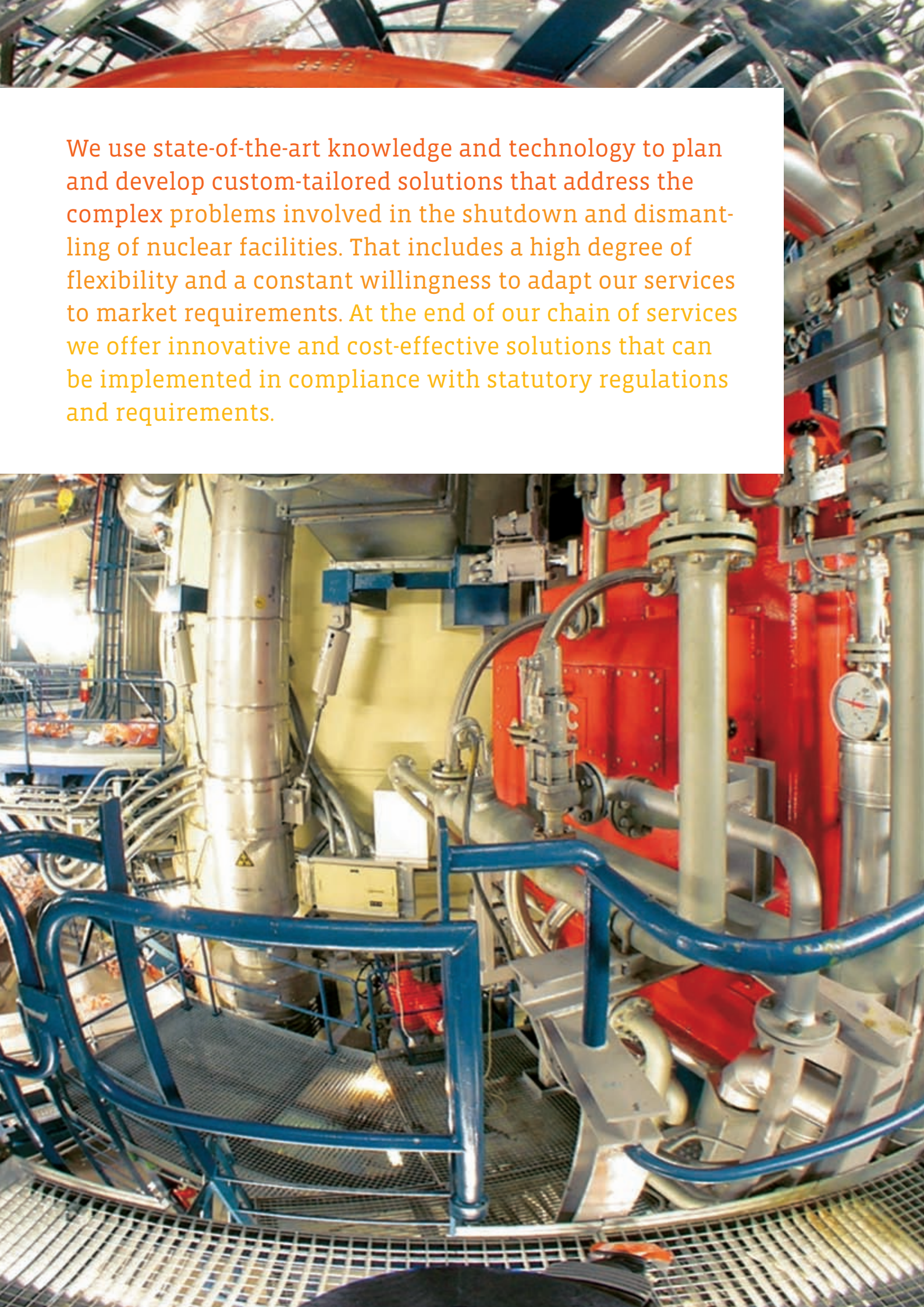




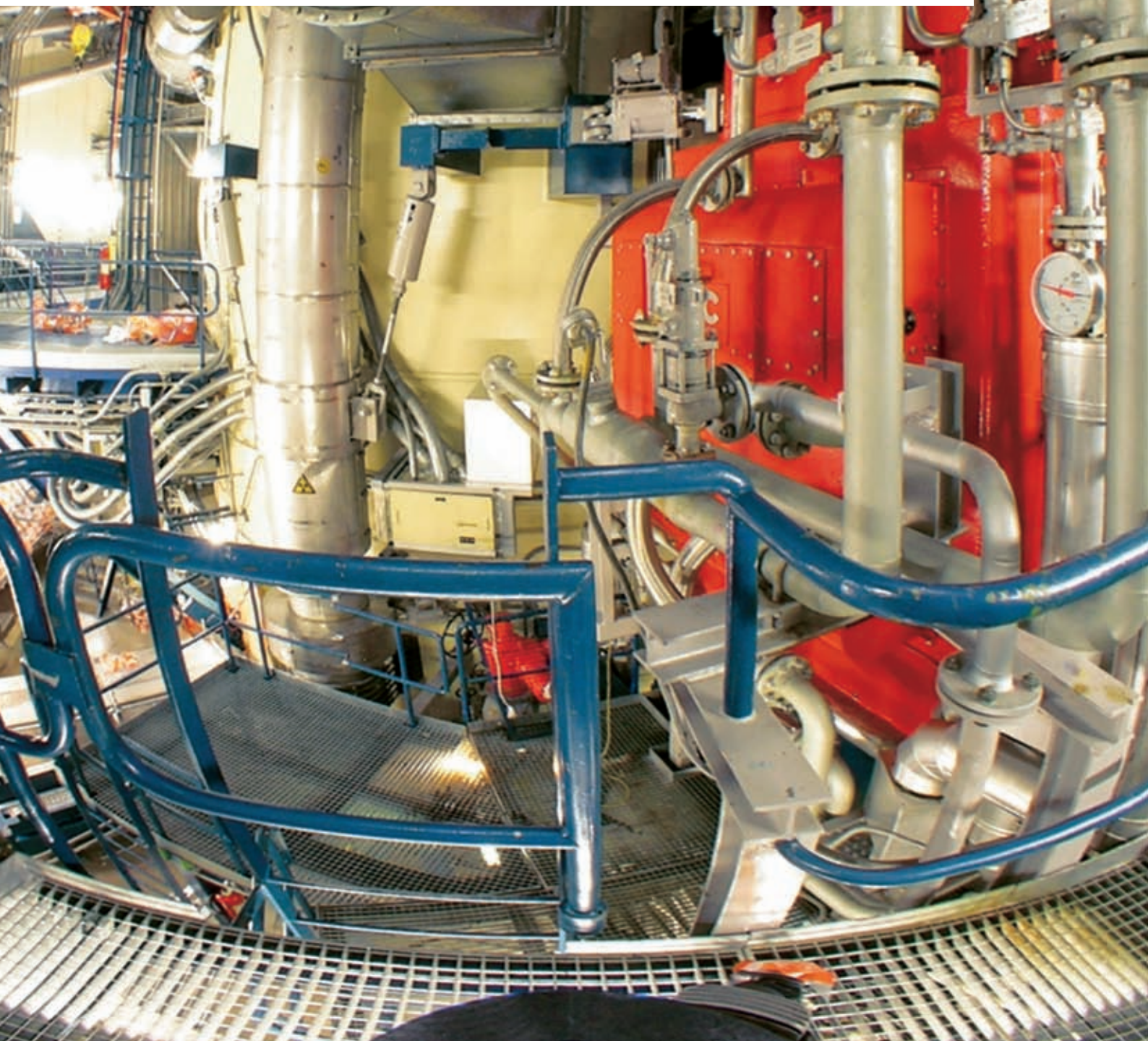
Kraftanlagen
Heidelberg

Decommissioning, radiation protection,
and waste disposal
Expertise and experience





