



Siempelkamp

Issue 02 | 2010

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bulletin

The Siempelkamp Magazine

PEOPLE | MARKETS | MACHINES



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

Dear Readers:

"Whether a permanent and sustained upward business trend is realistic, is still open," was a statement we made at this point in our last Bulletin. Despite a successful beginning of 2010, we did not want to get carried away with early forecasts. After all, even Churchill knew: "It is always wise to look ahead, but difficult to look further than you can see."

In the summer it was still unknown whether the positive trend on the world markets would develop into stable business success for our company. Meanwhile we can say: With 22 continuous presses sold in the first nine months of 2010, our business division Machinery and Plant Engineering has had the highest number of orders since years! 2007 and 2008 were strong business years, the demand in 2010, however, has surpassed both years.

Siempelkamp's Foundry and Nuclear Technology business divisions have also had an extraordinary business year. New and improved products as well as the sustainable expansion of our location and an enlargement of our competences have made our services interesting to an increasing number of new and existing international customers.

We thank you for choosing Siempelkamp in 2010 for so many new and ambitious projects. Whether it is in Europe, Eastern Europe, Asia or South America: You, our customers, have specifically put your trust in Siempelkamp products in 2010 to help realize your ambitions for market success.

We look forward to exciting reports in future Bulletins about the numerous new locations and plants for which the foundations were set this year!

With kind regards from Krefeld,

A handwritten signature in blue ink, appearing to read 'H. Fechner', written in a cursive style.

Dr.-Ing. Hans W. Fechner

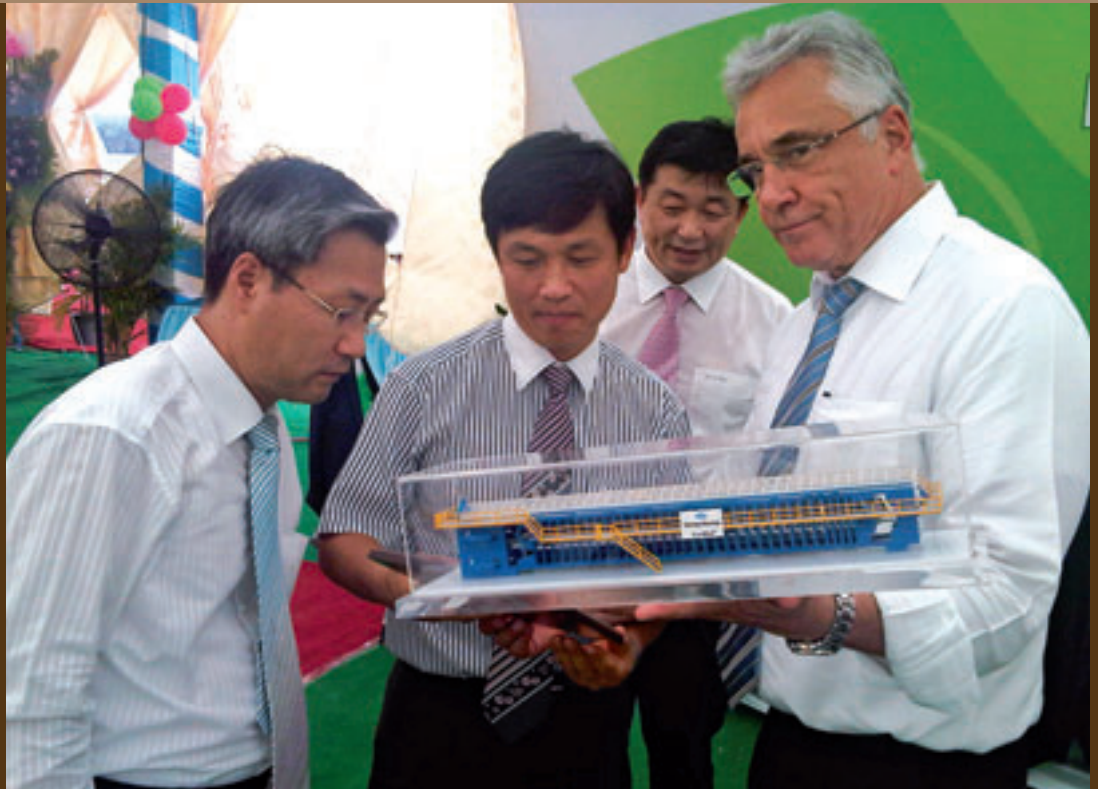
High demand from the wood-based materials industry: Siempelkamp sells 22 plants in nine months

Nine months into 2010, Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG states "Our plants are in demand". With 22 new orders for wood-based material production plants in nine months, the Krefeld market leader for continuous presses for the wood-based materials industry continues the successful trend from the previous year. Asia, Eastern Europe, and South America have been the top three consumer markets responsible for this demand.

