



## **Ionics Agar Environmental Ltd.**

### **LEAKWISE® OIL ON WATER MONITORING SYSTEMS**

#### **APPLICATION NOTE #5**

#### **POWER GENERATION PLANTS**

##### **1. 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 (See also application notes #1 & #2)

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

Oil sheen detection on water discharge after separation and water treatment (See also application note #4)

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. 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.

##### **Oil Sheen Detection in Cooling Water System**

###### **Open cooling water system**

An ID-223 oil sheen detector mounted in a special Agar Stiller can detect leaks from heat exchangers along the cooling water channels or at the cooling water intake or discharge points.



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#### **Closed cooling water system**

If monitoring of cooling water is required in a closed system, the 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**

An 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. An ID-223 oil sheen detector in the drainage canal will give an early warning of oil presence.

#### **Oil/water separator monitoring & control**

In many cases oil/water separators and/or retention tanks are covered, and the operator does not know if they are functioning correctly or if oil is present in them. An ID-221\_}, oil sheen detector can monitor for oil presence. An ID-225 oil thickness monitor can measure layer thickness and control a skimming pump which can be automatically activated until the layer reaches a certain thickness.

## **2. 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 & Oil Thickness Measurement in Cooling Water Sumps**

Cooling water carries lubricating oil, leaked from turbine bearings. ID-221 oil sheen detector is installed in a cooling water collection sump and it detects the presence of oil sheens which can be removed before the cooling water is discharged into the lake or river. If larger amounts of oil are accumulated in the sumps, an ID-225 oil thickness monitor can indicate oil thickness for manual skimming or activate a skimming pump.