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Executive Summary

This report contains a general analysis of the existing electrical system for the UCSD Cal (IT)² building. Because of the location of the building, California Energy Code Title 24 was accounted for in my analysis of lighting systems, power densities and energy consumption. Using the National Electric Code (2002), I determined the lighting, receptacle, mechanical, and other various electrical loads. From the panelboard, light fixture, and mechanical schedules, I was able to verify if my summing of Volt-Amps was correct or not. After summing all my loads, and using the proper demand factors found in the NEC, I was able to check the size of my three main unit substations and feeder sizes.

After finding my values, I found that the main power feeds into the substations and circuit breakers were sized appropriately. In fact, they were sized extremely high in case of growth, voltage drop, and number of conductors in the conduits. On top of the analysis, the utility rate structure was given to see how this building will be billed for energy.