

Carron Valley WTW Coagulation Failure 03 April 2011

DWQR Inspector:
William Byers

Summary of Incident

Alarms on the aluminium sulphate dosing system and disinfection process in the evening of 03 April 2011 alerted staff to a problem at Carron Valley Treatment Works in Stirlingshire. On arrival at the site, the Operators discovered both systems had stopped operating and they managed to restart the coagulation. A subsequent alarm on detection of a chlorine gas leak was also received and was attended to. During their investigation, the Operators found the chlorine controllers had stopped working. These units were restarted and all systems were restored to operation. The normal chlorine residuals had been restored in the processes within 2h 30m of the initial alarms and no failures in final water quality supplied to consumers were experienced.

DWQR Assessment of Cause of Incident

The failure of these processes are attributed to a spike in the power supply causing the dosing controllers to trip. The close proximity of the initial alarms which were within a minute of each other supports this. The later chlorine gas alarm is not thought to be directly related. Whilst the power spike is the root cause, it highlighted a weakness in the automatic shut down arrangements of the plant in such events.

DWQR Assessment of Actions Taken by Scottish Water

Scottish Water reacted promptly to the water quality alarms, attending the site within 45 minutes and they made effective investigations of the problems. The investigation of the problems with chlorine controllers has enabled a more robust control over the shut down of the works in the event of chlorine or other significant process alarms being generated to prevent untreated water leaving the works. DWQR is satisfied that appropriate additional sampling was carried out and that there were no failures against water quality parameters during or as a consequence of the incident.

Scottish Water has identified two actions from this incident. DWQR accepts that these are appropriate and will be monitoring to ensure they are completed prior to signing off the incident: