



2020 MARY KAY O'CONNOR PROCESS SAFETY SYMPOSIUM

Beyond Regulatory Compliance: Making Safety Second Nature
In Association with IChemE

DAY 1: TUESDAY, OCTOBER 20 | Virtual Symposium

8:00AM	Welcome & State of the Mary Kay O'Connor Process Safety Center Dr. Stewart Behie		
	Welcome Zoom Link: TBA		
8:30AM	Break		
	Track I: Risk/Consequence Analysis & Design Aspects Moderator:	Track II: Human Factors—People in Action Moderator:	Track III: Managing Operations and Maintenance Moderator:
Link	TBA	TBA	TBA
Sessions	Risk Assessment I	Training/Engagement	Modeling and Asset Integrity
8:45AM	Importance of Process Safety Time in Design Concept Shanmuga Prasad Kolappan, Vijay S*, TechnipFMC	Facilitate to Engage - Accelerative Learning and PHA Kumar (Chris) Israni, ERM	Use of Consequence Modelling for Meticulous Risk Based Inspection Calculations of Offshore Topsides Static Mechanical Equipment Bahram Fada, Chetan Birajdar, and Faraj Rachmat, Monaco Engineering Solutions
9:15AM	Limitations of Layers of Protection Analysis (LOPA) in Complicated Process Systems Arafat Aloqaily, Abdulaziz Alajlan, Saudi Aramco	Participative Approach for Achieving Excellence in Operations by Continuous Risk Reduction Sudhir V Thorwe, Reliance Industries Limited	Indicators of an Immature Mechanical Integrity Program Derek Yelinek, Michelle Moore, Siemens Process & Safety Consulting
9:45AM	Integrated Approach for HAZOP, LOPA and Alarm Rationalization Reviews Khama Matiti, Monaco Engineering Solutions	Using Counterfactual Training to Improve Process Safety: An Innovative Pilot Study Sadia Najneen, Rachel Smallman, Mindy Bergman, Camille Peres, Cassie Lewis, Joseph W. Hendricks, Texas A&M University	Remember the à la Mode: Lessons Learned from Ammonia Release at Frozen Foods Warehouse Sean J. Dee, Russell A. Ogle, Matthew S. Walters, Exponent, Inc.
10:15AM	Break		
Link	TBA	TBA	TBA
Sessions	Risk Assessment II	Human Performance/Decision Making I	Recalling and Learning from Incidents
10:30AM	An Efficient and Effective Approach for Performing Cost Benefit Analysis, with Two Case Studies Henrique M. Paula, Donald K. Lorenzo, Marcelo Costa Orlandia, ABS Group	Is Attentional Shift the Problem (or something else) with Hazard Statement Compliance? An Experimental Investigation Using Eye-Tracking Technology Jonathan Walls, S. Camille Peres, Joseph W. Hendricks, Texas A&M University	Process Related Incidents with Fatality and the Effectiveness of the Process Safety Management Program Syeda Zohra Halim, T. Michael O'Connor, Noor Quddus, and Stewart W. Behie, MKOPSC
11:00AM	Does Your Facility Have the Flu? How to Use Bayes Rule to Treat the Problem instead of the Symptom Keith Brumbaugh, aeSolutions	Has Decision Making in Complex Situations to be by Gut Feeling? Many Methods Exist to Do It Rationally Instead. Hans J. Pasman, William J. Rogers, MKOPSC	Application of Mind Mapping to Classify and Recall Potential Hazards T. Michael O'Connor, Ingrid Ruiz, MKOPSC
11:30AM	Integrating the PHA and Facility Siting into a Site Risk Assessment Life-Cycle Sam Aigen, AcuTech Consulting Group, Inc.	Decision Making using Human Reliability Analysis Fabio Kazuo Oshiro, Fajar Rachmat, Monaco Engineering Solutions	Root Cause of the Deadliest Accident in Human History Howard Duhon, GATE Energy
