Final Ethics Assignment on ABET

EGR101- Introduction to Engineering

Section E2

David Jefts

December 8th, 2017

The Institute of Electrical and Electronics Engineers (IEEE) Code of Ethics is very closely based upon the National Society of Professional Engineers' (NSPE) Code of Ethics for Engineers, but expands upon it further in a way that more closely befits Bruce Barton's case. Based upon the IEEE Code of Ethics, Jack Jacobs violated a significant portion of the Code, Codes 1, 3, 5, 6, 7, 9, and 10 to be precise.

Jacobs broke IEEE Code 1, which states that one should always accept responsibility for their own decision making, especially when they could affect the safety, health, and welfare of the public. He failed to disclose that the plastic he tested does not work for the prototype, an issue that ended up causing a catastrophic failure and significantly set back the development of the appliances Barton had to develop. Jacobs should have held the performance of the plastic above his own eagerness to provide good results and return to his university.

Jacobs additionally did not properly determine the potential consequences of using faulty plastic, in violation of IEEE Code 3, wherein he made claims about the plastic that were not actually true or verifiable. According to Tom Mason, Jacobs either completely falsified the data, or based his claims upon a sample size that was much to small to be able to verifiably determine whether the plastic was suitable for the prototype. This also violated IEEE Code 5 which describes how research should be used to understand technology- both its application and potential repercussions. Jacobs' incorrect and incomplete data failed to describe the potential repercussions of using the plastic Barton was recommended. It is very possible that Jacobs actually did realize that the plastic would not work, but instead of informing Barton of this and properly documenting his testing, he created false data and failed to offer proper or honest criticisms of the plastic in direct violation of IEEE Code 7. He didn't acknowledge that the plastic was faulty, nor did he attempt to correct the error.

According to IEEE Code 9, Jacobs should have reported the flaw in the plastic to either Barton or Mason to avoid hurting XYZ company's reputation, and Barton and Mason's employment. His failure to report the flaw in the plastic may have very well hurt their employment because Barton had a very tight deadline to meet with the project, and Jacobs hurt Barton's chances of meeting that deadline.

When Jacobs took on a project that he was not actually competent for, he broke IEEE Code 6. Jacobs failed to explain to Barton or Mason that he was incapable of doing the testing or that there were limitations on what he actually could do. He took upon himself the task of doing the testing for the XYZ appliances without actually having the time, motivation, and/or ability to test the plastic like Barton needed him to. Instead, Jacobs could have come to his overseers and expressed his concerns.

Mason neglected to properly assist Barton or Jacobs with the project. IEEE Code 10 states that it is the duty of professional engineers to help co-workers in their professional development. When Mason left the project to Barton without proper oversight, he didn’t give his co-worker the opportunity for feedback and development. Mason left the stress testing to a college student without proper observation, which ultimately hurt Bruce Barton's project. Jacobs was at XYZ for a co-op experience, where the student learns from the company and develops into a proper engineer. Without proper guidance, Jack Jacobs’ skills could not develop, and ultimately the company suffered as a result. Tom Mason could have provided oversight when he assigned these tasks, to ensure the development of his co-workers and proper data.

Following a code of ethics ensures the proper development and research for projects intended to be used by the public, as well as providing for greater safety. Engineering ethics have real-life effects all around us, and it is our duty to ourselves and society to adhere to these codes.