



Siempelkamp

Issue 01 | 2009

Trainees in the spotlight: Determined, eager for knowledge – fit for Siempelkamp! **Well-thought-out details result in superior systems:** Double belt lines from SHS **Mission possible:** Three particle dryers for EGGER **Siempelkamp Nuclear Services Inc.:** A strong partner **Concept ecoline for ContiRoll®** The savings package with quality advantage

bulletin

The Siempelkamp Magazine

PEOPLE | MARKETS | MACHINES



- Interview
- 04 **The savings package with quality advantage**
Concept *ecoline* for ContiRoll®
- Michael Bischof
- 08 **A small-sized press for high efficiency and customer orientation**
4'-ContiRoll® – a reference project for China
- Ralf Griesche
- 14 **Double belt lines from SHS for state-of-the-art sandwich panels made by Romakowski**
“Well-thought-out details result in superior systems”
- Dr. Aldo Weber
- 20 **Complex power that fits at the first go!**
Process computer replacement in the Mühleberg nuclear power plant
- Dieter Stanke
- 23 **Another order for the NIS team of experts**
Decommissioning and dismantling of the nuclear power plant Stade
- Carsten Otto
- 26 **Three particle dryers for EGGER**
Mission possible
- Helmut Rieck
- 29 **Siempelkamp's contribution to power generation in modern steam power plants**
Casting giants for the power supply industry
- Horst Weiss/Ulrich Bens/Carsten Otto
- 32 **New production line on the fast track**
Siempelkamp support for EGGER Rion
- Christian Jurianz
- 40 **A strong partner for the American power companies**
Siempelkamp Nuclear Services Inc.
- Ralf Griesche
- 42 **Innovative machines for new processes and products**
Siempelkamp has been present in North America for over 50 years
- Dr. Silke Hahn
- 48 **Determined, eager for knowledge – fit for Siempelkamp!**
Trainees in the spotlight
- Derek Clark
- 52 **From assembly stations to flow production**
Wind power on RoundTracks®
- Ines Veckenstedt
- 56 **Modification concepts for existing energy plants**
Siempelkamp Energy Systems (SES)
- Heinrich Kampen
- 58 **A new company for Siempelkamp Nuclear Technology**
Crane specialist E & W Anlagenbau GmbH

Imprint

Publisher G. Siempelkamp GmbH & Co. KG, Marketing/Communication Department, Siempelkampstr. 75, 47803 Krefeld (Germany)

Executive Editor (Officer responsible for compliance with German press law) Ralf Griesche Text Dr. Silke Hahn

Typesetting and Layout vE&K Werbeagentur GmbH & Co. KG Printing KARTEN Druck & Medien GmbH & Co. KG Translation Uta Kleiser

This publication is published in German and English. Reprints, in whole or in part and including illustrations, require the Publisher's permission, which in most cases is gladly given. Visit Siempelkamp on the Internet: www.siempelkamp.com



Dr.-Ing. Hans W. Fechner
Chairman of the Executive Board
G. Siempelkamp GmbH & Co. KG

Dear Readers:

The first Bulletin in 2009 welcomes you with news and stories involving Siempelkamp projects and products. We are presenting you with reports about modifications and “first boards” which we have carried out successfully for our customers over the last months. A highlight in this context: in March 2009, a ContiRoll® press in China produced its first board. Despite its small size, this press is outstanding in the market. With a width of only 4', this press is the smallest representative of the ContiRoll® family. This ContiRoll® is a milestone for us but especially for its target market. Our article about a large modification, which we carried out for our customer EGGER Rion-des-Landes, France, describes the successful combination of existing equipment and new technology.

I am also referring to these milestone projects in light of the global economic crisis, which makes us face big challenges. For years, our customers – and we at Siempelkamp also – have focused on efficiency increases. Today this focus has shifted towards production cost control and resource savings.

We are reacting with diverse modification and retrofitting concepts which will qualify your existing plants for resource-saving and energy-conserving operation. Our performance concept ContiRoll® *ecoline* is one answer in our endeavours to save resources and energy. Please read about this concept on page 4. Our modification concepts for existing energy systems from our subsidiary Siempelkamp Energy Systems (SES) also contribute to this approach. In these difficult times we are optimally positioned to provide you with services which are the foundation for your competitiveness.

Our Foundry and Nuclear Technology business units have also positioned themselves successfully with their products and services for the power industry. Whether it regards the replacement of a process computer or the areas of decommissioning and dismantling, our experts provide excellent services to nuclear power plants. Large castings made by Siempelkamp play a central part when it comes to increasing the efficiency of power plants.

Please see for yourself and read about numerous features which we have in store for you. I wish you pleasant reading.

With kind regards and best wishes from Krefeld,

A handwritten signature in blue ink, appearing to read 'H. Fechner'. The signature is fluid and cursive, written in a professional style.

Dr.-Ing. Hans W. Fechner

Concept *ecoline* for ContiRoll®: The savings package with qu

The success of Siempelkamp's ContiRoll® press technology has been ongoing in the wood-based products industry since 1985. Since then the press has been adjusted continuously to changing technological requirements. Siempelkamp's new *ecoline* concept is customer-oriented by saving resources with well-thought-out modification packages in a difficult market situation. Heinz Classen, managing director, and Juergen Philipps, sales director of Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG, explain the objectives for these modification packages and their benefits.

What conditions and influences have led to further optimizing the successful concept of the ContiRoll®?

Heinz Classen: Currently, the keyword 'resource efficiency' confronts us with new general conditions. Siempelkamp has always developed products in close cooperation with the customers and thus has reacted to changing demands and markets. In recent years the focus was on capacity increases. Machines and plants had to be bigger and quicker in order to assure customers a competitive advantage. In the context of the financial crisis, another aspect moves into the foreground: production costs.

As a reaction to changing capacity utilizations?

Heinz Classen: Production plants for wood-based products are equipped for around-the-clock operation. A capacity utilisation of



(From left to right): Juergen Philipps, Sales Director, and Heinz Classen, Managing Director, Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG

only 80% inflicts economic damage on our customers. Because many plants are currently no longer used to capacity, we as the supplier have to react by lowering the variable costs of our customers as much as possible. This means finding ways to reduce the wood, glue and energy consumption. To do so we have compiled concrete recommendations which we summarise under the term Siempelkamp *ecoline*. Before we go into detail, I will begin by saying that the measures of the *ecoline* modification package can save a total of 15 to 20% in material costs and maintain high product quality.

What is included in this modification package?

Heinz Classen: The service package includes the *ecocalibrator* which we are already using in our outstanding and fully developed thin board concept. In previous years we have concentrated on perfecting the technologies for thin board production. The

ality advantage

The interview was conducted by Ralf Griesche



calibration technology, which we developed for this concept, resulted in the best pressure distribution of all time reducing pressure variations to a tenth of the previous value. This value was already based on the leading concept, as independent analyses have confirmed. The scientific experiments at several higher education institutions as well as practical experience proved one thing: there is a direct connection between the pressure distribution in the calibration zone and the technical properties of the product. The poorer the pressure distribution, the more the customer has to compensate for it with more wood or glue in the mat. Due to the practically isobaric pressure distribution of the *ecocalibrators*, which is achieved with mechanical-hydraulic constructional elements, the curing process of the glue occurs homogeneously. This results in an improved thickness tolerance and material savings of up to 20% which can be realised as glue savings or in reduced wood consumption.

More savings result from the fact that in many cases the board no longer needs to be sanded. That means an entire energy-intensive logistics step can be omitted.

What practical experience could Siempelkamp gain with the optimized pressure distribution?

Juergen Philipps: We sold nine of these continuous presses last year and four of them have been accepted. Furthermore, we have streamlined several older presses from press generations 5 and 6 in this way and have also achieved a considerably better pressure distribution. These presses were retrofit with modest effort. We achieved the same positive result as with our new presses. The fact that this modification only requires a shutdown time of a maximum of three weeks – which means that it can be performed within the scope of the regular yearly shutdown – fully convinced our

ContiRoll® **ecoline**

ecochanger **ecoscalper** **ecopilot** **ecocalibrator** **Prod-IQ®**

customers. Altogether, this is a very interesting option for customers with older presses who want to achieve material savings but do not want to lose production time during a modification.

What additional features does the *ecoline* concept provide?

Heinz Classen: A manual product changeover process can have a negative effect on the material consumption and the time budget if performed several times a day. In order to provide a solution we have designed the *ecochanger*. This tool reduces start-up losses (material) for frequent product changeovers which affect the plant efficiency. The *ecochanger* by Siempelkamp allows an automatic sequential product changeover and takes different widths, densities, lengths, and thicknesses into account. With the installation of this new software, the line can be smoothly adjusted from one product to the next. Additional benefits include: less scrap, longer production times, simple handling and, depending on the frequency of the changeover, up to 1% more productivity.

With *ecopilot* we have developed new software that we also refer to as automatic thickness feedback. The thickness of the board is permanently measured at the press outfeed across the entire width of the board and is compared to the target thickness. Deviations are corrected by adjusting the pressure of the corresponding cylinders in the calibration zone. Because this process is carried out automatically in a loop, the press runs considerably more smoothly compared to a manual control. The process is therefore imperative for a fast-operating machine. Our customers benefit from considerably improved thickness tolerances in the longitudinal and crosswise directions, with less downgrade board. Furthermore, the operating personnel is relieved.

Additional savings arise from the fact that the boards no longer have to be sanded for (thickness) tolerance reasons.

What other tools are offered in an effort to provide possible savings to our customers, including older plants?

Juergen Philipps: Another tool we offer is the *ecoscalper*, which can level out forming differences in older lines. For our new lines we

have solved the problem with forming differences in a different way. Since 2000 our forming and levelling systems have operated fully mechanically. Since then we have supplied more than 80 of these systems for all possible wood product ranges and board types. Especially in connection with thin board technology, we have established additional process steps which eliminate inhomogeneity during mat forming. For example, a fibre brake which prevents density spots inside the matformer bunker. Newer lines are operating with this feature. For older lines, which are still equipped with a scalper, we offer the *ecoscalper* which helps to correct local irregularities during mat forming.

How does this principle work?

Heinz Classen: Individually controlled motors under the forming belt raise the mat. Through this partial lifting, the *ecoscalper* systematically corrects an uneven distribution of the fibers in the mat. Depending on the existing fiber matforming accuracy, customers with older lines can benefit from extensive material savings.

The *ecoline* concept is completed with the production management system Prod-IQ®...

Juergen Philipps: This *ecoline* component is a unique and leading system for which we offer the consulting and implementation from one source – an advantage for our customers. Additional benefits: the Prod-IQ® software accelerates the process and optimizes the system operation. Regarding the total cost of ownership, the customer has access to all consumption and performance data needed for a performance evaluation. This is the basis for optimizing processes. Furthermore, the system provides the online quality forecast of quality features which otherwise could only be obtained through destructive material testing in a laboratory.

Altogether Siempelkamp is offering a highly attractive package of measures which aims at increasing the efficiency of existing plants. The keyword 'Power Disc Drive' disguises another innovation, which will also lead to considerable savings in new plants ...



Heinz Classen: This technology is indeed a leader in its class. The Power Disc Drive is a new type of drive which improves the efficiency factor considerably. The starting point for this innovation was the diverse selection of options when it comes to press drives which make servicing more difficult, especially since the gearbox is a highly stressed element of the line. Our answer to this weak point was the design of the Power Disc Drive which has fewer moving parts.

... and it is considerably more wear resistant ...

Juergen Philipps: Exactly. In cooperation with a partner we have developed this new technology based on the linear drive (now exclusively available from Siempelkamp). Because of its design, this drive has a considerably better efficiency factor and is practically wear-free. Furthermore, a highly standardised machine could be the result of this development. "A drive for all ContiRolls®", was the demand, which we put into practice successfully with this development programme.

What would you estimate to be the savings potential for the customers?

Heinz Classen: Up to 35,000 euros per year and ContiRoll®! This new press drive is a milestone, a true technology leap, due to the improved efficiency factor alone. Additionally, this drive translates into advantages due to its standardization and longevity.

Keyword 'efficiency' – how is Siempelkamp positioning itself in the current economic crisis?

Heinz Classen: Our company is entering this crisis with the stable background of its power for innovations. The thin board concept, developments in the field of insulating boards, particularly the wood-fiber insulating board, the lightweight frameless honeycomb panel, our leading technologies in mat pre-heating and the fastest doorskin-line in the world, are only a few keywords from our reference list. The demand for these special products is high. However, we did notice that this demand is negatively influenced by the worsened long-term financing of such projects on the side of the customers.

Which prospects do you see here?

Heinz Classen: A trend towards a better situation can already be felt due to the measures the German government took towards promoting exports. The fact that the financial crisis would have an impact on industrial goods could be anticipated. As far as our company is concerned we are glad to be able to say that our capacity utilization is guaranteed for 2009. We will not have to go to reduced hours as other machine builders are forced to. Our highly qualified personnel is an important basis for our power of innovations which has characterized Siempelkamp through the years. Our customers know: a Siempelkamp line is always a good investment.

With due respect to the impacts of the financial crisis, this is reason for optimism?

Heinz Classen: Without wishing to appear presumptuous, yes, it is reason for optimism. Our results and facts speak for themselves. Through the takeover of Metso Panelboard in Hanover, Germany, in 2007, the Siempelkamp Group now has a worldwide installed base of 75%, also including the Küsters- and Bison presses which we gained through this takeover.

In 2008 we successfully sold our products in Russia, South-East Asia and China. In March of 2009 a ContiRoll® produced its first board – an outstanding feat considering its small size. With a width of only 4 feet, the smallest representative of the ContiRoll® family was designed specially for the Asian markets. It incorporates all the features of the large 8 or 12 foot presses. These are all arguments which prove the strength of our machine and plant manufacturing company.

Can we take a final look at the two other business units of the Siempelkamp Group?

Heinz Classen: The demand for products from our Nuclear Technology Business Unit continues to be high. The Foundry Business Unit focuses with its special segments and an outstandingly well equipped and recently upgraded location on their markets, especially in the area of large castings. In this respect, our Group stands on many legs and will prove itself in this global crisis.

4'-ContiRoll® – a reference project for China: A small-sized press for high efficiency and customer orientation

Only 4 feet wide, this ContiRoll® press is the smallest in the ContiRoll® family. However, it combines all features of 8 or 12 foot presses. This outstanding press, which produced its first board in March 2009, is the first of its size used at Zhejiang Liren Wood Industry in Jiang Shan City, Zhejiang province, and arouses the interest of the industry. What characterizes this press? For what applications is this press suitable? The following article will provide the answers.

By Michael Bischof / Photo: Stefan Tippenhauer



The shell of the 4' ContiRoll® press



Installation of the frames



View of the drives



Assembled hydraulic cylinder



Hydraulics support next to the press

Zhejiang is located on the coast of the East China Sea in southeastern China. Important industry sectors include the electromechanical, shipbuilding, textile, chemical, food processing, and building materials industries. Zhejiang Liren Wood Industry has been producing thin MDF since late 2007 on an 8' x 23.8 m Siempelkamp ContiRoll® press. Originally founded as a saw mill in 1968, the Liren Group today employs more than 2,000 people at 9 locations. The head office is located in Lishui, Zhejiang. In addition to chemical products, MDF production is one of the company's core businesses. With a yearly production capacity of 850,000 m³, the Group is one of the top five companies in the Zhejiang province. MDF made by Liren is regarded as a quality

brand and has already received several awards from the province because of the high standard.

