

2020 MARY KAY O'CONNOR PROCESS SAFETY SYMPOSIUM

Beyond Regulatory Compliance: Making Safety Second Nature
In Association with IChemE
October 20-21, 2020 | Virtual Symposium

DAY 1: TUESDAY, OCTOBER 20 | Virtual Symposium

8:00AM	Welcome & State of the Mary Kay O'Connor Process Safety Center Dr. Stewart Behie		
Welcome Webinar — Session Room D			
8:30AM	Break		
	Track I: Risk/Consequence Analysis & Design Aspects	Track II: Human Factors—People in Action	Track III: Managing Operations and Maintenance
	Session Room A	Session Room B	Session Room C
	Risk Assessment I Session Chair: Rob Bellair	Training/Engagement Session Chair: Mindy Bergman	Modeling and Asset Integrity Session Chair: Jeff Thomas
8:45AM	Importance of Process Safety Time in Design Shanmuga Prasad Kolappan , <i>TechnipFMC</i>	Session Break	RBI Study using Advanced Consequence Assessment for Top-side Equipment on Offshore Platforms Chetan Birajdar , <i>Monaco Engineering Solutions</i>
9:15AM	Limitations of Layers of Protection Analysis (LOPA) in Complicated Process Systems Abdulaziz Alajlan , <i>Saudi Aramco</i>		Indicators of an Immature Mechanical Integrity Program Derek Yelinek , <i>Siemens Process & Safety Consulting</i>
9:45AM	On the Usage of Ontologies for the Automation of HAZOP Studies Johannes I. Single , <i>CSE Center of Safety Excellence</i>	Virtual Reality Process Safety in Counterfactual Thinking Kianna Arthur , <i>Texas A&M University</i>	Remember the à la Mode: Lessons Learned from Ammonia Release at Frozen Foods Warehouse Matthew S. Walters , <i>Exponent, Inc.</i>
10:15AM	Break		
	Risk Assessment II Session Chair: Robert Bellair	Human Performance/Decision Making I Session Chair: Mindy Bergman	Recalling and Learning from Incidents Session Chair: Jeff Thomas
10:30AM	An Efficient and Effective Approach for Performing Cost Benefit Analysis, with Two Case Studies Henrique (Henry) M. Paula , <i>Galvani Risk Consulting, LLC</i>	Is Attentional Shift the Problem (or something else) with Hazard Statement Compliance? An Experimental Investigation Using Eye-Tracking Technology S. Camille Peres , <i>Texas A&M University</i>	Process Related Incidents with Fatality—Trends and Patterns Syeda Zohra Halim , <i>MKOPSC</i>
11:00AM	Does Your Facility Have the Flu? How to Use Bayes Rule to Treat the Problem instead of the Symptom Keith Brumbaugh , <i>aeSolutions</i>	Risk management entails decision making: Does decision making in complex situations come down to somebody's gut feeling? Hans J. Pasman , <i>MKOPSC</i>	Application of Mind Mapping to Organize and Recall Potential Hazards T. Michael O'Connor , <i>MKOPSC</i>
11:30AM	Integrating the PHA and FSS into a Site Risk Assessment Life Cycle Colin Armstrong and Sam Aigen , <i>AcuTech Consulting Group</i>	Decision Making using Human Reliability Analysis Fabio Kazuo Oshiro , <i>Monaco Engineering Solutions</i>	Would a HAZOP, LOPA, or STPA have Prevented Bhopal? Howard Duhon , <i>GATE Energy</i>
12:00PM	Lunch Break		
1:00PM	Keynote Address: "Mission-Oriented Leadership" by Katherine A. Lemos, Ph.D. Chairperson and CEO, U.S. Chemical Safety Board		
	Keynote Webinar — Session Room D		
