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NUCLEAR DECOMMISSIONING

IEM FörderTechnik GmbH - Business Unit Nuclear Decommissioning
Conveyor Technology for Nuclear Facilities



THANK YOU

FOR YOUR INTEREST IN IEM

Alexander Remes
Managing Director

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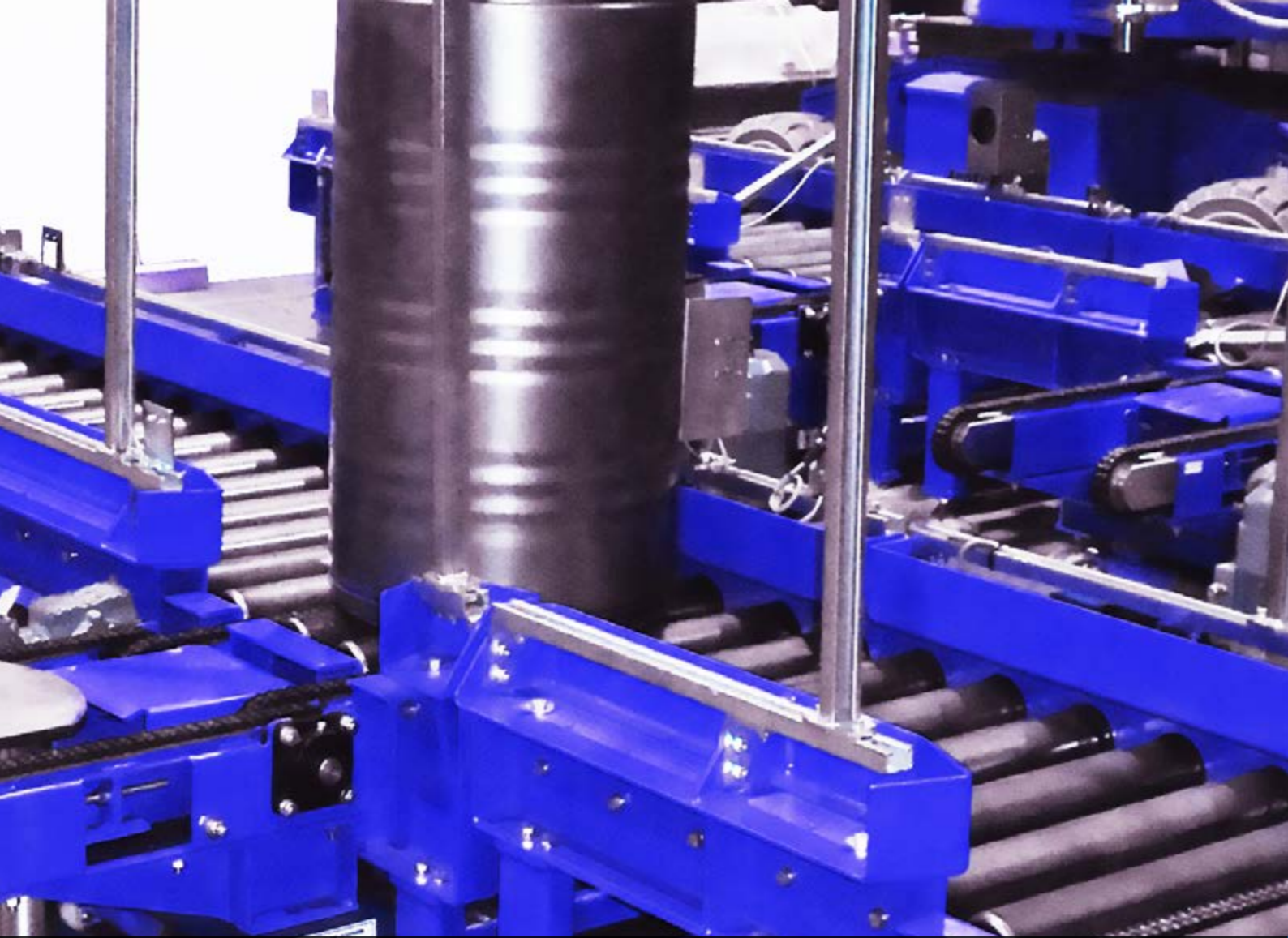
IEM FÖRDERTÉCHNIK

... THE COMPANY

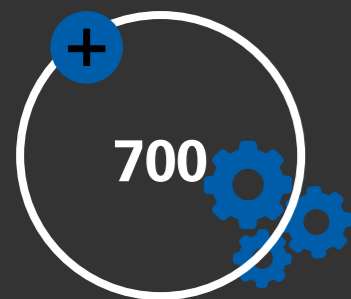
IEM FörderTechnik GmbH is a medium sized company located in Bavaria and founded in 1969. The system provider for conveyor technology specialises in solutions in the field of transport and storage of bulk and general goods. The internationally active company supplies clients in the energy sector (coal power plants, nuclear power plants, waste incineration plants), environmental sector (waste treatment, sewage sludge incineration, slag treatment) and numerous other industries. With its own research department, IEM supports power plant operators in the reduction of mercury in combustion gases in accordance with strict EU requirements.

