



Master thesis opponent's review

Master thesis: **Technical and economic studies of application of cables with insulation from cross-linked polyethylene in the case of reconstruction of schemes and networks of power supply system**

Author: **Irina Nikolaeva**

Thesis supervisor: **Ing. Miroslav Vitek, CSc.**

Thesis opponent: **Ing. Jan Švec, Ph.D.**

Rating (1 – 5)
(1 = best; 5 = worst):

1. Fulfillment of assignment requirements:	<input type="text" value="2"/>
2. Systematic solutions of individual tasks:	<input type="text" value="1"/>
3. Ability to apply knowledge and to use literature:	<input type="text" value="2"/>
4. Thesis formal and language level:	<input type="text" value="1"/>
5. Thesis readability and structuring:	<input type="text" value="2"/>
6. Thesis professional level:	<input type="text" value="2"/>
7. Conclusions and their formulation:	<input type="text" value="1"/>
8. Final mark evaluation (A, B, C, D, E, F):	<input type="text" value="C"/>
verbal:	good

Brief summary evaluation of the thesis (compulsory):

The student fulfilled all the assignment requirements. The thesis has a good structure with all the necessary chapters. The literature overview is a nice and useful description of oil-filled cables and XLPE cables with comparison of their characteristics. The technical part mentions the basic steps of dimensioning and reconstruction of MV distribution grid in the factory. The student described all the necessary steps, however some relations and explanations are not very clear or with steps from one to another which makes the chapter a little confusing for the reader. The meaning of some quantities is also hard to find. Lots of equations are taken directly from the references about designing without any explanations. The economic evaluation explains many partial issues for the right decision about investments and finally states the result when comparing two different cable technologies. The thesis formal level is very good, I would only recommend to order references with one number series for all categories and to add numbers to equations in all chapters. Be careful: lighting vs. lightning. In the technical part the impedances must be added by each component (real, imaginary) separately. However I appreciate the thesis as a good proposal for future decision about cable grid reconstructing in a real situation.



Questions:

1. Can you explain the meaning of the “effective number of equipment” – page 25 / equation (4)?
2. Can you explain what means \sqrt{TF} (page 25 bottom)?
3. Why is the circuit breaker rated current higher than calculated short-circuit current (page 43)?

Date: 6th June 2018

Signature: