

## **Building Electrical System Overview**

### **Executive Summary:**

The following report describes the existing emergency power distribution system and loads associated with that portion of the system. The addition of the new wing was fed by spare slots in existing unit substations located on the 6<sup>th</sup> floor penthouse of the current hospital. It is important to note that hospital emergency systems must abide by the National Electric Code Article 517 (Health Care Facilities). Thus, the emergency system must be broken into three distinct branches: life safety, critical, and mechanical. In case of prolonged power failure, these branches ensure the hospital's essential components of the electrical system function properly. To make certain the entire system does not shut down due to a generator overload, the branches are capable of shutting down independent of each other.

To properly evaluate the current emergency system, NEC load calculations were performed on all panels and feeders to compare the sizing of these components with the current loads on the system. A one-line diagram of the emergency system component of the addition is enclosed. A table highlighting the various characteristics of each fixture, lamp, and ballast is included. The panels, circuit breakers, and feeders were all sized correctly with plenty of room for future expansion. Utility rates for the area were obtained; however, proper rate comparison could not be performed due to incomplete data concerning the entire hospital and its associated loads.