4' ContiRoll® – smallest press in the ContiRoll® family has many benefits

In November 2007 the Chinese company laid the foundation for an extended production range with the signing of a contract: Liren ordered a small 4' x 33.8 m Siempelkamp ContiRoll®. This press produces 4' x 8' MDF with a thickness ranging from 4 to 18 mm at a speed of up to 1,300 mm/s. Siempelkamp was also commissioned to deliver a double-diagonal saw, a Starformer mat forming machine within the forming and press line, and the



Discharge bunker and former head



Press infeed area with steel belt

project management. Construction started in October 2008, and the first board was produced in March 2009. Only a few weeks later the press reached full capacity.

What technical benefits does the 4' ContiRoll® offer its users? "In principle, this smallest press of the ContiRoll® family has all the features of the large 8' and 12' presses, this includes the best pressure distribution of all time, very low thickness tolerances, quick start-ups, stable ramp-up curves, and unsurpassed high availability," summarizes Lothar Sebastian, manager of engineering design of Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG. Just like the "big" presses, the 4' ContiRoll® is based on the expertise of more than 200 presses which Siempelkamp implemented over 25 years. All the technical features are combined in this press for a consistent high board quality with very high production flexibility.

In addition to these general advantages of the ContiRoll®, the 4' version offers a large bandwidth of advantages which are beneficial to customers in specific market situations.

"The small 4' model is especially interesting in certain conditions, for example, if there is a high regional demand for MDF in the premium segment corresponding to the increasing quality awareness of the consumer, combined with a short supply of raw materials. Steadily rising costs, from the transport of raw materials to the supply of the markets, demand short distances if operations are to be efficient." The conservative use of resources such as wood and glue is also an advantage, especially compared to multi daylight presses (see box

page 13). In that respect, the small ContiRoll® is suitable both as a greenplant investment and as a replacement for an old multi daylight press.

Another advantage: The popular Asian board sizes 4' x 8' and 4' x 9' can be produced directly. Thus, the 4'- ContiRoll® renders a costly cut-to-size line obsolete.

High share of locally sourced machinery around the Siempelkamp equipment

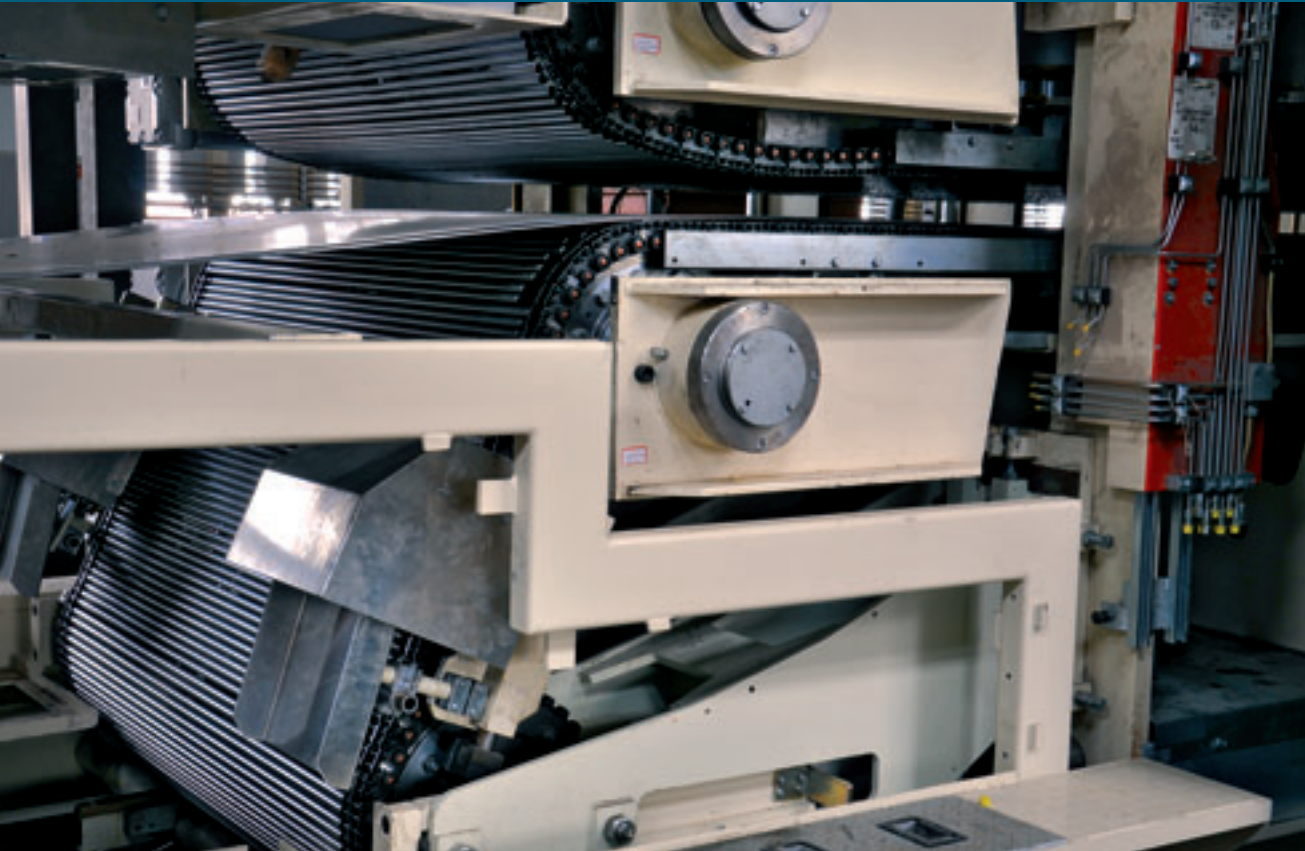
Last but not least, large investments are increasingly difficult to finance. For the customer, a small ContiRoll® means a lower capacity of premium MDF adjusted to needs and, at the same time, a lower investment. Consequently, the 4' model is suitable for such markets as Brazil, Russia, India, and China! "We have adjusted the design of the ContiRoll® for Liren Wood Industry to the available materials preparation technology. This makes the use of locally developed equipment possible. Thus, the raw material preparation technology of Chinese partners is applied prior to the matforming machine and again after the press for the finishing line. This, in turn, lowers the investment costs for our customer. The most important fact for the customer remains: behind this locally sourced equipment stands Siempelkamp competence and high quality," outlines Lothar Sebastian.

The possible savings ensured by a small-sized ContiRoll® even during construction cannot be ignored. The low press height



Dryer and cyclone

Roller rod carpet inside the press infeed



requires a lower shop height. A smaller press pit has a positive effect on the overall size of the installation. Furthermore, the foundations are subjected to lighter loads and the hydraulic system can be smaller.

Conclusion: The narrow ContiRoll® not only satisfies the special needs of specific markets, but also guarantees resource-efficient

production. Possible cost savings for shop construction, transport, and the possible sourcing of local equipment make the 4' model an acquisition which pays off in many ways: "The additional investment in a small ContiRoll® will pay for itself after one year," says Michael Bischof, area sales manager of Maschinen- und Anlagenbau GmbH & Co. KG.

Small ContiRoll® – large advantages

- capacities from 70 –100,000 m³ per year
- highest board quality
- large thickness spectrum ranging from 3.0 to 40 mm
- large density spectrum ranging from 500 to 950 kg/m³
- high share of customer-provided materials
- high availability
- no down times during press process
- low susceptibility to mechanical problems because there is no mat acceleration, no loading/unloading, no cross cut saw
- no capacity restrictions for thin boards due to mechanical limitations
- low production costs
- small investment

Small ContiRoll® – large product spectrum

- thin MDF 3.0 mm
- LDF (low density fibreboard) up to 500 kg/m³
- HDF for flooring
- thick MDF 40 mm

Double diagonal saw at the press outfeed area



Small ContiRoll® versus multi daylight press – a win on points for the ContiRoll®

- broad range of products for changing market requirements available due to easy recipe changes at the push of a button
- less trim due to the fact that there is no cross trim (savings of approx. 3.5% compared to 4 x 8' board produced on multi daylight presses)
- less sanding allowance because of improved thickness tolerance (+/-0.1 mm) and less pre-cure because pressure-less dwell time of the mat inside the press is reduced, which means:
 - up to 40% less material loss
 - lower use of glue
 - lower energy consumption
 - lower investment in grinding heads and grinding belts
- outstanding thickness tolerances from 0.1 to 0.15 mm
- different pressure profiles for light to heavy boards can be run with the flexible infeed head:
 - 3% higher density in the board centre leads to 10% improved transverse tensile strength
 - on average 2% glue savings without loss of board quality (tried-and-tested)



Coil car and decoiler

“Well-thought-out details result in superior systems”:
Double belt lines from SHS for
state-of-the-art sandwich panels
made by Romakowski

By Ralf Griesche

“Well-thought-out details result in superior systems,” is the core competence of Romakowski GmbH & Co. KG. For over 35 years, the business relationship between the leading supplier of sandwich panels and Siempelkamp Handling Systeme (SHS) has put this combination into practice. The current production lines under construction, which will be the third and fourth Siempelkamp lines for Romakowski insulation systems, will continue the successful tradition between the two family-owned companies.



Profiling upper belt



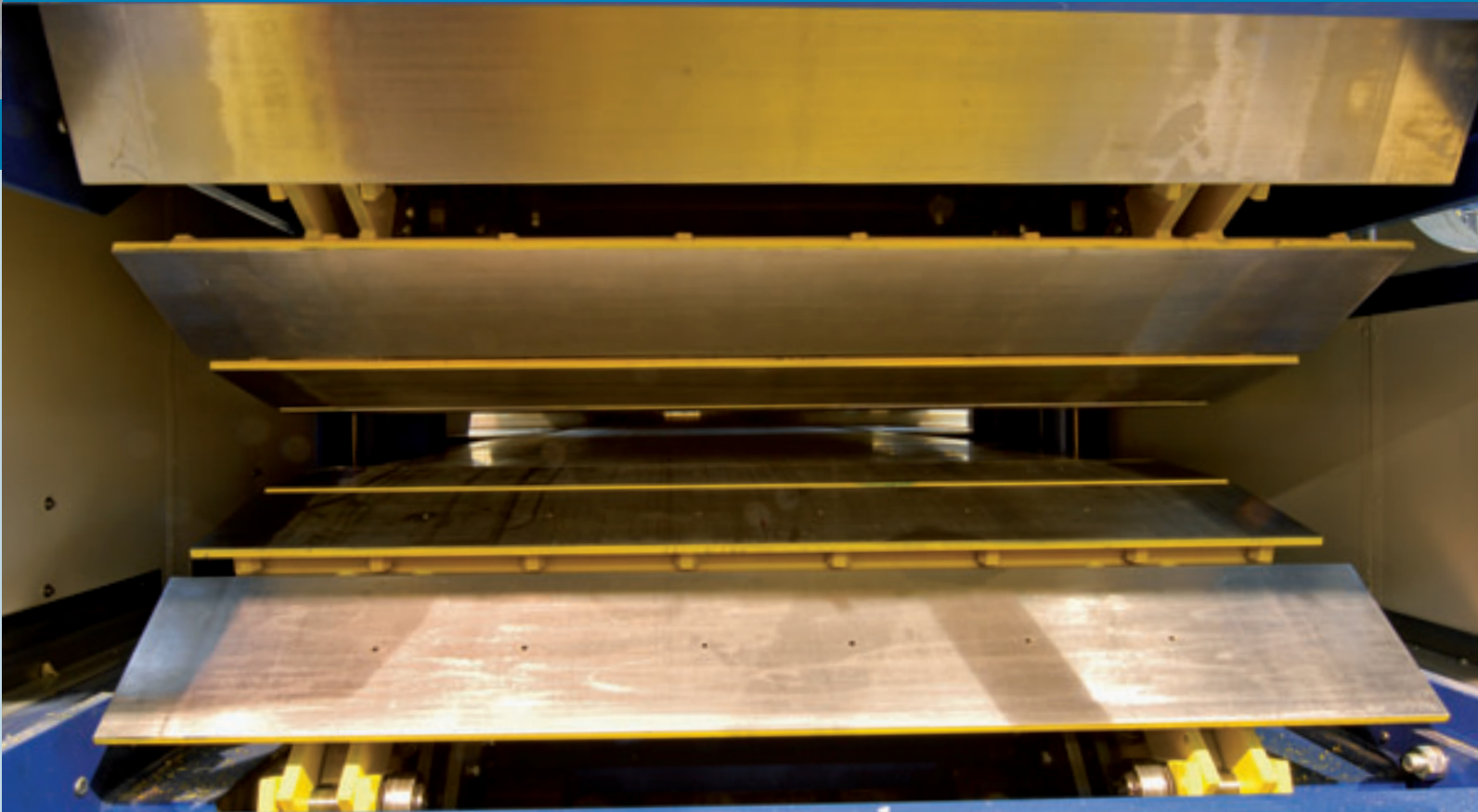
Profiling lower belt

As a complete system provider, SHS supplies all components for the production of sandwich elements including the decoiling and roll-forming sections, the profiling sections, the metering and covering sections for polyurethane components, the double belt press, and the

cutting, cooling, stacking as well as packing sections. The control system with process data handling and the visualisation are also part of the Siempelkamp portfolio.

In 1973 the order for the first line was placed from Bittenwiesen with Verfahrens-

technik Ernst (today SHS). This first order was a pioneer project in many ways. The world's first double belt line for cooling and deep-freeze elements produced cold storage elements with a thickness of up to 140 mm on a 12 m long (39 ft) double belt press.



Double belt



The second line was installed in 1990: The second double belt line focused on automation and a high production capacity and flexibility. With the world's largest and most sophisticated production line for sandwich panels, Romakowski and SHS achieved milestones in many respects: quadruple coil technology, double foam portal, cross

cutter with saw band replacement during production. These innovations increased the availability of the plant to 95%!

Just under 20 years and many new concepts later, the third and fourth lines have been planned. Two more double belt lines, which were ordered in 2007, are currently

being assembled in Bittenwiesen. With an SHS line for mineral wool sandwich panels, Romakowski paved the way for a new product: wall and roof panels with increased fire protection. The second project includes a line for PUR/PIR sandwich panels. Elements for cold storage buildings as well as standard wall and roof elements can be



Sealing chain magazine

Romakowski is the only supplier of panels with a length of up to 24 m (78 ft) in Germany. The production speed of up to 12 m/min results in a daily production capacity of up to 15,000 m². production speed of up to 12 m/min results in a daily production capacity of up to 15,000 m².

The line for the production of sandwich panels with a PUR core and the line for producing sandwich panels with a mineral wool core are equipped with the latest SHS technology. Line details include: energy-efficient double belt heating, quick cross cutter for increased production, a wide thickness range for all panel types, sheet metal profiling and edge milling of the longitudinal and cross panel sides. All these details are well-thought-out and the complete solutions guarantee Romakowski the superiority which characterises the company in the market!

produced with this line. Thus, Romakowski can react quickly to different production requirements. Furthermore, the new PUR line is equipped with fully automated sheet feeding and the connection of both coil ends during cover layer change and colour change. In this way, the plant can produce continuously. Due to this configuration,



Sandwich panel with PUR core



Using the sandwich panels on site

Accurately fitting products – custom-fit production

Erwin Pesch, technical director of Romakowski GmbH & Co. KG and project manager for the new lines III and IV, talks to Bulletin about the specialisation and market leadership of Romakowski insulation technology.

