



**Kraftanlagen  
Heidelberg**

Energy and Passion.  
Kraftanlagen Heidelberg's chain of  
professional engineering, construction and  
services for nuclear and conventional plants





Nuclear energy is a powerful natural force. Harnessing its potential and utilising it in a responsible manner will provide a sustainable supply of energy for our planet. Worldwide there are currently more than 450 nuclear installations in operation. Many more are under construction or at the planning or initial licensing stage. Kraftanlagen Heidelberg has valuable skills and expertise and we are passionately dedicated to preserving, enhancing and sharing our know-how – both nationally and internationally.

# Kraftanlagen Heidelberg: more than 40 years experience in nuclear engineering and construction



Our expertise and experience have made us a key partner in the field of nuclear services such as engineering, supply, construction and radiation control. Today we have more than 400 in-house employees, top-class references and a permanent presence at several large nuclear installations. This success is built on tradition, trust, reliability and quality. Founded in 1922, Kraftanlagen Heidelberg entered the nuclear technology market in the 1960s. Since then we have built a reputation that makes us a sound and sought-after partner. Our customers include most nuclear facilities in Germany, Switzerland, Belgium and the Netherlands. One important cornerstone of our many close and long-standing client relationships is the quality of our employees.

## **High-tech and expertise at your service**

We plan and construct energy and nuclear installations of almost any type and size, including the related pipework. We also provide technical services, develop innovative radiation protection solutions for nuclear facilities and undertake specialized reprocessing and disposal of radioactive waste. Our services are tailored to our customers' requirements and meet stringent specifications and regulations. Our network of branches and offices ensures rapid support whenever you need Kraftanlagen Heidelberg's assistance.

## **Training gives us an edge**

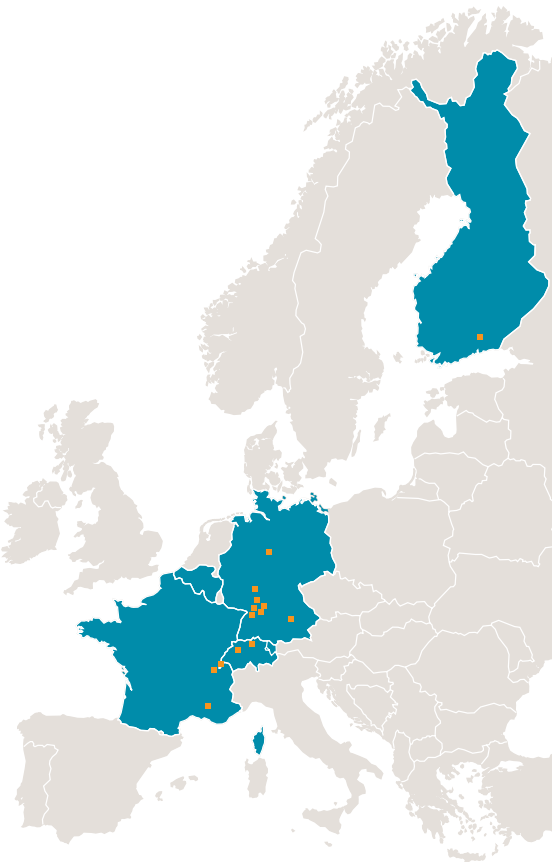
Our success is based on the skills of our employees. That's why we invest in qualifications, through initial and ongoing training. Our goal is to train our employees to the highest standards and foster the development of an interdisciplinary mindset, backed up by their associated wide-ranging competencies. This is what sets us apart from many of our competitors. Our customers know (and value) the difference.





