Power Generation Plants

Fossil Fuel Power Generation

Fuel fired power generation plants have several oil storage tanks for feeding fuel to the power units. Coal or gas fired power generation plants also have oil storage tanks to be used for start-up or as a back-up energy source. All power generation plants also need to detect oil leaks into cooling water and condensate.

Leak/Spill Detection in a Dyke's Sump of an Oil Storage Tank

Leakwise* ID-223 Oil Sheen Detectors are installed in oil and storm water collecting sumps, and separators/ interceptors located near the dykes of the tanks. These sumps need to be monitored for safety and environmental purposes. The Leakwise sensors can also control the sumps' outlet and divert only oily water for treatment and thus reduce the plant's treatment costs.

For more about leak/spill detection in a dyke's sump of an oil storage tank, see also Leakwise Application Notes: *Above-Ground Oil Storage Tanks and Oil Storage Tank with Floating Roof.*

Oil Sheen Detection on Water Discharge After Separation and Water Treatment

Local environmental authorities allow only a few ppms of oil in the discharge from separators. On-line ppm monitors are usually too expensive and not reliable. The Leakwise ID-223 Oil Sheen Detector can be used as an alternative (or as a back-up) on-line monitor which will set off an alarm in case of oil sheen detection, indicating that there is an upset in the water treatment process and the amount of discharged oil exceeds the permitted level.

For more about oil sheen detection on water discharge after separation and water treatment, see also Leakwise Application Note, *Oil Sheet Detection: An Alternative to On-Line PPM Analyzers*.

Oil Sheen Detection in Cooling Water System

Open Cooling Water System: A Leakwise ID-223 Oil Sheen Detector mounted in a special Leakwise stilling well can detect leaks from heat exchangers along the cooling water channels or at the cooling water intake or discharge points.

Closed Cooling Water System: If monitoring of cooling water is required in a closed system, the Leakwise ID-223 Oil Sheen Detector should be installed in a settling tank mounted on a by-pass from the main cooling water pipeline.

Oil Sheen Detection in Condensate: A Leakwise ID-223 Oil Sheen Detector installed in condensate tank with atmospheric pressure can detect an oil sheen in high temperature condensate water.

Oil Detection in Sewer System: Fumes due to oil leaks into underground sewer systems create a major safety hazard. A Leakwise ID-223 Oil Sheen Detector in the drainage canal will give an early warning of oil presence.

Hydro Electric Power Generation

Hydroelectric power generation plants are usually located in nature resorts, which have very high environmental protection standards. Large volumes of water are used for generating power as well as for cooling purposes.

Oil Sheen Detection and Oil Thickness Measurement in Cooling Water Sumps

Cooling water carries lubricating oil, leaked from turbine bearings. The Leakwise ID-221 Oil Sheen Detector is installed in a cooling water collection sump and it detects the presence of oil sheens that can be removed before the cooling water is discharged into the lake or river. If larger amounts of oil are accumulated in the sumps, a Leakwise ID-225 Oil Thickness Monitor can indicate oil thickness for manual skimming or activate a skimming pump.

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The Americas
GE Analytical Instruments
6060 Spine Road
Boulder, CO 80301-3687 USA
T +1 800 255 6964
T +1 303 444 2009
F +1 303 527 1797
geai@ge.com

Europe/Middle East/Africa
GE Analytical Instruments
Unit 3, Mercury Way
Urmston, Manchester
UK M41 7LY
T +44 (0) 161 864 6800
F +44 (0) 161 864 6829
geai.europe@ge.com

Asia Pacific
GE Analytical Instruments
5 United Plaza
1468 Nanjing Rd (W)
Shanghai 200040
China
T +86 021 3222 4555
geai.asia@ge.com

www.geinstruments.com

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