11:45AM	Lunch Break		
1:00PM	Keynote Speaker: Katherine A. Lemos, Ph.D. Chairperson and CEO, U.S. Chemical Safety Board		
	Keynote Zoom Link: TBA		
2:00PM	Break		
	Track I: Risk/Consequence Analysis & Design Aspects Moderator:	Track II: Human Factors—People in Action Moderator:	Track III: Managing Operations & Maintenance Moderator:
Link	TBA	TBA	TBA
Sessions	Layers of Protection: Relief Systems I	Safety Culture and Leadership	Improving Process Safety with Technological Advances
2:15PM	A Framework for Automatic SIS Verification in Process Industries using Digital Twin Nitin Roy, California State Univ, Sacramento	Improving Industry Process Safety Performance through Responsible Collaboration Mawusi Bridges, AFPM	Predictive Process Safety Analytics and Ilo Michael Marshall, Tratus Group
2:45PM	Additional Engineering and Documentation to Reduce Pressure Relief Mitigation Cost Michelle Moore, Kartik Shrenikkumar Maniar, and Gabriel Gandhi Martiniano Ribeiro de Andrade, Siemens Process & Safety Consulting	How Much Does Safety Culture Change Over Time? Stephanie C. Payne, Stefan V. Dumlaio, Texas A&M University	Challenges of Risk Estimation for Robotics Applications In Chemical process Industry Syeda Zohra Halim, Noor Quddus, and Stewart Behie, MKOPSC
3:15PM	Overpressure Protection by System Design for Flare Mitigation Mukundray Dave, Motiva Enterprises LLC	Administering a Safety Climate Assessment in a Multicultural Organization: Challenges and Findings Atif Mohammed Ashraf, Luc Vechot, Stephanie Payne, and Tomasz Olewski, Texas A&M University	The Insanity We Call Process Safety Syeda Zohra Halim, Noor Quddus, and Stewart Behie, MKOPSC
3:45PM	Break		
	Layers of Protection: Relief Systems II	Procedures	Exploring NaTech Events and Domino Impacts
4:00PM	Overlooked Reverse Flow Scenarios Michelle Moore, Gabriel Andrade, Chris Ng, Derek Wood, Siemens Process & Safety Consulting	The Impact of Hazard Statement Design in Procedures on Compliance Rates: Some Contradictions to Best (or Common) Practices Joseph W. Hendricks, S. Camille Peres, Timothy J. Neville, Cara A. Armstrong, Texas A&M University	Climate Change and Process Safety Victor Edwards, VHE Technical Analysis
4:30PM	Failure Under Pressure: Proper Use of Pressure Relief Device Failure Rate Data based on Device Type and Service Todd W. Drennen, Michael D. Moosemiller, Baker Engineering and Risk Consultants (BakerRisk)	A Comparison of Procedure Quality Perceptions, Procedure Utility, Compliance Attitudes, and Deviation Behavior for Digital and Paper Format Procedures Joseph W. Hendricks, S. Camille Peres, Texas A&M University	Process Safety Implications in a Changing Environment Trish Kerin, IChemE Safety Centre
5:00PM	Analysis of Pressure Behavior during Reaction Runaway and Estimation of Available Depressurization Design Yuto Mizuta, Motohiko Sumino, Youichi Kunito, Mitsubishi Chemical	Practical Writing Tips To Prevent Human Error When Following Procedures Monica Philippart, Ergonomic Human Factors Solutions	A Critical Evaluation of Industrial Accidents Involving Domino Effect Ravi Kumar Sharma, Indian Institute of Technology - Roorkee

