LEAKWISE
OIL ON WATER DETECTION SYSTEMS

APPLICATION NOTE

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 need to detect oil leaks into storm water, cooling water and condensate.

POWER GENERATION PLANTS

OIL SHEEN DETECTION ON WATER DISCHARGE AFTER SEPARATION AND WATER TREATMENT

Environmental authorities allow only a few PPMs of oil in the discharge from separators. On-line ppm monitors are usually very expensive and require routine cleaning, compensation, filtering and zeroing. 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.

LEAK/SPILL DETECTION FROM OIL STORAGE TANKS

Fuel fired power generation plants have several Leakwise ID-223 Oil Sheen Detectors installed in oil and storm water collecting sumps, and separators/interceptors located in containment area near tanks. These sumps need to be monitored for safety and environmental purposes. Leakwise sensors can also control the sumps' outlet valve to prevent oil from being discharged into storm water drains or rivers. Only oily water will be diverted to treatment, thus reducing the plant's treatment costs.
For more information refer to Leakwise Application Notes “Above-Ground Oil Storage Tanks” and “Oil Storage Tank with a Floating Roof”.

OIL DETECTION IN COOLING WATER SYSTEMS

1 →

Open Cooling Water Systems

A Leakwise ID-223 Oil Sheen Detector can detect leaks from heat exchangers along the cooling water open channels, at cooling water intake or at discharge points.

2 →

Closed Cooling Water Systems

If monitoring of cooling water is required in a closed system, the Leakwise ID-223 Oil Sheen Detector should be installed in a sampling-settling tank mounted along a cooled by-pass from the main cooling water pipeline.

3 →

Oil Sheen Detection in Condensate Water

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

HYDRO-ELECTRIC POWER GENERATION

Hydroelectric power generation plants are usually located in clean nature sites, which have very high environmental protection standards. Large volumes of water are used for generating power as well as for cooling purposes. For more information refer to Leakwise Application Note “Hydro-Electric Power Plants”.

OIL DETECTION IN RUNOFF DRAIN SYSTEMS

Fumes due to oil leaks into containment runoff drain systems create a major safety hazard. A Leakwise ID-223 Oil Sheen Detector in the upstream drainage canal will give an early warning of oil presence.

OIL SHEEN DETECTION AND OIL THICKNESS MEASUREMENT IN COOLING WATER SUMPS

Cooling water can carry lubricating oil leaked from turbine bearings. The Leakwise ID-221 Oil Sheen Detector is installed in a cooling water collection sump and 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 measure the oil thickness for manual skimming or automatically activate a skimming pump.

GAS TURBINE POWER GENERATION PLANTS

These are usually small generation plants located in rural areas. Government's office for environmental protection takes a high priority in such plants.
Leakwise sensors can do early detection of oil leaks or spills from the turbines, from the oil tanks that feed them and from the transformers.

OIL DETECTION IN TRANSFORMER SUBSTATIONS

Transformers are an integral part of power generation plants. Since they contain large amounts of cooling oil that might leak and be washed with storm water to public water, it is important to monitor the containment sumps for oil leaks from the transformers. For more information refer to Leakwise Application Note “Power Distribution”.

LEAKWISE
OIL ON WATER DETECTION SYSTEMS