

ECE470 Power Systems I

Hints for HW # 6

Selected answers:

1. 7 bells - $\#_{\text{TRIPS}} = 2.98$ outages/yr
8 bells - $\#_{\text{TRIPS}} = 2.44$ outages/yr
Improvement = 18.2%
2. Selected $[Y_{\text{bus}}]$ entries: $Y_{13} = j10$, $Y_{22} = -j16$, $Y_{32} = 0$, $Y_{43} = j12.5$, and $Y_{44} = -j21.5$
3. a) Bus voltages (kV) are: 236.7, 236.1, 235.0, 234.1
b) These are much lower when the cap bank is removed.
4. a) $\delta = 25.5^\circ$. c) 1.7 MNm