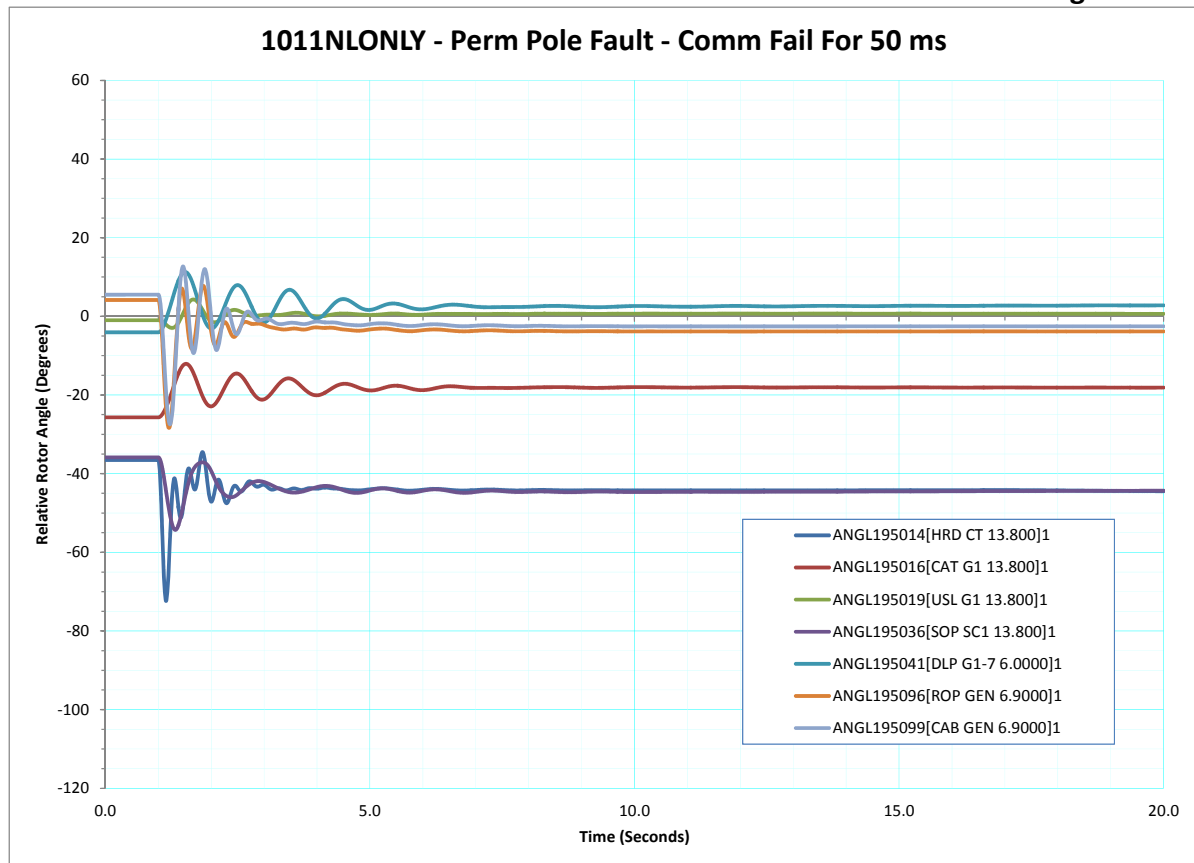


1 Q. Further to PUB-NLH-443 what impact would commutations failures in the remaining
2 pole have on the frequency and the need for load shedding on the Island
3 Interconnected System, assuming that persistent commutation failures (during
4 which no power could be transmitted) would take place for 50 ms, 100 ms or 250
5 ms.