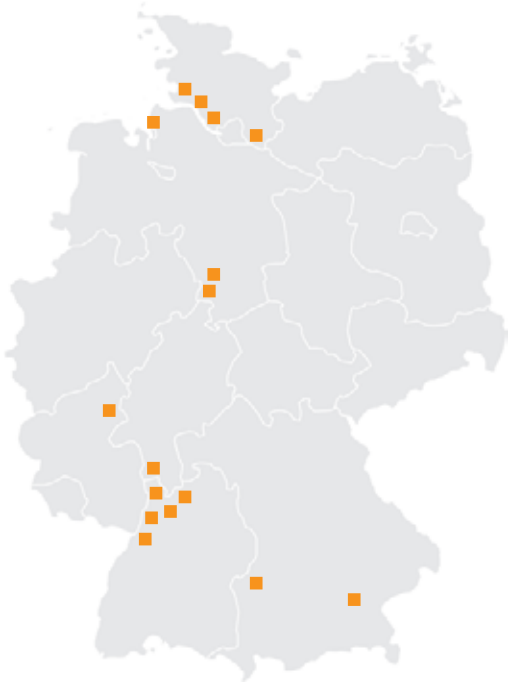
We use state-of-the-art knowledge and technology to plan and develop custom-tailored solutions that address the complex problems involved in the shutdown and dismantling of nuclear facilities. That includes a high degree of flexibility and a constant willingness to adapt our services to market requirements. At the end of our chain of services we offer innovative and cost-effective solutions that can be implemented in compliance with statutory regulations and requirements.



