Dissemination Event

Decommissioning, Waste Management & Transportation

Newton Bowmer,
Graham Dick,
Helmut Huger,
Dr. Jeanne Bargsten

Mehr Wert.
Mehr Vertrauen.

Add value.
Inspire trust.

TÜV SÜD at a Glance

150+
YEARS OF
SAFETY, SECURITY
& SUSTAINABILITY

1,000+
LOCATIONS
WORLDWIDE

€2.5
BILLION
IN ANNUAL
REVENUE

24,500+
EMPLOYEES*

41%
OF REVENUE
OUTSIDE GERMANY^

BUSINESS LINE
NUCLEAR POWER &
DECOMMISSIONING

550+
NUCLEAR EXPERTS

60+
YEARS OF
EXPERIENCE IN THE
NUCLEAR FIELD

MAINLY LOCATED IN
THE UK & GERMANY

*As of 2018-12-31
^Based on clients' locations

TÜV SÜD Nuclear Services – Our Experience

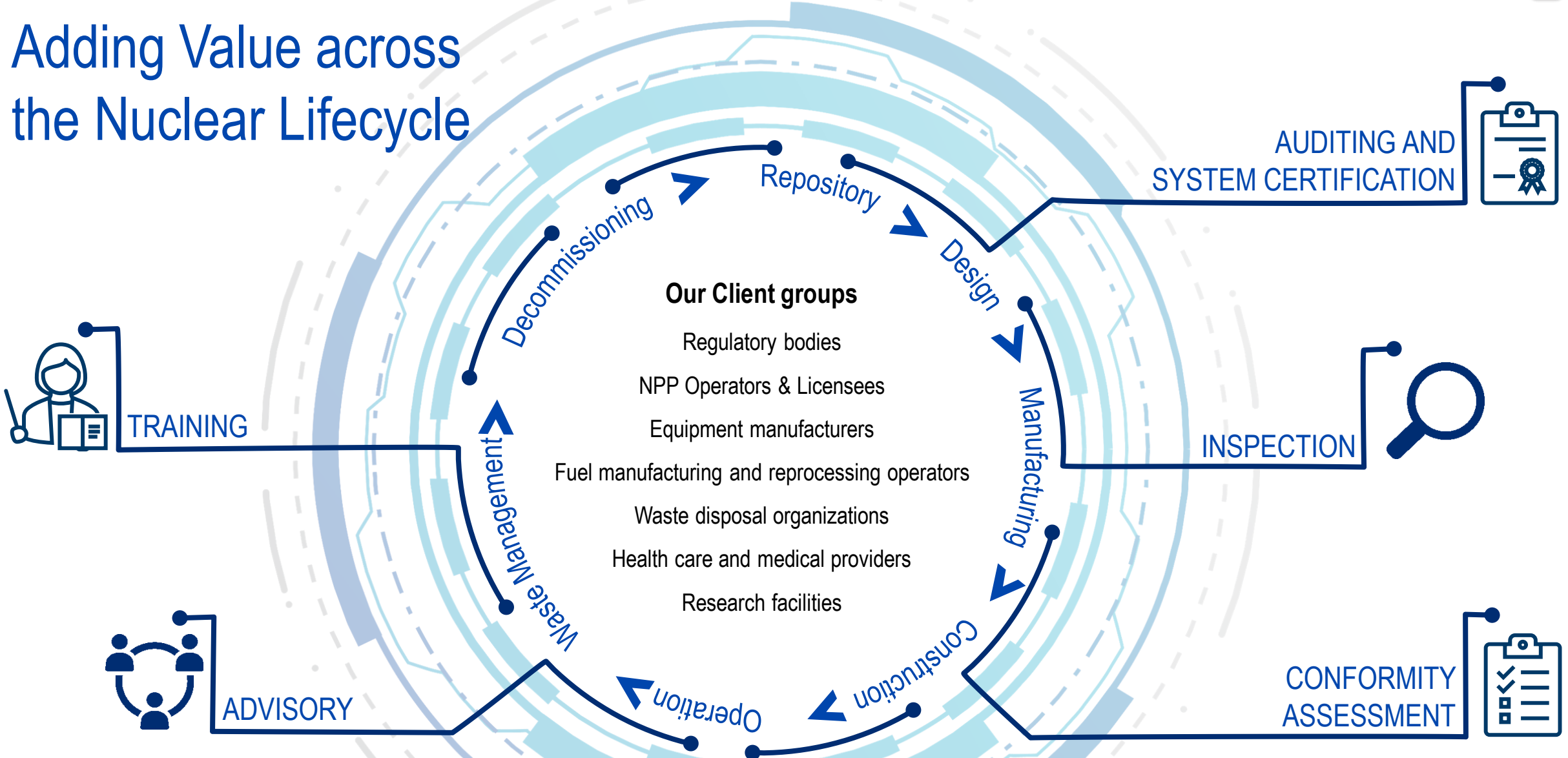
> 60 years	Experience in the nuclear industry
entire lifecycle	Covering all stages of nuclear projects
worldwide	Local workforce all around the world

Involved in nuclear projects from the beginning: Design, component manufacturing, construction & commissioning.

