

**William J. Rhodes II, P.E.**

**Consulting Electrical Engineer**



## **AREAS of EXPERTISE**

Analysis of industrial, commercial and residential power systems.

Electrical equipment and appliance failure analysis associated with personal injury and/or property loss due to fire, explosions, electrocution and/or loss of business revenues.

Quality systems and production line testing associated with electrical equipment manufacturing.

Explosion-proof and intrinsically-safe electrical apparatus.

Primary and secondary battery powered equipment; solar powered equipment; battery charging and testing systems.

Intrinsically Safe and Explosion-proof Electrical equipment and installations in NEC and IEC hazardous locations.

Low voltage power distribution system design per the NEC; AC and DC low voltage electrical system failures.

Project engineering of large systems onshore and offshore.

Lift crane load-moment instrumentation.

Gas and liquid commodity custody transfer instrumentation and applications.

Embedded software, software applications and software verification procedures.

Electronic circuit analysis.

Lightning strike/power surge losses.

## **SUMMARY of EXPERIENCE**

Mr. Rhodes has over 35 years of extensive electrical engineering experience. He has performed multiple inspections and investigations to evaluate the safety of electrical systems or to determine the cause and origin of a fire, explosion, electrocution, power loss, or equipment failure.

## **EDUCATION and TECHNICAL COURSES**

B.S. - Electrical Engineering - University of Houston (Main Campus) - 1969

Engineering and technical continuing education courses (list available)

## **CERTIFICATIONS and REGISTRATIONS**

Registered Professional Engineer (Electrical) - Texas (License Number 37734)

Certified Fire and Explosion Investigator – No. 10495-6512

## **PROFESSIONAL POSITIONS**

2001 - CONSULTING ENGINEER IN PRIVATE PRACTICE.

*Consulting Engineer* Areas of primary interest include electrical systems analysis, electrical fault analysis, electrocution, lightning strikes, electrical fires, explosions, protective devices and control systems, electrical equipment and appliance failure analysis, vehicle fires

2000 - 2001 HERNANDEZ ENGINEERING, INC.

*Contract Electrical Engineer* Designed and implemented electrical and electronic test facilities; specified circuit breakers, conductors and power panels; prepared schematics using AutoCAD; prepared shop instructions to build and test facilities per NASA requirements; and prepared single line drawings of 480v 3 phase power systems. Assured compliance with NASA safety requirements and National Electric Code.



**PROFESSIONAL POSITIONS  
(CONTINUED)**

- 1990 - 1999     DANIEL INDUSTRIES, INC.  
*Applications/Approval/Supervising Engineer* Coordinated agency approvals of intrinsically safe and explosion proof equipment; prepared software specifications to assure product compliance and provide a standard for software verification; prepared technical proposals; Configuration, Engineering Change and Documentation controls; ISO 9000; prepared field wiring diagrams for hazardous location equipment for correct manufacture, testing and field installation; and configured hydrocarbon transport loading systems. Battery/solar powered hydrocarbon measurement systems. Battery testing/charging equipment. Transient voltage protection circuits. Production line testing to comply with agency approved apparatus.
- 1979 - 1990     MARKLOAD SYSTEMS INC.  
*Vice-President of Engineering* Supervised entire electronic and mechanical product development from conception to documentation and preparation of service manual; domestic and international field service operations; trained and supervised field service, repair and quality control technicians; 8085 assembly language software; designed and developed bulk and truck weighing systems. Commissioned offshore crane load and anchor line monitoring systems.
- 1974 - 1979     MARK PRODUCTS, INC.  
*Project Engineer* Design and developed products for oil exploration industry; evaluated geophones; developed lift crane safe load-moment computer; and 4040 assembly language software.
- 1972 - 1974     INPUT/OUTPUT, INC.  
*Staff Engineer* Designed and developed several processes and systems; supervised the assembly, testing and service of new products; prepared operation and service manuals; designed active high cut, low cut, notch and aliasing filters for seismic data recorder.
- 1970 - 1972     WESTERN GEOPHYSICAL CO.  
*Electrical Engineer* Designed and developed electronic equipment for oil exploration contracting business; designed active filters; evaluated hydro and geophones.
- 1969 - 1970     ACOUSTRON CORPORATION  
*Design Engineer* Designed and developed tape recorder circuits; stereo and loudspeaker design and evaluation.

Texas Air Guard - Ground Communication Equipment Technician

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**PROFESSIONAL MEMBERSHIPS and ASSOCIATIONS**

National Association of Fire Investigators

Institute of Electrical and Electronic Engineers

National Society of Professional Engineers

Central Texas Fire Investigators