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Engineering & Scientific Consulting

Russell A. Ogle, Ph.D., P.E., CSP, CFEI

Practice Director & Principal Engineer | Thermal Sciences
4580 Weaver Parkway, Suite 100 | Warrenville, IL 60555
(630) 658-7502 tel | rogle@exponent.com

Professional Profile

Dr. Ogle applies his expertise as a chemical engineer to the scientific investigation and prevention of accidents. He specializes in the investigation of complex industrial accidents; catastrophic fires, explosions, and chemical releases; incendiary fires (arson); and combustible dust hazards. Dr. Ogle has investigated hundreds of fires and explosions in industrial, commercial, and residential settings. Drawing from his diverse accident investigation experience, he has provided consulting services in process safety management such as combustible dust hazard analysis, process hazard analysis, quantitative risk assessment, and decision analysis. He has 30 years of industrial experience working in fire, explosion, and chemical safety. His book, *Dust Explosion Dynamics*, is an introduction to the combustion science of dust explosions and fires.

His investigations have involved the performance evaluation and failure analysis of a wide range of chemical processes, industrial equipment, and consumer products. He has investigated accidents involving combustible dust fires and explosions, flammable gases and liquids, thermal runaway and spontaneous ignition, the mixing of incompatible chemicals, and chemical reactivity hazards. Dr. Ogle was awarded one of the first doctorates in the United States based on dust explosion testing using the 20-liter sphere, and he was one of the first investigators to analyze dust explosion data using chemical kinetics and computational fluid dynamics.

In addition to his work in process safety, Dr. Ogle regularly consults with clients on process systems engineering, particularly in the areas of plant performance and process operations. He has extensive experience in evaluating the performance of chemical process plants including the analysis of process flowsheets and production data, the determination of plant capacity, the identification of production bottlenecks, and the investigation of product quality issues. He has also investigated the detection and management of abnormal operating conditions, the impact of operator responses to process upsets, and the potential role of human error.

In addition to his consulting experience, Dr. Ogle has worked in both the defense and environmental industries. In the defense industry, he was responsible for the design, testing, and evaluation of military weapon systems. In the environmental industry, he performed and managed investigations, feasibility studies, and design projects for the cleanup of hazardous waste sites. Drawing on his environmental experience, he has investigated explosions and fires associated with the subsurface migration of natural gas, propane, or landfill gas into buildings.

Academic Credentials & Professional Honors

Ph.D., Chemical Engineering, University of Iowa, 1986

B.S., Chemical Engineering, Purdue University, 1980

William H. Doyle Award for best paper presented at the 2011 AIChE Loss Prevention Symposium: Fatal explosion caused by an intermittently used fuel gas piping system

Licenses and Certifications

Licensed Professional Engineer, Illinois, #062-026870

Licensed Professional Engineer, Texas, #102868

Licensed Professional Engineer, Louisiana, #PE.0037448

Licensed Professional Engineer, Arkansas, #12225

Licensed Professional Engineer, Alabama, #28089E

Certified Safety Professional, #15568

Certified Fire and Explosion Investigator, #20609-11688

40-Hour Training, Process Hazard Analysis (PHA) for Team Leaders

40-Hour OSHA Certification, Hazardous Waste Operations and Emergency Response

10-Hour OSHA Certification, General Industry Standards

Professional Affiliations

Short Course Instructor

- Dust Explosion Dynamics, AIChE 2019 Spring National Meeting, New Orleans, LA, March 31, 2019.
- Dust Explosion Dynamics, AIChE 2018 Spring National Meeting, Houston, TX, April 22, 2018.
- Dust Explosion Dynamics, AIChE 2017 Spring National Meeting, San Antonio, TX, March 26, 2017.

Leadership

- Conference Chair, 32nd Center for Chemical Process Safety (CCPS) International Conference, AIChE 2017 Spring National Meeting, San Antonio, Texas, March 26 - 30, 2017.
- Conference Vice Chair, 31st Center for Chemical Process Safety (CCPS) International Conference, AIChE 2016 Spring National Meeting, Houston, Texas, April 10 - 14, 2016.
- Session Chair, 30th Center for Chemical Process Safety (CCPS) International Conference, AIChE 2015 Spring National Meeting, Austin, Texas, April 26 — 29, 2015.
- Session Chair, 29th Center for Chemical Process Safety (CCPS) International Conference, AIChE 2014 Spring National Meeting, New Orleans, Louisiana, March 30 — April 3, 2014.
- Session Chair, 28th Center for Chemical Process Safety (CCPS) International Conference, AIChE 2013 Spring National Meeting, San Antonio, Texas, April 28 - May 1, 2013.

