CALCULOS PARCIAL MAYO 2018:

Cable 30 kV 1x500 Al desde Mdeo Z:

$Z_{Ld30} := (0.082 + 0.108\mathrm{i}) \cdot 0.3$ $\quad Z_{Ld30} = 0.025 + 0.032\mathrm{i}$ ohm

$U := 31.5\,\mathrm{kV}$

$X_{Fd} := \frac{U^2}{665} \cdot 1\mathrm{j}$ $\quad X_{Fd} = 1.492\mathrm{i}$ ohm $\quad$ Mdeo Z Pccmax=665 MVA

$Icc_{3F} := \frac{\frac{U}{\sqrt{3}}}{X_{Fd} + Z_{Ld30}}$ $\quad |Icc_{3F}| = 11.928$ kA

Cable 30 kV 1x500 Al desde Mdeo C:

$Z_{Ld30} := (0.082 + 0.108\mathrm{i}) \cdot 4$ $\quad Z_{Ld30} = 0.328 + 0.432\mathrm{i}$ ohm

$U := 31.5\,\mathrm{kV}$

$X_{Fd} := \frac{U^2}{1278} \cdot 1\mathrm{j}$ $\quad X_{Fd} = 0.776\mathrm{i}$ ohm $\quad$ Mdeo C Pccmax=1278 MVA

$Icc_{3F} := \frac{\frac{U}{\sqrt{3}}}{X_{Fd} + Z_{Ld30}}$ $\quad |Icc_{3F}| = 14.524$ kA

.... la maxima Icc trifasica es cuando se conecta la estacion desde Mdeo C

$U := 6.4$ kV

$X_{Td} := 0.12 \cdot \frac{U^2}{15} \cdot 1\mathrm{j}$ $\quad X_{Td} = 0.328\mathrm{i}$ ohm $\quad X_{To} := X_{Td}$

$X_{Fd} := \frac{U^2}{1278} \cdot 1\mathrm{j}$ $\quad X_{Fd} = 0.032\mathrm{i}$ ohm $\quad$ Mdeo C Pccmax=1278 MVA

Corriente maxima de cortocircuito 3-F en 6,4 kV : $Z_{Ld30} = 0.328 + 0.432\mathrm{i}$ (desde Mdeo C)

$Z_{Ld} := Z_{Ld30} \cdot \left(\frac{6.4}{31.5}\right)^2$ $\quad Z_{Ld} = 0.014 + 0.018\mathrm{i}$

$Icc_{3F} := \frac{\frac{U}{\sqrt{3}}}{X_{Fd} + Z_{Ld} + \frac{X_{Td}}{2}}$ $\quad |Icc_{3F}| = 17.254$ kA

Corriente maxima de cada transformador (para eleccion de corriente nominal de interruptores):

$$I_{30} := \frac{15}{\sqrt{3} \cdot 31.5} \cdot 1.33 \qquad I_{30} = 0.366 \text{ kA}$$

$I_{int\_1y2} := 2 \cdot I_{30} = 0.731$ kA $\qquad$ $I_{int\_3\_4y5} := I_{30} = 0.366$ kA

$I_{int\_6} := 415 \cdot 1.2 = 498$ kA

Interruptor N°	Tensión nominal (kV)	Corriente nominal (A)	Poder de corte/corriente limite térmica (3 seg) (kA)	Corriente limite dinámica (kAcr)
1	36	800	12,5	31.5
2	36	800	16	40
3	36	630	16	40
4	36	630	16	40
5	36	630	16	40
6	12	630	20	50