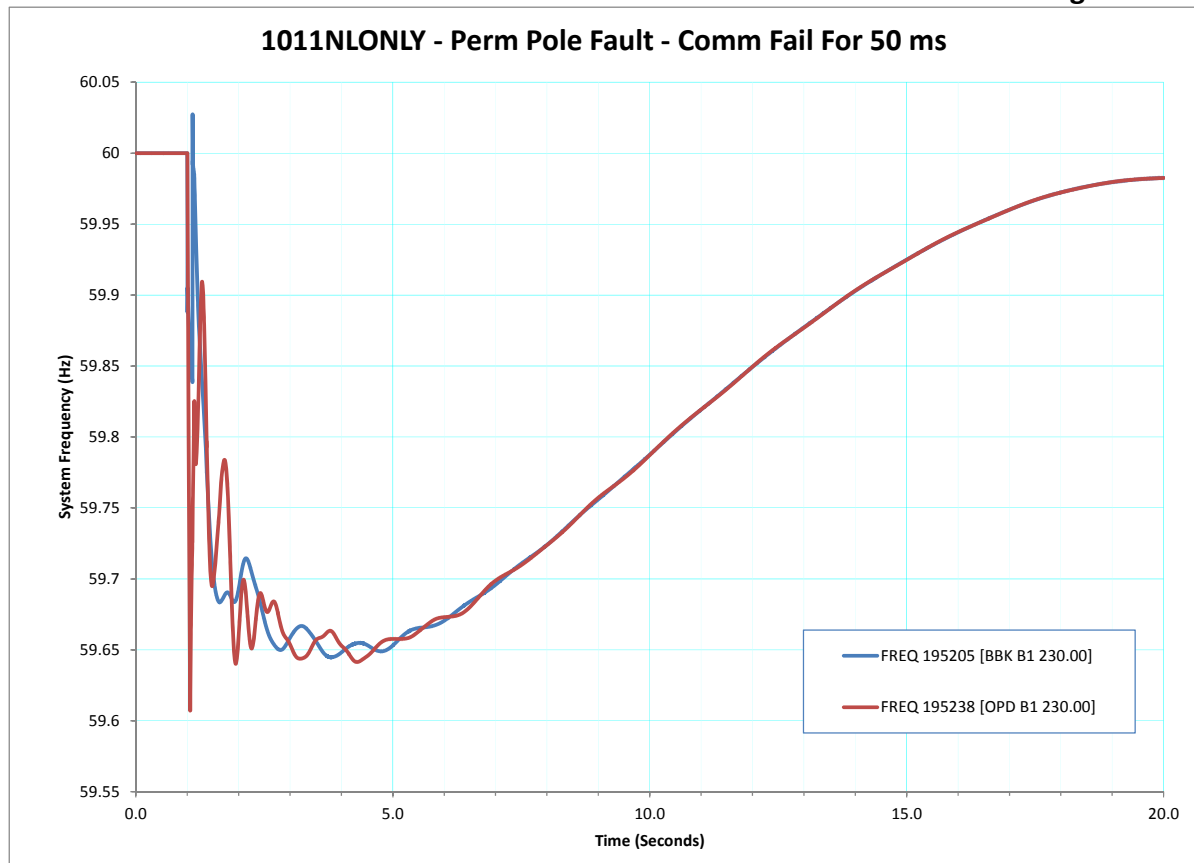
6

7

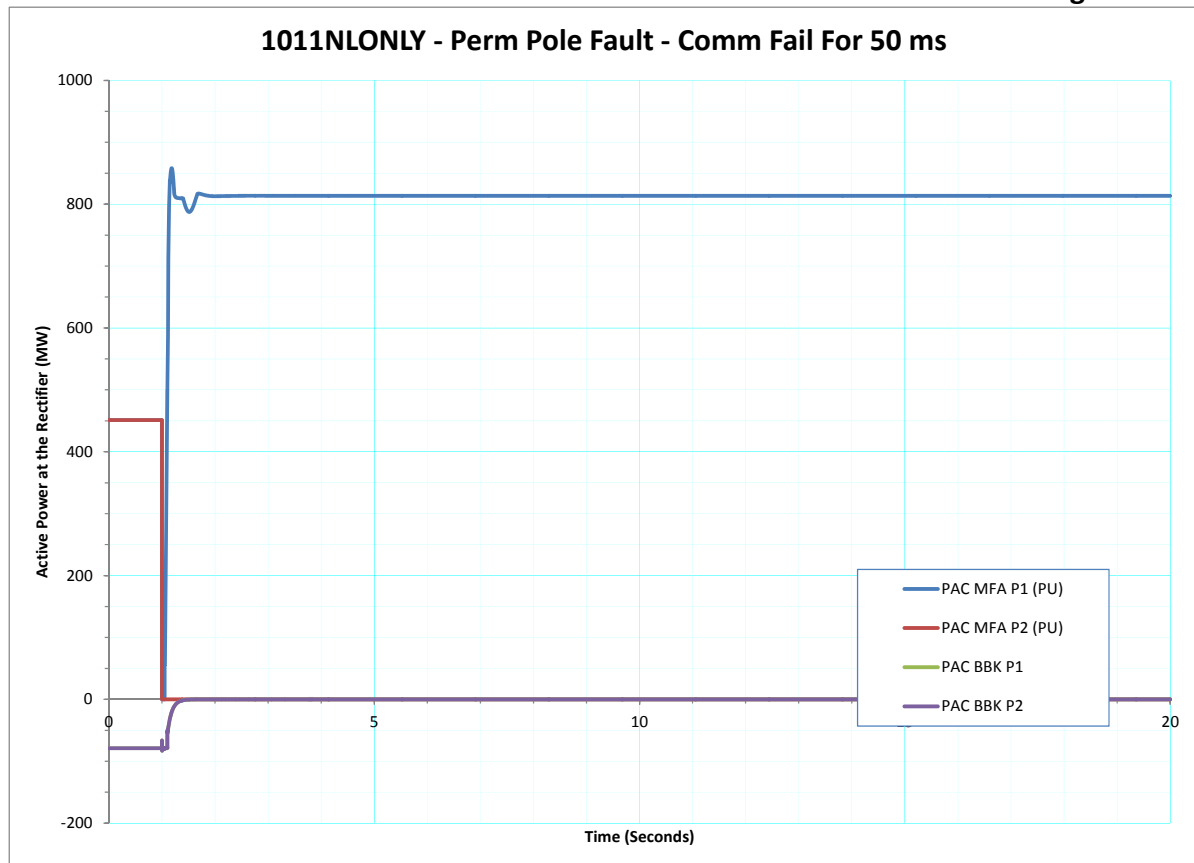
8 A. As per the figures below, there is no need for load shedding on the Island
9 Interconnected System, assuming that persistent commutation failures (during
10 which no power could be transmitted) would take place for 50 ms, 100 ms or 250
11 ms. This is due to the curtailment of export over the Maritime Link in response to
12 LIL contingencies, as discussed in Hydro's response to PUB-NLH-440. The simulation
13 considers the peak load case with LIL at 900 MW, a permanent pole fault on LIL Pole
14 2 with commutation failures on Pole 1.



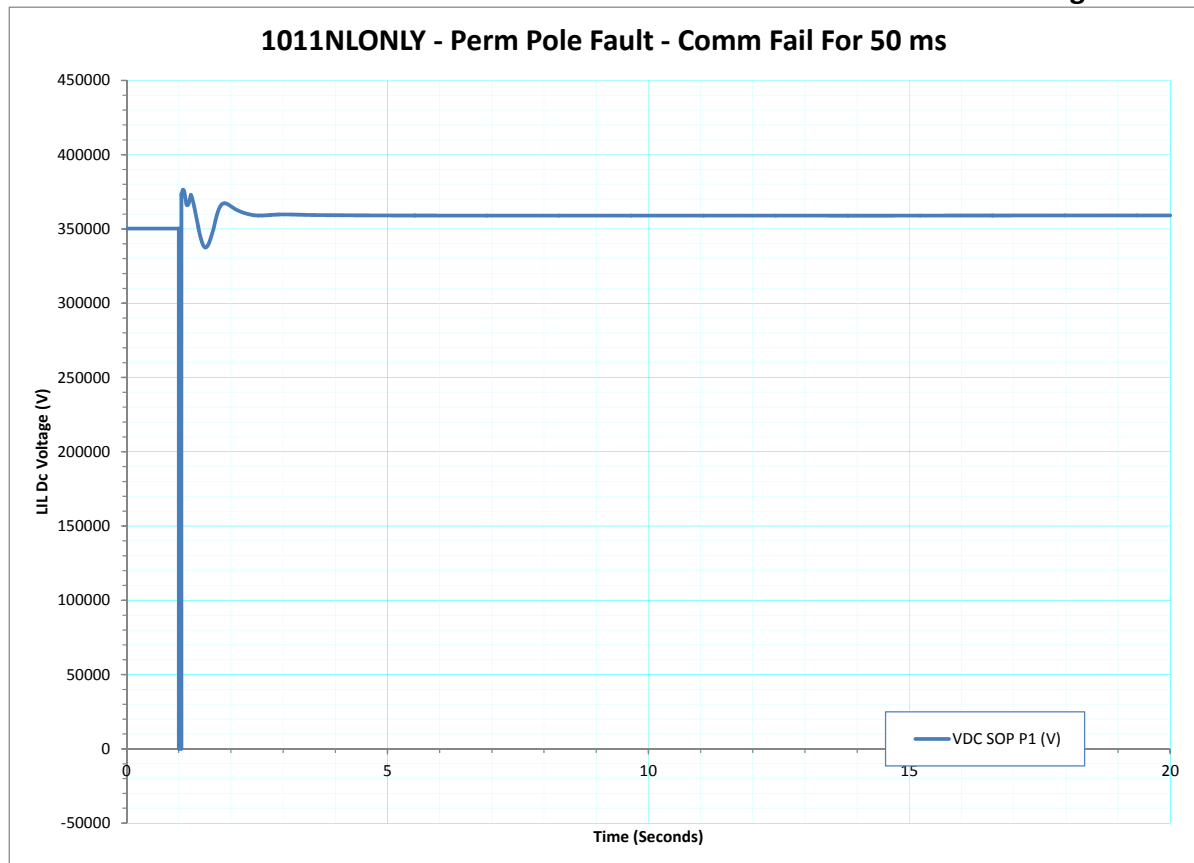
1 **Figure 1 - 1011NLONLY - Perm Pole Fault - Comm Fail for 50 ms - Relative Rotor Angle**
2 **(Degrees)**



1 **Figure 2 - 1011NLONLY - Perm Pole Fault - Comm Fail for 50 ms - System Frequency (Hz)**