### Services

- Engineering, construction and supply of piping systems and special components
- Nuclear power plant technology
- Dismantling and radiation protection
- Plant design and process technology
- Technical calculations and systems technology
- Industrial technology and services
- Training of high-quality welders

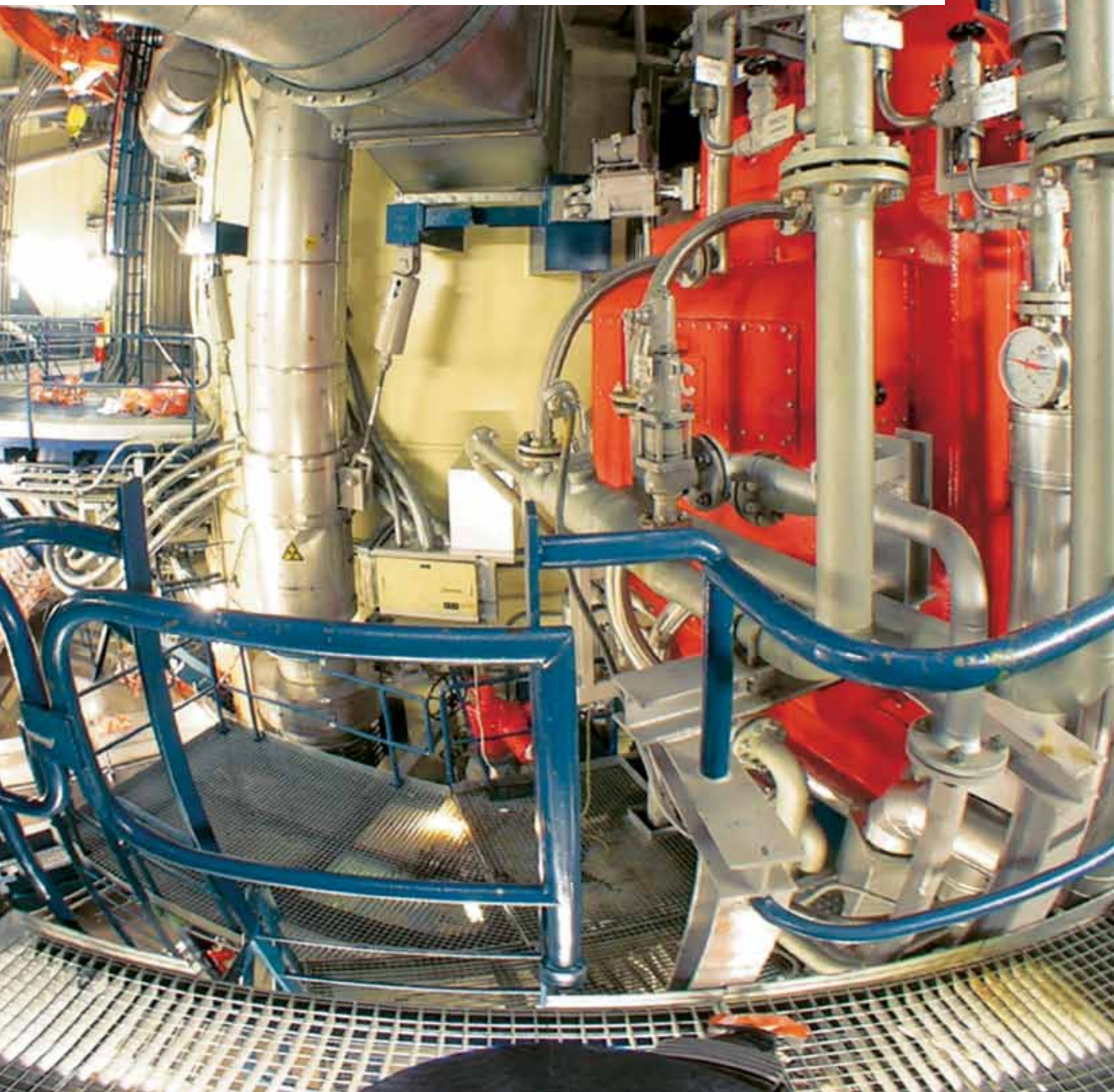


For Kraftanlagen Heidelberg, customer focus means maintaining a permanent presence close to our clients, often directly, in nuclear power stations and research centers.