Thanks to the optimally tailored production depth, IEM is capable of quickly and flexibly accessing its own production parts, without having to rely on third party suppliers. With its subsidiary ROS RollenTechnik GmbH and Business Unit IEM MetallTechnik, both also based within the headquarter in Kastl (Bavaria), a seamless synchronisation takes place.

The subsidiary ROS RollenTechnik GmbH is a producer and provider of carrier rollers in the most different designs. IEM's portfolio, as a full service provider, extends from the needs analysis, engineering, process engineering, design, production and assembly (strictly according to the current HSE standards) to the commissioning at site in 20 countries - and all that 100 percent at the Bavarian location. 50 years of know-how of more than 150 employees distinguishes itself in references of far more than 700 major projects. In 2014, the former family business was taken over by the investment company CGR Industry Management and its Managing Director Alexander Remes. Since then as an owner managed company IEM has been constantly expanding innovative business areas with sustainable success.

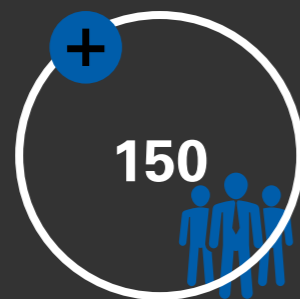


WE GET THINGS MOVING:



MAJOR PROJECTS

worldwide



EMPLOYEES

in Germany



COUNTRIES

active

NUCLEAR DECOMMISSIONING

NEW BUSINESS UNIT

In 2020, IEM founded the nuclear decommissioning as a business unit and provides effective solutions for the decommissioning of nuclear facilities. The main focus of activities lies in safe and economic dismantling of the facilities and the conveyed disposal of radioactive residues, as well as the recycling of non-critical demolition materials, through the material residue cycles.



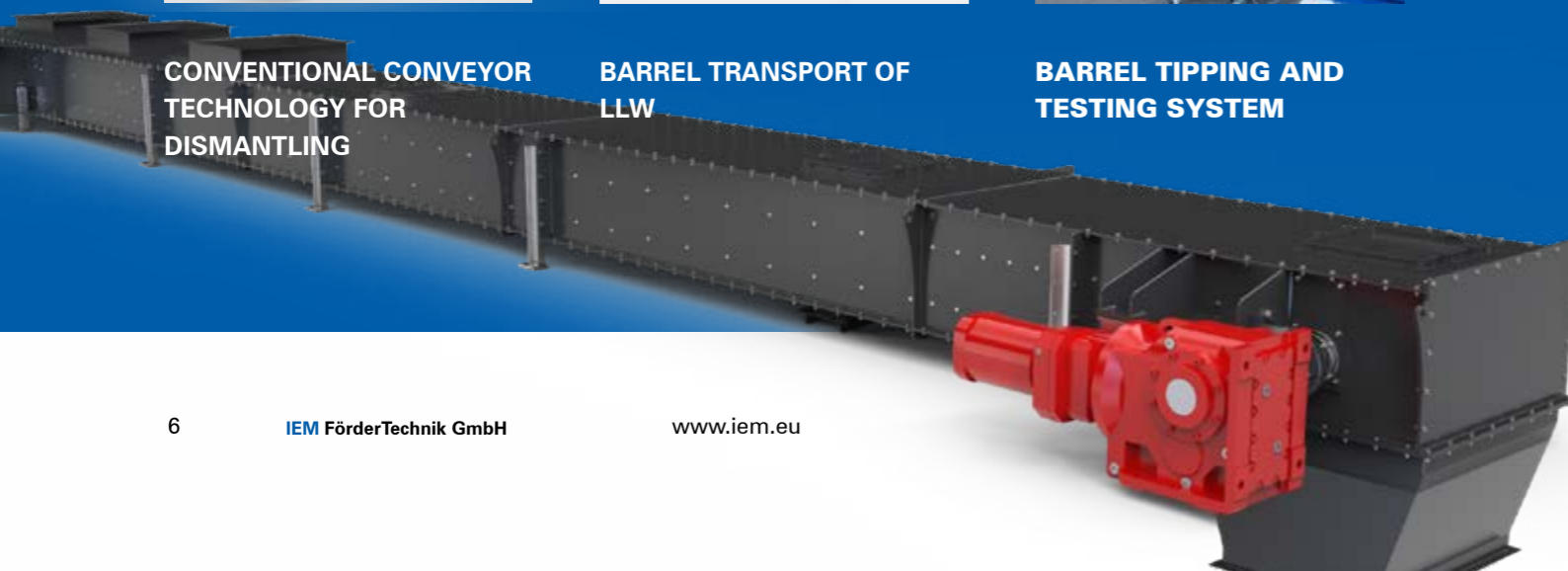
CONVENTIONAL CONVEYOR TECHNOLOGY FOR DISMANTLING



BARREL TRANSPORT OF LLW



BARREL TIPPING AND TESTING SYSTEM



IEM NUCLEAR DECOMMISSIONING

The challenge

We face the great challenges of our time.



