INTELLIGENT DESIGN & CONSTRUCTION SOLUTIONS, LLC

Stephen A. Wrzesinski, P.E.

Managing Engineer

As Managing Engineer, Mr. Wrzesinski is responsible for all engineering design and construction services by Intelligent Design and Construction Solutions, LLC. The major work areas include water and wastewater plants, airports, mass transit facilities, schools, hospitals, commercial and industrial facilities and pump stations as well as others. Projects have involved HVAC, plumbing and sanitary systems, roadway lighting and signalization, motors, drives, generation, instrumentation and SCADA systems, electrical distribution systems, substations, switchgear, and associated electrical and mechanical equipment.

Education

B.S. and M.B.A., Electrical Engineering
Illinois Institute of Technology

Licenses & Professional Societies

P.E. – Illinois
P.E. – Missouri
P.E. – Louisiana
P.E. – Michigan
National Society of Professional Engineers
Electric Association

Publications

Power Quality Exhibition & Conference 2004
"Harmonic Mitigation Techniques to Achieve IEEE 519 Compliance in Water & Wastewater Pumping Stations"
Stephen A. Wrzesinski and Patrick Clifford.

Wastewater Treatment Plant Expansion, Construction Services - Salt Creek Sanitary District
Villa Park, Illinois

Mr. Wrzesinski was the QA/QC Electrical Engineer for the instrumentation and electrical systems during the wastewater treatment plant expansion. Intelligent Design and Construction Solutions, LLC was the sub-consultant responsible for the review of all electrical and instrumentation shop drawings, as well as shop drawings that were associated with the electrical and instrumentation systems, such as valves, centrifuge equipment and etc. Also included in construction services are construction meetings, on-site inspections, creating preliminary and final punch-lists as well as ongoing responses to requests for information or clarifications.

Wastewater Treatment Plant Improvements – City of Plano
Plano, Illinois

Mr. Wrzesinski was Electrical Engineer on this project, responsible for the QA/QC of instrumentation system. The electrical design included a complete electrical system upgrade along with a generator sized to provide back-up power for the entire facility. The electrical upgrades include a new service entrance from the utility company into a new draw-out switchboard that distributes power throughout the facility to smaller motor control centers (both new and existing). There are four new buildings that were part of the expansion: a new Head-Works Building, a new Secondary Control Building, a new Blower Building that also houses the generator and a new UV Building. The instrumentation and control systems were designed for monitoring via new remote telemetry units (RTU). The RTU's were designed to accommodate future connection to a distributed control system (DCS). The base bid of the instrumentation and control system was by Rockwell Automation ControLogix and DeviceNet. Specification Divisions 13 and 16 were written by Intelligent Design and Construction Solutions, LLC.

Pump Station Vulnerability and Risk Assessment Study – Metropolitan Water Reclamation District (MWRDGC)
Chicago, Illinois

Mr. Wrzesinski was responsible for the evaluation of six separate Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) pumping stations which pump raw sewage from the Deep Tunnel System to three wastewater reclamation plants. The project consisted of evaluating existing District data, visiting the stations to collect data, organizing findings, drawing conclusions, and drafting reports to define the vulnerabilities and risks found at each station.

Stop Logs and Diversion Pump Design Services – Metropolitan Water Reclamation District (MWRDGC)
Wilmette, Illinois

Mr. Wrzesinski was responsible for the coordination and design of a new incoming utility service to rehabilitate an early 1900's pumping station and lock at the intersection of the North Branch of the Chicago River and Lake Michigan. This project included the design for the replacement of early-era substation transformers and their

associated primary circuit breakers, upgrades to the lighting system within the building as well as on the exterior, upgrades to the controls of the gate structures (including lighting above the new gate control bridge), design of an annunciator for communication with the public during gate operations, upgrades to the control system, and communication to both the Main Control Center and North Side Water reclamation plant.

Pump Station Rehabilitation – Metropolitan Water Reclamation District (MWRDGC)
Evanston, Illinois
Mr. Wrzesinski was responsible for electrical and instrumentation upgrades to the Evanston pump station which consisted of HVAC hardware and control upgrades as well as communication upgrades to both the Main Control Center and the North Side Water Reclamation plant.

Upper Des Plaines Wastewater Pump Station Improvements – Metropolitan Water Reclamation District (MWRDGC)
River Forest, Illinois
Mr. Wrzesinski was involved in the complete study and rehabilitation of a major pump station serving the Upper Des Plaines River service area. Included in these improvements are the installation and control of a bypass to the TARP System to accommodate emergency events for the Metropolitan Water Reclamation District of Greater Chicago.

Electrical Panel Replacement at Stickney Water Reclamation Plant – Metropolitan Water Reclamation District (MWRDGC)
Stickney, Illinois
Mr. Wrzesinski was the Project Manager for the design of the replacement of control panels project at the 1,200 MGD Stickney WRP. The $4.2 Million project replaced the existing 6.9KV distribution system by expanding the 13.2KV system. The project included the expansion of the 13.2KV distribution switchgear, replacement of transformers in the central boiler facility, the West digester area, the existing post-digestion centrifuge facility and barge dock. The work also included the replacement of switchboards with new switchboards and transfer switches, installation of battery operated emergency lights in the primary tanks service tunnel and new disconnect switches for the grit pumps serving the aerated grit tanks.

Post Digestion Centrifuge Facility Improvements at Stickney Water Reclamation Plant – Metropolitan Water Reclamation District (MWRDGC)
Stickney, Illinois
Mr. Wrzesinski was the Senior Project Engineer responsible for the electrical and instrumentation design for the $30 Million expansion of the existing post digestion centrifuge building to accommodate six new and three future centrifuges. Associated improvements included new biosolids pumping and distribution system, polymer system, biosolids conveyance and railcar/truck loading, hvac and odor control system. The electrical system for this expansion includes the addition of two new 2,000 KVA double-ended unit substations. The control system for this facility includes the linking of over 35 programmable logic controllers (PLC's) and associated view nodes on a fiber optic control net network. A ControlNet/Ethernet gateway is also a part of this project.