

**KENNETH R. McLAUHLAN, P.E., CFEI**

### **EDUCATION**

University of Maryland, BSME Degree  
Carrier Corp., Microcomputer Design Course  
ASHRAE, Smoke Control Design Course  
National Fire, Arson and Explosion Training Program

### **REGISTRATION**

Professional Engineer in the State of Maryland  
Certified Fire and Explosion Investigator, NAFI

### **PROFESSIONAL AFFILIATIONS**

American Society of Heating, Refrigeration, and Air Conditioning Engineers  
National Association of Fire Investigators  
National Fire Protection Association  
International Association of Arson Investigators  
American Industrial Hygiene Association  
Instrument Society of America  
Association of Independent Consultants

### **CAREER HISTORY**

#### **FORENSIC ENGINEERING EXPERIENCE**

**McLauchlan and Associates, Inc.** - President, Senior Mechanical Engineer: - Mechanical systems and equipment failure investigations on Heating, Ventilation and Air Conditioning Systems (Residential, Commercial and Institutional); Analyses of fire causation and smoke flow in buildings, gas and fuel oil equipment and systems, building automation systems, plumbing and process piping systems analysis, vacuum piping and central vacuum systems, medical gas systems, compressed air systems and air compressors. Diesel engine generators and support systems (fuel, lube oil, start air). Hydraulic power systems, industrial gas, oil, dual fuel fired equipment (dryers, furnaces, boilers, etc.). Analysis of high reliability, precision controlled IT facilities, including "clean" and raised access floor environments. Cost estimating and value engineering. Specification writing and interpretation. Mechanical power transmission (gear drives, belt drives, etc.) Water and wastewater treatment plant equipment and processes. PCB incident investigations. Automatic control systems (Pneumatic, electric, electronic, direct digital). Construction industry practices and standards. Pumps and associated system controls; piping, valves and fittings. Building code interpretation. Steam power plant systems and hospital mechanical systems. Asbestos abatement design review.

Specific Indoor Air Quality experience includes an evaluation of the EPA Headquarters, Washington D.C., and Casimir Pulaski Building, Washington, D.C., for employee health complaints related to alleged "sick building syndrome." Evaluated eight DEA Laboratories, nationwide, for ventilation system adequacy and employee safety.

Performed engineering investigations for determination of causation in catastrophic fatality/property damage incidents. Projects include investigation of HVAC and Stack Effect in the distribution of toxic gases as a result of the fire at MGM Grand Hotel, Las Vegas, Nevada, and as a result of the PCB Fires at New World Tower in Miami and One Market Plaza, San Francisco, California. Investigated carbon monoxide incidents related to combustion of hydrocarbon fuels in heating equipment and appliances.

Compressed air system investigations have included analysis of pressure vessel and component failures in small "shop-air" fixed systems (reciprocating), analysis of large industrial compressed air systems (rotary screw) and analysis of fires and explosions in both types of systems. Components analyzed have included pressure switches, coalescing filters, pressure reducing valves, pressure relief valves, oil separators, slide valves and system piping and fittings.

Expert testimony; depositions, bench and jury trials, and also mediation and arbitration.

## **DESIGN ENGINEERING EXPERIENCE**

**McLauchlan and Associates, Inc.** - President: Design projects have included HVAC, plumbing and fire protection for a private school in Gaithersburg, MD, a high-rise apartment building in Rosslyn, Virginia, a retirement complex in Arlington, Virginia, a HEMP hardened Air Force satellite communications facility in Cavalier, ND, a Telecommunications Center hardened against blast, nuclear, biological, and chemical weapons at Clark Air Base, Philippine Islands. Designed elevated water storage facility, Suitland, Maryland. Performed Value Engineering studies and Constructibility Reviews for the Chrysler Corporation, the US Coast Guard, NAVFAC, the City of Baltimore, and the State of Maryland Dept. of General Services. Performed engineering analysis of building heating, ventilation, and air conditioning (HVAC) systems for compliance with specifications, codes, and standards.

**Stottler, Stagg, and Associates**, Lanham, Maryland - Department Head, Mechanical Engineering: - Performed design of HVAC, plumbing and fire protection systems for a two million square foot Federal office building, military research laboratories (Pulse Laser and Underwater Acoustics), HEMP hardened satellite communications facilities, and various other military and commercial projects.

Clients include GSA, Naval Research Laboratory, Chesapeake Division NAVFAC, Tyndall Air Force Base, Bolling Air Force Base, Robins Air Force Base, Andrews Air Force Base, Army Corps of Engineers (Baltimore District/National Capital Area).

Major projects have included the design of water and wastewater treatment plants for Brevard County, FL, and for the U.S. Navy, and the retrofit design of citadel type HVAC systems for HEMP and blast hardened facilities. Performed design of residential HVAC, plumbing and fire protection.

**Litton Bionetics, Inc.**, Frederick, Maryland - Project Engineer, Facilities Engineering: Designed cancer research laboratories including renovation of abandoned military biological and chemical warfare facilities. HVAC and process piping designs included containment of carcinogenic biological and chemical materials and creation of "clean" environments for animal research. Evaluated energy conservation opportunities. Responsible for evaluation and oversight of A&E subcontractors. Designed experimental pathology laboratory and animal virus laboratory.

**Sverdrup & Parcel and Associates**, Silver Spring, Md. - Project Engineer, Buildings Department:  
- Started mechanical department. Designed HVAC, plumbing, and fire protection systems for maintenance buildings, a church, a 250-man military barracks, and hospital emergency room and pediatrics ward. Designed renovations for a federal pistol range, a locomotive repair factory, and an airport terminal building. Wrote specifications and developed engineers cost estimates for all projects. Clients include Washington Suburban Sanitary Commission, US Postal Service, Southview Presbyterian Church, Royal Norwegian Embassy, General Motors Corporation, Charleston Area Medical Center, West Virginia General Services Division, and Greenbriar Airport.

**Whitman Requardt and Associates**, Baltimore, Md. - Design Engineer, Mechanical Department:  
- Designed various aspects of water and wastewater treatment plants, including plant hydraulics and process piping. Wrote specifications and developed engineer's cost estimates for all projects. Clients included Washington Suburban Sanitary Commission, District of Columbia Environmental Services, and City of Richmond, Virginia.

### **SECURITY CLEARANCE**

Secret clearance, U.S. Government, DOD, (DISCO)  
Clearance, U.S. Department of Justice, DEA

### **SEMINAR PRESENTATIONS GIVEN**

DC Fire Investigation Branch - "Investigation of Mechanical Equipment Fires"  
International Association of Arson Investigators - "Investigation of Mechanical Equipment Fires"  
Consumer Product Safety Commission - "Gas-Fired Equipment Fire Investigation"  
Aegis Loss Prevention Roundtable - "Technical Aspects of Site Investigations"  
International Association of Arson Investigators - "Mechanical Equipment Fires"

### **OTHER LICENSES**

FAA Commercial Pilot, Instrument Rated, ASEL