ACCORDING TO THE DECISION

of the German Federal Ministry of the Environment, Nature Conservation and Nuclear Safety, the nuclear power plants Grafenrheinfeld, Gundremmingen B and C, Grohnde, Brokdorf have already been or will be shut down until the end of December 2021. Only the three remaining nuclear power plants Isar 2, Emsland and Neckarwestheim 2 stay active until the end of 2022.

PROBLEM SOLVER IN DISMANTLING

Large operating companies meanwhile have recognised IEM as a problem solver within the field and are appreciating its competencies, whether through direct procurement or indirectly through the inclusion as a system supplier, with general contractors.

THE GREAT CHALLENGES OF DISMANTLING

are **not** in the energy supply but they concern the dismantling of nuclear facilities and the disposal of radioactive residues. Cost estimates of the German Institute for Economic Research for dismantling and final storage vary from 50–70 billion Euros. 38 billion of this will be financed by the provisions of the nuclear power plant operators. It is not only the search for final repositories of highly radioactive residues that remains to be a heavily discussed topic, but also the safe and above all, economical dismantling of nuclear facilities.

THE REQUIREMENTS

OF DISMANTLING TECHNOLOGY

IN ADDITION TO EMPLOYEE AND ENVIRONMENTAL PROTECTION,

are designed to make the dismantling process as safe and efficient as possible.

