



نتایج خلاصه تنظیمات رله های O/C و E/F

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 Company or Region Name = ZREC  
 Group or Checker Name = Group\_1  
 Substation Name = Test\_230kV\_OK  
 Voltage = 230 / 63  
 Calculation date & time = 2016 / 2 / 8 on Monday at 16:34:4  
 Comment for this Calculations: محاسبات آزمایشی  
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Outgoing Feeder Name:A1  
 Overcurrent Protective Relay R1(1) for 63 kV Outgoing feeder 'A1'  
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Relay Type: MCGG82  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 800 / 1  
 Feeder type: Line  
 Connected to Section Nr. 1

$I_s = 0.4 \times I_n$   
 TMS = 0.05  
 $I_{inst} = 29 \times I_s$   
 Tinst = 0 sec

-----  
 Outgoing Feeder Name:A1  
 Earth Fault Protective Relay R1(1) for 63 kV Outgoing feeder 'A1'  
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Relay Type: MCGG82  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 800 / 1  
 Feeder type: Line  
 Connected to Section Nr. 1

$I_s = 0.1 \times I_n$   
 TMS = 1  
 $I_{inst} = 29 \times I_s$   
 Tinst = 0 sec

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 Outgoing Feeder Name:A2



Overcurrent Protective Relay R1(2) for 63 kV Outgoing feeder 'A2'

.....  
Comment: fgfdggdfd.

Relay Type: MCGG82

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 800 / 1

Feeder type: Line

Connected to Section Nr. 1

Is = 0.6 × In

TMS = 0.075

linst = 22 × Is

Tinst = 0 sec

-----  
Outgoing Feeder Name:A2

Earth Fault Protective Relay R1(2) for 63 kV Outgoing feeder 'A2'

.....  
Relay Type: MCGG82

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 800 / 1

Feeder type: Line

Connected to Section Nr. 1

Is = 0.1 × In

TMS = 0.25

linst = 29 × Is

Tinst = 0 sec

-----  
Outgoing Feeder Name:A3

Overcurrent Protective Relay R1(3) for 63 kV Outgoing feeder 'A3'

.....  
Relay Type: MCGG82

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

In = 1 A ; Relay Nominal Current



C.T Ratio = I1CT / I2CT = 800 / 1  
 Feeder type: Reactor  
 Connected to Section Nr. 1

$I_s = 0.65 \times I_n$   
 TMS = 0.25  
 $I_{inst} = 2 \times I_s$   
 Tinst = 0 sec

-----  
 Outgoing Feeder Name:A3  
 Earth Fault Protective Relay R1(3) for 63 kV Outgoing feeder 'A3'  
 .....

Relay Type: MCGG82  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 $I_n = 1$  A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 800 / 1  
 Feeder type: Reactor  
 Connected to Section Nr. 1

$I_s = 0.1 \times I_n$   
 TMS = 1  
 $I_{inst} = 11 \times I_s$   
 Tinst = 0 sec

-----  
 Outgoing Feeder Name:A4  
 Overcurrent Protective Relay R1(4) for 63 kV Outgoing feeder 'A4'  
 .....

Relay Type: MCGG62  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 $I_n = 1$  A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 800 / 1  
 Feeder type: Cap-Bank  
 Connected to Section Nr. 2

$I_s = 0.65 \times I_n$   
 TMS = 0.1  
 $I_{inst} = 16 \times I_s$   
 Tinst = 0 sec



Outgoing Feeder Name:A4  
 Earth Fault Protective Relay R1(4) for 63 kV Outgoing feeder 'A4'

.....  
 Relay Type: MCGG62  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 800 / 1  
 Feeder type: Cap-Bank  
 Connected to Section Nr. 2

Is = 0.05 × In  
 TMS = 1  
 Iinst = Infinity  
 Tinst = 0 sec

-----  
 Overcurrent Protective Relay R2(1) for 63 KV at Buscoupler feeder 'Bus\_LV\_1'

.....  
 Relay Type: MCGG82  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

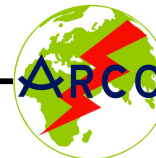
C.T Ratio = I1CT / I2CT = 2000 / 1  
 Feeder type: Bus-Coupler\_LV  
 Connected to Section Nr. 1

Is = 0.8 × In  
 TMS = 0.25  
 Iinst = Infinity  
 Tinst = 0 sec

-----  
 Earth Fault Protective Relay R2(1) for 63 KV at Buscoupler feeder 'Bus\_LV\_1'

.....  
 Relay Type: MCGG82  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 2000 / 1  
 Feeder type: Bus-Coupler



Connected to Section Nr. 1

Is = 0.1 × In  
 TMS = 0.775  
 linst = Infinity  
 Tinst = 0 sec

-----  
 Overcurrent Protective Relay R3(1) for 63 kV Incoming feeder 'Incoming\_1'  
 .....

