

*"Your Fire Experts"*



James Heyl, P.E.

## **James Heyl, Registered Professional Engineer**

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### **State-Wide Consulting & Investigating, LLC**

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### **Experience Summary**

Mr. Heyl is a Registered Professional Engineer with over 30 years experience in design and management of electrical engineering projects. His engineering experience includes design and technical specifications for a wide range of projects, both new construction and renovation work for government, commercial and industrial clients. His experience includes site development, power distribution, lighting systems, substations and control system design. He has applied this broad experience while performing Value Engineering studies and forensic engineering investigations. His management responsibilities have included leadership of electrical groups and serving as the Vice President responsible for the electrical department of an architectural and engineering firm.

### **Background**

After receiving his electrical engineering degree, Mr. Heyl took the position of Electrical Engineer for the City of Detroit, Street Lighting Division where he worked for six years. He then moved into the private sector taking positions with two large Detroit area consulting engineering firms, first as Chief Electrical Engineer and eventually supervisor of the Electrical Department for 17 years at one firm then Vice President and Director of Electrical Engineering Department for 6 years at the second firm. In 2002, he began work with a consulting firm in western Michigan and specialized in forensic evaluations related to failures and analysis of electrical components and systems.

He joined State-Wide Consulting & Investigating in 2020.

### **Forensic Engineering**

Mr. Heyl's knowledge and experience enable him to accurately identify the electrical component and condition that has caused a failure, fire and/or injury. Through forensic investigation he has identified the electrical cause or eliminated it as a cause in numerous failures of appliances, equipment, structures and vehicles. Michigan's two largest energy companies often retain Jim to assist them on complex electrical issues of their own.



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### Examples of Forensic Experience

#### **Appliances and Equipment:**

- Eliminated electrical wiring as the ignition source after discovering an oil leak that lead to spontaneous combustion in a high temperature process oil heater, igniting a fire that damaged the heater unit and produced heavy soot deposits.
- Eliminated electrical wiring as the ignition source for a fire that damaged a swimming pool water heater. Investigation revealed improper installation had resulted in a lack of proper combustion air that caused flames to emerge from the front of the burner.
- Identified improper wiring in an electric furnace that prevented blower operation, allowing the heating coils to overheat from lack of airflow and igniting a fire in plastic ductwork gasket material that damaged the adjacent trusses in the attic.

#### **Structures:**

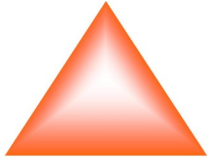
- Identified that placement of electrical extension cords directly on the floor below a mattress caused the cords to overheat and ignite a fire in the mattress. The fire then burned a hole in the floor and spread to the contents of the room.
- Identified an electrical cable hidden in a wall filled with cellulose insulation that had overheated at the location of an existing fault and ignited the insulation.
- Identified improper grounding wiring in a house where stray current from an electric welder, used to thaw underground water pipes in the neighboring house, had flowed through the ground wire to a nearby house, its electrical system and into the electric water heater. This ground wire overheated and had become an ignition source for cellulose insulation in the attic.

#### **Vehicles:**

- The driver of an unloaded flatbed tractor-trailer truck reported that an unanticipated lowering of the trailer's auxiliary wheels lead to loss of control which resulted in a fatal collision with an oncoming vehicle. Identified that water had entered a corroded electrical connector becoming a conductor for current that then activated the valve that lowered the wheels without intervention of the driver.
- Identified a faulted battery cable in a motorized crop sprayer that ignited a fire.

#### **Personal Injury:**

- Identified how the replacing of power fuses in the absence of personal safety procedures lead to an arcing fault in equipment that was still energized. The resulting arc flash caused severe burn injuries to an electrician and damaged the equipment.



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### **Education:**

B.S. Electrical Engineering, University of Missouri, 1970

### **Professional Licensure**

Professional Engineer: Michigan License # 6201024786

### **Professional Organizations**

- National Society of Professional Engineers
- Michigan Society of Professional Engineers