

## David Beachy, MS, PE, CFEI | District Manager & Principal Engineer

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### *Professional Summary:*

Mr. Beachy is a licensed Professional Engineer in multiple states throughout the Mid-Atlantic region as well as a Certified Fire and Explosion Investigator and a Certified Fireplace & Chimney Inspector.

Mr. Beachy began his career in the United States defense industry as a mechanical design engineer performing complex structural and mechanical analyses for the development and field implementation of classified customer desired products. Mr. Beachy was accountable for all aspects of the product development life cycle including conceptualization, design, analysis, fabrication, verification testing, and deployment. He managed and led over nine successful mission direct projects providing client operators solutions in the field.

Mr. Beachy capitalized and leveraged his past engineering and hands-on experience when entering the forensic engineering field and currently has extensive experience in consulting, leading, and managing projects related to litigation, failure analysis, and product design. These projects often include topics of mechanical and fire protection engineering. Further, Mr. Beachy is proficient in performing research, analysis, and interpretation of codes and standards related to building, plumbing, mechanical, and fire protection systems.

Mr. Beachy also has the expertise as a Certified Fire and Explosion Investigator, and a Certified Fireplace and Chimney Inspector. Mr. Beachy utilizes these certifications to inspect and evaluate the design, installation, maintenance, and use of various appliances and chimneys related to fire and explosion investigations.

Mr. Beachy also manages five EFI offices in the Mid-Atlantic region, as well as EFI's forensic service line team comprised of fire investigators, mechanical engineers, and electrical engineers.

Mr. Beachy's expertise includes:

- Mechanical failures
- HVAC systems
- Water losses and plumbing failures
- Building envelope evaluation
- Equipment evaluation
- Vehicle fire and component failures
- Event Data Recorder (EDR) analysis
- Fire protection systems
- Commercial kitchen fires and failures
- Fireplace, chimney, and solid fuel-burning appliances
- Analyzing and interpreting codes and standards

### Licenses and Certifications:

Professional Engineer (Additional states available upon application):

Connecticut, 37866

Delaware, 21009

Maryland, 49747

New Jersey, 24GE05340600

New York, 106100

Pennsylvania, PE087200

Virginia, 402053588

Washington DC, PE908722

West Virginia, 22999

National Engineering Registration, NCEES, 14-434-31

Certified Fire and Explosion Investigator, National Association of Fire Investigators, 22334-14283  
(Originally obtained 3/12/2020)

Certified Fireplace & Chimney Inspector, Fireplace Investigation, Research & Education Service  
(F.I.R.E.), FCI-408, (Originally obtained 7/22/2023)

### Project Experience:

The sample projects here outline a small sampling of the types of projects and losses Mr. Beachy regularly investigates. For further information or additional examples, please contact EFI Global.

#### **Commercial Boiler Failure- Howard University, District of Columbia Mechanical Analysis**

Investigated and analyzed boiler tube failures in two commercial steam boilers, each rated at 112,000 lb/hr of steam, which caused catastrophic boiler failures and a loss of heat to the entire University campus.

#### **Residential Elevated Humidity Levels- Exton, PA Mechanical Analysis**

Investigated, performed testing, and completed HVAC heating and cooling load calculations to determine the cause for a dwelling to experience high humidity levels after a new HVAC system was installed.

#### **Commercial Sprinkler Freeze- Earleville, MD Mechanical Analysis & Fire Protection System Analysis**

Investigated, documented the installation method, analyzed codes, and performed heat transfer calculations to determine the cause and the party responsible for a wet pipe sprinkler system to freeze.

#### **Multiple Locations in the Mid-Atlantic Region Mechanical Analysis & Product Defect**

Investigated numerous commercial and residential plumbing failures that included but was not limited to various PEX connection systems, soldering and brazing connections, and plastic to metallic fitting connections.

### Project Experience (Continued):

#### **Personal Injury- Albany, NY Mechanical Analysis & Product Defect**

Investigated an alleged product defect following an injury involving a commercial pasta maker. Performed an analysis of the evidence, the manufacturer's instructions, OSHA standards, and witness statements to provide the client with an expert failure analysis opinion.

