

## **EDUCATION**

1999 **Bachelor of Science in Mechanical Engineering**  
Clemson University, Clemson University

## **EXPERIENCE**

January 2016  
to Present **Engineering Design & Testing Corp.**  
**Seattle-Tacoma, Washington**

*Consulting Engineer*

Root cause investigation and analysis of mechanical failure and fracture of components and materials. Specialized consulting in the areas of rotational power equipment, ship-board mechanical and environmental systems, industrial combustion systems, spray drying equipment and processes, stamping dies, control circuits, and low voltage electrical distribution equipment. Piping flow control evaluation of steam, ventilation, pumping, and gravity-driven systems.

April 2013  
to December 2015 **Project Integration, Inc.**  
**Spartanburg, South Carolina**

*Project Engineering Manager*

Design of industrial waste gas handling systems including afterburners, natural gas and oxygen piping systems, ventilation systems, evaporative cooler systems, baghouses, and scrubbers. Created P&ID layouts, specified components, and designed and authored functional and detailed control procedures. Designed pressure vessels to customer specifications. Designed non-pressure vessels for multiple purposes. Designed high, medium and low-pressure steam piping system for a boiler upgrade including control valves, traps, condensate handling and flash tank components. Designed baghouses, including pulsed air systems for bag clearing. Developed concept and designed pneumatic transfer system. Designed equipment to integrate weigh hopper, mixer, and dispenser from different sources for bucket and bag filling of a dry masonry product.

May 2006  
to April 2013 **Schneider Electric**  
**Seneca, South Carolina**

*Staff Engineer*

Designed motor control centers, low voltage switchboards/switchgear, and panelboards. Designed, built and tested breaker operator mechanisms, buss systems, plug-in jaws, cast copper conductors, and equipment structural systems using finite element analyses, mechanics and dynamics, and material selection. Modeled motor control center structures for use in handling restraints as well as seismic event performance. Designed test procedures for seismic compliance testing as well as short circuit and withstand testing. Designed bracing for components to provide compliance with required standard tests. Performed thermal and fluid analyses on ventilation systems used in motor control center units. Evaluated plating used on copper and aluminum conductors for heat transfer, useful life, corrosion, and durability.

May 2004  
to May 2006

**GE Gas Turbines**  
**Greenville, South Carolina**

*Design Engineer*

Design of gas turbine blades (buckets), nozzles, and cases. Performed useful life calculations for turbine buckets for crack propagation, creep elongation and rupture, corrosion, startup cycling, and material property variances. Evaluated turbine and compressor rotor components for wear and surface characteristics. Troubleshot field turbines with regard to unexpected combustion and aerodynamic phenomena. Performed multiple finite element analyses of hot gas path components to understand load and heat effects as well as welding, machining, and traumatic episodic events and their effects on performance and life. Analyzed turbine shell vs. turbine rotor component clearances during startup, shutdown, and loaded conditions, and provided design options and oversight. Oversaw complete turbine system assessment, restoration, and preservation of turbines that had experienced environmental attack in shipment.

May 2000  
to May 2004

**Schneider Electric**  
**Seneca, South Carolina**

*Manufacturing Engineer*

Developed processes, provided engineering support for multiple production lines, represented assembly and fabrication on new product development teams, employed statistical process control and process capability strategies for sheet metal and formed copper parts. Designed, built, and tested new structural enhancements to IBC seismic requirements. Designed: fixtures, lifting mechanisms, class A stamping dies, conveyor systems, tilting/positioning mechanisms, and sheet metal parts for use in fabrication and assembly. Machined, fabricated, welded and assembled multiple parts and assemblies.

June 1999  
to May 2000

**Norfolk Southern Railroad**  
**Bellevue, Ohio**

*Locomotive Repair Shop Supervisor*

Analyzed locomotive systems for malfunction including diesel engines, turbo chargers, air compressors, traction motors, generators, wheel slip controls, dynamic brakes, and air brakes.

July 1986  
to July 1995

**United States Navy**  
**Charleston, South Carolina**

*Submarine Sonar Supervisor/Technician*

Troubleshot and repaired multiple analog and digital electrical sonar systems. Expert of: doppler data target motion analysis, and operations compartment ship's hydraulic, air, electrical, water, and waste systems. Performed the duties of chief of the watch and brig maintenance supervisor.