By Ralf Griesche



Handover of a ContiRoll® model during the laying of the foundation stone for VRG DongWha



Asia, the driving force of the global economy in 2010, has been the main purchaser of Siempelkamp products during the first three quarters of the year. China alone, spurred on by a high domestic demand and a gigantic urbanization process, ordered eight (8) press lines during this time frame.

With the 4' models of the continuous ContiRoll® press, Siempelkamp secured important competitive advantages. With numerous benefits the smaller press model, which was introduced in 2007, meets the special requirements of Chinese plant operators (see page 52). Excellent machine quality and high productivity at a reasonable price have convinced eight customers thus far in 2010: Gulin, Jianfeng, Dong Zheng I and II, Yichang, Aosheng and Jiangsu Senmao in China as well as May Forestry in Vietnam. 4' x 33.8 m and 4' x 38.7 m ContiRoll® presses ensure these manufacturers yearly capacities of 115,000 and 130,000 m³ of MDF.

Asia: Full confidence in the complete Siempelkamp spectrum for the wood-based materials industry

Three signed contracts with customers from Thailand and Vietnam for MDF plants, an order for a particleboard plant for China as well as two plants for Turkey complete the new orders from Asia. The total number of orders from this sales region amounts to 14.

In addition to the smaller 4' models, another customer from China ordered a "large" press line: The wood-based materials manufacturer BML ordered a plant including an 8' x 20.5 m ContiRoll® press for the production of 200,000 m³ of particleboard per year.

The Vietnamese joint-venture company VRG DongWha Joint Stock Company headquartered in Minh Hung signed a contract for an MDF/HDF plant in June 2010. With the 8' x 47 m ContiRoll®, this customer will own the largest MDF plant in Vietnam. VRG DongWha is a joint venture of two Asian companies, the rubber manufacturer Vietnamese Rubber Group (VRG) and the Korean DongWha Company, Asia's largest manufacturer of MDF and HDF.

The commencement of the \$120 million investment for the joint-venture was finalized on July 13, 2010. In addition to the ContiRoll® press, Siempelkamp will be responsible for the engineering and a number of machines for the front-end area. The scope of supply includes a drum chipper, chip storage, screens, conveyors, and silos. The fiber dryer and the separators, custom-designed for fibers from the rubber tree, as well as the complete glue blending system will also be supplied by Siempelkamp.

Next to the forming and press line, Siempelkamp will supply three diagonal saws, the cooling and stacking line, a fully-auto-



Heinz Classen (Siempelkamp) and Somporn Pisolpool (Rayong)



Sale of the Yildiz Entegre plant

matic storage system as well as the sanding line, the cut-to-size line with a book saw and two packing lines. SicoScan, the tool for optimal quality control, is also included in the scope of supply.

The MDF/HDF plant, which will start operation in the beginning of 2012, is designed for a daily capacity of 1,200 m³. The plant will be supplied with wood from the rich resources of several Vietnamese provinces. The MDF boards are intended for domestic consumption as well as export. The objective is to significantly advance the modernization and industrialization of the Binh Phuoc province with the help of the new plant.

In June, the wood-based materials producer Rayong PB from Thailand ordered a partial MDF plant from Siempelkamp. The primary element of this order is a forming and press line with an 8' x 38.7 m ContiRoll® press which will be set up in Klaeng in Eastern Central Thailand starting in August 2011. Rayong PB, in the market since 1994, will make use of the rich rubber tree sources at the location and position itself with new products in its markets.

The new plant will produce 8' x 18' MDF boards with a thickness ranging from 2.5 to 40 mm. The Belgian Siempelkamp subsidiary Sicoplan will carry out the planning of the plant. The scope of supply includes a fiber dryer by Büttner, a fiber screen, a blending system, a cooling and stacking as well as a sanding line, and an offline book saw.

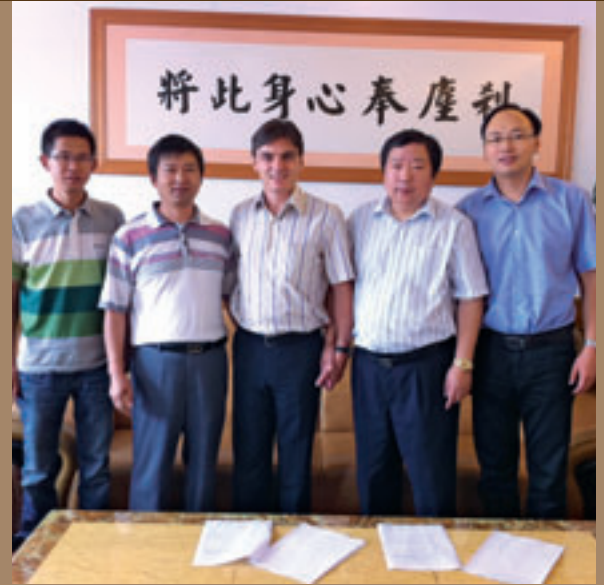
This is the second time that Rayong PB chose a Siempelkamp product. In 2004 the company ordered a particleboard plant from Krefeld. This plant manufactures 1,000 m³ of particleboard daily.

