ALAN M. WIRONEN, PE

EDUCATION

M.S., Civil Engineering, Georgia Institute of Technology, 1988
B.S., Civil Engineering, University of Lowell, 1981
Transmission Engineering Certificate, Gonzaga University, (December 2012)

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Professional Engineer, Maine, (#8817), 2001
Professional Engineer, Massachusetts, (#33067 C), 1985
Professional Engineer, Connecticut, (#25655), 2004
Professional Engineer, New York, (# 090671)

AREAS OF EXPERTISE

Mr. Alan M. Wironen, PE, has management and technical experience in the following general areas:

- Engineering Management
- Project Management and Project Scheduling
- Construction Management
- Preliminary & Conceptual Design
- Engineering Studies
- Construction Specifications
- Construction Cost Estimating
- Detailed Engineering Design
- Coating Inspection and Forensic Evaluation
- Tank and Piping Inspection

REPRESENTATIVE EXPERIENCE

Mr. Wironen has over 30 years of experience and progressive responsibility in construction management and engineering consulting. His qualifications include extensive hands-on planning, field investigation and construction management, design, permitting, cost estimating, and project management. Mr. Wironen's background includes extensive service to public and private-sector clientele including the U.S. Department of Defense, Exxon-Mobil Oil Company, State of Maine, Public Service of New Hampshire, Northeast Utility Services Company, National Grid, and various small private and municipal clients. He currently serves in the capacity of Principal Civil Engineer in the Augusta, Maine office.

Confidential Client, DC Transmission Feasibility Study (Transmission Engineer 2010)

Mr. Wironen provided technical support and cost estimating services for the project feasibility study. The project evaluated multiple routes and scenarios for construction of a 1000 MW High Voltage Direct Current transmission cable originating in Northern Maine and terminating in the metro-Boston area. The study included evaluation of marine routes, new transmission corridors, parallel to

existing high pressure gas lines, along railroad right-of-way, and parallel to existing interstate highways. Key to the feasibility study was the project cost estimates which Mr. Wironen developed from commercial cost estimating databases and historical project information.

Transmission Developers Inc. TDI, Champlain-Hudson Power Express (Transmission Engineer 2010-Present)
This project conducted a feasibility study to construct a 1000 MW High Voltage Direct Current Transmission line from the U.S. Canadian border into New York City and southern Connecticut. The project was found to be feasible and has continued through preliminary design and is currently nearing completion of the permitting process. The current scope has been reduced to just the 330 miles of transmission system from Canada to New York City, including 101 miles through Lake Champlain, 134 miles of underground cable installation along railroad right-of-way, state roads and parklands, and 98 miles along the Hudson River.
Mr. Wironen's role during this process was to serve as technical consultant to the system developer, assist with preliminary design and permitting. Mr. Wironen has provided permitting narratives used in the permit applications, developed typical design exhibits and provided testimony in the permitting hearings.
Mr. Wironen developed various route alternatives, preliminary designs and associated cost estimates for alternative evaluation and selection. He also participated in Engineer-Procure-Construct (EPC) bid evaluations and developed an independent detailed cost estimate for the terrestrial portion of the project construction.

Public Service of New Hampshire, White Mountain Projects-Manchester, NH (Project Manager 2007-2010)
Upon joining TRC in January, Mr. Wironen was assigned as the Project Manager for the White Mountain Projects, a group of 5 large high voltage substation construction, repair, upgrades and modification projects. The project includes Protection and Control Relay upgrades at the Littleton and Whitefield, NH substations; separation of the distribution and transmission systems at the Beebe River Substation; Construction of a new substation at White Lake, NH; and modification of the Saco Valley substation to include additional capacitor banks and a 290 MVA phase shifting transformer.

Enterprise Engineering Inc, Principal- Freeport Maine (Chief Engineer: 1997-2007)
As the Principal-in-Charge of Enterprise Engineering's Freeport, Maine office, Mr. Wironen supervised a consulting engineering staff of 43 individuals including 12 engineers of various disciplines. Personally developed, reviewed, supervised, and acted on all management initiatives including budgeting, contributing to the office's annual business, marketing, and operations plans, reviewed contract terms and conditions, established standard billing rates and monitored business benchmarks. Other duties included establishing project management guidelines, review of engineering proposals, approval of negotiated agreements,

management of the office safety program, and direct design of both mechanical and civil engineering projects.

Naval Air Station, Resident Officer in Charge of Construction- Brunswick, ME (Contract Manager: 1988-1993)
As the senior contract manager and Warranted Contracting Officer for the Brunswick, Naval Air Station, Mr. Wironen managed the contracts office and its 14 personnel. Responsibilities included budgeting, staffing, office workload planning and project assignments. Project responsibilities included project planning, contract negotiations, and management of an average of ten design contracts and $30 million in construction contracts per year.

Trust Territory of the Pacific Islands, Resident Officer in Charge of Construction- Colonia, Yap, Federated States of Micronesia (Contract Manager: 1984-1985)
While on active duty, Mr. Wironen was assigned to manage and administer infrastructure construction contracts for the United Nation's Trust Territory Government and served as the US Government's local envoy. Specific work requirements included running the construction administration office and managing its six employees. Contract workload included more than $24 million in construction including the new airport, roadways, sewer, water and electric systems. Personal responsibilities included performing material testing, evaluating proposed materials, reviewing submittals, detailed design, estimating and negotiating changes, inspecting the construction and resolving conflicts.

