

ENGINEER: ELECTRICAL

ALBERT M. ROSE, P.E.
Engineering Design & Testing Corp.
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EDUCATION:

1981 Bachelor of Electrical Engineering
Ohio State University

EXPERIENCE:

May 2014 **Engineering Design & Testing Corp.**
to Present **Maitland, Florida**

District Engineering Manager and Consulting Engineer. Failure analysis involving electrical power transmission, distribution and control (including transformers, circuit breakers, switchgear and motors/generators). Analyses include design feasibility, reliability studies, and root cause. Additional consultation in fire origin and cause, and scope of damage.

April 2007 **Engineering Design & Testing Corp./EDT Engineers, P.C.**
to April 2014 **Asheville, North Carolina**

February 2004 **Fred Wilson and Associates**
to March 2007 **Jacksonville, Florida**

Industrial Group Supervisor. Managed all industrial design projects including project assignments, task scheduling, design review, and approval and professional staff mentoring. Project Manager for the construction stage of the design. Projects included upgrades of distribution systems from overhead to underground; voltage conversions for various municipalities; and Geographical Information System database development integrated with analysis software to perform load flow, short circuit, protective device coordination and transient stability analysis on the electrical distribution systems.

August 2002
to February 2004

Cadick Corporation
Garland, Texas

Director, Reliability Centered Maintenance Services. Developed the Reliability Centered Maintenance Services Division, including conducting risk assessment, on-site maintenance testing, test data analysis, maintenance program development and on-line maintenance data trending services.

November 1996
to August 2002

The Rodell Group
Rockledge, Florida

Owner and President. Specialized in equipment and systems maintenance and reliability consultation. Performed Reliability Centered Maintenance studies for the Kennedy Space Center, Cape Canaveral Air Force Station, Antigua Air Force Station and Ascension Island Air Station. Performed maintenance optimization analyses for clients, including maintenance procedure document, maintenance interval specification and maintenance technique training.

October 1990
to November 1996

EG&G Florida
Kennedy Space Center, Florida

June 1994 to November 1996 - Lead Engineer. Instrumental in the design and implementation of the Reliability Centered Maintenance program. Designed the electrical portion of the program and coordinated the implementation and operation of the program for the Kennedy Space Center. Technologies included thermography, ferrography, vibration analysis and electrical testing.

October 1990 to June 1994 - Design Engineer and Senior Maintenance Engineer. Engineering and project management for medium and high voltage electrical systems including overhead and underground cable, oil-filled and dry-type transformers, switchgear, motor control centers, substation circuit breakers, emergency generators, and protective relay and control systems.

October 1984
to May 1990

**Duke Power Company
Charlotte, North Carolina**

Transmission Engineer. Managed transmission department personnel and work assignments. Provided engineering, maintenance and operational technical support on the main turbine generators, medium voltage motors, switchgear, circuit breakers, protective relays and meters. Project Manager for various equipment upgrades and additions. Wrote and maintained all required maintenance procedures and predictive maintenance records, INPO/NRC requirements and action notices.

July 1981
to October 1984

**Duke Power Company
Charlotte, North Carolina**

Construction Engineer. Engineering support and Project Management for installation, testing and start-up of high voltage distribution, transmission, and other plant electrical systems. This included main turbine generators, 600 volt and above transformers, switchgear and load centers, and protective relay and control systems. Conducted field redesign of the electrical controls for the radioactive waste solidification system.

EXPERIENCE - DESIGN AND CONSTRUCTION MANAGEMENT (partial list):

Catawba Nuclear Station - Managed replacement of the General Electric Unit 2 main turbine generator after a catastrophic malfunction of the original generator's windings.

Kennedy Space Center - Main Shuttle Launch 115KV to 13.8KV substation. Facility included two new transformers, new substation building, indoor vacuum switchgear, and all associated protective relays.

National Magnetic Laboratories, Florida State University - Redesign of main incoming switchgear as a result of increased power requirement. Included new underground cables, switchgear, and metering and controls.

Kennedy Space Center - replacement of 120 15,000 Volt loadbreak switches from oil filled to SF6 gas.

Kennedy Space Center - design and manage replacing original underground lead cable with new EPR type cable.

Kennedy Space Center - Launchpad Distribution Center. Included new 15KV switchgear and associated protective relays.

Florida A&M University - Main Campus Distribution. Converted original overhead 4160 volt system to underground 12,470 Volt system. Included new switchgear, two transformers, substation reactors, underground cable and ductbanks, and associated protective relays.

Catawba Nuclear Station - removal and repair of four 3,000 HP condensate pump motors.

EXPERIENCE - ENGINEERING INVESTIGATIONS (partial list):

Transformer Malfunction - Death Valley, Arizona. Determine that cause of malfunction, scope of damage to surrounding substation, track repair and replacement activities.

Transformer Malfunction - Gaffney, South Carolina. Determine that cause of malfunction, scope of damage to surrounding substation, track repair and replacement activities, find salvage value.

Power Plant Generator Malfunction - Roxboro, North Carolina. Determine cause of malfunction, scope of damage, and value of loss.

