Dr. Fletcher,

Our group is attempting to determine the fouling factor in a shell and tube heat exchanger and whether or not it is independent of flow rate. Our group has collected 9 trials worth of data, with each trial consisting of about 60 data points (for a total of 544 data points). Each trial measured the temperatures of the in and out streams of the shell and tube sides of the heat exchanger, with various flow rates (10, 32, and 54 gpm) for the tube side fluid and with various pressures (5, 10, and 15 psi) for the shell side fluid. From these temperature data and heat transfer correlations, we calculated fouling factors for each set of data. In the future we will measure more data at the flow rate-pressure combinations that we have not tested. We encountered problems when the Labview control interface failed to communicate to the control valve, which led to either near-overfilling of the water storage tank or near total drainage of the tank; we suspect Citrix interrupted this communication. Once we calculate a fouling factor (or a correlation for fouling factor based upon flow rate/Reynolds number), we will use the calculated fouling factor to select a heat exchanger from the manufacturer’s list that can be used to heat 200 gpm of water from 25°C to 75°C (assuming 100 or 300 psig steam).

Thanks,

Name withheld

**Total grade revised to 8/10. This paragraph was pretty nice.**