

From: Craig Stowell
Sent: Mon, 23 Feb 2015 20:33:33 +0000
To: David Sloan
Cc: Joel Klumpp; Vera Poe; Kerry D. Maroney; Daniel Nix (Wichita Falls); Mark Southard; Marlo Berg
Subject: RE: Wichita Falls UV Startup documentation
Attachments: Pages from Response to July 15 2013 TCEQ Letter Appendices A-I.PDF

David,

The review is going well but I'm missing a couple of things.

1. I requested fifteen-minute data for one day with varying flow and power levels, showing the collected values for flow rate, UVT, measured UV dose, sensor correction factor, the number of lamps in service, and the calculated minimum UV dose for each set of 15-minute data. The SWMOR-Alt spreadsheet's UV-CDA, UV-Sensor Data, and UV-UVT Analyzer worksheets were to cover that same day. So I would need the fifteen-minute data for February 13, 2015.
2. Also Trojan did not provide the boundary conditions verification we needed. We requested: Screen shots of the code showing bounding formulas restricting the input power level (> 30%), flow rate (>1 but < 25 MGD), UVT (>70%), and RED (>2.5 <20 Mj per cm cube) to the validated parameters. Attached are examples that CRMWD gave us for their validation.

If you have any questions please call.
Thanks,

Craig A. Stowell, P.E.

Texas Commission on Environmental Quality
Water Supply Division
Utilities Technical Review Team, MC-159
P.O. Box 13087
Austin, Texas 78711-3087
Tel. 512-239-4633

How is our customer service? Fill out our online customer satisfaction survey at www.tceq.texas.gov/customersurvey.

From: David Sloan [mailto:DWS@freese.com]
Sent: Wednesday, February 18, 2015 5:19 PM
To: Craig Stowell
Cc: Joel Klumpp; Vera Poe; Kerry D. Maroney; Russell Schreiber (Wichita Falls); Daniel Nix (Wichita Falls)
Subject: Wichita Falls UV Startup documentation

Craig: Attached please find a transmittal letter and startup submittals on behalf of the City of Wichita Falls for the UV Disinfection system installed at their Cypress WTP to increase log inactivation of

Cryptosporidium at their interim DPR facility. Please contact me if you have any questions regarding the submitted materials.

DAVID W. SLOAN, P.E., BCEE
SENIOR PROCESS ENGINEER
BOARD CERTIFIED ENVIRONMENTAL ENGINEER



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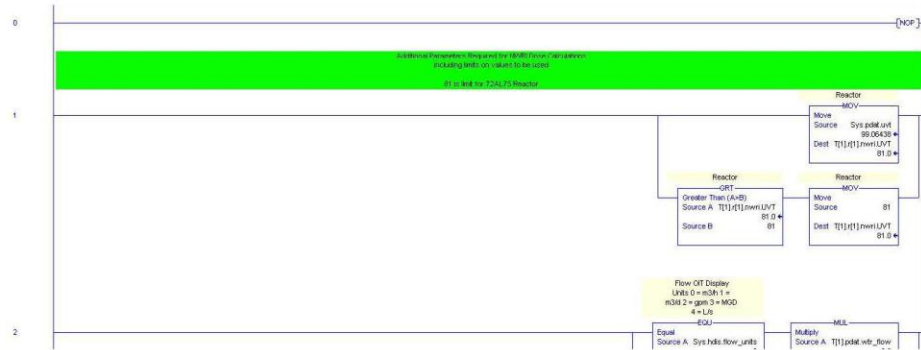
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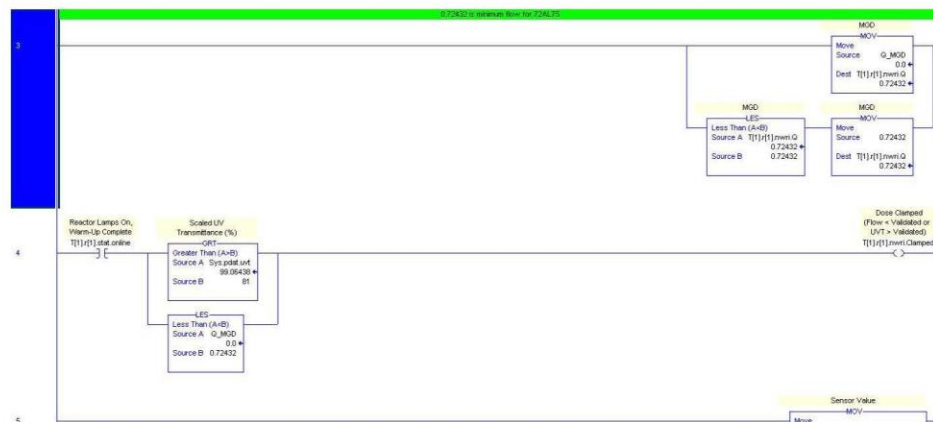
Appendix C – UV Integration Formula

Big Springs Logic Snapshots for UV Dose Calculations.

