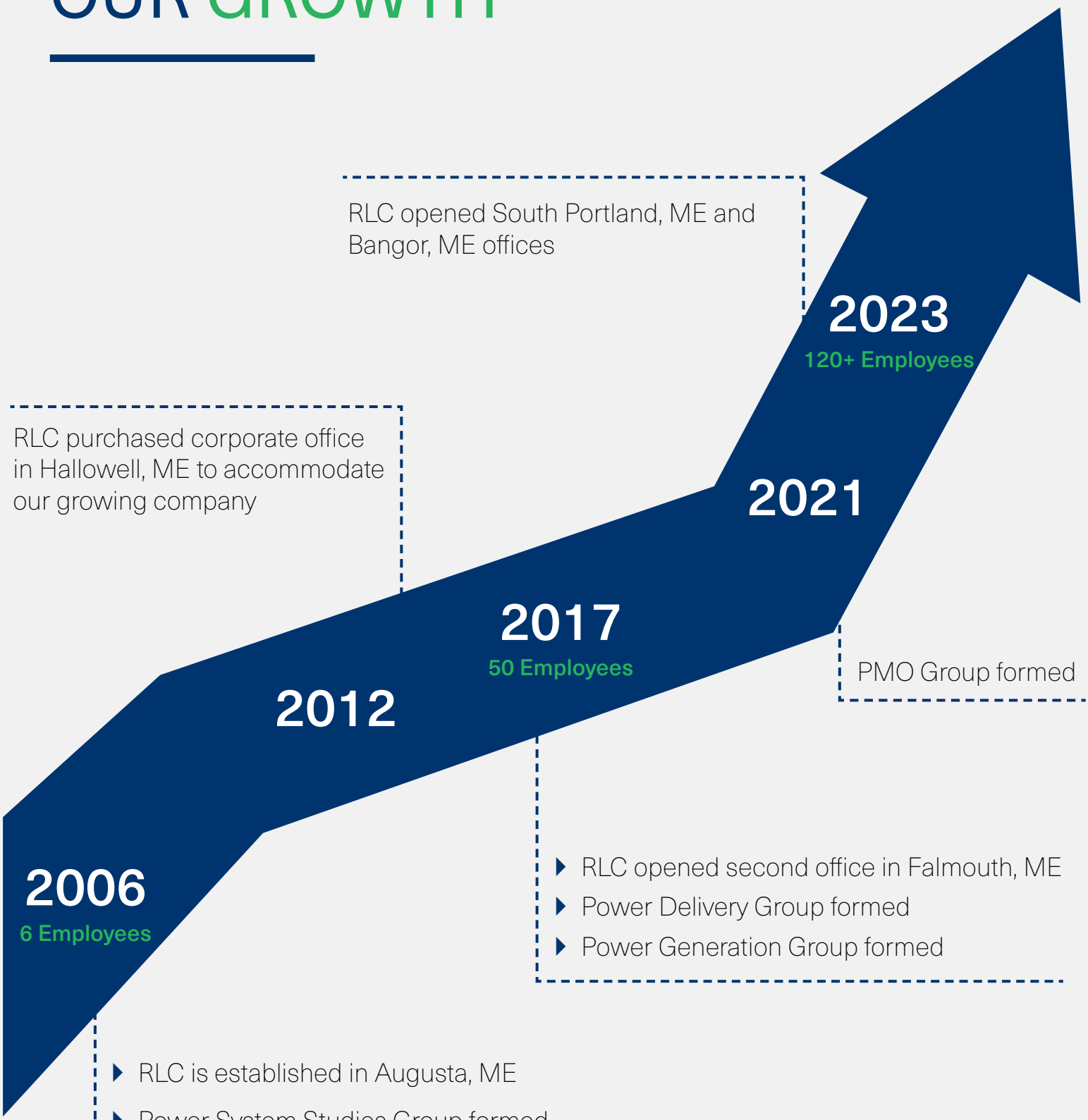
RLC ENGINEERING

POWER SYSTEM STUDIES PROFILE

EMPOWERING ENERGY SOLUTIONS
FOR THE FUTURE...TODAY

TABLE OF CONTENTS

OUR GROWTH


2023
120+ Employees
RLC opened South Portland, ME and Bangor, ME offices
2021
RLC purchased corporate office in Hallowell, ME to accommodate our growing company
2017
50 Employees
PMO Group formed
2012
RLC opened second office in Falmouth, ME
Power Delivery Group formed
Power Generation Group formed
2006
6 Employees
RLC is established in Augusta, ME
Power System Studies Group formed

