



RLC
ENGINEERING



COMPANY PROFILE

EMPOWERING ENERGY SOLUTIONS
FOR THE FUTURE...TODAY

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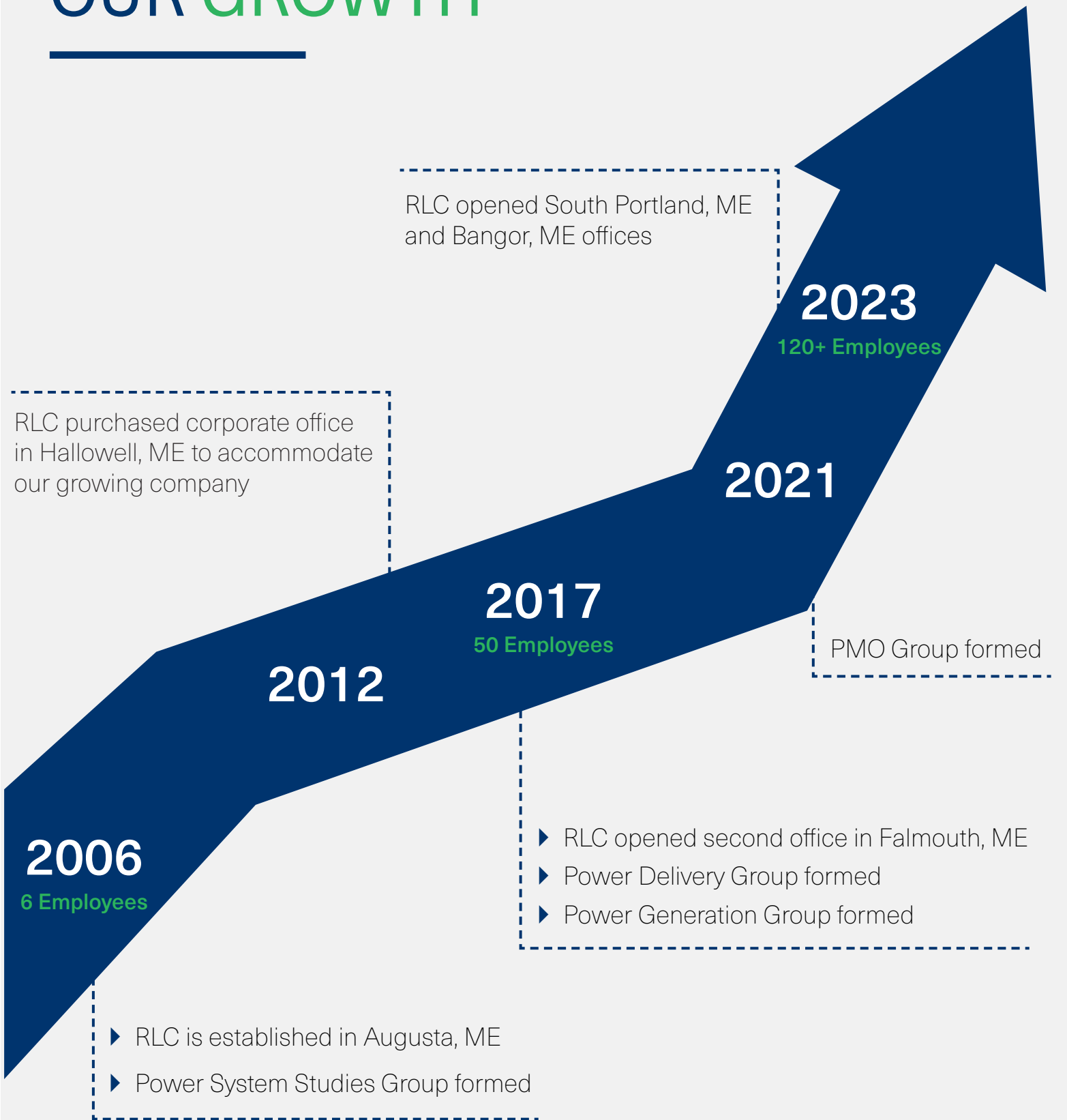
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OVERVIEW & BACKGROUND

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 experienced in performing Distribution Hosting Capacity Studies.

TRANSMISSION SYSTEM STUDIES

RLC is expert at performing transmission system studies. Studies range from preliminary feasibility studies for energy developers 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.

