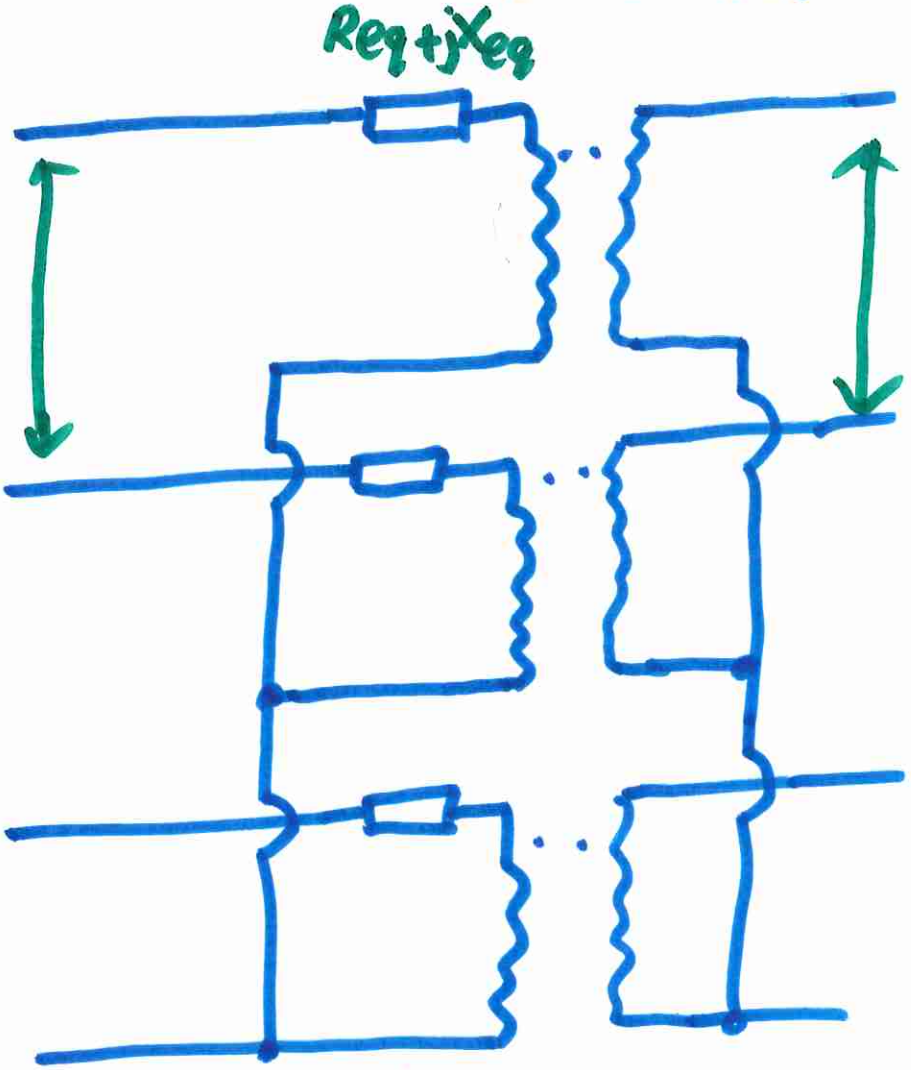
Y − Y 34.5 kV : 11 kV $S_{3\phi,rating} = 600$ MVA