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DAY 2: WEDNESDAY, OCTOBER 21 | Virtual Symposium

Welcome & Mary Kay O'Connor Process Safety Center Awards Dr. Stewart Behie			
8:00AM	Welcome Zoom Link: TBA		
8:15AM	Break		
	Track I: Risk/Consequence Analysis & Design Aspects Moderator:	Track II: Human Factors—People in Action Moderator:	Track V: Explosions Moderator:
Link	TBA	TBA	TBA
Sessions	Risk Assessment III	Human Performance/Decision Making II	Explosion Modelling
8:30AM	ALARP Demonstration for Major Hazard Prevention on Subsea Facilities using Quantitative Bow Tie Analysis with LOPA Andy Noorsaman Sommeng, Dwi Karsa Agung Rakhmatullah, Universitas Indonesia	Preventing Cognitive-Attributed Errors in Safety Critical Systems: A Path Forward Tom Shephard, Wood (Retired)	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, Tatiele D. Ferreira, Sávio S. V. Vianna, University of Campinas
9:00AM	Large Hydrocarbon Pool 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, Farzan Sasangohar, S. Camille Peres, Texas A&M University	Towards a Comprehensive Model Evaluation Protocol for LNG Hazard Analyses Filippo Gavellia, Bryant Hendrickson, Babajide Kolade, Rich Kooy, Blue Engineering and Consulting
9:30AM	Elements Driving Effective Risk Management Implementation in Downstream Process Facilities Arafat Aloqaily, Mohammad Mulhim, Saudi Aramco	Beyond Human Error: Integration of the Interactive Behavior Triad and Toward a Systems Model Joseph W. Hendricks, S. Camille Peres, Pranav Kannan, and Lubna Ahmed, Texas A&M University	Numerical Investigation of Accidental Subsea Gas Releases Using CFD Maria Fernanda Oliveira, Sávio Souza Venâncio Vianna, University of Campinas
10:00AM	Break		
Link	TBA	TBA	TBA
Sessions	Risk Mitigation	Fatigue and Stress	Explosion Phenomena I
10:15AM	Development of Resilient LNG Facilities Onder Akinci, Connor Rivard, Andrew Staszak, Michael Stahl, NextDecade LNG	Operator Performance Under Stress: A Neurocentric Virtual Reality Training Approach Yibo Zhu, Ranjana Mehta, Texas A&M University	Flammable Mist Hazards Involving High-Flashpoint Fluids Simon Gant, Anthony Giles, Richard Bettis, Philip Bowen, UK Health and Safety Executive
10:45AM	Development of Risk Mitigation Programs using a Quantitative-Risk-Based Approach Rafael Callejas-Tovar, Karen Vilas, John Dyer, Joshua Bruce-Black, BakerRisk	Towards a Predictive Fatigue Technology for Oil and Gas Drivers John Kang, Abedallah Al Kader, Ran Wei, Ranjana Mehta, Anthony McDonald, Texas A&M University	Sensing Dispersed Dust Concentration using Photograph Kingsly Ambrose, Y. Zhao, Z. Niu, Purdue University
11:15AM	Incorporating Consequence Mitigation into LOPA Edward Marzal, Kenexis	Validation of the Fatigue Risk Assessment and Management in High-Risk Environments (FRAME) Survey Abedallah Al Kader, Stefan V. Dumlao, Ranjana K. Mehta, S. Camille Peres, Texas A&M University	Creation of the HBT, a Large-Scale Facility at TAMU for Study of Detonations and Explosions Elaine S. Oran, Texas A&M University
11:45AM	Lunch Break		
	Track I: Risk/Consequence Analysis & Design Aspects Moderator:	Track IV: Research and Next Generation Moderator:	Track V: Explosions Moderator:
Link	TBA	TBA	TBA
Sessions	Consequence Analysis: Gas Release	Next Generation Process Safety I	Explosion Phenomena II
12:45PM	Hole Size Matters Jeffrey D. Marx, Benjamin R. Ishii, Quest Consultants Inc.	What Will the Future of Instrumented Protective Systems Look Like? John Hall, Eastman Chemical Company	Influence of Inert Dust Dilution on the Ignition Sensitivity of Combustible Dust Emmanuel Kwasi Addai, Stonehouse Process Safety
1:15PM	How Can I Effectively Place My Gas Detectors Jesse Brumbaugh, Vinny Simoes, and Chris Hickling, aeSolutions	An Intelligent Learning Framework for Analysis of Pipeline Incident Investigation Reports Guanyang Liu, Mason Boyd, Pallavi Kumari, Syeda Zohra Halim, and Noor Quddus, MKOPSC	Fireball and Flame Venting Comparisons: Test Data, CFD Simulations and Industry Standard Predictions Peter A. Diakow, J. Kelly Thomas, and Emiliano Vivanco, BakerRisk
1:45PM	Consequence Assessment Considerations for Toxic Natural Gas Dispersion Modeling SreeRaj Nair, Noma Ogbeifun, Chevron - MCBU	Development of Hazard Index for Engineered Nanoparticles Nabila Nazneen, Qingsheng Wang, MKOPSC	
2:15PM	Break		
2:30PM	Plenary Panel: Pandemic Preparedness Neil Ackerman, Oxy USA; Stewart Behie, MKOPSC; TBD; TBD		
	Panel Zoom Link: TBA		
3:45PM	Break		
	Reactive Chemicals	Next Generation Process Safety II	Consequence Analysis: Flammability
4:00PM	Modelling and Simulation to Predict Energetic Material Properties Hongwei Xi, Ho Wee Goh, Kok Hwa Lim, SIT	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, Carolyn R. Kaplan, and Elaine S. Oran, Texas A&M University
4:30PM	Safety Assessment of Low Temperature Radical Initiator for Proper Storage and Safe Handling Conditions Cuixian Yang, Ralph Zhao, Amanda Peterman, Analisse Rosario, Josh Bader, Tom Vickery, Megan Roth, Adam Fine, Merck & Co	A Brief Review of Intrusion Detection in Process Plants and Advancement of Machine Learning in Process Security M. Bhasi, V.R. Renjith, Sinijoy P J, Cochin University of Science and Technology	The Use of Bent Poles as a Detonation Indicator J. Kelly Thomas, W.B. Lowry, B.L. Bingham, BakerRisk
5:00PM	Preparation and Properties of Modified Aluminum Diethylphosphinate Flame Retardant Low-Density Polyethylene Ben Liu, Ou Hongxiang, Xu Jiacheng, Changzhou University	Decision Making on Issuance of Emergency Evacuation Orders using Machine Learning Technique Chuntak Phark, Seungho Jung, Ajou University	Machine Learning Based Quantitative Prediction Models for Mixture Flammability Limits Zeren Jiao, Chenxi Ji, Shuai Yuan, Zhuoran Zhang, and Qingsheng Wang, MKOPSC



