



Choose certainty.
Add value.

Design and construction of nuclear power plants

Develop safe and secure systems, structures and components.

Your challenges

As worldwide energy consumption rises, nuclear power continues to play an important role in satisfying demand. The Fukushima Daiichi accident was a strong reminder of the importance of nuclear safety. The foundations for a safe and secure operation should be established from the onset of the nuclear power plant (NPP) lifecycle. Plant design and construction must adhere to national and international safety and security standards. Operators and suppliers have to develop and hold the relevant licensing documents. Plant development also involves safety concept assessment, analysis of possible hazards, and provision of defence in depth for systems, structures and components (SSC).

What services does TÜV SÜD provide for NPP design and construction?

TÜV SÜD reviews design documentation and assesses technical solutions for standard compliance. Our experts verify that systems and components are perfectly aligned and in accordance with the license agreement.

Why are these services important for authorities, suppliers and operators?

As an independent technical expert that is familiar with the relevant regulations and standards, TÜV SÜD helps authorities to ensure that all safety and security requirements are fulfilled. In addition, our independent status increases public trust in the safety of NPPs.

For suppliers and operators, our review of planning documents and consultation ensures technical compliance in all areas and enables early detection of errors or weaknesses. This facilitates timely modifications, improvements and control for increased safety, security and availability of NPPs.

How can we help you?

TÜV SÜD provides objective and impartial technical consulting services throughout the entire project lifecycle. Our integrated approach ensures a top-level view of the safety, availability and reliability of nuclear installations. Well versed in all international and various



national standards, guidelines and procedures, our experts support you with specialised state-of-the-art equipment, software and methodologies.

Our services for NPP design and construction

TÜV SÜD covers all your SSC requirements with a comprehensive suite of NPP design and construction solutions.

■ Systems

We provide overall analysis of systems and operation, deterministic safety assessments, probabilistic safety assessments, and evaluation of operation manuals and procedures.

■ Structures

TÜV SÜD reviews the structural design against external human-influenced and natural events such as earthquakes, as well as internal events such as fire and explosions. We provide criticality assessments and advice on radiation shielding.

■ Components

Our design and construction services for components include design review, structural analyses, functional testing and verification, acceptance and commissioning tests, type testing, review of component specifications, dynamic tests, environmental management and damage analysis.

Your business benefits

- **Work with an expert partner** – and benefit from the capabilities of almost 1,000 highly qualified nuclear experts with an extensive understanding of regulations and standards supported by an international network.
- **Minimise risk** – by consulting TÜV SÜD at the early stage of design and construction. We ensure compliance of SSC to national and international regulations and standards.
- **Ensure transparency** – with a trusted and objective third-party organisation that will increase confidence and assurance in NPP projects.

Why choose TÜV SÜD?

TÜV SÜD is an independent third-party technical expert that provides impartial and objective consulting on NPPs. We offer end-to-end nuclear energy consultancy that begins with licensing and continues through to nuclear waste disposal and decommissioning.

Our world-class expertise includes extensive knowledge of national and international standards and regulations. With our international reach, we draw upon global best practices whilst taking into consideration the special needs of your local area.

Choose certainty. Add value.

TÜV SÜD is a premium quality, safety and sustainability solutions provider that specialises in assessment, testing, inspection, auditing, certification, training and knowledge services. Represented in over 800 locations worldwide, we hold accreditations in Europe, the Americas, the Middle East and Asia. By delivering objective solutions to our customers, we add tangible value to businesses, consumers and the environment.

Related services

TÜV SÜD provides the following related services:

- Licensing for nuclear power plants
- Nuclear power plant operation
- Safety assessment of nuclear installations
- Radiation protection
- Nuclear waste management
- Nuclear decommissioning