Wednesday, March 25, 2026							
Start	Finish	Duration	Room / Presentation Topic & Presenters				
	Moderator		Daniel Stein	Robyn Brooks	Jack Pendlebury	AM: J. Warner; PM: A. Borgstrom	Robyn Kinsley
			Legends IV	Legends II	Legends III	Legends VI	Legends VII
8:00 AM	8:30 AM	30	**Brine Treatment and Sulfate Removal Systems – Design and Technology Considerations**	**Old Plant, New Life: Viable, Safe & Efficient Cell Room Conversions**	**Design Parameters for Falling Film HCl Absorbers**	**Digital Tools for Safer Logistics Operations**	**Safe Operations for Loading and Unloading Chlorine Rail Tank Cars**
Presented By:			Herbert Lee - Chemetics Inc. ; Laura Nalos	Jim Sims - INEOS Electrochemical Solutions	Robert Grooms - CG Thermal	Christian McDermott - Voovio Technologies ; Jack Jenks - Voovio Technologies	Marcel Beekman - Fluor
8:40 AM	9:10 AM	30	**Common Knowledge is not so Common**	**Electrical Safety in Chlor-Alkali Cell Rooms**	**Nitrogen Trichloride Management**	**A Catalytic Route to Low-Cost, Low-Carbon Chlorine from CO_2 and Salts**	**Burning Chlorine Sniff Gas in HCl Synthesis Units – Design Considerations**
Presented By:			Susan Dadd - Covestro	Josh Kelley - De Nora Electrode Technologies	Thomas Vanfleteren - Euro Chlor	Matin Hanifzadeh - Rushnu ; Roxanna Delima - Rushnu	Wayne Moroz - Mersen ; Matt Smoots - Mersen
9:20 AM	9:50 AM	30	**Brine Treatment and Operations**	**Lessons from a Railcar Unloading Hose Chlorine Release**	**Maintenance and Reliability Strategies for Aging Chlor-Alkali Plants**	**Decarbonization Pathways for Chlor-Alkali Plants in Support of Net-Zero Emissions by 2050**	**Development of Tank Car Closure Procedure**
Presented By:			Rafe MacKenzie - Morton Salt, Inc	Jason Wisdom - PVS Chemicals	Randy Pound - Tormod - A Hargrove Company	Mariko Kuroda - ThyssenKrupp-Nucera	Tim Rice - VSP Technologies
9:50 AM	10:20 AM	30	Break				
10:20 AM	10:50 AM	30	**Advances in Surface Filtration for Brine Purification**	**Preventing Hose Failure: A First-Person Account of a CSB-Investigated Incident**	**Double Dry Gas Seals - Zero Emission Solution**	**Turning Chlor-Alkali Byproducts into Profits: Drop-In e-Methanol for Chlorine Plants**	**Refrigerants Fit for Chlorine Service**
Presented By:			Josh Azarchi - W.L. Gore & Associates	Steve Springer - Wehl Consulting Services LLC	Alasdair Conn - AESSEAL ; Alton Jamison - AESSEAL	Marissa Beatty - Turnover Labs	Chuck Allgood - Chemours
11:00 AM	11:30 AM	30	**Understanding the Process of Breakpoint Chlorination**	**First-Person Account of a Chlorine Rail Breach**	**Part 2, Polymer 101: A Closer Look at Fluoropolymer Materials in Pipes and Valves**	**Technical Strategies to Prevent Membrane Cell Damage During Operation**	**Relief Systems in Chlorine, Chlorofluorocarbon Refrigerants, and HCl Service**
Presented By:			Corey Harper - Hawkins, Inc.	Chip Day - Specialized Response Solutions	Josh Goldberg - Asahi/America	Michael Pope - Asahi Kasei America	Rob Walker - Solstice Advanced Materials
11:30 AM	1:00 PM	90	Performance Recognition Lunch				

