

FINES FOR EMERGENCY SPILLS FROM SEWAGE PUMPING STATIONS HAVE INCREASED SIGNIFICANTLY SINCE 2014. BETTER USE OF RISK MANAGEMENT PRACTICES AND MITIGATION MEASURES WILL HELP TO REDUCE RISK OF SPILLS.

THE NEED

Recent changes in sentencing guidelines have dramatically increased the magnitude of fines for water companies for pollution offences. Potentially fines could be unlimited. There have been fines of up to £750k for pollution incidents from sewage pumping stations. One of the key components in determining the level of any fines is the culpability, which is influenced by companies risk management practices. There are over 21,000 sewage pumping stations of which 3,500 are large. The factors that determine whether a pumping station failure leads to pollution are complex. It is difficult to assess the effect any changes in reliability or working practices will have on the risk of pollution. Better tools are needed to understand and manage the risks of failure of sewage pumping stations.

BUSINESS BENEFITS TO CLIENTS

- A reduction in the number of pollution incidents at sewage pumping stations by improved risk management.
- A reduction in the level of fines from pollution incidents by reducing culpability through demonstration of improved risk management.
- Improved cooperation with the environmental regulator leading to increased possibility of using environmental undertakings in place of prosecution.

SOLUTION

The tool will allow companies to model the effect of component reliability on the risk of a pollution incident. The model will be populated with sewer and river catchment data, component reliability data and data on the time taken to recover the service following failure. This is used in a Monte-Carlo simulation with a long series of rainfall data to predict the frequency and impact of pollution on the receiving water.

This tool will enable companies to understand their present risk exposure, understand the implications of any changes in component reliability and explore

the effect of any changes in operating procedures or contingency plans as well as asset improvements.

WHY INVEST?

- Fewer pollution incidents from sewage pumping stations through improved understanding of risk.
- Demonstrating effective risk management will reduce the likelihood of prosecution in the event of a pollution incident.
- Being able to demonstrate low culpability could reduce fines in the event of prosecution by up to 90% saving up to £700k in a severe case.

RELATED WRc WORK

- Reducing the cost of operating sewage pumping stations (1996)
- Urban Pollution Management (UPM) Research Programme (1984 - 1994, 1998, 2012)
- Software: PumpRAM, UPM-RAT, SIMPOL, STORMPAC

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