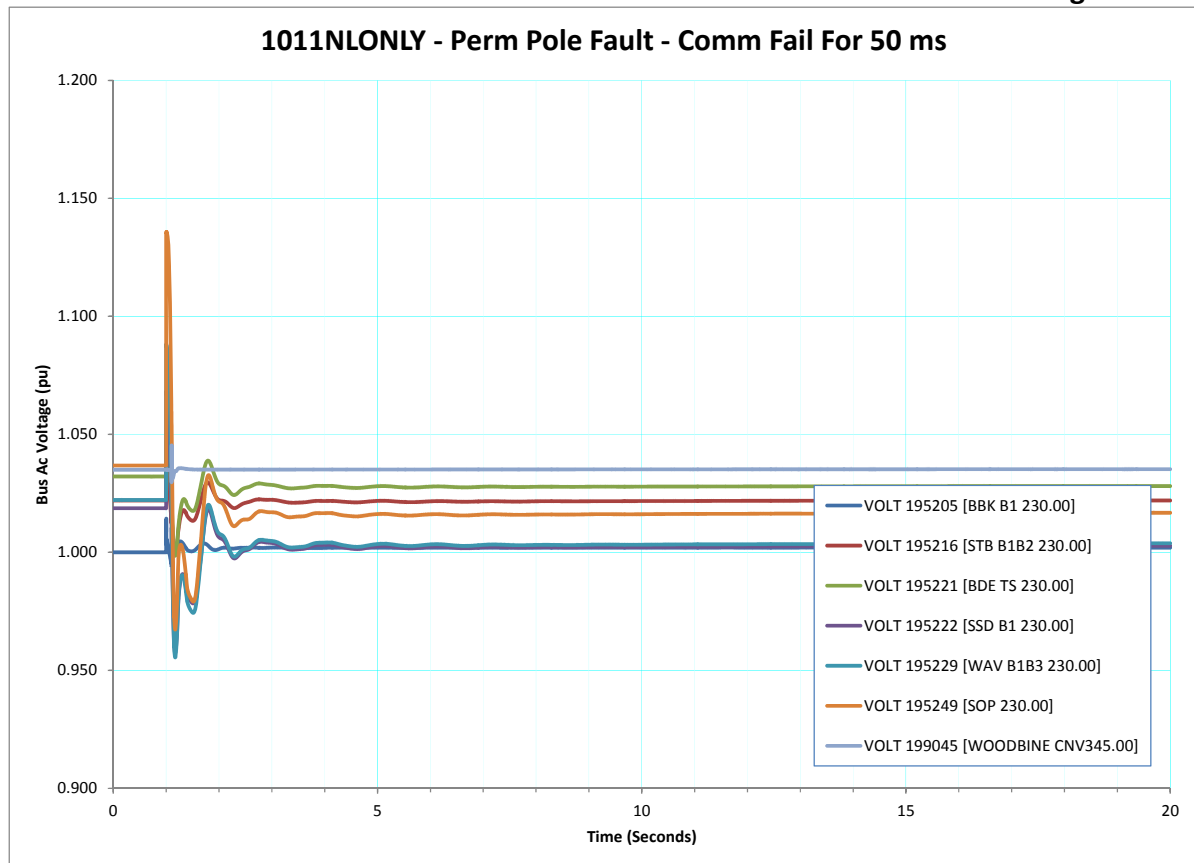


1 **Figure 3 - 1011NLONLY - Perm Pole Fault - Comm Fail for 50 ms - Active Power at the Rectifier**
2 **(MW)**



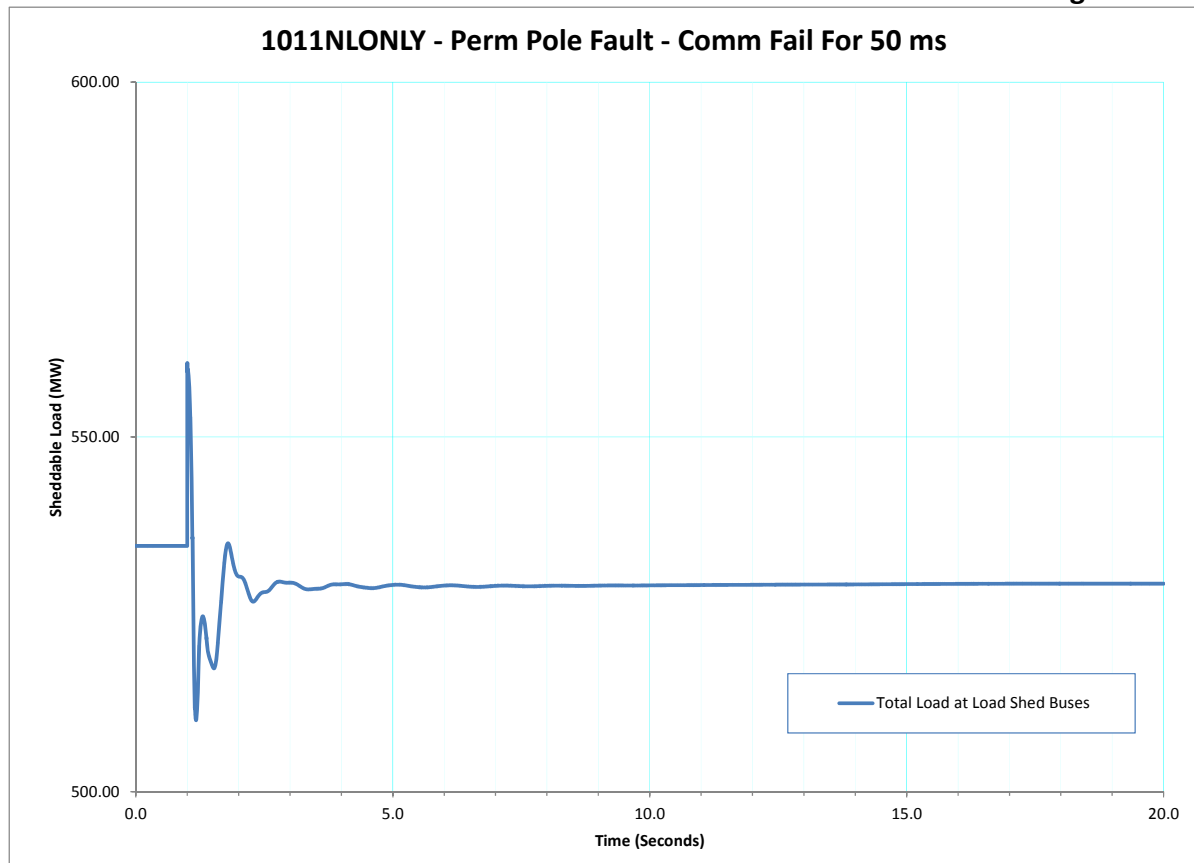
1

Figure 4 - 1011NLONLY - Perm Pole Fault - Comm Fail for 50 ms - LIL Dc Voltage (V)



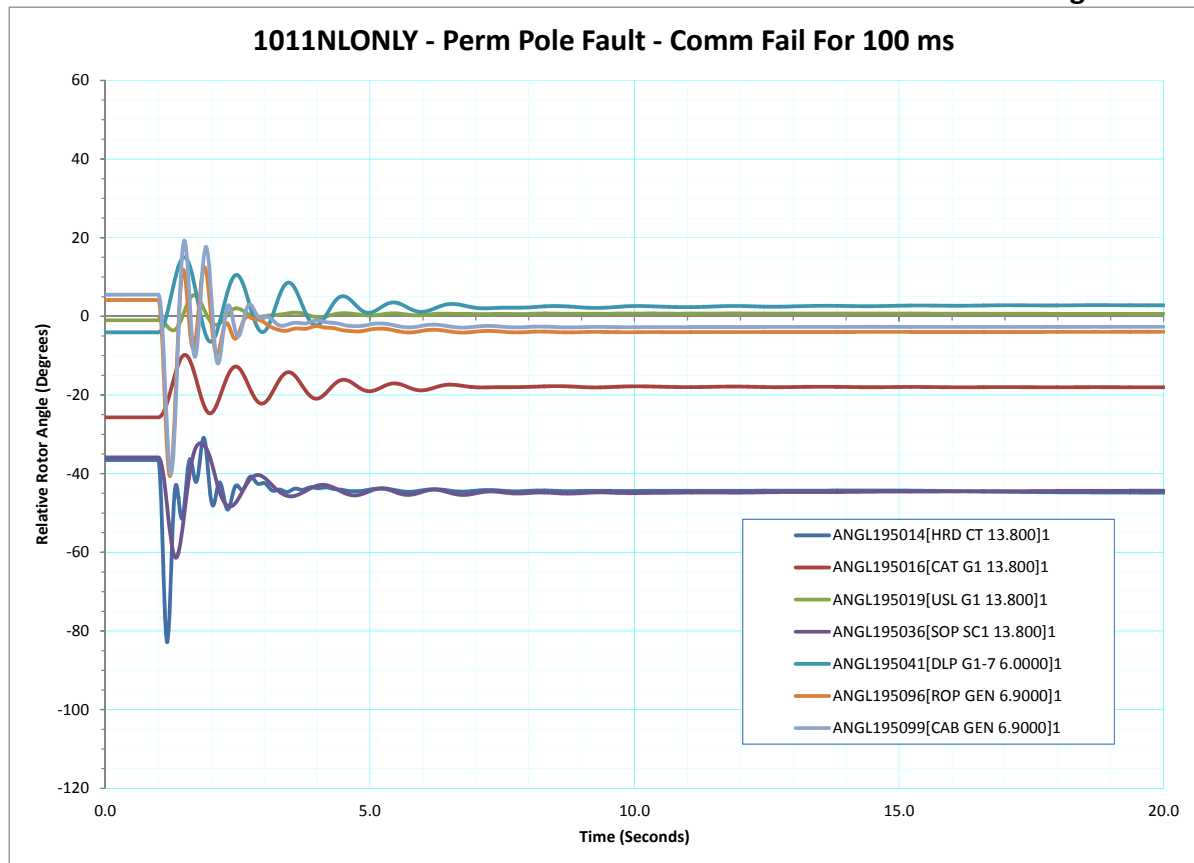
1

Figure 5 - 1011NLONLY - Perm Pole Fault - Comm Fail for 50 ms - Bus Ac Voltage (pu)

