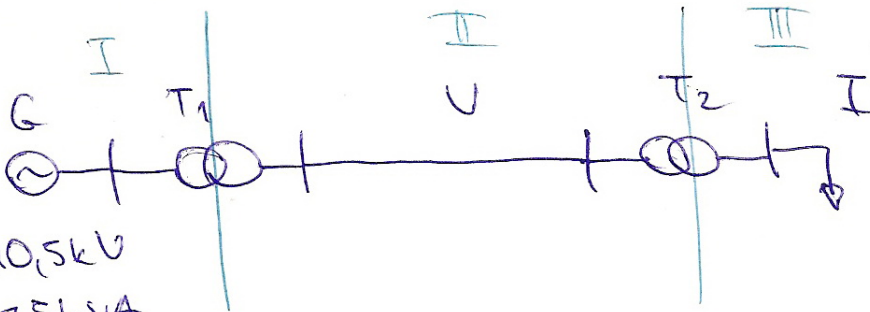


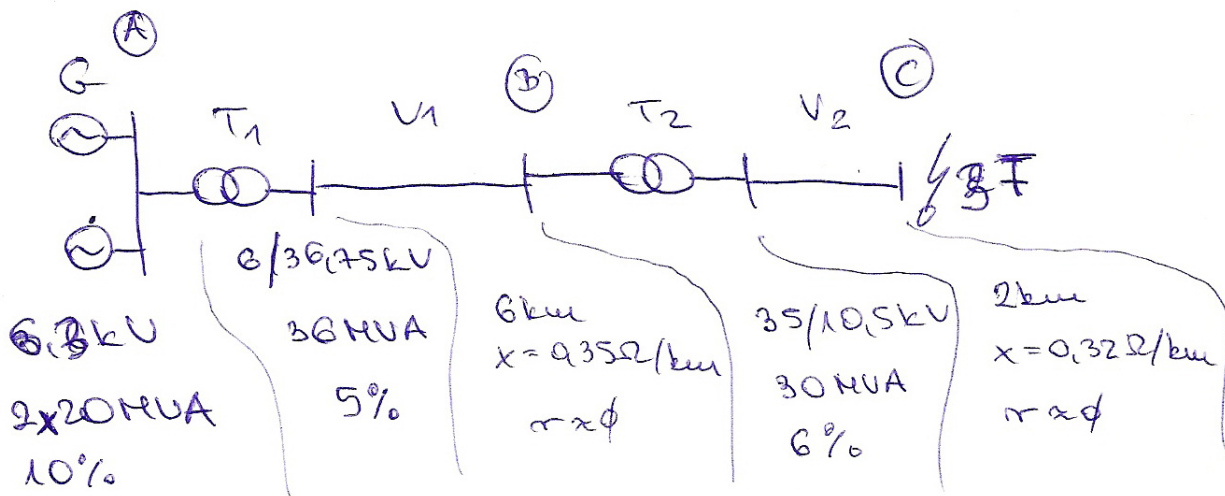
2009.03.27. Energetika gyakorlat

①



$U_n = 10,5 \text{ kV}$
 $S_n = 75 \text{ kVA}$

②

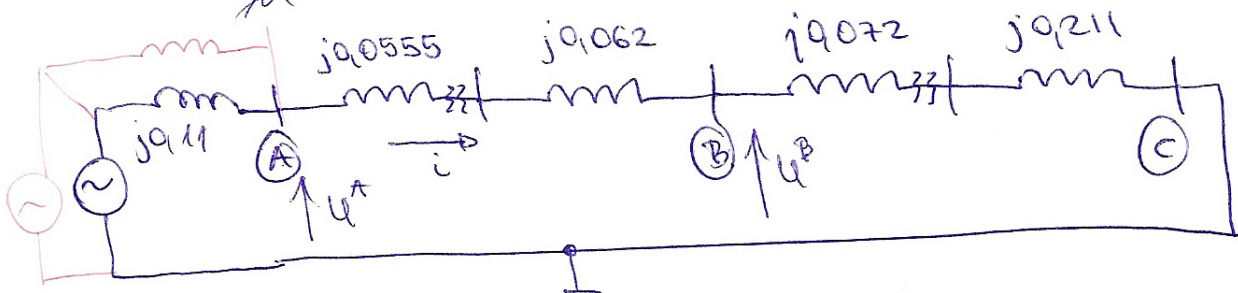


$I_2 = ?$ - zárás helyén
 ideje alatt
 - ártalmos áramerősség
 - absz. érték
 (kA, A)

