

$$a) S_{AL/Fe} = S_{ml} + S_{pe} = 243 + 24,2 = 267,2 \text{ mm}^2$$

$$b) \kappa_{AL/Fe} = \frac{G_{AL/Fe}}{S_{AL/Fe}} = \frac{980 \cdot 10^{-3} \text{ dan/m}}{267,2 \text{ mm}^2} = 3,666 \cdot 10^{-3} \text{ dan/mm}$$

$$b) R = \frac{\rho L}{S_{ml}} = \frac{2,9 \cdot 10^{-8} \text{ } \Omega \text{m} \cdot 120 \cdot 10^3 \text{ m}}{243 \text{ mm}^2} = \frac{2,9 \cdot 10^{-8} \cdot 120 \cdot 10^3}{243 \cdot 10^{-6}}$$

$$= 14,32 \text{ } \Omega$$

$$c) P = \sqrt{3} U I \cos \varphi \Rightarrow I = \frac{P}{\sqrt{3} U \cos \varphi} \Rightarrow$$

$$I_{\#} = \frac{10 \cdot 10^6}{\sqrt{3} \cdot 110 \cdot 10^3 \cdot 0,9} = 58,38 \text{ A}$$

$$\Delta P_1 = R I_{\#}^2 = 14,32 \cdot 58,38^2 = 0,0408 \text{ MW}$$

$$\Delta P_3 = 3 R I_{\#}^2 = 0,1224 \text{ MW}$$

$$I = \frac{10 \cdot 10^6}{\sqrt{3} \cdot 400 \cdot 10^3 \cdot 0,9} = 16,0565 \text{ A}$$

$$\Delta P_1 = R I^2 = 14,32 \cdot 16,0565^2 = 0,00269 \text{ MW}$$

$$\Delta P_3 = 3 R I^2 = 0,01107 \text{ MW}$$