



Roger W. Griffith, P.E.
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Curriculum Vitae

EXPERTISE

Over 37 years of mechanical engineering experience in the design, maintenance, and operation of mechanical, plumbing and sprinkler systems. Since 2002, also an Expert Witness/Forensic Consultant for matters related to **plumbing design, hot water scalding, legionella, gas appliances and venting, carbon monoxide poisoning, fuel gas fires/explosions, HVAC design, sprinkler system design, and failure analysis of mechanical and plumbing equipment/systems.**

PROFESSIONAL REGISTRATIONS AND CERTIFICATIONS

Board Certified in Forensic Engineering, Diplomate (DFE), National Academy of Forensic Engineers (NAFE). Program accredited by the Council of Engineering and Scientific Specialty Boards.

Registered or Licensed Professional Engineer in 23 states: Alabama, Arizona, Arkansas, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Louisiana, Minnesota, Mississippi, Missouri, New York, North Carolina, Ohio, Oklahoma, South Carolina, Tennessee, Texas, Utah, and Virginia.

PROFESSIONAL AFFILIATIONS

American Society of Heating Refrigeration and Air Conditioning Engineers (ASHRAE); 1996 - present

American Society of Mechanical Engineers (ASME); 1991 - present

American Society of Plumbing Engineers (ASPE); 1998 - present

- past Vice-President of Technical of East Tennessee chapter; (2004)
- past Vice-President of Education of East Tennessee chapter; (2005)
- past Vice-President of Legislation of East Tennessee chapter; (2003)

08/10/20

*This curriculum vita shall not be used for expert designation unless an authorized agreement is executed.



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- President of East Tennessee chapter; 2016-2020
American Society of Sanitary Engineers (ASSE); 2015 - present
American Society of Testing & Materials (ASTM); 2016 - present
International Code Council (ICC); 2014 – present
National Academy of Forensic Engineers (NAFE); 2016 - present
National Fire Protection Association (NFPA); 2004 - present
National Society of Professional Engineers (NSPE); 2012 - present

CODES AND STANDARDS EXPERIENCE

ASPE Technical Standard 15 – Hot Water Temperature and Control, member; (2009 – 2010). This is a design standards committee that provides industry guidelines for hot water temperature limits and control for plumbing systems to prevent scalding.

ASSE Scald Awareness Task Group, member. The task group was formed to make the public and plumbing community more aware of potential scald issues relative to plumbing systems. The task group has published the following white papers during my membership:

- Adjustment of Automatic Compensating Valves to Prevent Potential Scald Hazards
- Guidelines for Temperature Control Devices in Domestic Hot Water Systems
- Recommended Installation Practices for Residential Storage Type Water Heaters To Reduce the Danger of Scalds

ASSE 1082 Working Group, member; (2016-2020). The Working Group developed a standard for Tankless Water Heaters Used as Temperature Control Devices for Hot Water Distribution Systems.

ASSE 1084 Working Group, member; (2017-2020). The Working Group developed a standard for Tankless Water Heaters Used as Temperature Control Devices for Point-of-Use Applications.

ASSE 1085 Working Group, member; (2017-2020). The Working Group developed a standard for Tankless Water Heaters Used as Temperature Control Devices for Emergency Fixtures.

ASHRAE Technical Committee TC6.6 - Service Water Heating Systems, provisional corresponding member; (2016 - present). Technical Committee 6.6 is concerned with two general areas: (1) service water requirements, and (2) design of the system for heating and distributing service hot water.

ASTM Subcommittee F15.03 – Safety Standards for Bathtub and Shower Structures, member; (2016 - present). This subcommittee has jurisdiction for the following standards:



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- F444-88 Standard Consumer Safety Specification for Scald-Preventing Devices and Systems in Bathing Areas
- F445-88 Consumer Safety Specification for Thermal-Shock-Preventing Devices and Systems in Showering Areas
- F446-85 Standard Consumer Safety Specification for Grab Bars and Accessories Installed in the Bathing Area
- F462-79 Standard Consumer Safety Specification for Slip-Resistant Bathing Facilities

ASTM Committee E58 on Forensic Engineering, member; (2016 - present). The Committee promotes Forensic Engineering knowledge and the development of appropriate standards intended to promote the awareness of the scientific, engineering, ethical, and legal consideration inherent in Forensic Engineering investigations, reporting, and testimony.

