

Scott E. Dillon

PE, IAAI-CFI, CFEI, CVFI
Principal



Scott Dillon is a Principal for ESi. Scott is a licensed professional engineer with over 25 years of experience in the areas of fire protection engineering, fire and explosion investigation, fire science, building and fire codes, and forensic analysis.

He provides clients with expert consultation regarding fire protection and alarm systems, life safety, fire dynamics, fire testing, and compliance with industry codes and standards. He has an in-depth understanding of origin and cause investigations of fires and explosions and has experience performing investigations involving residences and vehicles as well as commercial, industrial, chemical and agricultural facilities. He is skilled in performing complex investigations and managing large fire and explosion scenes, including those involving fuel gas systems and equipment.

He is proficient in the investigation of incidents involving combustible dusts and combustible metals as well as evaluating combustible dust hazards and performing Dust Hazard Analyses (DHAs) in accordance with National Fire Protection Association (NFPA) standards.

He has extensive experience conducting both standard and non-standard fire tests for regulatory compliance and as part of forensic investigations.

He has performed evaluations of the design, installation, inspection, testing, maintenance and failure of fire and life safety systems, including sprinkler systems, commercial kitchen suppression systems, clean agent systems, and vehicle suppression systems. He also has experience performing fire risk assessments and safety, risk, and hazard evaluations of facilities related to root cause analysis of accidents as well as the prevention of accidents.

Education

MS, Fire Protection Engineering. University of Maryland. 1998

BS, Fire Protection Engineering. University of Maryland. 1996

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Areas of Specialization

- Fire and Explosion Investigations
- Fire Protection Engineering
- Fire Protection and Alarm Systems
- Fire Sprinkler Systems
- Kitchen Fire Suppression Systems
- Complex and Large Fire Investigations
- Fire Testing and Analysis
- Combustible Dust and Combustible Metal Hazards
- Fuel Gas Systems
- Life Safety Systems
- Building & Fire Codes and Standards
- Fire Risk and Hazard Assessments

Licenses & Certifications

- State of Illinois P.E. License 062-060342
- State of Iowa P.E. License 21836
- State of Minnesota P.E. License 51152
- State of Missouri P.E. License 2014014004
- State of Montana P.E. License 51798
- State of Nebraska P.E. License E-17017
- State of North Dakota P.E. License 9200
- State of Vermont P.E. License 018.0103109
- State of Wisconsin P.E. License 43245-6
- IAAI Certified Fire Investigator (IAAI-CFI)
- NAFI Certified Fire and Explosion Investigator (CFEI)
- NAFI Certified Vehicle Fire Investigator (CVFI)
- ASGE Certified Gas Engineer
- OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) Technician (29 CFR 1910.120)

Positions Held

Engineering Systems Inc., Plymouth, Minnesota

- Principal, 2025 – Present
- Senior Managing Consultant and Fire Science Practice Director, 2019 – 2024

Crane Engineering, Plymouth, Minnesota

- Fire Protection Engineer and Fire Sciences Manager, 2013 – 2018

Exponent, Warrenville, Illinois

- Senior Managing Engineer, 2006 – 2013

Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF), Fire Research Laboratory (FRL), Ammendale, Maryland

- Fire Research Engineer, 2000 – 2006

Southwest Research Institute, Department of Fire Technology, San Antonio, Texas

- Fire Protection & Testing Engineer, 1998 – 2000

Professional Affiliations/Honors

International Association of Arson Investigators (IAAI)

- Member since 2002

International Association of Arson Investigators, Minnesota Chapter

- Member since 2013

National Association of Fire Investigators (NAFI)

- Member since 2007

Society of Fire Protection Engineers (SFPE)

- Professional Member since 2006

Society of Fire Protection Engineers, Minnesota Chapter

- Member since 2013

American Society of Gas Engineers

- Member since 2019

National Fire Protection Association (NFPA)

- Member since 1998
 - Member of the Technical Committee on Fire Tests (FIZ-AAA)
 - Member of the Technical Committee on Combustible Metals & Metal Dusts (CMD-CMM)
 - Member of the Technical Committee on Wood and Cellulosic Materials Processing (CMD-WOO)
 - Member of the Technical Committee on Handling and Conveying of Dusts, Vapors, and Gases (CMD-HAP)

Publications

“Explosion from a Smoldering Silo Fire, Process Safety Progress,” R.A. Ogle, **S.E. Dillon**, M.T. Fecke, Vol. 33, No. 1, American Institute of Chemical Engineers, March 2014.