Membership

- American Chemical Society
- American Institute of Chemical Engineers
- Center for Chemical Process Safety, Technical Steering Committee
- American Society of Safety Engineers
- National Association of Fire Investigators
- National Fire Protection Association

Publications

Hetrick TM, Smyth SA, Ogle RA, Ramirez JC. Evaluating the potential for gasoline geysering from small engine fuel tanks. *ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part B: Mechanical Engineering*, 2017 October; 4(2).

Garner SW, Cox BL, Bobbitt BD, Parrish B, Ogle RA. Managing the chemical reactivity hazards associated with hazardous waste. *Loss Prevention Bulletin*. 2017 Jun 1(255): 15-20.

Dee SJ, Cox BL, Ogle RA. Development of a slip hazard: partially wetted floors and film formation. *Materials Performance and Characterization* 2016; 5(1):272- 287.

Ogle RA. *Dust Explosion Dynamics*. Elsevier, 2016.

Ogle RA, Ramirez JC, Hetrick TM. Domino effect in a catastrophic solid oxidizer fire. *Process Safety Progress* 2015; 34; 167-171.

Ogle RA, Dee SJ, Cox BL. Resolving inherently safer design conflicts with decision analysis and multi-attribute utility theory. *Process Safety and Environmental Protection* 2015; 97:61-69.

Cox BL, Carpenter AR, Ogle RA. Lessons learned from case studies of hazardous waste/chemical reactivity incidents. *Process Safety Progress* 2014; 33:395-398.

Ogle RA, Carpenter AR. Calculating the capacity of chemical plants. *Chemical Engineering Progress* 2014; August: 59-63.

Bishop JA, Fecke M, Ogle RA. Explosion-proof may not be the answer. *Powder and Bulk Solids* 2014; available 7/23/2014 at <http://www.powderbulksolids.com/article%5CExplosion-Proof-May-Not-Be-the-Answer-07-22-2014>.

Ogle RA, Dillon SE, Fecke M. Explosion from a smoldering silo fire. *Process Safety Progress* 2014; 33:94-103.

Ogle RA, Morrison DR, Dee SJ. Using assessments to improve process safety culture. *Process Safety Progress* 2013; 33:148-151.

Ogle RA, Carpenter, AR, Dee SJ. Promoting commitment to process safety. *Process Safety Progress* 2013; 32:319-321.

Dee SJ, Cox, BL, Ogle RA. Using near misses to improve risk management decisions. *Process Safety Progress* 2013; 32:322-327.

Ogle RA, Carpenter AR, Ramirez JC. Risk assessment of a propane storage sphere: Maintain or decommission? *Process Safety Progress* 2013; 32:131-135.

Ogle RA, Ramirez JC, Smyth SA. Calculating the explosion energy of a boiling liquid expanding vapor explosion using exergy analysis. *Process Safety Progress* 2012; 31:51-54.

Ogle RA, Dillon SE, Carpenter AR. Fatal explosion caused by an intermittently used fuel gas piping system. *Process Safety Progress* 2011; 31:360-364.

Ogle RA, Morrison III DR. Hazards of unplanned power outages: implementing appropriate safeguards. *Process Safety Progress* 2011; 30:99-103.

Ramirez JC, Ogle RA, Carpenter AR, Morrison III DR. Preventing overpressure hazards from trapped liquids. *Process Safety Progress* 2010; 29: 313-317.

Ramirez JC, Eby DJ, Bullen DB, Carpenter AR, Ogle RA. Inerted vessels: Avoiding hazards caused by buoyancy. *Journal of Loss Prevention in the Process Industries* 2009; 22:791-794.

Dillon SE, Carpenter AR, Ogle RA. Comparative fire risk of motor vehicle fuels: Gasoline vs. ethanol. *Process Safety Progress* 2009 Jun; 28:171-178.

Su YS, Morrison III DR, Ogle RA. Chemical kinetics of calcium hypochlorite decomposition in aqueous solutions. *Journal of Chemical Health and Safety* 2009 May/June; 16(3):21-25.