The Thai wood-based materials manufacturer Panel Plus ordered in July a complete HDF/MDF plant for its Hat Yai location. The company that belongs to the Mitr Phol Group is the largest sugar manufacturer in Asia and it already operates three particleboard lines of which two are equipped with Siempelkamp's ContiRoll® technology. The current order will open up a daily capacity of up to 1,000 m³ of MDF depending on the board thickness for Panel Plus. The line is designed for the production of thin boards with a thickness of 2.5 mm as well as boards with a thickness of up to 40 mm. Thus, it provides maximum flexibility.

Panel Plus ordered the entire Siempelkamp product spectrum from the engineering to the packing line. As the engineering specialist, the Belgian Siempelkamp subsidiary Sicoplan will be responsible for the complete planning. The scope of supply ranges from the wood-yard to the de-barking system, the chipper, the bunker discharge system, and the screening system – all Siempelkamp products – to the refiner and dryer from Büttner, to a fiber screen which is custom-built for the use of wood from the rubber tree. The core element of the plant is a forming and press line with an 8' x 38.7 m ContiRoll® press. Also made by Siempelkamp will be the SicoScan measurement and control technology as well as the triple diagonal saw, the star coolers and a fully-automatic storage system.



Panel Plus, Thailand



Signing of the contract with our customer Yichang Jin Tai Yuan, Hubei Province, China

The sanding line including a sander and an offline book saw allows for maximum flexibility during finishing. Furthermore, the plant is equipped with two automatic strapping lines and a packing line which is also supplied by Siempelkamp. The energy for steam generation, heating of the press and dryer is provided by a Siempelkamp energy system with a capacity of 63 MW. The complete modules of the Siempelkamp process control system Prod-IQ® – Business, Quality and Maintenance – provide for optimal product quality.

Last but not least Panel Plus also decided to install an additional short-cycle press which is supplied together with the complete HDF/MDF plant. Panel Plus is the largest provider of laminated wood in Thailand. With the new equipment the company can offer new products to its existing customers. Whoever obtained particleboards from Panel Plus thus far, can now also order raw MDF as well as laminated MDF from Panel Plus.

At the end of September Yildiz Entegre, the largest wood-based materials manufacturer in Turkey, ordered two Siempelkamp plants: In Mersin a new complete MDF plant including an 8' x 47.1 m ContiRoll® press will be built. The dryer and machines for the front-end area will also be supplied by Siempelkamp. The 4' x 8' boards are intended for domestic consumption as well as for the Arabian market. The targeted yearly production capacity is 300,000 m³.

The second new Siempelkamp plant will be the first particleboard production plant for Yildiz Entegre: Siempelkamp will supply the

main components for a particleboard plant which will be built in Akhizar near Izmir. The scope of supply includes an 8' x 42.1 m ContiRoll® press, a particle dryer, particle screens and separators, bunker and silo discharge systems, as well as a glue kitchen and the blending system. The yearly capacity of this plant is going to be 400,000 m³. Both new plants are scheduled to start operation in mid 2012.

“All from one source” – competence for Eastern Europe

Five additional orders from Eastern European countries complement the successful results for Siempelkamp in 2010 thus far: Siempelkamp received two orders for particleboard lines from the Republic of Belarus, an order for an OSB plant from Rumania, and the first order for an OSB plant for Russia in 2010.

Complete Siempelkamp competence was ordered from Russia in May. OOO DOK Kalevala signed a contract for a complete OSB plant which will be built in Petrozavodsk in the Republic of Karelia. With its extended range of products and as the single-source provider of wood-based material plants, Siempelkamp hit the mark for the customer. Next to a 9' x 50.4 m ContiRoll® press, the large order for our new Russian customer, headquartered in St. Petersburg, incorporates a comprehensive Siempelkamp product range. The scope of supply includes the complete equipment for the front-end area ranging from the wood-yard, to the de-barker, to the chipper, to the screens, to the glue blending system to the discharge bins.



Laying of the foundation stone for Kalevala



VMG Industries Ltd. and the Siempelkamp sales team

Downstream of the forming and press line with the ContiRoll® press are two double-diagonal saws, a cooling and stacking line, a high-stack storage system, a cut-to-size line as well as a packing line. Siempelkamp's 'all from one source' concept for this order also includes a complete energy plant from Siempelkamp Energy Systems (SES) and a dryer from Büttner.