Kraftanlagen Heidelberg has an excellent reputation as a specialist for the construction of nuclear facilities. For more than 40 years we have provided support in planning and construction of nuclear facilities. We supply components, carry out maintenance work and overhauls, and provide a range of key services. Our staff consists of both white collar and blue collar people.





# Nuclear power plant technology

## Continuous technical development and improvement



### **Skill and passion: our employees**

High-end pipework specialists, experts in high quality alloy steel, engineers trained specifically in the engineering and maintenance of complex plants, construction site managers, assembly specialists and expert welders – Kraftanlagen Heidelberg has extremely well-trained teams who are ready to handle the requirements of our clients. All our staff have security clearance and meet the access requirements for working in nuclear installations. Because we know the demanding nature of nuclear technology, we are passionately committed to high quality and safety standards.

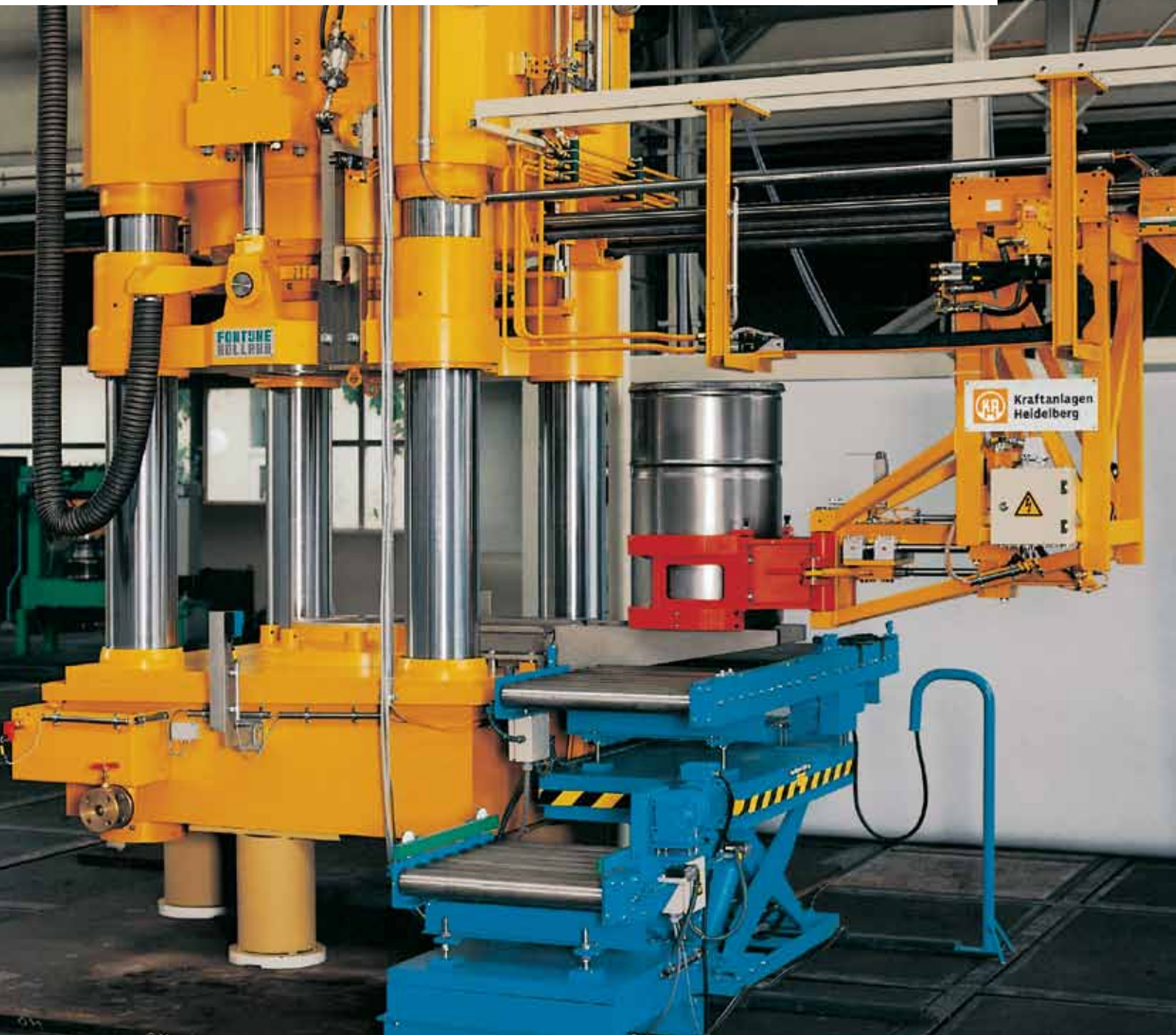
### **Customers focus is a priority**

Kraftanlagen Heidelberg has offices and branches in Germany, Switzerland, Belgium, Finland and France. Being close to our customers is part of our strategy.

### **Services**

- Construction of facilities, including documentation
- Retrofitting
- Maintenance and overhauls
- Procurement and expediting of materials
- Component supply and services
- Quality assurance

Dismantling nuclear facilities and disposing of the components is not at all less complex than constructing new nuclear facilities. A whole range of official regulations have to be observed. Dismantling, reprocessing, transportation, safe interim and final storage of activated materials require technical expertise and a routine approach in dealing with authorities and plenty of experience. Kraftanlagen Heidelberg meets these requirements. For decades we have been valued by our customers as a reliable and competent all-around service-provider.