2:00PM	Break		
	Track I: Risk/Consequence Analysis & Design Aspects	Track II: Human Factors—People in Action	Track III: Managing Operations & Maintenance
	Session Room A	Session Room B	Session Room C
	SIS—LOPA Session Chair: Robin Pitblado	Safety Culture and Leadership Session Chair: Ranjana Mehta	Improving Process Safety with Technological Advances Session Chair: Trish Kerin
2:15PM	A Framework for Automatic SIS Verification in Process Industries using Digital Twin Nitin Roy , <i>California State University, Sacramento</i>	Improving Industry Process Safety Performance through Responsible Collaboration Ryan Wong , <i>ExxonMobil Research and Engineering</i> ; and Shanahan Mondal , <i>CVR Energy</i>	Predictive Process Safety Analytics and IIoT - PSM Plus: The AI+PSM Analytic Framework Michael Marshall , <i>Tratus Group</i>
2:45PM	The use of Bayesian Networks in Functional Safety Paul Gruhn , <i>aeSolutions</i>	How Much Does Safety Culture Change Over Time? Stephanie C. Payne , <i>Texas A&M University</i>	Guidance to Improve the Effectiveness of Process Safety Management Systems in Operating Facilities Syeda Zohra Halim , <i>MKOPSC</i>
3:15PM	My Vision of Future Instrumented Protective Systems Greg Hall , <i>Eastman Chemical Company</i>	Administering a Safety Climate Assessment in a Multicultural Organization: Challenges and Findings Atif Mohammed Ashraf , <i>Texas A&M University</i>	Unified Wall Panel System (UWPS) - A Value Engineering Solution for Protective Construction in the Petroleum Industry Scott Hardesty , <i>Applied Research Associates</i>
3:45PM	Break		
	Relief Systems Session Chair: Robin Pitblado	Procedures Session Chair: Farzan Sasangohar	Exploring NaTech Events and Domino Impacts Session Chair: Trish Kerin
4:00PM	Overlooked Reverse Flow Scenarios Gabriel Martiniano Ribeiro de Andrade, Chris Ng and Derek Wood , <i>Siemens Process & Safety Consulting</i>	A Comparison of Procedure Quality Perceptions, Procedure Utility, Compliance Attitudes, and Deviation Behavior for Digital and Paper Format Procedures Joseph W. Hendricks , <i>Texas A&M University</i>	Protect Process Plants From Climate Change Victor Edwards , <i>VHE Technical Analysis</i>
4:30PM	Failure Under Pressure: Proper Use of Pressure Relief Device Failure Rate Data based on Device Type and Service Todd W. Drennen , <i>Baker Engineering and Risk Consultants (BakerRisk)</i>	Practical Writing Tips To Prevent Human Error When Following Procedures Monica Philippart , <i>Ergonomic Human Factors Solutions</i>	Process Safety Implications in a Changing Environment Trish Kerin , <i>IChemE Safety Centre</i>
5:00PM	Additional Engineering and Documentation to Reduce Pressure Relief Mitigation Cost Gabriel Martiniano Ribeiro de Andrade, and Kartik Maniar , <i>Siemens Process & Safety Consulting</i>	The Impact of Hazard Statement Design in Procedures on Compliance Rates: Some Contradictions to Best (or Common) Practices Joseph W. Hendricks , <i>Texas A&M University</i>	A Critical Evaluation of Industrial Accidents Involving Domino Effect Ravi Kumar Sharma , <i>Indian Institute of Technology - Roorkee</i>

