

## **Gerald O. Davis, P.E.**

**Davis Materials & Mechanical Engineering, Inc. (DMME, Inc.)**  
**4723 Squaw Valley Court, Glen Allen, VA 23060**

**Phone: 804-967-9129**

**E-mail: [JDavis@DMME-engineering.com](mailto:JDavis@DMME-engineering.com)**

**Website: [www.DMME-engineering.com](http://www.DMME-engineering.com)**

### **Professional Summary:**

- Engineering consultant in metallurgical, corrosion and mechanical failures
- Expert witness for forensic engineering litigation in these areas
- Over 45 years of diverse engineering experience and education
- Licensed Professional Engineer (P.E.) – Virginia & Delaware

### **Formal Education:**

- University of Delaware, MS, 1986, Applied Materials (thesis on corrosion)
- Golden Gate University, MBA, 1972, Business Administration
- Virginia Polytechnic Institute & State University, BS, 1968, Mechanical Engineering

### **Areas of Expertise:**

#### ***Metallurgical and Mechanical Root-Cause Failure Analysis (RCFA)***

- Methodology for completing RCFA's
- Failure mechanisms of metallic materials, e.g., overstress, fatigue, wear, corrosion
- Characteristics of the different forms of metal fracture
- Specifying laboratory evaluations to characterize metallic material properties
- Interpreting results of laboratory evaluations of metals
- Metallurgical and mechanical properties of various alloy classes
- Assessing the qualities of welds

#### ***Corrosion Analysis and Control***

- Completing RCFA's that involve corrosion
- Mechanisms of the several forms of corrosion, e.g., general, pitting, crevice attack, stress-corrosion cracking
- Susceptibility of different classes of alloys to the various forms of attack in different corrosive media
- Laboratory tests to characterize corrosion and rates of attack
- Evaluating the effectiveness of the primary control methods – coatings, material selection, cathodic protection or chemical inhibitors – in specific applications
- Design and operating tactics to minimize corrosion
- In-situ methods to indicate corrosion rates in operating equipment
- Preventative maintenance techniques to minimize corrosion

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### ***Engineering Expert Witness***

- Forensic engineering for product liability and personal injury cases
- Experience in cases with plaintiffs and defendants
- Multiple depositions provided
- Clear communicator – via technical reports, one-to-one and groups
- Diverse engineering work experience and graduate education
- Effective searches of engineering literature regarding unique problems
- Ability and willingness to recommend another appropriate technical specialist for questions in other areas of engineering or science

### ***Training Provided for Others***

- On-line continuing education courses for P.E.'s (see [www.suncam.com](http://www.suncam.com))
- Developing and presenting live short courses for industrial clients
- Multiple technical articles published
- Providing presentations on disaster preparedness for local Red Cross chapter

### **Work Experience/Employment Summary:**

- DM&ME, Inc., 2004-Present, President
- Henkels & McCoy, Inc., (Virginia) 1995-2004, Program Manager
- DNV,(Ohio & Alaska), 1992-1995, Senior Engineer
- Battelle Memorial Institute, (Ohio), 1985-1992, Research Scientist
- University of Delaware, 1981-1985, Graduate Research Assistant and student
- Honeywell Corp., (Virginia), 1974-1981, Project and Reliability Engineer
- Ingersoll-Rand Co., (New Jersey), 1972-1974, Mechanical Project Engineer
- U.S. Air Force, (California), 1968 – 1972, Project/Test Engineer
- **Details of work during each employment period are provided in Profile [at Gerald(Jerry) O. Davis, P.E.] on LinkedIn**

### **Other Professional Activities and Memberships:**

- Licensed Professional Engineer - Virginia {11793} and Delaware {11153}
- Certified Materials Selection/Design Specialist – National Association of Corrosion Engineers (NACE International) {5797}
- Instructor in engineering economics for Richmond, Virginia area engineers preparing for the Virginia P.E. examination
- Member National Society of Professional Engineers (NSPE); Chairman of Richmond, VA Chapter in 2008, Presently serve as a Director and Treasurer on the State of Virginia Board
- Member NACE International
- Member American Society for Metals (ASM International)