A special characteristic of this project is the two-phase concept: After completion of the first phase, the plant will have a daily output of 750 m³; after an expansion, which is part of the second phase, the daily output will double to 1,500 m³! The forming and press line as well as the finishing equipment are already designed for these maximum outputs. Additional machinery for the front-end area will be set up at a later time. The enormous advantage for the customer: With this concept, production will not have to be stopped in order to achieve the higher capacity level. The 50 MW output of the energy plant will increase in the course of the two-phase concept to 100 MW with the installation of a second energy plant. Sicoplan will be responsible for the planning, engineering, and start-up for this project.

The plant will produce OSB in different sizes. Board thickness will range from 6 to 40 mm. A tongue and groove board line, which will also be installed, will produce flooring boards. These boards will be used within the group. As a part of the building group Kompakt, OOO DOK Kalevala has a high demand of OSB which it uses in the construction of large industrial buildings.

VMG Industries Ltd., Republic of Belarus, ordered a complete plant for its Mogilev location. This is the second time that the company has decided on Siempelkamp equipment. The plant will produce MDF for the furniture industry at a yearly capacity of approx. 150,000 to 165,000 m³.

Siempelkamp also sold a complete particleboard plant to the Republic of Belarus in September 2010: The Retchizadrev company decided to replace a multi-daylight press with continuous production via a 6' x 23.8 m ContiRoll® press. Siempelkamp will integrate this concept into the existing infrastructure. The customer benefits from top environmental engineering provided with the wet electrostatic precipitator for the press and dryer and resource savings thanks to the ContiRoll® concept.

Another king-size plant was sold to Egger in Rumania. This customer wanted an OSB plant with a similar-size ContiRoll® as the one for Kalevala: The 9' x 48.7 m continuous press will produce an enormous yearly capacity of 500,000 m³ at the Radauti location starting in 2012.

Siempelkamp will prove its competence in the area of custom plants for another project in the Republic of Belarus. The Mozyrdoc company ordered a production line for insulation boards including a pre-heater system. This plant is designed for a yearly capacity of 230,000 m³. The scope of supply also includes the complete machinery for the front-end area including the machines for de-barking and chip generation, silos with dis-



Contract negotiations for Cuyoplacas, Argentina



Retchizadrev during contract negotiations

charge technology, conveyors, a drying system, a glue blending system, as well as a resin preparation and dosing system. Downstream of the forming and press line, the cooling and stacking line as well as a high-stack storage system and a packing line are installed.

This order involves a competence area that Siempelkamp opened up recently: For the production of wood-fiber insulation boards used to insulate against heat, cold, and impact sound, Siempelkamp has developed a new production method. The new dry-manufacturing process allows the production of boards with a thickness of 20 (0.8 in) to 240 mm (0.8 ft). This process also allows the production of flexible wood-fiber insulation boards. These boards are used as insulation between rafters.

South America: three plants for Argentina, Brazil and Chile

Customers in South America signed three additional contracts for Siempelkamp plants. The wood-based materials producer Cuyoplacas in Argentina ordered a partial Siempelkamp plant in March 2010. The scope of supply for this particleboard plant includes the planning, the forming and press line, a 7' x 25.5 m ContiRoll® press, a cooling and stacking line, a sanding line, and storage technology.

Arauco signed two contracts in July for its locations in Brazil and Chile. Arauco do Brasil ordered for the Jaguaraiava location a partial MDF line which will complement the already existing infrastructure of two MDF lines. The primary element of this order is a 9' x 45.4 m ContiRoll®. The highlight of this order is a Siempelkamp energy system which will be used self-sufficiently to provide the process energy for the location. Paneles Arauco S.A. is building a particleboard line with an 8' x 20.5 m ContiRoll® press in Teno, Chile. Starting in the beginning of 2012 this customer will probably have a modern continuous production in the country.

