4th Annual

THE CONNECTED WORKER ENERGY

How Chevron and Chevron Phillips Chemical are Prioritizing Worker Safety in Remote and Hazardous Environments

With insights from

Ted Stoves, Product Owner, Connected Worker Group at **Chevron**

Mason Jones, Manufacturing Digital Manager at **Chevron Phillips Chemical**

As the energy sector continues to grow and expand operations, prioritizing worker safety has become more crucial than ever. Technological advancements present the sector with new and innovative ways to connect with and support its workforce. While these technologies offer substantial benefits, decision-makers still have a long way to go in terms of successful implementation and integration.

This case study highlights the trends and technologies reshaping the landscape of worker safety in remote, hazardous, and high-risk environments. From connected worker solutions, and AI-powered analytics to real-time location services (RTLS) and digitized workflows, Connected Worker technology is not only transforming how safety is managed, but also creating opportunities to help companies improve productivity, upskill their workforce, and ultimately, increase profitability.

Ahead of the upcoming **Connected Worker: Energy Summit** in **Houston**, from **March 18-20**, **2025**, we spoke with event speakers **Ted Stoves**, Product Owner, Connected Worker Group at **Chevron**, and **Mason Jones**, Manufacturing Digital Manager at **Chevron Phillips Chemical**, about the implementation of connected worker safety technologies within their operations.

Read as they share exclusive insights into the impact of real-time location services (RTLS) in improving field worker safety at Chevron, and how mobile applications have transformed the way field workers interact with safety systems at Chevron Phillips Chemical.

The Trends

Maryam Irfan, Connected Worker Series:

What are the most significant trends you see shaping the future of worker safety in industries operating in remote or high-risk environments?

Ted Stoves, Chevron: The most significant trend is the automation of facilities, reducing the need for human involvement in physical and mechanical interactions as much as possible. Our primary objective is workforce safety, and digitizing data flows from users to the cloud has enabled us to track worker metrics. This should help reduce incidents and injuries while simultaneously increasing productivity by minimizing product outages. However, this doesn't come without challenges, and we use anonymized data for trend analysis to ensure compliance with data privacy regulations.

Mason Jones, CP Chem: The generation now entering the workforce is accustomed to information being available at their fingertips. In the near term, areas that support data availability and data quality will be the most prevalent. These include access to asset information in the field, electronic Safe Operating Procedures (SOPs), and leveraging AI/ML to interpret and consolidate large amounts of operational data into easily digestible insights. This will help predict future equipment failures, prescribe solutions for upcoming issues, and identify new ways to optimize existing processes so we can operate more sustainably.

Scaling Real-Time Location Services and Connected Safety at Chevron

Maryam Irfan, Connected Worker Series:

How is Chevron leveraging connected safety technologies to enhance worker protection in remote and hazardous environments? Can you share any specific examples of how these technologies have improved safety or prevented incidents?

Ted Stoves: We are piloting several real-time location services and lone worker protection 'man-down' solutions that capture data on worker safety and operational environments. Our aim is to digitize personnel safety tracking for several operational use cases, including emergency mustering, plant entry and exit, geofencing, hazardous areas, and integrating a user and operations center alert system. Additionally, we send anonymized workforce safety metrics for trend analysis to identify potential risks and implement preventive measures to protect workers.

In addition, emergency notification features alert users if there is an imminent danger to their well-being, whether from environmental phenomena or industrial activity.

Maryam Irfan, Connected Worker Series:

Can you talk about the impact of real-time location services (RTLS) in improving field worker safety, productivity, and emergency response?

Ted Stoves: We are still in the process of bringing these solutions into production, but following field evaluations, we've determined that we can reduce personnel accountability in an emergency, from several hours, to just a few minutes. In fact, during a triggered emergency muster, this accountability is performed in real time. Simultaneously, relevant external services, such as fire and ambulance, as well as localized resources like security and operations teams, are notified and provided with alerts and notifications.

Maryam Irfan, Connected Worker Series:

What role does predictive analytics or artificial intelligence play in Chevron's approach to worker safety and hazard prevention?

Ted Stoves: Currently, we are not using predictive analytics or AI for worker safety or hazard prevention efforts. However, we have recently launched an enterprise-level generative AI program that we integrate into our evolving solutions. One example is leveraging generative AI with guides for operational troubleshooting, drawing from a localized repository containing hundreds of thousands of documents related to the facility's systems.

Maryam Irfan, Connected Worker Series:

How do you approach scaling connected safety and real-time location services across various sites with different risk profiles?

Ted Stoves: Our solutions are highly customizable to accommodate the size and range of our global facilities. This allows us to add or remove features as needed and ensure that specific operational requirements are met based on local needs. Not all of our facilities have hazardous area requirements, and they vary in size from a few hundred square meters to several thousand square kilometres. Therefore, it is important to ensure that every deployment is neither over nor under-engineered to optimize deployment costs.

Additionally, we ensure that the support and maintenance of these systems are appropriately scaled to fit each facility. Currently, we are focusing on several small to medium-sized refineries to evaluate the performance of our solutions. Over time, we will establish a framework of low, medium, and high-capacity deployment portfolios.