“Investigating Inadvertent Automatic Fire Sprinkler System Discharges,” A.F. Blum, R.T. Long, **S.E. Dillon**, American Society of Civil Engineers (ASCE) 6th Forensic Engineering Congress, San Francisco, CA, October 31-November 3, 2012.

“Analyzing Unsatisfactory Fire Sprinkler Performance,” A.F. Blum, R.T. Long, N.P. Wu, **S.E. Dillon**, American Society of Civil Engineers (ASCE) 6th Forensic Engineering Congress, San Francisco, CA, October 31-November 3, 2012.

“Common Causes of Bus Fires,” S.A. Smyth, **S.E. Dillon**, SAE Technical Paper 2012-01-0989, Society of Automotive Engineers (SAE) World Congress, Detroit, MI, April 24-26, 2012.

- "Flash Fire Involving a Hot Combustible Liquid," R.A. Ogle, J.R. Ramirez, **S.E. Dillon**, American Institute of Chemical Engineers (AIChE) 2012 Spring National Meeting & 14th Annual Process Plant Safety Symposium, Houston, TX, April 1–5, 2012.
- "Facility Siting and Hidden Pathways for Hazardous Gas Migration," R.A. Ogle, **S.E. Dillon**, A. R. Carpenter, Mary Kay O'Connor Process Safety Center, 2011 International Symposium, College Station, TX, October 25–27, 2011.
- "Fatal Explosion Caused By an Intermittently Used Fuel Gas Piping System," R.A. Ogle, **S.E. Dillon**, A.R. Carpenter, American Institute of Chemical Engineers (AIChE) 7th Global Congress on Process Safety, Chicago, IL, March 13–16, 2011.
- "A Review of the Hypotheses of Low-Temperature Self-Ignition of Wood," D.R. Morrison, **S.E. Dillon**, T.H. Hetrick, Proceedings, 2011 Fire and Materials Conference, San Francisco, CA, Interscience Communications Limited, London, January 2011.
- "Lessons Learned From a Thermal Runaway Incident Involving an Organic Peroxide Intermediate During a Power Outage," D.R. Morrison, **S.E. Dillon**, M.T. Fecke, American Institute of Chemical Engineers (AIChE) Proceedings, 2010 Global Process Safety Congress, San Antonio, TX, March 21–24, 2010.
- "Analysis of a Two Decade Old Arson Investigation Using Scientific Fire Investigation Methods: The People Vs. Madison Hobley," D.R. Morrison, R.A. Ogle, Lucas RJ, **S.E. Dillon** presented at the 2009 Fire and Materials Conference, San Francisco, CA, Interscience Communications Limited, London, January 2009.
- "Comparative fire risk of motor vehicle fires: Gasoline vs. Ethanol," **S.E. Dillon**, A.R. Carpenter, R.A. Ogle, American Institute of Chemical Engineers (AIChE), 42nd Annual Loss Prevention Symposium, New Orleans, LA, April 7–9, 2008.
- "Characterization of Candle Flames," A. Hammins, M. Bundy M, **S.E. Dillon**, Journal of Fire Protection Engineering 2005; 15(4):265–286. Society of Fire Protection Engineers, Bethesda, MD, 2005.
- "Ignition Propensity and Heat Flux Profiles of Candle Flames for Fire Investigation," **S.E. Dillon**, A. Hammins, Proceedings, 2003 Fire and Materials Conference, San Francisco, CA, Interscience Communications Limited, London, January 2003.
- "Characterizing the Thermal Environment of the Cone Calorimeter for Analyzing Ignition Data of Materials," M.L. Janssens, **S.E. Dillon**, S. Allwein, Proceedings, 9th Interflam Conference, Edinburgh, Scotland, Interscience Communications Limited, London, pp. 125–135, September 17–19, 2001.
- "A Comparison of Building Code Classifications and Results of Intermediate-Scale Fire Testing of Stored Plastic Commodities," M.L. Janssens, A.S. Garabedian, **S.E. Dillon** presented at the Conference Proceedings, 9th Interflam Conference, Edinburgh, Scotland, Interscience Communications Limited, London, September 17–19, 2001.
- "Using the Cone Calorimeter as a Screening Tool for the NFPA 265 and 286 Room Test Procedures," **S.E. Dillon**, M.L. Janssens, M.M. Hirschler, Proceedings, Fire and Materials Conference, San Francisco, CA, Interscience Communications Limited, London, January 2001.