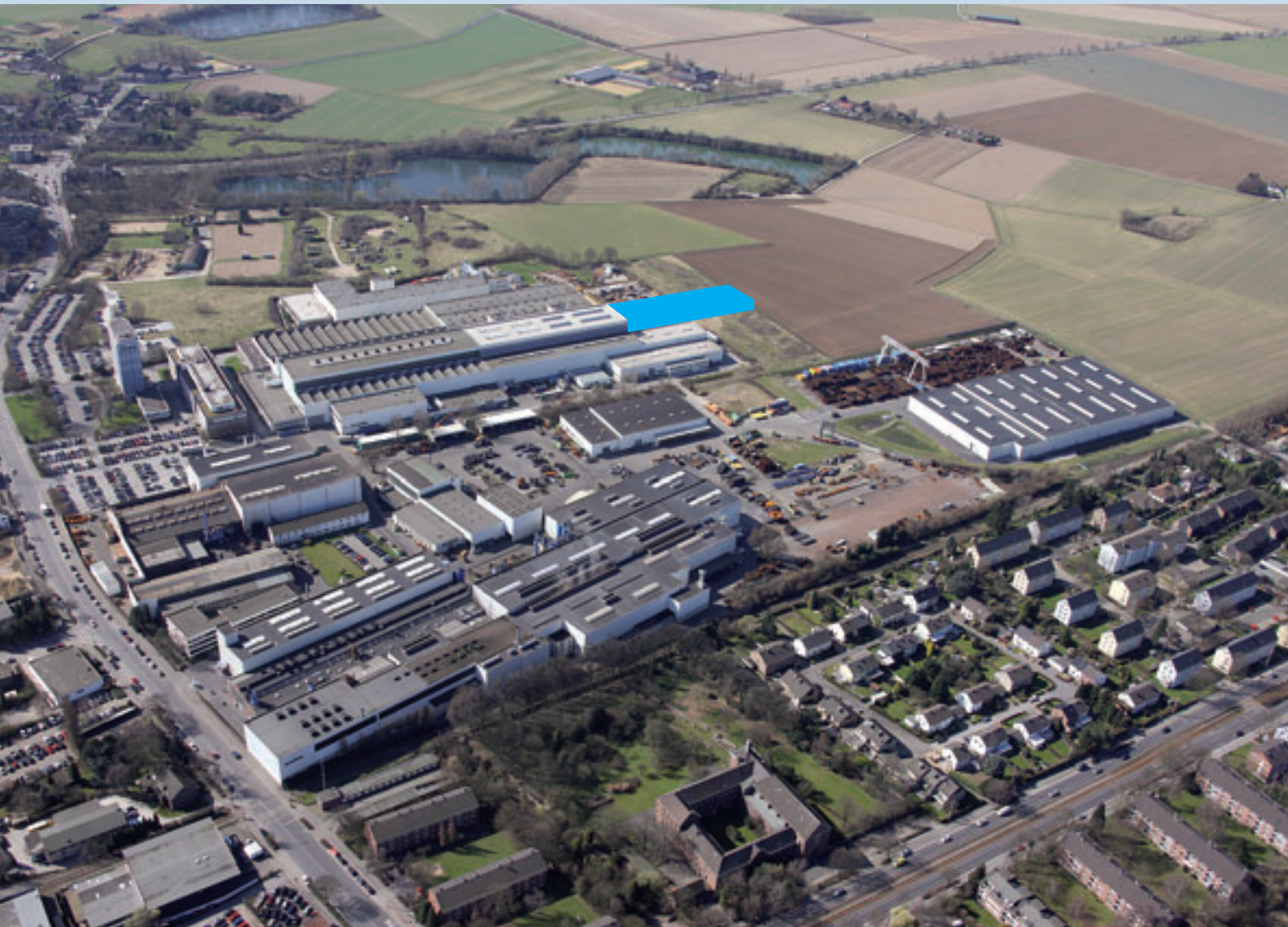
Specialized and flexible in the final sprint of this business year

Whether large plants, 4' concept or custom plants: The orders received in 2010 demonstrate Siempelkamp's broad competences and position the company excellently in the first year after the global financial crisis. "Other projects are still in the pipeline. However, the sales results of 2010 to date are a big success. We have used the globally emerging willingness to invest and seized all opportunities to convince our customers of our services. The trust of numerous existing and new customers in us all over the world ensures us with capacity utilization into 2012," says Dr.-Ing. Hans W. Fechner, CEO Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG.

Siempelkamp location Krefeld:

Investments in machinery and manpower

By Ralf Griesche



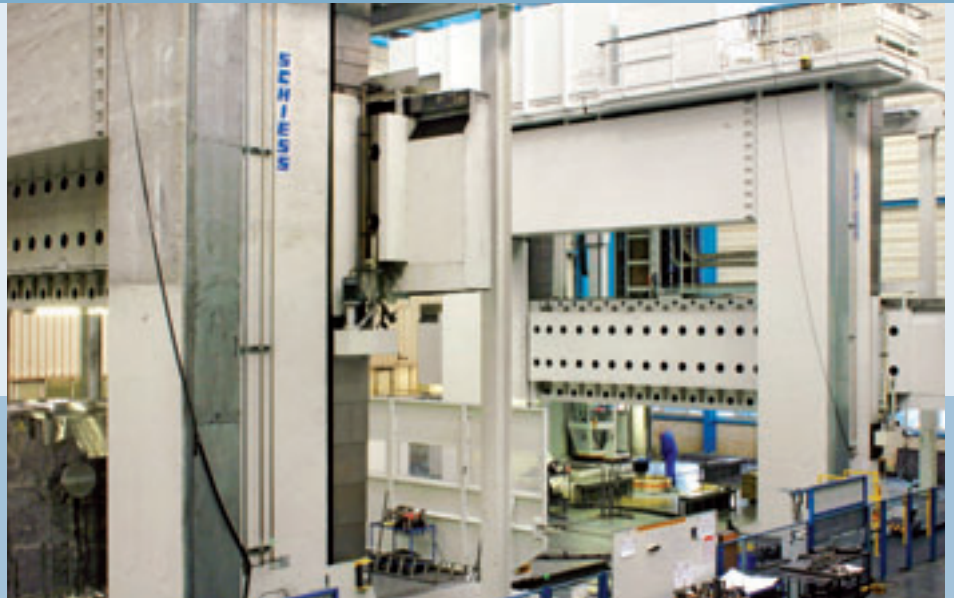
Siempelkamp, Krefeld, from a bird's-eye view