WELCOME TO

COMPANY PROFILE

OVERVIEW & BACKGROUND

RLC Engineering, PLLC (RLC) is an engineering consulting firm located in Maine, offering a full range of services in the electric utility and renewable generation engineering fields, from conceptual planning to final commissioning. RLC opened its corporate office in 2006 in Augusta, Maine and has experienced steady growth and success since. Its customers range from electric utilities, regional grid operators, renewable energy developers, and contractors of electric grid infrastructure projects.

OUR MISSION

To provide professional engineering consulting services and innovative solutions for our clients, while providing an enriching work environment that encourages personal development and job satisfaction for our employees.

CORE VALUES

RLC's core values are the foundation of our culture. They are genuine, thoughtful values that guide our employees to work towards the same goals and support the company's vision and shape our culture.

WHO WE ARE

RLC's team of more than 120 technical professionals provide innovative engineering solutions, tailored to fit our client's specific needs. Our engineers bring extensive experience in the study, planning, and design of complex power systems, understanding the need for efficiency, flexibility, resiliency, attention to detail, and value of time and money invested.

OUR CORE SERVICES

RLC provides fully engineered solutions including planning, feasibility studies (site selection, utility interconnections, cost estimating), detailed design, interconnection applications, permitting, and power generation facilities, and industrial plants.

With our comprehensive range of services, RLC will provide expert consulting and engineering services to meet your technical, schedule, and budgetary requirements.

POWER SYSTEM STUDIES

- Transmission System Studies
- Distribution System Studies
- Interconnection Studies

POWER DELIVERY

- Substation Design
- Transmission Line Design
- Protection & Control
- Civil & Structural Design

POWER GENERATION

- Solar Generation
- Wind Generation
- Energy Storage
- Renewable Generation Studies
- Operations & Maintenance

POWER ENGINEERING

- Mechanical Design Services
- Energy Management
- Microgrid Design Support
- Power Distribution Design

POWER SYSTEM STUDIES

- ✓ Feasibility Studies and System Impact Studies
- ✓ Circuit Breaker Rating Analysis
- ✓ Detailed Loss Analysis
- ✓ Evaluation of Power Supplies Alternatives Studies
- ✓ DER Cluster Studies
- ✓ Protection and Coordination Studies
- ✓ Hosting Capacity Studies
- ✓ Time Series (8,760) Analyses
- ✓ Power Systems Analysis
- ✓ Motor Start Analysis
- ✓ Transmission Upgrades Approval Studies
- ✓ Areas Needs Assessments & Solutions Studies
- ✓ Reactive Compensation Analysis
- ✓ Steady State, Stability, and Transient (EMT) studies
- ✓ Integrated System Planning
- ✓ NERC TPL-001 Compliance Studies

RLC is widely recognized as a leading industry provider of Power System Studies in the Northeast. We perform a full breadth of transmission and distribution system planning and operational studies for electric utilities, grid operators and energy developers. Owners of Transmission and Distribution systems need to find effective ways to meet mandated reliability standards and power quality requirements while meeting the challenges of grid modernization. With large amounts of distributed energy resources interconnecting and other non-transmission alternatives competing with traditional grid solutions, energy developers, utilities, regulators, and system operators depend on power system studies to maintain the security and dependability of the electric grid. RLC's Power System Studies group has decades of electric system operational and planning experience from both transmission and distribution system perspectives necessary to effectively tackle these challenges.

