation Reconstruction – Richford	CUC	2003	6682	Vermont
Island Pond to Bloomfield Line	CUC	2001	6044	Vermont
HK Webster Substation	CUC	1999	6045	Vermont
Burton Hill Substation	CUC	1999	6046	Vermont
Border to Richford 120/46kV Line	CUC	1998	5331A	Vermont
New Transmission Lines and Substation	IBM	1991	5549	Vermont
New Substation – Northern Vermont	GMP	1990	5459	Vermont
Gas Turbine Interconnection Facilities	IBM	1989	5347	Vermont
Dover Substation Expansion	GMP	1987	5226	Vermont
Rate Cases & Integrated Resource Planning (Retail and Wholesale)				
Distributed Generation Integration	NV Energy	2011	10-04008	Nevada
Distributed Utility Planning	CUC	2003	6290	Vermont
Power Purchase Contracts – IURC Complaint	Jay REMC	1998	9704-CP-069	Indiana
Section 205 Filing – Wholesale Rates	NISource	1997	ER96-35-000	FERC
Open Access Transmission Tariff Filing	NISource	1996	ER96-399-000	FERC
Request for Increase in Wholesale Rates	NISource	1996	ER92-330-000	FERC
Request for Increase in Retail Rates	GMP	1991	5532	Vermont
Least-Cost Planning Integrated Resource Plan	GMP	1991	5270	Vermont
Request for Increase in Retail Rates	GMP	1990	5428	Vermont
Request for Increase in Retail Rates	GMP	1989	5370	Vermont
Request for Increase in Retail Rates	GMP	1988	5282	Vermont
Request for Increase in Retail Rates	GMP	1986	5125	Vermont
Industry Restructuring & Asset Transactions				
Purchase of Electric Assets	VEC	2004	6853	Vermont
Certificate of Consent, Sale of Distribution Assets	CUC	2004	6850	Vermont
Certificate of Consent, Sale of Transmission Assets	Velco/CUC	2004	6825	Vermont
Prudency Review and Audit Support	CUC	2003	5841/5859	Vermont
Competitive Opportunities Filing	ConEdison	1997	96-E-0897	New York



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Articles and Publications

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- *"Grid Integration of Renewable, Intermittent Resources"* 2011 PowerGen International Conference, December 2011, Las Vegas, NV, with Vladimir Chadliev (paper approved).
- *"Reducing T&D Investments Through Energy Efficiency"* IEPEC, August 2011, with Kathryn Parlin & Walter Poor, (paper approved).
- *"Value of Distributed Generation and Smart Grid Applications,"* DistribuTECH, San Diego, February, 2011.
- *"Prioritization Methods for Smart Grid Investments,"* EI Perspectives, April-May, 2010.
- *"Evaluation of Targeted Demand-Side Management at ConEd (CECONY),"* ACEEE Energy Efficiency Conference, September, 2009, with Craig McDonald.
- *"DER Operational & Grid Benefits"* Electric Light & Power, February, 2009.
- *"Benefits of Smart Grid Integration with Distributed Energy Storage Systems,"* Infocast Power Storage Conference, July, 2008.
- *"The Rise of Distributed Energy Resources,"* Public Utilities Fortnightly, Feb, 2007, with S. Tobias.
- *"Risk Planning & Project Prioritization: Bringing Energy Delivery to the Next Level in Asset Management,"* InfoCast T&D Asset Management Conference, St. Louis, MI, May 2004.
- *"Valuation Methods: Estimating the Value of Avoiding the Risks Associated with T&D Reliability Failures,"* EI Spring 2004 T&D Conference, Charlotte, NC, April 2004.
- *"Reliability Tradeoffs,"* EI Perspectives, January-February, 2004, with Daniel O'Neill.
- *"What's the Outlook for Distributed Generation Interconnection Standards?"* 2003 PowerGen International Conference, Las Vegas, Nevada, December 2003.
- *"Federal Interconnection Standards: Putting DG in a Box,"* Public Utilities Fortnightly, April 2003, with Stan Blazewicz.
- *"An Innovative Approach to Fact-Based Distribution Reliability Cost Optimization,"* Distribution 2000, Brisbane, Australia, November 1999, with Cheryl Warren.
- *"System Reliability: Competitive Issues,"* Rethinking Electric Reliability Conference, Chicago Illinois, September 1997.
- *"Reliability: Competition & Keeping the Lights On,"* EUCI, Denver, Colorado, October 1998.
- *"System Reliability in a Restructured Environment,"* Electric System Reliability in a Competitive Environment Workshop, Denver, Colorado, October 1997.
- *"Privatization Efforts in South America"* EUCI Workshop, Denver, Colorado, January 1997.
- *"Open Access Pricing Issues,"* Transmission Pricing Conference, Vail, Colorado, Sept. 1996.