

# PWRs operation and safety

INSTN, CEA Saclay, France

2018

3 – 7 December 2018

## OBJECTIVES

The course is intended at the acquisition and/or development of working skills on the design, operation and safety of Pressurized Water Reactors. The course includes basic knowledge on thermal-hydraulics and core physics to support the mastering of technical aspects of PWR design, systems and management procedures.

## PUBLIC

The course is addressed to PhD students, managers, scientists, engineers, operators and technicians who are working in the nuclear sector and want to have an insight into the basic principles of PWRs.

Basic knowledge in reactor physics is preferable but not required to attend the course.

## GENERAL INFORMATION, REGISTRATION FEE

The course will be held at the National Institute for Nuclear Science and Technology, located at the CEA-Saclay site (20 km south of Paris).

It is held in the frame of the European Nuclear Energy Network (ENEN).

The number of participant is limited to 12 to ensure a high effectiveness of the practical courses.

The course is free for ANNETTE participants.

## FURTHER INFORMATION

Course organizer:

Nadia NOWACKI: [nadia.nowacki@cea.fr](mailto:nadia.nowacki@cea.fr)

Scientific supervisor:

Jean-Christophe KLEIN: [jean-christophe.klein@cea.fr](mailto:jean-christophe.klein@cea.fr)

## PROGRAMME

In order to enhance the effectiveness of the course, theoretical courses are strongly coupled with practical courses carried out on PWR simulators (normal operation and accidental scenarios)

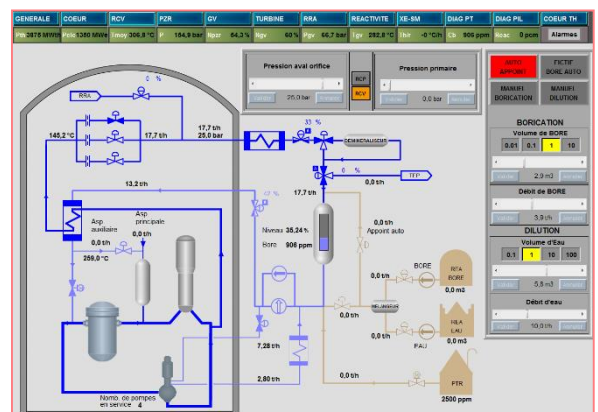
### • Theoretical courses (21 hours)

Reactor principles and systems / Neutron kinetics and dynamics / Core physics / Thermal-hydraulics of reactors / PWR design and operation / Safety systems and accidental scenarios

### • Practical courses (9 hours)

**On PWR normal operation simulator:** From start up to full power operation / Power variation management (study of core poisoning by Samarium and Xenon) / house load operation

**On PWR accidental scenarios simulator:** Loss of Coolant Accident / Steam line secondary break / Steam generator tube rupture



CPWR simulator