PORT COMPLIANCE

Connecting the dots for compliance at ports

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In the modern shipping industry, the importance of regulatory compliance has increased significantly. Regulatory and watchdog groups have pushed for more regulation of pollution, emissions, and runoff. Different safety and management standards, from shipboard conditions to office management procedures, whether focused on mechanical or personnel, require reporting in order to prove and maintain certification. Being able to provide up-to-date, or even real-time information improves an organization's ability to comply with regulations.

The term "environment," especially in industrial, shipping, and port settings, takes on two meanings. The first is the operational environment which the company creates and maintains for the safety of their workers. Regulations and standards that deal with operational environments stem from organizations such as the Occupational Health and Safety Assessment Series (OHSAS) Project Group. The second is the natural environment within which the organization operates and affects both locally and globally. The regulations that centre on the natural environment focus on preserving the health and beauty of the surrounding ecosystem, as well as the health and well-being of those whom the organization affects. While on a large scale, issues affecting the natural environment are difficult to tackle; modern sensor networks have the ability to track point source pollution in almost real time.

Monitoring allows tracking as required by different standards within an operation even with multiple regulations attached to each. Many trade agreements, shipping regulations, opt-in agreements and contracts require certain levels of "green" targets for pollution reduction. The organizations with regulatory authority in the U.S. range from the Environmental Protection Agency (EPA) and state and local agencies. In Canada, Environment and Climate Change Canada and Fisheries and Oceans Canada as well as provincial, regional and municipal agencies can be involved in setting policy.

There are many different ways to monitor operations, from manual checks to electronic sensors. Manual checks are beneficial as they give an almost foolproof method of measuring or understanding what is happening, but they are time consuming and offer only a snapshot of what is happening. Increasingly, organizations are implementing this sensor to dashboard model to track their compliance, processing information through a network of sensors and displaying it in a simplified format.

Problem Statement

Tracking regulatory data within a port setting is challenging because of the naturally hostile environment of moving machinery and elemental exposure. However, the benefits of digesting large amounts of data in real time allow an organization to show compliance and respond to their needs. A good example of the beneficial use of a sensor to dashboard model is a container ship equipped with a Maritime and Vessel Management System. Larger container ships have too many systems to check manually and, by digitizing this information, the ship's engineer and parent company are able to see real-time information. The company can also use these systems to monitor International Safety Management compliance and track other standards.

In both Canada and the U.S., there are many layers of regulations concerning spill prevention, preparedness and response; storm water pollution; pollutant discharge elimination; and conservation/sustainability.

Effective compliance with regulatory requirements can be time-consuming, expensive, and often times, complicated.

Solutions

Port regulatory issues are comprised of physical monitoring and record keeping. Having a different system for each framework can further compound issues, and merging different systems can be a disjointed task. Organizations can avoid this by utilizing an online portal from a single service provider, created specifically to handle these frameworks, with the modular ability to expand and adapt. Through the online portal, information layers can be easily accessed and sorted anywhere. This system includes the ability to automatically update and track records, creating reports for regulatory agencies.

To understand this, it is best to briefly outline a few of the issues that can be addressed with the sensor to dashboard

model.

When the focus is on above-ground oil storage, and quick detection and responses to spills are necessary, there are a few simple ways sensors can quickly be deployed to warn of oil discharge and allow organizations to take action. The first includes monitoring above-ground storage tanks for oil levels, discharge at different valves and outlets, and alarm notifications of discharge. The second is through proper attention to required maintenance and training schedules managed through a computerized maintenance management system (CMMS) which can be easily used to satisfy reporting requirements of regulations.

Storm water pollution presents many monitoring challenges while needing some of the most extensive and active scrutinizing. Monitoring can provide early warning if any of the pretreatment systems are failing or if facility storm water contains an unusually high amount of pollutants before it reaches the environment. These systems can also include a CMMS, reducing oil discharges and other pollutants from being swept up by runoff. Pretreatment system maintenance and automation can be run in conjunction with a storm water program. Government-regulated wastewater, vessel discharges, pesticides, and other industrial pollutants that can be found in a port setting must also be monitored.

While many violations of regulations happen in record keeping, the use of some sensors to log and transmit data into a database simplifies this process. An online program can include automatic record and report creation, and an easy portal for entering information about individual cargos. Online access of these records streamlines the process of sorting and delivering them to relevant agencies.

All of the data that is collected from these sensors can then be routed into an easy-to-read informational dashboard. The most efficient dashboard setup is through a web-based platform from a singular service provider. A secure web-based platform can be accessed from almost anywhere, either remotely, at headquarters, or by technicians in need of the current information. Those that work with these dashboards, such as engineers and port personnel, can then analyze the

activity and understand the interconnected changes within these regulations.

Conclusion

Environmental regulatory measures have increased in the past decade and have required ports to make major changes and keep a close eye on their environmental practices under the careful watch of regulatory agencies and watchdog groups. Many of these issues can be addressed through the increased use of sensors linked to a web-based dashboard centralizing the four most common issues found in ports: spill prevention, preparedness and response; storm water pollution; pollutant discharge elimination; and conservation/sustainability.

Violations in these areas centre around monitoring the source of pollution and having up-to-date detailed records required by each regulation. This allows a real-time view of what is happening, enabling a facility to address issues early and increase efficiency.

By having this system provided by a single service provider, additional upgrades, troubleshooting, and application expansion can be tailored to the organization's specific needs. To learn more about the specific applications of a web-based compliance software and its benefits visit Freer Consulting at www.freerconsulting.com.

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