Yellow = Lessons Learned

Purple = Chlor-Alkali Safety 101

Wednesday, March 25, 2026							
Start	Finish	Duration	Room / Presentation Topic & Presenters				
	Moderator		Daniel Stein	Robyn Brooks	Jack Pendlebury	AM: J. Warner; PM: A. Borgstrom	Robyn Kinsley
			Legends IV	Legends II	Legends III	Legends VI	Legends VII
1:00 PM	1:30 PM	30	**Chlorine and the Formations of Disinfection By-products**	**Life Cycle Assessment of Chlor-Alkali Products**	**Artificial Intelligence (AI) in the Chemical Workplace**	**Assessment of Potential Reactivity of Refrigerant R-513a with Chlorine**	**Transportation Incident Investigation**
Presented By:			Corey Harper - Hawkins Water Treatment Group	Keno Ignace - Eco-quant	Kathy Green - CargoCheck	Ibrahim Abdallah - OxyChem ; Kenneth Kurko - Fauske & Associates, LLC	Lloyd Moore - Kemira Water Solutions, Inc.
1:40 PM	2:10 PM	30	**Black Algae, Cyanobacteria, and Cyanuric Acid: Rethinking Pool Chemistry with Actual Science**	**High-Current Rectifiers in Chlor-Alkali Operations: Safety, Reliability, and Risk Mitigation**	**A Discussion of FRP Piping Condition Assessment**	**End-of-life Chlor-Alkali Membrane Recycling**	**90-ton Chlorine Release Incident Walkthrough**
Presented By:			Rudy Stankowitz - Aquatic Facility Training & Consultants	Matteo Rimoldi - FRIEM America, Inc.	Jeff Eisenman - Maverick Applied Science, Inc.	Stephen Grot - Ion Power, Inc	Paul Linder - Westlake Corporation ; Matt Bond
2:20 PM	2:50 PM	30	**New Streamlined Compliance Process for On-site Chemical Generator Effluent Evaluations (Chlorination Chemicals)**	**The Process Engineering Use and Perspective of PSM**	**Machine Controlled Fusion Welding for High Reliability CPVC and FRP Piping Systems**	**Considerations for the Installation of a Wireless Gas Detection System**	**Emergency Response Desktop Exercise (A Carrier Perspective)**
Presented By:			Blake Stark - NSF International	Monica Hernandez - Formosa Plastics	Shahin Shadlou - RPS Composites ; Chris Heuback - RPS Composites	Bud Dungan - Gastronics, Inc.	Lloyd Moore - Kemira Water Solutions, Inc.
2:50 PM	3:20 PM	30	Break				
3:20 PM	3:50 PM	30	**Hazard Assessment and Mitigation Strategies for Chlorinated Pool Chemicals**	**Enhancing Electrolyzer Longevity Through Safety-Centric Operations in Chlor-Alkali Cell Rooms**	**Accidental Mixing Hazard Recognition & Prevention**	**Hydrogen in Chlorine Management**	**Best Practices for Non-Metallic Flange Assembly**
Presented By:			Karllee Barton - Solenis, LLC in conjunction with the Pool and Hot Tub Alliance	Mariko Kuroda - ThyssenKrupp-Nucera	Phil Burmeister - Olin	Joe Mock - INEOS Electrochemical Solutions	Tim Rice - VSP Technologies
4:00 PM	4:30 PM	30	**Optimization of Brine Treatment Design for Flexible Salt Supply**	**Improving Membrane Cell Electrolysis Through Optimized Brine Softening with Lewatit® Chelating Resins**	**Ton Container Recovery Vessel and Comprehensive Chemical Safety**	**Analytical Integrity from Salt to Hypochlorite**	**Maintaining Readiness: Chlorine Emergency Kit Tips and Care**
Presented By:			David Erickson - Hargrove Engineers and Constructors ; Justin Merritt - Hargrove Engineers and Constructors	Dr. Zhendong Liu - Lanxess Deutschland GmbH	Dan Thompson - TGO Technologies	David Miyamoto - Kuehne Company ; Gabrielle Daniel - Kuehne Company	Matt Bond - Westlake Corporation ; Mike Croke - JCI Jones Chemicals

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
			Legends IV		
8:00 AM	8:30 AM	Brine Treatment and Sulfate Removal Systems – Design and Technology Considerations	Herbert Lee - Chemetics Inc. ; Laura Nalos	The brine system is a critical part of the chlor-alkali plant. It must produce extremely pure, nearly saturated brine on a consistent basis. The long term performance and reliability of the electrolyser depends on a modern, reliable and efficient brine treatment system specifically tailored to each operator's salt supply. This presentation will provide an overview of salt selection, brine treatment process and technology considerations. Pros and cons of different approaches to sulphate control, such as nanofiltration, chemical precipitation and purging will also be presented.	Legends IV
8:40 AM	9:10 AM	Common Knowledge is not so Common	Susan Dadd - Covestro	Knowledge transfer is critical for safe operations. This presentation will give an overview of Covestro's multi-faceted approach to knowledge transfer, which includes a mix of hands-on training and the use of virtual tools.	Legends IV
9:20 AM	9:50 AM	Brine Treatment and Operations	Rafe MacKenzie - Morton Salt, Inc	Join Morton Salt for an in-depth walkthrough on primary brine treatment. The presentation will walk through sodium carbonate (soda ash), sodium hydroxide (caustic), and calcium hydroxide (lime) reactions, and how levels of addition impact reaction speed. Primary brine treatment's function is the precipitation of calcium, magnesium, and select dissolved metal impurities to purify brine prior to polishing filters. Proper brine treatment reduces impurities and improves the settling time and clarification of the brine.	Legends IV
9:50 AM	10:20 AM	Break	Break	Break	Legends IV