Ogle RA, Morrison III DR, Carpenter AR. The relationship between operator error and automation complexity. *Journal of Hazardous Materials* 2008; 159:135-141.

Morrison DR, Ogle RA. Further application of the Semenov model to evaluate the possibility of spontaneous combustion in tumble dryers. *Journal of Fire Science* 2008; 26(2):173-190.

Ogle RA, Morrison III DR, Carpenter AR, Su YS. Missed opportunities in reactive chemical hazard evaluations. *Process Safety Progress* 2006 Mar; 25:2-7.

Morrison III DR, Ogle RA, Viz MJ, Carpenter AR, Su YS. Investigating chemical process accidents: Examples of good practices. *Process Safety Progress* 2006 Mar; 25:71-77.

Ogle RA, Morrison III DR, Viz MJ. Emergency response to a non-collision HAZMAT release from a railcar. *Process Safety Progress* 2005 Jun; 24:81-85.

Ogle RA, Carpenter AR, Morrison III DR. Lessons learned from fire and explosions involving air pollution control systems. *Process Safety Progress* 2005 Jun; 24:120-125.

Ogle RA, Carpenter AR, Morrison III DR. Explosion of a railcar containing toluene diisocyanate waste. *Process Safety Progress* 2005 Jan; 23:316-320.

Ogle RA, Megerle M, Morrison III DR, Carpenter AR. Explosion caused by flashing liquid in a process vessel. *Journal of Hazardous Materials* 2004; 115:133-140.

Ogle RA, Carpenter AR. Toxic gas release caused by the thermal decomposition of a bulk powder blend containing sodium dichloroisocyanurate. *Process Safety Progress* 2003; 22:75-82.

Morrison III DR, Carpenter AR, Ogle. Common causes and corrections for explosions and fires in improperly inerted vessels. *Process Safety Progress* 2002; 21:142-150.

Ogle RA, Morrison III DR. Investigation of an acid spill caused by the failure of an air-operated diaphragm pump. *Process Safety Progress* 2001; 20:41-49

Ogle RA, Carpenter AR. Lessons learned from fires, flash fires and explosions involving hot work. Process Safety Progress 2001; 20:75-81.

Ogle RA. The need for scientific fire investigation. Fire Protection Engineering 2000; Issue No. 8, Fall: 4-8.

Ogle RA. Explosion hazard analysis for an enclosure partially filled with a flammable gas. Process Safety Progress 1999; 18:170-177.

Ogle RA, Schumacher JL. Fire patterns on upholstered furniture: Smoldering vs. flaming combustion. Fire Technology 1998; 34:247-265.

Ogle RA, Schumacher JL. Investigation of an explosion and flash fire in a fixed bed reactor. Process Safety Progress 1998; 17:127-133.

Ogle RA, Schumacher JL. Investigation of a steam explosion in a petroleum product storage tank. Process Safety Progress 1998; 17:171-175.

Ogle RA, Beddow JK, Vetter AF, Chen LD. An investigation of aluminum dust explosions. Combustion Science and Technology 1988; 61:75-99.

Ogle RA, Beddow JK, Vetter AF, Chen LD. Thermal theory of laminar premixed dust flame propagation. Combustion and Flame 1984; 58:77-79.

Presentations and Conference Proceedings

Walters M, Dee SJ, Ogle RA. Two Plants, One Fence Line: Understanding Process Safety Management Responsibilities in Shared Facilities. 15th Global Congress on Process Safety, New Orleans, LA, April 1-3, 2019.

O'Hern S, Jokar, A, Anderson D, Cundy M, Ogle RA. Flammable Refrigerants: Performance Comparison, Safeties and Lessons Learned. 2019 ASHRAE Winter Conference, Atlanta, GA, January 12-16, 2019.

Smyth, SA, Cox, BL, Hetrick, TJ, Ogle, RA. Lessons Learned from a Milling Explosion, 12th International Symposium on Hazards, Prevention and Mitigation of Industrial Explosions (ISHPMIE), Kansas City, KS, August 12-17, 2018.

Stern MC, Dee SJ, Ibarreta, AF, Bishop JA, Ogle RA, Myers TJ. Electrostatic Hazards during Pneumatic Conveying of Combustible Dusts in Flexible Hoses. 14th Global Congress on Process Safety, Orlando, FL, April 22-25, 2018.