# Dismantling and radiation protection

## Reliable execution of complex tasks



### **A sound reputation**

Management of dismantling projects starts well ahead of the actual manual work. We perform studies, generate concepts and prepare the documentation required to obtain the necessary permits by the authorities.

### **Radiation protection**

Kraftanlagen Heidelberg is authorised under section 15 of the German Radiation Protection Ordinance and has an excellent reputation in this field. Customers in and outside of Germany rely on our radiation protection services. Our services are extremely important during maintenance and service shutdowns as well as in the transportation and exchange of fuel elements.

We train radiation protection specialists, yet another field where customers have relied on the expertise of Kraftanlagen Heidelberg for decades.

### **Services**

- Engineering, supply, assembly, upgrading and operation of
  - facilities to compact radioactive waste
  - vaporizers
  - cementation and vitrification facilities
  - filling plants
  - decontamination facilities
  - incineration plants
- Complete waste management including documentation



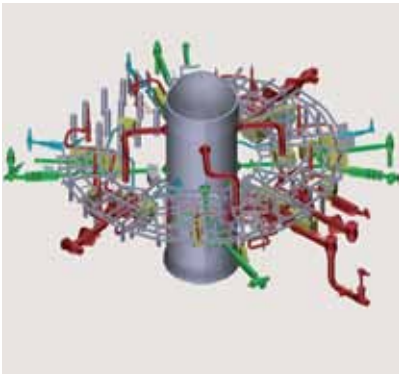
Technical solutions based on experience. That is one of the important benefits that Kraftanlagen Heidelberg can offer the customer. Experience combined with a sound knowledge of engineering that is constantly being renewed and intensified. A combination that ensures sustainable progress, which is vital in view of the high quality and safety standards which are applied in nuclear facilities around the world.





# Planning and process technology

## At the heart of the new energy era



### A respected partner

Kraftanlagen Heidelberg is a reliable technical expert for nuclear research and development projects. Detailed knowledge of complex nuclear technology processes acquired over decades is enhanced by competence as a general contractor for plant engineering and construction projects.

