

## ECG 742 – Fall 2019 - Test 1 (Take home portion)

Consider the 5-Bus power system below (this is sample case BR5 in PowerWorld). Use GENROU as a dynamic model for both generators.

- 1) Conduct a transient stability run by creating a 3-phase fault at Bus 4 for  $1/10^{\text{th}}$  of a second, followed by opening the circuit breakers. Examine the power angles of both generators. Repeat for longer fault durations in an attempt to determine the critical clearing time.
- 2) Repeat 1) if the fault is cleared.
- 3) Repeat 1) if the fault occurs midway along the transmission line connecting Buses 1-2.

