

INCIDENT TYPE:

ULTRA-VIOLET DISINFECTION UNITS Precautions to be taken when working on UV units



What happened

An operator was seriously injured when he worked on a UV disinfection unit without switching the unit off. Exposure to ultraviolet radiation is extremely harmful, even for short periods of time, and the person involved was blinded for 12 hours.

What actions should be taken

Ultra-violet disinfection units must be completely isolated (i.e., all the banks of UV tubes must be switched off) before any work commences on these units. Precautions should be taken in case this affects the quality of effluent or clean water being produced.

In addition, these units must be made secure to prevent any intruder on the site gaining access to the live UV tubes. If the units are not covered by secured covering plates, the individual tube banks should be secured in place in the unit, either individually by means of screws or bolts, or the entire set of tubes should be held in place by a covering plate or bar, secured to the frame of the unit with screws or bolts. In all cases the means of securing the tubes must be kept in place so that a tool is required to remove the bar or plate.

A plate or other cover should also be secured at any point on the unit where the UV tubes are visible. The manufacturer's guidance states the tubes are safe if immersed in liquid, but it is not always possible to guarantee that this will be the case. A secure covering plate should be designed to prevent sight of the active tubes.



Any UV unit in use in Scottish Water must be inspected by a competent fitter and the security of the unit checked on a regular basis, and inspections of these units should be carried out during 'Supervision for Safety' visits. A site specific risk assessment for ALL tasks on UV units must be prepared and the results communicated to any staff who might work with these units.

SWS staff and construction delivery partners must ensure that they are aware of these risk assessments and ensure that the necessary precautions are in place and working where they may come into contact with these units.