

Incident Summary

Craighead WTW Disinfection Failure 26th September 2021

DWQR Inspector:
William Byers

Event No. 12091

Event Category: Significant

An out of hours process alarm indicating failure of disinfection, was received by the Intelligent Control Centre (ICC) at 03:45 on 26th September and the standby treatment operator was alerted to the problem. Arriving on site just over an hour later, he found the works to be operating but both the duty and standby sodium hypochlorite pumps had tripped and the disinfection dosing control panel had no power available. The operator reset circuit breakers and started an alternative dosing pump, increasing the pump stroke to help boost chlorine levels in the clear water tank. The problem with the dosing system was reported to the ICC and escalated to the Team Leader. Bench tests were carried out and formal samples were taken to monitor water quality. Investigation by an Electrical and Mechanical maintenance team identified severe corrosion within the disinfection solution flow switches to have destroyed the units, causing a short circuit and the panel breakers to trip. Two formal samples of the final water supplied to consumers were taken to monitor the impact of the 90 minute cessation of disinfection and both were found to meet water quality standards.

Scottish Water's investigation into the failure of the disinfection flow switches found serious internal corrosion. These switches had been inserted on the sodium hypochlorite dosing lines less than 2 weeks prior to the event to enable a works shutdown facility on low dosed flow. It brings into question the suitability of the materials or type of switch used. I am satisfied with these findings and note that alternative ceramic switches are to be fitted. It is however of serious concern that such a situation can come to pass in the procurement or fitting of sensors in a critical element of water treatment process controls.

The event has been categorised as significant. Scottish Water has identified eight actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made no additional recommendations.