POWER SYSTEM STUDIES SERVICES

DISTRIBUTION SYSTEM STUDIES

Distributed energy resources are dramatically changing the design and requirements of the future distribution system. Advances in smart grid technology, coupled with high penetration of renewable resources proposing to interconnect on distribution and sub-transmission lines, require modeling, study and investigation. The new challenges and advancement in technology require better understanding of both supply and load resources. RLC assists our utility customers by performing distribution interconnection impact studies and equipment design reviews to ensure and maintain mandatory power quality standards. RLC is also experienced in performing Distribution Hosting Capacity Studies to determine the amount of additional distributed energy resources that can interconnect to a feeder reliably.

TRANSMISSION SYSTEM STUDIES

RLC is expert at performing transmission system studies. Studies range from feasibility studies, to wide area transmission planning studies to satisfy regional and national reliability standards, as well as competitive transmission solutions for public policy initiatives. Our engineers have significant experience modeling and planning transmission systems both large and small. RLC maintains a high level of security and confidentiality through security software and internal procedures for handling Critical Energy Infrastructure Information.

INTERCONNECTION STUDIES

RLC's engineers analyze the integration of solar, wind, and battery storage resources onto both transmission and distribution systems through interconnection studies, including feasibility studies, system impact studies, and DER cluster studies. We have analyzed interconnections of small and large resources, performing steady-state, stability, short circuit, harmonics, and EMT analyses, including studies for emerging technologies. In addition, we perform congestion analyses to study moving large quantities of renewable energy over long distances.

DISTRIBUTION SYSTEM STUDIES SERVICES

The future distribution systems will look different than those of the past. There will be many more distributed resources, and both resources and loads will need to be controlled in real-time by a coordinated controller. Our engineers are prepared to help utilities and developers figure out how to make this all work, and have performed hundreds of distribution system renewable resource interconnection impact studies, including equipment design upgrades. We are proficient with ASPEN, PSCAD, Synergi, and CYME for completing these analyses. We understand the issues associated with unbalanced loads and are experienced at solving voltage profile, voltage flicker, effective grounding, anti-islanding, power factor, short circuit, reverse power flow and other interconnection problems. In addition, we perform PSCAD analyses for Risk of Islanding (ROI), Ground Fault Over Voltage (GFOV), Load Rejection Over Voltage (LROV), Under Frequency Load Shedding (UFLS), and Control Interaction per IEEE 1547-2018. Our strengths are complemented by a strong system protection group.

TYPICAL STUDIES PERFORMED:

- System Impact Studies
- Long-Term Dynamic Studies
- Transient Analyses
- Curtailment Analyses (8,760 Analyses)
- Load Addition Analyses
- Motor Start Analyses
- Reliability Analyses
- IEEE 1453 Flicker Analyses
- Protection and Coordination Studies
- EMT Analyses (ROI, GFOV, LROV, UFLS, control interaction)

TRANSMISSION SYSTEM STUDIES SERVICES

Our engineers are experts at performing transmission system studies that include steady state, stability, short-circuit, transient switching and congestion analyses. Tools that we use for these analyses include PSS/E, TARA, PSLF, ASPEN, PSCAD, EnFuzion, ATP and our own specialized programs. Our client list includes large investor-owned utilities, Independent System Operators (ISO) and merchant power plant developers.

TYPICAL STUDIES PERFORMED

- Generation System Impact
- Generator Feasibility
- Transmission System Expansion and Operations
- Non-Transmission Alternative Analysis
- Congestion Analysis
- DER Cluster Studies
- Power System Protection
- NERC Modeling, Testing and Documenting for MOD-025, -026, -027, -032, and TPL-001
- Capacitor Bank Switching and Application
- Needs Assessments
- Transmission Upgrade Approval Studies

INTERCONNECTION STUDIES SERVICES

The growth of solar, wind and battery renewable energy sources have been brisk the last few years and are likely to continue their high penetration of both small- and large-scale projects. We analyze the integration of these resources onto both transmission and distribution systems through interconnection studies and studies for emerging technologies. In addition, we perform congestion analyses to study moving large quantities of renewable energy over long distances. We have performed hundreds of distribution system studies for utilities throughout the United States, with a wide breadth of industry software knowledge.