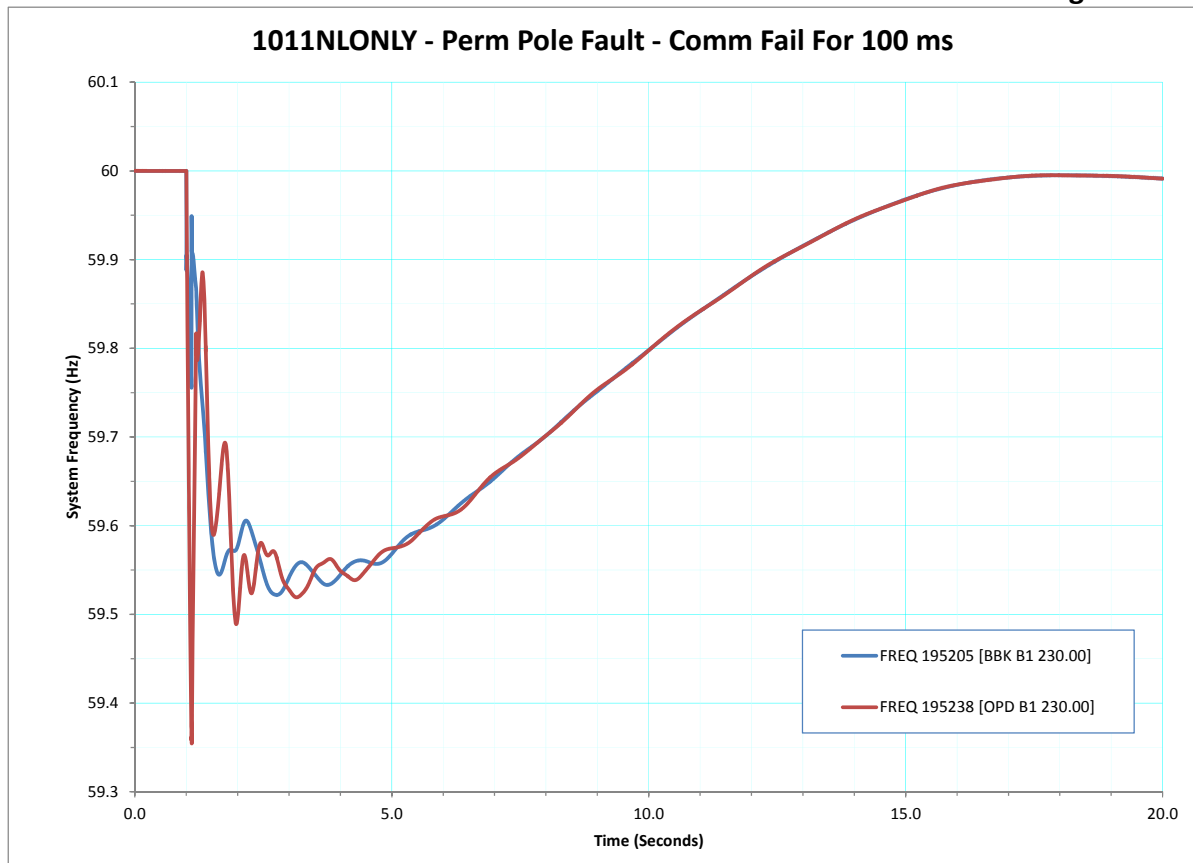


1 **Figure 6 - 1011NLONLY - Perm Pole Fault - Comm Fail for 50 ms - Sheddable Load (MW)¹**

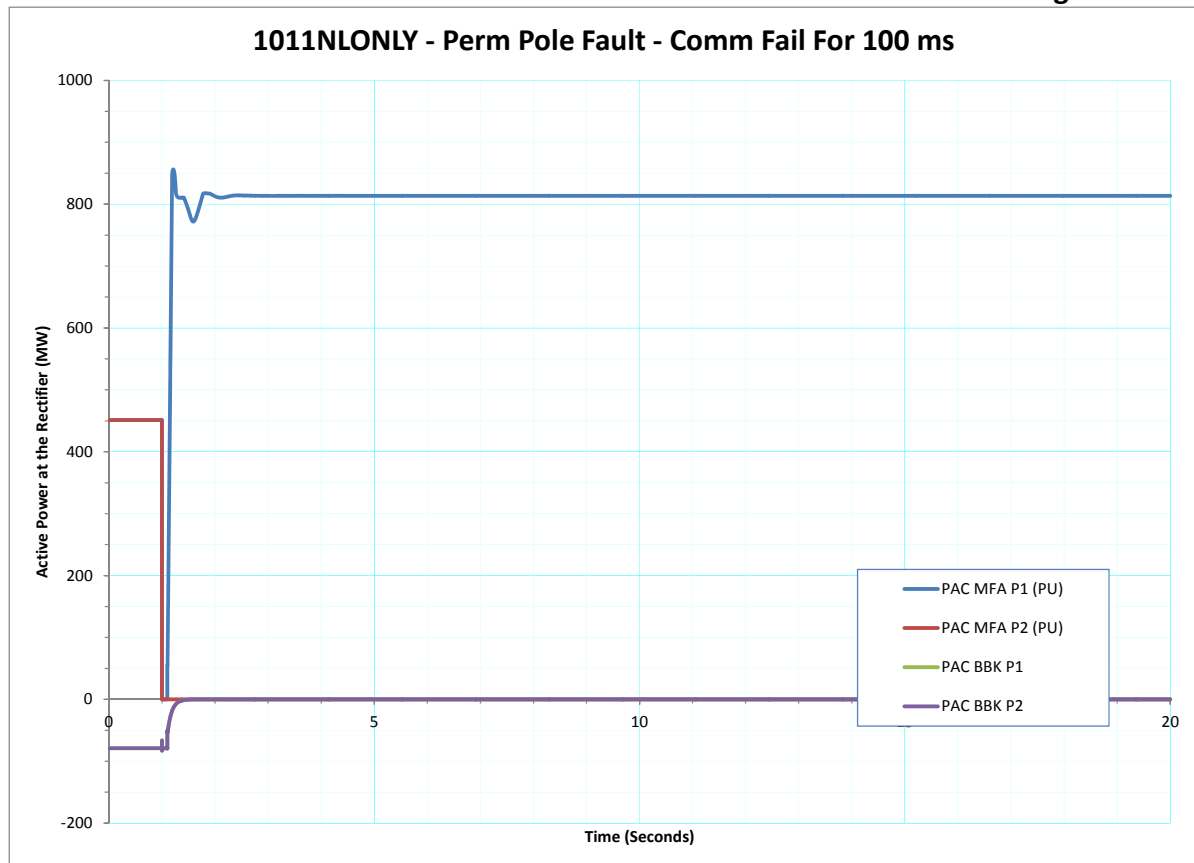
¹ Minor reduction in sheddable load due to voltage dependency of load with post fault ac bus voltages less than pre fault values.