U. S. Navy, Naval Mobile Construction Battalion 74- Gulfport, MS (1981-1983)
Mr. Wironen served as the Engineering Officer for the deployments to Puerto Rico and Okinawa. This position required management of the Battalion's material testing laboratory, its engineering and surveying staff. Following the Okinawa deployment was assigned as the Detachment Guantanimo Bay, Cuba Assistant Officer In Charge. This position required overseeing the technical and military training of the 89 assigned personnel, managing the construction projects and the detachment's construction equipment maintenance.

NY Air National Guard, Aircraft Fueling Facility
Construction Administrator on a government project at the International Airport in Niagara Falls, NY. The project included design and construction of the ready-issue fuel tanks, containment system, truck receipt and issue system, Philips Type II fuel hydrant system, fuel laboratory and de-icing fluid storage. The projects also included repairs to the existing bulk fuel storage system and a two-mile underground fuel transfer pipeline. Specific project responsibilities included coordination of construction inspection, submittal review, payment request approval, civil inspection, tank construction inspection, pipeline construction inspection, change order negotiation, and owner liaison.

NAVFAC Southern Division, Repair Tanks and Dikes - South Carolina
Construction Administrator for the construction of a drainage system and 4500 gpm oil/water separator to handle and treat storm water from a 50 acre government fuel facility. The work included construction of shotcrete containment dike liners, cast-in-place containment floors and rebuilding of nine 150,000 Bbl bulk fuel storage tanks, including new foundations and under-floor liners.

NAVFAC Southern Division, Replace Bulk Fuel Storage Facility – Mayport, FL
Project Manager for the design and construction of a new bulk fuel storage facility to be built on the same site as the existing, while the existing facility remains in operation. The work included phased demolition of the existing seven cut-and-cover bulk fuel tanks, temporary piping for temporary operation of the facility during construction, four new 80,000 Bbl bulk above ground tanks and concrete containment dikes, refueler vehicle parking, one-half mile ship refueling pipeline, three mile perimeter road and related tasks.

NAVFAC Southern Division, API 653 Tank Inspection – Jacksonville, FL
Project Manager and API 653 inspector for API 653 in-service, and out-of-service inspection of eleven 188,000 Bbl bulk fuel storage tanks. The project included design of repairs to the out-of-service tanks so they could be placed back in service for 5 years, until replacement tanks could be constructed.

Other Fuel System and Tank Projects

- Repair Tanks 1-4 (DFSP Verona, New York): Construction contract administrator and inspector for tank repairs, new concrete ringwall foundations, oil-water separator, and dike modifications for the fuel farm facility.
- Repair Tanks, Dikes, & Dike Drain System (DFSP Searsport, Maine): Project Manager and Construction Administrator for the design and construction of a project that included: dike lining with 650,000 square feet of geosynthetic clay liner, jacking and repair of four storage tanks, secondary containment, environmental permitting, a direct-buried 2,500 GPM oil/water separator, site drainage improvements, design of fire suppression system modifications and related work.
- Replace Fuel Tankage (DFM, FISC Jacksonville, Florida): Construction Administrator for a MILCON facility replacement to receive, store and issue marine diesel (DFM) at FISC Jacksonville. The design provided three new aboveground storage tanks, new secondary containments, and a new pump house as well as a co-located truck loading and receiving station. The design also maintained the existing system in full operation, while construction of the new facility was ongoing.

- Inspect Storage Tanks (Various Locations, ExxonMobil, Motiva Enterprises LLC, Irving Oil, Gulf Oil, J M Huber, Webber Energy, Kahler Oil): Participant and/or lead inspector for API 653 tank inspections, tank evaluations, and report preparation. Various locations in Eastern United States, 1998 – 2007.
- Repair POL Facilities (DFSP Tampa, Florida): Project Manager for the design and construction administration of the complete re-build of three 188,000 bulk fuel tanks, including foundation construction, a dike lining system, a drainage system, and an oil/water separator for the seven-acre fuel facility. The project included the design of a 750,000 square foot geomembrane liner system, a 2,000-foot drainage system, and twin 1,250 GPM precast concrete aboveground oil/water separators. The work also included design of a new pump facility, pipeline repairs, new ready-issue filtration system, truck rack and related controls.
- Jet Fuel Off-Load Facility (Barksdale AFB, Louisiana): Construction Administrator and inspector for the construction of a five acre JP-8 petroleum logistics facility to support jet fuel receipt requirements at Barksdale Air Force Base (AFB), Louisiana. The design provided the capability to receive 100% of the Base's daily jet fuel requirement by tank truck, operating storage for receipt/issue of JP-8, aircraft refueler fillstands, and connection into the existing petroleum logistics infrastructure. Ancillary facilities include a system pumphouse, operations facility, secondary containment systems, and a 2,000 GPM oil/water separator capable of treating contained stormwater during the site's "first flush."