line-line line-line



$$Z_{\phi,b} = \frac{V_{\phi,b}^2}{S_{\phi,b}}$$

~~$V_{LL,b} = 34.5$ kV~~

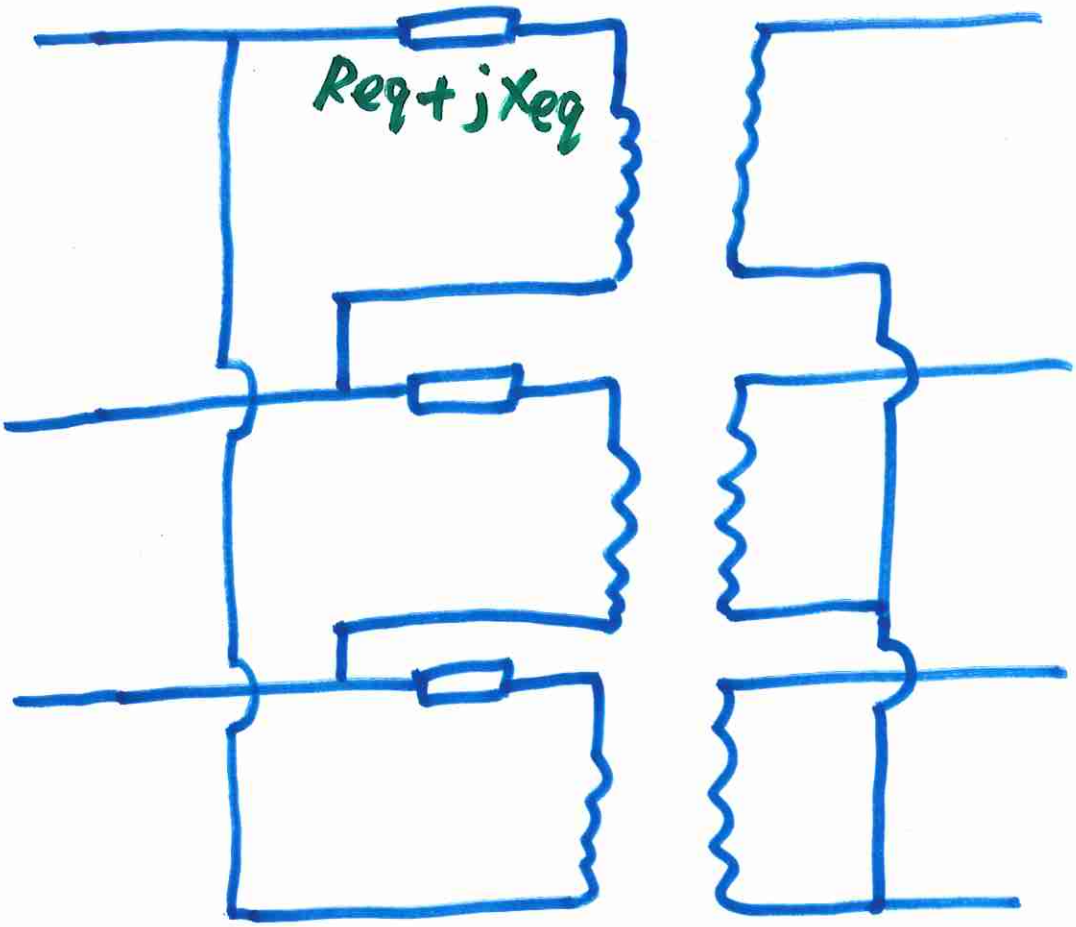
$V_{LL,b} = 34.5$ kV

$V_{\phi,b} = $ ~~$34.5/\sqrt{3}$~~ $V_{LL,b}/\sqrt{3}$

$S_{\phi,b} = S_{3\phi,b}/3$

$$Z_{\phi,b} = \frac{(V_{LL,b}/\sqrt{3})^2}{S_{3\phi,b}/3} = \frac{V_{LL,b}^2}{S_{3\phi,b}}$$

Δ - Y 34.5 kV : 11 kV (l-l) $S_{3\phi,b} = 600\ MVA$



$$Z_{\phi,b} = \frac{V_{\phi,b}^2}{S_{\phi,b}}$$

$$V_{\phi,b} = V_{ll,b}$$

$$S_{\phi,b} = S_{3\phi,b}/3$$

$$Z_{\phi,b} = \frac{V_{ll,b}^2}{S_{3\phi,b}/3} = \frac{3V_{ll,b}^2}{S_{3\phi,b}}$$