CASE STUDY
DESALINATION PLANT

For a thermal desalination plant oil spill damage can be alleviated by circulating dispersants within the units, which eventually restores cleanliness. Reverse osmosis membranes are not so tolerant and oil pollution has serious consequences.

PROBLEM

For Desalination Plants, oil spills are a considerable threat. Polluted seawater fouls piping, reduces exchange surfaces performance for osmosis systems and pollutes fresh water production if fractions distil for thermal systems.

For example these 2 examples: first a desalination and power generation plant on a coastal waters of Mirfa in the UAE; secondly the Tanjung Bin Power on the Malaysian coast. Both needed some sort of rugged, continuous water monitoring of intake channels to make sure no hydrocarbon contamination came into their plants.

Complimenting current water intake protection with automatic methods is essential to increase the effectiveness of existing systems; providing both active and passive protection to your site.

Plant location and geography is an important factor in assessing the risk level from oil pollution. Busy shipping lanes in the vicinity, harbours or refineries increase the risk of a spill significantly, routine bunkering operations and ballast water discharge are a regular source of contamination.

RECOMMENDATIONS

- OFFSHORE NETWORK OF ROW BUOYS
- SMS ALERTS
- INDUSTRIAL RADIO MODEMS
- POWERED BY SOLAR PANEL
- PROXIMITY TO WATER INLET

SOLUTION

Installing a network of autonomous ROW oil spill detectors in the area surrounding water inlets allow for early detection of potential threats. This provides you, the operator the time you need to make a decision and allows more options for containment.

Buoy based ROW sensors are perfect for this application, being resilient to waves and storms, operating reliably 24/7 and allowing the opportunity for detection offshore.

For onshore installations, notification of a spill in the proximity of the plant gives time to shut down pumping to water inlet until the pollution is confirmed and dealt with. Detecting oil earlier enables physical containment to be feasible, with more time to react and organise containment.

Following this the responsible authorities can initiate the clean-up effort and allow operations to resume rapidly. For reverse osmosis systems the use of chemical dispersants can even be considered if oil is detected further away from the water intake.