Technical Report Two

Building and Plant Energy Analysis

Defense Information Systems Agency Headquarters Facility

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Mechanical Option

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Executive Summary

In order to better understand the Defense Information Systems Agency (DISA) Headquarters Facility's performance, an energy model simulation run by Trance TRACE 700 software was performed. This simulation helped calculate cooling loads, energy consumption, and various costs to run the building.

The simulation was simplified due to the size of this project (1,000,000 + SF) and time constraints, as this model took the Engineer months to complete. An energy model of the Operations building which is typical office space for the rest of the facility was completed. The energy model yielded results that seemed reasonable. The electricity use was dominated by plug loads, which makes sense when considering the use of the building. The calculated heating and cooling loads were a bit off when compared to the results of the Engineer's energy model. The cooling load had a 35% error, while the heating load had a 17% error. Although the $/SF of the office space is high compared to typical office space, this facility has much more equipment than a typical office building. The estimated annually energy consumption for the DISA HQ was found to be $ 2,814,385.50.