A nationwide presence in Germany - A partner for customers, appraisers and authorities



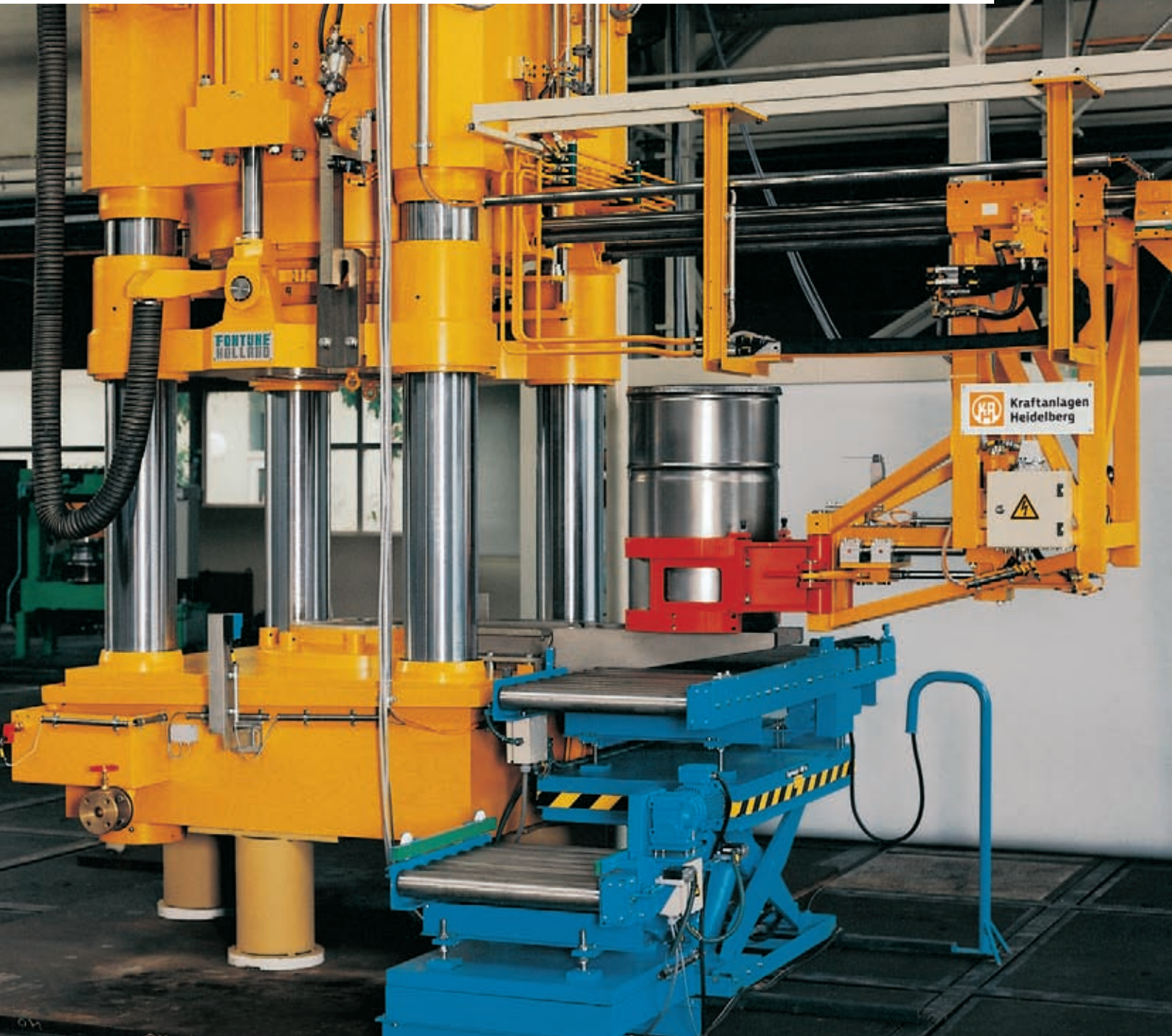
A nationwide network of offices and branches at NPPs in Germany enables us to be always on hand while work is being carried out and guarantees a rapid response to all project-related questions. We develop optimal solutions in close consultation with our customers.