Cox BL, Bishop JA, Ogle RA, Traina NA, Prigmore JA. Bonded, Grounded, and Burned to a Crisp: Electrostatic Ignition of Flammable Gases. 14th Global Congress on Process Safety, Orlando, FL, April 22-25, 2018.

Ogle, RA. Plenary Talk: Dust Explosion Dynamics—Combustion Theory as a Bridge to Better Safety Management. 10th Midwest Regional Conference of the American Institute of Chemical Engineers, Chicago, IL, March 13, 2018.

Ogle, RA. Forensic Chemical Engineering. AIChE Student Chapter, Illinois Institute of Technology, Chicago, IL, February 7, 2018.

Stern MC, Sean CO, Ibarreta A, Ogle RA, Myers TJ. Ignitability of Combustible Dust Fueled Flash Fires with Industrial Ignition Sources. 13th Global Congress on Process Safety, San Antonio, TX, March 26-29, 2017.

Cox BL, Dee SJ, Ogle RA. When the Fail Open Valve Fails Closed: Lessons from Investigating the "Impossible". 13th Global Congress on Process Safety, San Antonio, TX, March 26-29, 2017.

Ponchaut NF, Marr KC, Ogle RA. Fire risks from lithium-ion batteries: navigating evolving regulations Battcon International Stationary Battery Conference (BATTCON 2016), Boca Raton, FL, May 10-12, 2016.

Stern MC, Sean CO, Ibarreta A, Ogle R, Myers TJ. Ignitability of combustible dust fueled flash fires with industrial ignition sources. 13th Global Congress on Process Safety, San Antonio, TX, March 26-29, 2017.

Cox BL, Dee SJ, Ogle RA. When the fail open valve fails closed: Lessons from investigating the "impossible". 13th Global Congress on Process Safety, San Antonio, TX, March 26-29, 2017.

Ponchaut NF Marr KC Ogle RA. Fire risks from lithium-ion batteries: Navigating evolving regulations Battcon International Stationary Battery Conference (BATTCON 2016), Boca Raton, FL, May 10-12, 2016.

Dee SJ, Ogle RA. Lessons learned when evaluating the feasibility of emerging green technologies. Midwest Regional Conference of the American Institute of Chemical Engineers, Chicago, IL, March 4, 2016.

Stern MC, Rosen JS, Ibarreta AF, Ogle RA, Myers TJ. Quantification of the thermal hazard from metallic and organic dust flash fires. 18th Annual International Symposium, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, October 27-29, 2015.

Stern MC, Rosen JS, Ibarreta AF, Myers TJ, Ogle RA. Unconfined deflagration testing for the assessment of combustible dust flash fire hazards. 11th Global Congress on Process Safety, Austin, TX, April 28, 2015.

Ogle RA, Cox BL, Dee SJ. Scaling analysis for confined dust flame propagation. 7th Annual AIChE Midwest Regional Conference, Chicago, IL, March 12-13, 2015.

Dee SJ, Cox BL, Ogle RA. Ignition of flammable vapors within a container. 7th Annual AIChE Midwest Regional Conference, Chicago, IL, March 12-13, 2015.

Cox BL, Dee SJ, Carpenter AR, Ogle RA. Hazards inherent to batch processing: Lessons learned from case studies. 7th Annual AIChE Midwest Regional Conference, Chicago, IL, March 12-13, 2015.

Ramirez JC, Smyth SA, Ogle RA. BLEVE energy and aerosol formation: an exergy analysis. ASME 2014 International Mechanical Engineering Conference & Exposition, Montreal, Canada, November, 2014.

Hetrick TM, Smyth SA, Ogle RA, Ramirez JC. Evaluating the potential for flashing discharge from small engine fuel tanks. ASME 2014 International Mechanical Engineering Conference & Exposition, Montreal, Canada, November, 2014.

Ogle RA. Panel discussion: Potential pitfalls and interpretations of workplace safety based upon OSHA guidelines. National Association of Subrogation Professionals Annual Conference, Orlando, FL, November, 2014.

Buehler CS, Haussmann GJ, Ogle RA. Flash fire from a fractionator overflow, 17th Annual International Symposium, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, October 28-30, 2014.

Ogle RA, Carpenter AR. Calculating the capacity of chemical plants. AIChE Chicago Section Meeting, Waterford Banquet and Conference Center, Elmhurst, IL, October 15, 2014.