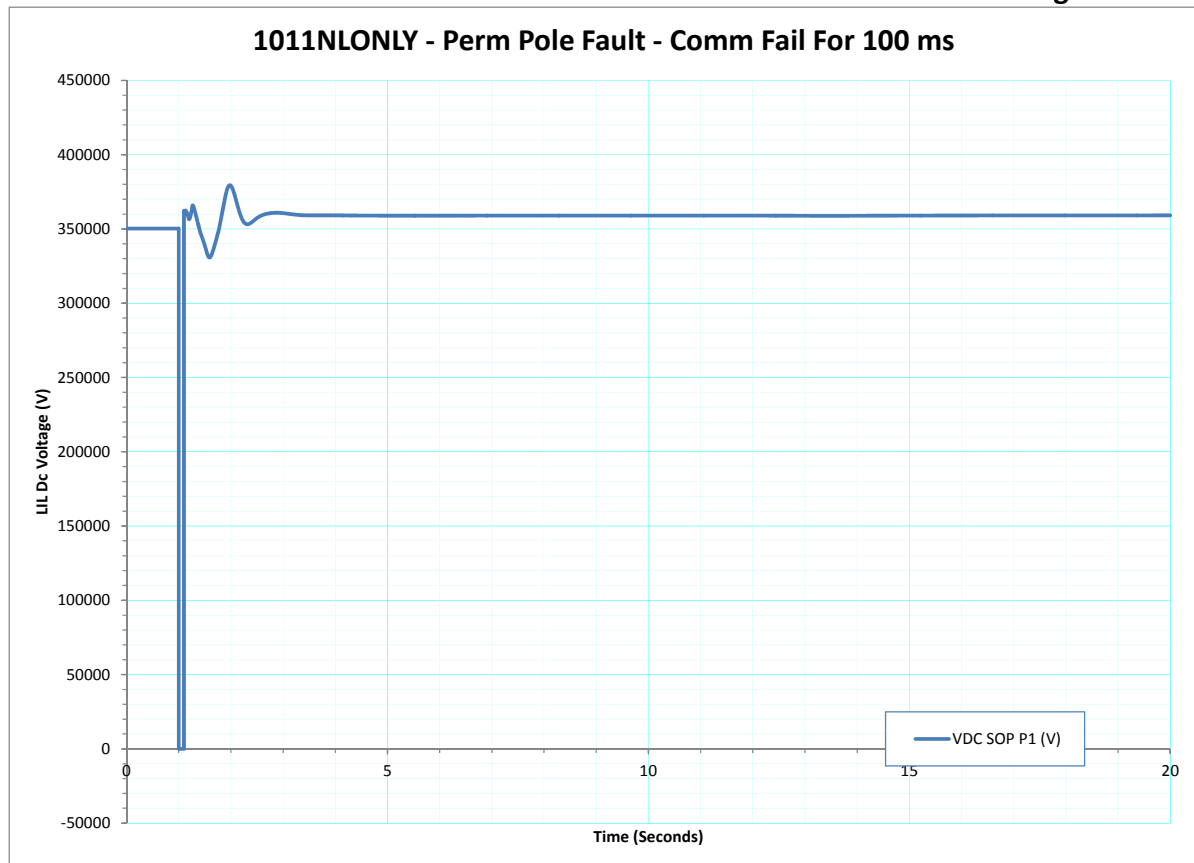
1 **Figure 7 - 1011NLONLY - Perm Pole Fault - Comm Fail for 100 ms - Relative Rotor Angle**
2 **(Degrees)**



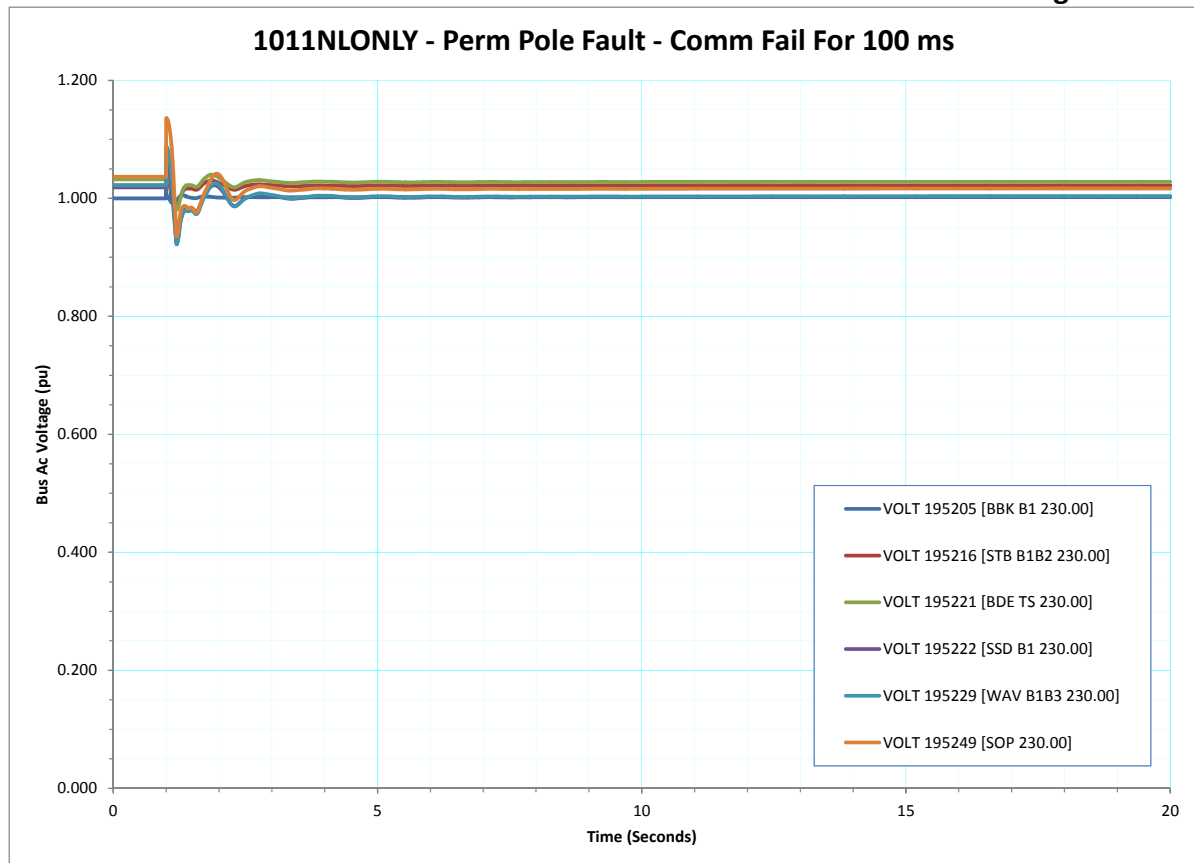
1 **Figure 8 - 1011NLONLY - Perm Pole Fault - Comm Fail for 100 ms - System Frequency (Hz)**



1 **Figure 9 - 1011NLONLY - Perm Pole Fault - Comm Fail for 100 ms - Active Power at the**
2 **Rectifier (MW)**

