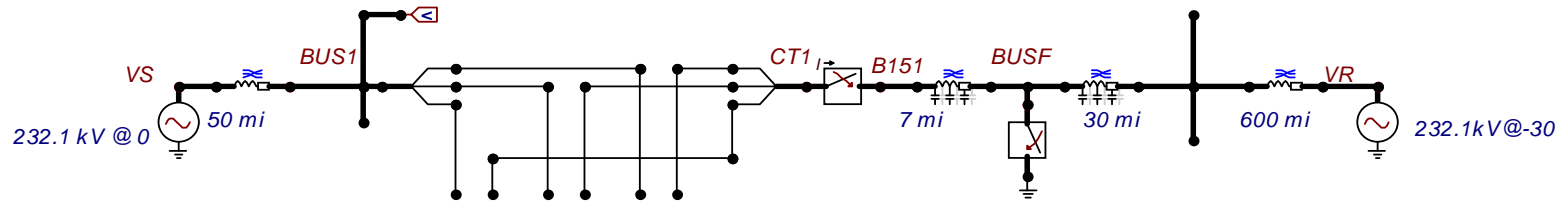
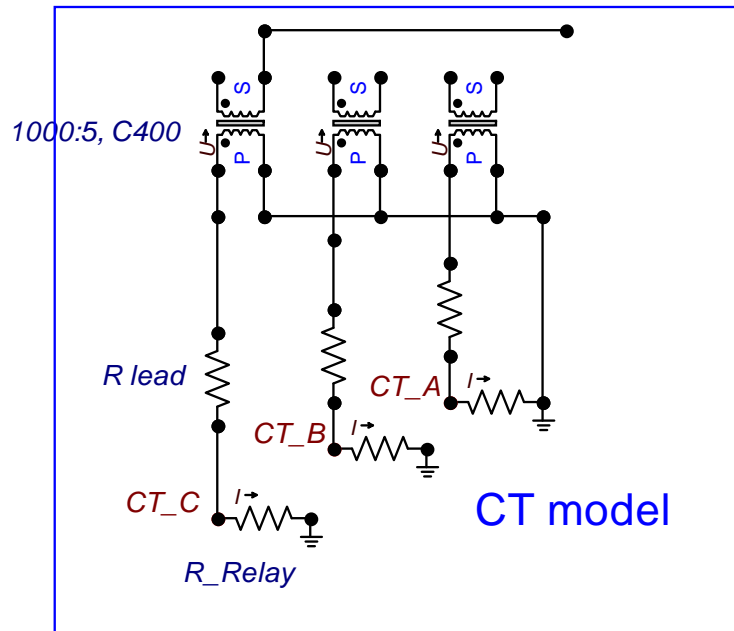


CT and CVT Example

Test system



Current transformer connections



Main dialog for CT

Component: TRAF0_5

Attributes | Characteristic

DATA	UNIT	VALUE
Rmag	Ohms	0
Rp	Ohms	0.288
Lp	mH	1E-6
Vrp	kV	200
Rs	Ohms	0
Ls	mH	1E-6
Vrs	kV	1
RMS	0/1	1

NODE	PHASE	NAME
P1	1	XX0005
P2	1	
S1	C	BUS1
S2	C	CT1

Copy Paste Reset Order: 0 Label: 1000:5, C400

Comment: Phase C CT

Output: 2 - Voltage Hide

Edit definitions OK Cancel Help

Saturation Characteristic

Component: TRAF0_S

Attributes Characteristic

Saturation (on the PRIMARY winding!)

