MET330 Test 3 Reflection

I feel that test 3 has demonstrated my work towards some of the course objectives. The first one being compute friction losses in pipes for a variety of configurations (series, parallel, network, etc.). This is demonstrated by the need to calculated losses in a parallel piping system. The next being apply the principles of conservation of energy (Bernoulli's equation) and mass to fluid flow systems. This was demonstrated by the need to apply Bernoulli's equation at different locations within the piping system presented.

In comparison to the available solution, my test compares worse than I had expected. I made some minor mistakes in the calculations which then transferred into larger issues later on in the calculations. I made mistakes in energy loss calculations throughout the system by missing certain components that caused energy losses. This transferred into a larger issue later on through the problem contributing to the end result being incorrect.

As for what my grade should be, it is as follows: PROBLEM 1: Initial setup – labeling, reference, points 1/5. Appropriate use of Bernoulli's to solve for hA 1/5. Compute all 11 energy losses 0.6/5. Compute pump power 0.8/5. Correct final results 0.6/5. Problem 2: Setting up the equations 1.3/7. Consider ALL energy losses in each branch 0.6/7. Setting up the iteration process 0.5/7. Solving the equations using excel 1/7. Tried all valve opening cases 0.5/7. Correct final results 0.5/7. FINAL GRADE: (90/2)*(3.7/5+4.3/7) = 64.3

The only problems that I encountered during the test were issues regarding calculations. What I did to troubleshoot this issue was rewatch lectures, refer to the book, as well as refer back to notes that were previously taken. Other than calculations issue I did not run into any other issue during the test.

Steps that I took to complete the whole test were similar to the steps I took for previous tests. This consisted of setting aside dedicated time during the week and weekend to work on the test. The times that I set aside were extended periods of time and I also took short breaks during this time to give myself mental breaks. I also took a day off of work to use the entire day to work on the test.

I have learned many new concepts during this test. I have learned many different concepts related to parallel piping systems that I was unaware of before. I was also somewhat familiar with the iteration process but had never used it to this extent that it was used on this test.

I think engineers use these concepts in many different piping systems. It is very common that bypasses are put into systems in order to keep a system running for a short while well certain pieces of equipment are changed out of a system due to failure.

I do not think I will be using the concepts to the extent of which we have learned about them in this class, but I do think I will apply simpler forms of the concepts to systems in my work life in the future. I do think what I have learned about is somewhat important to my professional career in the future. I have plans to go into manufacturing engineering and I believe there are certain aspects of which I will be applying these concepts. I think I will apply these concepts in the design of new machines or processes. I have not been able to directly apply these concepts to my professional career yet, but I have considered them in certain instances.

I feel I have been most successful and have improved the most at applying Bernoulli's equation. As compared to the beginning of the course Bernoulli's equation has only gotten more complicated in how we use it and I have adapted and learned how to use it in the application in which we need it.

I see the content in this course intersecting with my field or career I am in right now because I work as a pipe fitter and pipe welder. If I were to continue down the path, I am on right now it is possible I could apply the concepts I have learned in this course to many different piping systems in a design application.

In terms of how much time I spent on this test, I took roughly 17 hours working on this test. I organized the time by setting aside extended periods of time to work on the test with short breaks in between for mental breaks. I would not change anything about how I organized my time for the test as I have used this strategy before for taking tests and it has worked well for me.