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
10:20 AM	10:50 AM	Advances in Surface Filtration for Brine Purification	Josh Azarchi - W.L. Gore & Associates	Surface filtration technology, based on low surface energy expanded PTFE membranes, enables the capture of fine particulates on the filter surface with reliable cake release and minimal fouling. This approach contrasts with depth-based mechanisms, offering higher flux, predictable cleaning, and stable long-term performance. W. L. Gore & Associates has advanced this technology through the GORE® Filter Tube Assembly (GFTA), which integrates ePTFE membranes into a robust tubular configuration. With greater filtration area per unit volume than candle filters and lengths up to 8 ft, GFTA elements reduce vessel size and count while achieving >99% retention at 0.5 µm under demanding chlor-alkali conditions.	Legends IV
11:00 AM	11:30 AM	Understanding the Process of Breakpoint Chlorination	Corey Harper - Hawkins, Inc.	Breakpoint chlorination is a fundamental process in achieving effective oxidation and disinfection in potable water treatment. This presentation will examine the essential chemical reactions and operational parameters that define true breakpoint conditions when applying free chlorine. Key discussion points will include the relationship between chlorine dose and demand, oxidation of reduced inorganic and organic compounds, and the point at which a stable free chlorine residual is established. Attendees will gain a clear understanding of how pH, contact time, and water quality characteristics influence the efficiency of chlorine utilization. Practical emphasis will be placed on dose optimization, field monitoring, and ensuring regulatory compliance while maintaining disinfection efficacy and minimizing byproduct formation.	Legends IV
11:30 AM	1:00 PM	Break	Break	Break	Legends IV

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
1:00 PM	1:30 PM	Chlorine and the Formations of Disinfection By-products	Corey Harper - Hawkins Water Treatment Group	Chlorine is a powerful oxidant used to disinfect drinking water by attacking carbon-bonded organic compounds and microbial cell structures. During this oxidation process, chlorine reacts with naturally occurring organic matter, altering its molecular bonds and forming halogenated by-products such as trihalomethanes (THMs) and Haloacetic acids (HAAs). These reactions, while essential for disinfection, led to critical EPA regulations to balance microbial protection with chemical optimization. This presentation will summarize the oxidation mechanisms, key water quality factors influencing DBP formation, and approaches to minimize by-product generation while maintaining effective disinfection.	Legends IV
1:40 PM	2:10 PM	Black Algae, Cyanobacteria, and Cyanuric Acid: Rethinking Pool Chemistry with Actual Science	Rudy Stankowitz - Aquatic Facility Training & Consultants	Two long-standing pool industry myths, that black algae is a rooted algae rather than cyanobacteria, and that high cyanuric acid can only be corrected by draining, are dismantled through evidence-based research showing that correct identification and repeatable chemical methods reduce damage, waste, and cost, proving that progress comes from testing assumptions instead of repeating them.	Legends IV
2:20 PM	2:50 PM	New Streamlined Compliance Process for On-site Chemical Generator Effluent Evaluations (Chlorination Chemicals)	Blake Stark - NSF International	Certain chlor-alkali chemicals, including sodium chlorite/chlorate, are used as feed stocks to on-site disinfectant generators (e.g. chlorine dioxide generators). Although drinking water regulations specify compliance to NSF/ANSI 60/61 for precursor chemicals and generators (respectively), a defined standard had not existed (prior) for safety evaluation of the effluent chemical itself. Historically, the burden of this evaluation had rested with individual states, water utilities, generator manufacturers, and feedstock chemical suppliers. This presentation will provide an overview of a new voluntary standard for third-party evaluation of chemical generator effluent. We believe that this will provide a streamlined compliance approach for all involved stakeholders.	Legends IV
2:50 PM	3:20 PM	Break	Break	Break	Legends IV

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
3:20 PM	3:50 PM	Hazard Assessment and Mitigation Strategies for Chlorinated Pool Chemicals	Karllee Barton - Solenis, LLC in conjunction with the Pool and Hot Tub Alliance	Chlorinated pool chemicals, including calcium hypochlorite, sodium hypochlorite, and chlorinated isocyanurates, are vital for sanitizing recreational water, safeguarding over a billion swimmers annually by preventing disease in pools and aquatic facilities. This presentation analyzes a decade of incidents involving fire hazards, chlorine gas releases, and chemical incompatibilities throughout an ever-changing supply chain. Critical mitigation strategies for protecting people, facilities, and the environment will be discussed.	Legends IV
4:00 PM	4:30 PM	Optimization of Brine Treatment Design for Flexible Salt Supply	David Erickson - Hargrove Engineers and Constructors ; Justin Merritt - Hargrove Engineers and Constructors	As global supply chains evolve, chlor-alkali producers increasingly face variability in salt feedstock quality. This variability can impact brine purity, cell performance, and overall plant efficiency. Traditional brine treatment systems are often optimized for a single feedstock type, limiting operational flexibility and increasing costs when raw material characteristics change. This presentation outlines strategies for designing brine treatment systems that accommodate diverse feedstocks without compromising reliability or efficiency. Key themes include selecting system architecture, adaptive impurity management, and leveraging real-time monitoring for proactive adjustments. Practical examples will highlight how flexible designs reduce chemical consumption, improve uptime, and extend equipment life.	Legends IV

