ABSTRACT for the 2013 ISA WWAC Symposium

Gaining control of Effluent Residual

Narciso Santiago, CAP[1]*

[1]EMA Inc., 2180 West S.R. 434, Suite 6100, Longwood, Florida, 32779, USA
(*correspondence: nsantiago@ema-inc.com , Tel: 407-865-5380)

FORMAT

30 minute presentation

KEYWORDS

Effluent residual, influent residual, chlorine control, flow pace feed rate, flow pace plus trim

ABSTRACT

Although today's advance process function technologies can provide ultimate optimization for chlorine residual control in waste water effluent, there are waste water organizations that are not taking advantage of the time and cost savings automatic control provides. Utilizing basic control methods to gain control of the process would realize big savings without the need to upgrade hardware like PLC (programmable logic controller). In such cases, once the process control strategy is defined, updating the PLC program to gain automatic control of effluent chlorine residual can be completed in a single day. Tuning may require additional time but the overall implementation cost proves to be very affordable with the immediate cost savings in chemicals.

Gaining control of the process should always be maintaining the process variable, in this case the effluent chlorine residual measured, within predetermined range parameters. Control optimization will always result in maintaining the process variable at the desired control setpoint value. Chlorine waste occurs anytime the effluent residual measured is outside the predetermined range parameters.

This presentation addresses how to implement basic automatic control of effluent residual without changing existing hardware. A specific example will be given as well as additional case study projects will be included and lessons learned. The audience for this paper will primarily be waste water treatment facilities owners.

About the Author:

Narciso Santiago, CAP has over 25 years of broad-based experience in automation, control, and electrical system engineering. He is currently a Project Engineer dedicated on designing automation and control systems for water and wastewater facilities. Narciso has a Bachelor's of Electronics Engineering Technology from the University of Puerto Rico, and Associate of Instrumentation Engineering Technology from the Technological Institute of Puerto Rico. Narciso has been a Certified Automation Professional since April 2009.