

## Govt. Degree College Utnoor

### Department of Maths

#### Student study project/Field visit

#### Mathematical calculation of voltage hazard in power station

During lifetime of a power station, the electrical system is subjected many times to ground faults, giving rise to voltage hazards. Voltage hazard could be due to Step Voltage, Touch Voltage and Ground Potential Rise. They are dangerous and result into electric shock and/or loss of life to O&M personnel, stakeholder or animal. Electrocutation in India, constitutes a substantial death among total accidental and suicidal death, with continued rising trend. Because of an earth fault, an ungrounded system or structure becomes energised, creating panic due to measurable voltage to ground. The purpose of the present paper is to mathematically calculate the Step Voltage & Touch Voltage of a power station and demonstrate that the earthing grid design is suitable, meeting the general safety requirement of CEA regulation.

