REVIEWER'S OPINION OF FINAL THESIS

I. IDENTIFICATION DATA

Thesis name:	**Elements of analyzing and testing an electric power system**
Author's name:	**Generalov Alexey**
Type of thesis :	master
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Economics, Management and Humanities
Thesis reviewer:	Ing. Martin Hejhal
Reviewer's department:	PREdistribuce, a. s.

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment **challenging**

Evaluation of thesis difficulty of assignment.

The assignment for master thesis is relatively complex – it covers both the finding (and verification) of the technical solution and the economical evaluation.

Satisfaction of assignment **fulfilled with minor objections**

Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.

The thesis formally covers all points given in the assignment. The points related to technical solution are very well elaborated. On the other hand, the economical evaluation is very short and the evaluation of active filter-compensating devices is missing. This part of the master thesis should form the main part of it at the Economics department.

Method of conception **correct**

Assess that student has chosen correct approach or solution methods.

The approach of net present value evaluation (NPV) was technically implemented correctly. The inputs to the calculation are not fully explained – such as the timeframe for calculation and its relation to "payback period of 5 years".

Technical level **D - satisfactory.**

Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.

The proved level of technical knowledge is much higher than the level of economical knowledge. The economical part of the thesis consists of 8 pages in total, which is about 12% of the thesis. The analysis does not go much into the detail, it does not offer a comparison of different solutions of the problem for making a decision which option is the best one. Negative NPV does not automatically mean that the project is not the right option – for example if some action is needed to be done to meet the required specifications and parameters of the network, than a project with the least negative NPV may be the right choice.

Formal and language level, scope of thesis **C - good.**

Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.

The overall language level is at a good level. There are several minor typographical errors, such as different number formats used in Table 13, x-axis labels crossed by grid in Figure 43, non-linear x-axis in diagrams in Figure 41 and 42.

Selection of sources, citation correctness **A - excellent.**

Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.

The used sources are relevant and the requirements of citation ethics have been met.

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III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

Summarize thesis aspects that swayed your final evaluation. Please present apt questions which student should answer during defense.

Questions:

1. **Would you explain the following sentence on page 64?**
   "The VDB depreciation method and the depreciation values for fluorescent light bulbs are presented in Table 7."
   Table 7 contains *"The error of voltage at substations"*. In addition, why are the values for fluorescent light bulbs taken into account, when calculating economical evaluation for capacitor bank?

2. **How did you calculate the payback period of 5 years for capacitor bank? (page 63)**
   "The payback period was taken from the ETAP capacitor battery library (Table 10)."
   Table 10 contains only technical parameters for capacitor bank and cost of installation, purchasing and maintenance.

3. **Why did you decide for the base period of 5 years for NPV?**

4. **Would you explain why the economical evaluation of active filter-compensating devices is missing?**

I evaluate handed thesis with classification grade **D - satisfactory.**

Date: **2.6.2022** Signature: Ing. Martin Hejhal