### The ITER project

The vision behind the ITER project is generating energy on a large scale through nuclear fusion – and our engineers are part of this project. Since 2006 we are providing services for EFDA, F4E and ITER Organisation. The technical and project management experience we have gained in projects such as LHC (Large Hadron Collider, CERN) and HELOKA (Helium Loop Karlsruhe, KIT) is very useful for the execution of our ITER projects.

### HELOKA project

In the HELOKA project, Kraftanlagen Heidelberg optimised engineering of piping systems and performed the stress calculations. This enabled us to simulate conditions close to those of ITER (e.g. temperature, mass flow, materials).

### Vitrification of high active liquid waste

Since 2009 we are a major partner in the consortium which won the contract for a vitrification plant in Guangyuan (Sichuan Province, China). Kraftanlagen Heidelberg is playing an important role in this quite unique project (the safe conditioning of 800 m<sup>3</sup> of high active liquid waste). KAH is responsible for a significant part of the engineering and the supply of key components for this project.

### Services

- Layout and engineering of complex plants
- Systems review and optimization
- CAD models of plant components
- Design of remote maintenance appliances
- ALARA studies for occupational radiation measurement
- Installation of hardware
- Documentation

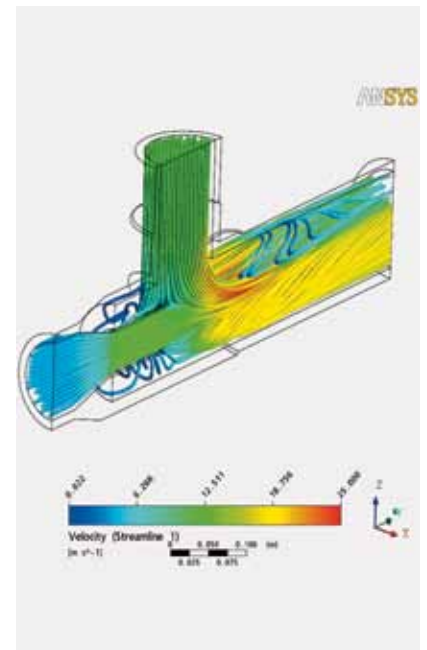
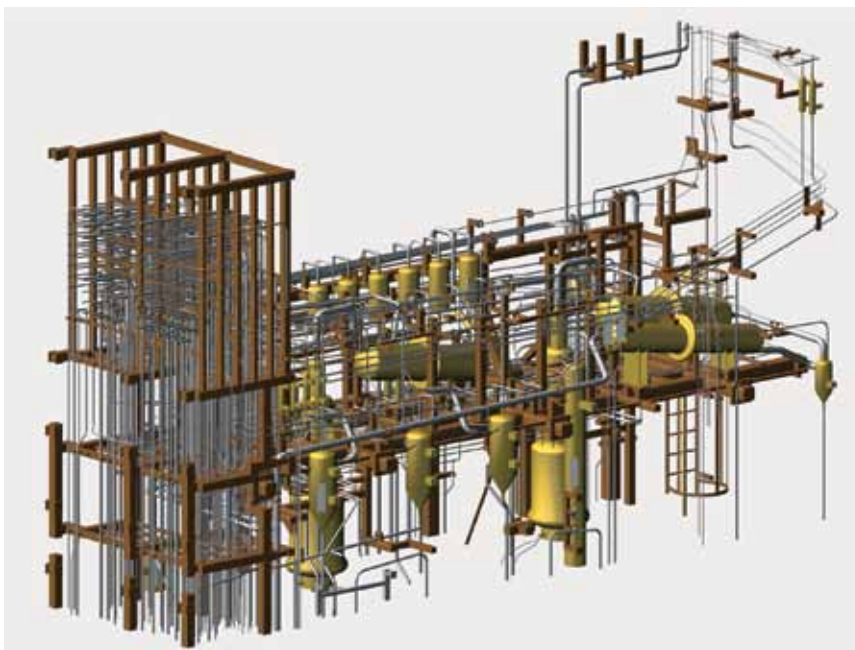


Nuclear installations have the highest safety standards. That requires exceptional care in dimensioning and verifying the stress analysis of components and assemblies. In addition to normal operating conditions there must be provisions for cases of abnormal operation. KAH has extensive experience in this important engineering discipline.