POWER DELIVERY



- ✓ New and Rebuild Substation Design
- ✓ Electrical, Civil, and Structural Design
- ✓ Protection & Controls (Settings & Design)
- ✓ Automation & Integration
- ✓ Testing & Commissioning
- ✓ Right-of-Way Analysis
- ✓ Environmental Services and Geotechnical Studies Management
- ✓ Existing Overhead Line Ratings and Re-Ratings
- ✓ Distributed Energy Resources (DER)
- ✓ Line and Structure Rendering
- ✓ Line Constant Development
- ✓ Transmission Protection (Differential, Line, Transformer, Generator)
- ✓ Distribution Protection (Reclosers)
- ✓ Field Surveys of Electrical Facilities
- ✓ Cable Sizing
- ✓ Insulation Coordination

Over the years we have been privileged to work with electric utilities, regional grid operators, renewable energy developers and contractors of electric grid infrastructure projects across the Northeast, Mid-Atlantic, and Southeast regions offering a comprehensive package of engineering, design, and estimating services. Our engineers are familiar with each of our client's standards and maintain a high level of quality for all design-related projects. We leverage our design experience in combination with utilizing nationally recognized software to support for our utility and energy developer clients.

POWER DELIVERY SERVICES

SUBSTATION DESIGN

Our engineers can plan, specify, and perform all aspects of engineering for transmission, distribution or interconnection substations. Our engineers assist clients in navigating from the conceptual stage into the final design as well as through material procurement, construction and final commissioning. We perform detailed project designs, develop material purchasing and construction service specifications for transmission, distribution and auxiliary systems.

TRANSMISSION LINE DESIGN

Our expertise extends from distribution to transmission line design and standards. We provide transmission line design services from the conceptual level through design for construction on lines ranging from 4 kV to 345 kV. Our engineers utilize leading-edge software programs to design and analyze transmission line facilities for a variety of needs, including maintenance, fiber optic additions, rebuilds, relocations, re-rates, and reconductors.

PROTECTION & CONTROL

RLC offers significant experience in the area of utility system protection and coordination for renewable, non-renewable, regulated, and non-regulated clients. Our engineers have created, reviewed, and approved protective relay settings for numerous relay types and applications. In addition, we develop construction-level control system designs for new and existing facilities. The modernization of the protective relay functions within the electric grid involves knowledge of power systems and microprocessor-based equipment to provide both safe and reliable operation. Legacy equipment replacement with state-of-the-art numerical relays represents a major sector of our business and capabilities.

CIVIL & STRUCTURAL DESIGN

We offer complete civil and structural engineering services for substation and transmission projects. With extensive electric utility experience, our team has the unique knowledge necessary to provide safe, constructible and functional designs ensuring the reliability of your facility.

POWER GENERATION



- ✓ Detail Design
- ✓ Site Layout and One Lines
- ✓ Interconnection Applications
- ✓ Generation and Emergency Generation Analysis
- ✓ Performance Guarantee Testing Analysis
- ✓ Grounding Analysis
- ✓ Harmonics Analysis
- ✓ Reactive Compensation Analysis
- ✓ Testing and Commissioning Support, Including, Relay Testing, and IV Curve Tracing
- ✓ Area and Site Feasibility Studies with Focus on Infrastructure
- ✓ Short Circuit, Load Flow, and Arc-Flash Hazard Analysis
- ✓ Generation and Emergency Generation Analysis
- ✓ Steady State, Stability, and Transient (EMT) studies
- ✓ Training Owner Personnel
- ✓ System Performance Monitoring
- ✓ Operations and Maintenance Support (O&M)
- ✓ Generation Modeling
- ✓ Circuit Breaker Rating Analysis
- ✓ Detailed Loss Analysis
- ✓ Project Modeling Analysis
- ✓ Motor Start Analysis
- ✓ Prospecting/Siting Analysis

RLC has extensive experience in the power generation industry and have played a key role in the development of over 4 GWs of solar, wind, and energy storage throughout the Northeast and Mid-Atlantic United States. We provide engineering solutions for complex power systems that serve a variety of energy related technologies in the development of renewable energy.

Our engineers provide in-depth knowledge of electrical systems and can pinpoint problems and provide cost-effective solutions to power system operators including specialties such as photovoltaic, wind, battery storage, standby, and emergency generation. Our engineering services cover the full life of a system from concept and feasibility to design and commissioning, as well as maintenance support. Detailed engineering services include construction drawings and construction support to ensure the installation complies with the approved drawings. Our power generation engineers can provide independent engineering functions as a third party and can investigate why your operating system is not performing to specifications.

