



EXECUTIVE SUMMARY

The electrical system can best be described as star; one main switchboard that feeds to the main distribution panel, which then feeds the other panels. The normal power is provided to the existing Assisted Living Facility from a PEPCO owned network transformer vault. The electrical service terminates in a 2000 amp switchboard protected by a fused bolted pressure switch located in the basement of the Assisted Living Facility. From the switchboard power is fed to the distribution panel board, designated Panel MDP, rated 480Y/277 volts, 3 phase, 800A. Mechanical equipment is served directly from Panel MDP. Lighting and receptacle loads are served by dry-type transformers and 208Y/120 panelboards. The distribution panels are located in the Penthouse area of the Assisted Living Facility and panelboards are fed down from that location.

The emergency power is generated via and on-site, 150 KW diesel-fired emergency generator. The generator is located outside on grade, and provides emergency power to the egress lighting and a limited amount of refrigeration in the kitchen. Emergency power for the addition is provided for the egress lighting, and is received from the existing emergency distribution panel EH1. Emergency power is stepped down to 208Y/120 voltage and distributed to life safety panels on floors 2 and 4 of the addition.

A calculation of the NEC building design load was performed to check the existing wire sizes and over current protection devices for the main feeders and distribution panels. As the report indicates, everything was sized correctly with additional capacity for growth. The building has not yet been built, so there were no past electrical bills to analyze for power factor correction and demand charges. The addition will be built under a new rate structure than what the current building is operating. After deregulation, PEPCO revamped their rate structures with new categories and rates. When cost analysis research is done for different systems and methods of power distribution, the building will be put into the rate structure category, “GT LV”, Time Metered General Service – Low Voltage Service Schedule.