Octave Reliance boosts GM's continuous improvement with fast, efficient EHS compliance

Key facts:

Company: General Motors

Industry: Automotive

Country: United States

Octave products used: Reliance *(ETQ Reliance)*

Key benefits:

- Saved $165,000 (85% of budget) in single plant tear-out by automating equipment decommissioning with tablet-based workflows

- Deployed across 10+ business functions with scalable low-code platform that eliminated expensive custom-coded systems

- Automated supplier cost savings tracking and complex industrial boiler compliance across 100+ due date combinations

General Motors' corporate vision of a future with zero crashes, zero emissions and zero congestion highlights its strong culture of environmental, health and safety (EHS) values in its company-wide working practices.

General Motors Co. (GM) designs, manufactures, markets, and distributes vehicles and vehicle parts. The company is headquartered in Detroit and provides a complete range of vehicles that aim to satisfy customers' needs and surpass their expectations through eight distinctive automotive brands: Chevrolet, Buick, GMC, Cadillac, Holden, Baojun, Wuling, and Jiefang.

The company also knows that it must continually improve EHS programs to continue to lead in an era of dynamic regulatory changes and stronger compliance obligations.

Challenge

Prior to deploying an automated solution, GM managed data collection, auditing and reporting manually, which caused inefficiencies and added cost to the EHS process. Additionally, manual methods were nearly impossible to scale and deploy across GM's global manufacturing footprint.

Although GM business units adhered to applicable ISO standards, each local unit largely created its own methods and systems for tracking, reporting and managing EHS requirements. Inherent in this localized approach is the difficulty in creating a unified EHS reporting system because much of the data was collected on paper or through locally saved Microsoft Excel and Microsoft Word files. This made internal and external reporting inefficient. Data accuracy and the establishment of a "single source of truth" required additional validation steps. At the same time, what common applications that were used, were custom developed in-house. This internal infrastructure was both expensive to code and maintain and required outside technology consultants to do much of the heavy IT lifting. In addition, these systems were prone to breakages and often created silos of information that were either not shareable or non-scalable on a global basis for GM's many plants.

Solution

Having identified the pain points in its existing EHS systems, GM bought its Reliance solution in 2008. GM selected Reliance because of its flexibility and configurability, putting a big premium on the low-code capability of Reliance to adapt quickly to ever evolving business needs. With GM's environmental group as a model, the product was soon in demand in many other departments, business units and locations within the GM ecosystem.

"Our Reliance solution is flexible and easy to scale. For example, once you build the structure for a role, a plant manager for example, for one business process, Reliance allows you to leverage that same building block to quickly create the next process involving that role without repeating all the same work. In that sense, Reliance truly gets easier to scale the more processes we onboard to the platform."

Joel Wolf
Staff solutions architect, General Motors Co. (GM)

For example, one of the first and most significant applications was performing annual audits, tracking any gaps in the environmental protection record and streamlining how GM worked with regulatory agencies to address closing and documenting those identified gaps.

Internal audit groups quickly saw the benefit of using Reliance in this way

According to Joel Wolf, GM staff solutions architect, Sustainable Workplaces, and 23-year GM veteran, this company-generated internal momentum made it easy to deploy Reliance to other GM business functions that needed an automated business process system. Thanks to Reliance's license model and easy configurability, Reliance is currently in use, or in the process of deployment, in over 10 GM functions, in many cases forming bridges between them.

"Our Reliance solution is flexible and easy to scale. For example, once you build the structure for a role, a plant manager for example, for one business process, Reliance allows you to leverage that same building block to quickly create the next process involving that role without repeating all the same work. In that sense, Reliance truly gets easier to scale the more processes we onboard to the platform," said Wolf.

In addition to eliminating waste from individual events or processes, the benefit to the Reliance platform approach is the ability to provide real time key performance indicator status, as well as automated alerts to detect potential issues. By freeing its people from tasks such as basic auditing and reporting, GM employees can better leverage their creative skills to solve challenging problems. It is a win for the company and its customers.

