



**Frank Macino**  
Electrical Engineer

### **Education**

B.S., Electrical  
Engineering  
Purdue University

### **Professional Societies**

CEE  
IEEE

### **Software Knowledge**

PTW  
Visual Lighting Design  
AutoCAD 2011  
Microsoft Office (Excel,  
Outlook, Powerpoint,  
Word)

As Electrical Engineer, Mr. Macino is responsible for electrical distribution design for structures and complexes including wastewater treatment plants and pump stations. He has been involved in control schematic, instrumentation, and P&ID design for wastewater treatment plants and pump stations. He is responsible for calculating voltage drops and power factor corrections, as well as luminaire requirements on a per area basis and layout of lighting fixtures. Mr. Macino is proficient in utilizing generator calculation programs to size generators for specific projects. In addition, Mr. Macino performs construction services including shop drawing reviews, RFI reviews, change order reviews and estimates.

### **Design and Construction**

Mr. Macino has followed his projects from the design memorandum stage all the way through construction. Construction services consist of shop drawing review, responding to contractor questions, site inspections and start up.

#### **Bissell Disinfection – Metropolitan Sewerage District (MSD) St. Louis, Missouri**

Mr. Macino is the Electrical Engineer for the instrumentation and control design for the disinfection system at the Bissell Wastewater Treatment Plant. There are two disinfection systems at Bissell WWTP, both of which utilize a chlorination/dechlorination chemical system. There is a dry weather system for flows up to 300 MGD and a wet-weather flow system for flows between 300 MGD and 450 MGD. The dry weather disinfection system consists of dosing sodium hypochlorite into induction units located in junction chambers. Chlorine residual is measured and is used as fine tuning for accurate chemical dosing. When the flow exceeds 300 MGD, the wet weather strategy begins by opening the motor operated gates, which allows excess flow into the chlorine contact basin for treatment. The wet weather system has automated control features that prepare the system for high flow disinfection as well as clean the channels by use of tipping buckets and flush the chemical lines after the event. Integration of the new instrumentation into the existing SCADA system was required at Bissell WWTP. Mr. Macino will also provide construction services for this project. These include answering requests for information, shop drawing review and final punch-list review.

#### **Lemay Disinfection – Metropolitan Sewerage District (MSD) St. Louis, Missouri**

Mr. Macino is the Electrical Engineer for the instrumentation and control design for the disinfection system at the Lemay Wastewater Treatment Plant. The disinfection systems consist of ultraviolet disinfection, as well as a chemical disinfection system. There are two disinfection systems at Lemay WWTP, a dry weather system which utilizes ultraviolet (UV) technology and a wet-weather flow system which utilizes a chlorination/dechlorination chemical system. The chemical system uses sodium hypochlorite injection and sodium bisulfate injection. IDCS selected the instrumentation required for the controls and designed the controls to be integrated into the existing control system at Lemay. Mr. Macino will provide construction services for this project. These include answering requests for information, shop drawing

review and final punch-list review.

**Pump Station Rehabilitation - Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) Wilmette, Illinois**

Mr. Macino was an Electrical Engineer for the design of a rehabilitation to a pumping station at the intersection of the North Branch of the Chicago River and Lake Michigan. Work 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 Northside Water reclamation plant. (2/10-8/11)

**Sludge Thickening - Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) Calumet and Stickney, Illinois**

Mr. Macino performed construction services for a sludge thickening project at the Stickney Water Reclamation Plant and a primary settling tanks and grit removal facility project and the Calumet Water Reclamation Plant. Services include shop drawing review, RFI review, change order review and estimates. (12/10 - 8/11)

**Pump Station Vulnerability and Risk Assessment Study - Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) Various Pump Stations throughout Chicagoland**

Mr. Macino performed site walkthroughs and evaluations for MWRDGC pumping stations and drafting a report to define the power vulnerabilities and risks found at each station. (10/10 - 1/11)

**Cummings Building Cooling Tower Replacement - University of Chicago Chicago, Illinois**

Mr. Macino was Electrical Engineer for the design of the power distribution for a chiller and cooling tower replacement in a lab building on the University of Chicago campus. Measures had to be taken for temporary power to not disturb labs in operation. (5/10 - 3/11)

**Hospital Addition - Little Company of Mary Hospital Evergreen Park, Illinois**

Mr. Macino was Electrical Engineer for the design of the lighting system for a new building at Little Company of Mary Hospital. This included lighting fixture selection and layout, photometric calculations, and lighting control. (7/08 - 10/09)

**Hospital Bedtower Addition - Palos Hospital Palos Park, Illinois**

Mr. Macino was electrical Engineer for the design of the fire alarm system for an eight-story bedtower addition at Palos Hospital. Frank worked with the Palos Park Fire Marshall and Notifier Fire Alarm Company to design a fire alarm system that follows all applicable codes. (1/09 - 10/09)

**Student Resource Center Renovations - College of Dupage Glen Ellyn, Illinois**

Mr. Macino was Electrical Engineer for the power layout of a major renovation at the College of Dupage. Frank made use of new and existing electrical equipment to supply power to various specialized labs and classrooms. (12/08-10/09)



**Summer Renovations - Niles High School District  
Niles, Illinois**

Mr. Macino was Electrical Engineer for renovation designs and construction services for Niles North and Niles West High Schools. Frank replaced and added lighting and power using existing power feeds. Construction services included shop drawing review, response to Requests for Information and attending construction meetings.

*(3/09 - 9/09)*