TYPICAL STUDIES PERFORMED

- Distributed Resource Interconnection Studies
- Distribution System Studies
- Interconnection Studies
- Transmission System Studies
- Hosting/Injection Capacity Analyses
- Distributed Energy Resource Cluster Studies

POWER SYSTEM STUDIES EXPERIENCE

DISTRIBUTION SYSTEM STUDIES

Today's distribution systems look different than those of the past as there are many more distributed energy resources, electric vehicles, and managed loads. RLC's engineers help utilities succeed in this environment by performing comprehensive power flow analyses while applying the latest industry standards and guidelines. Our application of time domain analyses and leveraging of smart inverter functionality ensure the least cost plan which meets all applicable criteria. We are experts at feasibility and system impact studies, risk of islanding and transient analyses, curtailment assessments (8,760 analyses), load studies, motor start and flicker analyses, reliability analyses, and protection and coordination studies.

TRANSMISSION SYSTEM STUDIES

With intermittent and variable inverter-based generation displacing rotating machines, state-of-the-art studies are required to ensure system reliability and resiliency. Our engineers are experts performing steady state, stability, short-circuit, transient switching, and time domain analysis for utilities, Independent System Operators (ISO) and merchant power plant developers to ensure reliability and resiliency. Typical studies performed include interconnection feasibility and system impact studies, transmission system expansion and operations studies, non-transmission alternative (NTA) analyses, congestion analysis, DER cluster studies, power system protection analyses, NERC TPL modeling, testing and documenting, and capacitor bank switching and application.

INTERCONNECTION STUDIES

The growth of clean energy sources will continue their high penetration of both small- and large-scale projects. RLC analyzes the integration of these resources onto both transmission and distribution systems through interconnection studies and assessments. We have analyzed interconnections of small and large resources, including interconnection studies and DER cluster studies with steady-state, short circuit, stability, and transient analyses. In addition, we perform congestion analyses to study moving large quantities of renewable energy over long distances. We have performed hundreds or renewable generation studies for utilities throughout the United States.

POWER SYSTEM STUDIES EXPERIENCE

DISTRIBUTION SYSTEM STUDIES

CYME & PSCAD EXPERTS

We are EXPERTS at feasibility and system impact studies, ROI and transient analyses, curtailment assessments, load studies, motor start and flicker analyses, reliability analyses, 8,760 analyses, and protection coordination.

We analyze LROV, GFOV, ROI, UFLS interaction, and control interaction using PSCAD.

TRANSMISSION SYSTEM STUDIES

STATE-OF-THE-ART STUDIES

Our engineers are EXPERTS performing steady state, stability, short-circuit, transient switching, and time domain analysis for utilities, Independent System Operators (ISO) and merchant power plant developers to ensure reliability and resiliency. We also perform DER Cluster studies using both PSSE AND PSCAD.

