

Course Overview:

Ensuring reliable and secure power system is the primary responsibility of every system operators. Recent grid incidents of 2019 have underlined the importance of grid security. As the grid grows in size and complexity, grid security has to be enhanced because the consequences of failure of a large grid are severe. The course will give an introduction to the main principles and objectives of power system reliability and security analysis.

Course Objective:

The course will give a thorough understanding of the main principles in power system reliability and security analysis as well as knowledge of different methods and tools for reliability analysis.

Course Outline:**Basics of Power System**

- Basic Concepts
- EHV AC Transmission and HDVC Transmission
- Power System Planning

Power System Operation and Control

- System Operation Concepts
- Load Frequency Control
- Voltage Control
- Power System Restoration

Reliability Indices

- Relationship between System Protection and Reliability
- Effects of Design and Operation on Reliability
- Intelligent System Components
- Reliability Improvement due to Automation

Power System Analysis

- Steady State Power Flow Analysis
- Fault Analysis
- Power System Stability
- Power System Protection

Who Should Attend:

- Engineers and technicians new to the electric utility industry
- Intermediate-level engineers and technicians responsible for utility distribution planning
- Professionals involved with improving distribution system reliability
- Utility engineers and consultants who conduct load forecasts

Training Language:

Eng/Ar

Training Methodology:

- Presentation & Slides
- Audio Visual Aids
- Interactive Discussion
- Participatory Exercise
- Action Learning
- Class Activities
- Case Studies
- Workshops
- Simulation