Kraftanlagen Heidelberg is present at almost all nuclear installations in Germany. We also have offices throughout Europe.



Decommissioning nuclear facilities and disposing of the components is hardly less complex than erecting new facilities. A whole range of official regulations has to be observed. Dismantling, conditioning, transportation, and safe interim storage of components require technical expertise, assurance in dealing with authorities, and, of course, plenty of experience. That is precisely what Kraftanlagen Heidelberg can offer. For decades we have been valued by our customers as a reliable and competent all-round service-provider.



Decommissioning nuclear installations - Advanced technical solutions that address demanding questions



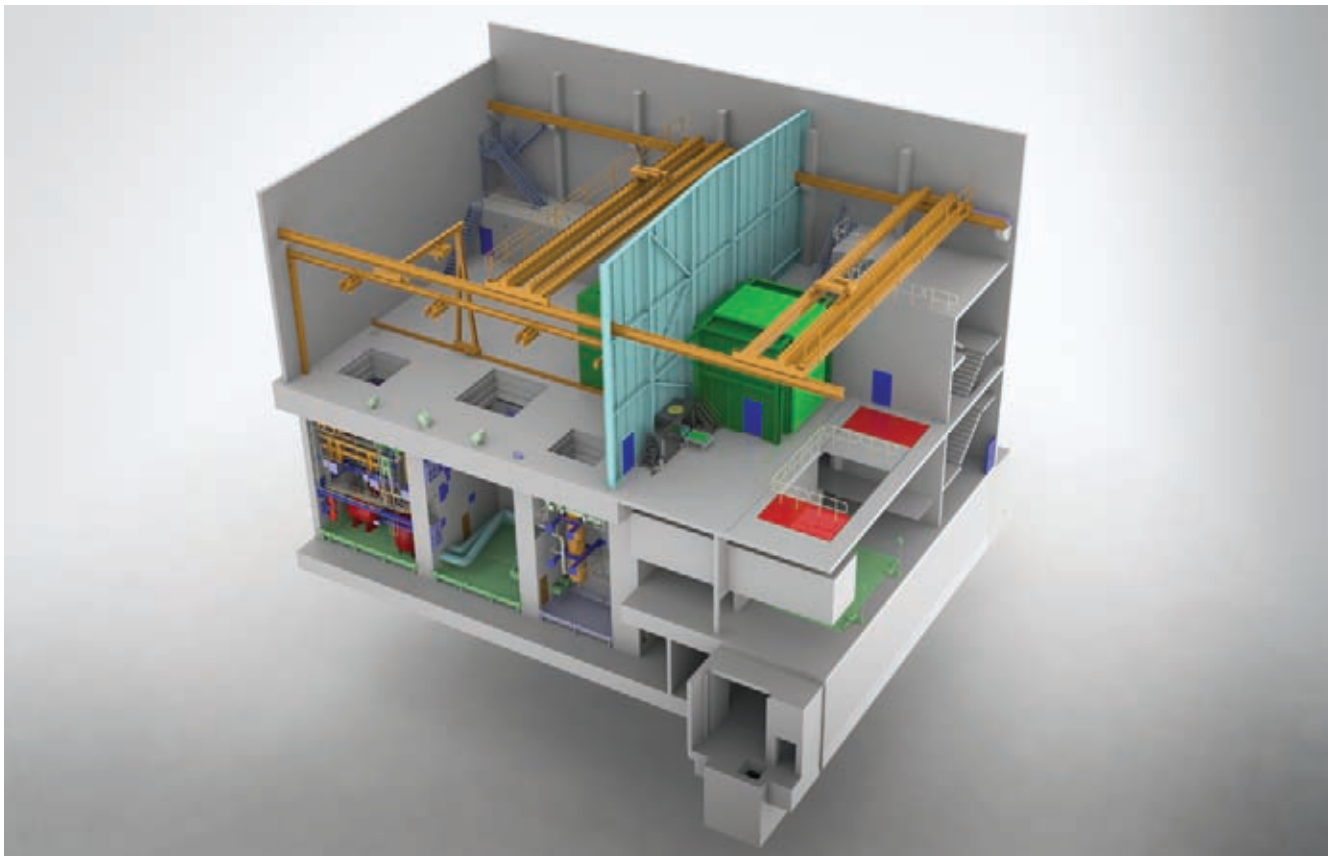
Kraftanlagen Heidelberg has been an established name in the shutdown and dismantling of nuclear installations for more than 20 years. Alongside planning and carrying out the necessary decommissioning work, our services include planning, delivery, and assembly of new facilities. Our decommissioning services also include operational radiation protection and waste management. We are a recognised and reliable local partner for the German nuclear power stations in Obrigheim, Mülheim-Kärlich and Stade that are currently being decommissioned.



Our decommissioning and dismantling services start during the post-operational phase of a nuclear facility:

- Maintenance and materials testing
- Shutdown of sub-structures
- Adapting infrastructure to modified operating conditions
- Modifying fire-fighting technology
- Ventilation
(safety inspections and conversion if necessary)
- Modification of steam supply
(e.g. for heating systems)
- Description of dismantling processes
- Mass flow and waste flow tracking and control
- Revising plant-specific documentation
- Generating applications for shutdown and dismantling permits
- Preparing tender documents for individual decommissioning phases
- Supervision of work (construction projects)

