



PROJACS ACADEMY
by egis



Electrical Power Stations Repair Systems and Protection

المحطات الكهربائية اعطالها وحمايتها

15 – 19 May 2023

London / United Kingdom

Introduction

This Electrical Power Stations Repair Systems and Protection course will provide the Engineers and Senior Management detailed strategies about the Electrical Power generating station types and the related repairing systems, in addition the course will focus on the Protection Systems and procedures to be applied. This is not intended to be a theoretical document; but it will provide applicable techniques and methodologies. Real application examples are provided to comprehend the operation of the electrical power generation stations.

During the course, an intensive investigation of the above-explained subjects will be conducted to the trainees through the presentation of simulated real systems. The trainee will have the opportunity to check the effect of changing various system parameters on the performance of the system.

Objectives

As a result of this course, attendees will be able to:

- Know more information of Electrical Power Generation plants types.
- Know the new technology of electrical generation systems.
- Know the protection types and applicable systems.
- Know the Protection types and methodologies.
- Understanding troubleshooting in Power Plants and Maintenance procedures.

Who Should Attend?

Senior and junior engineers concerned with the electrical power system installation operation and managements. In addition, the course will be valuable to senior management and engineers working in large industrial applications and power generation. The course targets also high qualified field engineers who are involved with the operation, maintenance and protection of electrical power plants.

Course Outline

Day One

- Introduction
- Major Equipment in Power Plants
- Types of Power Generation
- Renewable Energy
- Thermal Power Station
- Turbine Generators;
- Fossil Fueled Power Plants
- Nuclear Power Station
- Hydro-Electric Power Station
- Solar power generation

Day Two

- Lightning Protection System
- Earthing System
- Relays

Day Three

- Types of Protection
- Protection Devices
- Power Plant Fire Protection System
 - Fire Water Reservoir or Fire water Pump House
 - Pumps Installed in Fire Water Pump House
 - Control and operating philosophy
 - Constructional requirements
- Hydrant System
- Spray System
- Fix Foam system
- Potable and mobile extinguisher
- Fire Detection and Alarm System

Day Four

- Protection System in Power System
 - Objective of Power System Protection
 - Protection System in Power System
 - Functional Requirements of Protection Relay

- Important Elements for Power System Protection

Day Five

- Transformer components and Maintenance
- Generator Maintenance
- Typical Generation Operational Problems
- Switchgear Troubles and Maintenance
- Power Station Protective Systems;
- DC Tripping Systems
- Maintenance Scheduling for Electrical Equipment

Training Method

- Pre-assessment
- Live group instruction
- Use of real-world examples, case studies and exercises
- Interactive participation and discussion
- Power point presentation, LCD and flip chart
- Group activities and tests
- Each participant receives a binder containing a copy of the presentation.
- slides and handouts.
- Post-assessment

Program Support

This program is supported by interactive discussions, role-play, case studies and highlight the techniques available to the participants.

Schedule

The course agenda will be as follows:

- | | |
|---------------------|------------------|
| • Technical Session | 08.30-10.00 am |
| • Coffee Break | 10.00-10.15 am |
| • Technical Session | 10.15-12.15 noon |
| • Coffee Break | 12.15-12.45 pm |
| • Technical Session | 12.45-02.30 pm |
| • Course Ends | 02.30 pm |

Course Fees*

- **5,200 USD**
**VAT is Excluded If Applicable*

المقدمة

ان نظم اصلاح وحماية محطات الطاقة الكهربائية ستوفر للمهندسين والإدارة العليا استراتيجيات مفصلة حول الطاقة الكهربائية و محطات التوليد و أنواع النظم ذات الصلة، وبالإضافة إلى ذلك ستركز الدورة على أنظمة وإجراءات الحماية ليتم تطبيقها حيث سيتم التعرف على التقنيات والمنهجيات المطبقة و سيتم تقديم أمثلة للتطبيق الحقيقي لفهم كيفية تشغيل المحطات الكهربائية لتوليد الطاقة.

الاهداف

بعد الانتهاء من هذه الدورة، سيتم التعرف على:

- انواع محطات توليد الطاقة الكهربائية.
- التكنولوجيا الجديدة من أنظمة توليد الكهرباء.
- أنواع الحماية والأنظمة المعمول بها.
- استكشاف الأخطاء وإصلاحها في محطات توليد الطاقة وإجراءات الصيانة.

الحضور

المهندسين المعنيين بعملية تركيب نظام الطاقة وإداراتها، وبطبيعة الحال سوف تكون ذات قيمة للإدارة والمهندسين العاملين في التطبيقات الصناعية الكبيرة وتوليد الطاقة. تستهدف الدورة ايضا المهندسين الميدانيين المؤهلين الذين يشاركون في تشغيل وصيانة وحماية محطات توليد الطاقة الكهربائية.