$I_G^A = ?$
 $I^B = ?$
 $U^{A,B,C} = ?$ - zárás alatt
 - zárás előtt

- zárás u_j -ből következik
 - Generátor: $U^A = U_{qn}$

reaktanciák
 felvételnek
 r=0



	I	II	III	
U_a	6	38,75	11	kV, von.
S_a	40	40	40	MVA 3φ
Z_a		33,8	3,03	Ω
I_a	3850	628	2100	kA

$$I_a = \frac{S_a}{\sqrt{3} U_a}$$

$$Z_a^{II} = \frac{38,75^2}{40} = 33,8 \Omega$$

$$Z_a^{III} = \frac{11^2}{40} = 3,03$$

$$Z_a^{III} = 33,8 \left(\frac{10,5}{35} \right)^2 = 3,03$$

$$U_a^{III} = U_a \cdot 38,75 \cdot \frac{10,5}{35} = 11 \text{ kV}$$

$$X_{qe} = \frac{X_q^{(2)}}{Z_a^{(2)}} = \frac{10 \cdot \frac{6,3^2}{40}}{\frac{6,3^2}{40}} = \frac{10}{100} \cdot \frac{(6,3)^2}{40} = 0,11$$

$$X_{T1} = \frac{5}{100} \cdot \frac{(6)^2}{\frac{36}{40}} = 0,0555$$

$$X_{V1} = \frac{0,35 \cdot 6}{33,8} = 0,062$$

$$X_{T2} = \frac{6}{100} \cdot \frac{(10,5/11)^2}{\frac{36}{40}} = 0,072$$

$$X_{V2} = \frac{2 \cdot 0,32}{3,03} = 0,211$$

$$U_{gr} = 6,3 \text{ kV} = U^A \text{ Belast. elöft}$$

$$U_g = \frac{6,3}{6} = 1,05 \text{ — überlastbar bei } U_{gr} \text{ und } U_{gr} \text{ a } f_{gr}$$

$$U^A = 10,5 \rightarrow U_{I}^A = U^A \cdot U_a^I / 3 =$$

$$U_{V}^A = U^A \cdot 6 = 6,3 \text{ kV}$$

$$U^B = 10,5 \rightarrow U_{V}^B = U^B \cdot 38,75 = 38,6 \text{ kV}$$

$$U^C = 1,05 \rightarrow U_{V}^C = 1,05 \cdot 11 = 11,55 \text{ kV}$$

$$i = \frac{U_g}{i(X_q + X_{T1} + X_{V1} + X_{T2} + X_{V2})} = \frac{1,05}{j0,11} = -j2,06$$

$$|I^A| = |i| \cdot I_a^I = 2,06 \cdot 3850 = 7910 \text{ A}$$

$$|I^B| = |i| \cdot I_a^{II} = 2,06 \cdot 628 = 1290 \text{ A}$$

$$|I^C| = |i| \cdot I_a^{III} = 2,06 \cdot 2100 = 4320 \text{ A}$$

$$\frac{I^A}{I_u^{T1}} = \frac{7910}{3464} = 2,28$$

$$\frac{I^B}{I_u^{T2}} = \frac{1290}{495} = 2,6$$

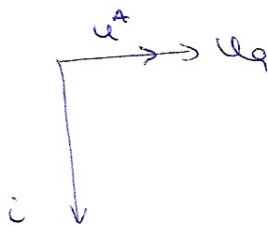
$$I_u^{T1} = \frac{S_u^{T1}}{\sqrt{3} U_u^{T1}} =$$

$$I_u^{T2} = \frac{30 \text{ MVA}}{\sqrt{3} \cdot 35 \text{ kV}} = 495 \text{ A}$$

$$u^A = u_g \frac{j(X_{T1}^{*} + X_{u1} + X_{T2} + U_{u2})}{j(X_{g1} + \dots)} = 0,824$$

assumed

$$U_u^A = u^A G = 5,2 \text{ kV}$$



$$U_u^B = u^B 36,75 = 21,5 \text{ kV}$$

$$u^B = u^A \frac{j(X_{T2} + X_{u2})}{j(X_{T1} + X_{u1} + X_{T2} + X_{u2})} = 0,582$$