Decommissioning of reactors and hot cells - A complex task

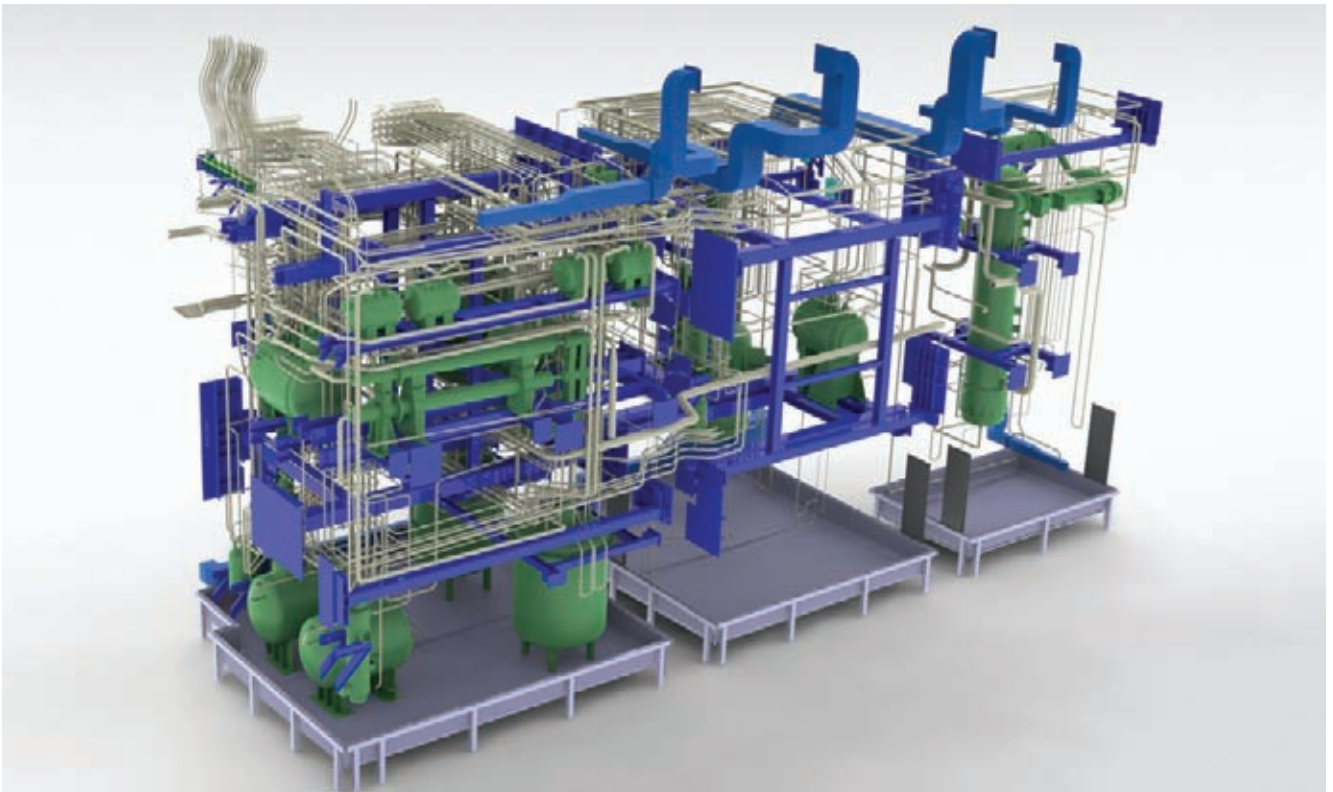


Kraftanlagen Heidelberg is playing a key role in dismantling the KNK II compact sodium-cooled nuclear reactor.

For many years, we have been involved in planning the decommissioning of the nuclear reprocessing facility in Karlsruhe.

Decommissioning is divided into several steps. One is the dismantling of the process cells of the storage and evaporation units.





Extensive planning work is undertaken by a consortium led by Kraftanlagen Heidelberg – the technical project manager – as part of the overall concept for the shutdown, dismantling, and disposal of the nuclear reprocessing facility in Karlsruhe.

Decommissioning often involves the installation of new plants. We calculate the specific structural properties for the plant to ensure that all circumstances relating to the new installation and dismantling processes are taken into account. We are an experienced partner for all questions relating to structural and strength calculations.

Our services provide proof of strength and stability. We also perform complex proof with the aid of the finite elements method as well as load-bearing and load-crash analyses.

Our experienced engineers and specialists play a key role in planning the decommissioning of nuclear facilities and their dismantling.

Our services

- Planning from basic concept to realisation
- Sluice concepts for dismantling
- Decommissioning work
- Conditioning and packaging of radioactive waste in accordance with final storage specifications (“Konrad” specifications)
- Examination of local modes of transport and logistics
- Generating local buffer and interim storage concepts
- Preparation for transport to interim or final storage facilities
- Safe sealing
- Documentation
- Liaising with appraisers and authorities
- Preparing and conducting negotiations with authorities
- Preparing specifications and tender documents for our customers

Managing permits and applications is as important in the decommissioning phase as during operation



Decades of experience make us an expert partner for all permitting processes. Our customers can be sure that we comply with all relevant laws and regulations.