Ogle RA, Ramirez JC, Hetrick TM. Domino effect in a catastrophic solid oxidizer fire. Presentation at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 10th Global Congress on Process Safety, New Orleans, LA, March 31-April 2, 2014.

Cox BL, Carpenter AR, Ogle RA. Lessons learned from case studies of hazardous waste/chemical reactivity incidents. Presentation at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 10th Global Congress on Process Safety, New Orleans, LA, March 31-April 2, 2014.

Carpenter AR, Ogle RA Cox BL Dee SJ. Inherently safer design: lessons learned about the principle of simplification. Presentation (electronic poster) at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 10th Global Congress on Process Safety, New Orleans, LA, March 31-April 2, 2014.

Dee SJ, Cox BL, Ogle, RA. Process safety in the classroom. Presentation at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 10th Global Congress on Process Safety, New Orleans, LA, March 31-April 2, 2014.

Fecke M, Ogle RA. Combustible dust risk evaluation made simple. BIOMASS Conference and Expo, Orland Florida, March 26th 2014.

Dee SJ, Ogle RA, Morrison DM. Applying game theory to understand process safety culture. 6th Annual AIChE Midwest Regional Conference, University of Illinois at Chicago, Chicago, IL, March 11, 2014.

Cox BL, Dee SJ, Ogle RA. Using near misses to improve risk management decisions. 6th Annual AIChE Midwest Regional Conference, University of Illinois at Chicago, Chicago, IL, March 11, 2014.

Carpenter AR, Ogle RA. Evaluating the process safety culture implications of major incidents: Chemical release and explosion at a plastics plant. 6th Annual AIChE Midwest Regional Conference, University of Illinois at Chicago, Chicago, IL, March 11, 2014.

Shields WJ, Ogle RA. Environmental forensics. Short course given at the Air & Waste Management Association 106th Annual Conference and Exhibition, Chicago, IL, June 24, 2013.

Ogle RA, Morrison DR, Dee SJ. Using assessments to improve process safety culture. Presentation at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 9th Global Congress on Process Safety, San Antonio, TX, April 29-May 1, 2013.

Ogle RA, Dillon SE, Fecke M. Explosion from a smoldering silo fire. Presentation at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 9th Global Congress on Process Safety, San Antonio, TX, April 29-May 1, 2013.

Ogle RA, Carpenter, AR, Dee SJ. Promoting commitment to process safety. Presentation at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 9th Global Congress on Process Safety, San Antonio, TX, April 29-May 1, 2013.

Viz, MJ, Dee SJ, Ogle RA, Cox BL. Hydrogen sulfide exposure from molten sulfur-a forgotten hazard? Presentation at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 9th Global Congress on Process Safety, San Antonio, TX, April 29-May 1, 2013.

Dee SJ, Cox, BL, Ogle RA. Using near misses to improve risk management decisions. Presentation at the American Institute of Chemical Engineers, 2013 Spring National Meeting, 9th Global Congress on Process Safety, San Antonio, TX, April 29-May 1, 2013.

Ogle RA. Responding to chemical disasters. National Association of Subrogation Professionals Annual Conference, Las Vegas, NV, November, 2012.

Ramirez JC, Smyth SA, Ogle RA. Maximum missile velocity from boiling-liquid expanding-vapor explosions (BLEVE) using exergy analysis. ASME 2012 International Mechanical Engineering Conference & Exposition, Houston, TX, November, 2012.

Ogle RA, Smyth SA, Carpenter AR. Investigation of a chlorine gas release caused by the mixing of incompatible chemicals. American Society of Civil Engineers 6th Congress on Forensic Engineering, San Francisco, CA, October, 2012.

Ogle RA, Dillon SE, Ramirez JR. Flash fire involving a hot combustible liquid. Presentation at the American Institute of Chemical Engineers, 2012 Spring National Meeting, 8th Global Congress on Process Safety, Houston, TX, April 1-5, 2012.

Barrera CA, Morrison DR, Ogle RA. Using LOPA to establish SILs for power outage protection. Presentation at the American Institute of Chemical Engineers, 2012 Spring National Meeting, 8th Global Congress on Process Safety, Houston, TX, April 1-5, 2012.