> **Our solutions are highly customizable to accommodate the size and range of our global facilities.**

Digitizing Permit to Work Processes at Chevron Phillips Chemical

Maryam Irfan, Connected Worker Series:

How does Chevron Phillips Chemical approach worker safety in hazardous and remote environments?

Mason Jones: Our team has worked tirelessly to equip our workforce with tools designed for the environments they operate in. We provide rated handheld devices, enabling them to access information from anywhere in the plant, and have installed private LTE throughout the facility to ensure they remain a truly *connected* worker. Additionally, we continue to explore new ways to leverage technology to augment and support the ongoing training of our workforce.

Maryam Irfan, Connected Worker Series:

How does Digitizing Permit to Work Processes enhance worker safety at Chevron Phillips Chemical?

Mason Jones: We did more than just digitize our safe work process; we took a step back and looked at how we could transform it for everyone involved. Traditionally, maintenance would plan the job steps, hazards, and overall work description well in advance of the actual day. However, it wasn't until the morning of the job that operations would request a permit, requiring both operations and maintenance to spend time revisiting the maintenance plan. We sought to reduce redundant information entry by pulling key data directly from our ERP system and automatically creating the permit. Based on the category of work being done, the permit would also recommend likely hazards and suggest the relevant controls and mitigations. This reduced variability between operators and work crews, ensuring that hazards were not overlooked for a specific job. Additionally, it brought more visibility to operations regarding upcoming work and sped up the time it took for maintenance teams to get to their tools.

Maryam Irfan, Connected Worker Series:

How important is mobile accessibility for your safety protocols safe operating procedures (SOPs), and how have mobile apps transformed the way field workers interact with safety systems?

Mason Jones: We want digital solutions and information to be available where the actual work is being done. We can't expect an operator to climb down a tower and walk to the control room to download something using the control room WiFi. That is why we've ensured that devices and connectivity are available throughout our units. For SOPs specifically, they often require collaboration among multiple operators completing steps in a specific order in different

locations. With a digital SOP, each operator, regardless of their location in the unit, can see which step of the procedure they are on and ensure that it is completed and signed off in order, preventing any missed steps.

Previously, operations solely relied on radio communication; now, we have added a second sense—sight—to the mix, making it easier to succeed and harder to fail.

Maryam Irfan, Connected Worker Series:

Can you tell us about the implementation and user adoption challenges faced?

Mason Jones: When it comes to worker safety and truly transforming how we work, these implementations can be challenging. We could have taken the easy route and simply digitized a safe work permit or existing SOPs, but the value of a project is directly proportional to the effort put into it. Instead, we took the time to revisit work processes, systems, behaviors, interactions, and how we store and access data. This led to a more significant change from the current state to the desired future state, aligning with our company's goals.

In the end, our change managers were crucial in ensuring strong user adoption. We faced many roadblocks and challenges along the way, including issues related to mobility, connectivity, and offline mode, which I will discuss, along with the lessons learned during my presentation at the Connected Worker Houston Summit.

Maryam Irfan, Connected Worker Series:

What metrics do you use to measure the success of these initiatives?

Mason Jones: When evaluating safety metrics, it's crucial to consider both the metrics we aim to maintain and those we seek to improve. We may be looking to improve hazard communication, adoption, and use of tools, or even reducing the time it takes to start work in the morning. Throughout the process, we monitor to ensure that we don't inadvertently increase risk or the potential for injuries.

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March 18-20, 2025

The Westin Galleria, Houston

Join us at The Connected Worker: Energy Summit

Hear more from Ted and Mason at the upcoming **Connected Worker: Energy Summit** this March as they share insights on '**Using Real-Time Location Services to improve Field Worker Safety, Productivity and Emergency Management**' and '**Eliminating Paper-Based Systems and Improving Safety Outcomes through Digitizing Permit to Work Processes**'.

Plus join Mason at Chevron Phillips Chemical's Bayou Cedar Plant! Limited to just **25 places**, this exclusive site tour presents a valuable opportunity to hear and witness Chevron Phillips Chemical's Digital Transformation journey including connected worker applications such as ePermitting, digital Safe Operating Procedures, Unit Sign-in, Asset Information Management, and more.

To learn more, ACCESS THE 2025 EVENT GUIDE HERE

"The Connected Worker Summit provides a great opportunity for us to learn from other industries and compare technology roadmaps to see if they align with ours or highlight gaps in our own digital modernization process. It's also an opportunity to network with counterparts, share experiences, and seek inspiration. At Chevron, the Connected Worker group is constantly looking for new technologies and advances that can improve safety, enhance productivity, and automate workflows and so, the Connected Workers Summit offers a unique chance to stay updated on the real-time evolution in this space."

Ted Stoves,
Chevron

"The Connected Worker: Energy Summit presents a valuable opportunity to gain insights into best practices and potential pitfalls from peer companies within the industry. With the rapid evolution of Artificial Intelligence, I am particularly keen to learn how organizations are integrating AI into their tools and workflows. Whether it's through chatbots, predictive maintenance, or enhancing safety presentations, the possibilities are vast and intriguing. I am eager to discover innovative value cases from other companies that I may not have considered at the Summit."

Mason Jones,
Chevron Phillips Chemical