We provide support – including the execution of complete work packages – in the following areas:

- Preparing the relevant documentation, notification of changes
- Safety reports
- Test documents
- Incident reviews, radiation exposure following the discharge of radioactive substances
- Preparing and conducting talks with authorities
- Revising documents
- Implementation instructions
- Documentation of changes and modifications of facilities
- Shutdown regulations: revision of the operating manual, operating instructions, operating procedures
- Documents relating to environmental compatibility studies

Conditioning, declaration, and disposal of radioactive waste and residues - Key tasks in the decommissioning of nuclear installations



Our services

- Developing waste disposal concepts
- Defining measuring and testing procedures
- Generating test sequences and workflow plans
- Approval measurements
- Documentation based on the waste tracking and control system
- Supply and operation of the pertaining facilities

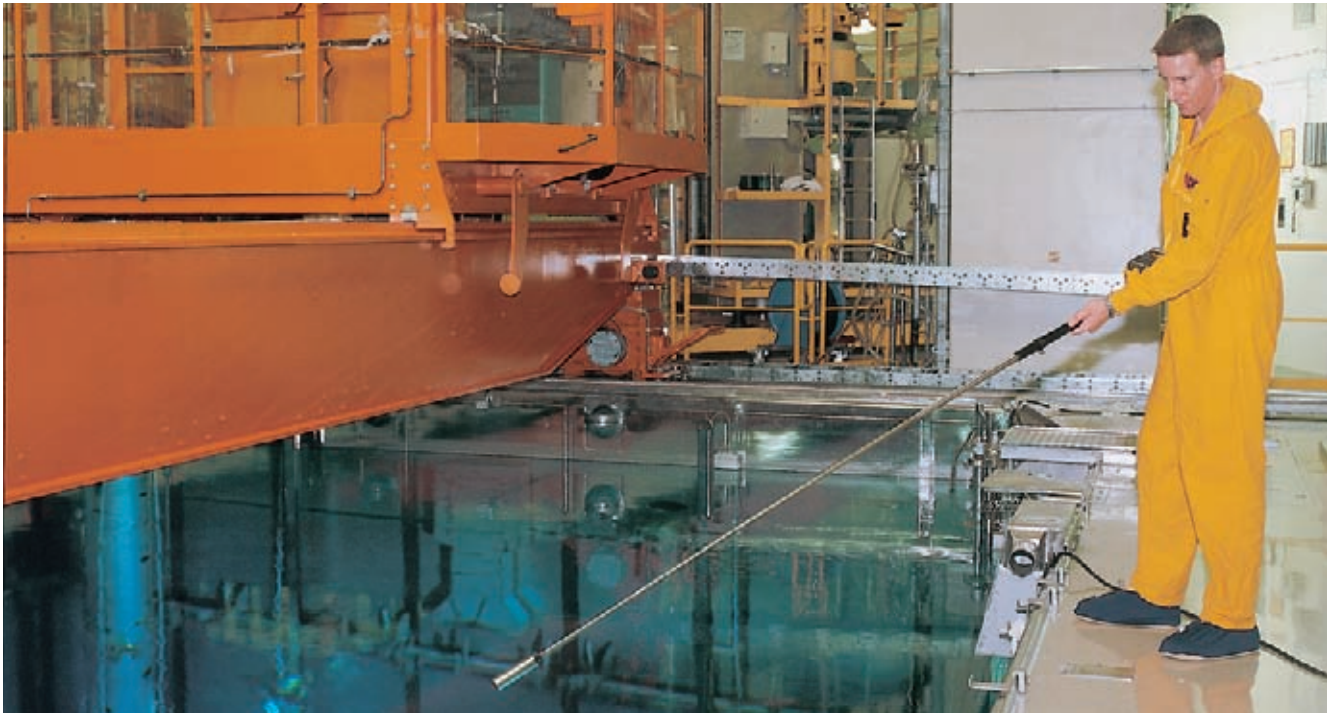
For many years, Kraftanlagen Heidelberg has been one of the leading companies for the planning, supply, assembly, and operation of treatment facilities for nuclear waste.

Our services include compacting facilities for radioactive waste, vaporisers and cementation facilities for resins and concentrates, filling equipment, decontamination equipment and incinerators.

As well as operating waste treatment facilities under contract for specific facilities, we provide a full range of waste management services ourselves, in close collaboration with the operators of nuclear facilities. That includes the identification, classification and declaration of waste, and documentation of final storage.