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
Legends II					
8:00 AM	8:30 AM	Old Plant, New Life: Viable, Safe & Efficient Cell Room Conversions	Jim Sims - INEOS Electrochemical Solutions	As the chlor-alkali industry faces mounting pressure from rising energy costs, evolving regulatory demands, and the continuous need for higher plant reliability, membrane conversion projects are a strategic imperative for aging assets. This presentation explores the multifaceted challenges and practical lessons learned from recent and ongoing conversions. Key topics include the reuse of existing infrastructure, integration of advanced control systems, retraining of operational staff, and executing conversions within live plant environments. Special emphasis is placed on health and safety considerations, particularly the complexities of maintaining safe operations during phased installations. Attendees will gain insights into robust cell room design strategies tailored to site-specific conditions and approaches to future-proofing assets through enhanced automation and reliability.	Legends II
8:40 AM	9:10 AM	Electrical Safety in Chlor-Alkali Cell Rooms	Josh Kelley - De Nora Electrode Technologies	This presentation will focus on the electrical hazards within a chlor-alkali circuit. Referencing Pamphlet 139, it will emphasize circuit equipment design and the precautions that must exist for safe operations.	Legends II
9:20 AM	9:50 AM	Lessons from a Railcar Unloading Hose Chlorine Release	Jason Wisdom - PVS Chemicals	Imagine connecting a flexible hose to unload a railcar at your facility, a core and routine part of your business, only to have it fail unexpectedly for reasons that would not be fully apparent for a while. This presentation will briefly describe the CSB-investigated incident followed by lessons learned from someone who was there.	Legends II
9:50 AM	10:20 AM	Break	Break	Break	Legends II

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
10:20 AM	10:50 AM	Preventing Hose Failure: A First-Person Account of a CSB-Investigated Incident	Steve Springer - Wehl Consulting Services LLC	On January 23, 2010, a hose failure fatally exposed a veteran operator to phosgene. Similar hoses are frequently used in the chlor-alkali industry. This presentation will walk through the incident and corrective actions from someone who investigated the incident.	Legends II
11:00 AM	11:30 AM	First-Person Account of a Chlorine Rail Breach	Chip Day - Specialized Response Solutions	In 2005, a chlorine railcar derailed and breached. Come hear lessons learned from a hazmat responder who was at the scene.	Legends II
11:30 AM	1:00 PM	Break	Break	Break	Legends II

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
1:00 PM	1:30 PM	Life Cycle Assessment of Chlor-Alkali Products	Keno Ignace - Eco-quant	The chemicals industry is the world's largest generator of toxic waste and contributes roughly 5% of global CO_2 emissions, which is why assessing chemicals from a life-cycle perspective is essential. Life-cycle assessment (LCA) is a science-based method that quantifies environmental impacts of a product or process across more than 16 categories, including acidification, climate change, and eco-toxicity. It covers all stages of a products life: raw-material extraction, processing and manufacturing, use, and end-of-life. LCAs reveal both supply-chain hotspots and process-specific hotspots, enabling targeted decarbonization and impact mitigation. By mapping Scope 1–3 emissions alongside other impacts, LCAs guide evidence-based decisions, help prioritize investments, and provide verifiable baselines for tracking reductions.	Legends II
1:40 PM	2:10 PM	High-Current Rectifiers in Chlor-Alkali Operations: Safety, Reliability, and Risk Mitigation	Matteo Rimoldi - FRIEM America, Inc.	This presentation examines the design and safety performance of high-current transformer-rectifier systems used in chlor-alkali production. It highlights how optimized electrical design, thermal management, and harmonic-limiting configurations support reliable, continuous operation under demanding conditions. A major focus is the safe management of shutdown scenarios through coordinated protection architectures, fast current-reduction strategies, functional safety principles, and SIL-aligned controls. The session also covers redundancy, N-1 design margins, and preventive maintenance practices that enhance availability, reduce operational risk, and ensure safe, sustainable chlorine production.	Legends II
2:20 PM	2:50 PM	The Process Engineering Use and Perspective of PSM	Monica Hernandez - Formosa Plastics	Several decades have gone by since the PSM standard was ratified into law during the Clean Air Act Amendments of 1990. And while OSHA's occupational safety has seen an improvement, the process safety management side continues to lag. The current discussion will present the transitioning perspective of an engineering manager regarding the PSM standard and its valuable use for learning, teaching, and planning in a standardized way.	Legends II