Mr. Pesch, as is the case with Siempelkamp, the business success of Romakowski is also based on a long tradition as a family-owned business and based on the goal of setting trends for the company's market.

Erwin Pesch: Indeed, our companies have several similarities. Romakowski started out as a joinery in 1948 producing mainly products used in the rebuilding of Germany after World War II. Soon the company's founder, Reinhold Romakowski, recognised that in the long run only specialisation will lead to continued success. He started to concentrate on products for the preservation and distribution of foods. A company for refrigeration units was established which filled a niche in the market. The former product portfolio included shop counters, refrigeration room doors, beverage cool boxes, refrigerators, freezers and communal deep-freeze systems.

Arising from these activities, in 1962 Romakowski developed the sandwich panel design. Which milestones have resulted from this development?

Erwin Pesch: When other competing companies were still producing conventionally, Romakowski was the first manufacturer in Germany to start producing "cooling cells for disassembly". With it, the basic idea for today's commercially available sandwich panel design method was born. Five years later we introduced rigid polyurethane foam as an insulating material with the intention of replacing polystyrene.

Which range of products is offered to Romakowski's customers today?

Erwin Pesch: Today we are the specialist for many different applications of the sandwich technology. We supply all constructional elements for complete buildings, concentrating mainly on wall and roof elements, doors, windows and constructional materials for efficient industrial building and hall construction. High-quality refrigeration and deep-freeze cells are still among our strong points. Everything is made from one source and is system-compatible. We also set a high value on the optical coherence of our products.

What characterizes the Romakowski products?

Erwin Pesch: Our unique selling point is quality. We use high-quality surface layers and foam systems from Elastogran. The quality of the rigid foam used not only depends on the quality rating of the raw material, but also on the consistency of this quality over the entire panel profile. This means continuous production and a high rate of machine utilization is important. Other trend-setting characteristics include the long-term quality of the metallic cover layers, their adhesion properties to the rigid foam, and the quality of the profiles. The latter is especially important for very long panels and also when it comes to material and time savings for supporting constructions.

How large is the market volume of Romakowski GmbH & Co. in Germany?

Erwin Pesch: Our market volume in Germany amounts to approx. 15 million m². Every fourth panel used in Germany is





produced by Romakowski. A total of six manufacturers supply the German market, the competition is bound by the producer. With the rising popularity of low-energy houses, our products have made their way into residential building construction. The growing need for energy-saving potentials has resulted in an increasing relevance of our insulating technology.

Why were you able to position your sandwich elements so well in this market?

Erwin Pesch: Sandwich elements can be produced quickly and inexpensively. Furthermore, not only the economic but also the ecological sustainability are impressive advantages. Since the introduction of the German energy savings ordinance in 2002, the requirements have been raised and have become more precise. The amendments in the years 2004 and 2007, and the current modifications from this year, have raised the bar even higher.

The sandwich design in general and our concept in particular have an excellent reputation. Long-life cycles and no need for maintenance guarantee customers high efficiency. Best heat insulation properties with lambda values of up to 0.022 W/mK satisfy the need for high energy efficiency. Additional impressive factors include excellent joint sealing and driving rain security outstanding sound insulation, universal application potentials through high UV and, weather resistance, and last, but not least, optimal environmental compatibility because the components are recyclable.

The advantage of sandwich elements with polyurethane and mineral wool respectively is the variable design of the cover layers in addition to the outstanding heat insulation and the quick

(From right to left): Josef Stix, Managing Director and Erwin Pesch, Technical Director

installation. This applies to the surface profile as well as the individual colour scheme.

Furthermore, Romakowski products can be interconnected easily to give an exact fit. We are the world's only manufacturer who machines the tongue and groove joints on sandwich elements after the curing process of the foam has been completed. Thus, we assure an exact, force-fit and smooth assembly. With their light weight and exact interconnections, the panels can be installed quickly and without difficulty. In short, our sandwich elements provide all the positive properties necessary for flexible construction. This works well for assembly companies and also for builders.

In order to produce constructional elements with such excellent properties, it takes a partner with competence and many years of experience and one who has the commitment to implement these high-performance features in the appropriate machinery.

SHS has been a partner for many years for the basic configurations needed to reach specific benchmarks. Why did you decide to place your order with Siempelkamp?

Erwin Pesch: Our experience working together with Siempelkamp has been very good. With the delivery of the third and fourth line, SHS has once again succeeded in providing the type of quality standard and reliability that we want to pass on to our customers. SHS's experience of many decades, totalling 100 sold systems, has been an outstanding reference for us.

Process computer replacement in the Mühleberg nuclear power plant:

Complex power that fits at the first go!

Germany has 17 nuclear power plants (NPPs) in operation with an electrical power output of 21,497 MW. During 2008 they produced 148.8 billion kWh of electricity. In the context of this power production – with an increasing demand on the international platform – a significant support is provided by Siempelkamp Nukleartechnik. Following the successful replacement of the process computer in both of the boiling water reactor units of the Bavarian NPP Gundremmingen, NIS Ingenieurgesellschaft mbH was attributed in 2008 the contract of replacing the process computer in the Swiss NPP Mühleberg.

By Dr. Aldo Weber

The Mühleberg nuclear power plant (MNPP) is the largest electrical power production complex of BKW FMB Energie AG in Switzerland. It covers approximately 40% of the demand in its service area delivering electricity for approx. 400,000 end customers. The electrical power output amounts to 355 MW with a year's production of around 3,000 million kWh. MNPP has a boiling water reactor and obtains its cooling water from the river Aare.

MNPP is monitored from the control room with the aid of the process computer and data acquisition system. Here comes one of the key competences of NIS Ingenieurgesellschaft mbH into play. NIS has established itself as a system integrator in the field of processing data handling.

Processing computer and data collection system: a complex performance structure

The process computer and data acquisition system is a challenging task: The system collects, processes and visualizes the main process data of a NPP. The data is compared with linked and derived base values. It is then sent immediately to the control room for visualization purposes. Furthermore, the scope of functions of the system includes the storage of the process data. "The term 'process computer' used in this project is to be understood in a broad sense because the processing computer supplies a reliable, verified and a near real-time process image. In order to assure this, the processing computer has to be linked with essential neighboring systems of the NPP – this includes for instance the core simulator, the control rod operating and surveillance system and the neutron flux monitoring system," explains Aldo Weber, head of the business unit Information Technology and Consulting of NIS.

NPP Mühleberg, Switzerland



Replacement requires management of the interfaces

If the replacement of a processing computer becomes necessary, as is the case at MNPP, the eye has to focus on the big picture: The integration and connection of the processing computer into the heterogeneous system scenery is a delicate structure and must be considered. "The architecture of the interfaces between the present and the new components paves the road to success or to failure of such a replacement. Precisely at this point, one of our key competences comes into play. We focus on the global aspect of the process data processing," adds Aldo Weber.

From collecting to processing and finally to visualizing the data, the system structure can be subdivided into three levels. These three functional levels operate independently from each other. The data processing level plays a central role as the link between data collection and data visualization level. Aldo Weber explains: "At this point, all the information comes together – the proper signal collection, that of the neighboring systems as well as the interaction of the operator. For this reason this level has a build-in redundancy and therefore meets all demands for single error-reliability and high availability.

The performance features of the system are:

- **A high intake capacity:** The system is able to collect and process up to 20,000 binary and 5,000 analog signals.
- **Fast signals:** The temporal resolutions of the binary and analog signals are 1 ms and 10 ms, respectively.
- **No congestion:** In case of a signal flooding, the processing computer is able to collect up to 40,000 signal changes without any loss.
- **Getting a quick picture:** It takes a maximum of 1 second latency period from capturing to visualizing a signal change.



Reactorbuilding main control room

- **No loss of data:** In case of failure of a host computer (on the data processing level) the functional capacity is provided by the remaining computer without any data loss; the operational state of the system is being maintained.

"Neither a safety net nor a double bottom": the status quo

The process computer with its data acquisition is an important component of NPPs. In this respect it is subject to Swiss nuclear



Main control room

laws and regulations and to supervision of the Swiss Federal Nuclear Safety Inspection (ENSI). The replacement project will be approved accordingly in a separate and discerning certification procedure after which it is cleared for operation. The status quo: NIS had a primary successful certification in the third quarter of 2008. The technical concept described in detail in the requirement specification documents of the processing computer was not only reviewed favorably by ENSI but was also accepted without having to do any rectifications.

At present factory integration tests of the processing computer are performed by NIS. For this, the entire system is assembled and

elaborate testing is being conducted over a period of several months. After the installation of the processing computer in the Mühleberg NPP, parallel operation with the present old system is not possible, so that the new process computer must start up into operation, error and failure-free – with neither a safety net nor a double bottom. “This is an extreme challenge. Typically when replacing a key component, such as the process computer, commissioning starts with parallel operation with the old system for several months. Through the replacement of the process computers in the Gundremmingen NPPs, we have already proven our ability to successfully replace processing computers without

parallel operation. Essential here are successful integration and plant tests with a near 100% functional testing covering all essential states and power conditions of the processing computer system. This is the requirement for a successful commissioning of the system without parallel operation,” outlines Aldo Weber.

NIS has begun with this phase in January 2009 and work will be carried on until July 2009 – thereupon NIS will proceed on-site with final assembling and commissioning of the system.

Decommissioning and dismantling of the nuclear power plant Stade:

Another order for the NIS team of experts

Since February of 2008 an expert team of NIS Ingenieurgesellschaft mbH has been fully involved in a large-scale project at the nuclear power plant Stade. These specialists are planning the dismantling, disassembling and packing of the reactor pressure vessel including all peripheral internals at the plant. In November of 2008 NIS Ingenieurgesellschaft mbH received another challenging order. The underwater sampling of the reactor steel in the reactor pressure vessel has now also become part of NIS's spectrum of tasks.

By Dieter Stanke

After more than 30 years of operation the nuclear power plant Stade was taken off the grid on November 13, 2003. After disposal of the spent fuel elements, the plant has been slowly phasing out since September 2005. Currently, the dismantling phases I and II are in progress. NIS Ingenieurgesellschaft mbH has been commissioned with the disassembly, dismantling, packing and disposal of the reactor pressure vessel which are part of phase III. Sampling and dose rate measurements are now also carried out by NIS and are an important foundation for the other tasks.

Underwater sampling and dose rate measurements in the reactor pressure vessel – why?

The disassembly and packing of a reactor pressure vessel requires detailed planning. By sampling in the reactor pressure vessel, we establish reliable data so that the loading of the waste packages can be planned. It is essential that the loaded containers comply with the Konrad- as well as the LarA acceptance requirements for radioactive waste disposal (LarA = storage for radioactive waste at the nuclear power plant Stade) and that they are loaded as closely as possible to the allowed maximum in regards to activity and mass.

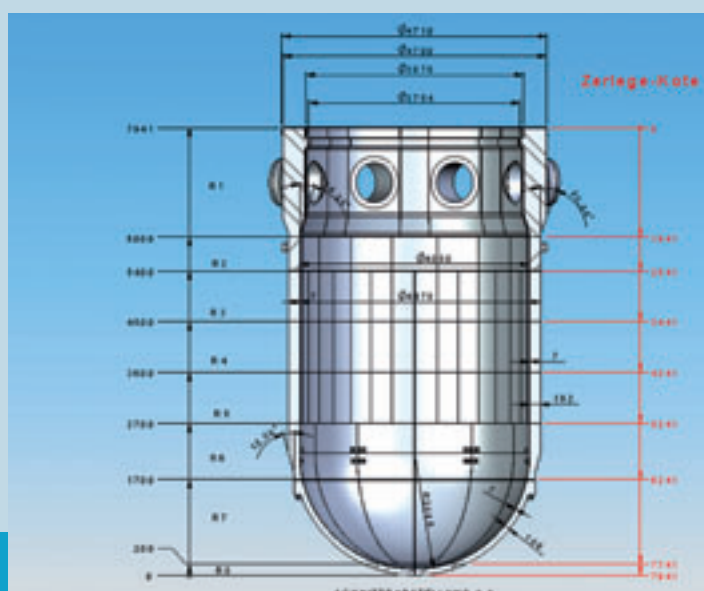
For the underwater sampling process NIS Ingenieurgesellschaft mbH developed a program which provides the basis for the future loading schedule and waste declaration. "In order to achieve the challenging individual objectives, a sufficient number of measurement readings concerning the activation of the reactor pressure vessel are necessary. These readings are carried out across the inside of the reactor pressure vessel in such way that the progress of the activation can be reliably determined," describes Dieter Stanke, manager plant planning and dismantling planning.

Furthermore, it is the goal to determine the progress of the activation for the plating as well as for the base material of the reactor pressure vessel.

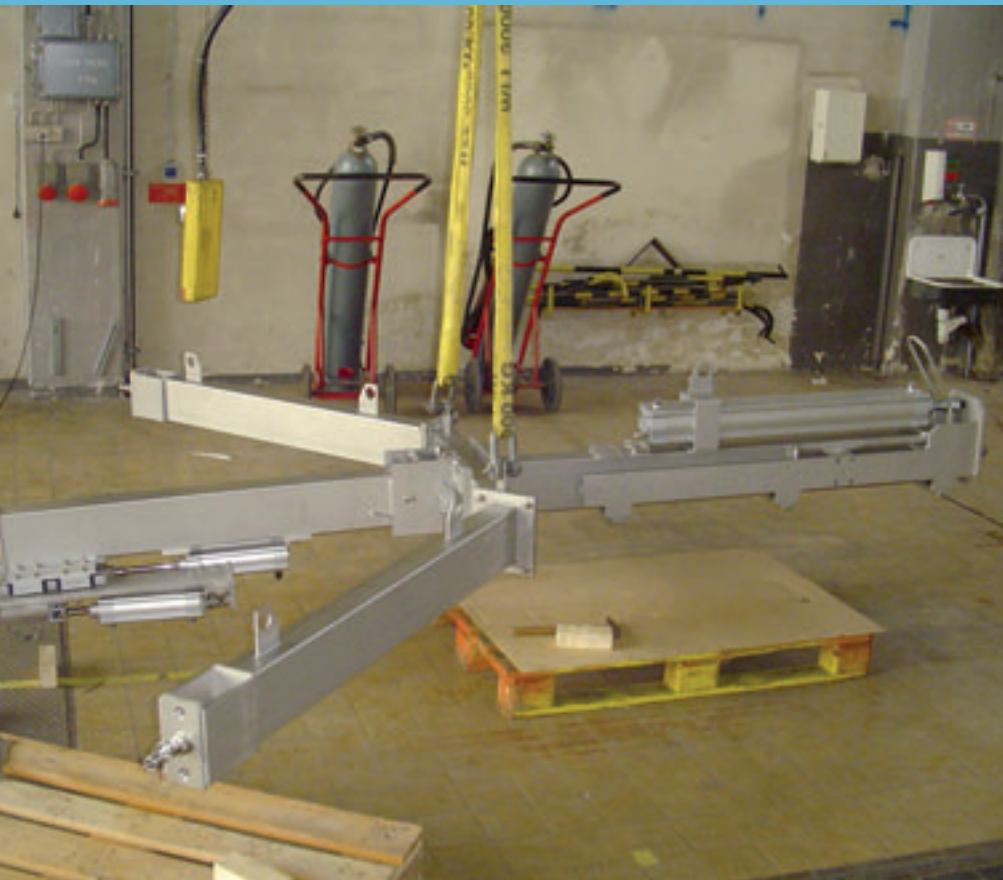
The process for the underwater sampling and the dose rate measurement

The underwater sampling is scheduled for mid-May 2009. NIS will start the sampling process in currently unreachable places in the reactor pressure vessel, for example the core zone, as soon as the internals have been removed from the vessel and these areas become available.

