South Moorhouse WTW
pH Failure
October 2016

DWQR Inspector:
Colette Robertson-Kellie

Event No. 8087

Event Category: Significant

Scottish Water's Electrical and Mechanical section attended the site to replace a faulty pump which supplies the treated water pH monitor. In order to avoid disturbance to the final water pH dosing, the Operator put the lime dosing pump into flow proportional mode, rather than the pH being flow proportional and also trimmed by readings from the pH monitor. However, a valve on the sample line had been accidently opened, which caused flooding in two rooms on the site. The Operator dealt with the open valve and the flooding, and forgot to return the final water lime pump to automatic.

The final water duty and standby lime dosing pumps automatically flush and switch over every nine hours, and when the changeover to the standby pump occurred, the pump dose simply worked on a flow proportional basis. The size and output from the two lime pumps was not identical, and more lime was dosed when the changeover occurred. The pH of the treated water rose to pH 9.6, marginally above the PCV of 9.5, triggering an alarm at the Intelligent Control Centre (ICC), whose staff monitored the alarm for almost an hour before notifying Operations. Once the Operator was called to the site, he quickly determined the cause of the issue and returned the pump to automatic, after which the pH levels returned to their normal levels. The pH exceedance in the final water lasted for around seven hours.

No samples were taken in the distribution system as a result of this incident, so the impact of the incident on consumers is unknown. There were no consumer contacts as a result of the incident.

The cause of the incident was Operator error.

The event has been categorised as Significant. Scottish Water has identified seven actions which DWQR accepts are appropriate and will monitor to ensure they are completed prior to signing off the incident. DWQR made one additional recommendation.