

jgm224

Spring 2012 Contributions

This semester, I am on the Linear Chemical Dose Controller team. We are working on developing an LCDC which can add up to three chemical doses at different points in the water treatment process. The new LCDC will allow for a coagulant dose prior to flocculation, another coagulant dose prior to the entrance into the Stacked Rapid Sand Filter, and a third dose, of chlorine solution, after filtration and before the treated water enters the distribution tank.

We need to determine how to most effectively calibrate the LCDC to give the most accurate doses possible for the entire range of possible flows. This involves minimizing total error but also maintaining simplicity so that the calibration technique can be understood and replicated. Another task is selecting components for the LCDC that are accessible, including durable and appropriate for lever arms, curvature-reducing devices and the float. Things to keep in mind while selecting parts include local availability, chlorine resistance and sturdiness/stability.

This semester we are working on keeping a running list of the materials in use, which can be adapted as more available or suitable alternatives are found. The majority of our work is refining the calibration technique and keeping total error summed from all sources to a total of 10% or less.