C&I for Pressurized Water Reactors

3-day Nuclear Simulator Training for Supplier and Operator Personnel to get an Overview on Control & Instrumentation Systems.

Das Simulatorzentrum

KSG | GfS

TÜV SÜD

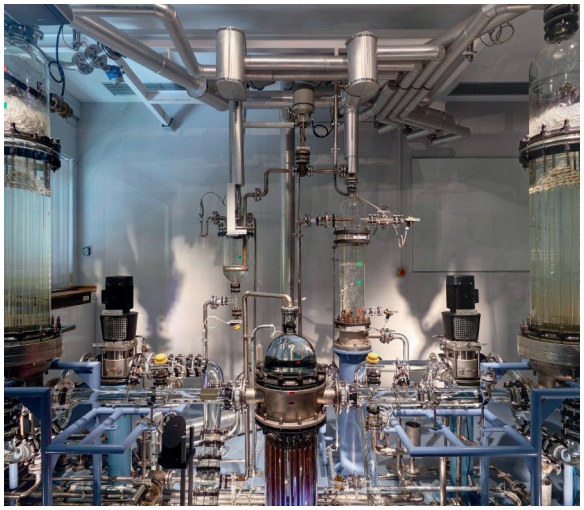
Energietechnik

Add value.
Inspire trust.

Photographer Jochen Tack

TÜV®

Real experiences. Real benefits.



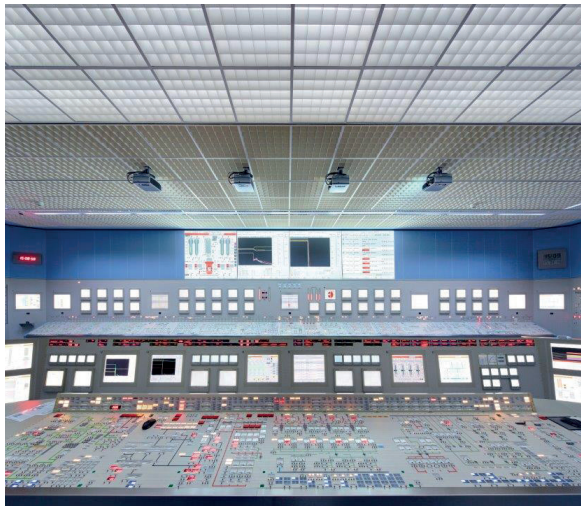
Reactor Glass Model

The worldwide unique reactor glass model is a reproduction of a two-loop pressurized water reactor at a scale of 1:10. It allows the visualization of thermal hydraulic phenomena in light water reactors occurring through normal, abnormal and accident conditions. At the reactor glass model, seeing is understanding. In our forty years of experience in classroom teaching and practical trainings, the efficiency of this unique teaching tool has proven superior to any other didactic means. Come and take a look at processes that normally happen out of sight inside ducts in this unforgettable first-hand experience.

Big Picture Learning

Profit from a unique combination of background knowledge and hands-on experience in C&I. Together with three trainers of TÜV SÜD and KSG | GfS you will enhance your knowledge through interactive learning strategies. The number of participants is limited to ten, which guarantees an individual approach.

Who are we?
TÜV SÜD is an independent third-party service provider applying global knowledge and best practice to help ensure compliance with international regulations.
The Simulator Center of KSG | GfS provides simulator training for licensed operating staff in German and Dutch nuclear power plants.
Gain access to more than 40 years of C&I experience in the nuclear industry by signing up today.



Photographer Bernhard Ludewig

Full Scope PWR Simulator

Originally started in 1977 with two simulators – one for power plants with pressurized water and one for boiling water reactors – KSG | GfS today runs 7 plant-specific simulators. The simulators are almost identical replica of their reference power plants with respect to the control room.
Get a feeling for the atmosphere in the main control room and operate a PWR during normal, abnormal and design basis accident scenarios. See in real-time simulations how the reactor surveillance and limitation system as well as the reactor protection system are initiated and bring the plant to a safe and stable condition.

Agenda

3-day training course at the German Simulator Center in Essen, Germany

Get an overview on C&I systems: Following theoretical lessons, reflect your newly gained knowledge by operating a full scope PWR simulator, which is a state of the art replica of an existing NPP. Furthermore, learn how to qualify C&I equipment for nuclear new build projects. As a bonus you will spend a half day at the worldwide unique PWR glass model and take a closer look at usually hidden thermohydraulic phenomena. Save your spot now.

DAY 1	DAY 2	DAY 3

Theoretical Lessons
▪ PWR Reactor Basics
  ▪ Safety Objectives
  ▪ Safety Levels & Plant Conditions
▪ C&I System Architecture
  ▪ Control Systen
  ▪ Instrumentation and Measured Quantities
 	
- Lunch -
 	
PWR Glass Model
▪ Trip of Main Coolant Pump
▪ Station Black Out / Natural Circulation
▪ Pressurizer Stuck Open Safety Relief Valve (Three Mile Island Accident)
▪ Visualization of Heat Transfer Mechanism
 	
- Joint Dinner with Participants and Trainers -
	Theoretical Lessons
	▪ Safety Classification
	▪ Technological & Conceptual Design Requirements for C&I Systems
	▪ Engineering Lifecycle
	▪ Reactor Surveillance and Limitation System
	
	- Lunch -
	
	PWR Simulator Training
	Overview of a PWR control room and its features
	Normal Operation: Operate a PWR in safety level 1 situations e.g. reactor and turbine auxiliary control, control of steam generator level.
	
	Abnormal Operation: Operate a PWR in safety level 2 situations e.g. turbine trip, load rejecton to auxiliary station supply.
		Theoretical Lessons
		▪ Reactor Protection System & Control of Design Basis Accident
		▪ Equipment Qualification of C&I Components
		▪ Example Based on RCC-E (Aspects for Supplier, Operator, Authority)
		
		- Lunch -
		
		PWR Simulator Training
		
		Design Basis Accidents: Control a PWR in safety level 3 situations e.g. large break loss of coolant accident, steam generator tube rupture.

Join us for this unique experience on one of the following dates:
May 21st - 23rd 2019
September 10th - 12th 2019
Course Costs: 3000€ (excl. VAT), number of participants limited to ten

Energietechnik

Register now.

https://simulatorzentrum.de/en/tuev-pwr-simulator-training

registration@ksg-gfs.de

Das Simulatorzentrum

KSG | GfS

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