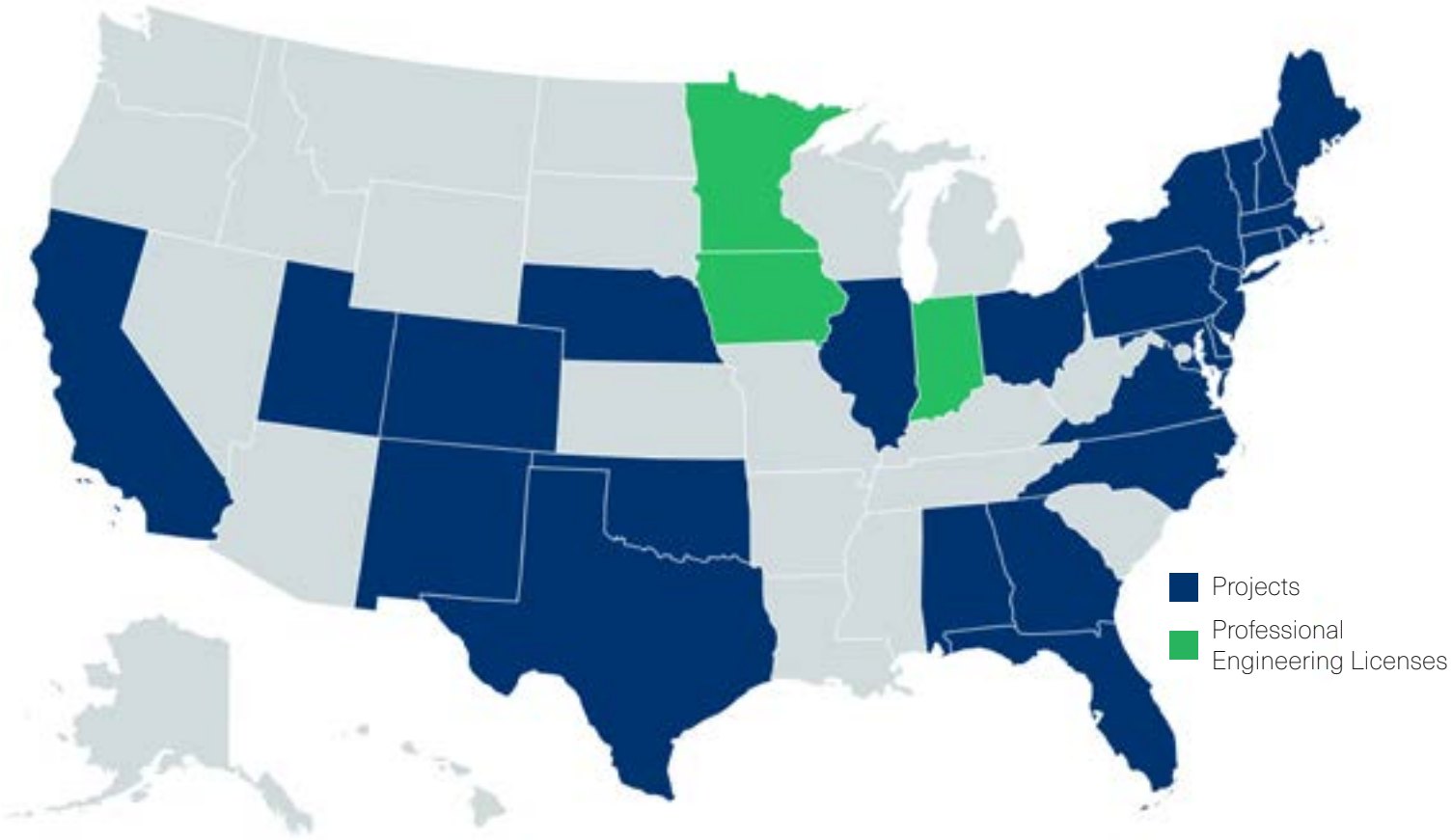
INTERCONNECTION STUDIES

We have performed HUNDREDS of renewable generation studies for utilities throughout the US.

Analyzed interconnections using steady-state, short circuit, stability, and EMT analyses, including cluster studies and PSCAD cluster studies.

WHERE WE WORK

RLC has performed over 1,000+ transmission and distribution system planning and operational studies for electric utilities, grid operators throughout the United States. Regulators and system operators alike depend on power system studies to maintain the security and dependability of the electric grid.



OUR EXPERIENCE SPANS THE COUNTRY

OFFICES AND SATELLITE LOCATIONS IN

12+

STATES ACROSS THE COUNTRY

PERFORMED

1000+

STUDIES FOR UTILITIES AND DEVELOPERS

OUR EMPLOYEE REGISTRATIONS SPAN

24+

STATES ACROSS THE COUNTRY

PROJECT MANAGEMENT ORGANIZATION

At RLC, great project management is more than just cost, schedule, quality, and scope. Building relationships and trust with our clients are critical elements to ensure a projects successful execution. RLC's project managers utilize a variety of skills to effectively perform their jobs through communication, planning and forecasting, scheduling and time management, budgeting, technical expertise, risk management, and problem-solving, to ensure our clients success.

Projects are often complex and involve numerous stakeholders, having a project manager in place is essential to make certain projects start on time, stay within budget, and meet expectations. Our project managers are highly experienced with the leadership capabilities to effectively guide, manage, and support our clients. They are experts in utilizing best practices and have a clear understanding of the various processes required for the successful implementation and completion of any project.