In order to achieve a definite disassembly and packing schedule, the reactor pressure vessel had to be divided into different dismantling zones (see figure 1).



(Figure 1) Sectional view of reactor pressure vessel at the nuclear power plant Stade



(Figure 2) Pre-assembled tool carrier



(Figure 3) Tool carrier with pneumatic drilling machines, dose rate measurement sensors and underwater video technology

Figure 1 illustrates how the reactor pressure vessel can be subdivided in the vertical direction into eight sections which in turn can be dismantled into 32 segments.

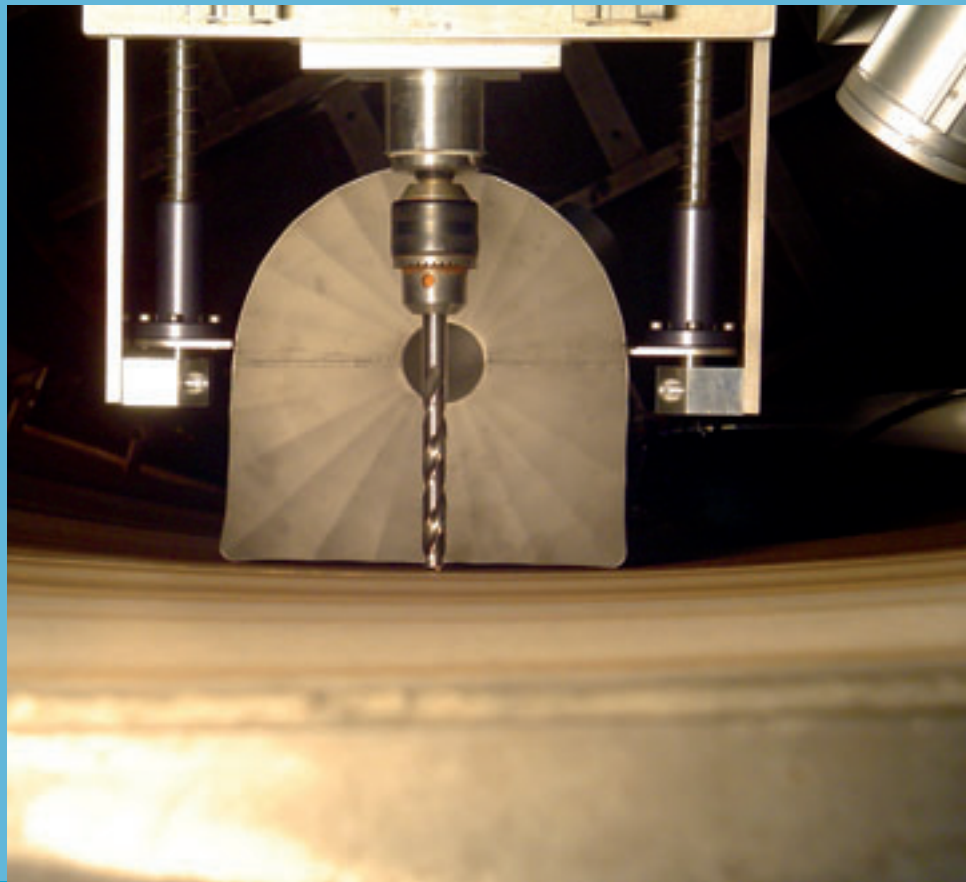
The underwater sampling process and dose rate measurements are carried out remotely. With the help of a drilling tool the team removes material samples to determine the activation. The dose rate is measured with a dose rate sensor specially developed for underwater use.

The devices used for sampling, for example, the pneumatic drilling machines, dose rate measurement sensors as well as auxiliary

systems such as the video technology suited for underwater use, are mounted on a tool carrier. Measurements and sampling takes place in the following order:

- Dose rate measurement
- Drill sample plating
- Drill sample base material

High precision is required for the alignment of the tools: The devices used for sampling and the measuring equipment are positioned with the tool carrier underwater in the reactor pressure vessel (figure 2 and figure 3).



(Figure 4) Pneumatic drilling machine in position

For sampling and dose rate measuring the tool carrier is positioned and pneumatically attached at the selected sampling and measuring positions (level of height and azimuth). (Figure 4)

The dose rate prevailing in drilling position is now determined with the dose rate measuring sensors. The readings are transmitted to evaluation electronics on the surface and stored in a data base. Next, the drillings in the plating and the base material of the reactor pressure vessel are carried out. Via a special device the bore chips are withdrawn by suction into a prepared sampling box. The chips are collected on a filter inside the box, which is located at the edge of the reactor pool, and can then be analyzed in a laboratory.

The described sampling process represents a complex procedure for which NIS has well prepared itself. "We have developed this equipment especially for underwater sampling and tested it extensively in a test environment. The sampling of the reactor steel and the dose rate measurements on site will nevertheless have surprises in store for us. However, we are confident that our team will also be able to solve these additional tasks," says Detlef Queißer, project manager.

Mission possible: Three particle dryers for

By Carsten Otto



Removal of the old dryer

The EGGER Group with its head office in St. Johann, Austria, is based, just like Siempelkamp, on the solid pillars of a family business. Founded in 1961 by Fritz Egger senior, the EGGER Group is now managed by Walter Schiegl, Thomas Leissing and Ulrich Bühler. The company owners, Fritz and Michael Egger, belong to the advisory board where they determine the guidelines for the strategic orientation of the Group. Nowadays, EGGER is one of the world's leading producers of particle-board, MDF, OSB and surface-finished products such as coated boards, post and soft-forming elements, pre-fabricated parts, laminates, edging, and laminate flooring.



EGGER

More than 1,800 dryer systems sold worldwide have made Büttner Gesellschaft für Trockungs- und Umwelttechnik mbH a market leader in this industry. However, the number of dryers sold is not Büttner's only reference. Using the example of the replacement of three particle dryers at the EGGER plant in Unterradlberg, the Siempelkamp subsidiary confirms: 'It won't work is not an option!'

Büttner and Siempelkamp: specialization under one roof

Another parallel to Siempelkamp is that EGGER also combines numerous specialists under the umbrella of a group company. 16 plants in six countries employ approx. 5,700 people. On top of this, EGGER has sales offices in the most important industrial nations of the world. Since 1970 the particleboard plant in Unterradlberg near St. Pölten has not only opened up the east of Austria but has also guaranteed the integration of the markets of Eastern European neighbouring countries and Italy. Here, EGGER sets new benchmarks for the wood-based products industry.

In Unterradlberg near St. Pölten, Austria, a new energy and drying concept was implemented in 2000. The system included a cogeneration heat and power plant and three indirectly heated drum dryers. The boiler of the cogeneration plant is utilized to generate high-pressure steam which is then used to run turbines for the generation of power. Downstream, the steam, now with a considerably lower pressure, is used to dry wood particles. For this purpose the saturated steam is supplied to special tube bundles inside the dryer drum. The wood particles and shavings are dried by contact. In the past, these three existing drum dryers were ordered from a competitor.

Mission possible: replacement of the three existing drum dryers by Büttner

After the wear on the three particle dryers became increasingly higher and repair costs rose, EGGER decided to replace these dryers completely. At the end of 2007, Büttner received the order to disassemble the existing drum dryers one by one and to replace them with three completely new, also indirectly heated, particle dryers. The new Büttner dryers type 5.4 x 28 RT were ordered with higher capacities. The drum diameter is 5,400 mm (18 ft), the length of the drum 28 m (92 ft). The total length of the steam pipes inside one of these dryers is 16 km (10 miles), the total

Transport of the new dryer





Transport to the plant...



... Arriving at the crane...



... The installation in its last phase

weight amounts to over 250 t (276 US tons). The number of pipe elbows per drum which have to be welded exceeds 1,300. That means over 4,000 weld seams are necessary!

Upgrading existing equipment from all manufacturers including efficiency increases and the supply of new plants are Büttner's daily business. The EGGER project, however, included another challenge. The dryers that have to be replaced are located in the centre of the plant and only limited space is available on site.

The solution: a complete site fabrication of the drum

"Due to the fact that the possibilities for the delivery of the new drum were limited, we decided for a complete site fabrication of the drum. We set up an on-site shop and the component parts of the dryer were delivered by truck. The tube bundles were assembled from individual pipes and elbows. At the same time we assembled the drum shell from the individually supplied sections. Finally, we put the new drum together," explains Carsten Otto, sales manager for Europe, Turkey and the CIS.

We continued with the hoisting and assembly of both tires. Before hoisting the drum onto the trunnions, the heat insulation was finished as far as possible – the new Büttner drum was ready to be installed!

At the same time, the disassembly of the first old dryer was prepared at full speed on the factory floor. Two cranes, an 800 t (882 US tons) crawler crane and a 500 t (551 US tons) telescopic crane, were set up. "As is usual for EGGER, the dryers at the

plant in Unterradlberg are covered. The roof had to be removed and the drum lifted up with precision. The old drum was placed on a special caterpillar-type tank wagon which was positioned right next to the crane.

With the help of the tank wagon, the drum was transported away from the plant before it was completely disassembled," describes Carsten Otto.

As soon as the drum was hoisted out, work on the trunnions started. The trunnion frames had to be levelled by milling the face and then reequipped with the overhauled trunnion wheels. The new Büttner drum was transported on the caterpillar-type tank wagon the same way back into the plant, then hoisted by the 800 t crane and carefully put onto its trunnions. Finally, the roof was rebuilt and the drum ready-installed.

All these individual steps demonstrate a well-thought-out interplay of the teams and were implemented in record time. The entire project, starting with the disassembly of the first old dryer to the completed installation of the first new Büttner drum, took only five 24-hour workdays!

The first of three new Büttner dryers has already been installed and has started operation. "The planning for the replacement of the second dryer in the second quarter of 2009 is under way. The replacement of the third dryer will take place in 2010," says Carsten Otto. After the replacement and complete site fabrication concept has proven itself once, dryers number II and III will also contribute to setting benchmarks for EGGER particle-board production in Lower Austria in the future!

Casting giants for the power supply industry:

Siempelkamp's contribution to power generation in modern steam power plants

By Helmut Rieck

Power plants for fossil fuels will continue to play an important role in the worldwide power supply for the 21st century. It is becoming more important to considerably increase the efficiency of these power plants. Improved cooling technologies and material systems do their share in reaching this objective. The Siempelkamp Foundry supports these efforts with large castings.

Approximately 90% of the world's primary energy demand is met by nuclear energy and by burning fossil fuels including brown and black coal, natural gas and oil. To increase the efficiency of these plants, i.e. to optimise the percentage rate at which the applied energy is converted into electrical power, has become the primary focus in this industrial sector.

Especially for gas turbine and steam turbine power plants with a capacity of more than 100 megawatts, the aim is to reach efficiency factors of over 60%. Natural gas power plants are characterized by relatively low investments but comparatively high operating costs. An improvement in efficiency factor results in lower energy consumption and lower environmental impacts. This can be achieved by technical measures such as improved cooling technologies, reliable design methods and improved material systems.



Casting

Ductile iron castings: improved damping, optimised mechanical properties

The design of the inner and outer turbine casings contributes significantly to improving the efficiency factor. These casings are welded constructions or steel castings, but the number of ductile iron castings is increasing. Ductile iron casting is a modern casting process during which the cast is processed in such a way that some of the carbon precipitates as nodular graphite.

Because of its inexpensive producibility and excellent machinability, ductile graphite iron has many industrial applications and provides

advantages which other production methods cannot offer: “Compared to welded constructions, ductile iron castings are characterized by their improved damping and mechanical properties during continuous operation. Even cast steel falls short of ductile cast iron in terms of quality and damping properties,” says Helmut Rieck, sales department, Siempelkamp Foundry. In the area of large and heavy castings made of ductile iron, the Siempelkamp Foundry occupies one of the leading positions in the market.

Due to its outstanding properties, ductile iron is the only ferrous casting material with a constant production growth rate. Large castings with thick walls including turbine casings, heavy machine components, components for wind power plants and parts for general machine construction are made according to this method.

Siempelkamp Foundry: major player for large ductile iron castings

Against the backdrop of a continuously growing worldwide energy demand, but also in order to meet the medium-term replacement needs in Europe, Siempelkamp Foundry has taken up serial production of large turbine components. As the world's leading manufacturer of heavy and large castings made of ductile iron with nodular graphite, the Siempelkamp Foundry has supplied individual large casing sets (each consisting of an upper and lower casing) with weights of up to 105 t (116 US tons).

“For the production of these components we needed more than 120 t (132 US tons) of molten iron and up to 500 t (551 US tons) of moulding sand per set. We are thinking in and working with enormous dimensions,” explains Helmut Rieck. This required that the motto “Think big” had to become a basic philosophy starting with pattern storage and handling capacities for house-size patterns, and extending to increased moulding pit sizes in the heavy mould shop, and up to the fettling shop.

Careful operations, test and logistics planning is necessary for processing times of 6 to 8 weeks and single component deliveries in a four-week cycle in order to ensure customers a smooth overall project throughput.

Big size in the purest form: a 160 t (176 US ton) prototype and a gantry-type portal milling machine

The current turbine capacities of up to 1200 megawatts require appropriate characteristics of the cast parts in terms of optimal material properties and dimensions. Currently, the Siempelkamp Foundry manufactures casings with set weights of up to 120 t (132 US tons). A prototype weighing 160 t (176 US tons) was cast in March 2009. Exhaust cross sections of 16 m² and counting are being reached nowadays.



Model of a turbine component



Raw casting of the upper shell of a steam turbine



Mounting of a 168 megawatts gas turbine rotor (Photo: Siemens)



Steam turbine for Niederaussem (Photo: Siemens)

Another milestone: recently it has become possible to mechanically finish components directly at Siempelkamp with a new gantry-type portal milling machine. The Gantry VMG 6 PS belongs to the equipment of the Maschinen- und Anlagenbau GmbH & Co. KG and is the first machine of this size to operate in Germany. All nine of its predecessors were manufactured for export by Schiess in Aschersleben, Germany.

This general-purpose machine turns, drills and mills at high performance – 100 KW milling spindle capacity for heavy-duty machining with high precision. 26 m (85 ft) in length and 13 m (43 ft) in height open up enormous potentials for Siempelkamp and

its customers. As far as the size of the workpieces is concerned, parts 6 m (20 ft) high and 7 m (23 ft) wide are no problem!

This type of equipment is very appealing to numerous customers and interested parties who require large sizes. Corresponding requests are in progress. “The customers benefit from the fact that expensive transports by road, sometimes all the way to Northern Italy, become unnecessary. Furthermore, Siempelkamp now ensures customers efficient order processing according to the “from a single source” principle. In our opinion this type of full service is a future-oriented one from which our customers can profit,” underlines Helmut Rieck.