# Technical calculations and systems technology

## Safety throughout the entire plant lifecycle



### Services

- Dimensioning of components
- Static and dynamic structural mechanics
- Thermal calculations
- Pressure loss calculations
- Surge analyses
- Calculation of vibration effects
- Residual lifecycle analyses, ageing management
- Technical specifications
- Studies as a basis for customers' decision processes

### Lifelong safety

Managing the ageing of nuclear installations requires consistent high-tech performance. Kraftanlagen Heidelberg is a partner for all aspects of lifecycle management. In many years we have gathered experience and knowledge of details and routines. This ensures all necessary steps are carried out correctly, in conformance with the applicable standards.

### Knowledge at your service

Over the years our Systems Technology Division has developed into a service centre that is mainly used by external customers. It analyses and optimises plant structures and calculates the remaining life of systems – an essential service in licensing procedures. All our calculations are based on national or international standards and methods. They meet the requirements of the established quality management standards. Certified data processing programs such as Rohr2 for pipeline calculations, ANSYS for finite element analyses and Microstation or AutoCAD for CAD are our standard “tools”.

We have been designing, building and operating industrial plants of all types and sizes for more than 80 years. The experience we have gained makes us a qualified service-provider for progressive plant management. The brand Kraftanlagen Heidelberg stands for quality of service, high level technical standards and reliability.







# Industrial services, fire prevention systems, industrial plant engineering

## A high level of efficiency for your plants and processes



### Always the optimum

As an independent engineering and plant construction company, we can supply solutions that are not tied to specific manufacturers or suppliers. That means we can always find the optimum solution – both technically and economically. Our services range from preliminary design and implementation, planning to turnkey erection and start-up operation of facilities. Our customers also value us as a general contractor for technical installations and as a quality-conscious contractor for specific aspects of complicated projects.

### People at the heart of our service

Every employee is skilled in his fields and works with the support of a strong team. Many projects have therefore turned into long term customer relationships. A significant number of customers entrust us with service and maintenance of entire production lines.

### Servicing is essential for uninterrupted operation

It is vital to ensure that plant and machinery always operate perfectly. Competent, reliable servicing is an important part of all processes. Kraftanlagen Heidelberg maintains and services heating, ventilation, sanitary, air-conditioning, refrigeration and fire prevention installations.

### Maintenance to maximise availability

We work very closely with our customers. Therefore, we have a good knowledge of their facilities and their special requirements (safety, product quality, etc.). We can identify problems faster than non-specialised service-providers and solve them quickly and efficiently. We are ready 24 hours a day, 365 days a year.

#### Services

- Optimisation of facilities
- Maintenance and servicing
- Fire prevention systems in nuclear facilities
- 24/7/365 emergency service
- Fields covered
  - Heating technology
  - Ventilation
  - Air-conditioning and refrigeration
  - Fire protection systems
- Industrial pipework and plant engineering







# Welding Training Centre

## Perfect welding is crucial



### Highest quality welding

Welding pipes, steel frames, etc. for nuclear installations is a very challenging exercise. Zero error tolerance is not optional in such facilities - it is absolutely vital. That is why we established our own centre for initial and ongoing training in welding technology. Our certified Welding Training Centre has excellent reputation.