Whether at the Krefeld headquarters or at the production locations Hombak/Germany, CMC/Italy, Blatnice/Czech Republic, Wuxi/China: Siempelkamp Maschinen- und Anlagenbau is operating at full capacity. The current investments are not only a reaction to the excellent order situation, but are aimed at proactively preparing the company for a safe long-term pole position among the competition.

top: The second portal of the Schiess milling machine in use

center: Beginning work for an extension of the production hall

bottom: The new 100 m production hall is closed



Siempelkamp's initiative includes increasing the number of machines in the production centers. At the Krefeld location, the company is investing in its production in order to maintain or expand competitive advantages.

The second portal of a universal machine – one of the largest of its kind worldwide, a gantry type VMG 6 PS portal milling machine by Schiess, is now operating. With a milling spindle capacity of 100 kW, this universal milling machine can turn, drill, and mill. With a length of 26 m (85 ft) and a height of 13 m (43 ft), it can process workpieces with heights of 6 m (20 ft) and widths of 7 m (23 ft). For the processing of large-scale workpieces, the second portal holds an enormous advantage. Workpieces can either be machined on the machine table and the face plate simultaneously or they can be prepared on one and machined on the other in a parallel process.

Another benefit: These machines open up further synergies between Siempelkamp's machinery and plant engineering as well as foundry technology business divisions: The casting process and the process of machining the casting form a smooth alliance according to Siempelkamp's "all from one source"-concept. For Siempelkamp customers this is a decisive advantage! The latest example of this synergy is the record casting and machining of the upper beam of a closed-die forging press for Alcoa Forging & Extrusions: This press component, which was one of 13 castings produced by Siempelkamp Foundry for





PAMA Speedram 2000



Alcoa, was finish-machined on the two portal milling machines by Schiess (see page 62).

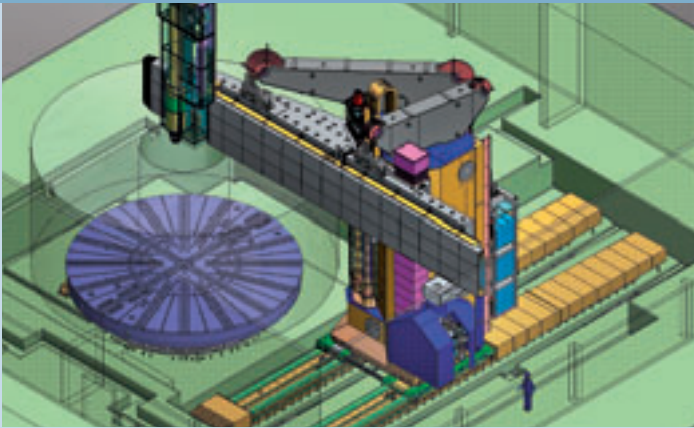
Two additional large-scale machines are being installed. From Italy Siempelkamp ordered a plate boring mill and milling machine type PAMA Speedram 2000. The quality features of PAMA machines include high precision, high speeds, high torques, as well as a high drive power for optimal machining results.

With a longitudinal travel of 10,000 mm (33 ft) and a vertical travel of 5,000 mm (16 ft), the new PAMA opens up an extremely large machining capacity for Siempelkamp. Further key data illustrates that the existing machinery at the Krefeld production location is complemented with another highlight by adding the boring mill and milling machine. The spindle power amounts to 60 kW, the bearing shell section covers 400 x 440 mm. The machine table with a dimension of 6 m x 5 m can be loaded with a weight of 25 t

per m²! Workpieces with piece weights of up to 100 t (110 US tons) can be machined. The automatic tool changer is designed for 120 tools. Furthermore, the PAMA Speedram 2000 includes an automatic angle milling head and a universal milling head. An important benefit: Possible thermal expansion of the spindle or the bearing shell is automatically compensated thanks to a PAMA patent. The spindle bearings with minimal lubrication are surrounded by oil and are kept thermally stable via an oil cooler. The assembly of this machine is scheduled for April 2011, the start-up for June 2011.