We partner with clients to ensure projects are completed on-time and under budget.

Our project management team has experience in the following areas:

- Leading the Planning of and Successful Execution of Projects
- Project Scheduling
- Earned Value Management (EVM)
- Financial Planning and Cost Controls
- Contract Management
- Quality Assurance and Quality Control
- Risk Assessment and Management
- Project Communication Plan
- Resource Staffing Plans

BENEFITS

RLC's PMO team has developed procedures and best practices required for the successful implementation and completion of any project and is devoted to ensuring consistency, efficiencies, and better management of costs.

CLIENT REFERENCES

RLC is extremely proud of our established reputation with our clients. Please feel free to contact the following references regarding our performance and services.

POWER SYSTEM STUDIES

Josh Castonguay, VP & Chief Innovation Officer
Green Mountain Power
Phone: 802-655-8754
E-mail: Josh.Castonguay@greenmountainpower.com

Deb Manning, Sr. Transmission Planning Engineer
Versant Power
Phone: 207-973-2733
E-mail: Deborah.Manning@versant.com

Megan Sullivan, Manager of Transmission Planning
Avangrid
Phone: 207-629-2121
E-mail: Megan.Sullivan@avangrid.com

POWER DELIVERY

John Babu, Manager - P&C Engineering
Eversource Energy
Phone: 860-665-2448
E-mail: John.Babu@eversource.com

Kevin Black, Manager System Operations
Versant Power
Phone: 207-941-6602
E-mail: Kevin.Black@versant.com

Michael Wilkins, Manager - Substation Engineering
Eversource Energy
Phone: 603-634-2602
E-mail: Michael.Wilkins@eversource.com

POWER GENERATION

Parker Hadlock, General Manager
Cianbro Corporation
Phone: 207-838-8162
E-mail: PHadlock@cianbro.com

Todd Presson, Chief Executive Officer
Jay Cashman, Inc.
Phone: 617-890-0600
E-mail: TPresson@jaycashman.com

Christopher Reino, Senior Project Manager
Eversource Energy
Phone: 413-727-2845
E-mail: Christopher.Reino@eversource.com

Integrity and accountability are what drive our highly experienced engineers. We provide our clients with reliable innovative engineering solutions, tailored to fit their specific needs. We have had the privilege to work with utilities throughout the Northeast, independent system operators, and solar and wind developers all across the Northeast, Canadian Maritimes, and beyond.

"We believe in providing our customers with the most reliably engineered planning and design to accommodate the energy demands of today's world."

-Rick Conant

OUR CLIENTS

- Avangrid
- Borrego Solar
- Central Maine Power Company
- Cianbro Corporation
- CS Energy
- C2 Omega
- Discovery Wind and Solar Energy
- Dominion Energy
- Eversource Energy
- FirstLight
- Great River Hydro
- Green Mountain Power
- ISO New England
- Longroad Energy Partners
- MYR Group
- National Grid
- Nexamp
- NextEra Energy
- Norwich Solar Technologies
- Versant Power

MANAGER BIOS

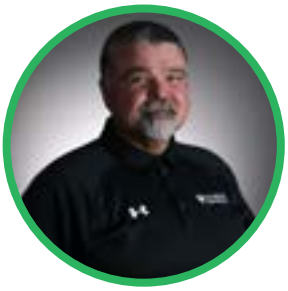
RICK CONANT, PE – MEMBER-MANAGER

As the Member-Manager and Founder of RLC Engineering, Rick offers utility providers and developers a rich background in power system studies and power delivery engineering excellence. With over 30 years of experience in the electric utility industry, Rick provides clients with a diverse knowledge of power system operation from both a planning and operational perspective in tandem with exceptional professional engineering.

BRIAN CONROY, PE – MANAGER OF POWER SYSTEM STUDIES

Brian oversees transmission and distribution system planning and operational studies for electric utilities, grid operators and energy developers. With over 33 years of experience in the electric utility industry, Brian and his team are prepared to assist utilities and developers interconnecting to the power grid with the most trustworthy power system studies to maintain the security and dependability of the electric grid. Brian is a senior member of IEEE.