POWER GENERATION SERVICES

SOLAR GENERATION

Our solar experience on ground mounted, landfill mounted, rooftop and canopies over parking lots is extensive and ranges from small to large-scale projects. We can assist on behind the meter projects where all the energy is consumed within the host system or on projects exporting power to the grid and into the energy markets. Our engineering staff also supports testing and commissioning for relay testing and performs IV curve trace testing. We have provided developers with prospecting and development assistance for over 2 GWs of systems throughout the Northeastern United States. Our engineering staff is well versed in the latest design, modeling, and testing software.

WIND GENERATION

Our engineers have significant experience providing conceptual design studies, interconnection support, detail design, management, and testing support on both onshore and offshore wind projects. Our engineers can support detail design on wind projects ranging from 5 MW to 40 MW, and conceptual design studies for projects ranging between 5 MW and 450 MW in size.

ENERGY STORAGE

We have the experience and expertise to guide our clients through each stage of their battery storage projects, whether they are for utility scale or distributed generation. Our staff of subject-matter experts, with deep technical knowledge of large-scale solar, wind, and energy storage projects provide the very best expert consulting in pairing battery storage with renewable energy sources that meet the technical, schedule and budgetary requirements for your project.

RENEWABLE GENERATION STUDIES

RLC's engineers analyze the integration of solar, wind, and battery storage resources onto both transmission and distribution systems through interconnection studies, and fatal flaw assessments. We have analyzed interconnections of small and large resources, performed siting and interconnection studies, and performed studies for emerging technologies. In addition, we perform congestion analyses to study moving large quantities of renewable energy over long distances.

OPERATIONS & MAINTENANCE

Proper Operations and Maintenance (O&M) are an integral part of maximizing the Return on Investment (ROI) for renewable energy projects. Our engineers use a variety of methods to pinpoint problems and provide cost-effective solutions for complex power systems supporting a variety of energy-related markets. Services include visual and hands-on inspection of PV system components, as well as selective testing. We provide reports identifying items requiring corrective actions and the recommended resolution, analyze total program performance, including energy production and provide complete site-by-site information with significant actions.

POWER ENGINEERING



- ✓ Probability Cost Studies
- ✓ Construction Support Services
- ✓ Owner Engineer Services
- ✓ 3rd Party Reviews
- ✓ Fully Designed System Installation
- ✓ Piping Stress Analysis
- ✓ Hydraulic and Pump Designs
- ✓ CHP Studies and Designs
- ✓ Energy Management Solutions
- ✓ Distributed Generation (DG) Installations
- ✓ Equipment Specification
- ✓ CHP/Cogeneration/Utility Plant Retrofit

RLC's Power Engineering team, addresses the rapidly evolving power management opportunities with commercial and industrial consumers of electricity. RLC combines its unique understanding of this environment with institutional and industrial clients' needs for efficient energy use and improved energy security. We have evaluated, engineered, and created medium voltage campus distribution systems and emergency generation for a variety of facilities such as colleges and universities, hospitals, research facilities, state governmental entities and level 4 data centers.

Our designers and engineers have supported piping design for steam, hot water, and glycol distribution systems, as well as electrical, instrumentation, and control support projects.

For the energy consumer, this includes Combined Heat and Power (CHP) studies and designs, Distributed Generation (DG) installations, and energy management solutions.

POWER ENGINEERING SERVICES

ENERGY MANAGEMENT

Starting with the decision process, we develop the documentation and organization strategies including conceptual design, probable cost studies and proposal solicitations. For project managers, we provide construction support services, owner engineer services and third-party reviews. We support, measure, and verify project performance and financials, even after construction has been completed.

MECHANICAL DESIGN

We provide a full range of support for your energy management needs. We help determine the solutions that will best serve your requirements and budget. Whether you need new boilers, a Combined Heat and Power (CHP) installation or a microgrid, we design the entire installation. When energy savings are the foremost solution, we determine the best approach to efficiently use the resources that you already have through cooperation with utility providers or through in-house conservation.

Our engineers have the skills and expertise to integrate with the utility if the goal is to distribute power or thermal energy to a distributed grid load in campuses, transport to business parks, or other potential customers. Our design teams create electrical and mechanical equipment specifications, piping stress analysis, hydraulic and pump designs.

