ELECTRON ATOM

Newsletter 15/05/2016
Volume 1 Issue 2

SECAB.I.E.T, ELECTRICAL AND ELECTRONICS ENGINEERING DEPARTMENT, BAGALKOT ROAD, NAURASPUR, VIJAYAPURA- 586109

INSIDE THIS ISSUE

"When dealing with people remember you are not dealing with creatures of logic, but creatures of emotion."

From HOD'S Desk

It gives me immense pride and pleasure to lead the electrical and electronics engineering department of this esteemed institution.

The department encourages students to participate in cultural and co-curricular activities, sports, seminars, paper presentation etc. keeping in mind overall growth of the students.

To fill the gap between industry and the academics providing industrial visits and internships to the students are regular practice of the department, which assist the student in smooth transition from academic life to work life.

I wish the students make best use of the facilities provided by the department and work towards achieving excellence in the chosen field.

Importance of Education

We all want to see our kids going towards success which is only possible through the good and proper education. Every parent tells their kids from childhood about the importance of education in the life and all the advantages of education to make their mind towards better study in the future. Make your kids and children habitual of writing essays, participate in debates and discussion and many more skill enhancing activities in the schools or at home using such simple essays. All parents should actively participate in making your kid's better future by providing simple essay on importance of education.

"The Best revenge is massive success."

GULSHAN MULLA. 6th SEM

Protection Of Industrial Power Supply Systems

As industrial operations processes and plants have become more complex and extensive, the requirement for improved reliability of electrical power supplies has also increased.

The potential costs of outage time following a failure of the power supply to a plant have risen dramatically as well. The protection and control of industrial power supply systems must be given careful attention. Many of the techniques that have been evolved for EHV power systems may be applied to lower voltage systems also, but typically on a reduced scale.

However, industrial systems have many special problems that have warranted individual attention and the development of specific solutions.

In other plants, the nature of the process allows production of a substantial quantity of electricity, perhaps allowing export of any surplus to the public supply system – at either at sub-transmission or distribution voltage levels. Plants that run generation in parallel with the public supply distribution network are often referred to as co-generation or embedded generation.

Electric and magnetic fields

UZMA BANU 4th sem

In relation with the increased use of mobile phones during the last decades more concerns about possible harmful effects of electro-magnetic fields to human beings have been expressed. Overhead lines cause both electric and magnetic fields.

An important difference between the fields generated by antennas used for mobile communication and high voltage lines is the **operating frequency**. The fields of high voltage lines have a low frequency of 50 Hz, or 60 Hz, whereas the fields from antennas lie in the GHz domain.

Moreover, the very aim of antennas is the generation and radiation of fields whereas this is only an undesirable side effect in the case of high voltage lines.

case phase-shifted by 120°, and the voltages and currents in the conductors vary with the power frequency of 50 Hz. These voltage and current variations influence the electromagnetic fields.

The field strength is dependent on the considered time instant, i.e. the fields are also alternatingSince we consider a symmetric three-phase system, the voltage in the single conductors are in each

Industrial visit was made on 26th and 27th February 2016 to supa-Hydro power plant and west coast paper mill Dandeli.

Md. Nawaz 5th sem

Important Factors In Design Of Distribution Substations

Safety of life and preservation of property are the two most important factors in the design of the substation. Codes must be followed and recommended practices or standards should be followed in the selection and application of material and equipment.

Operating / Design Limits

Following are the operating and design limits that should be considered in order to provide safe working conditions:

1. Interrupting devices must be able to function safely and properly under the most severe duty to which they may be exposed.
2. Accidental contact with energized conductors should be eliminated by means of enclosing the conductors, installing protective barriers, and interlocking.
3. The substation should be designed so that maintenance work on circuits and equipment can be accomplished with these circuits and equipment de-energized and grounded.
4. Warning signs should be installed on electric equipment accessible to both qualified and unqualified personnel, on fences surrounding electric equipment, on access doors to electrical rooms, and on conduits or cables above 600 V in areas that include other equipment.
5. An adequate grounding system must be installed.
6. Emergency lights should be provided where necessary to protect against sudden lighting failure.
7. Operating and maintenance personnel should be provided with complete operating and maintenance instructions, including wiring diagrams, equipment ratings, and protective device settings.

A variety of basic circuit arrangements are available for distribution substations. **Selection of the best system or combination of systems will depend upon the needs of the power supply process.**

In general, system costs increase with system reliabil- ity if component quality is equal. Maximum reliability per unit investment can be achieved by using properly applied and well-designed components.

TANVEER *4th SEM*

Bad Effects of Corona on Transmission Lines

All the diverse ionization processes involved in producing **corona discharges** in the highly stressed regions near the conductors of transmission lines, as well as the creation and movement of charged particles in the electric field, require an expenditure of energy.

This energy is supplied by the high voltage power source connected to the transmission line, **which generates the high electric field near the conductors** necessary to sustain corona discharges.

Most of the energy is converted to thermal energy for heating the air in the immediate vicinity of the conductors. A small proportion of the energy is converted to **electromagnetic radiation including light emission**, to acoustic energy, and to electrochemical energy required to produce gaseous effluents ozone and nitric oxides.

"You cannot shake hands with a clenched fist.."

Corona Loss

The power loss, defined by the rate at which energy is drawn by corona from the high voltage power source, is known as **corona loss**. Since the electromagnetic, acoustic, and electrochemical components are only a small part of the overall energy, corona loss is effectively caused by the movement of positive and negative ions in the electric field.

The lifetime of electrons created in the discharge, before they attach to neutral molecules and become negative ions, is very short, and consequently, their movement in the electric field gives rise only to short-duration current pulses, which do not contribute significantly to corona loss.

On an ac transmission line, the sinusoidal voltage applied to the conductors **causes a capacitive current to be drawn from the power source**.

Before the onset of corona, the power source is called upon to supply mainly the capacitive current. The capacitive current flowing in the conductor gives rise to a small amount of I^2R power loss

One day colloquium on "Power Quality Issues" in S.I.E.T Vijayapur by Dr. Uma Rao, Dpt. of EEE on 05/03/2016

For Details Contact

Nauraspur Bagalkot Road,Vijaypur(Vijayapura) 586109,KARNATAKA.(INDIA)
Website:siet.secab.org, e-mail:secab_siet@secab.org phone:08352-278912,276425
cell:+91 9513314007 , 9880674370, 9986085198, 8904146113