INTELLIGENT DESIGN & CONSTRUCTION SOLUTIONS, LLC

Stephen A. Wrzesinski, PE
Managing Engineer

Education
B.S., Electrical Engineering; Illinois Institute of Technology

M.B.A., Finance & Accounting; Illinois Institute of Technology

Years of Experience
1973 – Current
(43 Years)

Licenses
Professional Engineer:
- Illinois 062.038959
- Louisiana PE.0026421
- Missouri 2004004212
- Michigan 6201051080
- New York 9178753

Professional Societies
- NSPE
- CEE

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.

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, pump stations, airports, mass transit facilities, schools, hospitals, commercial and industrial facilities as well as others. Projects have involved HVAC, plumbing and sanitary systems, roadway lighting and signalization, motors, drives, generators, instrumentation and SCADA systems, electrical distribution systems, substations, switchgear, and associated electrical and mechanical equipment.

Electrical and Instrumentation Engineering: Design and Construction Services
Wastewater Treatment Facilities

Disinfection Facilities at the Calumet Water Reclamation Plant – Metropolitan Water Reclamation District (MWRDGC)
Chicago, Illinois

Mr. Wrzesinski was the Project Electrical Engineer for the IDCS team's effort on the Calumet Water Reclamation Plant Disinfection Facilities project, which was a fast track design for the installation of the first chemical disinfection system to the plant. This project was designed in under one year. The Calumet WRP has the capacity to treat approximately 350 MGD, this project will disinfect the effluent water using sodium hypochlorite and sodium bisulfate prior to discharge. IDCS was responsible for the electrical design of a new Chemical Storage and Pumping Building, as well as site work for power distribution, including providing temporary power to the police trailer during the construction phase. Extensive site investigation was required for locating adequate power supply and the routing of utilities to supply power. IDCS also provided electrical design for lighting, medium and low voltage power, and the SCADA and telephone systems. Additionally, IDCS developed a Statement of Probable Cost for the electrical work. This project was bid under the engineers estimate and was completed in December 2015. IDCS also provided construction services on the project which include reviewing shop drawings, answering RFIs, and final punch-list review.

Stop Logs & Diversion Pumps at Wilmette Pump Station and Evanston Pump Station Rehabilitation - Metropolitan Water Reclamation District of Greater Chicago (MRWDGC)
Chicago, Illinois

Mr. Wrzesinski was the Project Electrical Engineer for the project at Wilmette Pump Station which consisted of the complete demolition and design of a new incoming utility service to replace the existing service which had passed its useful life expectancy, replacement of 1966 era substation transformers and their associated primary circuit breakers, replacement of the lighting system within the building as well as on the exterior, new 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, a new control system, with communication and control from both the Main Waterways Control Center and Northside Water Reclamation Plant. Evanston Pump Station electrical and instrumentation upgrades consisted of HVAC hardware and control upgrades as

well as communication upgrades to both the Main Control Center and the Northside Water Reclamation plant. IDCS was also contracted to perform construction services for this project. These include responding to RFIs, shop drawings, change orders, site visits and progress meetings.

Service A Replacement - Fox Metro Water Reclamation District (FMWRD)
Oswego, Illinois

Mr. Wrzesinski was the QA/QC Engineer on the project to design a replacement of new medium voltage service entrance switch gear fault current limiting line reactors are installed in the lineup as the fault current in the area is increasing to levels that are above the capacity of the plant distribution equipment. Design included provisions to reduce down-time at the plant. Power monitoring and switch position were implemented into the SCADA system.

Electrical and Instrumentation Engineering: Design and Construction Services
Aviation

O'Hare East Cooling Tower Replacement - Chicago Department of Aviation (CDA)
Chicago, Illinois

Mr. Wrzesinski was the Senior Electrical Engineer on the East Cooling Tower Replacement project at the Chicago O'Hare International Airport. The East Cooling Tower is responsible for providing cooling to the Terminal Building at O'Hare International Airport. The project began with site visits to gather required information for the demolition of the existing cooling tower and design for the new cooling tower. Demolition consisted of removal of three 600 HP, 4160 Volt, condensate water pumps and their full voltage non-reversing (FVNR) starters from an existing medium voltage motor control center (MCC), and the removal of thirteen 75HP, 480V, cooling tower fan motors. IDCS designed the replacement of condensate water pumps with three 750HP motors with medium voltage variable frequency drives (VFDs); as well as the replacement of the cooling tower fans with 6 new fans having 150 HP motors, all fed from the low voltage VFD. Additionally, IDCS was responsible for performing load calculations on the existing MCC's utilized to feed the new equipment, and locating all of the new VFDs within the existing electrical room footprint. IDCS provided power and control cables between the HRT building and the new east cooling tower, along with lighting and receptacle power at the new cooling tower. Voltage drop calculations were performed on the feeds from the HRT to the cooling tower. IDCS also provided input on the Code Matrix Sheet and created specifications for Division 16 work.

Electrical and Instrumentation Engineering: Design and Construction Services
Higher Education

University of Chicago Cummins Life Science Center Chillers Replacement - University of Chicago
Chicago, Illinois

Mr. Wrzesinski was the Senior Electrical Engineer on the project to provide the electrical design for the replacement of two electric chillers at the Cummins Life Science Center on the University of Chicago Campus. The work included new 4160V feeds, and starters for the 1,020-ton chillers. The new constant-speed circulating and condenser pumps required a new MCC, and the chilled water pumps and cooling tower fans required new feeders and MCCs. The existing installation was extremely congested and new 4160V feeders were needed from across the building. The Pump/Chiller Room had no extra space for the new VFDs and medium voltage starters; a great deal of coordination was needed to fit the electrical facilities and process equipment in the allotted space, during staged construction, while keeping the conditions operational for the sensitive research within the building.