

Christopher J. Porto

PE, CFEI

Sr. Managing Consultant, Director – Fire Sciences



Mr. Chris Porto is a Senior Managing Consultant for Engineering Systems Inc. (ESi), specializing in fire protection and mechanical engineering. He is a licensed fire protection and mechanical engineer in multiple states and has extensive experience delivering complex engineering analyses for a diverse range of clients.

Mr. Porto's fire protection engineering expertise includes building life safety assessment, code compliance evaluations, and failure analyses involving fire suppression/extinguishing and alarm systems including evaluation of design and integration.

In addition to his knowledge involving fire protection systems, he has expertise in fire dynamics and mechanical systems involving fires within structures and heavy machinery. Mr. Porto's mechanical expertise includes origin and cause investigations related to mechanical and electrical systems, including gas systems, HVAC, plumbing, fireplace and chimneys. He has extensive knowledge of codes and standards including NFPA, ICC, FM Global, and DoD directives.

Mr. Porto has served as a lead mechanical and fire protection engineer in the design of military and private facilities. His experience includes design, testing, inspection, and commissioning for Navy, Air National Guard, Air Force, Army, Customs and Border Protection, State, and private facilities. His design experience also includes the application of performance-based fire, smoke, and egress modeling for approval of alternative life safety means and methods.

Education

MEng, Fire Protection Engineering. University of Maryland, College Park, 2019

BS, Mechanical Engineering & Business Administration, Auburn University, 2011

Licenses & Certifications

- State of Alabama P.E. License 35376-E

Contact Information

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ESi Atlanta

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Areas of Specialization

Fire Protection:

- Fire Sprinkler Systems (Wet, Dry, Pre-action & Deluge)
- Kitchen Fire Suppression Systems (Dry & Wet Chemical)
- High & Low-Expansion Foam Fire Suppression Systems
- Special Hazards (Aircraft Hangars, Data Centers, & Lithium-Ion Battery)
- Distribution & Fulfillment Facilities
- Inspection, Testing, Maintenance & Commissioning
- Fire Pump & Water Distribution Systems
- Smoke Control Systems
- Combustible Dust & Explosion Suppression Systems

Mechanical:

- Chiller Water Systems
- Cooling Towers
- Gas Systems
- DX (Direct Expansion) Systems & VRF (Variable Refrigerant Flow)
- Hydronic & Plumbing Piping
- Heavy Machinery
- Fireplaces & Chimneys

- State of Florida P.E. License 79824
- State of Georgia P.E. License PE039960
- State of Kentucky P.E. License 31194
- State of Louisiana P.E. License 40200
- State of Maine P.E. License 16258
- State of Minnesota P.E. License 59758
- State of Mississippi P.E. License 26743
- State of Missouri P.E. License 2023000154
- State of New Jersey P.E. License 24GE05343400
- State of New York P.E. License 96266
- State of North Carolina P.E. License 43436
- State of Ohio P.E. License 84040
- State of South Carolina P.E. License 32753
- State of Tennessee P.E. License 119915
- State of West Virginia P.E. License 22057
- NCEES ID 1290229
- NAFI Certified Fire and Explosion Investigator (CFEI)
- OSHA 30 Training (Construction Safety)
- ANSUL Foam Systems Service & Maintenance
- SPP Pump Fire Pump Training – NFPA 20

Positions Held

Engineering Systems Inc., Atlanta, Georgia

- Senior Managing Consultant and Director (Fire Sciences), 2025 – Present
- Senior Consultant, 2022–2024

Harrington Group Inc., Duluth, Georgia

- Senior Fire Protection Engineer & Associate Project Manager, 2020–2022

Engineering Systems Inc., Atlanta, Georgia

- Senior Consultant, 2019–2020
- Senior Staff Consultant, 2019–2019

- Staff Consultant, 2017–2018

PT&C | LWG, Atlanta, Georgia

- Fire Protection & Mechanical Project Engineer, 2015–2016

Pond & Company, Norcross, Georgia

- Fire Protection and Mechanical Engineer, 2011–2015

Kaydon Filtration, LaGrange, Georgia

- Full-Time Summer Co-Op, 2008, 2009 & 2010

Professional Affiliations/Honors

National Fire Protection Association

Society of Fire Protection Engineers

International Association of Arson Investigators

National Association of Fire Investigators

Alpharetta Fire Department

- Technical Presenter & Trainer, Fire Alarm Systems

Project Experience

Fire Protection – Aircraft Hangar Suppression System

Conducted an investigation into the unintentional discharge of a high-expansion foam system that damaged multiple aircraft within a MRO hangar. Through on-site testing and laboratory examination of multiple system components supplemented with thorough analysis of the system programming and event history, ESI was able to determine the specific root cause. In addition, ESI provided valuable insight regarding applicable codes and standards outlining the inspection, testing, and maintenance duties for the system assisting our client with matter resolution.