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DAY 2: WEDNESDAY, OCTOBER 21 | Virtual Symposium

8:00AM	Welcome & Mary Kay O'Connor Process Safety Center Awards Dr. Stewart Behie		
	Welcome Webinar — Session Room D		
8:15AM	Break		
	Track I: Risk/Consequence Analysis & Design Aspects	Track II: Human Factors—People in Action	Track V: Explosions and Flammability
	Session Room A	Session Room B	Session Room C
	Risk Assessment III Session Chair: Brenton Drake	Human Performance/Decision Making II Session Chair: Camille Peres	Explosion Modelling Session Chair: Delphine Laboureur
8:30AM	Applying PHA Methodologies such as HAZOP and Bowtie to Assessing Industrial Cybersecurity Risk John Cusimano, Jacob Morella, and Tim Gale, aeSolutions	Preventing Cognitive-Attributed Errors in Safety Critical Systems: A Path Forward Tom Shephard, Wood	The Influence of the Velocity Field on the Stretch Factor and on the Characteristic Length of Wrinkling of Turbulent Premixed Flames Tássia L. S. Quaresma, University of Campinas
9:00AM	Large Hydrocarbon Tank Fires: Modelling of the Geometric and Radiative Characteristics Ravi Kumar Sharma, Indian Institute of Technology - Roorkee	Two Views of Evaluating Procedural Task Performance: A Transition from Safety-I to Safety-II Approach Changwon Son, Texas A&M University	Towards a Comprehensive Model Evaluation Protocol for LNG Hazard Analyses Filippo Gavellia, Blue Engineering and Consulting
9:30AM	Risk assessment of a large chemical complex during the construction phase using Intuitionistic Fuzzy Analytic hierarchy process Suresh G, Bharat Petroleum Corporation, Kochi Refinery	Beyond Human Error: Integration of the Interactive Behavior Triad and Toward a Systems Model Joseph W. Hendricks, Texas A&M University	Beirut: How behaves Ammonium Nitrate Exposed to Fire and How Strong and Damaging is its Explosion? Charline Fouchier, von Karman Institute of Fluid Dynamics
10:00AM	Break		
	Risk Mitigation Session Chair: Brenton Drake	Fatigue and Stress Session Chair: Camille Peres	Explosion Phenomena I Session Chair: Delphine Laboureur
10:15AM	Development of Resilient LNG Facilities Onder Akinci, Daros Consulting	Operator Performance Under Stress: A Neurocentric Virtual Reality Training Approach Ranjana Mehta, Texas A&M University	Flammable Mist Hazards Involving High-Flashpoint Fluids Simon Gant, UK Health and Safety Executive
10:45AM	Development of Risk Mitigation Programs using a Quantitative-Risk-Based Approach Rafael Callejas-Tovar, BakerRisk	Towards a Predictive Fatigue Technology for Oil and Gas Drivers John Kang, Texas A&M University	Measuring Suspended Explosive Dust Concentration from Images Yumeng Zhao, Purdue University
11:15AM	Incorporating Mitigative Safeguards with LOPA Edward Marszal, Kenexis	Validation of the Fatigue Risk Assessment and Management in High-Risk Environments (FRAME) Survey Stefan V. Dumlao, Texas A&M University	The HBT-A Large-Scale Facility for Study of Detonations and Explosions Elaine S. Oran, Texas A&M University
11:45AM	Lunch Break		
	Track I: Risk/Consequence Analysis & Design Aspects	Track IV: Research and Next Generation	Track V: Explosions and Flammability
	Session Room A	Session Room B	Session Room C
Sessions	Consequence Analysis: Gas Release Session Chair: Marisa Pierce	Next Generation Process Safety I Session Chair: Nick Gonzales	Explosion Phenomena II Session Chair: Chris Cloney
12:45PM	Hole Size Matters Jeffrey D. Marx, Quest Consultants Inc.	Identifying contributing factors of pipeline incident from PHMSA database based on NLP and text mining techniques Guanyang Liu, MKOPSC	Development of Flammable Dispersion Quantitative Property-Consequence Relationship Models Using Machine Learning Zeren Jiao, MKOPSC
1:15PM	How Can I Effectively Place My Gas Detectors Jesse Brumbaugh, aeSolutions	Causation analysis of pipeline incidents using artificial neural network (ANN) Pallavi Kumari, MKOPSC	An Unsupervised Model to Predict the Liquid In-cylinder Combustion Risk Ratings of Marine Fuels Chenxi Ji, MKOPSC
1:45PM	Consequence Assessment Considerations for Toxic Natural Gas Dispersion Modeling SreeRaj Nair, Noma Ogbeifun, Chevron - MCBU	Development of Hazard Factor for Engineered Particles Nabila Nazneen, MKOPSC	Fireball and Flame Venting Comparisons Peter A. Diakow, BakerRisk
2:15PM	Break		
2:30PM	Plenary Panel: Integrating Pandemic Preparedness and Response Into Business Continuity and Risk Management Planning Panelists: Gerald Parker, Director, Pandemic and Biosecurity Policy Program, Scowcroft Institute, Bush School of Government and Public Services, Texas A&M University; Paul Thomas , VP Health, Environment, Safety & Security, OxyChem; Malick Diara , Public Health Manager, Workplace Infectious Disease Control Manager, ExxonMobil; Richard Wells , VP Gulf Coast Operations, Dow Chemical Corporation Moderator: Stewart Behie, Interim Director, MKOPSC		
	Panel Webinar — Session Room D		
3:45PM	Break		
	Session Room A	Session Room B	Session Room C
	Reactive Chemicals Session Chair: Marisa Pierce	Next Generation Process Safety II Session Chair: Nick Gonzales	Consequence Analysis: Flammability Session Chair: Chris Cloney
4:00PM	Modelling and Simulation to Predict Energetic Material Properties Kok Hwa Lim, Singapore Institute of Technology	Can a Virtual Reality Application Better Prepare Millennials and the Z-Generation for Working with Systems in the Process Industry? Nir Keren, Iowa State University	Numerical Simulation of Methane-Air DDT in Channels Containing Trace Amounts of Impurities Logan N. Kunka, Texas A&M University
4:30PM	Safety Assessment of Low Temperature Radical Initiators for Proper Storage and Safe Handling Conditions Cuixian (Trisha) Yang, Merck & Co	Process Safety Risk Index Calculation Based on Historian Data Prasad Goteti, Honeywell Process Solutions	The Use of Bent Poles as a Detonation Indicator J. Kelly Thomas, BakerRisk
5:00PM	Analysis of Pressure Behavior during Reaction Runaway and Estimation of Available Depressurization Design Yuto Mizuta, Mitsubishi Chemical	A Brief Review of Intrusion Detection in Process Plants and Advancement of Machine Learning in Process Security Sinijoy P J, Cochin University of Science and Technology	Machine Learning Based Quantitative Prediction Model for Chemical Mixture Flammability Limits Zeren Jiao, MKOPSC