

MICHAEL J. GOSLAK, P.E.

Principal Electrical Engineer

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EDUCATION

1990 to GMI Engineering & Management Institute, Flint, MI (now Kettering University)

1995 Bachelor of Science Electrical Engineering w/ Computer Science Minor

PROFESSIONAL CREDENTIALS

Registered Professional Engineer – Michigan, Ohio, Tennessee, Kentucky
Credentials on file w/ NCEES

AFFILIATIONS

IEEE – Institute of Electrical & Electronics Engineers
ISA – International Society of Automation
NFPA – National Fire Protection Association

PROFESSIONAL EXPERIENCE

2005 to **Thor Engineering, LLC**

Present *Owner*

Perform electrical engineering analyses and studies on large industrial electrical power distribution systems including: short circuit analysis, protective device coordination, power factor correction, harmonic analysis and general NEC compliance. Specialize in providing Electrical Arc Flash Hazard Analyses as required by NFPA-70E for OSHA compliance. Provide on-site field investigations at industrial plants typically located throughout the Southeastern U.S.

2003 to **Robson Forensics, Inc.**

2005 *Associate (Part-time while working at River Consulting)*

Provided technical investigations, analysis, reports, and testimony towards the resolution of commercial and personal injury litigation involving electrical systems and failure analysis.

1995 to **River Consulting, Inc.**

2005 *Electrical Project Manager*

Rapidly promoted from engineer to project engineer to project manager. Responsibilities included start up and management of the Ann Arbor, MI branch office, supervision of teams of engineers, designers and drafters. Responsible for all phases of industrial electrical projects including: sales, proposals, construction cost estimates, final design engineering, software development (PLC/HMI), commissioning and ongoing support. Areas of expertise include: Electrical Power Distribution Design of Industrial Facilities; Industrial Automation & Control System Design & Programming; National Electrical Code (NEC); Electrical Installations in Hazardous Areas in Industrial Facilities; Industrial Ethernet Network Design & Implementation.

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1990 to **Toledo Edison Company - Davis-Besse Nuclear Power Station**

1995 *Electrical Engineering Co-op Student*

Responsible for maintaining/updating electrical drawings/specifications, and assisting lead engineers in plant modification design engineering. Performed field walk-downs to gather data for updating drawings. Coordinated electrical modifications with electricians and operators. Designed several large databases using DBASE IV, Crystal Reports and DOS for the purpose of tracking plant electrical raceways and fuses.

SAMPLE FORENSICS PROJECTS

Electrical Injury: Retained by plaintiff attorney to determine if the actions of the electrical contractor lead to the injuries sustained by plaintiff handyman. Plaintiff handyman sustained shock, burn and neurologic injuries after accidentally initiating a short circuit and arc flash while using his metal measuring tape inside an energized residential electrical service panelboard. Reviewed photos, provided written report and deposition.

Fatality at Industrial Manufacturing Plant: Retained by major manufacturer of clutch assemblies for heavy-duty semi-trucks after an employee was involved in a fatal accident. Reviewed machine control system wiring and associated PLC/HMI programs for proper interlocking of safety light curtains, emergency stops, process interlocks etc. and made modifications to code as-needed to meet current applicable OSHA safety standards.

Explosion of 15kV Underground Power Cable: Retained by forensics company as part of an insurance claim to investigate the root cause of the catastrophic failure of a 15 KV underground electrical power feeder cable. The loss of the cable resulted in a power outage to a major portion of the factory and several days of downtime.

Self-Destruction of Machine in Flour Mill: Investigated the root cause of the self-destruction of a vibratory sifter machine at a U.S. flour mill. The claim was that the 480 volt motor controlling the equipment started unintentionally while the equipment access doors were left open for a fumigation outage. The result was that the equipment self-destructed resulting in production downtime and costly repairs. Investigated the 480 volt motor control circuit and PLC control system to determine if it was possible for a PLC output card to fail in such a manner as to inadvertently start the motor without operator intervention.

City Challenges installation of Radio Tower due to possible Electrical Interference: Retained by defendant attorney representing the City of Ecorse, MI to provide electrical expertise in the matters of electrical interference caused by a proposed radio tower installation. Reviewed written documents provided by the plaintiff in support of the installation of a radio tower in the City of Ecorse. Provided rebuttal statements at a zoning/planning commission meeting at the City of Ecorse.

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Electrical Injury: Retained by plaintiff attorney to determine if the actions of the electrical contractor lead to the injuries sustained by plaintiff electrician. Plaintiff electrician was injured after falling from a ladder while trying to open a cover of a large overhead electrical junction box. Determined that the cover of the box was not properly installed as required by the UL listing and the National Electrical Code. Reviewed photos and provided opinions to plaintiff attorney.

Did Ground Rod Cause Fire at Dry Cleaners?: Retained by insurance company to investigate the cause of a fire at a dry cleaner in Saginaw, MI. A ground rod for a billboard lighting system was suspected to have caused the fire. Performed a site investigation and submitted a written report of my findings.

Fire in Refrigerator at Grocery Store: Retained by insurance company to investigate the cause of a fire in a commercial refrigerator. Performed a site investigation along with a fire investigator and submitted a written report of my findings.

