

Grier Consulting Group LLC

CHRISTOPHER GRIER

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Chris Grier has over 30 years of operations management and consulting experience in the power and utility industry. Chris maintains deep industry knowledge in the areas of business strategy and management, administration, generation, plant operations, engineering, transmission and distribution, nuclear management, and project and risk management.

Chris, who worked for 20 years in utility line executive and staff positions, has guided numerous consulting engagements for over a decade across a broad spectrum of electric utility issues. Relevant consulting work includes power and utility corporate and business unit [strategy](#), [mergers and acquisitions](#), [operations and performance improvement](#), and [operations and regulatory compliance](#), decision analysis, and risk management.

Background

Prior to starting Grier Consulting, Chris was Director - KPMG Power and Utilities Advisory Practice. Preceding KPMG, Chris was Senior Manager and Consulting Practice Leader for Capgemini's Energy, Utility and Chemical Practice. Previous to Capgemini, Chris was a Director at Navigant Consulting after concluding 20 years in operations and management at ComEd (now a regulated subsidiary of Exelon).

Chris holds a Bachelor of Science degree in Nuclear Engineering from Kansas State University, a Master of Science degree in Nuclear Engineering from Northwestern University, and an M.B.A. from Northwestern University's Kellogg School of Management.

Chris also held a Senior Reactor Operators Certification with the US Nuclear Regulatory Commission, a high voltage operator's certification, and has worked with federal, state and industry organizations on operations, licensing and compliance issues.

Chris is active in the community in Arizona where he is on the Executive Board and Chairman of the Risk Management Committee for the Grand Canyon Council of the Boy Scouts of America.

Current and Past Clients

AES	Entergy	OGE
Alliant Energy	Exelon	OPG
American Transmission Co.	Florida Power and Light	OPPD
Arizona Public Service Co.	Great Plains Energy	PacifiCorp
CADWP	InterGen	Progress Energy
ConEd	LADWP	Sempra
Diamond Castle Holdings	LIPA	Southern Company
Duke Energy	Northeast Utilities	Energy Future Holdings (TXU)

Illustrative Work

Strategy and M&A Activities

- **Keep or Sell Generating Assets Strategy** - Strategic plan outlined for a large energy company to guide the internal determination of the best going-forward strategy associated with owned generation. Activities included reviewing strategic options, identifying the requirements for an economic assessment model, stakeholder value proposition, risk management, and implementation strategies.
- **Buy-side Commercial Due Diligence** - Provided industry business and technical subject matter commercial due diligence support related to a nuclear support services transaction. Supported areas included review of the U.S. commercial (nuclear and conventional) power plant operations, labor outsourcing, outage and decommissioning management. In addition, the project included a review of the target's market environment and competitive landscape, as well as nuclear plant owners outsourcing models and vendor selection criteria
- **Support Function Review Strategy** - Lead work stream to identify risk based opportunities for cost and personnel optimizations related to support functions across the enterprise for a large nuclear generation company. This work identified over \$200 million in achievable opportunities over a 24 month period.
- **PPA Value Modeling** – Developed assessment models for purchased power agreements (PPA) for a regulated utility acquisition. Assessment included financial, market, and operational analysis of the cost and risk of various PPA proposals.
- **Transmission Services Company** – Performed a value assessment of an international transmission services company which was ultimately acquired by a large international corporation. Risk based value assessment models were developed to determine the expected free cash flow for various business scenarios.
- **Outsourcing Strategy for T&D Company** - Led the development of an outsourcing strategy for a large transmission and distribution company. Activities included the identification of core versus non-core processes and services, evaluation of outsource providers on a level playing field, modeling risk for alternate strategy outcomes, and the design of service level agreements.
- **Nuclear Plant PLEX Versus Early Shutdown Valuation Model** - Business case and strategy developed to determine the best value creation for an operating nuclear power plant. Value determination included least cost alternatives and an assessment of the overall impact to the surrounding regions economy of plant life extension, versus early shutdown and re-powering with base load coal plant.
- **Nuclear Power Up-rate Valuation Model** – Business case development to determine the best alternative and critical components for power plant up-rating based on a required steam generator replacement. Changes included those to the NSSS and Balance of Plant to allow differing levels of power up-rate.
- **Risk Assessment of SAP WCM** – Co-Led for an overall risk assessment of the implementation of the SAP Work Clearance Management module. WCM is used to manage and control the de-energizing and re-energizing high energy (high voltage and high pressure) equipment. Work included structured risk assessment of executive decision making, project management, implementation team roles and responsibilities and organization. Results of the assessment resulted in an immediate re-chartering of the project as well as new project management to ensure the highest levels of personnel safety.