Results

Cost reductions from decommissioning

The flexibility of Reliance allows GM to leverage its investment in unique ways. Nowhere is this more evident than in the environmental protection requirements around the "tear out" and retooling of manufacturing plants.

Quality journey

Manual, disparate EHS requirements and processes

No-code configurability
Adapt quickly to ever evolving business needs

ROI
$1 Million in scrap revenue

A tear out requires the removal of thousands of pieces of equipment from a plant that is being re-tooled for production of a new vehicle model, Wolf said. During this process, several thousand pieces of equipment must be removed from the plant and either sold, scrapped or reused at another GM facility. GM has strict company requirements to manage hazardous materials associated with this equipment in a manner that is safe for people and the environment. Every piece of machinery must be tracked and communicated to GM's finance department for capital asset tracking purposes.

This is a vitally important process that takes place in a highly compressed timeframe – typically 20-40 days. Formerly, this process was tracked with paper and clipboard, required physical signatures from environmental engineers, and required GM to hire outside consultants to support the aggressive 24/7 schedule of the job. Now, the entire process is a Reliance workflow and is available on a tablet with all of the factory's soon-to-be-removed assets preloaded with decommissioning checklists.

In just one instance of using the Reliance process, GM saved more than $165,000, or nearly 85% of the initial budget, thanks to Reliance. In that same instance, GM used 622 trucks to move 8,500 tons of material to recycling, removed 400,000 gallons of fluid, processed 400 refrigeration units and took in more than $1 million in scrap revenue.

"Our information is no longer siloed," said Wolf. "We can show value immediately, like in the tear out work, where the information on each asset is available to all stakeholders, in real time. It didn't matter if it was Finance, Shipping or Maintenance, everyone knew who was doing what and where each asset was."

Simplified maintenance and inspection planning

Another example of the efficiency and control enabled by Reliance is in the way the company adheres to regulatory compliance for its industrial boilers – massive units that produce steam or compressed air for manufacturing. Industrial boilers are regulated at the federal and state levels by a very complex set of rules that require different compliance schedules based on boiler size, oxygen trim equipment (or lack thereof) and permitting status. This complexity is deepened by the fact that each state has its own set of reporting deadlines. GM leverages Reliance to track progress and calculate due dates to inform maintenance managers of the need to plan for maintenance and inspections. With over 100 potential due date combinations for each boiler, using technology to manage this work goes a long way towards mitigating the risk of human errors.

Supplier cost management

GM is also using Reliance to manage its supplier costs. GM signs multi-year contracts with suppliers that specify a certain level of cash savings each year that the supplier is responsible for implementing, documenting and reporting to GM. This was another time-consuming process that was previously done manually. Now suppliers enter their savings projects directly into Reliance and the information is automatically rolled up at the end of each reporting period. According to Wolf, this makes for a faster and more accurate accounting of savings. As a bonus, this also eliminates any arguments over amounts saved between suppliers and GM. The data is either in the common system or it doesn't count toward the metric.

Ultimately, the automotive industry is a dynamic business and Reliance is a flexible, yet integrated, system that is easy to tune on the fly, without any required software development and nearly zero incremental cost. This allows a company like GM to iterate quickly and efficiently, stay on top of EHS compliance and remain true to its goal of continuous improvement.

In just one instance of using the Reliance process, GM saved more than $165,000, or nearly 85% of the initial budget, thanks to Reliance. In that same instance, GM used 622 trucks to move 8,500 tons of material to recycling, removed 400,000 gallons of fluid, processed 400 refrigeration units and took in more than $1 million in scrap revenue.

About General Motors

General Motors (GM) has a diverse team of over 165,000 employees who bring their collective passion for engineering, technology and design to deliver an ambitious future. Headquartered in Detroit, Michigan, General Motors is a company with global scale and capabilities including 156 facilities in the United States, services in six continents, operations across 22 time zones and a diverse workforce speaking 75 languages. For more information on GM, visit gm.com.