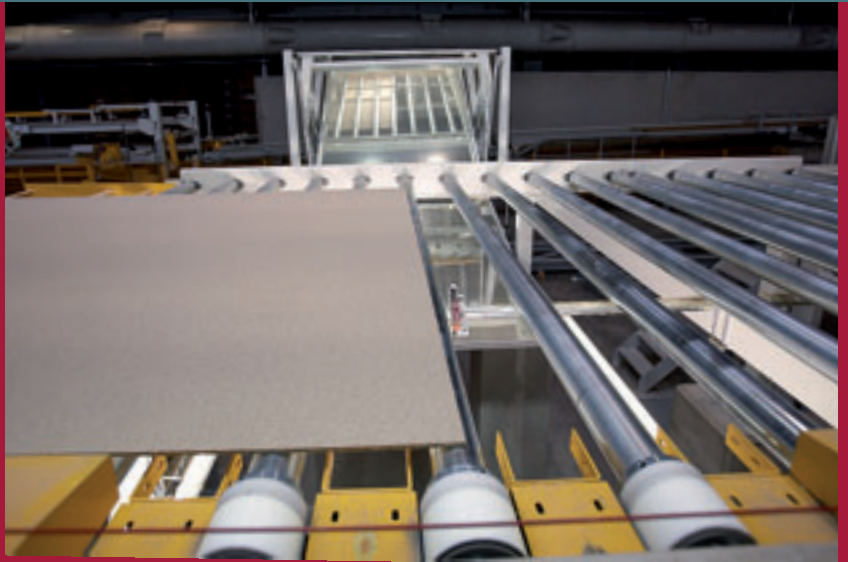
Siempelkamp support for EGGER Rion:

New production line on the fast

In 2008 Siempelkamp completed the upgrade of the EGGER particleboard plant in Rion-des-Landes, southwestern France. EGGER ordered several components for a new particleboard production line which was put into operation in record time after the production of the first board. The special design feature: The new forming and press line was installed right next to the old predecessor model from 1994, on the fast track, so to speak. The benefit for the customer: The quality of the boards and the added value increase.



Forming and press line by Siempelkamp



Board transport

st track

By Horst Weiss



Sanding line

At 16 locations in Europe, EGGER produced 5.75 million m³ of high-quality particleboard, MDF and OSB in 2007/2008. The company carries out the surface finishing of these boards and supplies them to furniture, wood-based products, and flooring businesses as well as building supply stores.

In Rion-des-Landes, a commune in the Landes department in Aquitaine close to the Atlantic Ocean, EGGER focuses on the processing of maritime pine with a team of 400 employees. This type of tree is native to the western Mediterranean area and is preferably used in furniture production and for planks. Sales activities for this EGGER location include not only the particleboards produced here, but also the complete EGGER program. EGGER therefore uses the French sales organization as a platform for the marketing of all products, also those originating from other locations.

engineering, the order includes a forming and press line with a 6'-7' x 42.1 m ContiRoll® press which operates at a speed of 1200 mm/s. This line is not only faster and more efficient than its predecessor, but it produces higher quality particleboard due to the fact that the technical progress of the last 15 years has advanced the continuous ContiRoll® press.

"Keywords for this development include the distance control of the press cylinders, the flexible press infeed, a power heating system, the proportional valve technology, a precise steel belt control and thinner hotplatens. Furthermore, we have improved the press safety and with it the availability of the press," describes Michael Vogel, manager for construction design of the continuous presses at Siempelkamp, referring to the transformation process of the ContiRoll®. The easy operation of the press completes the status quo with

for boards with a thickness ranging from 6 to 40 mm, a width ranging from 1,830 to 2,200 mm, and a length ranging from 2,390 to 6,100 mm.

Full plant capacity in record time

The results of this upgrade include: higher quantity at consistently increased quality, decreasing costs and more added value. The quick take-up of three-shift operation contributed to an optimal start of the new concept. The first board at EGGER Rion was produced on November 13, 2008. Only a day later the plant started three-shift operation. This record performance and optimal start for EGGER was achieved in teamwork between the customer and Siempelkamp.

Furthermore, the scope of supply of the Siempelkamp Group included a new SHS cooling and stacking as well as a grinding

Surface area weight scale



Star cooler



Upgrade concept based on the development work of many years

With a total investment of 55 million euros, EGGER Rion is currently implementing a comprehensive upgrade program. Siempelkamp support contributes to this program. In addition to the planning and

consistent excellent product quality at higher flexibility and capacity.

To begin with, the existing forming and press line from 1994, which was also equipped with a ContiRoll® press, has been shut down. Two daylight presses will also be replaced. The new press line is designed

line. As early as August, Siempelkamp installed an additional laminating line at EGGER Rion which processes boards to decor products used in the furniture industry. This investment has a decisive advantage for the customer because the laminating and processing capacity of the boards will increase by 30%!



42 m long ContiRoll® press



Finishing line



Board stacking



The intelligent process control technology by Siempelkamp was also included in the order volume for EGGER. The current version of Prod-IQ® covers the areas of production data management, quality assurance, as

well as servicing and maintenance. It also has several features regarding process modelling and online quality forecasting in store and is tailored to meet each customer requirement in the wood-based

products industry! A core competence is the availability of reliable and up-to-date management data about plant performance, consumption and costs. Thus, Prod-IQ® contributes to the efficiency of the plant.



Finishing line with star cooler in the background

To meet the claim that EGGER will have one of the most up-to-date plants for the production of particleboard, Siempelkamp makes a diverse interplay of performance modules available: "With the entire upgrade

concept in Rion-des-Landes, EGGER is implementing its own high quality standard. The scope of services provided by Siempelkamp plays an important role," says Walter Schiegl, managing director of production.

Short-cycle press for EGGER Rion:

Laminating expertise for all areas of the production line

At the EGGER location in Rion-des-Landes, France, board production and lamination have long been a cohesive system. The previous owner, the ROL Group, expanded the laminating capacity parallel to the start-up of a Siempelkamp ContiRoll® press in 1991.

After the takeover of the location by EGGER, the focus stayed on the ongoing expansion of the laminating centre. The replacement of the old ContiRoll® with a higher-capacity press of the latest ContiRoll® generation gave reason to restructure the laminating centre and upgrade it with the installation of another short-cycle press line.



The siempelkamp short-cycle-press for EGGER Rion

By Ulrich Bens

The new short-cycle press line which has in the meantime been fully integrated into the production plant incorporates a press of the latest generation. The position control for the movement of the upper beam makes the synchronous run possible and thus guarantees the absolute parallel operation of the upper and lower hotplaten – at any time during the move as well as when touching down on the press charge. This feature improves the quality of the finished boards and results in an extension of the maintenance intervals. Among other things, the protection of the sealing and guiding systems of the cylinders has a share in this.

EGGER prefers the use of the inline paper laying system. The scope of this project also includes one of these systems. The patented inline paper laying system was developed by Siempelkamp in the early 1980s. It allows the simultaneous laying of the decorative top paper, the raw boards and the backing paper in a single station. Siempelkamp has continued to develop this system and adjusted it to the demands of the market as far as speed, precision and reliability are concerned. Therefore, the system has not lost its attractiveness over the years. It is not without reason that EGGER is using ten (10) of these machine systems, of which four (4) alone were supplied in the last three years.

Next to an increase in production capacity, the logistics of the new EGGER project were put to the test. Here it is imperative to load four (4) parallel operating short-cycle press lines, which oftentimes produce different products and sizes, just in time with raw materials, boards and paper. Furthermore, the laminated products have to be loaded into two packing lines without delays.

In order to react to future extensions flexibly, the scalability of the transport systems played an important role. The concept is based on two quick moving transfer cars, one at the infeed side and one at the outfeed of the line. A centralised order processing system is in use which receives orders from the production lines and prioritises transport orders for smooth processes which are free of dead time. For this, the automated raw board stack storage was extended and a centralised infeed station for material was installed. These components as well as the fully automatic packing line supplementing the existing line were supplied and put into operation by Siempelkamp Handling Systeme, Wolfratshausen.

Once again, this project required the expertise of Siempelkamp not only in supplying a laminating line but also in providing solutions for complex logistic interconnections of entire laminating centres.

Büttner dryer for EGGER Rion:

Effective combination of existing and new equipment

The American author Norman Mailer once commented on the brevity of progress: "What starts out as science fiction today may wind up being finished tomorrow as a report." What does this mean for technological innovations? Two different things: to modernize the existing equipment efficiently and to develop completely new product innovations into high performers. This concept is illustrated by two Büttner dryer solutions which were developed for EGGER Rion in 2008.

By Carsten Otto

Particle dryer upgrade: environmentally compliant, reliable, efficient

Büttner concepts are not only known for their custom-built orientation. Environmental compatibility also plays a foremost role when it comes to dryer solutions. Against this background, EGGER Rion commissioned our company in 2008 with the upgrade of the existing particle dryer from another manufacturer. The focus of this task was to conserve natural gas when heating the dryer. Before the concept was developed, Büttner engineers laid the foundation for their work on site. During a site survey in Rion-des-Landes, France, measurements were taken and dimensions were recorded. The solution then combined the existing technology with new technology: the team carried out several modifications to the existing burning chamber. The latest combination burner was installed. Both solutions together provided a convincing result. The burning of dust was optimized and the gas consumption was reduced to almost zero!

Another detail: the dryer was equipped with a cascading temperature control – a standard feature in Büttner dryers. Furthermore, the Büttner team implemented necessary modifications to the existing control. "Through this, the different operating conditions of the dryer were improved, variations were reduced, leading to an altogether better operation," explains Carsten Otto, Büttner sales manager for Europe, Turkey and the CIS. "A new burner and the upgrading of the control – both measures together guarantee our customer stable dryer operation and, more importantly, a considerable improvement of emissions." These upgrades were successfully completed for EGGER at the end of 2008.

A new particle dryer, adjusted to a larger press capacity

In the spring of 2008, Büttner also received from EGGER an order for a completely new particle dryer. This dryer was ordered to adjust the total drying capacity of the plant to the capacity of the new Siempelkamp press.

For Rion-de-Landes, EGGER ordered a single path drum dryer type NH with a flash tube predryer. This model has the same design as the Büttner systems that were built and started up for the EGGER locations in Hexham (Great Britain) and Radauti (Rumania). This order included an almost complete delivery of the dryer as well as the complete installation and start-up.

The dryer is heated with hot gas from a newly installed energy plant. The existing furnace burns wood and production waste. The Büttner dryer uses the flue gases from the energy plant as basic load for the drying process. The fine tuning of the dryer is carried out via a small dust burner. The scheduled start-up of this equipment is summer 2009.



The Büttner dryer for EGGER Rion

Siempelkamp Nuclear Services Inc.:

A strong partner for the American power companies

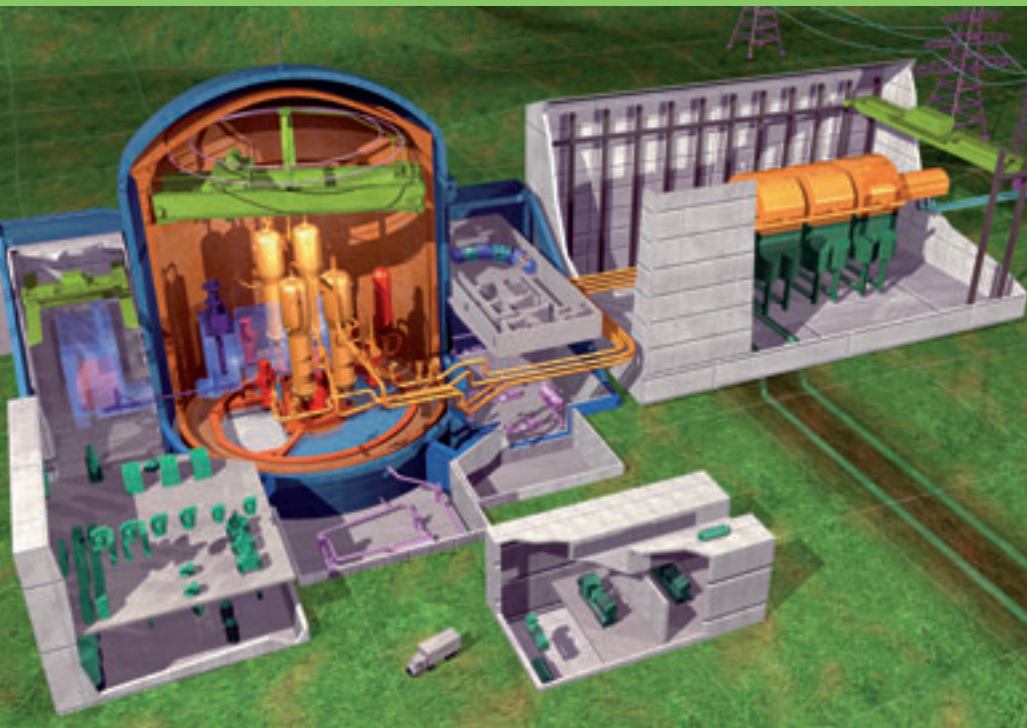
By Christian Jurianz

The generation of power with nuclear power plants is experiencing a worldwide renaissance. Countries such as Finland, China, Russia, Great Britain, France and the USA already count on nuclear power and will become important markets for this technology in the future. Poland, the United Arab Emirates, and Italy will increasingly secure their energy demand with this type of CO₂- free power generation. Siempelkamp Nukleartechnik GmbH provides far-reaching support in the area of nuclear power. With the recent takeover of the American MOTA Inc., the company is making an important step towards internationalization.

The Siempelkamp Nuclear Technology business unit supplies customers with products and services for the secure operation of nuclear facilities. With our highly qualified and experienced engineers as well as project managers we are well-equipped to meet upcoming tasks. High quality and field-proven technology contribute their part as well.

Components and equipment around the reactor are a core competence of our business. Furthermore, we are setting milestones in extending the service life of nuclear power plants. Our analyses, calculations and retrofittings do their part in contributing to a longer service life. Last but not least, several different decommissioning projects are pending in order to create room for new plant installations at certain locations.

The portfolio of the Siempelkamp Nuclear Technology business unit is setting its course to the US-American market. In order to meet the above mentioned market demands, we expanded our capacities by acquiring MOTA Inc. in South Carolina in February 2009. On April 6, 2009 the company was renamed as Siempelkamp Nuclear Services. A total of 20 engineers, technicians, design engineers, and project managers provide the new basis in successfully establishing Siempelkamp in the US-American market. This is a challenging objective because the construction of new power plants in the USA is one of the



Cross section of the new reactor type EPR and components (European Pressurized Reactor)
(Source: AREVA)



(From left to right):
 Refueling machine for new built reactors
 Dismantling – core support shield
 SNS building in West Columbia

most ambitious programs in the world. Six new nuclear power plants alone are planned to be built close to the location of Siempelkamp Nuclear Services. The expertise of our new American colleagues will be applied in these new projects:

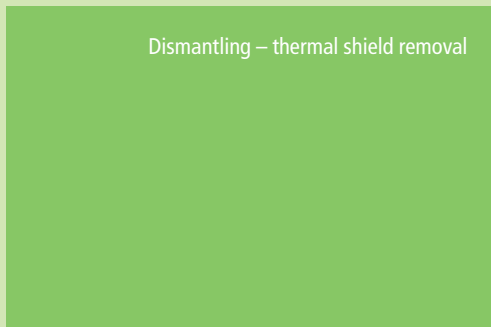
“These employees are the most experienced specialists in the dismantling and disassembling of nuclear reactor internals worldwide. Their richness of ideas paired with down-to-earth constructions for the disassembly tools to be applied and absolute reliability are the guarantee for our previous and future success,” specifies Christian Jurianz, Vice President Marketing/Sales of Siempelkamp Nukleartechnik GmbH.

