Ian Bailey

ECE 4220

18 February 2015

Automatic Water Level Controller – Proposal

For my project this semester in Real Time Embedded Computing, I’ve decided to build and design an automatic water level controller. I’ve had some good and bad experiences with this concept in as a manager of water parks. Over the past few summers, when working at a water park, I’ve seen similar systems work very well, and also, not function at all and had to deal with the pain of manually filling the large bodies of water. When these systems work correctly, you never really have to manage the water level and it can save you a lot of time, as well as it being a generally more efficient way to operate bodies of water with water level requirements. This project could also have many other similar applications such as monitoring sump pump levels, or controlling systems that require water pressure as a driver of the system.

I’ve identified this as a problem due to the fact that last summer, I had to manually add water into the pools whenever my water levels were low, and this wasn’t a very efficient way to do things. I couldn’t add water overnight when it would be more effective because I wouldn’t be there to shut it off, which would thus overflow the pool. When working with large bodies of water, it takes time to get the level up a noticeable amount. This time is even larger when you’re battling the sun evaporating the water, as well as people splashing water out of the pools. If there was a system in place that could automatically control the level, then as it got low, it could kick itself on and off as necessary and take the pain out of running to and from the pumps to manually manage them.

I intend to be able to monitor the water level of a body of water in real time with some sort of probes, and use that information to turn on a pump if the level is too low, or open a drain if its too high. The concept is simple enough, and is very useful in bodies of water that are subject to changing levels.