SAMPLE ENGINEERING/DESIGN PROJECTS

Electrical Arc Flash Hazard Analysis: Various projects throughout the U.S. for large industrial manufacturing plants. Performed Short Circuit Studies, Breaker Coordination Studies, and Arc Flash Studies to determine incident energy levels and the level of personal protective equipment (PPE) required to work on energized electrical equipment to be in compliance with OSHA and NFPA 70E Standards.

Automation of Largest Flour Mill in U.S.: Designed PLC based automation system for the largest soft wheat flour mill in the U.S. (Kraft Foods/Nabisco). Developed electrical power distribution drawings, electrical control system drawings, installation specifications and PLC/HMI programming. Responsible for motor control, safety and process interlocking, and batching/blending systems. Integrated plant floor production system with front-office MES Database for automated and paperless accounting, production scheduling, inventory control and real-time monitoring. System incorporates state-of-the-art redundant fiber optic Ethernet network. System designed in a Class II, Div. 1 & 2 Hazardous location.

Automation of Industrial Coffee Roasters: Partnered with German company that manufactures huge industrial coffee roasters (10,000 lbs/hr). Developed electrical power distribution drawings, electrical control system drawings, PLC/HMI programming. Responsible for instrumentation, gas burner safety interlocks, motor control, process interlocking, and batching/blending systems. Provided on-site start-up services at Kraft Foods (Maxwell House) and Proctor-Gamble (Folgers Coffee).

Industrial Control Systems Maintenance Support Services: Provided ongoing 24-hour maintenance support of customers' industrial automation and electrical systems. Duties include troubleshooting production line outages, equipment failures, electrical wiring, safety interlocking issues, and instrumentation calibration. Work was

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performed on-site or remotely over dial-up or Virtual Private Network (VPN) connection.

Tank Farm Solvent Delivery System Automation: Automated Tank Farm Solvent Pump Delivery System for PPG Industries, Inc. Paint Reactors. Utilized PLC based control system with fiber-optic industrial Ethernet network. Responsible for all PLC/HMI programming. System designed in a Class I, Div. 1 & 2 Hazardous location.

Veggie Burger Production Line Automation: Designed Ethernet PLC based automation system for a meatless product food production line (veggie-burgers) for Kellogg's (Worthington Foods). Integrated all OEM production line equipment into one complete system with interlocking, sequential starting/stopping of conveyors/equipment, recipe interface system, production/yield reporting, data-logging and quality control system. Developed electrical control system drawings, and PLC/HMI programming. Production line consisted of the following types of equipment: conveyors, steam ovens, freezers, cartonizers, palletizers, overwrappers.

Utility System Design Project for Industrial Facility: Designed electrical drawings, installation specifications and PLC/HMI programs for automatic control of the Utilities Systems for an Industrial Plant. Included the control/automation of the following systems: Boilers: Feedwater pumps, automatic chemical addition and surface blowdown; Refrigeration: staged scroll compressor control, temperature control; automatic defrost cycle; Tower Water: VFD control of Cooling Tower Fan based on Temperature and Wet Bulb; Heavy Instrumentation utilizing HART network for totalizing flow meters for water, gas, steam, effluent.

PUBLICATIONS & PRESENTATIONS:

Michael J. Goslak, P.E. *Thor Engineering, LLC Significantly Reduces Arc Flash Hazard Levels at Motor Control Centers in OSB Manufacturing Plant.* Thor Engineering, LLC Case Study / White Paper, released 2006.

Michael J. Goslak. *Modernizing Production Reporting.* Presented at Association of Operative Millers Michigan Chapter Meeting in Frankenmuth, MI on September 2002.

Michael J. Goslak. *Integrating Production Line Automation Systems with Office Information Systems.* Association of Operative Millers – Bulletin. August, 2002: p 7821-7824.

Michael Goslak. *Integrating Production Line Automation Systems with Office Information Systems.* Main Line Presentation - Association of Operative Millers (AOM) 106th Annual Technical Conference and Trade Show, St. Paul, MN, May 5, 2002.

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Michael Goslak, Gregory DiFrank. *River Consulting Employs RSSql and Softlogix for Automated Data Transfer and Control of Nation's Largest Soft Wheat Flour Mill*. Rockwell Software. The Software Connection. Vol. 2, 2000.

Michael J. Goslak. *Analysis of the Lightning Protection System at Davis-Besse Nuclear Power Station*. April 21, 1995. An investigation into the affects of a lightning strike on the critical electrical control/shutdown systems known as the Safety Features & Actuation Systems (SFAS) at a nuclear power plant.

Michael Goslak. *Analysis of Lightning Protection*. Electrical Power Research Institute (EPRI) Power Delivery Group. Lightning Protection Design Workstation News. July, 1994.

CURRENT & PAST CLIENTS:

Georgia-Pacific – Building Products & Wood Products Divisions
Perdue Farms
Kraft Foods North America (Coffee Division)
Nabisco / Kraft Foods
Frito Lay
Proctor-Gamble (Coffee Division)
Kellogg's (Worthington Foods – Veggie Burger Plant)
PPG Industries, Inc.
Bridgestone / Metalpha
Honda
Cooper-Bussmann