Flood damage to Manufacturing Facility - Nashville, Tennessee. Scope of damage investigation and cost estimate for replacement and repair of all electrical equipment damaged in the Nashville floods of 2010.

Fire in Manufacturing Facility - Morristown, Tennessee. Origin and cause investigation of fire in chemical coating machine.

Sewage Facility - Greenville, North Carolina. Investigate cause of flood to process equipment. Included testing of control systems, review of design drawings, and functional testing of systems.

Power Plant - Columbia, South Carolina. Scope of damage investigation and cost estimate for replacement and repair of 4160 volt switchgear that was damaged in a fire.

Manufacturing Plant - Kerney, New Jersey. Scope of damage investigation and cost estimate for replacement and repair for facility equipment damaged as a result of super storm Sandy.

Hospital - Louisville, Kentucky. Scope of damage investigation and cost estimate for replacement and repair of hospital utilities that were damaged as a result of a flood.

EXPERIENCE - RISK ASSESSMENT CONSULTATION:

Boeing Delta 4 Launch Pad - Evaluated the hydraulic system on the mobile launch platform to determine failure modes, consequence of failure including both downtime and costs, and how to mitigate failures.

Kennedy Space Center - Conducted a Reliability Centered Maintenance analysis on the medium and high voltage electrical system; included determining failure modes and specifying specific maintenance activities to minimize risks.

Cape Canaveral Air Force Station - Conducted a Reliability Centered Maintenance analysis on the medium and high voltage electrical system; included determining failure modes and specifying specific maintenance activities to minimize risks.

Glenn Research Center - Evaluated facility systems including HVAC, electrical distribution, and communications to determine what failures would result in significant downtime and outages.

Ascension Island Air Force Station - Conducted a reliability assessment of the station's power system, including a new 10-megawatt generating station. Made recommendations for reconfiguring the generating station to add redundancy, and specified specific maintenance activities to minimize risks.

Kennedy Space Center - Conducted a Reliability Centered Maintenance analysis of all facility systems including HVAC, electrical, structures, and sewage systems. Responsible for implementing the Reliability Centered Maintenance program center-wide. Technologies used included infrared imaging, vibration analysis, airborne ultrasonic testing, and electrical testing.

LEGAL CONSULTATIONS (partial list):

Electrical Shock - Cumberland, North Carolina. Expert testimony on cause of electrical shock to contactor employee.

Electrical Shock - Gilbert, West Virginia. Expert testimony on cause of electrical shock to contactor employee.

Residence fire - Lawrenceburg, Kentucky. Expert testimony on origin and cause of the fire

Manufacturing Facility - Cleveland, Ohio. Expert testimony on cause and scope of damage to electrical system as a result of water intrusion. Included review of industry standards and development and implementation of testing protocols for the affected equipment.

Apartment Building - Sylva, North Carolina. Expert testimony on origin and cause of the fire. Included review of local, state, and national building and maintenance codes and standards for compliance.

Swimming Pool - Fort Mill, South Carolina. Expert testimony on cause of a fatality. Analysis of the design, review of local and national codes.

Turbine Generator - Roxboro, North Carolina. Expert testimony cause of malfunction, scope of damage, and value of loss.

Distribution System - Columbia, South Carolina. Expert testimony on cause of an electrocution, analysis of installation of pole-top transformer, review of local and national codes and standards.

Office Building - San Juan, Puerto Rico. Expert testimony of cause of malfunction of emergency generator fuel system. Included review of installation drawings, codes, and standards.

Swimming Pool - Huntersville, North Carolina. Expert testimony on cause of heater vent malfunction and code compliance.

PROFESSIONAL ORGANIZATIONS:

Institute of Electrical and Electronic Engineers (IEEE)
National Fire Protection Association (NFPA)
InterNational Electrical Testing Association (NETA)
International Association of Arson Investigators (IAAI)
National Association of Fire Investigators (NAFI)

REGISTRATIONS AND CERTIFICATIONS:

Registered Professional Engineer in Kentucky (#27130)
Registered Professional Engineer in Florida (#60949)
Registered Professional Engineer in South Carolina (#25211)
Registered Professional Engineer in North Carolina (#033025)
Registered Professional Engineer in Virginia (#043511)
Registered Professional Engineer in Georgia (#PE032059)
Registered Professional Engineer in Ohio (#72946)
Registered Professional Engineer in Indiana (#11400595)
National Council of Examiners for Engineering and Surveying (#25969)
Certified Level 2 Thermographer (Infrared Imaging)
NAFI Certified Fire and Explosion Investigator (CFEI #12493-6574)

PUBLICATIONS:

“Electrical Predictive Maintenance at the Kennedy Space Center”, February 1995, *P/PM Technology Magazine*

“Dissolved Gas Analysis”, Fall 1995, *AVO Tester*

“Diagnosing Transformers”, March 2010, Volume 23 Number 1, *The Stress Point Magazine*

“Journal of Failure Analysis and Prevention”, Vol. 10, Issue 4, *New Issue Alert*

“To Maintain or Not to Maintain, That is the Question!” March 2012, Volume 25 Number 1, *The Stress Point Magazine*