#### **Residential Fireplace Fire- Alexandria, VA Fire Investigation**

Investigated the origin and cause of a residential structural fire related to a gas fired fireplace including the manufacturer's instructions for clearance to combustibles, the method of installation, and the analysis of the evidence.

#### **Commercial Restaurant Fire- Philadelphia, PA Fire Investigation & Fire Protection System Analysis**

Investigated the origin and cause of a commercial kitchen fire, and the cause for the fire suppression system to not operate properly which led to extensive fire damages. Performed a review of the applicable codes and manufacture installation and maintenance requirements, as well as extensive subject and exemplar system testing.

#### **Residential Explosion- Baltimore, MD Mechanical Analysis & Fire/Explosion Investigation**

Investigated the origin and cause of an explosion within a pool house at a residence that caused extensive property damage and a personal injury. Analyzed codes and manufacturer installation procedures, researched permits to identify parties of interest, and performed pressure testing of the propane system.

### Expert Witness Testimony: Court Qualifications/Depositions/Testimony:

*Mr. Beachy has experience testifying as an expert witness in depositions and trial, and has been accepted as an expert witness in numerous jurisdictions.*

*\*List of Expert Witness Testimony Experience is Available Upon Request*

### Professional Experience:

EFI Global, District Manager & Principal Engineer (current title), 2018 - Present

Unified Investigations and Sciences, Forensic Engineer, 2016 – 2018 (Merged with EFI Global)

Commonwealth Technology Inc., Mechanical Design Engineer, 2014 – 2016

Raytheon UTD, Mechanical Design Engineer, 2009 – 2014

#### Formal Education:

Master of Science, Mechanical Engineering, The Catholic University of America, Washington, DC, 2012

Bachelor of Science, Mechanical Engineering, University of Delaware, Newark, Delaware, 2009

#### Specialized Education/Training:

Beckett Basic Oil Burner Training, Advanced Burner Training, and Electricity & Controls Training, 3 Day Class, 2024

Tire Failure Analysis, 5 Day Class, 2023

Introduction to Metallurgical Failure Analysis with Case Studies, 2022

HVAC – Natural Ventilation Practices and Principles, 2022

Circuit Protection Devices, 2022

Overview of Fire Alarm and Detection Systems, 2022

Practical Fractography, 2021

Tools to Ensure Effective Litigation Preparation and Testimony as an Engineering Professional, 2021

Corrosion and Air Vents: NFPA 13 Code Requirements, 2021

Multiple Zone Air Systems, 2021

Bosch Vehicle Crash Data Retrieval Kit Training, 2020

Commissioning Process, 2020

Humidity Control: Avoiding Five Common Design Problems, 2020

Fire Investigation Training Program, 4 Days, 2020

Principles of Fire Investigation Multi-Program, 67 Credit Hours, 2020

HAZWOPER Training, 40 Hour, 2019

NFPA 25 – Inspection, Testing, and Maintenance of Water Based Fire Protection Systems Hands On Training, 3 Days, 2019

High Temperature Water Heating Systems, 2019

EFP Indoor Air Quality Building Education & Assessment Guidance, 2019

A Guide for Use and Adoption of The International Plumbing Code, 2019

Direct Current Circuits Fundamentals, 2019

Hands-On Electrical Fire and Arson Investigation, 2018

Introduction to Fire Suppression Systems Inspection, Testing, and Maintenance, 2018

Ethical Issues in Forensic Engineering, 2018

Introduction to Inspection of Boilers and Unfired Pressure Vessels, 2018

Hands-on Vehicle Fire/Arson Investigation, 2017

**Specialized Education/Training (Continued):**

Essentials of NFPA 1033, 2017

OSHA Guide - Mold Remediation in the Workplace, 2017

Introduction to Fire Protection Systems, 2017

Basics of Piping System Thermal Expansion for Engineers, 2017

Plastic Fundamentals: Properties and Causes of Failures, 2016

*\*A list of additional training prior to this date is available upon request\**

**Affiliations:**

Member, National Society of Professional Engineers

Member, National Association of Fire Investigators

Member, National Fire Protection Association