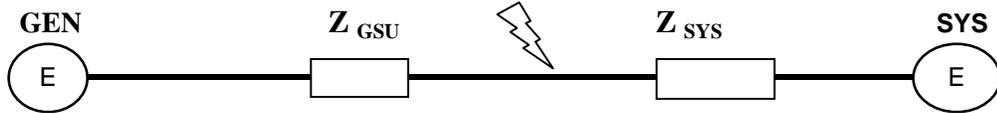


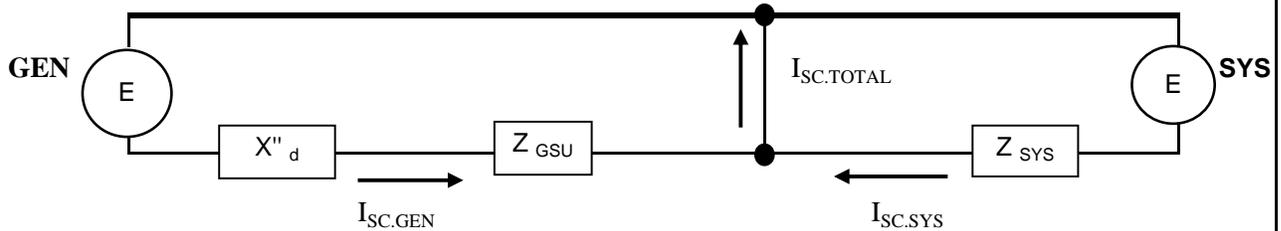
# GENERATOR CONTRIBUTION TO SYSTEM FAULT

## Three Phase Faults - Symmetrical

### Simplified One-Line



### Positive Sequence Network



Assumptions:

1. Generator and GSU rating [MVA] are the same
2. Generator and GSU low voltage rating [V] are the same
3. Generator  $X''_d = 0.15$  [pu]
4.  $Z''_{GSU} = 0.12$  [pu]
5. Fault voltage = 1.0 [pu]

#### Fault Current Magnitude by System Voltage for 10,000 [MVA] fault levels

E <sub>SYS</sub> [kV]	Fault Level [MVA]	I <sub>SC.TOTAL</sub> [kA]
138	10,000	41,837
230	10,000	25,102
500	10,000	11,547

Legend for following page.

250	Install fault recording for all individual units 250 [MVA] and higher at monitored buses with an aggregate of 750 [MVA] and higher.
500	Install fault recording for all individual units 500 [MVA] and higher at monitored buses.

# GENERATOR CONTRIBUTION TO SYSTEM FAULT

## Three Phase Faults - Symetrical

### Generator Contributions to System Short Circuit Based upon 10,000 [MVA] Fault Levels.

Unit Size [MVA]	E <sub>sys</sub> [kV]	I <sub>SC.GEN</sub> [A]	% I <sub>SC.GEN</sub> to I <sub>SC.TOTAL</sub>
20	138	310	0.7%
100	138	1,550	3.7%
200	138	3,099	7.4%
250	138	3,874	9.3%
300	138	4,649	11.1%
400	138	6,199	14.8%
500	138	7,749	18.5%
600	138	9,298	22.2%
700	138	10,848	25.9%
800	138	12,398	29.6%
900	138	13,948	33.3%
1000	138	15,497	37.0%
20	230	186	0.7%
100	230	930	3.7%
200	230	1,860	7.4%
250	230	2,325	9.3%
300	230	2,790	11.1%
400	230	3,719	14.8%
500	230	4,649	18.5%
600	230	5,579	22.2%
700	230	6,509	25.9%
800	230	7,439	29.6%
900	230	8,369	33.3%
1000	230	9,298	37.0%
20	500	86	0.7%
100	500	428	3.7%
200	500	855	7.4%
250	500	1,069	9.3%
300	500	1,283	11.1%
400	500	1,711	14.8%
500	500	2,139	18.5%
600	500	2,566	22.2%
700	500	2,994	25.9%
800	500	3,422	29.6%
900	500	3,850	33.3%
1000	500	4,277	37.0%