



**Ministry of Civil Aviation
Egyptian Aviation Academy**

Constant Current Regulator(CCR)

DESCRIPTION :

Purpose of the course:

The importance in controlling the intensity of illumination required on runways and taxiways and how to make calculation to select CCR for circuit and to detect faults.

Course format :

- This course requires approximately 50 hours.
- This course is part of the diploma in Airfield lighting.

What you will learn :

Upon completing this course you will have the skills to:-

Establish and explain the concepts of general theory for the operation of the power regulator device for any device in the world .And it's importance in the runways lighting and the control brightness required and how to handle and fix it in the optimum maintenance work, which lead to the device lifting quality and the efficiency in the provision of spare parts.

Who should attend :

- Airfield Lighting Maintenance Director
- Airfield Lighting Maintenance Head of Departments
- Electrical Engineers
- Consulting offices (Project's directors and Electrical Engineers)
- Construction companys (Airports) – (Project's directors and Electrical Engineers) (Maintenance and Projects)

PREREQUISITES :

Participants should have prior knowledge of Airfield Ground Lighting (AGL).

COURSE CONTENT :

Introduction:

- CCR Types and Electronic component introduction - Thyristor training program
- Thyristor introduction
- Thyristor and its types
- Thyristor construction and operation
- Thyristor characteristics
- Firing circuits and protection of thyristor
- Power circuit and control circuit
- Isolation circuits
- Methods of triggering the thyristor
- Firing cicuits
- Symbols and terminology.

- Theory of thyristor operation.
- Thyristor drivers and triggering.
- The SIDAC, a new high voltage bilateral trigger.
- SCR characteristics.
- Applications.
- Mounting techniques for thyristors.
- Reliability and quality.
- Appendices.

- Comprehensive explanation of the general theory of operation of any device in the world and how to measure the output wave for circuit loop . And explain all the hardware components and function of each part separately detailed.
- Comprehensive explanation of thyristor and the extent of it's the importance in the control of output current for current regulator and how it work.
- Explain how to control the operation of thyristor by firing circuit.
- Comprehensive explanation of how to repair the current regulator without excessive consumption of spare parts.
- Explain the current regulator device control circuits and include firing circuits for the thyristor and control brightness explanation of how to control the operation of the main contactor.
- Explain ways to measure the validity of the power thyristor without separate it from CCR to measure it.
- Explain how to remote control in the operation of CCR and control brightness at any degree of required illumination.
- Output current from CCR .
- Open circuit protection - Over current protection.
- Design explanation and operation for CCR.
- How to detect faults of the CCR, and how to fix it in less time.

DURATION : 50 Hours

LEVEL : Electrical Engineers.

LANGUAGE INSTRUCTION : English /Arabic