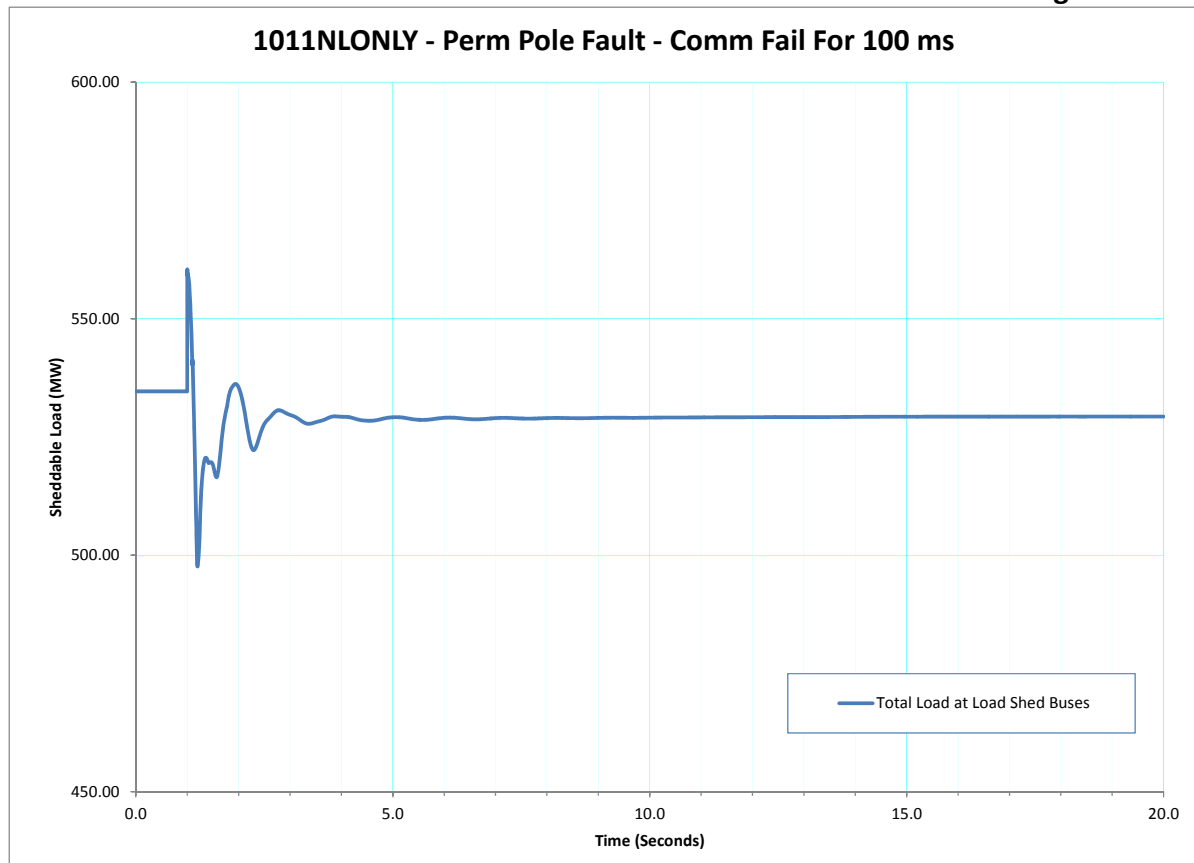


1 **Figure 10 - 1011NLONLY - Perm Pole Fault - Comm Fail for 100 ms - LIL Dc Voltage (V)**



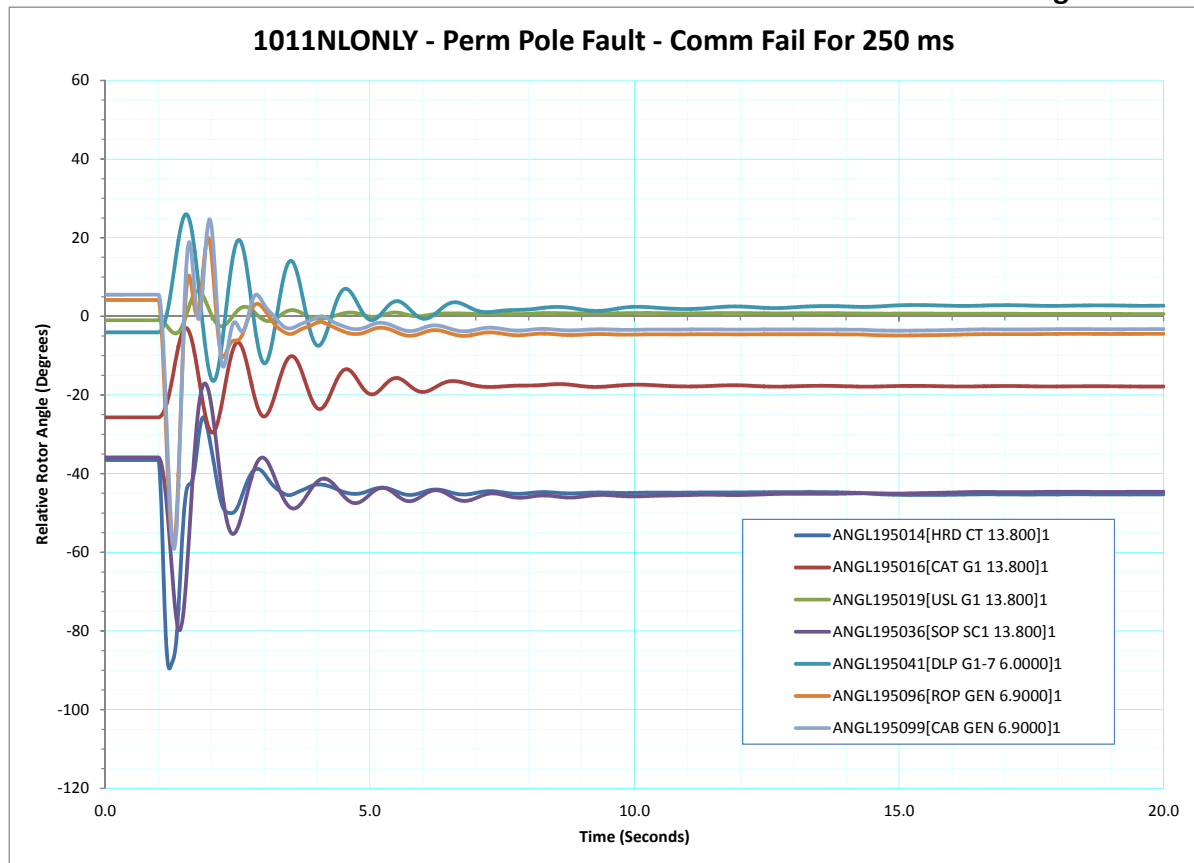
1

Figure 11 - 1011NLONLY - Perm Pole Fault - Comm Fail for 100 ms - Bus Ac Voltage (pu)

