Ethics Reflection

A code of ethics plays an important role in engineering, ensuring safe, high-quality, legal, and beneficial solutions for problems in the world. Without a Code of Ethics, people would lose faith in engineers and the solutions they provide, causing issues with solutions to leave solutions unimplemented and, as a whole, create a world of distrust. In many cases, laws regulate to help fulfill the purpose of a Code of Ethics; however, laws only go so far. Laws do not typically hold as strict of a standard as a Code of Ethics. Additionally, laws are written by politicians who typically partially understand a topic, especially all the technical ones encountered in engineering. Additionally, laws lag behind the boundaries being pushed forward by technology. A good example of the limitations of laws is cyber security. Laws are typically vague, nonexistent, or outdated with cybersecurity, but with a Code of Ethics, very important issues can have standards.

When I encounter an ethical situation, I consider all affected by the situation, whether that is myself, family, company, friends, or portions of society. I consider the consequences for all involved in the matter, the severity of the repercussions on people, and the cause of the consequences. From there make my decision based on mitigating negative consequences and maximizing positive outcomes. To demonstrate my thought process, I will use a situation discussed in class and put myself hypothetically in it. We read about Volkswagen falsifying their air quality test in millions of vehicles. If I were an engineer aware of the software changes to accomplish this, I would consider those involved. For starters, I could get in trouble with the company for pushing back on this decision, and if I lost my job because of it, it would affect my family. It would affect the company positively by saving money by falsifying the test, and telling the public would hurt their image. It negatively affects the public because of all the harmful gasses released. Considering all these negative effects on the public, specifically due to the company I work for, negligence means I should blow the whistle regardless of its effect on me or my company to protect society.

Throughout this class, we have learned about extreme ethical examples as the one discussed above. In my life, so far at least, I have not faced ethical issues that affect millions of consumers worldwide and all those in the general public. Other examples we worked through in class include companies interacting with the government, such as whether Amazon shares sound files from Amazon Echo with the government. Similarly, I have not faced a question affecting countless court cases. That being said, I still work with situations that can significantly impact other people.

An example is working as the Electrical Director for the solar car team. I am in charge of the entire electrical system of the solar car. I take responsibility in making decisions, very specifically due to the danger of the battery pack. I take it as my ethical responsibility to maximize the safety of our battery pack, not cutting corners of work or money to ensure it is safe. It is an important ethical situation for me to complete perfectly due to its ability to affect others. If the battery pack has a failure, it can create a very large fire, endangering myself, my

teammates, and the public as a whole, depending on where it occurs. This is similar to the case in class we read about where Ford Pintos were made with a design issue creating an explosion risk. Although we do not make thousands of cars, our cars still can affect people's health and live if we cut corners as they did. The opinion I hold on how to handle the battery of the solar car is held by all members of the electrical leadership team. Similarly, in class, we achieved a consensus on the most ethical way to address the situations we learned about in class.

Returning to the above-described issues about the Voltswagon falsification of gas emission tests. Many virtues of ethics relate to this topic. Three virtues of ethics that most specifically relate to this case study are Integrity, Honesty, and responsibility. Integrity is described as exercising good and ethical judgment in the field of practice. The software engineers who wrote the code to cheat the emission test did not practice integrity. Honesty is comprised of truthfulness and openness clearly violated by the company knowingly lying on their tests. Finally, Responsibility is described as a moral obligation to act for the good of others. In this case study, the company's actions directly went against the good of others. I chose these three because I felt like the company and those working for it blatantly violated them. Volkswagon did not as blatantly violate the other virtues. Although involved in this ethical situation, they were not as core. Although potentially included in one of the six listed in the virtue of ethics, another ethical virtue that could apply in the case study is courage. Courage would apply to this study would apply to employees to have the courage to shoot down the plan to falsify tests or to blow the whistle on the entire occurrence.

In conclusion, engineering needs a Code of Ethics, as demonstrated by all the examples explored in class. I will continue to practice the virtue of ethics for the betterment of society and to push engineering forward.