In addition to already existing dismantling references for nuclear facilities in Germany, Siempelkamp Nuclear Technology will position itself from now on as one of the strongest international providers in this area: “Their good reputation and the existing know-how of our American Siempelkamp employees puts us in the position to provide services and engineering such as studies, design services and calculations to our US-American customers. The permanent presence of our American colleagues with their profound knowledge

of technical rules and standards, the market and customer conventions in the USA will help the name Siempelkamp to penetrate very quickly into its target group. In the process we are offering the entire nuclear product portfolio of Siempelkamp Nuclear Technology in the USA,” says Christian Jurianz.

This significant step towards internationalization is a current milestone. Future

conjoint projects of all companies that are part of the Siempelkamp Nuclear Technology business unit will set further milestones. In this respect we are focusing on the demands of our customers for the local handling of projects, efficient project management, high reliability and high-quality technology. This goes for the areas of dismantling, service and retrofittings as well as for the supply of equipment for the construction of new nuclear power plants.



(From left to right):
 Dan Reese, Chief Financial Officer, Nuclear Technology US and Siempelkamp Nuclear Services,
 John Mageski, President, Siempelkamp Nuclear Technology US and Siempelkamp Nuclear Services

Siempelkamp has been present in North America for over 50 years:

Innovative machines for new processes and products

By Ralf Griesche

In the context of Siempelkamp's activities to promote international business, North America and the USA have played an important role for many decades. Because our trend-setting concepts support large American customers in setting benchmarks, many of our innovations have been placed in these markets. The USA/North American part of our business plays a significant role in Siempelkamp's global concept. It provides a clear representation of several exciting decades of shared history.



Roddi's Plant, plywood press from 1939



Plywood press with loader and unloader unit

Success with plywood

Already in the 1920s the first foundations for the business relations between the USA and Siempelkamp were laid. Back then exports were becoming increasingly important; promising markets such as the USA, but also South America, Eastern Europe and the Soviet Union, were opened up. In keeping with the high demand in presses and machines, which were requested from Siempelkamp by the plywood industry, the first press for the US American market was a plywood press which was delivered in 1936.

Almost all well-known plywood plants in Europe were already operating with presses from Siempelkamp before World War II. Their success was based on two factors: on the one hand the polished steel hotplatens, and on the other the close cooperation with the customers. Over many decades Siempelkamp secured itself a top position in the plywood press industry against strong competition. Following the sale of the first plywood press with an integrated automated loading and unloading system, Siempelkamp continued its success story on the American market in the 70s. From this point on the company set itself apart from

the competition. The innovative plywood press technology triggered a high demand; plywood presses from Krefeld became a fast seller!

Siempelkamp receives its own representation: growing markets, growing progress

At the beginning of the 50s, Siempelkamp contracted the Pathex company in Toronto, Canada, with the representation of its business for laminating and veneer presses as well as metal forming presses. In the following years Siempelkamp had tremendous success selling different metal forming presses to Canadian Steel or AVRO, laminating presses to Formica and presses for conveyor belts to Dunlop and Goodyear, to name a few examples.

The increasing presence of Siempelkamp technology in the USA made a company-owned branch office necessary in order to be close to the customers. At the beginning of the 60s Siempelkamp was represented by Wilco, an agency for wood-processing machines in Memphis, Tennessee. Later this representation led to Siempelkamp's own branch office. With former Wilco employee Ed Steck as president, this office performed important pioneering work in the US market which considerably advanced Siempelkamp's USA/North American business activities. Ed Steck was replaced with Heinz Roth, who took over the management of the office at the end of the 60s. Mr. Roth strongly accelerated the sale of particleboard plants.

Particleboard plants – from 4' to 8' presses

In the 50s Siempelkamp set priorities in the USA by introducing the new particleboard technology by Novopan. In 1952 Siempelkamp supplied the first press for the production of particleboard to the US Plywood Corporation, which was operating according to the Novopan process. This process was developed by Fred Fahrni of Switzerland. Before and during World War



Rubber pad press for AVRO, Canada, during operation

II Fahrni was looking for ways to produce high-quality particleboard with a low weight but high transverse strength. The Novopan board became a breakthrough for the entire wood-based products industry. This board was made up of three layers and had a raw density of 600 kg/m³. In 1948 Siempelkamp obtained a license from Fahrni for the supply of particleboard press lines operating according to the Novopan

process. Only one plant per country was given a license to use this process. In the USA this license went to the US Plywood Corporation which secured this market advantage for its location in Redding, California, and used the process under the name of Novoply. Little by little the company equipped its production plants with a total of seven correspondent Siempelkamp press lines.

Particleboard press with loader and unloader unit



Wir liefern komplette
PRESSANLAGEN FÜR SPANPLATTEN
 mit Fein- und Hartpressen und mit vollautomatisierten Ein- und
 Auslaufeinrichtungen sowie vollständigen Förderanlagen für Platten
 und Breitenbänder.
 Die Schweizer Spanplattenindustrie arbeitet mit Siempelkamp Anlagen.



Largest particleboard press of its time for Roseburg Lumber in 1969

Growth and progress prevailed in the following years across the continents. "Think big" became an important motto in the scope of Siempelkamp's collaborations with American customers, from which customers and markets profited. In 1969 the company supplied what was then the world's largest press line for particleboard to Roseburg Lumber in Oregon, one of the largest private wood processors in the United States. Adjusted to the US American standard dimension for furniture, all presses were designed with a width of 4'. With the 8' belt line, i.e. twice that width, Siempelkamp supplied an absolute benchmark concept which opened up an enormous capacity extension. A daily board output of 1,600 cubic metres was no longer a vision from the future! The order for Roseburg Lumber was the first in a series of orders for 8' presses which Siempelkamp implemented. The order was also trend-setting for the new standard board dimension for plants operating in the USA.

A year after the first Novopan plant for the production of plywood was sold in the USA, Siempelkamp placed its first press for the production of wet process hardboard in the

US market. Other presses followed, some of which are still operating today as can be seen in the picture.

MDF – and the country kitchen comes to life...

In 1969 another new press was introduced in the USA. Siempelkamp delivered the first press line with fibre mat forming machines and a finishing line for an MDF plant in the USA to Bassett Furniture, Virginia. At that time this company was 60 years old and its philosophy had been to produce inexpensive quality furniture. MDF, the wood-based product of the future, met the demands of the industry. Siempelkamp opened up a new future market with press lines for the production of MDF.

Early on, Dieter Siempelkamp recognised the advantages of this new material which was developed in the USA: "MDF boards were especially well-suited for furniture production. This material could be cut easily and thus, it could be shaped according to the needs of the designer. Furthermore, it suited the taste of the time because smooth MDF surfaces were perfect for surface finishing. For American households, MDF

was the ideal material which we successfully established in cooperation with our customers in the USA and North America," describes Dieter Siempelkamp, who decisively advanced the internationalisation of the company during these years.

In 1973 Siempelkamp made an important strategic decision by moving the representative office from Memphis to Marietta, Georgia. Two reasons were decisive for this move: the distance to Atlanta was a logistic



One of the first MDF plants for forest-fiber, Oregon

Masonite press for the production of wet process hardboard





Jimmy Carter, Governor of Georgia, USA, welcomes Dieter Siempelkamp

Panelboard in Bemidji, Minnesota. More or less square-shaped flakes with a side length of 20 to 40 mm were processed. This material was used to manufacture building boards for a broad application spectrum, for example, veneering, cladding, partition walls, and other interior structural applications.

Because Siempelkamp had extended and bundled the in-house expertise to meet market demands, the company was prepared when OSB was introduced to the market in 1979. Siempelkamp reacted with well-directed investments in this new product which was developed in North America: For the production of OSB, special mat forming machines were required which were able to spread strands with different orientations into a 3-layered mat. These forming machines were developed by Siempelkamp in the in-house research and development centre.

In 1980 Siempelkamp delivered the first OSB press line to Weyerhaeuser in Grayling, Michigan. The family-owned company ordered a 16-daylight press with a mat forming station for surface and core layers.

In 1986 and 1987 respectively Siempelkamp placed another innovation. Two steam injection presses, one for particleboard and one for MDF production, enabled our customer Weyerhaeuser to produce thick boards with short lengths without losing quality. A bigger concept was developed in 1990: MacMillan Bloedel decided for the steam injection concept, made by Siempelkamp, for the production of structural beam products. For the timberstrand line of this customer, processing longer strands than those for OSB, we developed the PSL (Parallel Strand Lumber) 300 concept. This concept allows the processing of strands 300 mm long. The concept was preceded by extensive test runs in Krefeld. Dried strands were sent to Germany via air freight in order to test the transverse strength at the Siempelkamp testing area.

advantage on the one hand because the state capital of Georgia played an important role as trans-shipment centre for spare parts supply. On the other hand, Georgia-Pacific, then Siempelkamp's largest customer, was headquartered in Atlanta. A move brought Siempelkamp closer to the customer. Jimmy Carter, later president of the United States, welcomed, as governor of Georgia, the new branch office as an enhancement to Atlanta's economic profile.

OSB: a product for North America

Before the development of OSB would lead to another success story regarding our activities on the American market; another milestone was reached in the 1970s. In 1979 Siempelkamp established the first complete waferboard plant at Northwood



OSB core layer forming tests at Siempelkamp



OSB line for Weyerhaeuser, 1982



8 x 24 ft OSB press with 16 daylights for Norbord, Cordele, 2006



(second from right) Harry Merlo is convinced of the ContiRoll® concept



Largest multi-daylight press (12 x 34 ft) for Canfor LP, Canada



2004, longest ContiRoll® press for Huber, Oklahoma, USA, Length: 60 m

The USA discovers the ContiRoll

In 1985 Siempelkamp developed its new reference product, the ContiRoll® press. One of the first customers interested in this new product was Louisiana Pacific – the new concept was convincing from the word go and we immediately received 5 orders from this customer. The prototype for an MDF plant went to the company's location in Oroville, California; the second ContiRoll®, and the first of its kind for OSB production, was supplied to Louisiana Pacific's location in New Waverly, Texas. Three more ContiRolls® for the Clayton, Alabama (MDF), the Urania, Louisiana (MDF), and the Missoula, Montana (particleboard), locations completed the order for this customer in 1985.

To date the 8.5' x 70m ContiRoll® at Tolko (Canada) is the world's longest ContiRoll® press and one of our reference projects. This press including dryers and finishing line was successfully put into operation in 2007.

As far as OSB is concerned, Siempelkamp developed a steam pre-heater, which results in the mat heating up more quickly before entering the press. In 1996 Siempelkamp supplied the first such pre-heater to J.M. Huber Corporation in Spring City, Tennessee, within the scope of a complete OSB press line

The Siempelkamp branch office today

Siempelkamp's North American branch office, managed by the two vice presidents Dirk Koltze and Joachim Meier, employs a total of 12 people. This team contributes to placing high-performance products in the US and Canadian markets. The North American market has a very high plant density. This is due to a sales history of many years and just as many long-standing customer contacts. Looking back, the biggest success in sales includes not only the largest ContiRoll® press for Tolko, but also a 12' wide press which was designed for Canfor LP. With dimensions of 12' x 34'

and 12 daylight, this press represents the largest OSB multi-daylight press which Siempelkamp has supplied to North America. A 16-daylight press for Norbord is also worth mentioning. This press is part of the tenth OSB line for this customer. Here, Siempelkamp proved its expertise in terms of ramp-up times. The line achieved 90% of its full capacity only three months after the first board was produced.

In the area of service, the branch office in North America also plays an important role for Siempelkamp: "Currently, we are focusing our activities on expanding our service capacities and improving our service quality. We see a large potential in adjusting existing plants to the current market conditions, which include the increasing costs for wood, changing wood compositions, and rising energy costs. Siempelkamp will continue to provide custom solutions which will meet customer needs in the future," say Dirk Koltze and Joachim Meier.



Joachim Meier (standing) and Dirk Koltze, branch office management in Marietta, USA

North America and Siempelkamp: Even more references

Siempelkamp's success story in the US and Canadian markets is based, to a large extent, on the milestones set in the wood-based products industry. However, there are several more success stories from other industry sectors.



Rubber pad press for McDonnell Douglas

In 1976 Siempelkamp built a 22-daylight press for the well-known manufacturer of decor-finished laminates Formica Corp.



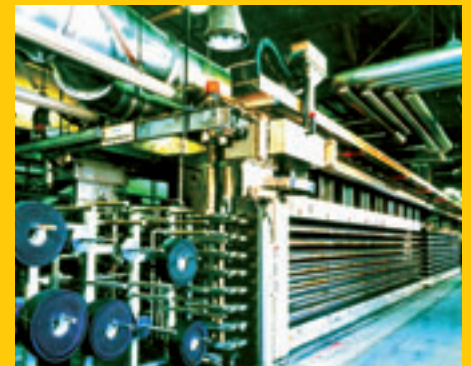
Internal, high-pressure forming press for Tower

Metal forming presses for different industry sectors were sold and installed in large numbers soon after World War II. Hydroforming presses were supplied and put into operation at Magna and Tower, rubber pad presses at McDonnell Douglas and Boeing, closed-die forging presses at Alcoa and coupling spindle presses at Snap-On-Tools Corp. Many of these presses are still operating today.



Sandwich board plant for Boeing

For the aerospace company Boeing, Siempelkamp supplied a press for sandwich boards in 1993. This press produces many different types of sandwich boards which are characterised by enormous rigidity and an optimal ratio between weight and stability.



Rubber press for tire retreads for Oliver Rubber

In 1999 Oliver Rubber, headquartered in Salisbury, North Carolina, ordered a tyre tread press for the company's plant in Asheboro. This press is an example of Siempelkamp expertise in the area of tyre tread and conveyor belt presses. Top arguments such as longevity, speed, high availability and efficiency have set standards in the USA and across other continents.

Sales results of Siempelkamp in North America after 1950

Siempelkamp has sold a total of 190 press lines to North America since 1950, of which 159 were sold to companies in the USA. The largest share, with a total of 55 press lines, is taken up by the wood industry, followed by 51 metal forming presses and 37 sold laminating presses. Furthermore, we have sold 34 short-cycle presses for the surface finishing of wood-based boards and 20 rubber presses for the production of conveyor belts and tyre retreads.

Trainees in the spotlight: Determined, eager for knowledge – fit for Siempelkamp!

110 trainees are currently laying the foundation for their professional future at Siempelkamp. In 2008 alone, 33 young people started their first year of training. Since the company's beginnings we have believed that young people are important for our company and its continuity. Our motto: "A successful mix of practical experience and theory brings forward a special quality!"

By Dr. Silke Hahn



The Siempelkamp management and contributors to the MiCo-project





The mini ContiRoll® was built by trainees



Siempelkamp trainees become quickly aware that careers in the metal industry or in mechanical engineering are anything but boring. Whether it is in a commercial, technical or industrial training field, new occupations are constantly added to our broad educational programme. Traditional job descriptions are permanently updated. We believe an international company with products that are world market leaders needs to offer the type of training that is always a step ahead.

To broaden one's horizon

In order to present trainees with a complete picture of the company's operations, Siempelkamp focuses on an interdivisional exchange of trainees from design, administration and production. All newcomers complete an introductory basic course at the training workshop irrespective of their training's focus. This promotes the understanding of metal, our basic raw material, even in those trainees who later will only deal with the material from their desks.