- Subcommittee E58.01 General Practice
- Subcommittee E58.02 Product Defect Incidents

IAPMO UMC Legionella Task Group (2020) This task group is developing an Appendix H for the Uniform Mechanical Code, which will guide the selection of water temperature to minimize Legionella growth potential associated with building mechanical systems.

IAPMO UPC Legionella Task Group (2018-2019) This task group developed Appendix N for the Uniform Plumbing Code, which guides the selection of water temperature to minimize scalding and the potential for Legionella growth.

ICC, Plumbing Mechanical Gas Code Action Committee (PMGCAC) member; (2017-2019). The PMGCAC reviews and proposes revisions to the International Plumbing, Mechanical, Fuel Gas, Private Sewage Disposal, and Swimming Pool and Spa Codes and the International Residential Code, chapters 12 through 33.

NFPA 54: National Fuel Gas Code, Technical Committee, member; (2016 - present). The committee has primary responsibility for changes and updates to the code, which covers the installation and operation of fuel gas piping systems, appliances, equipment, and related accessories, with rules for piping systems materials and components, piping system testing and purging, combustion and ventilation air supply, and venting of gas-fired appliances and equipment.

HONORS AND SERVICE

HVAC Consultant, University of Tennessee – Arch. 461: Studio Design; (2017 – 2019)

COURSE INSTRUCTION AND PRESENTATIONS



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“NFPA 96 and Building Code Requirements for Commercial Kitchen Hood Systems”, presentation to Fire Officials and Building Officials, Sevier County, Tennessee, 2004

Quality Improvement Tools & Techniques; Instructor, TVA University course, 1993 - 1997

Fault-Tree Analysis; Instructor, TVA University course, 1996 - 1997

PROFESSIONAL EXPERIENCE

- 1997 - present **Griffith Engineering & Consulting, Inc.**
Principal Engineer
- Mechanical, plumbing, and fire protection systems designer for residential, commercial, and industrial projects. Engineer-of-Record on over 3 million square feet of commercial, industrial, and residential construction projects
 - Expert witness providing forensic investigations and litigation support related to the design, installation, maintenance, and operation of mechanical, plumbing, and sprinkler systems, including pipe failures, hot water scalding, carbon monoxide poisoning, and legionella.
- 2014-2016 **Mesa Associates and Retiree Resource Corporation**
Mechanical Engineering Consultant
- Process piping engineer for the Tennessee Valley Authority’s new bottom ash dewatering facilities.
- 1983-1997 **Tennessee Valley Authority**
Quality Manager (1994-1997)
- Trained personnel at all levels of the corporation in problem-solving, root cause analysis, statistical process control, failure modes and effects analysis, and business process re-engineering.
- Maintenance Supervisor, John Sevier Fossil Plant (1992-1994)*
- Responsible for mechanical maintenance of plant equipment including boilers, piping, heat exchangers, pumps, and conveying systems.
 - Utilized root cause analysis for accident investigations and hazard analysis.
- Mechanical Engineer, Boiler and Heat Exchanger Group (1990-1992)*
- Performed boiler inspections to determine root causes of failures.
 - Inspected fans, pumps, ductwork, and other plant equipment and designed modifications and upgrades as required.
- Maintenance Engineer, John Sevier Fossil Plant (1988-1990)*
- Performed predictive maintenance and failure analysis of plant equipment.
 - Designed and coordinated equipment modifications and upgrades.
- Valve and Heat Exchanger Specialist (1985-1988)*
- Designed upgrades and modifications of power plant condensers, valves, and various heat exchangers to improve performance and reliability.
 - Performed failure analysis on plant equipment including heat exchangers, condensers, valves, and piping.



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Piping Analyst (1983-1985)

- Performed piping stress analysis for the Watts Bar Nuclear Plant.

UNIVERSITY EDUCATION

B. S. Mechanical Engineering, Tennessee Technological University