PHIL NADEAU, PE, PMP – MANAGER OF POWER DELIVERY



Phil has over 30 years of professional experience in the utility and manufacturing industries and works alongside both our clients and our in-house team from a project's initial concept to final commissioning. Phil is well-versed in the management of all project phases including development, planning, execution, monitoring, controlling and closeout of utility-based capital investment projects with a primary focus on creating industry-leading quality output.

JON GAY, PE – MANAGER OF POWER GENERATION & ENGINEERING

Jon has over 16 years of comprehensive experience in the electrical distribution and generation industry dedicated to Distributed Energy Resource (DER) interconnection, utility distribution engineering consulting, industrial and commercial distribution design, and construction management. Jon and his team provide in-depth knowledge of electrical systems and provide cost-effective solutions to power system operators.

JOHN JOYCE, PMP – PMO MANAGER

John has over 30 years of experience in the electrical utility industry in the areas of engineering, construction and project management. John leads a team of project managers and works in close collaboration with RLC clients in all segments of a project from scheduling, to finance, to engineering, to construction. John ensures that RLC's company standards are upheld, while also assuring excellent client satisfaction in delivering quality engineering services in a timely and cost-effective manner.

JUSTIN DODD, PMP – MANAGER OF BUSINESS DEVELOPMENT

Justin has over 17 years of combined experience in the energy and utilities markets. As Business Development Manager, Justin brings a wealth of expertise in driving business growth through strategic planning with hands-on execution, client relationship management, and innovative solutions. Justin is a registered PMP.

PRINCIPAL ENGINEERS

POWER SYSTEM STUDIES

- KWAME ANDOH
  PRINCIPAL POWER SYSTEM ENGINEER
- DAVE CONROY, PE
  PRINCIPAL POWER SYSTEM ENGINEER
- DAVE GREEN
  PRINCIPAL POWER SYSTEM ENGINEER
- DAN LEWIS
  PRINCIPAL POWER SYSTEM ENGINEER
- LEIGH PAINE
  PRINCIPAL POWER SYSTEM ENGINEER
- MIKE POULIN
  PRINCIPAL POWER SYSTEM ENGINEER
- HEATHER ROBERTS, PE
  PRINCIPAL POWER SYSTEM ENGINEER
- TAMMY ROBERTS, PE
  PRINCIPAL POWER SYSTEM ENGINEER
- BOB RUSSO, PE
  PRINCIPAL POWER SYSTEM ENGINEER
- ASA SPROUL, PE
  PRINCIPAL POWER SYSTEM ENGINEER
- WAINE WHITTIER, PE
  PRINCIPAL POWER SYSTEM ENGINEER

POWER DELIVERY

- CHRIS BENNETT, PE
  PRINCIPAL PROTECTION ENGINEER
- CRAIG LAKIN, PE
  PRINCIPAL PROTECTION ENGINEER
- CHRIS LYONS, PE
  PRINCIPAL CIVIL ENGINEER
- JUSTIN MACDONALD, PE
  PRINCIPAL ELECTRICAL ENGINEER
- CRAIG PERREAULT, PE
  PRINCIPAL CIVIL ENGINEER
- PAUL VILLENEUVE, PE
  PRINCIPAL PROTECTION ENGINEER

POWER GENERATION

- JOSÉ DONNELL, PE
  PRINCIPAL ELECTROMECHANICAL ENGINEER
- DAVE ESTEY, PE
  PRINCIPAL ELECTRICAL ENGINEER
- TEDD GIFFORD, PE
  PRINCIPAL ELECTRICAL ENGINEER
- JOHN MILLER, PE
  PRINCIPAL POWER SYSTEM ENGINEER
- AMAM ONWUACHUMBA, PHD, PE
  PRINCIPAL POWER SYSTEM ENGINEER

For complete principal bios, please visit our website at www.rlc-eng.com

RLC ENGINEERING

INFO@RLC-ENG.COM
RLC-ENG.COM