**REGISTRATIONS and CERTIFICATIONS**

Registered Professional Engineer in Alaska (#123865)

Registered Professional Engineer in Colorado (#PE.0056581)

Registered Professional Engineer in Hawaii (#PE-18768)

Registered Professional Engineer in Idaho (#16832)

Registered Professional Engineer in Montana (#41077)

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Registered Professional Engineer in Oregon (#91206PE)  
Registered Professional Engineer in South Carolina (#23176)  
Registered Professional Engineer in Utah (#10469390-2202)  
Registered Professional Engineer in Washington (#53458)  
Registered Professional Engineer in Wyoming (#17777)  
NAFI Certified Fire and Explosion Investigator (CFEI#21129-12127)

### **PROFESSIONAL ORGANIZATIONS**

American Society of Mechanical Engineers (ASME)  
ASM International  
National Association of Fire Investigators (NAFI)  
National Fire Protection Association (NFPA)

### **PRESENTATIONS**

*Process Capability: The Effects on Design*, presentation to executives with Schneider Electric, Nashville, Tennessee (2011)  
*Tolerance Analysis Basics*, tolerance analyses subject matter expert with Schneider Electric, Seneca, South Carolina (2007)  
*Industrial Plant Process Controls*, technical course, Orlando, FL (2018)

### **PATENTS**

Mohr, P., Nowak, D., Fernandez, E., Arnett, M., Williams, D., and Collado, C., United States Patent: 7,771,171 B2. Systems for preventing wear on turbine blade tip shrouds. Issued August 10, 2010.

### **CONTINUING EDUCATION**

2019     *Building Your Practice – Means & Methods for Success*, Columbia, South Carolina  
          *Construction Engineering: A Focus on the Use of Cranes in Construction Operations*, Columbia, South Carolina  
          *Interdisciplinary Investigations*, Columbia, South Carolina  
          *Quantitative Measurement of LP and Natural Gas Systems*, Columbia, South Carolina  
          *Subchapter M: A Brief Overview of EDT as a Third-Party Organization*, Columbia, South Carolina  
2018     *Basic Fatigue Analysis*, Columbia, South Carolina  
          *Industrial Plant Process Controls*, Columbia, South Carolina  
          *Metallurgy for the Non-Metallurgist and Its Use in Root Cause/Damage Assessments*, Columbia, South Carolina  
          *Methods of Equipment Protection*, Columbia, South Carolina  
2017     *Engineering Analysis of Failure: Determination of Cause in a Legal Environment*, Columbia, South Carolina

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- Instructions and Warnings: What is the Difference, and Does it Matter?* Columbia, South Carolina  
*Large Loss Report Writing*, Columbia, South Carolina  
*Smarter Ways to Use Excel for Engineering*, Columbia, South Carolina
- 2016 *International Fire, Arson and Explosion Investigation Training Program*, Sarasota, Florida  
*Cold Regions Engineering*, Seattle, Washington  
*Investigation of Gas and Electric Appliance Fires*, Seattle, Washington  
*Keys to Unlocking a Closed Insured*, Columbia South Carolina  
*Large Loss Forum-Engineering Economics: ACV Definitions and Calculations*, Columbia, South Carolina  
*Power System Protection and Fault Analysis*, Columbia, South Carolina  
*Sales Training*, Columbia, South Carolina
- 2014 *Piping/Pressure Vessels*, ASME, Greenville, South Carolina
- 2013 *Steam Trap Selection and Operation*, Charlotte, North Carolina
- 2010 *Fracture Mechanics Approach to Life Prediction*, ASME, Orlando, Florida  
*Shock and Vibration Analysis*, ASME, Chicago, Illinois  
*Power Systems Conference*, Schneider Electric, Chicago, Illinois
- 2007 *Seismic Design*, ASME, Charleston, South Carolina
- 2006 *Fracture Mechanics*, ASME, Chicago, Illinois
- 2004 *Design for Six Sigma*, General Electric Corp., Greenville, South Carolina  
*Investment Casting Design*, PCC Airfoils, Minerva, Ohio
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