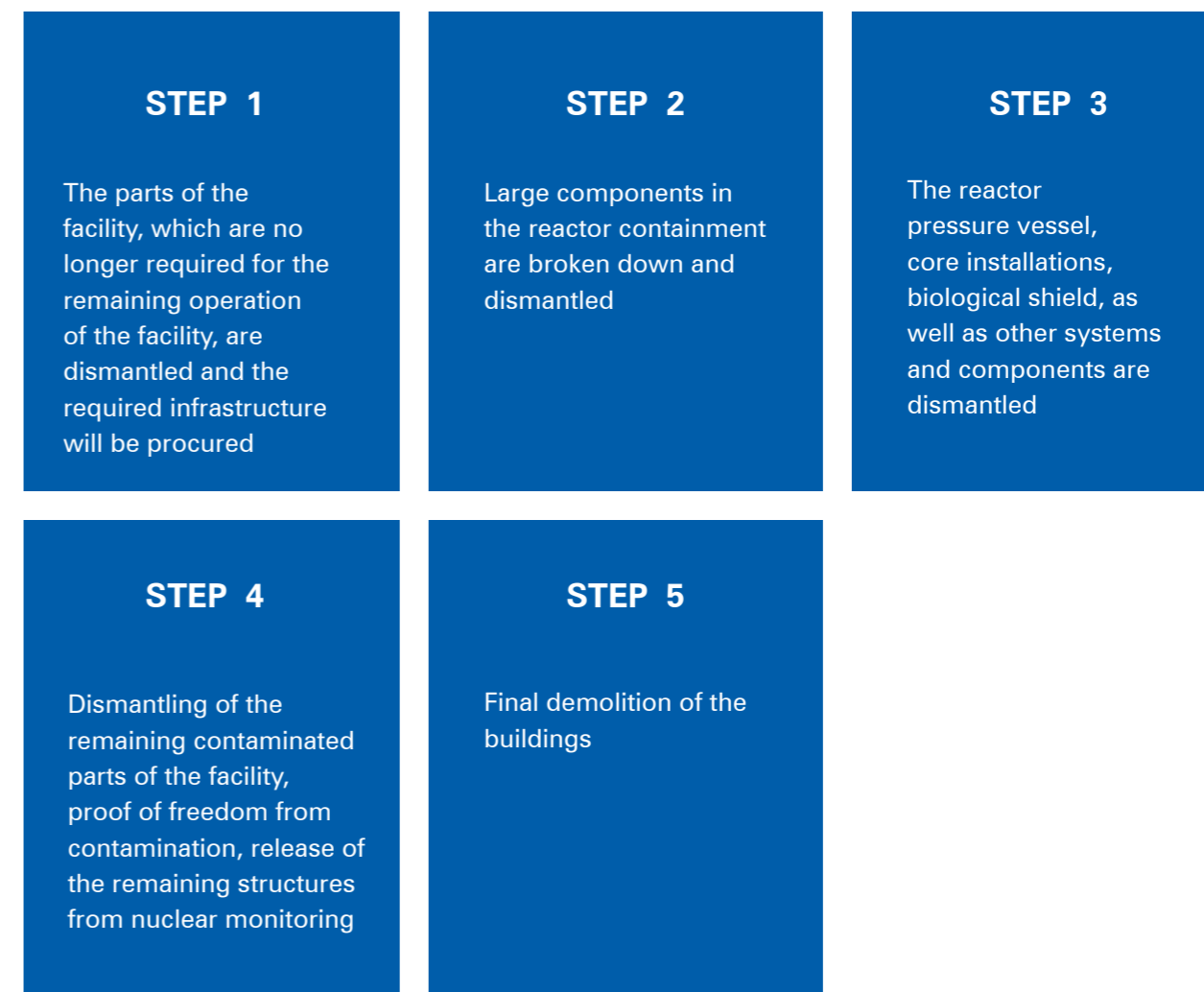


DISMANTLING

takes place in five steps

and, depending on the types of facilities and dismantling strategies, extends over 10 to 20 years.

The five steps of the post operational phase of a nuclear facility are:



The further course of dismantling accumulates large quantities of radioactively contaminated, but also contamination free materials, as for example metals, such as pipelines, valves, heat exchangers and other steel components or other concrete parts and building rubble. Those materials are examined to determine which portions can be reused and thus returned to the regular material cycle. About **97%** of the produced materials can be released. What follows is the preparation of the material (decontamination) for official clearance.



NUCLEAR DECOMMISSIONING PROJECTS

IEM FÖRDERTECHNIK

IEM FörderTechnik GmbH, as general contractor as well as producer, with its nuclear decommissioning unit, supports dismantling of nuclear facilities.

most different stages of dismantling and adapts those systems to the special requirements of each individual nuclear facility.

The correct transport and disposal way requires suitable conveyor technology solutions that especially prevent the contamination of employees at site with radioactive waste and ensure a continuous traceability of the recycled materials. Aside from companies such as Simpelkamp, Bilfinger Noel, GNS and Heidelberger Kraftanlagen, IEM is one of the few medium sized companies that faces the challenges of dismantling. It designs and produces conveyor systems for the

IEM PROJECTS

Innovative approach meets custom solutions

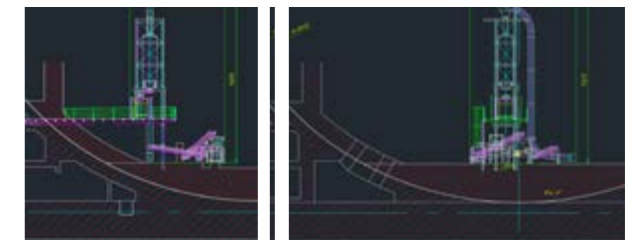


CONCEPT STUDIES

Advice and support

Before starting the dismantling process planning and construction of a functioning infrastructure for a residue treatment centre takes place. In addition to the production of standardised conveyor systems or client specific conveyor technology, the focus is on engineering and development of complex project and concept studies. These studies go through an accurate approval process, before an official tender can be released.

IEM is currently involved in projects at two nuclear power plants with its own concept studies. The dismantling is to be executed through driverless transport systems within a 170 m long underground supply tunnel.



SPECIAL SOLUTIONS

Residual Airlock

Another novelty was the development of an in-house residual material treatment lock. All residual materials that hereby are produced, during the dismantling process must be passed through and cleared.

They may only leave the nuclear power plant thereafter. This special airlock is in operation, after it has been extensively checked and approved by authorities.

There is currently a great demand from other nuclear power plant operators for this type of flexible technology.



Residual Material
Airlock & Mobile Barrel
Testing System -
Custom solutions
for the NPPs Biblis,
Neckarwestheim &
Gundremmingen



CUSTOM SOLUTIONS

Barrel testing system

Furthermore, IEM was significantly involved in the European research project EMOS, of the Karlsruhe Institute of Technology (KIT). In cooperation with IEM, a fully automated roller conveyor system for “photogrammetric barrel inspection” was developed and successfully put into operation. The barrels are moved 360° over the X, Y and Z axis in the fully automated system without interference contours, whereby a gap free surface scan is possible. The scan guarantees that no indirect hazards emanate from the barrel. This complete mobile system ensures that the materials, stored in the barrels, will not pose any risks for future generations.



IEM designs conveyor systems for an efficient and economical transport of the released materials, custom solutions through decades of expertise in the field of bulk and general goods transport. Therefore IEM is **KTA 1401** certified.

SUMMARY

The business unit Nuclear Decommissioning of IEM FörderTechnik GmbH, developed within the shortest period of time, from a niche player to a serious competitor in the still young “decommissioning” sector. IEM’s expertise is granted high value and its innovative strength sets new standards in the decommissioning of nuclear facilities.