Drinking Water Quality Regulator for Scotland

Incident Summary

Tomich WTW
Loss of disinfection
19th August 2025

Event No. 15072

Event Category: Significant

On 19th and 20th October 2024, several power failures occurred at Tomich Water Treatment Works (WTW). Scottish Water's incident report highlights three separate periods, totalling 8 hours 25 minutes, where chlorine dosing was lost and 145.48m^3 of undisinfected water passed forward into supply.

The first loss of disinfection occurred between 19:00pm and 23:20pm on 19th October 2024 due to a power failure (from 19:00pm – 21:00pm). The loss of power resulted in the WTW shutting down and a loss of telemetry from the site, however, due to a separate fault with the control switch at the borehole site, the borehole pumps continued to run, resulting in forward flow whilst no chlorine was being dosed. When the power and telemetry restored at 21:06pm, the Intelligent Control Centre (ICC) received a "Final Water" chlorine alarm due to the monitor failing to zero, followed by a "Dosed Chlorine" low-low alarm at 21:35pm.

The ICC immediately contacted the standby operator, who was dealing with a separate issue at another treatment works, but would attend Tomich WTW afterwards.

The standby operator arrived at Tomich WTW at 23:03pm and found the chlorine controller idle. The works was shut down and the Escalation Team Leader and Public Health Team were contacted, before chlorine and pH bench test were taken (0.53mg/l final chlorine and 7.51 final pH). Scottish Water's Electrical & Maintenance (E&M) team were contacted to attend as the standby operator was unable to restore chlorine dosing controller.

The second loss of disinfection occurred between 01:00 and 01:50am on 20th October 2024, when the plant was restarted as part of the investigation, but the chlorine controller remained idle with the dosing pumps inhibited. The plant was manually shut down again and a call was made for a Field Automation Specialist (FAS) engineer to attend site.

The E&M and FAS engineers continued to work through the night whilst the standby operator left site at 4:00am due to reaching the working time directive limit. When the second standby operator arrived on site at 5:39am to find the plant running with chlorine dosing operating as expected and chlorine residuals rising, so no further action was taken and the site was left.

The third loss of disinfection occurred between 12:15pm and 15:30pm on 20th October 2024 due to another power failure (from 10:00am – 12:15pm). When the power was reinstated at 12:15pm, the ICC called the Escalation Team Leader, concerned that the plant may be running with no chlorine dosing following issues the night before. Telemetry was not available at this time, so a decision was made to check the telemetry hourly. At 12:45pm, telemetry was restored and showed that the plant had been running with no chlorine dosing since the power had been restored. At 13:40pm, the telemetry was reviewed and an operator was called to site.

When the operator arrived on site, it was confirmed that chlorine dosing had failed, so the works was run to waste and then the chlorine control was reset having ‘frozen’ following the power issue. A final water free chlorine bench test was taken (0.37mg/l) and the disinfection failure was escalated to the Team Leader and Public Health Team again. As the chlorine control had been resolved, it was agreed to return the works to service and take a sample with no shock dosing of the CWT deemed necessary.

In total, three final water samples and one customer tap samples were taken between 20th and 23rd October 2024, with no water quality failures occurring.

The root cause of this event was the dosed chlorine controller freezing following power issues at the site during adverse weather conditions.

The incident was exacerbated by a failed switch at the borehole site, which inhibited the plant shutdown on low treated chlorine. This incident would have been avoided if the site had a standby generator and uninterrupted power supply (UPS).

The event has been categorised as significant. Scottish Water has identified ten actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made four additional recommendations.