Radiation protection - A partner with a long track record



Operators of many nuclear facilities in Germany and other European countries place their trust in the expertise of our radiation protection specialists. We have been certified under Paragraph 15 of the German Radiation Protection Ordinance for decades.

Our radiation specialists have an excellent reputation with our customers in areas ranging from designing and implementing radiation protection concepts, through radiation measurement, managing dosimetry data and charting radioactive emissions to the transportation of nuclear fuel.

We also offer our customers courses to prepare their personnel for the radiation protection examinations conducted by the German chambers of trade and industry, S3 courses, and radiation protection instruction in compliance with German law.



We are proud that we can offer specially trained personnel with radiation protection skills. Ongoing training is very important to us. Our employees work in all nuclear facilities in Germany and neighbouring countries.

Our services

- Practical radiation protection
- Planning and implementing changes
- Advice and support during authorization procedures
- Radiological calculations
- Drafting of studies and radiation protection concepts
- Intervention workflows
- Revision of guidelines
- Radiation protection instructions
- Dosimetry data management
- Calculation of nuclide vectors
- Provision of radiation safety- and radiation protection officers in compliance with the German Atomic Energy Act (AtG) and German Radiation Protection Ordinance (StrlSchV)
- Consulting and planning of radiation protection instrumentation that meets KTA and DIN standards
- Drafting of operating procedures and specialist operating instructions
- Repeat testing and calibration of measuring instruments
- Documentation
- Radiological monitoring (including clearance measurements and administration of whole body counting)
- Loading and unloading of fuel elements

Radiation protection services - KAH's services ensure maximum safety



We undertake all tasks required to ensure effective radiation protection both during operation and in the post-operating phase. Naturally, we are certified under Paragraph 15 of the German Radiation Protection Ordinance (StrlSchV) to work in third-party facilities and installations and during the various dismantling phases.



Our services

- Provision of skilled radiation protection personnel: radiation safety - and radiation protection officers
- Work preparation
- Workplace monitoring
- Routine radiation protection measurements
- Dosimetry data management
- Measurement of radioactive emissions
- Emissions monitoring
- Reporting / documentation

Vocational and ongoing training - Officially recognised qualifications



Radiation protection is not the only field where regular training is important. All of our engineers undergo regular training based on a defined training plan. That means Kraftanlagen Heidelberg always has excellently trained personnel in all fields.

The vocational and further training programmes developed by Kraftanlagen Heidelberg, which have been adapted constantly over the years, have shaped the professional standards set for radiation protection specialists. We are an officially authorised provider of specialist and distance learning courses in radiation protection in Germany.

Our services

- Courses to prepare for Chamber of Industry and Commerce radiation protection examinations
- Customised training programmes based on the applicable regulations
- S3 training (initial and refresher courses)
- Radiation protection instruction based on the German Radiation Protection Ordinance

Occupational safety - We want our customers and staff to know that we are committed to occupational safety



As well as ensuring that all technical equipment is in good working order, every employee can make a personal contribution to avoiding dangers at work. We place great store in employees who are familiar with their working conditions and trained in accident prevention. We were one of the first companies in the nuclear sector to obtain the SCC** certificate.

Our services

- Occupational safety concepts
- Accident prevention instruction
- Workplace monitoring
- Provision of occupational safety specialists and maintenance of respiratory equipment
- Data recording in operator-specific data processing programs

Quality is our top priority -
Our quality management systems
are state-of-the-art



Quality assurance is particularly important to us - a fact demonstrated by 28 different certificates. Our quality management systems are continuously reviewed and adapted to changing conditions where necessary. We can also provide quality management managers and the related personnel for our customers.



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Overview of our nuclear decommissioning, radiation protection and waste disposal services

- Permission and application management
- Planning and implementing nuclear decommissioning and supervising the necessary work
- Classification and declaration of radioactive wastes and residues
- Comprehensive waste management
- Waste disposal concepts
- Transport concepts
- Full training in radiation protection
- Provision of radiation protection personnel with plant-specific know-how