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Alternate Presentations (Day and Time TBA)

	Track I: Risk/Consequence Analysis & Design Aspects Moderator:	Track II: Human Factors—People in Action Moderator:	Track III: Managing Ops & Maint Moderator:
Link	TBA	TBA	TBA
Sessions	Risk Assessment III	Human Performance/Decision Making II	Explosion Modelling
	How to Tell the Difference between a QRA and a Risk Screening Benjamin Ishii, Jeff Marx, Quest Consultants	Bayesian Regression To Improve Facility Siting Risk Estimation Peter Hereña, Michael Moosemiller, Baker Engineering and Risk Consultants	Applying PHA Methodologies such as HAZOP and Bowtie to Assessing Industrial Cybersecurity Risk John Cusimano, Jacob Morella, Tim Gale, aeSolutions
	Development of Flammable Dispersion Quantitative Property-Consequence Relationship Models Using Machine Learning Zeren Jiao, Yue Sun, Yizhi Hong, Chenxi Ji, Pingfan Hu and Qingsheng Wang, MKOPSC	The use of Bayesian Networks in Functional Safety Paul Gruhn, aeSolutions (retired)	Risk assessment of a large chemical complex during the construction phase using Intuitionistic Fuzzy Analytic hierarchy process A B Bhasi, V R Renjith, Suresh G, Bharat Petroleum Corporation, Kochi Refinery
		On the Usage of Ontologies for Computer-aided HAZOP Studies Johannes I. Single, Jürgen Schmidt, Jens Denecke, CSE Center of Safety Excellence	Process Safety Risk Index Calculation Based on Historical Data Prasad Goteti, Honeywell Process Solutions
		Unified Wall Panel System (UWPS) - A Value Engineering Solution for Protective Construction in the Petroleum Industry Scott Hardesty, A. Mangold, K. White, Applied Research Associates	
			Track V: Explosions
			An Unsupervised Model to Predict the Flammability-emission Ratings of IMO Compliant Fuels Chenxi Ji, Sam Mannan and Mahmoud El-Halwagi, MKOPSC