"Predicting Fire Performance of Interior Finish Materials in the ISO 9705 Room/Corner Test," A.T. Grenier AT, M.L. Janssens, **S.E. Dillon**, Proceedings, Fire and Materials Conference, San Francisco, CA, Interscience Communications Limited, London, January 2001.

"Burning Characteristics of Heptane and Methanol Pool Fires," M.L. Janssens, **S.E. Dillon**, S. Allwein S. Proceedings, Fire and Materials Conference, San Francisco, CA, 2001, Interscience Communications Limited, London, January 2001.

"Balanced Approach to the Fire Performance Evaluation of Interior Finish Materials," M.L. Janssens, **S.E. Dillon**, NISTIR 6588, S.L. Bryner (ed), November 2000, U.S./Japan Government Cooperative Program on Natural Resources (UJNR), Fire Research and Safety, 14th Joint Panel Meeting, Vol. 1, Proceedings, San Antonio, TX, March 1-7, 2000.

"Flame Spread Model Progress: Enhancements and User Interface," M.J. Spearpoint, **S.E. Dillon**. NIST GCR 99-782, National Institute of Standards and Technology, Gaithersburg, MD, November 1999.

"Prediction of ISO 9705 Room/Corner Test Results" Volumes I and II, CG-D-22-99, C.L. Beyler, S.P. Hunt, B.Y. Lattimer, N. Iqbal, C. Lautenberger, N. Dembsey, Barnett J, M.L. Janssens, **S.E. Dillon**, A.T. Grenier. United States Coast Guard, Washington, DC, November 1999.

"Discussion of a Model and Correlation for the ISO 9705 Room-Corner Test," **S.E. Dillon**, J.G. Quintiere, W.H. Kim. Proceedings, Fire Safety Science 6th International Symposium, University of Poitier, France, M. Curtat (ed), International Association for Fire Safety Science, July 5-9, 1999, pp. 1015–1026.

"Wall and Ceiling Heat Flux Measurements in a Room-Corner Test," **S.E. Dillon**, J.G. Quintiere, S. Messa, D. Rosa. NISTIR 6242, October 1998, National Institute of Standards and Technology Annual Conference on Fire Research, Book of Abstracts, Gaithersburg, MD, November 2-5, 1998, pp. 141-142.

"Analysis of the ISO 9705 Room/Corner Test: Simulations, Correlations, and Heat Flux Measurements," **S.E. Dillon**. Master's Thesis, University of Maryland. NIST GCR 98-756, National Institute of Standards and Technology, Gaithersburg, MD, August 1998.

"Determination of Properties and the Prediction of the Energy Release Rate of Materials in the ISO 9705 Room-Corner Test," **S.E. Dillon**, W.H. Kim, J.G. Quintiere. Volume 98, NIST GCR 98-753, National Institute of Standards and Technology, Gaithersburg, MD, July 1998.

"Thermal and Structural Response of Light Steel Frame Wall Assemblies Exposed to Fire Using The SAFIR Finite Element Model," J. Milke, **S.E. Dillon** presented at the National Institute of Standards and Technology, 2nd International Conference on Fire Research and Engineering, Gaithersburg, MD, August 10–15, 1997.