Design of an Electrical Supply System for a Machine Shop and the Entire Z29 Factory

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***Abstract*—This thesis focuses on the design of an electrical supply system for a machine shop and the entire Z29 factory. The author, a student from the Industrial Electrical Engineering class K15A, conducted detailed load calculations, network design, and equipment selection. The design process followed international and Vietnamese standards to ensure the system meets the necessary requirements. The author performed short-circuit current calculations and designed lighting systems, using specific formulas and standard values. The work includes detailed calculations for short-circuit currents, design of lighting systems, and the selection of appropriate electrical equipment. However, no numerical evaluations or performance claims are provided.**

***Index Terms*—electrical supply system, load calculation, short-circuit current, lighting design, standard, design**

I. Introduction

The thesis presents the design of an electrical supply system for a machine shop and the entire Z29 factory. The project covers load calculations, network design, and equipment selection, ensuring the system meets the necessary standards. The design process is divided into several parts, each following specific standards to ensure the system's technical, safety, aesthetic, and economic requirements. The author highlights the importance of using software tools like Visio, Excel, and AutoCAD Electrical in the design process [1].

II. Methods

The author conducted load calculations, designed high and low voltage power networks, and selected appropriate electrical equipment. The design process followed international and Vietnamese standards to ensure the system's technical, safety, aesthetic, and economic requirements. Short-circuit current calculations were performed using specific formulas and standard values. The author used standard international and Vietnamese standards to ensure the system meets the necessary requirements. The design process is divided into several parts, each following specific standards to ensure the system's technical, safety, aesthetic, and economic requirements. The author used software tools like Visio, Excel, and AutoCAD Electrical in the design process [1].

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III. Results

The thesis includes detailed calculations for short-circuit currents, design of lighting systems, and the selection of appropriate electrical equipment. The author used standard international and Vietnamese standards to ensure the system meets the necessary requirements. However, no numerical evaluations or performance claims are provided. The author performed short-circuit current calculations using specific formulas and standard values. The calculations were based on the given formulas and standard values, but no measured evaluations or performance claims are provided. The author designed lighting systems and selected appropriate electrical equipment, but no numerical evaluations or performance claims are provided [1].

IV. Discussion

The author discusses the design process and the application of various standards in the electrical supply system. The design process is divided into several parts, each following specific standards to ensure the system's technical, safety, aesthetic, and economic requirements. The author highlights the importance of using software tools like Visio, Excel, and AutoCAD Electrical in the design process. The author emphasizes the importance of adhering to international and Vietnamese standards in the design process. The author also discusses the use of specific formulas and standard values in the short-circuit current calculations, but no measured evaluations or performance claims are provided [1].

V. Conclusion

The thesis concludes that the design of the electrical supply system for the machine shop and the entire Z29 factory was completed according to international and Vietnamese standards. The author emphasizes the importance of using software tools in the design process and the valuable experience gained from the project. The author highlights the importance of adhering to international and Vietnamese standards in the design process. The author also discusses the use of specific formulas and standard values in the short-circuit current calculations, but no measured evaluations or performance claims are provided [1].

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