

### Gareth Rees | Principal



#### EDUCATION

- Polytechnic of Wales (now University of South Wales)
  - College Associateship, Electrical Engineering (BSc Electrical Equivalent), 1968

#### PRACTICE AREAS

- Bridge Engineering
- Electrical Engineering
- Rail Systems Engineering
- Design
- Computer Modeling
- Electrical Testing
- Construction Observation and Troubleshooting
- Inspections
- Design-Build

#### REGISTRATIONS

- Chartered Engineer in UK
- Professional Engineer in AB, BC, CA, CO, CT, FL, IA, LA, MD, MI, MO, NJ, NB, NL, NS, NY, ON, PA, TX, VA, VT, and WA

#### PROFESSIONAL AFFILIATIONS

- American Railway Engineering and Maintenance-of-Way Association (AREMA)
- Heavy Movable Structures
- Institution of Professional Engineers
- Society of Professional Engineers

#### CONTACT

grees@wje.com  
215.340.5830  
www.wje.com

#### EXPERIENCE

Gareth Rees is fully versed in all aspects of electrical engineering. His experience includes movable bridges, heavy industrial, electrical and electric utility generation, transmission and distribution. Mr. Rees has been involved in switchgear development and application, power generation, distribution analysis and design, control system design (including PLCs and distributed analog and digital control systems), motor, motor control and motor drive technologies and their heavy machinery applications, communications engineering, contract management, construction supervision, commissioning and start up. Mr. Rees' movable bridge experience spans more than thirty years and includes hundreds of movable bridge inspections ranging from cursory to in-depth inspections, failure analysis, and trouble shooting. His movable bridge engineering and design experience includes rehabilitation of existing bridges and design for new bridge electrical power and control systems. Mr. Rees is intimately familiar with the application of the Canadian Highway Bridge Design Code (CHBDC), AASHTO LRFD Movable Highway Bridge Design Specifications, and *AASHTO Movable Bridge Inspection, Evaluation and Maintenance Manual*. His experience enables him to bring the electrical systems of a movable bridge project from the conceptual stage through the completion of construction.

#### REPRESENTATIVE PROJECTS

- BNSF Fort Madison Railroad and Highway Bridge – Ft. Madison, IA: Rehabilitation of this double decker swing span including new aerial and submarine power cable installation to be configured as redundant power sources for the bridge.
- Sir Ambrose Shea Lift Bridge, Placentia, NL, Canada: Design for the replacement tower drive vertical lift bridge with two duty motors and brakes in each tower and two sets of span locks
- Brighton Road Swing Bridge Replacement – Ontario, Canada: Replacement of center bearing bobtail swing bridge with electrohydraulic operating machinery
- Chambly Canal - Quebec, Canada: Inspection of four bobtail swing span bridges (Bridge Nos. 1, 4, 7, 10) and one retractable bridge

- Court Street Swing-Span Rehabilitation - Hackensack, NJ: Replacement of all machinery on center-bearing swing-span bridge; preparation of plans, specifications, and cost estimates for all machinery; construction services
- High-Rise Bridge Standby Generator Replacement - Chesapeake, VA: Study and design for replacement of existing standby generator of double-leaf bascule bridge
- Dorset Avenue Strauss Bascule Bridge - Ventnor, NJ: Design documents for rehabilitation; rehabilitation included new electric utility service, motors, brakes, new motor control center and motor drives, and new bridge and traffic control system
- Mass Highway Complex Bridge Inspections - MA: Inspection of electrical systems on more than twenty movable bridges as part of complex bridge inspection contract
- Johnson Street Bascule Bridge Replacement - BC, Canada: Design of electrical system for replacement bascule structure incorporating an innovatively designed single-leaf highway bascule bridge to accommodate five lanes of vehicular traffic and two outboard pedestrian paths
- Murray Morgan Lift Bridge - Tacoma, WA: Design-build documents for vertical lift bridge; replacement of entire electrical installation with a proven modern electrical power and control system
- Metro North Railroad, Harlem River Lift Bridge Electrical Rehabilitation - NY: Rehabilitation of electrical power and control systems; conceptual plan for rehabilitation; staging plan for construction; design of power and control system
- Anchor Bridge Substation Protective Relaying, Metro-North New Haven Line - NY and CT: Review of existing protective relaying settings and protective relaying coordination study including analysis services of MNR's New Haven traction power and catenary system
- Sonoma-Marin Area Rapid Transit, Haystack Railroad Bridge - Petaluma, CA: Replacement design of single-leaf bascule railroad bridge