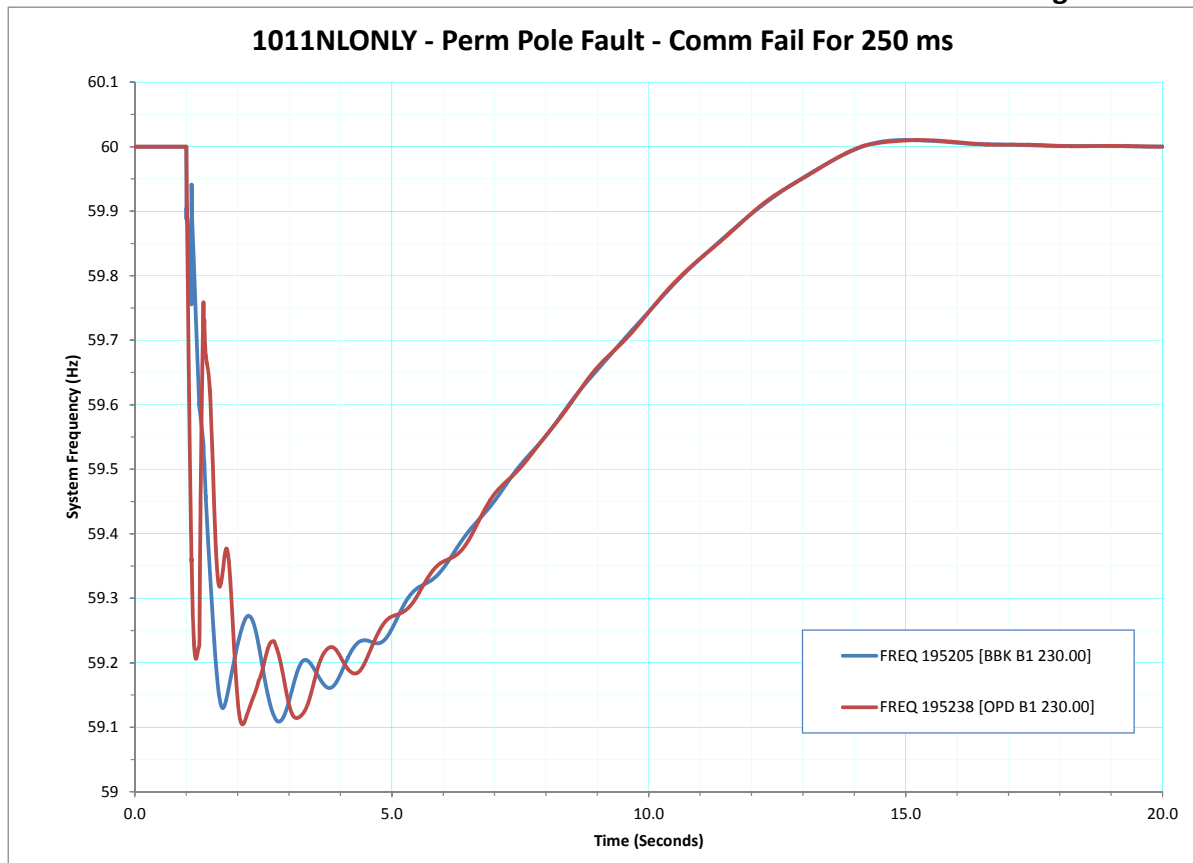


1 **Figure 12 - 1011NLONLY - Perm Pole Fault - Comm Fail for 100 ms - Sheddable Load (MW)²**

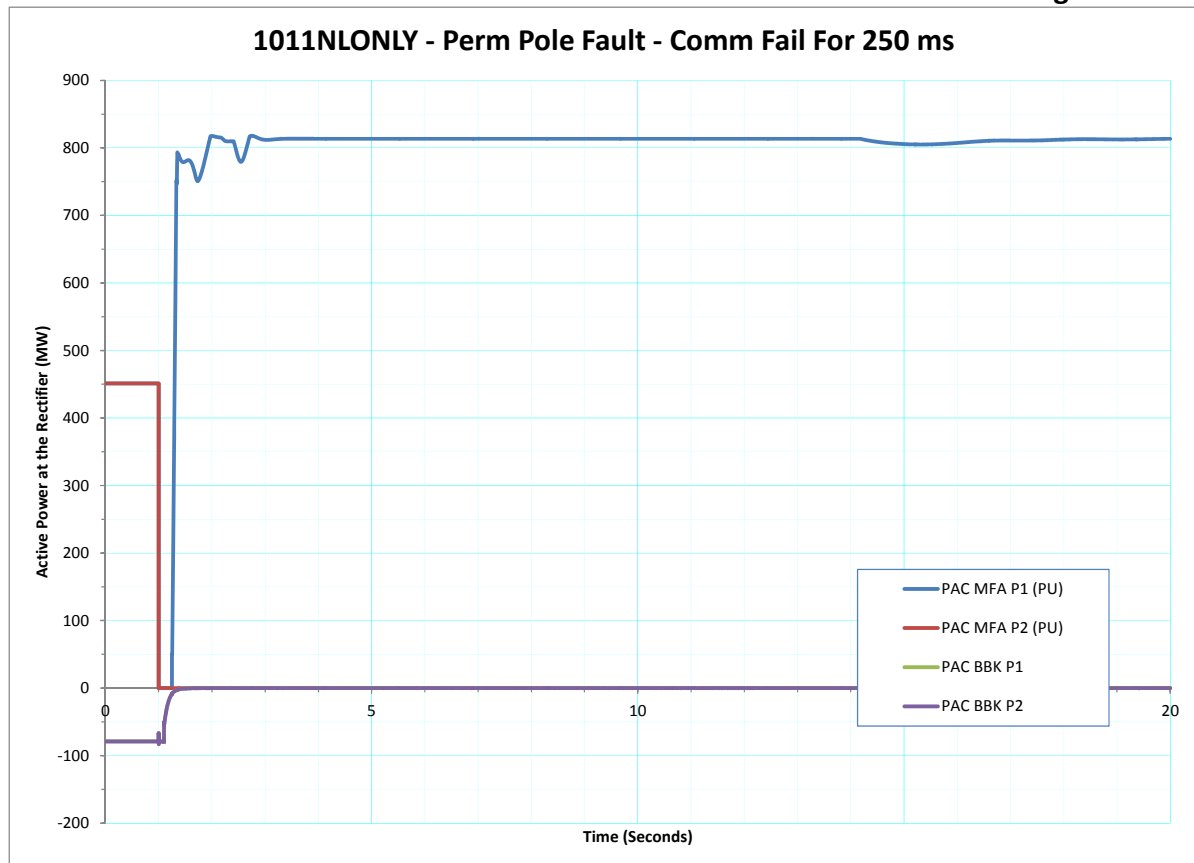
² Minor reduction in sheddable load due to voltage dependency of load with post fault ac bus voltages less than pre fault values.



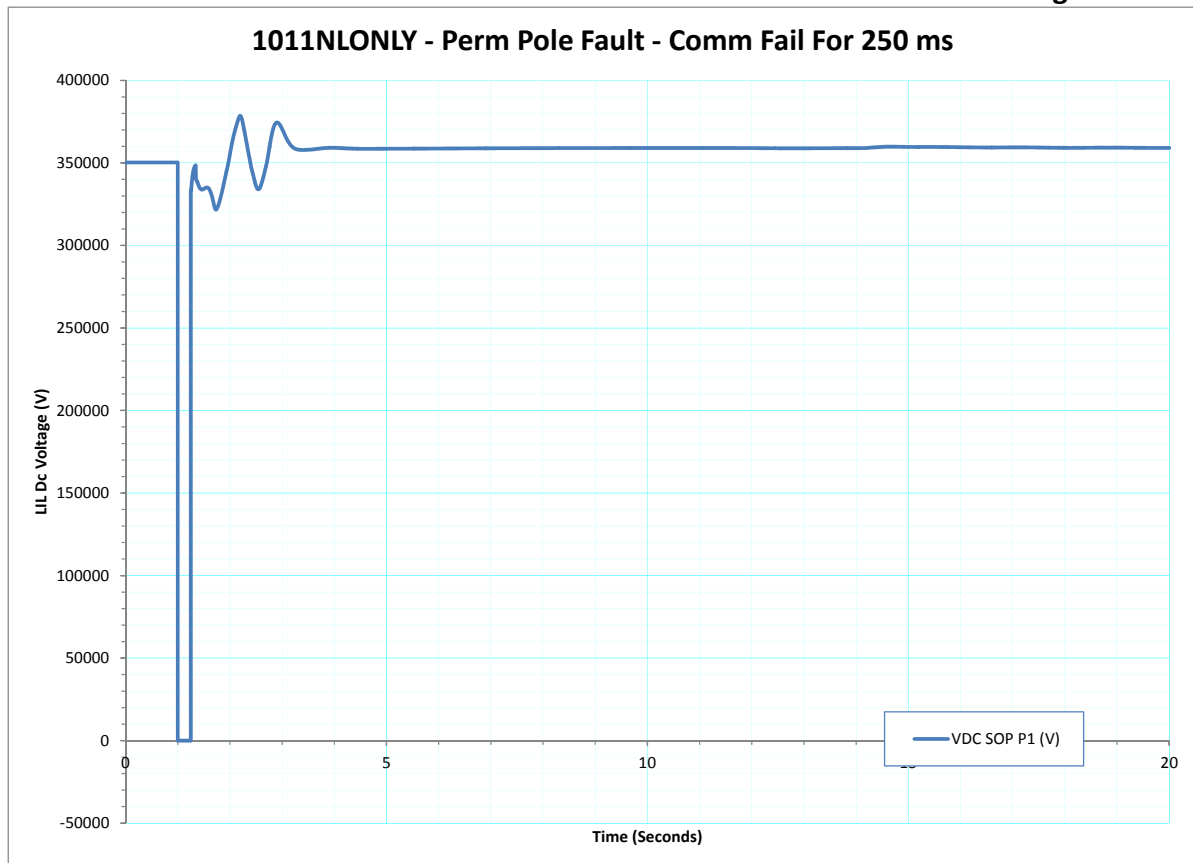
1 **Figure 13 - 1011NLONLY - Perm Pole Fault - Comm Fail for 250 ms - Relative Rotor Angle**
2 **(Degrees)**