Ramirez, JC, Ogle RA, Smyth SA. Towards an exergy-based explosion energy model for boiling-liquid expanding-vapor explosions. ASME 2011 International Mechanical Engineering Conference & Exposition, Denver, CO, November, 2011.

Martens J, Fecke M, Bishop J, Ogle R. Functional testing for industrial control systems. ASME 2011 International Engineering Congress & Exposition, Denver, CO, November, 2011.

Ogle RA. Scene characterization: chemical hazards. Chemical Plant Explosion Case Study, Institute of Forensic Investigation Annual Conference and Trade Show, Homeland Security Education Center, College of DuPage, Glen Ellyn, IL, October, 2011.

Ogle RA, Dillon SE, Carpenter AR. Facility siting and hidden pathways for hazardous gas migration. 2011 Annual Symposium, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, October 2011.

Ogle RA, Morrison III DR. Burn injury caused by mixing incompatible chemicals with sodium permanganate. Process Safety Progress 2011; 30:148-153.

Ogle RA, McCann DM, and Viz MJ. Sizing safety stock for supply chain risk management. American Institute of Chemical Engineers, 2011 Annual Meeting, Minneapolis, MN, October, 2011.

Ogle RA, Morrison DR, Hart RJ. Thermodynamic models for leak detection of natural gas in salt cavern storage. American Institute of Chemical Engineers, 2011 Annual Meeting, Minneapolis, MN, October, 2011.

Ogle RA, Dillon SE. Combustible dust. 23rd Annual Chicagoland Safety and Health Conference, Northern Illinois University, Naperville, IL, September, 2011.

Ogle RA, Dillon SE, Carpenter AR. Fatal explosion caused by an intermittently-used fuel gas piping system. 7th Global Congress on Process Safety, American Institute of Chemical Engineers, 2011 Spring Meeting, Chicago, IL, March 16, 2011.

Ogle RA, Carpenter AR, Ramirez JC. Risk assessment of a propane storage sphere: Maintain or decommission? 7th Global Congress on Process Safety, American Institute of Chemical Engineers, 2011 Spring Meeting, Chicago, IL, March 16, 2011.

Ogle RA, Ramirez JC, Smyth SA. Calculating the explosion energy of a BLEVE using exergy analysis. 7th Global Congress on Process Safety, American Institute of Chemical Engineers, 2011 Spring Meeting, Chicago, IL, March 16, 2011.

Morrison III DR, Ogle RA. Developing process safety capsules for the chemical engineering classroom. American Institute of Chemical Engineers, 2009 Annual Meeting, Salt Lake City, UT, November 9, 2010.

Ogle RA, Carpenter AR. Facility siting, buffer zones, and community relations. 2010 Annual Symposium, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, October 2010.

Ogle RA, Morrison III DR, Carpenter AR, Ramirez JC. Process safety management of combustible and flammable liquids. The 2010 Annual Meeting of the Venezuelan Society of Safety Executives (SegurShow 2010), Caracas, Venezuela, October 19-21, 2010. (In Spanish).

Ogle RA, Morrison III DR. Burn injury caused by mixing incompatible chemicals with sodium permanganate. American Institute of Chemical Engineers, 2010 Spring National Meeting, 44rd Annual Loss Prevention Symposium, San Antonio, TX, March 22-24, 2010.

Ogle RA, Morrison III DR, Henriksen T. Hazards of unplanned power outages: implementing appropriate safeguards. American Institute of Chemical Engineers, 2010 Spring National Meeting, 25th Center for Chemical Process Safety International Conference, San Antonio, TX, March 22-24, 2010.

Morrison III DR, Ogle RA, Gidaspow D. Internal natural convection effects on the self-heating of solids. American Institute of Chemical Engineers, 2009 Annual Meeting, Nashville, TN, November 13, 2009.

Blum A, Long RT, Ogle R, Morrison III DR, Dillon S. Performing a high-rise life safety analysis: Lessons learned from the Cook County Administration Building fire. 2009 NFPA America's Fire and Security Exposition, Miami Beach, FL July 30, 2009.

Morrison III DR, Martens JD, Ogle RA, Cowells JT. Root cause analysis of a cryogenic refrigeration system explosion. Proceedings, American Institute of Chemical Engineers, 2009 Spring National Meeting, 43rd Annual Loss Prevention Symposium, Tampa, FL, April 26-30, 2009.

