Design of an Electrical Supply System for the FCC Tower High-Rise Building

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***Abstract*—This thesis presents the design of an electrical supply system for the FCC Tower high-rise building. The author determined the load calculation, selected the transformer and backup generator, and designed the electrical supply network. The design adheres to international and Vietnamese standards to ensure technical, safety, aesthetic, and economic requirements. The author used load calculation methods, selected transformers and backup generators, and designed the electrical supply network. The design included two 1250 kVA transformers to supply 22/0.4 kV, with specific technical parameters. A 700 kVA backup generator was chosen to provide temporary power during outages. The electrical supply network design included two distribution cabinets, one for residential loads and one for basement, service, and elevator loads. The design ensures the quality of electrical power, reliability, and ease of operation. The author discusses the selection of the power supply sources and the wiring layout, ensuring simplicity and future development considerations.**

***Index Terms*—electrical supply system, high-rise building, load calculation, transformer, backup generator**

I. Introduction

The thesis focuses on the design of an electrical supply system for the FCC Tower high-rise building. It covers load calculation, transformer selection, backup generator choice, and the overall electrical supply network design. The design adheres to international and Vietnamese standards to ensure technical, safety, aesthetic, and economic requirements. The author used load calculation methods, selected transformers and backup generators, and designed the electrical supply network. The design included two 1250 kVA transformers to supply 22/0.4 kV, with specific technical parameters. A 700 kVA backup generator was chosen to provide temporary power during outages. The electrical supply network design included two distribution cabinets, one for residential loads and one for basement, service, and elevator loads. The design ensures the quality of electrical power, reliability, and ease of operation. The author discusses the selection of the power supply sources and the wiring layout, ensuring simplicity and future development considerations [1].

II. Methods

The author used load calculation methods, selected transformers and backup generators, and designed the electrical supply network. The design followed international and Vietnamese standards to ensure compliance with technical, safety, aesthetic, and economic requirements. The author used load calculation methods, selected transformers and backup generators, and designed the electrical supply network. The design included two 1250 kVA transformers to supply 22/0.4 kV, with specific technical parameters. A 700 kVA backup generator was chosen to provide temporary power during outages. The electrical supply network design included two distribution cabinets, one for residential loads and one for basement, service, and elevator loads. The design ensures the quality of electrical power, reliability, and ease of operation. The author discusses the selection of the power supply sources and the wiring layout, ensuring simplicity and future development considerations [1].

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III. Results

The author determined the load calculation for each floor and the entire building. Two 1250 kVA transformers were selected to supply 22/0.4 kV, with specific technical parameters. A 700 kVA backup generator was chosen to provide temporary power during outages. The electrical supply network design included two distribution cabinets, one for residential loads and one for basement, service, and elevator loads. The design ensures the quality of electrical power, reliability, and ease of operation. The author discusses the selection of the power supply sources and the wiring layout, ensuring simplicity and future development considerations [1].

IV. Discussion

The design ensures the quality of electrical power, reliability, and ease of operation. The author discusses the selection of the power supply sources and the wiring layout, ensuring simplicity and future development considerations. The design includes two 1250 kVA transformers to supply 22/0.4 kV, with specific technical parameters. A 700 kVA backup generator was chosen to provide temporary power during outages. The electrical supply network design includes two distribution cabinets, one for residential loads and one for basement, service, and elevator loads. The design ensures the quality of electrical power, reliability, and ease of operation. The author discusses the selection of the power supply sources and the wiring layout, ensuring simplicity and future development considerations [1].

V. Conclusion

The thesis successfully completed the design of the electrical supply system for the FCC Tower high-rise building. It included load calculation, transformer and backup generator selection, and network design. The author concludes that the application of design software in the future could improve the design process. The design includes two 1250 kVA transformers to supply 22/0.4 kV, with specific technical parameters. A 700 kVA backup generator was chosen to provide temporary power during outages. The electrical supply network design includes two distribution cabinets, one for residential loads and one for basement, service, and elevator loads. The design ensures the quality of electrical power, reliability, and ease of operation. The author discusses the selection of the power supply sources and the wiring layout, ensuring simplicity and future development considerations [1].

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