A large-scale turning machine type VME 10 by Schiess has also been added to the production center. This turning mill has a face plate diameter of 10 m (33 ft). With the help of extended beams, which are mounted to the face plate in a star-shaped arrangement, the mill can machine large parts with diameters of up to 15 m (49 ft) and heights of up to 6 m (20 ft). Once again the service chain between Siempel-





Large Schiess vertical boring and turning mill



Foundation for mill

kamp's foundry as well as machinery and plant engineering divisions has been closed.

CNC-controlled turning and milling machines will also join the production center soon. The DMG CTX Gamma 2000 TC as well as the DMF 360 Linear will be the 'twin' machines to an existing machine of this type. Both will be operational in December 2010.

No machine without manpower!

The new capacity utilization and equipment result in a need for additional workers at the Krefeld production location. "We will gradually hire up to 40 new industrial employees who will complement our existing staff of 914 Siempelkamp employees," says Dr.-Ing. Hans W. Fechner, CEO of Maschinen- und Anlagenbau GmbH &

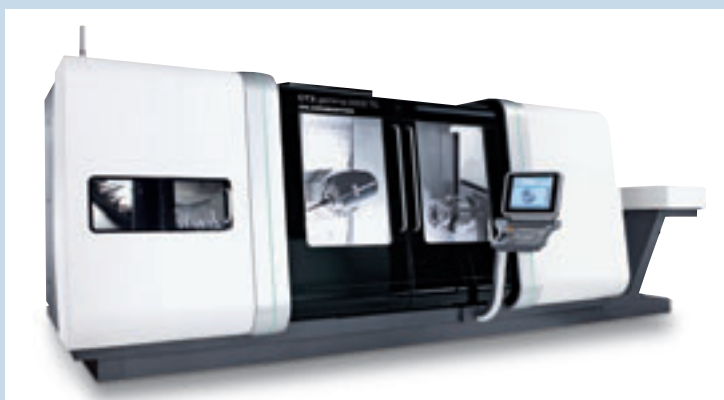
Co. KG. Siempelkamp is looking for experienced staff for the process planning, cutting machine operators, NC programmers, hydraulics assemblers, and crane operators in order to cope with the high workload and the associated customer demands.

By the same token Siempelkamp will focus on intensifying training activities. "Currently, we are employing 64 trainees in the area of machine and plant engineering. We will increase this number in order to bring more junior staff to Siempelkamp and secure the know-how of our company in the long term," explains Dr.-Ing. Hans W. Fechner. In order to defy the lack of skilled personnel and the problem of finding qualified new trainees, Siempelkamp will strengthen its recruiting as well as training and further education activities. Currently, a

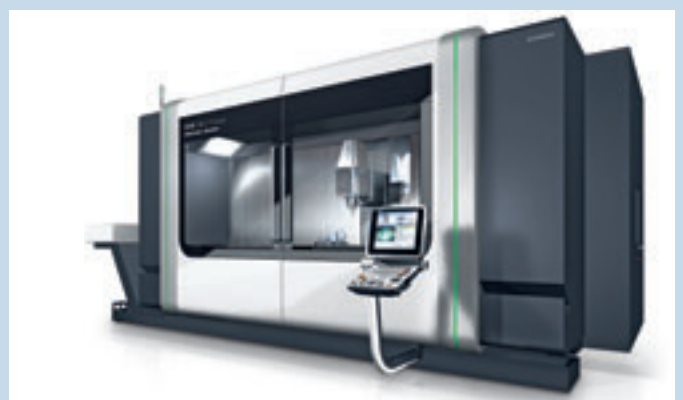
team of young engineers runs through an extensive qualification program which, among other things, includes construction site assignments lasting several weeks.

A production center that is becoming increasingly more efficient and has an increasingly higher number of qualified personnel is part of the model that Siempelkamp uses to head towards successful future years and orders. Full capacity utilization requires full performance: In 2011 up to 400,000 working hours will be performed at the Krefeld production facility; the normal capacity of the production volume is 300,000 working hours. This output will be complemented by 60,000 production hours at Hombak in Bad Kreuznach, Germany, 120,000 hours at CMC Texpan/Italy, 170,000 hours in Blatnice/Czech Republic, and 400,000 hours in Wuxi/China.

DMG CTX Gamma 2000 TC



DMF 360 Linear



Gold fever at Siempelkamp Giesserei:

Mill components for the



mining industry



Siempelkamp's commitment to the mining industry has continued to develop in the last years, especially in components for so-called horizontal mills. The production of these parts has become an established area within our complex product portfolio.

By Dirk Howe

What factors have led to Siempelkamp's successful position in the mining industry? "Firstly, strategically important decisions which were made at the right time. Good, longstanding and cooperative relations with customers from the mill and mining industries as well as our proactive sales activities have also helped our successful business trend in this sector. Furthermore, the mutually established trust and the solidarity in all actions have been the key to success," summarizes Dirk Howe, sales engineer at Siempelkamp Giesserei.

