

NPP Basics Nuclear Steam Supply System

This lecture will present the basics of a nuclear power plant's Steam Supply System (primary circuit), including reactor core, primary system, reactor system and reactor coolant system.

Duration: 3h30

Language: English

Participants: 10 to 30

Location: classroom



Basics

Prerequisites: None

Your profile

Master 1-2 level student in a partnering university, wishing to acquire a global vision of a Pressurized Water Reactor (PWR).

During the training, you will:

- Get the explanation of the nuclear energy utilization for heat production
- Discover the arrangement and control of nuclear fuel in the Reactor Core
- Get explanation on Primary system normal operating conditions
- Discover main features of the Reactor System
- Get the definition of the Reactor coolant system components and their function
- Understand the normal operating conditions of the Primary System

After the training, you will be able to:

- Explain the utilization of nuclear energy for heat production
- Describe arrangement and control of nuclear fuel in the Reactor Core in particular with respect to nuclear processes
- Recall the main features of a PWR Reactor System and illustrate their tasks for nuclear energy production and plant safety
- Define the Reactor Coolant System components and their function

- Illustrate the two-step steam generation by means of the heat transfer from the Reactor Core to the Steam Generators
- Explain function and safety relevance of the Pressurizing System
- Explain the normal operating conditions of the Primary System

Advantages

- Face-to-face training
- Illustration exercise

Content

Theoretical module:

- Introduction
- Nuclear heat production
- Reactor core
- Primary system
- Reactor system
- Reactor coolant system
- Operation of the primary system
- Conclusion

Evaluation

- None