Relay Type: MCGG62  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 2000 / 1  
 Feeder type: Trans.  
 Connected to Section Nr. 1

Is = 0.9 × In  
 TMS = 0.325  
 linst = Infinity  
 Tinst = 0 sec

-----  
 Overcurrent Protective Relay R3(2) for 63 kV Incoming feeder 'Incoming\_2'  
 .....

Relay Type: MCGG62  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 2000 / 1  
 Feeder type: Trans.  
 Connected to Section Nr. 2

Is = 0.9 × In  
 TMS = 0.325  
 linst = Infinity  
 Tinst = 0 sec

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 Overcurrent Protective Relay R4(1) for 63 KV L.V Side feeder 'Trans\_1'  
 .....

Relay Type: MCGG62



Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 2500 / 1$

Feeder type: Trans.

Connected to Section Nr. 1

$I_s = 0.85 \times I_n$

TMS = 0.35

linst = Infinity

Tinst = 0 sec

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 Earth Fault Protective Relay R4(1) for 63 KV L.V Side feeder 'Trans\_1'  
 .....

Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 600 / 1$

Feeder type: Trans.

Connected to Section Nr. 1

$I_s = 0.1 \times I_n$

TMS = 1

linst = Infinity

Tinst = 0 sec

-----  
 Overcurrent Protective Relay R4(2) for 63 KV L.V Side feeder 'Trans\_2'  
 .....

Relay Type: MCGG62

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 2500 / 1$

Feeder type: Trans.

Connected to Section Nr. 2

$I_s = 0.85 \times I_n$

TMS = 0.35

linst = Infinity



Tinst = 0 sec

-----  
 Earth Fault Protective Relay R4(2) for 63 KV L.V Side feeder 'Trans\_2'  
 .....

Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 600 / 1

Feeder type: Trans.

Connected to Section Nr. 2

Is = 0.1 × In

TMS = 1

linst = Infinity

Tinst = 0 sec

-----  
 Overcurrent Protective Relay R5(1) for 230 KV at Trans. Primary Side feeder 'HV\_1'  
 .....

Relay Type: MCGG62

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 600 / 1

Feeder type: Trans.

Connected to Section Nr. 1

Is = 0.85 × In

TMS = 0.45

linst = 2 × Is

Tinst = 0 sec

-----  
 Earth Fault Protective Relay R5(1) for 230 KV at Trans. Primary Side feeder 'HV\_1'  
 .....

Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

In = 1 A ; Relay Nominal Current



C.T Ratio = I1CT / I2CT = 600 / 1  
 Feeder type: Trans.  
 Connected to Section Nr. 1

Is = 0.15 × In  
 TMS = 0.05  
 linst = Infinity  
 Tinst = 0 sec

-----  
 Overcurrent Protective Relay R5(2) for 230 KV at Trans. Primary Side feeder 'HV\_2'  
 .....

Relay Type: MCGG62  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 600 / 1  
 Feeder type: Trans.  
 Connected to Section Nr. 1

Is = 0.85 × In  
 TMS = 0.45  
 linst = 2 × Is  
 Tinst = 0 sec

-----  
 Earth Fault Protective Relay R5(2) for 230 KV at Trans. Primary Side feeder 'HV\_2'  
 .....

Relay Type: MCGG22  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$   
 In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 600 / 1  
 Feeder type: Trans.  
 Connected to Section Nr. 1

Is = 0.15 × In  
 TMS = 0.05  
 linst = Infinity  
 Tinst = 0 sec

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 Earth Fault Protective Relay R6(2) for 63 kV side Neutral Protection at feeder 'LV\_Neutral\_2'





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Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/0) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/0) \times \{0 / [(I/Is)^0 - 1]^0 + 0\}$

$I_n = 5 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 500 / 1$

Feeder type: Trans.

Connected to Section Nr. 2

$I_s = 0 \times I_n$

TMS = 0

linst = Infinity

Tinst = 0 sec

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Earth Fault Protective Relay R6(2) for 63 kV side Neutral Protection at feeder 'LV\_Neutral\_2'

.....

Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/0) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/0) \times \{0 / [(I/Is)^0 - 1]^0 + 0\}$

$I_n = 5 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 500 / 1$

Feeder type: Trans.

Connected to Section Nr. 2

$I_s = 0 \times I_n$

TMS = 0

linst = Infinity

Tinst = 0 sec

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Overcurrent Protective Relay R7(1) for Line Bay feeder 'Abhar'

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Relay Type: MCGG62

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 1200 / 1$

Feeder type: Line

Connected to Section Nr. 1



$I_s = 0.45 \times I_n$   
 $TMS = 0.05$   
 $I_{inst} = 5 \times I_s$   
 $T_{inst} = 0 \text{ sec}$

-----  
 Earth Fault Protective Relay R7(1) for Line Bay feeder 'Abhar'  
 .....

Relay Type: MCGG62  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 $I_n = 1 \text{ A}$  ; Relay Nominal Current

$C.T \text{ Ratio} = I_1CT / I_2CT = 1200 / 4$   
 Feeder type: Line  
 Connected to Section Nr. 1

$I_s = 1.2 \times I_n$   
 $TMS = 0.25$   
 $I_{inst} = 15 \times I_s$   
 $T_{inst} = 0 \text{ sec}$

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 Overcurrent Protective Relay R7(2) for Line Bay feeder 'Eshragh'  
 .....