Morrison III DR, Martens JD, Ogle RA, Cowells JT. Accident investigation using process control event diagrams. Proceedings, American Institute of Chemical Engineers, 2009 Spring National Meeting, Fifth Global Congress on Process Safety, 24th Annual CCPS International Conference, Tampa, FL, April 26-30, 2009.

Morrison III DR, Ogle RA, Dillon SE, Lucas RJ. Analysis of a two decade old arson investigation using scientific fire investigation methods: The People vs. Madison Hobley. Proceedings, 2009 Fire and Materials Conference, San Francisco, CA, Interscience Communications Limited, London, January 2009.

Ogle RA, Morrison III DR, Carpenter AR, Ramirez JC. Common causes and corrections for explosions and fires in improperly inerted vessels. Proceedings, 2008 Annual Meeting of the Venezuelan Society of Safety Executives (SegurShow 2008), Caracas, Venezuela, October 29-31, 2008. (In Spanish).

Ogle RA, Morrison III DR, Carpenter AR, Ramirez JC. The relationship between automation complexity and operator error. Proceedings, 2008 Annual Meeting of the Venezuelan Society of Safety Executives (SegurShow 2008), Caracas, Venezuela, October 29-31, 2008. (In Spanish).

Morrison III DR, Ogle RA, Ramirez JC. Evaporator upset investigation in a sugar processing plant. Proceedings, 1st First Andean Congress on Safety and Health at Work, Lima, PerU, October 22-24, 2008. (In Spanish).

Morrison III DR, Ogle RA. Evaluating kinetic parameters for solid substances exhibiting complex self-heating behavior. Proceedings, American Institute of Chemical Engineers, 2008 Spring National Meeting, 42nd Annual Loss Prevention Symposium, New Orleans, LA, April 7-9, 2008.

Dillon SE, Carpenter AR, Ogle RA. Comparative fire risk of motor vehicle fuels: Gasoline vs. ethanol. Proceedings, American Institute of Chemical Engineers, 2008 Spring National Meeting, 42nd Annual Loss Prevention Symposium, New Orleans, LA, April 7-9, 2008.

Morrison III DR, Ogle RA, Gidaspow D. A new assessment of the finite Biot number correction to thermal ignition tests. American Institute of Chemical Engineers 2007 Annual Meeting, Salt Lake City, UT, November 8, 2007.

Ogle RA, Carpenter AR. Guidelines for identifying, evaluating, and selecting safety instrumented functions. Process Plant Safety Symposium, 2007 Spring National Meeting, American Institute of Chemical Engineers, Houston, TX, April 2007.

Ogle RA, Morrison III DR, Carpenter AR. The relationship between operator error and automation complexity. 2006 Annual Symposium, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, October 2006.

Morrison III DR, Ogle RA, Viz MJ, Carpenter AR, Su YS. Investigating chemical process accidents: Examples of good practices. Process Plant Safety Symposium, 2005 Spring National Meeting, American Institute of Chemical Engineers, Atlanta, GA, April 11-13, 2005.

Ogle RA, Morrison III DR, Carpenter AR, Su YS. Missed opportunities in reactive chemical hazard evaluations. 39th Annual Loss Prevention Symposium, American Institute of Chemical Engineers Spring National Meeting, April 11-13, 2005.

Ogle RA, Viz MJ, Morrison III DR, Carpenter AR. Bulk transportation of hazardous materials by rail: Lessons learned from non-collision accidents. 2004 Annual Symposium, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, October 2004.

Ogle RA, Morrison III DR, Viz MJ. Emergency response to a non-collision Hazmat release from a railcar. 19th Annual CCPS International Conference, Emergency Planning: Preparedness, Prevention and Response; American Institute of Chemical Engineers, Orlando, FL, June 2004.

Ogle RA, Viz MJ, Carpenter AR. Lessons learned from Hazmat accident investigations. 17th Annual AAR/BOE Hazardous Materials Seminar, Association of American Railroads/Bureau of Explosives, Houston, TX, May 2004.

Ogle RA, Carpenter AR, Morrison III DR. Lessons learned from fire and explosions involving air pollution control systems. 38th Annual Loss Prevention Symposium, American Institute of Chemical Engineers, New Orleans, LA, April 2004.

