SHORT CIRCUIT CALCULATION

TRANSFORMER = 1 MVA
% IMPEDANCE = 5%
SC UTILITY KVA = 100 MVA

PuZs = KVABase / SC UTILITY KVA
PuZs = 1000 KVA/100000 KVA
PuZs = 0.01 pu

PuZ1 = % IMPEDANCE / 100
PuZ1 = 5% / 100
PuZ1 = 0.05 pu

$$PuZw = \frac{IMPEDANCE}{KV^2} \times \frac{KVA\ Base}{1000}$$

$$PuZw = \frac{0.0524}{0.230^2} \times \frac{1000}{1000}$$

PuZw = 0.9905pu

FAULT CURRENT AT "A"

$$Isc = \frac{E}{Zc} \times \frac{BASE\ VA}{(1.732)BASE\ VOLTAGE)}$$

$$Isc = \frac{1}{0.0502} \times \frac{1000000}{1.732(230)}$$

Isc= 100108.5465 A or 100.1085 Ka

Therefore, the circuit breaker A should be rated not less that 150 Kaic SYMMETRICAL

FAULT CURRENT AT "B"

$$Isc = \frac{E}{Zc} \times \frac{BASE\ VA}{(1.732)BASE\ VOLTAGE)}$$

$$Isc = \frac{1}{0.0802} \times \frac{1000000}{1.732(230)}$$

Isc= 100108.5465 A or 100.1085 Ka

Therefore, the circuit breaker B should be rated not less that 100 Kaic SYMMETRICAL

FAULT CURRENT AT "B"

$$Isc = \frac{E}{Zc} \times \frac{BASE\ VA}{(1.732)BASE\ VOLTAGE)}$$

$$Isc = \frac{1}{0.007} \times \frac{1000000}{1.732(230)}$$

Isc= 1026.5567A or 102.6557Ka

Therefore, the circuit breaker B should be rated not less that 150 Kaic SYMMETRICAL

	BATANGAS STATE UNIVERSITY THE NATIONAL ENGINEERING UNIVERSITY COLLEGE OF ENGINEERING ELECTRICAL ENGINEERING DEPARTMENT	PROFESSIONAL ELECTRICAL ENGINEER: PRC NO.: VALIDITY: PTR NO.: DATE: ADDRESS: TIN:	PROJECT: PROPOSED COMMERCIAL BUILDING SCHOOL LOCATION: BATANGAS	ALVERO, MARCO JAKE Y. DAPUG, CHESTER NEIL M. ESCABEL, OMAR C. MENDOZA, YEREVEN DANIEL O. VALENCIA, AJEM G.	CHECKED BY: ENGR. JIM A. VILLANOBOS DATE: MAY 2023	SHEET CONTENT SHORT CIRCUIT	SHEET NO. 20