



MICHAEL D. PRATT, P.E., CFEI
PRINCIPAL
DIRECTOR OF FIRES AND EXPLOSIONS

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Mr. Michael Pratt is a Principal and the Director of Fires and Explosions for Engineering Systems Inc. (ESI). Mr. Pratt has over 29 years of experience in mechanical and forensic engineering and he has conducted more than 2,600 investigations ranging from small pipe ruptures to multi-million dollar industrial plant explosions. Mr. Pratt has worked in nearly every state in the country and in Canada, the Caribbean islands, Central America, and South America. Mr. Pratt's expertise includes mechanical and electrical systems, analysis of mechanical and electrical failures, and root cause investigations of boiler, turbine (steam and gas), pressure vessel and piping ruptures and explosions. Mr. Pratt has extensive experience in evaluations of damage to process facilities and power plants; estimating repair/replacement costs; analysis and technical investigations of residential, commercial and industrial accidents; analysis of design, fractures, corrosion and material properties; fire and explosion origin and cause investigations; analysis and technical investigation of fire suppression systems; evaluation of construction and heavy equipment, and; monitoring and analysis of radiation and/or contamination hazards.

Mr. Pratt has specialized expertise in power utility design, construction, operation, maintenance and repair. He has worked extensively on coal-fired and gas-fired boiler plants, gas turbine facilities, combined cycle power plants and biofuel systems across the United States and in South America. Mr. Pratt has been recognized in both State and Federal court as an expert in mechanical engineering, fire/explosion investigation, and material failure analysis.

Areas of Specialization

Fire and explosion investigation
Propane and natural gas distribution, storage and use
Boiler, furnace, and pressure vessel ruptures and explosions
Blast dynamics, including shock wave and acoustic wave analyses
Steam and gas turbine failures
Heavy equipment (cranes, man-lifts, forklifts, construction equipment, farm equipment, etc.)
Mining equipment
Products liability
Power utility, pulp and paper, petrochemical, textile, etc. failure analysis
Industrial plant restoration management
Machinery and equipment replacement and repair cost estimating
Industrial diesel engines
Rotating equipment
Hazardous waste operations and emergency response

Education

B.S., Mechanical Engineering, University of North Carolina at Charlotte, 1993
A.S., University of the State of New York, 1988

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Licensed Professional Engineer (P.E.)

State of ArizonaLicense No. 67173
State of Alabama License No. 062-056175
State of Arkansas..... License No. 12685
State of Georgia..... License No. 025270
State of Iowa..... License No. 22174
State of Louisiana..... License No. 32780
State of Michigan..... License No. 6201050185
State of Mississippi..... License No. 17482
State of Missouri..... License No. 2015020069
State of Nebraska..... License No. 11989
State of NevadaLicense No. 025810
State of North Carolina. License No. 022645
State of South Carolina. License No. 019557
State of Texas..... License No. 116547
State of Virginia..... License No. 33678
State of Washington..... License No. 51924

Certifications

Certified Fire and Explosion Investigator (10095-4593)
National Council of Examiners for Engineering and Surveying (NCEES), 22711
Certification in Hazardous Waste Operation and Emergency Response (OSHA)

Professional Affiliations

American Society of Mechanical Engineers (ASME)
International Association of Arson Investigators (IAAI)
National Association of Fire Investigators (NAFI)
National Fire Protection Association (NFPA)
Society of Fire Protection Engineers (SFPE)
ASM International
Tau Beta Pi – Engineering Honor Society

Positions Held

Engineering Systems Inc., Charlotte, North Carolina

Principal, Director of Fires and Explosions, 2015 – Present
Senior Managing Consultant, 2011 – 2015

Engineering Forensics, P.C., Charlotte, North Carolina

President/Chief Engineer, 2003 – 2011



The Warren Group, Inc., Charlotte, North Carolina

Manager/Senior Consulting Engineer, 2004 – 2007

Engineering Design & Testing Corp., Charlotte, North Carolina

Consulting Engineer, 1994 - 2003

Norman A. Cope & Associates, Inc., Mt. Holly, North Carolina

Associate Engineer, 1990 - 1992

The Pratt Company, Charlotte, North Carolina

Construction Foreman, 1988 - 1990

United States Navy, Active Duty, 1980 - 1988

USS Casimir Pulaski, SSBN 633 (Gold), Charleston, South Carolina
Engineering Watch Supervisor, 1983 – 1988

USS Casimir Pulaski, SSBN (Gold), Charleston, South Carolina
Leading Engineering Laboratory Technician, 1983 – 1988

Navy Nuclear Power Training Unit, Ballston Spa, New York
Prototype Submarine Facility Staff Instructor, 1981 – 1984

Specialized Training

Air Compressors; Brayton Cycle Analysis; Centrifugal Pumps; Hydraulic Accumulators; Geothermal Heat Pumps;
Fire-Designing Means of Egress; Safety – Fire Protection Equipment and Techniques, 2009

“Fatigue, Fracture and Corrosion of Medical Devices; Failure Analysis for Medical Devices” - ASM International, 2006

“National Fire, Arson and Explosion Investigation Training Program National Seminar on Fire Analysis Litigation;
Certified Fire Investigation Instructor Seminar,” National Association of Fire Investigators, 2004

“Turbomachinery for the Energy Industry” – Power-Gen International Competitive Power College, 2001

“Fracture Mechanics Approach to Life Predictions” – American Society of Mechanical Engineers, 1999

“Fractography” – Materials Engineering Institute, ASM International, 1998

Certification in Hazardous Waste Operation and Emergency Response through completion of OSHA 40 hour
HAZWOPER course, in accordance with 29 CFR 1910.129(e)(3)

“General Procedures for Failure Analysis” – Materials Engineering Institute, ASM International, 1995

Presentations

1. **M.D. Pratt**, “Explosions and Pressure Vessel Ruptures: An Overview with Claims and Litigation Considerations”, presented to various legal and insurance audiences.
2. **M.D. Pratt**, A.E. Richards, “Application of New Technologies to Complex Explosion Investigation”, Propane Gas Defense Association Meeting, Invited Speaker, New Orleans, Louisiana, September, 2016.
3. **M.D. Pratt**, “Hurricane Katrina: Lessons Learned”, adjusters and attorneys nationwide, 2008.
4. **M.D. Pratt**, “Water Damage to Machinery and Equipment”, presented to various legal and insurance audiences, 2004.
5. **M.D. Pratt**, “Designing Against Fatigue Fractures”, National Manufacturing Week Conference, 2003.
6. **M.D. Pratt**, “Fatigue Fractures – Overcoming Challenges Through Design and Analysis”, National Manufacturing Week Conference, 2001.
7. **M.D. Pratt**, “Engineering Aspects of Residential Losses”, Monthly regional adjusters meeting for a national insurance company, 1996.
8. **M.D. Pratt**, “The Use of Engineers in Resolving Insurance Claims”, Annual meeting of the Insurance Crime Information Exchange, 1996.