Additionally, in 2008 we started a cross-department project by the name of 'Mini-ContiRoll®' (see *trainee interviews*). Trainees from all departments are working together in a virtual company and have already produced a true-to-scale model of the ContiRoll®. Project 'Mini-ContiRoll®' allows trainees to put their newly learned skills into practice and to experience other occupational fields at Siempelkamp.

Training combinations

In addition to the vocational training as Industrial Business Management Assistant, we also offer a Bachelor of Arts in Business Administration that can be completed together with the vocational training. In 2008 three of our six trainees decided to start this programme of studies alongside their apprenticeship. We also offer training combinations for design draftsmen. This programme can be supplemented by cooperative engineering studies. Two of our three trainees are going to avail of this opportunity. The benefit for trainees who opt for educational combinations includes: financial support and versatile qualifications with future prospects. Siempelkamp benefits from welltrained young professionals with a close tie to the company.

Excellent!

Personnel development to such an extent has gained Siempelkamp the recognition of the region. The chamber of commerce and industry of the Lower Rhine region recognized Siempelkamp as the "Best Apprenticing Company 2008". At the same time several trainees received awards from the chamber of commerce and industry for being the best in their age group.

Our conclusion: Times are changing and with them the demands of the job market. We keep pace with these changing trends by offering innovative and integrated training strategies. The ability to work in a team, a sense of responsibility, determination, and reliability remain the core

values on which our educational programmes are based. This also concerns the welfare of our customers who may benefit from the education of our trainees in tomorrow's world.

Apprenticed professions at Siempelkamp: Many choices

Machinery and plants engineering:

- Electronic technician for automation technology (new!)
- Metal cutting operator
- Bachelor of Arts (Business Administration)
- Industrial business management assistant
- Industrial mechanic
- Construction mechanic
- Mechatronics technician

Foundry:

- Casting operators/
Specialization: hand-formed casting
- Industrial business management assistant
- Pattern making technician/
Specialization: foundry pattern making

Nuclear Technology:

- Metal cutting operator
- Industrial business management assistant



Three trainees, three exciting profiles:

Interview with Siempelkamp trainees

How do Siempelkamp trainees see the company? What prospects do they associate with their career start at the Krefeld location? Three trainees talk about their career start, first impressions and expectations – each one is a representative from the following occupational fields: commercial, technical and industrial.

What high school education do you have and what were your future professional goals then?

Kristina Lehnhoff: I finished German high school (Gymnasium) after the first half of the 13th grade. After completion of my apprenticeship I will have a technical diploma. Back in high school my professional goals went in two very different directions. I either wanted to become a physical therapist or a cutting machine operator. The latter is my father's profession. He often took me with him to his shop when I was child. By doing so, he aroused my interest in this profession.

Xenia Sell: After attending 10 years of German high school (Realschule) I continued my education at a commercial high school which I completed with a business diploma. In this respect, my high school education had already initiated my desire to work in a commercial field.

Stanislav Klein: I finished German high school (Gesamtschule) with a general qualification for university entrance. Even then I was interested in technical fields. That is why I decided to look for prospects within the scope of vocational training or academic studies.

What brought you to Siempelkamp?

Xenia Sell: While doing some research on the Internet I read up on the cooperative education system which combines practical training with academic studies. I was interested in this system. After some more research I had several "hits", i.e. I found companies which offer this type of cooperative education. Siempelkamp was one of these companies. I was impressed by Siempelkamp's internationality, especially by the fact that the company website was also available in Russian. I am originally from Siberia and thought this reference was great. After application, employment test, and interview I received the acceptance of two companies. I decided for Siempelkamp mainly because I liked the company atmosphere so much.



Name: Kristina Lehnhoff

Age: 23 years old

Training: cutting machine operator – first female trainee in the industrial occupational field at Siempelkamp!

Start of training at Siempelkamp: September 2006

Stanislav Klein: It was a similar process for me. I researched the Internet for companies that offer a cooperative engineering education. Siempelkamp was one of them. I applied and received an apprenticeship training position.

Kristina Lehnhoff: After I had decided that I wanted to become a cutting machine operator, I applied at Siempelkamp because the company is big and provides numerous prospects. After I had completed all aptitude tests, I received an apprenticeship training position.

What does your apprenticeship entail?

Stanislav Klein: Altogether my education – the cooperative engineering education – will take 4 years. For the first 2 years I will spend three days a week in practical training and two days with academic studies. These first 2 years are completed with the chamber of commerce and industry's examination for design draftsman. Afterwards, I will complete 2 years of full-time studies including an internship and the bachelor thesis. My programme of studies includes product planning, calculations, contacts to sub-suppliers and price comparisons – all topics dealing with the new and further development of products.

Xenia Sell: My cooperative education consists of 2 years of vocational training to become an industrial business management assistant and is complemented by 3 years of academic studies at the Hessian University of Cooperative Education in Essen. One day a week I receive training in preparation for the chamber of commerce and industry's examination for industrial business management assistant. In addition I am attending classes at the Hessian University of Cooperative Education in Essen on an average of three days a week. This programme of studies will be completed with a Bachelor of Arts. This cooperative system saves a lot of time. Many apprentices complete their apprenticeship complemented by academic studies by the age of 23.

ees



Name: Stanislav Klein
Age: 23 years old
Training: cooperative engineering education, specialization in mechanical engineering. 2-year training as design draftsman plus academic studies at the Niederrhein University of Applied Sciences in Krefeld – possibly followed by 2 years of full time studies with the goal of earning a degree as a mechanical engineer (BA)
Start of training at Siempelkamp: September 2007

Kristina Lehnhoff: The training as cutting machine operator looks like this: during the basic training course 'Metal' we learn how to drill, file, counterbore and grind. This course is followed by the basic training courses 'Turning' and 'Milling'. In addition to the 'Introduction to Production' (small series production at the training shop), 'CNC turning' and 'CNC milling' are also part of the curriculum. After the first part of the final examination I will work in several shop areas including the tool shop, marking shop, turning shop, and milling shop, in order to determine my future shop area.

What is the current status of your education?

Kristina Lehnhoff: The normal training period is 3.5 years. In my case this period has been shortened. Therefore, I will have my final examination in summer 2009. Currently, I am spending two days a week in the turning shop, one day in metal working class and two days a week in vocational training.

Xenia Sell: I am just before my final examination for industrial business management assistant! Since February 2009 I have been involved in Siempelkamp project management and will soon contribute to projects in Russia, Belarus and the Ukraine. Furthermore, I am the commercial manager of MiCo, our apprenticeship project. This project involves a miniature company that is exclusively managed by trainees. The participants learn a lot about Siempelkamp's different fields of activity and gain exciting insight into areas that we usually have little to do with.

Stanislav Klein: I am also right before the chamber of commerce and industry's final examination for my field of training. This exam will take place in June 2009. Just like Xenia Sell, I am actively involved, as the manager for production, in the apprenticeship project "MiCo Maschinenbau GmbH & Co. KG". Just as in real-life companies, we calculate, plan and draft. One of our projects was completed with the development and construction of a miniature ContiRoll® press.



Name: Xenia Sell
Age: 22 years old
Training: 2 years of training as an industrial business management assistant, complemented with a 3-year programme of studies at the Hessian University of Cooperative Education in Essen, Germany – prospective business management graduate / Bachelor of Arts
Start of training at Siempelkamp: September 2007

What overall impression do you have of the company?

Kristina Lehnhoff: As a female trainee in a typical male profession, I have noticed that Siempelkamp practices gender equality. The stereotype that skilled manual jobs are male professions does not exist here. Sure, in the beginning there were a few amazed looks but due to the fact that I show interest in my future profession and because I am totally committed to it, I am treated with respect and courtesy.

Xenia Sell: I agree. I know I am receiving very good training. Through my involvement in Eastern European projects I have a great opportunity to move at an international level.

Stanislav Klein: During my first tour of the Siempelkamp "skyscraper", I was impressed with the size of the company. After my first few weeks here I had the impression that the staff is very nice and would do anything to help an apprentice.

How will you proceed from here?

Stanislav Klein: After the chamber of commerce and industry's examination I will focus all my energy on my full-time studies. I will possibly study another two years at the Niederrhein University of Applied Sciences with the goal of obtaining a 'Master of Engineering' degree. The training at Siempelkamp complemented with an academic programme of studies is a great opportunity to receive a well-grounded professional education.

Xenia Sell: I am excited about and looking forward to all the experience and insights I will gain during the next months of working in the project management area. After the final examination of my training, another milestone will be the completion of my academic studies in August 2010. I would like to stay with Siempelkamp and I am very excited about what lies ahead!

Kristina Lehnhoff: I am very happy to already know that after my training I will stay with Siempelkamp! As soon as I have finished my training, I will work as the first female turner in Siempelkamp's turning shop!

Ms. Lehnhoff, Ms. Sell and Mr. Klein, we thank you for this interesting interview and wish you success and good luck for your future!

Wind power on RoundTracks®:

From assembly stations to flow production

By Derek Clark

The production of Rexroth gearboxes for wind turbines in Bosch Rexroth's Witten plant is based on STROTHMANN's RoundTrack® technology. The innovative floor transport system allows for assembly line-style operation: when one assembly cycle is finished, the gearboxes, which are mounted on platforms, proceed to the next station. Lothar Sossdorf, one of the engineering managers responsible for reorganising the production line, gave us a look behind the scenes and explained how profoundly the changeover to flow production affected production processes.

Many wind turbines are based on Rexroth's expertise. The company exports its gearboxes internationally, and is currently expanding its capacities through new production sites: a plant in Beijing, for instance, has been supplying the Asian market since September 2008, and a new plant in Nuremberg will be put into operation this year. In order to produce greater quantities, the company decided to optimise production processes at the main plant in Witten by means of a changeover to a flow production type similar to an assembly line. "In machine building applications, an assembly line can be implemented through manual line production. The only difference compared with assembly line operation is that workers in an assembly line finish no more than three screws in one step, while a production line has bigger

work units and employees may have assembly times as long as several hours", explains Lothar Sossdorf, head of production system design.

Bartering tools and "stealing" components

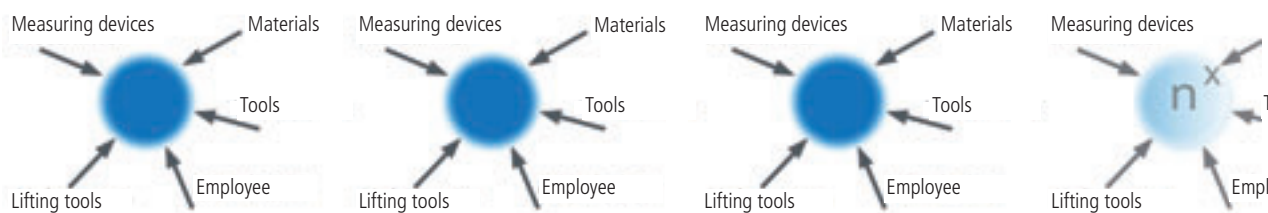
The changeover from conventional box assembly to flow production profoundly shook up production processes. Up to now, gearboxes were assembled in a box. In this so-called 'cluster assembly', employees had their materials, tools and measuring and lifting systems at one assembly station. If a tool was missing, the worker would go to another box to get it from there. In order to increase the production output in this system, the box assembly would have to be considerably expanded. An example: with a yearly output of 100 gearboxes, two

gearboxes, which would take up three stations, would have to leave the plant every week. 30 stations would be necessary for a yearly output of 1,000 gearboxes. "That would cause a problem with our available space", says Sossdorf. Therefore, the company came to the conclusion that cycle times had to be minimized and material logistics needed to be reorganized.

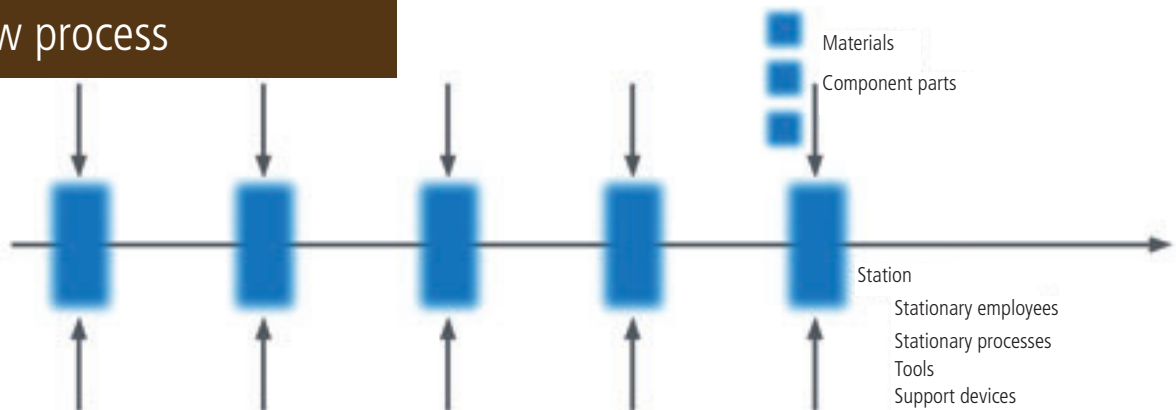
Well-defined work steps create transparency and enable know-how transfer

In order to implement the new production line, the company needed to define the required work steps for the gearbox production. Logistics were specified as a second step. The newly defined work and logistics processes, which were established by dedicated staff, create transparent work

Assembly stations



Flow process



Graphic illustration of the assembly stations (previously) and the new flow process production (afterwards)

steps, logistics and material flow, thus enabling the company to duplicate the concept for other plants. "The RoundTrack® merely serves as the vehicle for production. More importantly, we had to mentally face the changeover to flow production", says Sossdorf. "The machines now come to the employees who can fully concentrate on their tasks", explains Derek Clark, head of

sales and marketing at STROTHMANN. After completing the work step within the cycle time, the gearboxes are transported to the next station on platforms which rest on four consoles in their idle state. "Since the tasks are more manageable now, some employees notice room for improvements within their task areas, e.g. that tools should be located closer to the station",

says Sossdorf. The results of single work steps are optimized, which benefits the workers who feel responsible for quality. A further advantage for the company is that know-how is not specific to individual workers: if, for instance, employees call in sick, a colleague can take their place thanks to the transparent work steps.



The gearboxes are moved on transport platforms on the RoundTrack® floor rail system from station to station.

First place in the transport system category:
RoundTrack® from STROTHMANN

“After deciding to switch to flow production, we carried out a cost-benefit analysis, comparing suppliers who might technologically implement our idea. Rejecting air

cushion and wheel-based transport methods, we chose the RoundTrack® which proved superior to the alternatives in all respects”, says Sossdorf. Since the narrow tracks are laid in the hall floor without any grooves, and protrude only 3 or 4.5 millimeters from the ground, the surface loads are smaller



The gearboxes from Bosch Rexroth on a transport platform from STROTHMANN.