I [A]rms	U [V]rms
0.01	1.6
0.05	20
0.1	66
0.2	214
0.3	300
0.4	365
0.5	390
0.7	400
30	450

Add
Delete
Sort
Move
↑
↓

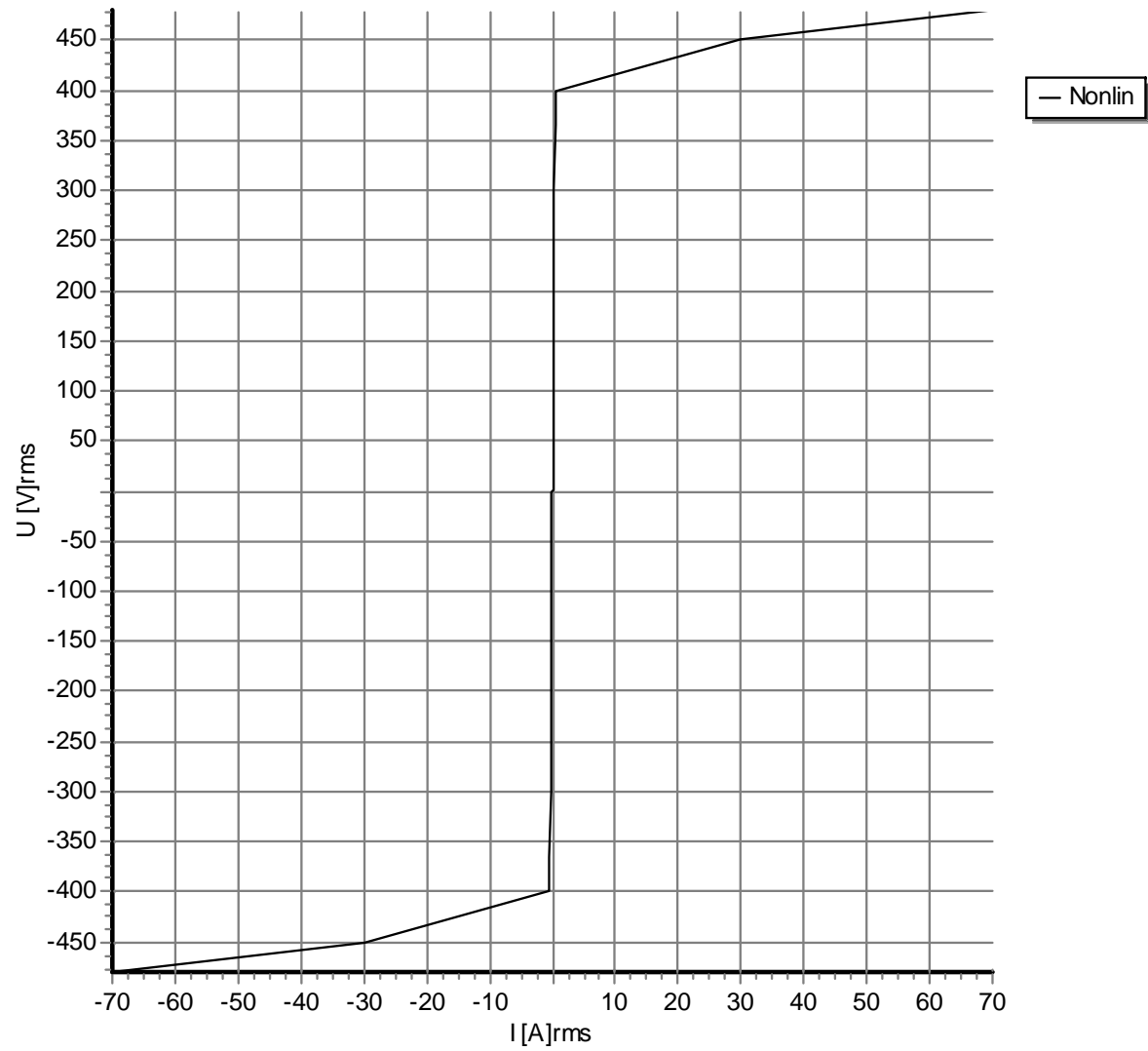
External characteristic

Data source: Edit... Include characteristic

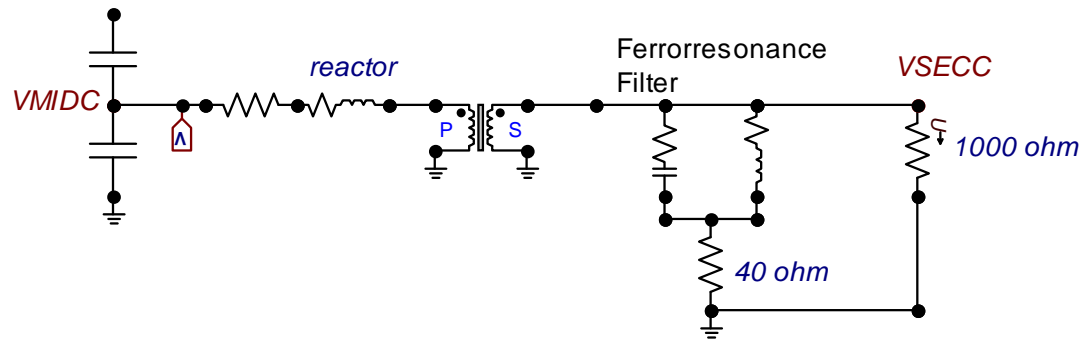
Save... Copy Paste View

Edit definitions OK Cancel Help