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
2:50 PM	3:20 PM	Break	Break	Break	Legends II
3:20 PM	3:50 PM	Enhancing Electrolyzer Longevity Through Safety-Centric Operations in Chlor-Alkali Cell Rooms	Mariko Kuroda - ThyssenKrupp-Nucera	This presentation explores strategies to extend the operational lifespan of electrolyzers in chlor-alkali plants by prioritizing safety as a foundational principle. Recognizing the cell room as a high-risk environment, the approach underscores that being rigorously safety-conscious not only protects personnel and assets but also directly contributes to equipment durability, operational reliability, and cost efficiency. The presentation introduces a multi-layered safety framework focused on electrical integrity and procedural discipline. Key elements include a four-pillar electrical safety system—comprising grounding protocols, insulation monitoring (IMS), busbar symmetry monitoring (BSM), and structured maintenance routines—designed to mitigate risks and prevent premature equipment degradation. Operational best practices such as controlled startup/shutdown sequences and safe long-term storage procedures are emphasized for their role in minimizing corrosion and mechanical stress. Case-based insights highlight the consequences of nickel corrosion and electrical hazards, reinforcing the importance of full disassembly as the only fully secure method for extended shutdowns. The findings advocate for strict adherence to operating manuals and safety guidelines, demonstrating that a safety-first culture not only aligns with regulatory and ethical standards but also yields tangible benefits in equipment longevity and lifecycle cost reduction.	Legends II
4:00 PM	4:30 PM	Improving Membrane Cell Electrolysis Through Optimized Brine Softening with Lewatit® Chelating Resins	Dr. Zhendong Liu - Lanxess Deutschland GmbH	LANXESS shares best practices for producing ultra-pure brine and optimizing the operation of ion exchange resins in chlor-alkali processes. The presentation demonstrates how Lewatit® resins manage hardness and remove barium, as well as greater operational reliability compared to alternative technologies.	Legends II

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
			Legends III		
8:00 AM	8:30 AM	Design Parameters for Falling Film HCl Absorbers	Robert Grooms - CG Thermal	The recovery of HCl from process gas streams usually requires producing at least a 31.5% HCl solution. This is most commonly accomplished with the use of a water-cooled graphite falling film absorber and a packed tail tower. This presentation will discuss the design and operational considerations to properly distribute liquid and gas to each tube for optimum operation, minimum wetting rates, tube sheet layouts for even liquid distribution, and gas mass transfer coefficients based on gas composition and operating pressure.	Legends III
8:40 AM	9:10 AM	Nitrogen Trichloride Management	Thomas Vanfleteren - Euro Chlor	This presentation will discuss nitrogen trichloride - what it is, how its formed, and its hazard profile. Safety management practices to control nitrogen trichloride in chlor-alkali processes will also be discussed.	Legends III
9:20 AM	9:50 AM	Maintenance and Reliability Strategies for Aging Chlor-Alkali Plants	Randy Pound - Tormod - A Hargrove Company	Chlor-alkali plants, operating continuously and producing hazardous chemicals, require robust maintenance and reliability strategies and protocols to ensure safety, compliance, and profitability. These facilities house diverse fixed, rotating, electrical, controls, and instrumentation equipment, making asset management complex and capital-intensive. Effective approaches must address cyclic product demand, manage costs, and optimize investments to maintain consistent performance between scheduled turnarounds. This presentation explores best practices for sustaining equipment reliability, minimizing unplanned downtime, and supporting business objectives. It emphasizes the importance of planning, monitoring, and adapting maintenance programs to meet evolving operational requirements in high-risk manufacturing environments.	Legends III
9:50 AM	10:20 AM	Break	Break	Break	Legends III

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
10:20 AM	10:50 AM	Double Dry Gas Seals - Zero Emission Solution	Alasdair Conn - AESSEAL ; Alton Jamison - AESSEAL	The presentation aims to provide an overview of how double dry gas seals can be utilized to replace existing tandem seals, which can emit harmful gases to the atmosphere. The presentation will explore the pre-existing operational issues surrounding Double Dry Gas Seals, how these issues may be mitigated and how their use can align with current and future environmental legislation. Attendees will gain an insight into the least common Dry Gas Seal design and an understanding of how it's use can assist with emission reduction with minimal changes to existing equipment & operations.	Legends III
11:00 AM	11:30 AM	Part 2, Polymer 101: A Closer Look at Fluoropolymer Materials in Pipes and Valves	Josh Goldberg - Asahi/America	In this second presentation of the Polymer 101 Series, we will explore the differences between thermoplastics like PVDF, ECTFE, and PTFE as well as take a look at thermoset materials like FKM and FFKM for piping and valve applications.. There will also be a discussion on the difference between EPA PFAS materials of concern vs. fluoropolymers like PVDF, ECTFE, and PTFE. Finally, real-world applications of these materials will be explored.	Legends III
11:30 AM	1:00 PM	Break	Break	Break	Legends III

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
1:00 PM	1:30 PM	Artificial Intelligence (AI) in the Chemical Workplace	Kathy Green - CargoCheck	Artificial intelligence (AI) is increasingly being considered and/or implemented across the chemical workplace. While AI-enabled tools offer meaningful benefits, those benefits depend on a clear understanding of what AI can and cannot do in safety-critical and regulated environments. This presentation provides practical guidance on how chemical organizations should evaluate, deploy, and continuously govern AI-enabled solutions, with a focus on risk, accountability, and appropriate human oversight.	Legends III
1:40 PM	2:10 PM	A Discussion of FRP Piping Condition Assessment	Jeff Eisenman - Maverick Applied Science, Inc.	FRP, “Fiberglass Reinforced Plastic”, piping is essential for many chlor-alkali services with some services being straight FRP while others may be dual laminate. The nature of FRP laminate construction and bonding is unique and more complex than other piping materials of construction. For this reason, condition assessment of these systems can be difficult and complicated. A thorough understanding of fabrication methods, construction, and material behavior are important to make reliable condition assessments for FRP and dual laminate piping. This presentation will discuss sites assessments, insight on pipe support arrangement, and inspections methods necessary to provide condition assessments of FRP piping. The key is to collect and assemble multiple data points from different inspection methods and techniques to develop accurate condition assessments so that operators and unit managers can make informed decisions on system reliability and maintenance.	Legends III

