Virginia Alternative System Regulation Proposal

FAIL-SAFE: A performance requirement the uses a method, process or mechanism to inhibit the release of partially treated or untreated effluent from entering the soil or receiving environment. All alternative treatment systems must incorporate a fail-safe into the treatment works design.

I. Fail-safe Options

A. Forward flow control

i. Dosing pump preceding alternative treatment system that incorporates a pump lock out feature under alarm conditions (e.g. aerator failure alarm, disinfection device alarm, dispersal pump high water alarm) and prohibits the forward flow of effluent.

B. Process control

i. Alternative treatment system without dosing pump

a) Treatment unit that uses electricity but effluent flows by gravity

- Treatment unit must incorporate fail-safe mechanism. Options could be A, C or incorporate another feature into the treatment train (e.g. polishing sand filter)

b) Units that are strictly gravity flow would be inherently fail-safe (e.g. Ecoflo, Eljen)

C. Water supply control

i. Valve is placed in-line prior to the water supply entering the residence. The valve would be tied to equipment failure(s) and/or alarm condition(s) of the alternative treatment system. Water supply flow would be restricted but not cut-off. Occupants could get enough water to drink, but the pressure would be too low for showering, laundering, etc.

Submitted by: Colin Bishop