- **Preparation for PUC Service Quality Assessment** – Co-developed, with utility regulatory organization, the strategy for a nine-month long service quality assessment of the utility’s planning, preparation, and management of a large ice storm (which caused a significant number of customer outages, some lasting for several weeks). Scope included reliability, vegetation management, engineering design, outage management, call center, dispatch, work management, and performance management.
- **Response to Attorney's General Suit** – Worked with a large mid-western energy company on preparation and response to Attorney's General suit on Adequacy of Supply and Adequacy of Demand for the regulated utilities energy delivery business unit. This included risk assessments of data request responses, testimony development, etc.
- **Advanced Metering** - Developed a comprehensive business case and a strategic plan for commercial, industrial, and residential metering for more than 3 million customers. This work included extensive development of financial and customer value proposition models for transitioning to AMR/AMI technology.
- **Transmission Strategic Plan** - Led a cross-functional utility/consultant team to develop a comprehensive strategic going-forward plan regarding the company's existing transmission assets and organization. This plan developed, on a stochastic basis, the benefits and challenges of an array of strategic options including acquisition, divestiture, and passive investment and their relationship to the FERC RTO NOPR.
- **Unregulated Energy Company Business Strategy** – Developed post Enron business strategy for an unregulated energy company that was faced with wholesale marketing, generating assets, and fuel procurement (including upstream gas) decisions. The strategy was developed through extensive executive level facilitation, benchmarking, and deterministic and stochastic analysis techniques.
- **Advanced Metering Infrastructure** – Worked on a multi-year project as a subject matter specialist for a provider of advanced metering infrastructure on the design and implementation of a new core software system (operations, outage management, etc).
- **External Business Acquisition** - Developed process for assessing potential external business development or acquisition. This process included quantitative and qualitative assessment of the affected industry, markets, segments, and competitors and risks.

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Operations and Performance Improvement

- **Power Plant Performance Assessments** – Lead operational plant assessments world-wide for a variety of power plants (coal, gas, CCGT, biomass). Assessment areas included: Management’s Understanding of Plant Risks, Conduct of Operations, Conduct of Maintenance, Conduct of Work Control, Engineering and Design Change Control, Outage Planning and Management, and Housekeeping and Material Condition. Results of plant performance assessments included recommendations of improvements related to governance, housekeeping and material condition, and improved plant operations, maintenance, engineering and outage management.
- **Power Plant Performance Improvement Value Modeling** – Lead the development of analytic models for the estimation of value improvements. These models provided a platform for assessing the key drivers of enterprise value as well as the best use of capital and O&M resources on the basis of both predictable improvements to service quality as well as increased EBIT.

- **Distribution Asset Management Value Modeling** – Performed assessment of asset management governance (policy, process, methods, models, and technology) for a variety of distribution companies, including national and international energy companies and public power entities.
- **Electric Distribution Business Value Models** - Provided leadership and oversight for the development of distribution company business model frameworks. These business models provided a platform for assessing the key drivers of enterprise value as well as the best use of capital and O&M resources on the basis of both predictable improvements to service quality as well as increased EBIT.
- **Demand Forecasting Improvement Assessments** - Led various assessments of company's short, intermediate, and long-term forecasting with regard to governance, processes, methods, and competencies against identified better practices. These assessments included estimating the economic value to a company of improving forecast performance.
- **Service Delivery Optimization Assessments** - Led an assessment of the key drivers of service delivery for a large electric and gas distribution company. Assessment provided the framing of a larger service delivery optimization effort to reduce interruption restoration time, work management down time, and service deliver costs.
- **Asset Management Governance** – Developed asset management processes, methods, and models for a variety of energy companies, including national and international holding companies (generation and energy delivery), merchant generators, and public power entities.
- **Demand Forecasting Benchmark** - Led a benchmarking effort with regard to near, intermediate, and long-term forecasting governance, methods, and results for energy. The national benchmark effort resulting in identifying better practices with regard to the benchmarked areas. Based on this benchmark effort the team developed a methodology for rapidly assessing a company' forecasting governance, processes, methods, and personnel against the identified better practices.
- **Energy Trading Process and Risk Assessment** - Co-directed an assessment of the processes and key assumptions for the energy trading organization for a large electric distribution company. Assessment provided the framing for the complete documentation of the process, the identification of all assumptions, sources of data, and uncertainties. Assessment and documentation was used to resolve risk management issues as well as the formulation of trading policies.
- **Engineering Contract Services** - Managed the development of business cases and plans to support the creation of stand-alone engineering contract services firms. This work included the development of customer value propositions, performance metrics, and financial plans.
- **Nuclear Plant for Long-term Nuclear Fuel Storage** - Business case and strategy developed to determine the best business decision for storage of spent nuclear fuel. Activities included reviewing storage options, developing an economic assessment tool, stakeholder value proposition, risk management, and implementation strategies.

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Operations and Regulatory Compliance

- **Power Generation Plant Audits** – Lead an operational plant audits for a multinational merchant generation company for a variety of plants (coal, gas, CCGT, biomass). Work included reviewing day-to-day plant operations, plant maintenance practices, plant modifications, and engineering design controls against better operational practices. Results of operational audits included

recommendations of improvements related to governance, housekeeping and material condition, and improved plant operations, maintenance, engineering and outage management.

- **Operations Based Electric Distribution Audits** – Performed an operational based audit of line clearance and vegetation management compliance to state utility regulations. Work included reviewing state regulations, internal processes and controls for preventative maintenance and line clearance operations.
- **Utility Compliance Readiness Audit** – Provided on-site technical and regulatory subject matter advisory support in a company’s assessment of its compliance with all Federal, state and local compliance requirements.
- **Risk Based Internal Audit Planning** – Led the development of a risk based internal audit plan for a large interstate utility company. Risks were assessed across all aspects of the enterprise, including shared services, finance, generation (nuclear and fossil operations, maintenance, environmental/safety, and workforce management), energy trading/hedging, energy delivery (including field workforce, customer care / marketing, and revenue cycle), and information technology. Utilized the PWC TeamRisk software and a web based survey of over 500 middle managers was utilized in developing the risk based plan.
- **NERC/ERO Audit Readiness** – Provided on-site technical and regulatory subject matter advisory support in a company’s assessment of its compliance with NERC standards. This work included assisting members of the company’s Internal Audit & Security department as they prepare for their first NERC regional compliance audit.
- **NERC ERO Compliance Framework** – Led the development of a COSO-like compliance framework to help a client assess their compliance to FERC/NERC/ERO reliability standards. Work included developing a strategic response, process and technical requirements definition, and working directly with their internal IT organization to build a Microsoft SharePoint platform to implement the framework.
- **Preparation for PUC Regulatory Audit** – Worked with a large mid-western energy delivery organization on a yearlong PUC audit of the adequacy of delivery. This included risk assessments of adequacy of supply, operational risk assessments, substation capacity, distribution line capacity, reliability, and service quality.
- **Billing Estimation and Metering** – Led an internal management assessment relating to regulatory compliance aligned with correct implementation of estimated bills, bill credits, and meter reading performance for a western utility company. Work included statistical sampling, testing, and remedial recommendations related to estimated bills, analysis of correct interpretation and implementation of bill credits, and implementation of new management controls regarding improved meter reading compliance. Results of assessment resulted in the immediate implementation of several areas to remediate near-term regulatory compliance.
- **Special Nuclear Materials Accountability** – Responsible for special nuclear materials inventory including analysis of fissile material production (primarily Plutonium), fissile material inventory (Plutonium and Uranium) and radioactive material production and inventory, physical confirmation of materials both in reactor, fuel pool, and dry storage and quarterly reporting to USNRC.

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