



ENEN-RU II Practical Course

April 25th to 28th 2017

Introduction to Nuclear safety analysis of Nuclear Reactors with state-of-art Computer Programs

Content

The course gives an introduction to nuclear safety analysis by using state-of-the-art system analysis computer programs. Models of nuclear power plant systems are set up, simulations are carried out and their results are interpreted. The modelling is focused on thermal-hydraulics. Reactor physics (core neutronic behaviour) is not included in the simulations.

Main topics

- Introduction to the basic layout of modern light water reactors
- Introduction to basic nuclear safety concepts and to nuclear safety analysis programs
- Modeling and simulation of basic plant components
- Simulation of the thermal-hydraulic response of a light water reactor under transient condition
- The simulation programs TRACE (U.S. NRC) and ATHLET (Gesellschaft für Reaktorsicherheit, GRS) will be used on the computers in the department's PC-pool.

Practical Exercises

- Basic plant components modelling.
- Steady-state model simulation.
- Transient simulation.
- Online-visualization of simulations.
- Simulation results analysis and interpretation.
- Uncertainty and Sensitivity Analysis in Nuclear Safety.

For registration, please send an e-mail to: rafael.macian@ntech.mw.tum.de.

The course is free of charge. The number of participants is limited to a maximum of 20.

Basic knowledge in nuclear technology, heat transfer and fluid mechanics is recommended.