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
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1:40 PM	2:10 PM	A Discussion of FRP Piping Condition Assessment	Jeff Eisenman - Maverick Applied Science, Inc.	FRP, "Fiberglass Reinforced Plastic", piping is essential for many chlor-alkali services with some services being straight FRP while others may be dual laminate. The nature of FRP laminate construction and bonding is unique and more complex than other piping materials of construction. For this reason, condition assessment of these systems can be difficult and complicated. A thorough understanding of fabrication methods, construction, and material behavior are important to make reliable condition assessments for FRP and dual laminate piping. This presentation will discuss sites assessments, insight on pipe support arrangement, and inspections methods necessary to provide condition assessments of FRP piping. The key is to collect and assemble multiple data points from different inspection methods and techniques to develop accurate condition assessments so that operators and unit managers can make informed decisions on system reliability and maintenance.	Legends III

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
3:20 PM	3:50 PM	Accidental Mixing Hazard Recognition & Prevention	Phil Burmeister - Olin	This presentation will review common components leading to accidental mixing events during chemical delivery and handling and will also address effective prevention strategies.	Legends III
4:00 PM	4:30 PM	Ton Container Recovery Vessel and Comprehensive Chemical Safety	Dan Thompson - TGO Technologies	This presentation will focus on the proper handling of chlorine containers and safely placing them into and out of service. This will include the properties of chlorine that control its release behavior and proper actions and equipment to remediate those releases. The alternative encapsulation technologies currently available to help prevent container releases will be covered as well as a newly available ton container recover vessel that offers the same desirable features that are currently only available for cylinders.	Legends III

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
			Legends VI		
8:00 AM	8:30 AM	Digital Tools for Safer Logistics Operations	Christian McDermott - Voovio Technologies ; Jack Jenks - Voovio Technologies	Truck and railcar loading operations remain a leading source of non-accidental releases (NARs) and procedural deviations in chemical and refining facilities. This presentation examines how digital, procedure-centric tools are being applied to standardize loading tasks, enforce critical steps, and improve operator execution in high-risk logistics operations. Attendees will learn how these tools support rapid onboarding and requalification, reduce variability across shifts, decrease reliance on limited subject-matter experts, and mitigate human error during abnormal and routine conditions. Case study data demonstrates measurable improvements, including 65% faster onboarding, freeing up scarce SME time by up to 75%, and sustained reductions in deviations linked to incidents and compliance events.	Legends VI
8:40 AM	9:10 AM	A Catalytic Route to Low-Cost, Low-Carbon Chlorine from CO_2 and Salts	Matin Hanifzadeh - Rushnu ; Roxanna Delima - Rushnu	Rushnu's CarbonCatalyze™ technology uses carbon dioxide as a feedstock, combining it with salts to produce carbonate minerals and chlorine-based chemicals. The process operates in two catalytic steps: (1) capture and mineralization, where CO_2 reacts with salts via Catalyst 1 to form stable carbonates, and (2) catalyst regeneration, where Catalyst 1 is regenerated by Catalyst 2, releasing Cl_2 or sodium hypochlorite. This approach achieves high CO_2 utilization efficiency and provides a carbon-negative pathway for chlorine production, with demonstrated reductions of >50% in cost, ~75% in electricity use, and ~96% in emissions compared to electrolysis.	Legends VI

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
9:20 AM	9:50 AM	Decarbonization Pathways for Chlor-Alkali Plants in Support of Net-Zero Emissions by 2050	Mariko Kuroda - ThyssenKrupp-Nucera	This presentation examines decarbonization strategies for chlor-alkali plants within the broader context of achieving net-zero greenhouse gas emissions by 2050. Chlor-alkali production is energy-intensive, with a significant portion of its emissions stemming from indirect electricity use. The analysis highlights the chemical sector's contribution to U.S. industrial emissions and explores actionable pathways to reduce its carbon footprint. Through case studies from North American facilities, the presentation demonstrates how upgrading legacy electrolyzer components to newer, more efficient generations has resulted in measurable declines in energy use and associated CO_2 emissions. The presentation also identifies further opportunities for potential decarbonization in chlor-alkali plants by upgrading balance electrolyzer elements in operation and projecting significant potential savings in energy and greenhouse emissions. The findings underscore that targeted technology upgrades not only support environmental goals but also enhance operational efficiency, product quality, and plant reliability. The presentation concludes by advocating for continued innovation and collaboration to meet future sustainability challenges in the chlor-alkali sector.	Legends VI
9:50 AM	10:20 AM	Break	Break	Break	Legends VI