“We can now tweak the whole system”

It took just under one year from the idea for the new transport system until the first components left the production line. “For the commissioning of the new system, we aimed for the same output as before the implementation of the new production line.” It was worth the effort: the flow production enabled the company to discover errors and faulty processes. The newly defined works steps and material handling logistics are the basis for all further improvements. “All of a sudden, we could tweak the whole system, correct errors, optimize processes and thus increase quality and efficiency. It was all about creating completely new processes”, says Sossdorf. The new transport system gives the Witten plant a great competitive advantage, because the analysis of all processes has created new know-how. The competitive edge over the company's rivals cannot simply be copied. “Even if we were to disclose all defined production processes, competitors would still have to analyze their own work steps.”

than in wheel-based transport methods. Transportation with air cushion vehicles can cause problems with brakes and cleanliness, which do not occur in RoundTrack® systems. The round upper edge of the rail protrudes only a few millimeters from the ground, allowing persons or vehicles to pass over the

tracks without any risk of accident. The floor rail system also includes trolleys with ball bearing rollers, whose “gothic arch” – shaped profile ensures that contact with the rails is limited to two small surface areas, thus ensuring smooth running, minimal rolling friction and excellent wear resistance.

The gearboxes are the core components for wind power plants.



Siempelkamp Energy Systems (SES):

Modification concepts for existing energy plants

Energy-saving technologies are in high demand – on the one hand due to a scarcity of fossil fuels, and on the other due to the fact that the financial crisis and its aftermath set boundaries on company budgets. The goal for energy generation is to minimize losses by making the desired net energy available at the least possible primary energy input. The upgrading concepts of Siempelkamp Energy Systems support operators with existing energy systems in their endeavour to operate efficiently.

By Ines Veckenstedt

Another reason for economical energy use is the worldwide deterioration of ecological conditions. In 2007 the climate report of the Intergovernmental Panel on Climate Change stated a clear global warming. The temperature increase of the last 50 years was already twice as high as the temperature increase of the preceding 100 years. 11 of the previous 12 years were the warmest since records began. The main cause of the global warming is the greenhouse gas carbon dioxide (CO₂), which results from the combustion of fossil fuels. From 1750 to 2005 the CO₂ content in the air increased by 35% from 280 ppm to 379 ppm. The combination of climate protection, shortage of resources, and the effects of the financial crisis demand that action be taken by each and every energy plant operator.

To protect the environment and save energy as well as production costs: SES focuses on sustainability

The wood-based products industry is increasingly adjusting to the new demands. "The production of particleboard, MDF and OSB is

an energy-intensive process. If you succeed in saving energy for this process, you will considerably reduce production costs. A replacement of fossil fuels, such as oil and natural gas, with renewable resources will also contribute considerably to climate protection," explains Ines Veckenstedt, managing director of SES in Hanover, Germany.

The realization that it is our responsibility to relieve the environment with energy-saving technologies and to minimize the use of fossil fuels for the benefit of future generations, is now reflected in many customer requests. "For energy plants that we supplied in the last few years, our customers have put increasing priority not only on the technical availability of the systems, but also on factors regarding energy conservation and environmental protection. The control of plant emissions also plays an important role in this respect," says Veckenstedt.

The concept that SES is offering customers is no hasty development due to the current demands: the Siempelkamp subsidiary has long taken an approach to recycle wood waste for energy generation. For this process all waste materials from the production process are used. "Our plants can be fuelled by anything from bark and start-up fibers to sander dust and rejected panels from other industries. This material produces flue gases for the dryer, steam for the refiner or other general heating purposes, and thermal oil for the press," says Dr. Hans-Günther Schwarz, senior sales manager. SES's solid background is based on 20 years of experience and 50 reference plants ranging from 12 MW to 85 MW firing capacity.



Grate furnace



Injection valves for granulates



Dust burner

Energy conservation: What is possible?

Because many older energy plants are not up to the latest technology and do not comply with the above-mentioned demands, SES created a special department at the end of 2008 which is responsible for the servicing and upgrading of energy plants. These services are also offered for energy systems that are not by SES. The potentials of these services are summed up by Burkhard Engeli, service manager: "We are often confronted with the fact that customers are working with oil and gas burners. In order to offer customers an alternative, which will make them independent of fossil fuels, we are replacing these burners with sander dust burners." For materials that are too fine for burning on the grate, but too coarse for the sander dust burner, SES has developed a system for the optimal combustion of fibers, granules and pellets.

More support offered by SES: Although these plants are already burning sander dust, the dosing process in many of these older systems is more or less uncontrolled. The retroactive installation of state-of-the-art sander dust burners allows uniform burning which is controlled across a wide range. The advantage: "In most cases these system modifications can be carried out during the yearly plant shutdowns so that our customers will not lose precious production time," emphasizes Engeli. The Austrian MDF manufacturer Hallein, who considers the environmental factors to play an important role in the production process, has decided to have this modification installed. At the British wood-based products manufacturer Sonae UK Ltd. in Liverpool, SES has already carried out this modification during the company's yearly plant shutdown.

It is important to SES to provide customers with custom-fit solutions for the substitution of fossil fuels with renewable resources. A sample calculation shows how effective these solutions are: "1 kg (bd) of wood waste substitutes approx. 0.45 kg of light-fuel oil and

0.5 m³ of natural gas respectively, which – depending on the market price for fossil fuels – leads to very short payback periods," describes Ines Veckenstedt.

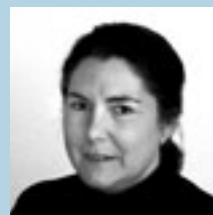
Last but not least, SES services for energy conservation include the control of combustion parameters and their subsequent optimal adjustment. Together with the installation of an oxygen sensor, the combustion efficiency can be considerably increased!

Emission control and environmental protection: The SES potentials

As far as SES's contribution to sustainability is concerned, additional services made in Hanover are available to serve this area. One possibility is to feed cleaned exhaust air from other plant areas for post-combustion into the combustion chamber. There are three other approaches. By recirculating the flue gases, the combustion temperature inside the combustion chamber can be effectively controlled. An optimized urea injection reduces the nitrogen oxide (NOx) emissions to values that comply with the latest requirements for pollution control. For the pre-wetting of dry fuel it is possible to use effluent water from different areas of the plant or to directly inject this water into the combustion chamber.

"According to the particular status quo of each energy plant, we can offer a diverse portfolio for the optimizing of processes and we can effectively bundle services to exactly meet customer needs," says Burkhard Engeli.

(From left to right):
Ines Veckenstedt, Burkhard Engeli, Dr. Hans-Günther Schwarz



Crane specialist E & W Anlagenbau GmbH:

A new company for Siempelkamp Nuclear Technology

What began as a joint project in 2004 led to an even closer business relationship in 2009. Since January 2009 the crane manufacturer E & W Anlagenbau GmbH belongs to Siempelkamp Nukleartechnik GmbH. With this acquisition Siempelkamp's Nuclear Technology business unit is expanding its range of products and services around the reactor.

von Heinrich Kampen

Established in 1987, E & W has developed into a renowned crane specialist for conventional as well as nuclear technology applications under the management of the founder and previous owner Werner Erfeling. Based in Moormerland, close to Leer, East Friesland, the company started as a supplier for standard crane systems with capacities up to 100 t (110 US tons). Meanwhile the business spectrum consists of a diverse portfolio of high-quality technical crane systems including special cranes, lifting beams, and handling equipment. Lifting capacities up to 200 t (220 US tons) and spanning distances up to 45 m (148 ft) are no problem.

Beginning involvement in the area of nuclear technology – cooperation with Siempelkamp Nuclear Technology

E & W's entry into the area of nuclear technology was a modification of a 160 t (176 US tons) gantry crane for the CASTOR® loading station Dannenberg. This project was followed by an order for two 25 t (27.5 US tons) double-girder bridge cranes with adjustable container spreader for Forschungszentrum (research center) Karlsruhe

as well as projects for other customers. The first joint project for E & W and Siempelkamp Nukleartechnik GmbH (SNT) took place in 2004. The Krefeld company commissioned E & W with the supply of two special cranes for their Lungmen project in Taiwan. From then on, SNT utilized the long-time experience of the North German specialist in the area of nuclear plant engineering in projects involving research centers and nuclear power plants in Germany.

The scope of supply for the Taiwanese nuclear power plant included a 2,000 kg (2.2 US tons) double-girder crane with drum grab and a 10,000 kg (11 US tons) double-girder crane with pallet grab. Both cranes are equipped with visualization and camera systems for operation from a control room. This major project, for which E & W received positive feedback from SNT as well as the customer, laid the foundation for further joint projects. Cranes, lifting beams and handling equipment in different designs and with different capacities continue to transport radioactive waste in the drum storage facility at the Lungmen location.

Vollportalkran 40 t x 28,00 m mit Containerspreder für Chemion



Grab für UF₆-Container für Urenco



At the same time SNT started to work even closer with E & W. After the successful acquisition in 2008, E & W has become an official member of the Siempelkamp Group. With this new company, the Nuclear Technology business unit is well prepared to offer complete solutions required by the market.

Future-oriented concentration of knowledge

After the retirement of Werner Erfeling in February 2009, E & W has been managed by Heinrich Kampen as well as Hartmut Poelstra, managing director of NIS Ingenieurgesellschaft GmbH, a Siempelkamp company. The new prospects under Siempelkamp's umbrella are assessed as promising by both sides. "The scope of supply from E & W consisting of cranes for conventional as well as nuclear application areas is very versatile. This opens up synergies in the areas of crane and lifting technologies," says Michael Szukala, managing director Siempelkamp Nukleartechnik GmbH. Heinrich Kampen adds: "By merging our companies we have achieved a future-oriented concentration of knowledge which can keep pace with the developments and needs of the national and international nuclear power market."

E & W's milestones of previous years prove that this concentration is resting on a solid foundation. In 2004 the company supplied a gantry crane with a lifting capacity of 40 t (44 US tons) and a spanning distance of 28 m (92 ft) including a spreader for the handling of tank containers. Because of the high collision risk for containers during the storage process, the safety requirements for crane and crane control are high. This project was completed to the fullest satisfaction of the customer which thereupon ordered a second crane in 2007 almost identical to the first.

A framework gantry crane with an 18 t (20 US tons) lifting capacity and a spanning distance of 35.5 m (116 ft) with a 10 m (33 ft) cantilever on both sides, which is equipped with cabin control and magnet installation for the transport of steel plates, was delivered in 2006 to Schulte & Bruns, a logistic company for Meyer Werft, Papenburg. This crane secures the material supply for manufacturing at Meyer shipyard.

In 2007 E & W manufactured and supplied three double-girder bridge cranes with 25 t (27 US tons) lifting capacities as well as 18 m (59 ft) and 22.5 m (74 ft) spanning distances to the uranium enrichment plant Urenco in Gronau. The order also incorporated special grabs for UF6 containers including different security devices in safety category 3.

Currently a bigger project for Demag Cranes & Components is being completed. The order includes 3 double-girder bridge cranes with lifting capacities up to 130 t (143 US tons) and a spanning distance of 34 m (112 ft).

The latest large order incorporating the supply of 23 cranes to the Finnish nuclear power plant Olkiluoto by order of AREVA confirms the competence of the new Siempelkamp subsidiary (see box).

Company data:

Turnover 2008:	14.7 million euros
Total number of employees and trainees:	56 + 8

History:

1987	Company founded by Werner Erfeling and Dieter Wiepkes
2001	E & W processes the first nuclear order for Forschungszentrum Karlsruhe (research center)
2002	E & W manufactures the first cranes according to German KTA standards (safety-related regulations established by the Nuclear Safety Standards Commission) for Forschungszentrum Karlsruhe
2003	Adoption of a Quality Management System according to ISO 9001:2000
2004	SNT commissions cranes for Lungmen project in Taiwan – our first joint project with SNT E & W accepts an order from AREVA for the delivery of a 90/20 t crane for the Olkiluoto nuclear power plant in Finland (OL 3)
2008	E & W accepts an order from AREVA for the delivery of 22 cranes for the Olkiluoto nuclear power plant in Finland (OL 3)
2008	The company is sold to Siempelkamp Nukleartechnik GmbH
2009	Heinrich Kampen and Hartmut Poelstra are appointed managing directors of E & W Anlagenbau GmbH

Range of services and products:

Services:	<ul style="list-style-type: none"> • Expert acceptance inspections and technical acceptance inspections • Calculation, dimensioning and design of structures and components • Repair work for all crane types and makes • Modifications of cranes • Upgrading and automation of cranes • Assembly and disassembly of all crane types
Engineering and manufacturing of:	<ul style="list-style-type: none"> • Gantry cranes • Single-girder bridge cranes • Double-girder bridge cranes • Suspension cranes • Wall-bracket cranes • Wall and pillar slewing cranes • Load lifting devices like grabs, spreaders and lifting beams
Specialization:	<ul style="list-style-type: none"> • Individual consulting sessions and system solutions for transport tasks of customers in different industry sectors • Engineering and implementation of new tailor-made systems as well as the installation of subsequent crane technology in buildings and containers with limited heights • Complete systems with load lifting devices and storage facilities for product handling • Automation and control concepts



Siempelkamp

G. Siempelkamp GmbH & Co. KG

Machinery and Plants



Siempelkamp

Maschinen- und Anlagenbau

Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG



Siempelkamp

Handling Systeme

Siempelkamp Handling Systeme GmbH



Siempelkamp

Energy Systems

Siempelkamp Energy Systems GmbH



Siempelkamp

Siempelkamp (Wuxi) Machinery Manufacturing Co. Ltd., China



Siempelkamp

Siempelkamp CZ s. r. o.



Büttner Gesellschaft für Trocknungs- und Umwelttechnik mbH



Sicoplan

Engineering

Sicoplan N.V.



Dr. E. Schnitzler

Industrieplanung

Zweigniederlassung
Maschinen- und Anlagenbau



361

ATR Industrie-Elektronik GmbH & Co. KG



STROTHMANN

Machines & Handling

W. Strothmann GmbH



CMC TEXPAN *

CMC S.r.l.

Nuclear Technology



Siempelkamp

Nukleartechnik

Siempelkamp Nukleartechnik GmbH



Siempelkamp

NIS Ingenieurgesellschaft mbH

NIS Ingenieurgesellschaft mbH



Siempelkamp

Tensioning Systems

Siempelkamp Tensioning Systems GmbH



Siempelkamp

Prüf- und Gutachter-Gesellschaft
Siempelkamp Prüf- und Gutachter-Gesellschaft mbH

ANSA

Assistance Nucléaire S.A.



Siempelkamp

MSDG

Siempelkamp MSDG SARL



Siempelkamp

Nuclear Technology UK

Siempelkamp Nuclear Technology UK LTD.



Siempelkamp

Nuclear Technology US

Siempelkamp Nuclear Technology Inc.



Siempelkamp

Nuclear Technology

Siempelkamp Nuclear Services Inc.

Sales companies/Representatives

Australia

Siempelkamp Pty Ltd.

Brazil

Siempelkamp do Brasil Ltda.

Canada

Siempelkamp Canada Inc.

China

Siempelkamp (Wuxi) Machinery Manufacturing Ltd., Beijing

France

Siempelkamp France Sarl

Italy

Siempelkamp S.r.l.

Russia

Siempelkamp Moscow

Singapore

Siempelkamp Pte Ltd.

Spain

Siempelkamp Barcelona

USA

Siempelkamp L.P.

Foundry



Siempelkamp

Giesserei

Siempelkamp Giesserei GmbH



Siempelkamp

Giesserei Service

Siempelkamp Giesserei Service GmbH

G. Siempelkamp GmbH & Co. KG

Siempelkampstrasse 75 47803 Krefeld Germany

Phone: +49 (0) 2151/92-30 Fax: +49 (0) 2151/92-5604

www.siempelkamp.com

* Minority shareholding