

Electrical Quiz 2

Contribution by: C.Kaliaperumal, Former CE/TNEB/India

1. When an arc flash occur?

An arc flash happens when an electric current flows through air gap between line to earth or between line to line.

Even a 300 mA of arcing current can produce a fire.

2. What is the temperature of the arcing?

20,000 deg. C (about 4 times that of Sun's surface temp), sounds at about 140 dB.

3. What is a typical acceptable unbalance in Voltage?

About 1%. Because, even 1% unbalance Voltage could cause 6% unbalance in Current.

4. Where symmetrical components are used?

To study power system analysis in unbalanced three-phase system conditions by converting them into two sets of balanced phasors (+ve & -ve) and a set of single-phase (zero sequence) phasors.

5. When unbalanced conditions will occur in power system?

Phase to ground and Phase to Phase faults,
Open conductor and unbalance in impedances.

[6.In](#) which equipment, positive and negative sequence components are equal?

Transformers and lines.

7. Do Generators produce negative sequence currents?

No, but negative sequence currents can flow in their windings due to system faults.

8. What is the Zero sequence reactance(X_0) of transformers & transmission lines?

X_0 of Transformer: $0.85 \cdot X_1$

X_0 of Lines: $3 \cdot X_1$

9. What can we see when CT secondary got open circuit ?

A Big orange Basket Ball with a big bang!

10. Who discovered God Particles?

Prof. Heaks.

11. Which end the of the 230 kV or 110 kV Generating Station feeders are to be test charged after any LC works, that is Generating Station side or from SS side?

Naturally, the test charging of any Generating Station feeders should be done only from their remote end Sub Stations and if the feeders stood okay, then only they must be tied at PH end.

The generating station should not test charge the feeders, since if there is any fault on the line, it would affect the generating station bus & generators and hence it is in practice to test charge only from the other end.