Accompanying nuclear power plants throughout the operating phase, including the management of spent fuel and radioactive waste.

Decommissioning and dismantling of NPPs & nuclear facilities, waste management, intermediate and final storage.

Adding Value across the Nuclear Lifecycle



Waste Management

Efficient and safe spent fuel & waste management strategies

- Formulation of concepts for waste minimization
  - Inventory studies
  - Clearance & release concepts, disposability assessments
  - Waste treatment solutions
  - Evaluation of waste conditioning options

- Evaluation of waste storage strategies
  - Assessment of interim storage solutions
  - Evaluation of final repository options
  - Environmental impact analysis

- Advising on the handling & transport of radioactive residual materials / wastes

- Collection and analysis of key operational experience of a fuel reprocessing facility and vitrification plant

Decommissioning

Efficient and safe decommissioning & dismantling strategies for nuclear facilites*

- Decommissioning planning
  - Feasibility study of decommissioning concepts
  - Evaluation of dismantling technologies
  - Waste-led studies
  - Waste estimating
  - Radiological characterization of systems, structures, components
  - Full system decontamination concept for waste minimization
  - Cost modelling

- Safety analysis
  - Post-operational phase
  - During dismantling & decommissioning

*nuclear power plant, fuel reprocessing plant, vitrification plant, research facilities

KINGS – Summer School

Kepco International Nuclear Graduate School

About the Project

Project Description

Training program on decommissioning including theoretical lectures, pracitcal exercises and real-world case studies.

Performance Period

- 2020 – 2024
- 2 training weeks per year
- 2250 working hours in total

Focus Topics

- NPP decommissioning
- Engineering technology including decommissioning procedure and managemennt plant establishment
- Radioactive contamination measurement, environmental monitoring
- Radiation protection, safety regulation, waste traeatment and disposal
- Remote control robot, sensing, VR application and monitoring technology

Hybrid Training Solution during COVID 19 Pandemic

Due to ongoing travel restricitions, until today the training couldn‘t be conducted in Germany as originally planned.
A hybrid training format was utilized, with two trainers in Korea and remote teaching from Germany with video conferencing software.

Highlights 2021

- More than 20 expert lectures
- Workshop session with Head of Decommissioning TÜV SÜD
- Training session on the utilization of smart glasses for remote inspections
- Virtual tour through the TÜV SÜD radiation measurement and filter test laboratory
- Insights from various external industry professionals, covering all aspects and perspective of decommissioning

Dismantling of KKP 1 & GKN I

Ministry of the Environment, Climate Protection and the Energy Sector Baden-Württemberg

Ministry of the Environment, Climate Protection and the Energy Sector

About the Project

Project Description

Dismantling of the nuclear power plants
Philippsburg 1 (KKP1) and Neckarwestheim I (GKN I)

Performance Period

- since 2013
- contract volume: 19,2 M€ for each unit

Outcome

- Expert statement according to § 20 Atomic Energy Act
- Assessment of procedures according to § 7 (3) Atomic Energy Act
- Activities during the decommissioning and dismantling of nuclear reactors in the context of administrative proceedings

Activities

- Assessment of the decommissioning and dismantling steps in the context of the licensing and supervising procedure (including safety assessment)
- Accompanying inspection at the implementation of changes
- Accompanying inspection at the conditioning of wastes for the final repository KONRAD (product control, also material product control)
- Realization of acceptance tests, functional tests and recurrent tests
- Evaluation of special incidents and reportable events
- Exchange of experiences with authorities and operators

Thermal Treatment of Higher Activity Wastes

Sellafield Ltd

About the Project

Project Description

Development of technologies for the treatment of higher activity wastes.

Performance Period

- Since 2016
- Project partners: Nuclear Decommissioning Authority UK, Sellafield Ltd and the National Nuclear Laboratory

Strategic and Economic Benefit

- Significant volume reduction
- Production of a passively safe waste form with high integrity
- Improved environmental performance
- Simplified storage requirements

Activities

Stage 1: 2016-2019

- Development of technologies and understanding benefits for the thermal treatment of higher activity wastes
- Considering every stage of the waste management lifecycle

Stage 2: since 2019

- Support to the implementation of pilot demonstrators for treatment of
  - Plutonium contaminated wastes
  - Pumpable waste feeds
  - Mixed beta gamma solid wastes
- Strategic goal: Support future decision making regarding thermal treatment opportunities

Add value.
Inspire trust.

Contact in China

Dr. Jeanne Bargsten

Jeanne.Bargsten@tuvsud.com

Visit our website