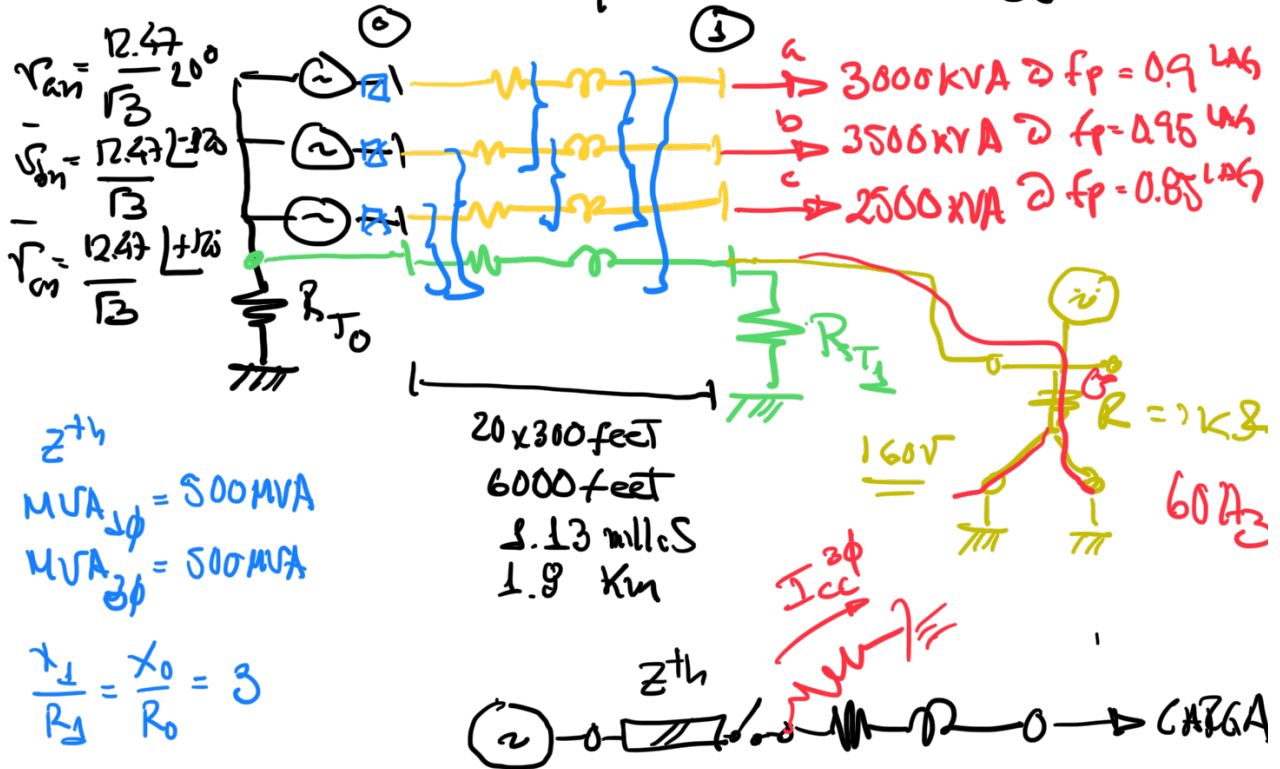


WORKSHOP - STRA 5234

Kersting NEV 3 ϕ + H desbalanceado



$$I_{cc}^{3\phi} = \frac{500 \text{ MVA}}{\sqrt{3} \cdot 12.47 \text{ kV}} = 23.14 \text{ kA}$$

$$I_{cc}^{1\phi} = 3 \frac{500 \text{ MVA}}{\left(\frac{12.47}{\sqrt{3}} \right)} = 3 I_0 = 23.14 \text{ kA}$$

$$MVA_{3\phi} = MVA_{1\phi} \Rightarrow I_{cc}^{3\phi} = I_{cc}^{1\phi}$$

$$x_1/R_1 = x_0/R_0 \Rightarrow Z_{th}^{3\phi} = Z_{th}^{1\phi}$$

$$\boxed{V_1^{\min} < |V_2| < V_1^{\max}}$$

$$KVA = 3000 + 2100 + 3500 = 9 \text{ MVA}$$

$$f_p \approx 0.9$$

$$V_1 = V_0 - V_0 \% \Delta V_{01}$$

$$V_1 = V_0 \cdot [1 - \% \Delta V_{01}]$$

$$\% \Delta V_{01} = \frac{9000}{10(12.47)^2} \left[\frac{0.306 \cdot 0.9}{\times 1.13} + 0.627 \sqrt{1 - 0.9^2} \right]$$

$$V_1^a = \frac{12.47}{\sqrt{3}} \cdot [1 - 0.035]$$

$$\boxed{V_1^a = V_1^b = V_1^c = 6.94 \text{ kV}}$$

$\theta_a?$

4%

$$V_B = \frac{12.47}{\sqrt{3}} = \frac{6.94}{12.47/\sqrt{3}} = \frac{6.94}{7.2} = 0.96$$

7.099

$$\% \Delta V^a = \frac{7.2 - 6.68}{7.2} = 7.1\%$$

$$\% \Delta V^a = 5.8\% < 5\% \text{ NO!}$$

$$\% \Delta V^c = \frac{7.11 - 6.99}{7.11} = 2.39\%$$

$$\% \Delta V^b = \frac{7.09 - 6.92}{7.09} = 3.1\%$$

$$\boxed{\% \Delta V^{\max} = 5\%}$$

OpenDSS
Neplan
PF

$$\Delta P_{3\phi} = 210 \text{ kW} \quad [3\phi]$$

$$\Delta P_{1\phi} = 199 \text{ kW} \quad [1\phi - \text{SQ}^+]$$

$$\frac{10 \text{ kW}}{200 \text{ kW}} = 5\%$$

$$\boxed{V_{r_{\max}}^{\text{new}} = V_0 + Z^+ \left(\frac{-S}{3V_{\text{old}}^2} \right)^*}$$

$$\int_{cma}^{\infty}$$

$$7. \begin{bmatrix} 7.2 & L_0 \\ 7.2 & 1000 \\ 7.2 & L_0 + 1000 \end{bmatrix}$$