MICROGRID DESIGN SUPPORT

Today's microgrids offer the ultimate resiliency and versatility whether connected to the utility grid or intentionally islanded. The total integration of renewable power systems, battery storage, rotating machines, and operation control systems pose complex challenges for today's load center's demands. RLC Engineering can help your facility meet your microgrid goals. Our experienced team can guide you through the microgrid design project.

POWER DISTRIBUTION DESIGN

From planning new medium voltage infrastructure to modernizing older systems, RLC Engineering has the experience to meet all your power distribution needs. RLC Engineering offers power system planning for load growth and system resiliency from 480 volt industrial power systems through 35 kV medium voltage power applications. System protection services ensure safety, reliability, and ease of maintenance for your complex power system infrastructure needs.

PROGRAM APPROACH

Reduce the site selection process using RLC's grid modeling capabilities. The area assessment can analyze an entire area (such as utility territory) to locate optimal areas of injection, focusing real estate selection to a pinpoint. RLC calls this top-down process a 'Program Approach'.

PROGRAM APPROACH HIGHLIGHTS

Site Selection

- RLC's abilities are engaged to find optimal substations for injection by identifying areas of available capability, condensing the real estate search to only the best sites

Parallel Projects

- RLC's Program Approach eliminates multiple contract negotiations
- Enhance schedule milestones to get your program sites to market quicker
- Streamlined work ensures vendor resource availability

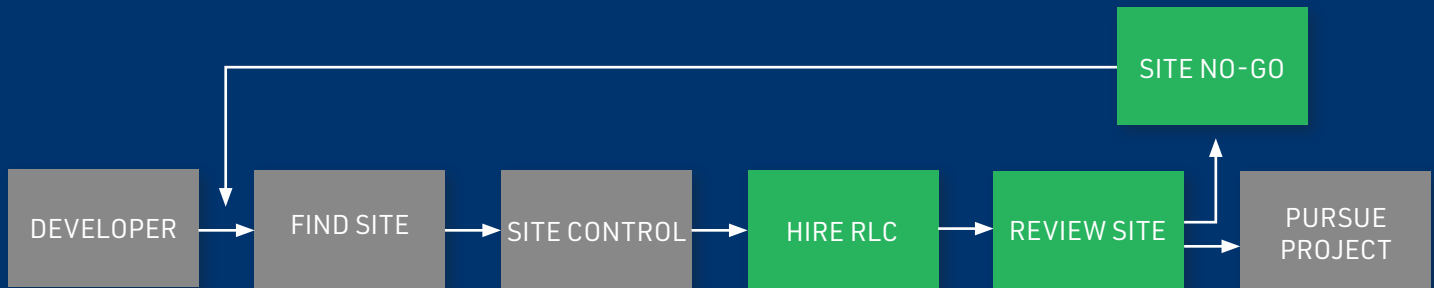
Site Standardization

- Standardized preliminary design for interconnection applications
- Standardized design may allow bulk material purchasing for further cost savings

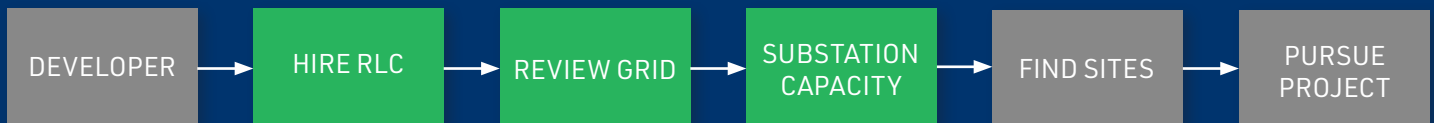
Program Wide Integrator

- Technical liaison with the interconnecting utility
- Construction Bidding
- Construction Engineering Support
- Testing and Commissioning Support
- Resource Staffing Plans

TRADITIONAL APPROACH



PROGRAM APPROACH



BNRG has worked closely with the team at RLC in the last few years. They are a good size and coordinated practice with a sensible multi-disciplinary approach which is both efficient and effective. Their in-depth knowledge of the grid networks in New England has been invaluable to BNRG's strategic approach to development. Most importantly, we enjoy working with the RLC Team.