### Welding is a demanding job

The training instructors employed at our Welding Training Centre rank among the top experts in their field. At the end of training, the skills learnt by our welders open up career opportunities in many sectors of industry. Some of the best are given the opportunity to work for Kraftanlagen Heidelberg. We give them the opportunity to utilise their skills, for example in

#### Services

- Training that meets industry standards e.g.
  - DIN EN 287 ff 2000 (steel, aluminium)
  - DIN EN ISO 9606 ff (nickel)
- Inspection of work and processes
- Inspection of welds
- Training courses certified by Germany's technical inspection authority (TÜV)
- Examination of welders
- Training program for the German Employment Agency

- gas welding
- manual metal arc (MMA) welding
- tungsten inert gas (TIG) welding (manual)
- metal inert gas (MIG) welding
- metal active gas (MAG) welding (manual and mechanical)
- soldering

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# Quality management

## Excellent work and high-tech quality assurance

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### **Quality management for a maximum of security**

Radiation, high temperatures, exceptional materials as well as the most stringent quality standards combine to make nuclear piping systems a real challenge for welders. Very few specialists have the talent to meet these challenges. Maximum quality is ensured by extensive checks. Our specialist engineers are qualified for such tasks. They have processes and test routines to verify all steps of the procedure, monitor and document the quality of welds.

### **Certified safety for your projects**

We have installed safety procedures to assure quality management within our company. We have all the qualifications and certificates required to work in nuclear installations, as well as for conventional projects. Important certificates:

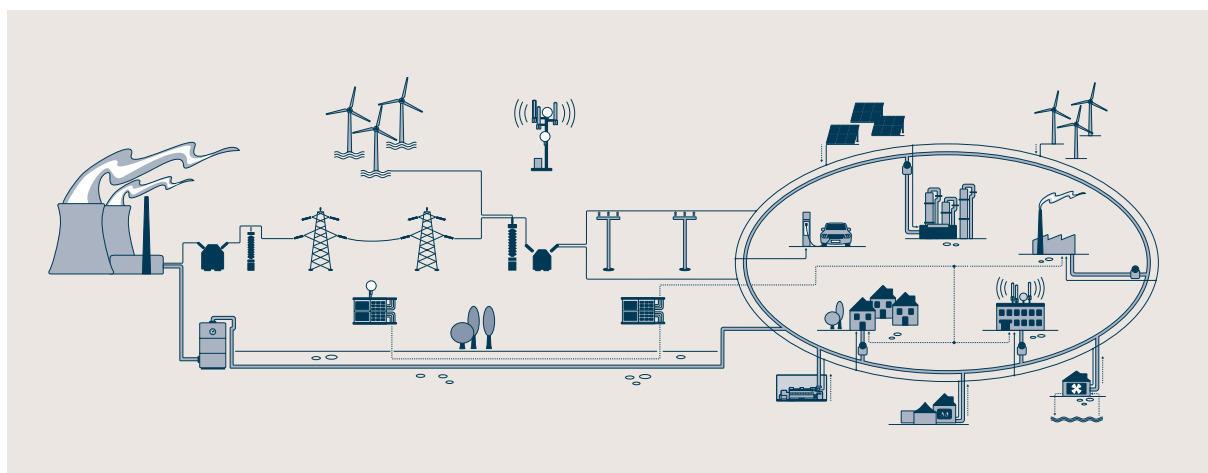
- DIN EN ISO 9001:2008
- DIN EN ISO 14001:2005
- KTA 1401 und AVS D 100/50
- DIN EN 729 Teil 2
- SCC\*\* contractors' safety certificate
- § 19 I German Water Resources Act (WHG)



# Powering ahead



We are part of the Alpiq Anlagentechnik Group, a European leader in services for energy supply infrastructure and plant engineering.



The Alpiq Anlagentechnik Group develops innovative solutions for the entire energy supply process chain. Its services range from energy generation, energy transmission, energy distribution and grid technology to the supply and use of energy.

The Alpiq Anlagentechnik brand brings together more than 20 subsidiaries. They work for utilities, communications network operators, the transport sector, commercial and industrial companies.

With nearly 5,000 employees and a network of around 150 locations, the Alpiq Anlagentechnik Group is one of the largest and most specialised energy technology companies in its markets.

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