0.7	400
30	450
70	480



CVT model



Transformer dialog

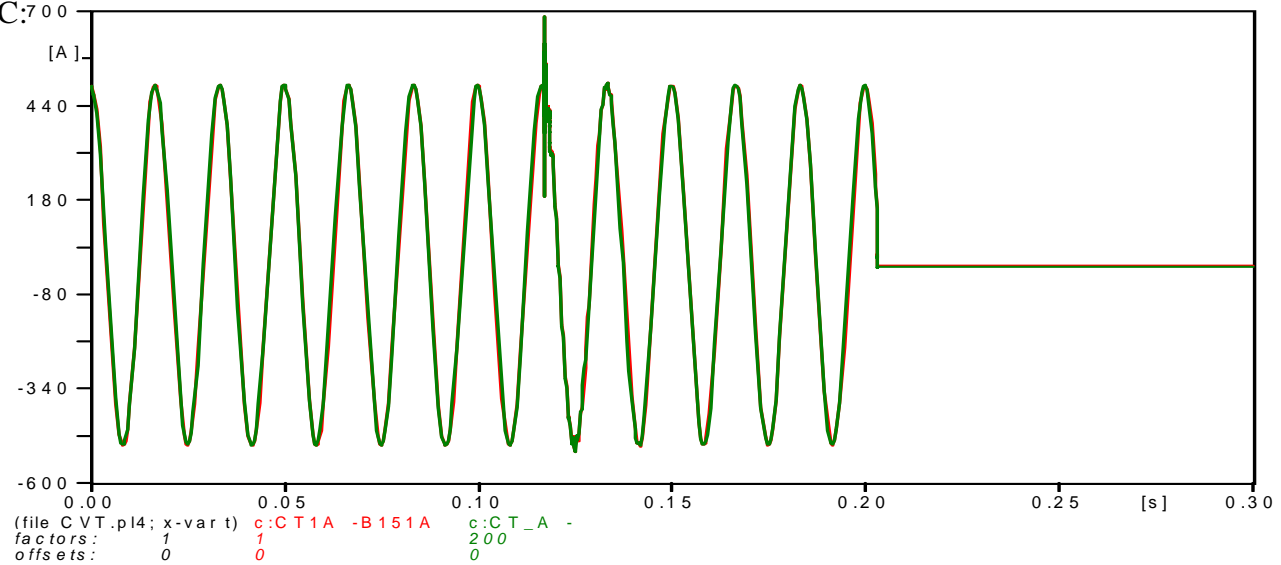
DATA	UNIT	VALUE	NODE	PHASE	NAME
Rmag	Ohms	1000000	P1	1	XX0008
Rp	Ohms	850	P2	1	
Lp	mH	4443.089	S1	1	VSECC
Vrp	kV	5058	S2	1	
Rs	Ohms	0.741			
Ls	mH	1.952			
Vrs	kV	115			
RMS	0/1	0			

Copy Paste Reset Order: 0 Label:

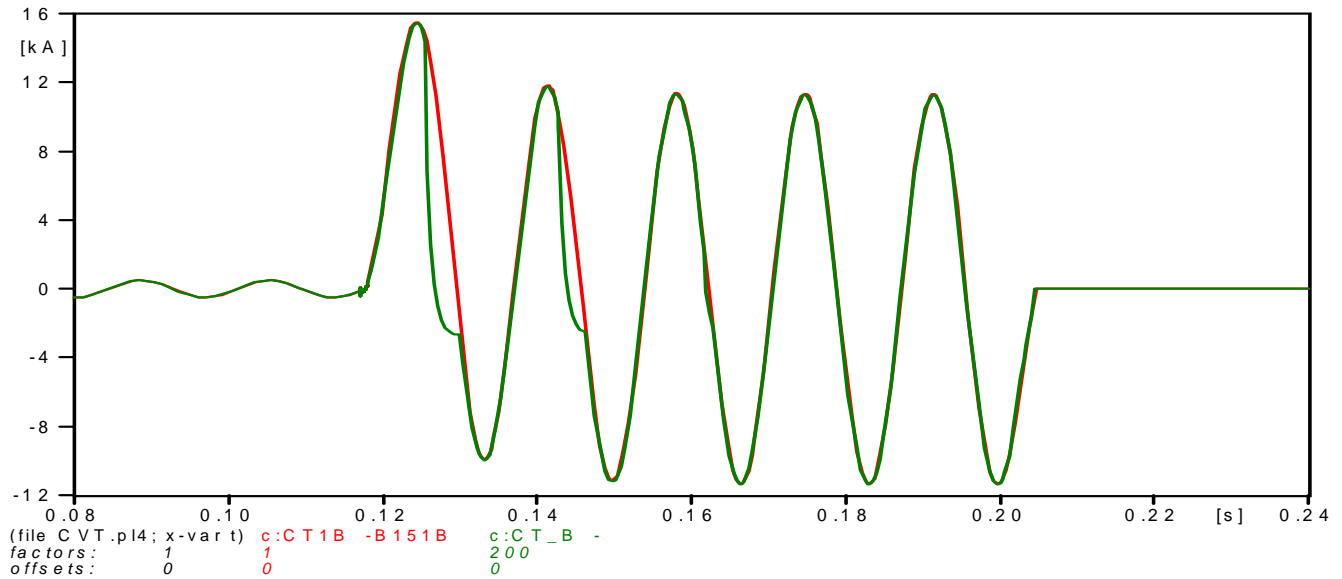
Comment:

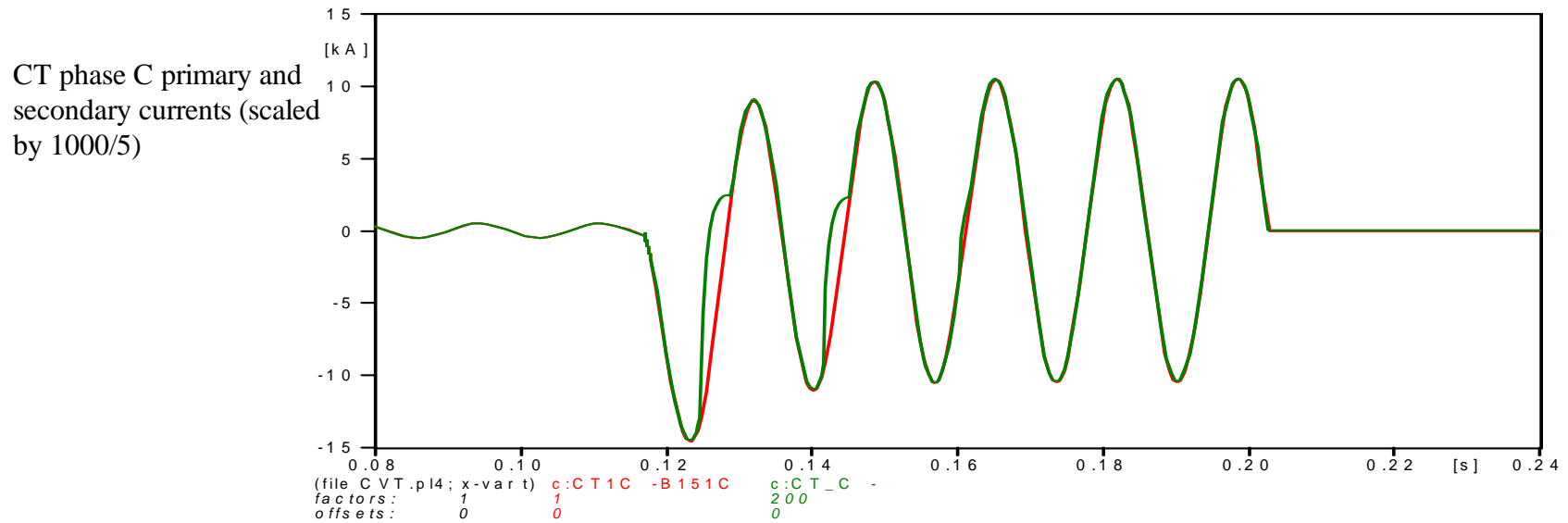
DLG fault on phases B and C:

CT phase A primary and secondary currents (scaled by 1000/5)



CT phase B primary and secondary currents (scaled by 1000/5)





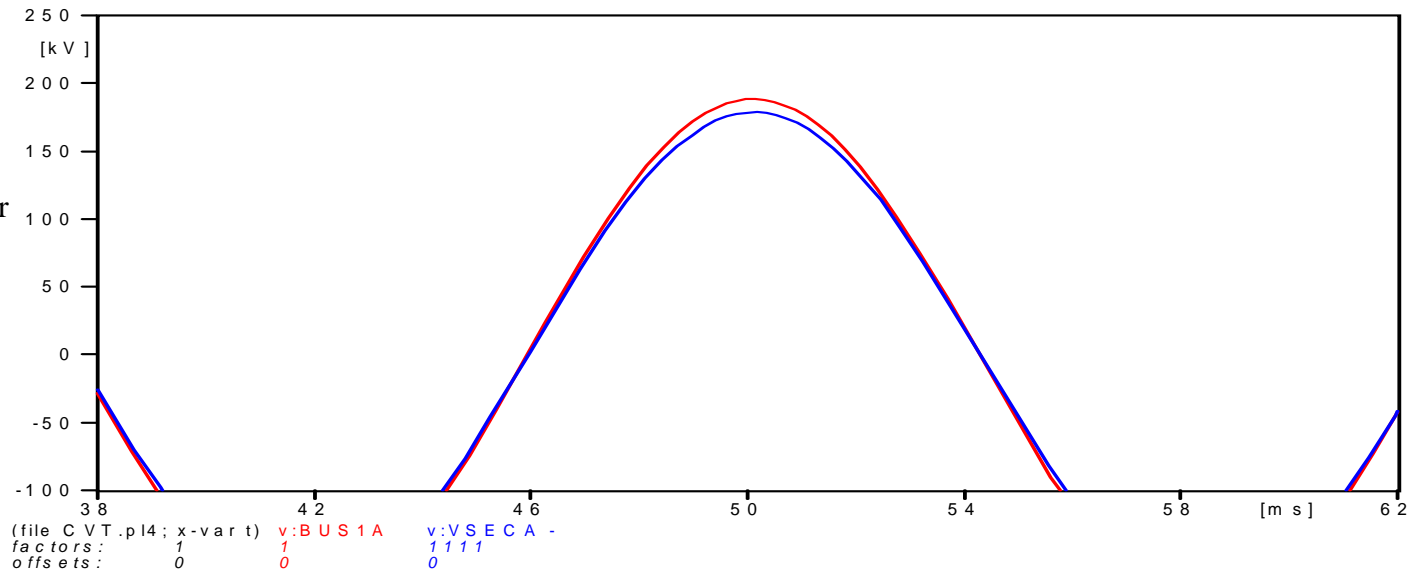
CVT Capacitor divider ratio: $\frac{0.091887}{0.0036386} = 25.25$

CVT transformer turns ratio: $\frac{5058}{115} = 43.98$

CVT net transformation ratio $\left(\frac{0.091887}{0.0036386}\right) \cdot \left(\frac{5058}{115}\right) = 1110.71$

Phase A primary and ratio secondary voltage:

Note that they are in phase with each other



Now add the midpoint of the capacitor

That voltage is shifted