-David Maguire Director/BNRG

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



COST



SCHEDULE



QUALITY



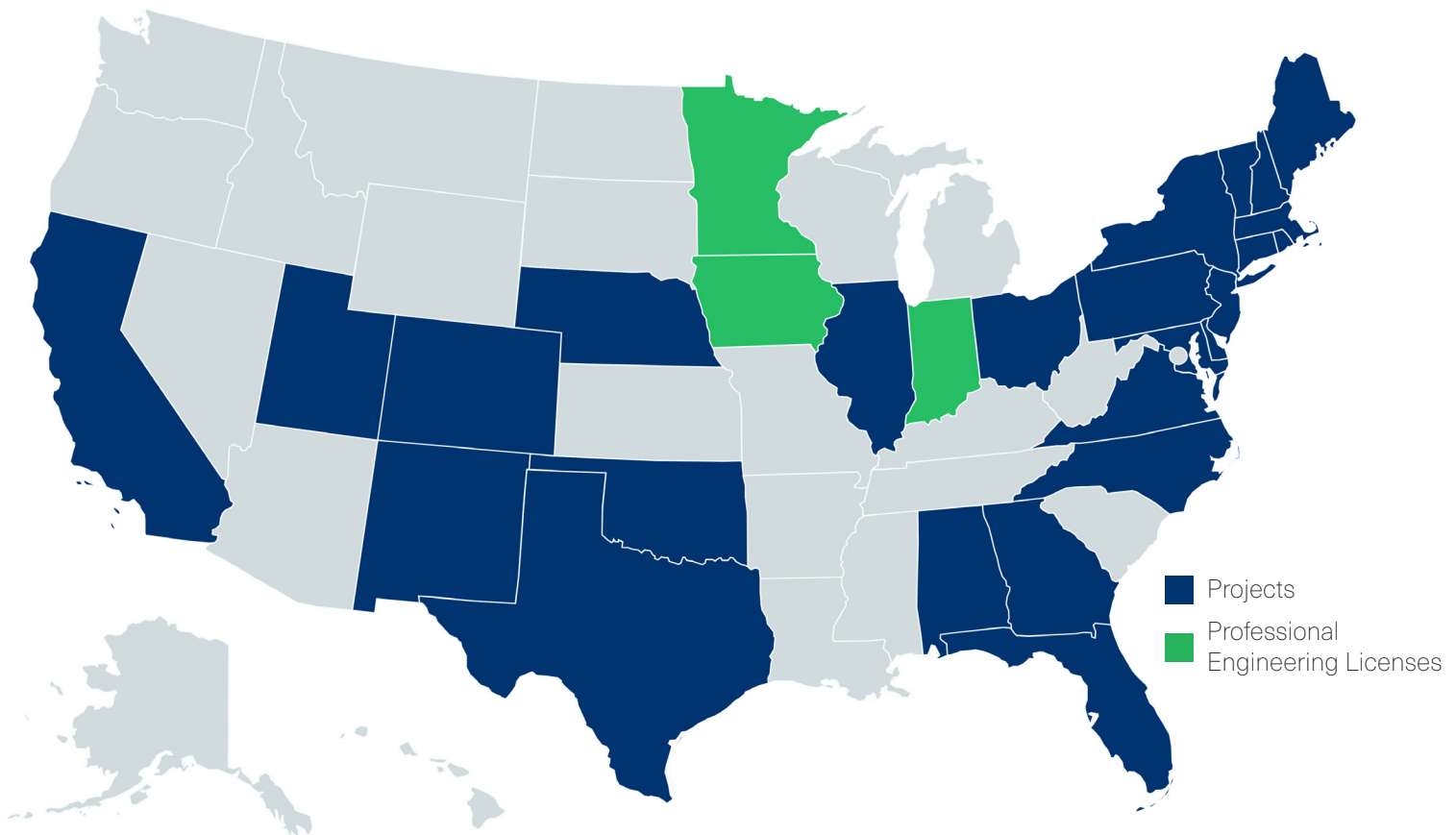
SCOPE

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.

WHERE WE WORK

RLC has supported hundreds of projects throughout the United States. Our Engineering and Project Management Teams collaborate with utility and energy developer clients nationwide. We provide our clients with the most reliably-engineered planning and design to accommodate the energy demands of today's world.



OUR EXPERIENCE SPANS THE COUNTRY

OFFICES AND SATELLITE
LOCATIONS IN

12+

STATES ACROSS THE
COUNTRY

OUR EMPLOYEE
REGISTRATIONS SPAN

24+

STATES ACROSS THE
COUNTRY

POWER SYSTEM STUDIES EXPERIENCE

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**.

DISTRIBUTION 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**.

TRANSMISSION SYSTEM 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.

INTERCONNECTION STUDIES

POWER DELIVERY EXPERIENCE

TRANSMISSION LINE DESIGN

VOLTAGES 12.47 kV – 345 kV

50,000 STRUCTURES

Reviewed/Designed for Repair/Replacement

500 MILES

Line Replacement Design

SUBSTATION DESIGN

VOLTAGES 4.16 kV – 345 kV

150 SUBSTATIONS

Greenfield/Brownfield Designs
Solar, Wind, Battery System Designs

COST ESTIMATING

Transmission and Distribution Line
Substation

FACILITY STUDIES

PROTECTION & CONTROL

150 PROJECTS

1,100 RELAY REPLACEMENT DESIGNS

61850 EXPERIENCE

OE SUPPORT

Program Deployment, 61850, 67N Standards
Development

A&I SCADA DESIGN AND SUPPORT

CIVIL & STRUCTURAL DESIGN

VOLTAGES 4.16 kV – 345 kV

150 SUBSTATIONS

Existing and New Facilities
Site Development and Structural

POWER GENERATION EXPERIENCE

SYSTEM SIZE: 500kW – 150MW

OVER 2 GWs of systems throughout the Northeast.

Provided engineering services on **OVER 150** ground mount systems.

Supported **OVER 350** Interconnection Applications.

We have supported **OVER 40%** of the Maine Solar market.

DEVELOPER & UTILITY SUPPORTED SOLAR GENERATION

GENERATOR SIZE: 5 MW – 40 MW

Supported **OVER 2 GWs** of systems throughout the Northeast and Mid-Atlantic States.

Conceptual design studies and detail design on **OVER 12 WIND PROJECTS** including construction support.

WIND GENERATION

SYSTEM SIZE: 1MWhr – 10 MWhr

Design and engineering support for **NEW ENGLAND'S 1ST** operational stand-alone utility interconnected energy storage facility.

Detailed design and construction support for developers and utilities for **MANY BATTERY ENERGY STORAGE SYSTEMS (BESS)** in the Northeast.

Evaluation of **8 PUMP STORAGE** locations.

OVER 50 solar coupled battery storage systems.

ENERGY STORAGE

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 of renewable generation studies for utilities throughout the United States.

POWER DELIVERY EXPERIENCE

SUBSTATION DESIGN

With today's ever-changing energy demands, the grid must evolve to support all of the technological changes occurring in the transmission and distribution of electric power. Substations are at the forefront of that evolution. Our industry-leading design, construction and commissioning experience, implementation of the latest standards and utilization of the most advanced design tools, enable our technical teams to consistently create safe, innovative, cost-efficient and reliable solutions for our clients. Our design skills include civil/structural, electrical, protection and controls, automation and integration and communication networking. In addition to design, RLC is experienced in estimating and support services i.e. owner's engineer, maintenance and operations, construction, and testing & commissioning.



TRANSMISSION & DISTRIBUTION DESIGN

The transmission and distribution grid's aging infrastructure requires an innovative approach to providing reliable upgrade solutions. Our industry-leading design, construction and commissioning experience, utilization of the latest standards and most advanced design tools, enable our teams to create safe, innovative, cost-efficient and reliable solutions for our clients. Our design capabilities include new line replacements, structure analysis and design, foundation analysis and design and underground systems design. RLC is also experienced in LIDAR coordination, material and construction specifications, line inspections, EPRI structure repair prioritization analysis, plan and profiles, lattice tower evaluations, creation of structure assembly drawings for construction and custom pole fabrication.



POWER DELIVERY EXPERIENCE



PROTECTION & CONTROL

Today's transmission and distribution grid is under the constant pressure of being compromised. The urgency to replace legacy equipment with state-of-the-art high-speed secure electronic systems continues to accelerate. Our industry-leading design, construction and commissioning experience, utilization of the latest standards and most advanced design tools, enable our teams to create safe, innovative, cost-efficient and reliable solutions for our clients. Our design experiences include relay replacements, traditional and 61850 Brownfield/Greenfield control systems, settings, area studies/coordination, and SCADA. RLC is experienced in standards development, equipment specifications, PRC studies, testing and commissioning, maintenance and operations, construction, and owner's engineering support.