1 **Figure 14 - 1011NLONLY - Perm Pole Fault - Comm Fail for 250 ms - System Frequency (Hz)**

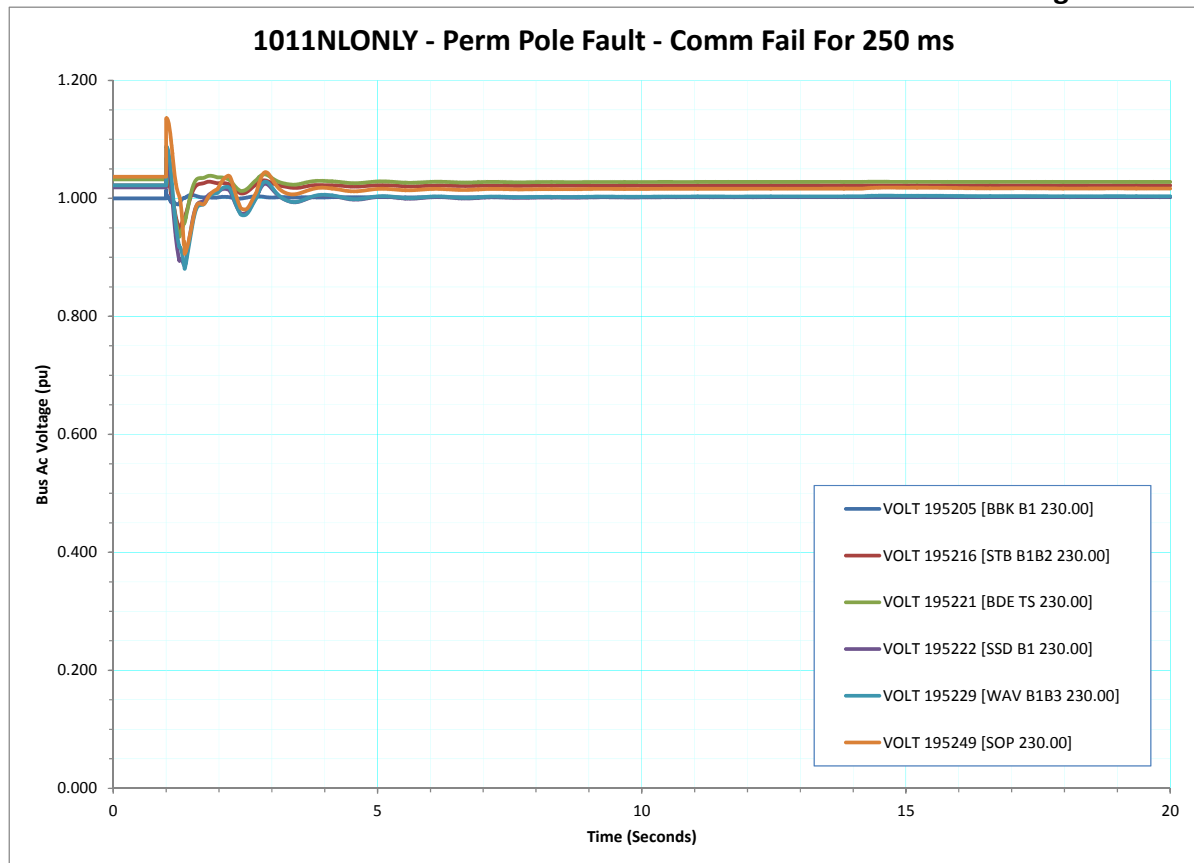


1 **Figure 15 - 1011NLONLY - Perm Pole Fault - Comm Fail for 250 ms - Active Power at the**
2 **Rectifier (MW)**

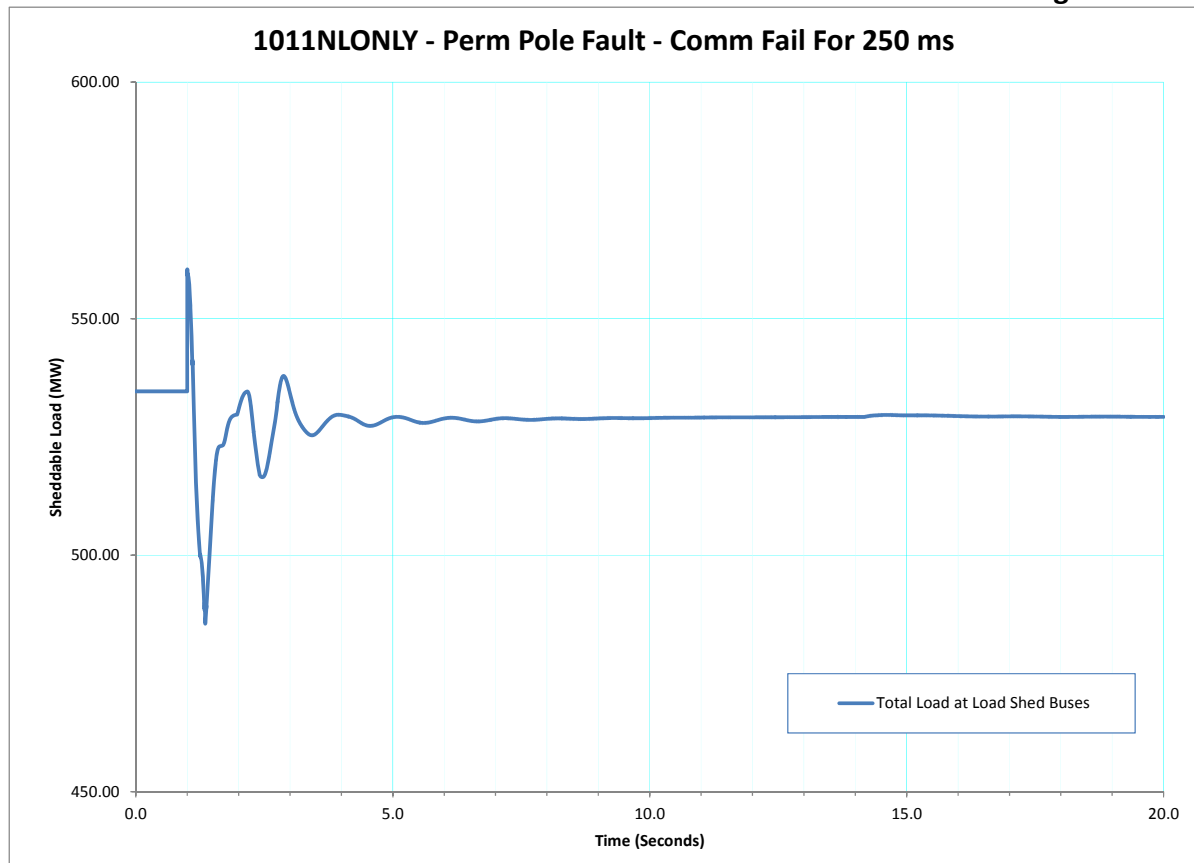


1

Figure 16 - 1011NLONLY - Perm Pole Fault - Comm Fail for 250 ms - LIL Dc Voltage (V)



1 **Figure 17 - 1011NLONLY - Perm Pole Fault - Comm Fail for 250 ms - Bus Ac Voltage (pu)**



1 **Figure 18 - 1011NLONLY - Perm Pole Fault - Comm Fail for 250 ms - Sheddable Load (MW)³**

³ Minor reduction in sheddable load due to voltage dependency of load with post fault ac bus voltages less than pre fault values.