



Derek M. Engel, M.S., CFEI **Engineer - Explosion and Fire Safety**

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Professional Profile

Derek Engel is an engineer within the Explosion and Fire Safety group at GexCon US Inc. He specializes in mechanical, thermal and fluid engineering. Mr. Engel is responsible for fire and explosion related activities as well as safety studies for various industries. Using the world-leading FLACS software, he has conducted studies that include explosion risk analysis and toxic gas distribution. He also has experience using FLACS for cause and origin investigation for accidents in residences and various commercial operations including mining operations and dust/pulp processing facilities. Mr. Engel also has experience in the testing and analysis of HVAC systems including experience in carbon monoxide production and dispersion through such systems.

Mr. Engel has also spent time in Norway developing modeling skills for use with FLACS, focusing on modeling large process facilities both on and off shore, including probabilistic based methods. These skills have been applied to a wide variety of projects including floating production, storage and offloading vessels and LNG liquefaction plants.

Prior to joining GexCon, Mr. Engel had worked in various fields including aerospace, biomedical, natural gas utility, as well as, accident investigation and analysis.

Academic Credentials

B.S., Mechanical Engineering with Physics Minor, Northeastern University, 2008

M.S. Fire Protection Engineering, University of Maryland, 2012

Licenses and Certifications

Certified Fire and Explosion Investigator (CFEI) in accordance with the National Association of Fire Investigators National Certification Board per NFPA 921 Section 13.6.4.2

Engineer in Training in accordance with the Maryland Department of Labor, Licensing and Regulation

Publications and Conference Proceedings

Engel D., Davis S.G., Optimization of Carbon Monoxide Detector Layout in Residential Structures, Proceedings, International Symposium on Fire Investigation Science and Technology, Hyattsville, MD, 2012

Davis S.G., Engel D., Hansen O.R., Case study summary of dryer explosion and venting design Process Safety Progress, December 2010, 29 (4), pg. 345-348

Davis, S.G., Engel, D., Gavelli, F., Hinze, P., and Hansen, O.R., Advanced Methods for Determining the Origin of Vapor Cloud Explosions Case Study: 2006 Danvers Explosion Investigation, Paper presented at ISFI meeting, Hyattsville, USA, Sept 27-29, 2010.

Davis SG, Engel, D, Hansen, OR. Dust or Gas Explosion: Case Study of Dryer Explosion and Design Venting, 6th Global Congress on Process Safety, American Institute of Chemical Engineers Spring

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National Meeting, San Antonio, TX, 2010

Hansen, O.R., Hinze, P., Engel, D. and Davis, S., Using Computational Fluid Dynamics (CFD) For Blast Wave Predictions, Journal of Loss Prevention in the Process Industries 23 (2010) pp. 885-906

Hansen, OR, Hinze, PC, Engel, D, Davis SG. Using CFD for blast wave predictions. Proceedings, 2009 Mary Kay O'Connor Process Safety Center International Symposium, College Station, TX.

Middha, P., Engel, D. & Hansen, O.R. (2009). Can the addition of hydrogen to natural gas reduce the explosion risk? Third International Conference of Hydrogen Safety (ICHS), 16-18 September 2009, Ajaccio, Corsica, France, Paper ID 114

Davis SG, Wise J, Engel D, Somandepalli V. Crimp connector failures: Quantifying copper oxide layer growth. Proceedings, International Symposium on Fire Investigation Science and Technology, Cincinnati, OH, 2008.

Prior Experience

Project Engineer at National Grid PLC, Gas Distribution Department (2008-2009)

Co-Op in Thermal Sciences Department at Exponent's Thermal Science Practice, Exponent – Failure Analysis Associates, Natick, MA (2007)

Co-Op Engineer in CT Medical Division at Analogic Corporation, Sustaining Engineering Department, Peabody, MA (2006)

Co-Op Engineer in Sensors Division at Ametek Aerospace & Defense, Engineering Services Department, Wilmington, MA (2005)

Professional Affiliations

National Association of Fire Investigators—NAFI (member)

Society of Fire Protection Engineering – SFPE (member)