

ET 332b  
Three Phase Transformer Connection Homework

Three single phase transformer are to be connected to form a three phase bank. The bank will supply a combined single and three phase load of 225 kVA. (Assume that the single phase load is equally divide between all phases) The primary side connects to a 12.47 kV system and the secondary side is grounded wye connected. The secondary voltage levels are to be 277/480 V. Each winding in the secondary is rated at 277 V.

- 1.) Draw the necessary connections in the figure to achieve a 12.47 kV delta / 277/480 V grounded wye secondary connection with 30° phase shift across the bank. Use T1 for phase A, T2 for phase B, and T3 for Phase C.
- 2.) What is the turns ratio of each of the single phase transformers in the bank?
- 3.) What should the power rating of each of the three transformers be to handle the anticipated bank load?

