

This is my conclusion. I will try to explain as short as possible.

You have not input the cable sizes and lengths in the data base. Since impedance data is missing for the program, it assumes some default data from the library (I don't know how. You may have to contact ETAP tech support) and gives a warning while doing so. Either you have to delete the cables or input some impedance.

Even though you don't have actual data in the ETAP library-specially metric cable data-at least you should input equivalent AWG sizes.

Because of the above, as long as you use a radial network the results are acceptable. Please refer the **RADIAL ONLY.PDF** file.

But the moment the faulted bus gets a contribution from somewhere, it assumes some default cable impedances and gives a different X/R ratio. It is evident from **WITH CONTRIBUTION.PDF** file. Because the driving point Thevenin's impedance at the faulted bus, is a parallel connection of all the impedances connected to that faulted bus.

The more you allow contribution to the faulted bus the more you deviate from the actual Idc value.

**Corrective Action:**

Either you have to delete all cables and re-do the calculation or input all necessary cable impedance data. Since your network is so large, and all 6.6 kV buses get some contribution from other buses, the cable impedance data is absolutely necessary (or to be deleted completely). Also you mentioned that your CBs are marginally rated. So in my opinion, cable impedance data is really needed.

I was trying to input some, but, the missing data is so huge, every time you run a SC analysis, the program gives a warning.

Hope this helps.