

Incident Summary

Turriff WTW Loss of control of coagulation process - 2nd February 2021

DWQR Inspector:
William Byers

Event No. 11528

Event Category: Significant

A routine planned maintenance task to service the coagulant dosing controller was carried out on 2nd February which required the dosing pumps to be switched to manual operation. Once the work was completed, the process was restored to automatic control but unnoticed to the operators, the dose speed had switched to maximum rather than recommence with the normal 30% speed. With the overdosing of the coagulant, an alarm was generated for high aluminium in post clarifier water and the operator was alerted to this by the staff in the Intelligent Control Centre. Investigations noted the 100% pump speed and that there was low flow to the monitor sample pump. Switching to the standby sample pump resolved the sampling water flow but the coagulant dosing speed did not respond. Switching the coagulant dosing to the standby pump also provided no change to the dosing speed and ultimately a reset was performed on the dosing controller which restored the coagulant dosing to normal. Whilst control of the process was lost for some 3 hours, the event caused the level of aluminium to be above the regulatory standard for more than 5 hours. Reactive sampling was carried out and this showed two failing samples in the final water from the station on the day of the event. Other sampling carried out on final water, at the outlet of the principal service reservoir and elsewhere in the distribution system showed there to be no other failures of water quality standards.

The cause of this event was the failure to monitor performance of coagulant dosing on completion of the routine service. Whilst the failure of the controller to restore to its normal operating setting appears to be an issue not previously experienced at the treatment works, it is nevertheless essential that proper checks are made following equipment servicing to ensure processes continue to operate as expected. The servicing of the coagulation controller should have been subject to a risk assessment to allow adequate planning, identify and document risk mitigations and checks and obtain approval through the Treatment Control process. I consider it likely that this would have avoided or reduced the impact and duration of the event.

The event has been categorised as significant. Scottish Water has identified three 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.