



COAGMENTUM

Spearhead Innovations, as the exclusive licensee to the patented technology, has recently adapted the technology for the purposes of determining fill levels, verification of liquid manifest and the ability to determine the adulteration of that liquid. In the past two years there has been significant focus on the PASS technology's potential usefulness in the petrochemical industry. We recently became aware of the U.S. Coast Guard's report to Congress, which addresses the need to accurately monitor fill levels in large water-borne containers such as oil tankers and barges.

The PASS technology is perfectly suited to not only monitoring large or very small leaks, but also in determining the rate at which the vessel may be losing its product. Furthermore, as PASS performs this function it is also able to provide to the carrier and customer a manifest verification and assurance of the quantity being delivered. The PASS technology can also perform the function of alerting of any adulterations of the delivered product. As an example, any change in the expected product that is greater than two parts per one hundred (distinguishes between regular, premium, jet fuel, diesel fuel or any melded derivative) would be identified. PASS can also measure the water content that may be present in the containers. PASS is able to provide this information automatically, instantaneously, on demand, or continuously. The data could be collected at its point of origin, monitored during transit and reported to appropriate U.S. officials prior to entering U.S. waters.

Benefits

Leak Detection: The PASS system when installed on a vessel would provide the ability to accurately and immediately determine the rate of any leak. In the case of a significant leak it would provide first responders accurate and timely information in which to allocate appropriate resources. PASS regardless of whether they are single or double hull, would be an advantage to the government and all affected parties. Single hull carriers that operate in US waters currently (1033 ships/barges) have a limited operational life. Should a PASS Monitoring System be installed it is conceivable that the authority for the ship to operate in US waters might be extended. This extension could provide a huge return on investment.

Potential of Immediate offloading: Currently it often takes tankers several hours upon arrival at the destination to confirm the quality and quantity of the product. This lost time before the ship is able to initiate off-loading, accumulates significant ship day losses. With this system installed, port authorities and customer can be notified electronically of quality and quantity test results prior to ship docking, allowing for earlier off-load operations. This would provide the availability of the vessel for other transportation requirements much earlier, providing additional return on investment.

Lower Insurance Costs: The PASS system could be of value to the owner of the vessel in his relationship with insurance companies, potentially reducing insurance premiums. The savings to the carrier in reduced annual liability insurance premiums alone, would in all likelihood, more than absorb the cost of implementing the PASS system on each vessel.

Identification of Origin: Given today's international political environment, the PASS technology has an ability to confirm origin of products. As an example it can identify the crude's distinctive signature thus validating the origin of such delivered crude oil.

Unique Solution

PASS is currently the only single technology that can provides the above benefits. These benefits would offer solid return on investment to carriers and customers and timely information to concerned governments.

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