

Waste water audit services

WRc conduct independent audits to ensure 17 waste water treatment works are capable of achieving full compliance.

Challenge

WRc were commissioned by a UK Water Company to undertake detailed independent audits of 17 waste water treatment works to assess whether the plants, if operated in accordance with good industry practice, were capable of achieving compliance with all permit conditions placed on the owners and operators and highlighting any areas of deficiency.

WRc's expertise in waste water operations process engineering and risk management was demonstrated in this series of audits. Together with innovative use of process simulation software, the ability of these plants to meet current and future consent standards was ascertained and recommendations for change clearly identified.

Solution

The audit process commenced with a visit to each site and a detailed request for all relevant data from the owners and operators. The data was used to construct a reference design plant to treat the flows and loads experienced over the previous 5 years. The WRc Plan-It STOAT steady-state design package was selected for this task. This reference plant was then compared with the treatment assets available on-site in terms of capacity and ability to treat the flows and loads. A dynamic model of the current assets was constructed using WRc STOAT and the ability of the plant to treat the variable loads being received was assessed.

The audit also covered an assessment of the extent of each company's proposed future capital maintenance plan together with any specific remedial works that were being implemented and to provide recommendations in respect of additional capital investment or capital maintenance work required to minimise the risk of operational failure or consent exceedance. WRc used a risk based approach to assess each works for failure potential. This involved undertaking a Failure Modes and Effects Analysis (FMEA) for each works in accordance with the UKWIR Capital Maintenance Planning Common Framework.

Outcome

The audit process led to a series of recommendations for change in terms of plant operation, maintenance schedules and capital solutions. This allowed the client to reduce their risk in terms of waste water compliance, reliability of plant and improve their service to customers. All of these factors led ultimately to substantial reputational enhancement.

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**For further information contact:
Richard Addison**

Tel +44 (0)1793 865184
Email richard.addison@wrcplc.co.uk
Water Research Centre Limited, Frankland Road
Blagrove, Swindon, Wiltshire SN5 8YF

wrcplc.co.uk | @WRcplc

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