Relay Type: MCGG62  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 $I_n = 1 \text{ A}$  ; Relay Nominal Current

$C.T \text{ Ratio} = I_1CT / I_2CT = 1200 / 1$   
 Feeder type: Reactor  
 Connected to Section Nr. 1

$I_s = 0.45 \times I_n$   
 $TMS = 0.475$

-----  
 Earth Fault Protective Relay R7(2) for Line Bay feeder 'Eshragh'  
 .....

Relay Type: MCGG22  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$



$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 1200 / 1$

Feeder type: Reactor

Connected to Section Nr. 1

$I_s = 0.35 \times I_n$

TMS = 0.4

-----  
Overcurrent Protective Relay R7(3) for Line Bay feeder 'Boein Zahra'  
.....

Relay Type: MCGG62

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$

$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 1200 / 1$

Feeder type: Reactor

Connected to Section Nr. 2

$I_s = 0.45 \times I_n$

TMS = 0.475

-----  
Earth Fault Protective Relay R7(3) for Line Bay feeder 'Boein Zahra'  
.....

Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$

$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_{1CT} / I_{2CT} = 1200 / 1$

Feeder type: Reactor

Connected to Section Nr. 2

$I_s = 0.35 \times I_n$

TMS = 0.45

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Overcurrent Protective Relay R8(1) for 230 kV side Buscoupler feeder 'Bus\_HV'  
.....

Relay Type: MCGG82

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times$



$\{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 $I_n = 1 \text{ A}$ ; Relay Nominal Current

C.T Ratio =  $I_1CT / I_2CT = 2000 / 1$   
 Feeder type: Bus-Coupler\_HV  
 Connected to Section Nr. 1

$I_s = 0.5 \times I_n$   
 TMS = 1  
 linst = Infinity  
 Tinst = 0 sec

-----  
 Earth Fault Protective Relay R8(1) for 230 kV side Buscoupler feeder 'Bus\_HV'  
 .....

Relay Type: MCGG82  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times$   
 $\{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 $I_n = 1 \text{ A}$ ; Relay Nominal Current

C.T Ratio =  $I_1CT / I_2CT = 2000 / 1$   
 Feeder type: Bus-Coupler  
 Connected to Section Nr. 1

$I_s = 0.2 \times I_n$   
 TMS = 1  
 linst = Infinity  
 Tinst = 0 sec

-----  
 Earth Fault Protective Relay R9(1) for 230 kV side Neutral Protection at feeder  
 'HV\_Neutral\_1'  
 .....

Relay Type: MCGG22  
 Selected Characteristic: SI  
 Generic Formula:  $T = (TMS/1) \times \{K / [(I/I_s)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times$   
 $\{0.14 / [(I/I_s)^{0.02} - 1]^1 + 0\}$   
 $I_n = 1 \text{ A}$ ; Relay Nominal Current

C.T Ratio =  $I_1CT / I_2CT = 1200 / 1$   
 Feeder type: Trans.  
 Connected to Section Nr. 1

$I_s = 0.1 \times I_n$   
 TMS = 0.625  
 linst = Infinity  
 Tinst = 0 sec



-----  
 Earth Fault Protective Relay R9(1) for 230 kV side Neutral Protection at feeder  
 'HV\_Neutral\_1'  
 .....

Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_1CT / I_2CT = 1200 / 1$

Feeder type: Trans.

Connected to Section Nr. 1

$I_s = 0.1 \times I_n$

TMS = 0.625

$I_{inst} = \text{Infinity}$

$T_{inst} = 0 \text{ sec}$

-----  
 Earth Fault Protective Relay R9(2) for 230 kV side Neutral Protection at feeder  
 'HV\_Neutral\_2'  
 .....

Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$

$I_n = 1 \text{ A}$  ; Relay Nominal Current

C.T Ratio =  $I_1CT / I_2CT = 1200 / 1$

Feeder type: Trans.

Connected to Section Nr. 2

$I_s = 0.1 \times I_n$

TMS = 0.425

$I_{inst} = \text{Infinity}$

$T_{inst} = 0 \text{ sec}$

-----  
 Earth Fault Protective Relay R9(2) for 230 kV side Neutral Protection at feeder  
 'HV\_Neutral\_2'  
 .....

Relay Type: MCGG22

Selected Characteristic: SI

Generic Formula:  $T = (TMS/1) \times \{K / [(I/Is)^{\alpha} - 1]^{\gamma} + \beta\} = (TMS/1) \times \{0.14 / [(I/Is)^{0.02} - 1]^1 + 0\}$



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In = 1 A ; Relay Nominal Current

C.T Ratio = I1CT / I2CT = 1200 / 1

Feeder type: Trans.

Connected to Section Nr. 2

Is = 0.1 × In

TMS = 0.425

Iinst = Infinity

Tinst = 0 sec