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
10:20 AM	10:50 AM	Turning Chlor-Alkali Byproducts into Profits: Drop-In e-Methanol for Chlorine Plants	Marissa Beatty - Turnover Labs	Chlorine plants often vent or flare valuable byproducts like CO_2 from process streams and hydrogen from chlor-alkali operations. Turnover Labs offers a practical “drop-in” solution to convert those byproducts into e-methanol, a low-carbon fuel in high demand. By directly integrating at existing facilities, we enable chlorine producers to improve resource efficiency, reduce emissions, and unlock new revenue streams without major infrastructure changes. Our robust, energy efficient systems are designed to tolerate impurities and dilution common in industrial gas streams, enabling cost-effective deployment at scale. This talk will highlight pathways for chlorine producers to convert waste liabilities into profitable, sustainable products.	Legends VI
11:00 AM	11:30 AM	Technical Strategies to Prevent Membrane Cell Damage During Operation	Michael Pope - Asahi Kasei America	As the only global supplier of both electrolyzers and ion exchange membranes, Asahi Kasei offers a unique perspective on operational challenges faced by Chlor-Alkali plants. This presentation focuses on strategies to mitigate blackout related risks, including salt blistering, membrane protonation, and cathode corrosion. We will also examine how current density influences membrane life and explore additional methods to prevent membrane damage. By combining insights from both technologies, we aim to support more stable, long-term membrane performance while helping reduce operational costs and ensuring high performance.	Legends VI
11:30 AM	1:00 PM	Break	Break	Break	Legends VI

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
1:00 PM	1:30 PM	Assessment of Potential Reactivity of Refrigerant R-513a with Chlorine	Ibrahim Abdallah - OxyChem ; Kenneth Kurko - Fauske & Associates, LLC	The American Innovation and Manufacturing (AIM) Act mandates a phasedown of high global warming potential (GWP) hydrofluorocarbons (HFCs), driving the transition to lower-GWP alternatives. Refrigerant R-513A is a fourth-generation refrigerant. However, as the chlorine processing industry moves away from accepted and widely used refrigerants, potential hazards associated with chemical reactivity, particularly interactions with chlorine must not be overlooked. This presentation highlights critical safety considerations as a sequel to a Dow Chemical Industry Chlorine Institute presentation three decades ago, when our industry was shifting away from Chlorofluorocarbons (CFC's) to R-22 and R-134a. We carried out similar experiments with chlorine and R-134a.	Legends VI
1:40 PM	2:10 PM	End-of-life Chlor-Alkali Membrane Recycling	Stephen Grot - Ion Power, Inc	In this presentation we will demonstrate the significant value contained in end-of-life Chlor-Alkali membranes. In contrast to the recycling challenges of many low value hydrocarbon "plastics" ; fluoropolymers have high value, and excellent stability thus are good candidates for recovery and second use applications. In this presentation we will describe the process that we developed to recover the ionomer component of these used membranes and convert them to commercial products. This work was supported under Department of Energy SBIR Phase II Award number DE-SC0023826.	Legends VI
2:20 PM	2:50 PM	Considerations for the Installation of a Wireless Gas Detection System	Bud Dungan - Gastronics, Inc.	Wireless gas detection systems have emerged as critical tools for ensuring safety and efficiency in various industrial and environmental settings. This presentation provides an overview of the technology, applications, and considerations for installation of a wireless gas detection system. Furthermore, these systems offer flexibility in deployment, as they eliminate the need for extensive wiring and infrastructure, making them suitable for both temporary and permanent installations.	Legends VI
2:50 PM	3:20 PM	Break	Break	Break	Legends VI

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
3:20 PM	3:50 PM	Hydrogen in Chlorine Management	Joe Mock - INEOS Electrochemical Solutions	Hydrogen is an ever-present risk in chlor-alkali operations and understanding how it behaves inside the electrolyzer is essential for safe and reliable operation. This presentation will delve into hydrogen formation, how it transfers across the membrane, and why this critically matters. We will compare hydrogen levels in chlorine from sodium and potassium electrolysis, examine what happens during start-up versus steady state operation, and highlight how good design of process controls – automation, interlocks, and VMS – can make all the difference. We will also discuss the importance of reliable analysis, such as gas chromatography, in keeping operations safe. Finally, a look back at past hydrogen-related incidents will provide valuable lessons and reinforce why careful control and monitoring remain critical for every chlor-alkali facility.	Legends VI
4:00 PM	4:30 PM	Analytical Integrity from Salt to Hypochlorite	David Miyamoto - Kuehne Company ; Gabrielle Daniel - Kuehne Company	The chlor-alkali industry has been a cornerstone of chemical manufacturing for over a century, providing the fundamental building blocks for countless products essential to our modern world. While the process itself is well-established, its success hinges on extreme efficiency to remain competitive, requiring a deep commitment to using data. This presentation will take you on a journey, exploring the entire lifecycle of the chlor-alkali process—from the sourcing of salt to the final products. We delve into the analytical methods that provide the necessary data, ensuring the process operates in the most economical, efficient, and quality-driven manner possible.	Legends VI