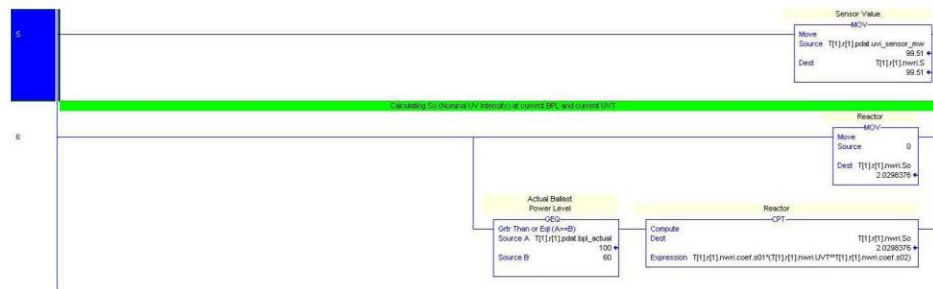
Logic to limit UV Transmittance to no higher than 81%

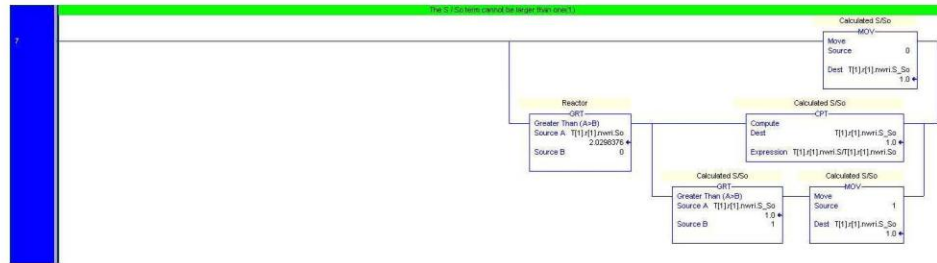


Logic to limit UV system flow rate to no lower than 503 gpm (0.72432 MGD)

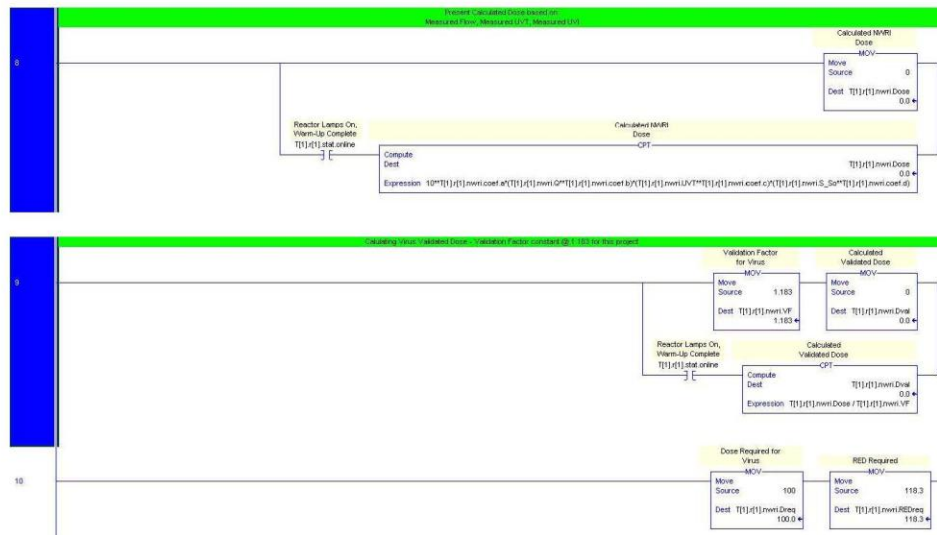


Logic to limit S/So to 1.0 or less





Validation Dose Calculation



Appendix D – Alarms and Shutdowns