Morrison III DR, MacDonald M, Ogle RA. Analyzing lint deposition within the residential electric clothes dryer. 2004 International Appliance Technical Conference, Lexington, KY, March 2004.

Morrison III DR, MacDonald M, Ogle RA. Assessing electric dryer lint fire cause scenarios. 2004 International Appliance Technical Conference, Lexington, KY, March 2004.

Ogle RA, Carpenter AR, Morrison III DR. Explosion of a railcar containing toluene diisocyanate waste. 18th International CCPS Conference & Workshop: Managing Chemical Reactivity Hazards and High Energy Release Events, American Institute of Chemical Engineers September 25, 2003.

Ogle RA, Haussmann G, Lucas RJ, Carpenter AR, Morrison III DR. The Scientific investigation of arson

fire. Paper (with accompanying presentation by Russ Ogle), 2003 DRI Fire and Casualty Seminar, Defense Research Institute, Phoenix, AZ, November 2003.

Ogle RA, Megerle MV, Morrison III DR, Carpenter AR. Explosion caused by a flashing liquid in a process vessel. 2003 Annual Symposium, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, October, 2003.

Ogle RA, Carpenter AR. An accident involving the thermal decomposition of a solid mixture containing sodium dichloroisocyanurate. AIChE Spring National Meeting, American Institute of Chemical Engineers, New Orleans, LA, March 2002.

Ogle RA, Carpenter AR. Lessons learned from fires, flash fires and explosions involving hot work. AIChE Spring National Meeting, American Institute of Chemical Engineers, Houston, TX, 2001.

Morrison III DR, Carpenter AR, Ogle RA. Common causes and correction for explosions and fires in improperly inerted vessels. Beyond Regulatory Compliance: Making Safety Second Nature, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, 2001.

Ogle RA. Ethics in forensic chemical engineering. AIChE Spring National Meeting, American Institute of Chemical Engineers, Atlanta, GA, 2000.

Ogle RA, Morrison III DR. Evaluation of accident investigations conducted by regulatory authorities and advisory agencies. Beyond Regulatory Compliance: Making Safety Second Nature, Mary Kay O'Connor Process Safety Center, Texas A&M University, College Station, TX, October 2000.

Ogle RA. Explosion risk analysis for a commercial building near a closed landfill. SFPE Symposium on Risk, Uncertainty and Reliability, Society of Fire Protection Engineers, Baltimore, MD, 1999.

Ogle RA, Smith KM, Strack S. Investigation of a boiler explosion caused by a natural gas detonation. American Society of Mechanical Engineers Pressure Vessels and Piping Conference, Boston, MA, 1999.

Ogle RA, Carpenter AR. Fire patterns on combustible flooring. Society of Fire Protection Engineers, 3rd International Conference on Fire Research and Engineering, Chicago, IL, 1999.

Ogle RA, Schumacher JL. Application of fire testing and modeling in a forensic investigation. Society of Fire Protection Engineers, 2nd International Conference on Fire Research and Engineering, Gaithersburg, MD, 1997.

Ogle RA, Strack S. The role of incident investigation in mechanical integrity programs. American Petroleum Institute, 61st Spring Refining Meeting, Chicago, IL, 1996.

Ogle RA, Brumleve CB, Joyner S. Hydrogeology and remedial action modeling for a superfund site in a glaciated area. Solving Ground Water Problems with Models Conference, National Ground Water Association, Dallas, TX, 1992.

Ogle RA, Peterson EH, Souka OA, Holmquist TJ. The effect of recoil dynamics and soil response on the interior ballistics of a lightweight launcher. 1989 JANNAF Propulsion Meeting, Cleveland, OH, 1989.

Ogle RA. Parametric sensitivity of a mathematical model for closed bomb dust explosions. Chemical and Physical Processes in Combustion, Eastern States Section, The Combustion Institute, Gaithersburg, MD, 1987.

Ogle RA. A new strategy for dust explosion research; a synthesis of combustion theory, experimental design and particle characterization. Ph.D. Dissertation, University of Iowa, 1986.

Ogle RA, Beddow JK, Vetter AF, Chen LD. A new strategy for dust explosion research. 17th Annual Meeting of the Fine Particle Society, San Francisco, CA, 1986.

Ogle RA, Beddow JK, Vetter AF, Chen LD. Dust explosion kinetics. 17th Annual Meeting of the Fine Particle Society, San Francisco, CA, 1986.

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