Drinking Water Quality Regulator for Scotland

Incident Summary

Burncrooks WTW Disinfection Failure 5th October 2022

DWQR Inspector:
Colette Robertson-Kellie

Event No. 12932

Event Category: Significant

At 01:25 on the 5th of October, a power dip caused Burncrooks WTW to shut down. The standby Operator was called out by the Intelligent Control Centre (ICC) and arrived on site at 02:10. The start-up procedure, which takes between 35 and 40 minutes if it runs smoothly, was followed correctly by the Operator until the final step, which requires the chlorinator to be put onto manual setting at the pre-shutdown level, in this case at 28%. The chlorinator was put on to manual setting, but was not set at 28%, and the system automatically reset to 1%. The Operator monitored the site start up, noticed that the final water chlorine residuals were dropping and so started to investigate. However during this investigation the site was shut down again by a second power dip, and the entire plant restart procedure had to be started again.

At 03:30 the Operator called the ICC to advise that final water chlorine residuals were low, and when they continued to drop, requested assistance from another Operator at 04:05. The other Operator suggested that the chlorinator output should be manually increased from 1% to 35%, and after doing this chlorine levels began to recover. The Operator kept monitoring the treatment works and residual chlorine trends, and carried out bench tests until 08:00. The ICC Duty Manager called the Public Health Team (PHT) at around 05:30 to inform them of the low chlorine residuals on the final water and samples were arranged.

By 05:30 water leaving the chlorine contact tank was back to normal levels, having had no disinfection for around four hours, and by 08:15 the water leaving the treatment works had its usual chlorine residual.

Samples were taken at the treatment works and in the network on the 5th and the 6th October, and all samples taken complied with regulatory standards.

The cause of the failure of the disinfection process was repeat power dips, which led to the treatment works shutting down twice in a short space of time, and a lengthy and laborious water treatment works restart process. The duration of the incident was increased by a

delay by the standby Operator resetting chlorine dosing to appropriate levels.

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 zero additional recommendations.

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