Co-op Assignment

SABIC Innovative Plastics is a chemical company that produces resins such as Lexan, Ultem, and Xenoy, used in anything from Suzuki, Mitsubishi, and GM cars, to solar panels and medical devices. For my first term at SABIC, I worked in the Reliability Engineering department of the Selkirk, NY plant. The reliability department, as its name would suggest, works to improve the reliability of the plant. The main methodology that I worked with was an RCA, root cause analysis, which works to pinpoint the physical, human, and latent causes of problems, so similar or repetitive issues can be avoided. For example, one of my RCA's involved a pair of failed pumps, and the failure was pinpointed to broken seals. But the RCA looks deeper than that. It checks for pipe strain, thermal expansion, maintenance routines, anything that could lead to the seal failure, and then puts recommendations in place to prevent failures not only on the pumps that failed, but also on all similar pumps. I also worked to complete an RCA on a set of heat exchangers that had been fouling for the past fifteen years, as well as wrapping up various old RCA's that engineers had forgotten. Outside RCA's, I dabbled in process engineering to install a spare pump, and replace another. Both projects were initiated by the reliability department because they will minimize the effects of failures in the future. One of the pumps could even prevent a 3-5 day shutdown ($1.2 million in production loss alone and set to nearly double next summer!). Other projects I worked on included a site-wide gauge standard and assigning a criticality level to all assets on site. Everything was driven by the goal of improving the reliability of the plant.

My first week in Reliability was a little rough. My supervisor and mentor were only notified of my existence the Friday before my arrival. HR blamed this on my background check arriving late; this should not be the norm. The whole first week I had no computer and no projects. I took a few tours of the plant and read about how the plant works and RCM: reliability-centered maintenance. I had to set up my own orientation meetings with various members of the plant, which was difficult when I had no computer and didn’t know anyone’s name, but people were very helpful. Furthermore, most of my orientation revolved around computer based programs, cementing my need for a computer. After the first week, however, things improved. My mentor got me started on a few projects and tried to be available for me whenever I needed.

Assessment of Learning and Development

Prior to this term, I have had to engineering work experience. I learned a lot about the manufacturing process and the work environment. (For starters, I never expected steel-toed boots and hard hats!) But I also learned there was a lot more to the process than setting it up and hitting the “ON” switch. Engineers need to work hard to maintain the plant and machinery and a lot of time goes into how they can improve the plant in both reliability and efficiency.

As a chemical engineer working in a chemical plant, I thought there would be more chemistry. I couldn’t have been more wrong; I spent most of my time working on mechanical engineering based projects. I’ve learned that engineers can be useful in any area, regardless of
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their background, especially in methodologies such as RCAs. As a result, I learned more about pumps, motors, and heat exchangers than I ever would have in a classroom. I realized my classes taught me how processes worked and what individual components did, but not how the machines themselves worked; as some here described it, I learned about “black boxes” until now.

Most importantly, I improved my people skills. I learned never to hesitate if I have questions, always be confident, and never forget to enjoy myself and my work.

Life Outside of Co-op
SABIC has a list of suggested living areas, but it’s pricier and meant for long-term employees, though they will provide $125/week. I looked on Craig’s list and rented out an empty house fairly cheap and was less than 10 minutes from work. My housing may have been a lucky find, but you should always be able to find cheap housing in Albany and still only be 20 minutes from work. Selkirk has lovely small towns around it, as well as Albany for shopping and plenty of entertainment. A little further away is RPI, and while Troy isn’t notorious for being the safest place in the world, it has lots of entertainment and college life.

SABIC itself had ~6 other people under the age of 30 that were quite social, but their entertainment usually involved bars, so I couldn’t join in. I imagine things will be different in the summer, when there are other interns and co-op students. Either way, a car is a MUST HAVE here. Buses don’t run to Selkirk and it’s ~2 miles from the nearest housing complexes. A bike would be dangerous with the snow here.

SABIC also has a fitness center for its employees and people regularly play basketball outside on lunch breaks.

If you have a car, I highly recommend taking a few trips to the Adirondacks and Lake George for hiking/swimming/skiing; it’s beautiful and makes for a great day trip.

Evaluation
SABIC has left me with invaluable experience. By placing me in a position that was not chemical engineering-centered, I was forced to learn things I never could have in a classroom. I also loved the flexible hours. HR asked that I avoid over time, so I nearly never went over a forty hour week and I could set my own schedule. If I wanted to stay late and work on a project one day, I just left early another. The only downside was the lack of socialization. Being the only co-op and under 21 put a damper on the fun times.