Fire Protection and Mechanical – Lithium-Ion Battery Storage Facility

Performed a detailed assessment of the mechanical and fire protection systems following a fire event that occurred at a power generation and lithium-ion battery energy storage facility. Our investigation identified multiple deficiencies with the fire protection and mechanical systems that prevented early detection of the fire. The assessment included evaluation regarding the installation and commissioning of air sampling and the pre-action fire sprinkler systems. Also, involved evaluation of the HVAC programming and integration with the fire alarm system. Our investigation and analysis revealed multiple deficiencies contributing to fire spread resulting in further damage to the facility.

Fire Protection and Mechanical – Water-hammer Origin and Cause Investigation

ESi was retained to conduct an investigation into significant water hammer events that were occurring at a large e-commerce facility. The facility was under construction and nearing completion. The client required resolution of the water hammer issues prior to handing over the facility to the end user. Through thorough on-site testing and data collection coupled with hydraulic transient modeling of the underground water distribution system, ESi was able to identify the primary contributing factors. Furthermore, ESi assisted in remediation of the issue by providing design directive for adjustment of the fire protection tank and pumping systems and installation of pressure regulating devices within the water distribution system.

Fire Protection – Explosion Protection System Investigation

Performed an engineering investigation into the inadvertent activation of an explosion protection system that had resulted in the loss of valuable product and caused significant delay in production. We investigated claims that improper maintenance and repair by a service contractor contributed to the incident. Based upon examination of the system, analysis of the event history and programming data, and component system testing, ESi was able to identify that the inadvertent activation was the result of improper use by the owner and was not caused by improper maintenance or repair by the service contractor.

Fire Protection – Fire Sprinkler System Failure Investigation

ESi was asked to conduct a loss investigation and determine the root cause of multiple fire sprinkler system failures that had occurred in a high-rise condominium complex. ESi performed multiple site inspections documenting the installation conditions of the fire sprinkler system and the general building construction features. Material examination of the failed system components was also performed. The analysis of data from site inspections and material reviews found that failures were caused by problems with building construction and envelope integrity, rather than incorrect installation of the fire sprinkler systems.

Fire Protection and Mechanical – Kitchen Fire Suppressions System Failure Investigation

Performed an origin and cause investigation into a kitchen fire that resulted in significant damage to the restaurant and business interruption for the owner. Through site inspection and lab examination the cause of the fire was identified to be the result of a recently repaired and serviced gas supply line for a fryer. In addition, ESi conducted on-site testing of the kitchen suppression system and provided technical insight for our client regarding the condition and effectiveness specific to application and protected area.

Fire Protection – CPVC Fire Sprinkler System Failure Investigation and Facility Assessment

Assisted unit owners and building association members of a high-rise condominium complex in the investigation and remediation of multiple CPVC fire sprinkler system failures that had occurred throughout the building over a few years. Our analysis identified that the failures were the result of incompatible fire caulking material coupled with areas of the system that had been improperly installed. Based upon our analysis and expertise, we were able to provide a cost-effective remediation plan for repair of the system while limiting disturbance to the unit owners.

Mechanical – Gas Grill Explosion Investigation

ESi investigated a gas grill explosion that occurred at an apartment complex community space. The explosion caused severe burns to the individual using the grill. Our investigation found that the leak was caused by deteriorated gas supply piping and improper modifications to the system. In addition, we determined that the propane gas was not properly odorized, preventing awareness of the fugitive gas leak prior to the explosion.

Mechanical – Fireplace and Chimney Fire Investigation

Performed an investigation into the cause of a fire that originated at a residential chimney and fireplace assembly. Our investigation identified a deficiency in the installation of the fireplace insert specific to the required clearance to combustible construction. In addition, ESi provided supporting analysis and research based upon the applicable building codes and NFPA standards.

Presentations

“An Ounce of Prevention: Fire Suppression Detection and Fire Spread,” **C.J. Porto**, MLL Chicago Fire Summit, Chicago, IL, July 2024.

“Introduction of Fire Alarm Systems During Emergency Response,” **C.J. Porto**, Alpharetta Fire Department, Alpharetta, Georgia, May 2024.

“Fire Alarm System Basics,” **C.J. Porto**, The Georgia Fire Investigators Association (GFIA), Georgia Public Safety Training Center Cobb County, March 2024.

“Overview of Fire Suppression Systems, Fire Alarm Systems, and Building Code and Life Safety Evaluations,” **C.J. Porto**, Liberty Mutual Fire Investigation Unit, Boston, MA, October 2018.

“Anatomy of a Mega Claim: Too Large to Fail,” **C.J. Porto**, Claims and Litigation Management Southeast Conference, Marietta, GA, November 2017.

“Fire Sprinkler System Failure Investigations,” **C.J. Porto**, National Association of Subrogation Professionals, Virtual, December 2016.

“How to Identify & Adjust Lightning Damage Losses,” **C.J. Porto**, Engle Martin & Associates, Inc., Atlanta, GA, June 2016.

“Fire Alarm and Fire Sprinkler System Failure Investigations,” **C.J. Porto**, PT&C | LWG Educational Event, Duluth, GA, May 2016.

“Fire Suppression Systems: Information Every Property Adjuster Should Know,” **C.J. Porto**, RSUI Group, Atlanta, GA, January 2016.