



Automating hydrocarbon detection in floating roof drains

A floating roof drain guard system reduces the risks of environmental contamination or permit violations by continuously monitoring for hydrocarbons in floating roof drain systems or dike containment. The drain guard system alerts an owner or operator of hydrocarbons present in floating roof drains, diked areas or similar applications, thus reducing risk and protecting inventory.

A drain guard system is composed of a receiver, baffle configuration, sensor, automated control valve and discharge port. In the event of a large storm or hurricane, employees must open each drain valve before seeking shelter. This approach to

drain management is common but problematic, as it risks personal health and safety. Another concern is that a drain valve could be left closed, causing excessive loading and failure of the floating roof.

Careful management of each roof hose and drain is required for long-term successful operation of floating roofs. In many situations, investment in automated drain management technology can significantly reduce the likelihood of a chemical release or floating roof failure for large aboveground storage tanks.

The roof drain guard system utilizes a UV fluorosensor to monitor drain dis-

charge. A UV-fluorescent light is emitted from the sensor onto the surface of a liquid to detect the presence of hydrocarbons. The system uses baffles to reduce the flow rate of drain contents, providing the settling time necessary for hydrocarbons to rise to the surface for easy detection.

A user may set the floating roof drainage system to a desired level of sensitivity. If the sensor detects the presence of hydrocarbons, it can signal a valve to automatically close and/or open to prevent release of storage tank contents. The system can be programmed to send an audio/video and/or text alert, eliminating the need for continuous on-site monitoring by operators and reducing risk to operations personnel.

The novel system reduces the need for an operator to open or close a floating roof drain during storm events. Continuously monitoring the liquid in and around a tank roof will minimize the risk and

severity of hydrocarbon leakage to the environment. Automated electronic monitoring provides peace of mind while employees are offsite, thus reducing risk and operating costs for tank farm owners.

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Evaluation and testing of new systems are important; industry experts like and welcome the benefits of the systems. Failures that were once more sporadic in the past now occur frequently, necessitating a new look at bulk storage operating protocols. Drain guard systems can automate an essential task for any tank farm, preventing the likelihood of event occurrence.

For more information, contact Michael Sprung at michael.sprung@enviroeye.net or call (713) 627-1700.



Figure 1. In-use drain guard system.

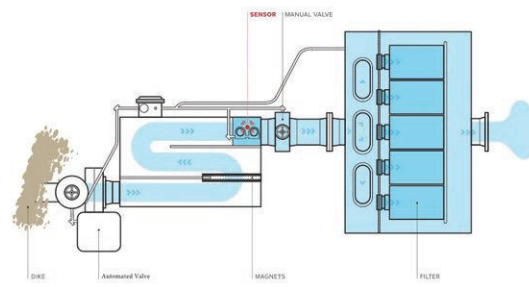


Figure 2. Drain guard system diagram.

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