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
			Legends VII		
8:00 AM	8:30 AM	Safe Operations for Loading and Unloading Chlorine Rail Tank Cars	Marcel Beekman - Fluor	This presentation explores the history and safety of chlorine rail transport in the Netherlands. Beginning in the 1920s, chlorine was shipped primarily for water treatment and later for PVC production, peaking at 600 metric tons per trip. Public opposition and risk concerns led to a 2006 policy shift toward local production. We will review technical and operational safety measures for Rail Tank Cars (RTCs), including design standards, loading protocols, and emergency response, highlighting lessons for risk mitigation and industry trends.	Legends VII
8:40 AM	9:10 AM	Burning Chlorine Sniff Gas in HCl Synthesis Units – Design Considerations	Wayne Moroz - Mersen ; Matt Smoots - Mersen	There are multiple ways to burn chlorine sniff gas in HCl synthesis units. The different methods must be analyzed to ensure that the most suitable process controls and process safety is incorporated for each application. Mersen has several sniff gas burners in operation and this expertise will be discussed.	Legends VII
9:20 AM	9:50 AM	Development of Tank Car Closure Procedure	Tim Rice - VSP Technologies	With the upcoming requirements surrounding tank car closure, it's important to ensure that loading/unloading facilities develop effective procedures to ensure a cars remain leak-free while in transit. This presentation will cover best practices for tank car flange assembly on various connection types. In addition, this will cover guidelines for taking an engineered approved to fluid sealing and the development of effective closure instructions & procedures.	Legends VII
9:50 AM	10:20 AM	Break	Break	Break	Legends VII

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
10:20 AM	10:50 AM	Refrigerants Fit for Chlorine Service	Chuck Allgood - Chemours	This presentation will focus on current and new refrigerants available for chlorine service, with an emphasis on the hazard profiles of each.	Legends VII
11:00 AM	11:30 AM	Relief Systems in Chlorine, Chlorofluorocarbon Refrigerants, and HCl Service	Rob Walker - Solstice Advanced Materials	Designing relief systems for chlorine, chlorofluorocarbon refrigerant, and HCl service provides unique challenges that require the focus of experienced process engineers. This presentation will provide a technical review of relief systems and provide a detailed description of the additional challenges faced with designing systems for Cl's mission chemicals. While adequately preventing overpressure especially for API coded vessels, these systems need to address corrosion and potentially unsafe discharges.	Legends VII
11:30 AM	1:00 PM	Break	Break	Break	Legends VII

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
1:00 PM	1:30 PM	Transportation Incident Investigation	Lloyd Moore - Kemira Water Solutions, Inc.	An in-depth look at a transportation incident, performing a deep dive into the root cause, establishing corrective actions, and verifying effectiveness of the actions for incident prevention.	Legends VII
1:40 PM	2:10 PM	90-ton Chlorine Release Incident Walkthrough	Paul Linder - Westlake Corporation ; Matt Bond	On August 27, 2016, a railcar weld catastrophically failed due to a recent improper weld procedure. This presentation will briefly walk through this NTSB-investigated incident and discuss emergency response and follow up actions from two presenters where were heavily involved in the recovery.	Legends VII
2:20 PM	2:50 PM	Emergency Response Desktop Exercise (A Carrier Perspective)	Lloyd Moore - Kemira Water Solutions, Inc.	Let's take a look at an annual desktop exercise scenario for a hydrochloric acid cargo tank spill.	Legends VII
2:50 PM	3:20 PM	Break	Break	Break	Legends VII

Wednesday, March 25, 2026

List By Room

Room ↓

Start Time	End Time	Presentation	Presenter and Company	Abstract	
3:20 PM	3:50 PM	Best Practices for Non-Metallic Flange Assembly	Tim Rice - VSP Technologies	Non-metallic flanges are commonly used in corrosive services for both fixed plant and transportation applications. The materials used for these flanges require special considerations for gasket selection and flange assembly that are critical to prevent in-service leaks. This presentation will cover common non-metallic flange materials, their usages, and special considerations that must be addressed during assembly.	Legends VII
4:00 PM	4:30 PM	Maintaining Readiness: Chlorine Emergency Kit Tips and Care	Matt Bond - Westlake Corporation ; Mike Croke - JCI Jones Chemicals	One of the highest probabilities of a release incident at a site is in the direct connections to the storage tank itself. The sheer number of connections due to the valves and PSV makes this area a primary area of concern in preventing releases. These connections typically also occur at the highest volume of chlorine on site as the tank is the source for chlorine provided to the process. An option to fully contain these connections to prevent environmental releases is available and allows the owner to manage any contained chlorine according to their site capabilities.	Legends VII