CIVIL & STRUCTURAL DESIGN

Severe storms, earthquakes, and other environmental events are placing a seemingly increasing strain on our infrastructure, including substations. Ensuring that substations are engineered for reliability and resilience in the face of such events is critical to maintaining and restoring electric service. Our team has extensive engineering and construction experience in all civil and structural aspects of substations. Our focus is providing safe, reliable, and functional designs. RLC's design capabilities include siting, grading and drainage, buildings and structures, rigid bus analysis, foundations, and secondary oil containment. Our experience also includes design support for GIS and STATCOM facilities.

POWER GENERATION EXPERIENCE

ENERGY STORAGE

System Capacity: 1MWhr to 10 MWhr

RLC provided design and engineering support for New England's first operational stand-alone utility interconnected energy storage facility. We've provided detailed design and construction support for several Battery Energy Storage Systems (BESS) throughout the Northeast. Support services consist of site layout and equipment arrangement, cable and transformer sizing, identifying interconnection options, ground grid design, cable and conduit sizing, interconnection relay settings, switchgear specifications, and alignment, as well as controls and communication wiring. RLC's engineers provide our clients with a fully designed integrated solution for their energy storage needs from interconnection applications to testing and commissioning.



SOLAR GENERATION

System Capacity: 500kW to 150MW

Our engineers have over 40 years of combined experience in the electrical design, interconnection application process and project management of photovoltaic facilities working with Developers and local Utilities. RLC's Program approach accelerates an entire portfolio of photovoltaic systems, is more efficient and cost effective at getting projects to market quicker with lower costs and higher success rates. RLC has acted as the Owner's Engineer, providing consulting, design services, on a variety of utility scale photovoltaic facilities, most are multi-site and required different interconnection locations. RLC served as Owner's Engineer and Interconnection Process technical lead for an entire portfolio (19 Sites) of solar facilities totaling 62 MWdc.



POWER GENERATION EXPERIENCE



RENEWABLE GENERATION 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 also help developers put forward proposals that satisfy system operator's and regulator's requirements, including project models and benchmarking. We have analyzed interconnections of small and large resources, performed siting and interconnection studies. 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.



WIND GENERATION

Generator Size: 5 MW to 40 MW

Our wind interconnection experience on both onshore and offshore projects in the Northeast is extensive. We have performed conceptual design studies and detail design on over a dozen wind projects. Our engineering staff is well versed in the interconnection application process and have served as project electrical engineer to design underground collector systems, conceptual designs for site communications consisting of multi strand fiber optic cabling, construction review and oversight of Interconnection facilities, protective relaying, and managed the commissioning of projects.

POWER ENGINEERING EXPERIENCE

ENERGY MANAGEMENT

RLC's Certified Energy Manager provides support for energy audits as well as Measurement and Verification of Renewable Energy Tax credits. We've performed ASHRAE energy audit for municipal buildings providing energy conservation measures to improve energy efficiencies and reduce operating cost. RLC provided third party renewable thermal energy credit verification for a college boiler burning biofuel, which provided savings in operating cost by reducing taxes on facility fuel costs.



MECHANICAL DESIGN

RLC provides pipe stress analysis for turbine steam pipe cleaning projects. We provided 3rd party static thermal analysis to evaluate temporary steam blowdown piping for B31.1 Code stress for a large turbine piping installation with new pipe steam blowdowns. We supported the design of a new DA and Condensate receiver by providing a control system review, 480 V wiring for a new system skid, control wiring for flow meters and boiler emergency shutdown interconnection for a major food manufacturer. We provided design services for a new steam process water heating system, which required sealed documents for pressure relief valve selection, and material specifications. RLC provides 3rd party review and analysis of existing hydraulic relief for piping and pump configurations.



POWER DISTRIBUTION DESIGN

RLC has developed a number of preliminary cost analyses for Combined Heat & Power including designs for 14 MW RICE and 30 MW gas turbine with heating and/or chiller subsystems CHP. Analysis included evaluating electrical utility reliability to determine the risk to the facility was sufficient to warrant back up power and a subsequent CHP selection. RLC's review helped integrate the projects overall energy management plan utilizing a variety of energy sources, including solar, natural gas and diesel into facilities management plans. Many projects include evaluation of clients' system resiliency to determine the best mix of energy sources while maximizing plant output per energy expenditure.



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

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POWER DELIVERY

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POWER GENERATION

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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 PERREAU, 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



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