The company's core competences include raw castings for different mill types as well as mechanical machining and transport services. Siempelkamp Giesserei has established this scope of supply in an industry that looks back on a long tradition: Copper, gold, silver, nickel, iron and tin were the first metals that mankind discovered and mined. The use of these metals goes back to the oldest civilizations known to us which lived approximately 10,000 years ago. Gold coins have been used as means of payment since the 6th century before Christ; gold used as jewelry dates back even further. During preindustrial times, these metals were oftentimes mined in pure form in small mining operations. With the industrial revolution, the steadily growing world population and the growing hunger for raw materials going along with it, the need for new mining and material handling technologies rose.



Entrance to the gold-mine "The Super Pit" in Australia



Mining excavator for rock mining

Metals – a mini lesson in material science

Gold – the name originates from the Indo-Germanic language and translates into "shiny yellow". In the periodic table of the elements it has the symbol *Au* from the Latin term *aurum*, "shining dawn".

Copper – In the periodic table copper is identified with the symbol *Cu*. It is derived from the Latin term *cuprum*, ore from the island of *Cyprus*, the stronghold of copper mining in antiquity.

Platinum – In the periodic table it holds the symbol *Pt*. It is derived from the Spanish word *platina*. The metal is extremely corrosion-resistant and was used for the first time in Egypt in 3000 before Christ.

Nickel – In the periodic table this metal has the symbol *Ni*. In its elemental form it could only be detected in 24 locations worldwide to date.

Iron – In the periodic table iron has the symbol *Fe* which is derived from the Latin term *ferrum*. Verifiably iron was used for the first time around 4000 before Christ for making spearheads.

Metal mining: gigantic projects with a final touch

Today metal-containing rocks are mined in large above-ground mines. As a matter of principle, extensive bank-approved feasibility and profitability studies are completed in the forefront of these operations. After the funding is approved, the planning phase starts by determining which milling system best fits the geological structure. Gigantic project sizes with outputs of more than 250,000 t (275,578 US tons) of rock per day are very common today. The yield of a gold mine is sometimes only 1.2 g of pure gold per ton of rock. At a current gold price of approximately 1,200 USD per ounce, even the mining of such small amounts is considered economical. The most productive mining areas for copper are Chile, Peru and Australia, for gold and platinum the African continent and for nickel Russia and Canada. Mining equipment is even supplied to places such as Papua New Guinea and Burkina Faso.

At the actual mining sites, gigantic diggers with single shovel volumes of up to 80 m³ are used. Dump trucks or heavy load vehicles with cargo weights of up to 400 t transport the mined material to crushing units.

For the last 20 to 25 years, crushers, autogenous mills and semi-autogenous mills as well as ball mills have been used to crush different types of material. These mill types with rotating cylinders that are mounted horizontally are used for the coarse grinding and the subsequent fine grinding of the respective mined rocks.



The "Super Pit"



Dirk Howe (left) together with the mill builder at the end customer

In short the grinding process can be summarized in three basic steps: crushing, grinding, and separation. While in autogenous mills the material is crushed against itself without the use of an additional grinding media, semi-autogenous mills are operated with additional grinding media which is taking up approximately 3 to 15 % of the total material to be ground. In order to grind rock material into a fine powder, ball mills are used. In ball mills the product is mixed and crushed to powder by using wear-resistant steel balls as the grinding media. The actual separation of the metals is carried out with different chemical processes, for example, gold via the mercury process or the cyanide process.

**Mill construction components from Siempelkamp:
top quality on time**

Mills are classified in feet as the measuring unit for diameter and length. Currently, the largest operating mills have a diameter of 40 ft. Siempelkamp Giesserei produced the mill heads for the world's first 40 ft mill: Cadia Hill.

Today the required power input is already at 28 MW, and continually increasing. Ring motors or conventional motors including large-scale gears are used in mills. Oftentimes Siempelkamp gear rings with diameters of up to 12 m and a weight of up to 130 t are used.

In order to successfully complete project orders with such nice sounding names as Los Pelambres, Esperanza or Santa Rita, sustainable team work at a high level as well as active com-



Complete system for the grinding process of rocks at the copper

Complete system in front of the rock masses





Casting of a mill head

munication between our specialty departments are absolutely necessary. Customers in mill construction need the finished components at the construction site or on a ship in the ports of Antwerp or Hamburg by an agreed date. Top quality delivered on time without any questions asked is essential for the end customers. After all, the mill is the centerpiece of a mine and needs to work flawlessly for at least 20 years. Investments in the multi-million-euro range are no exception for new mines. Siempelkamp has proven to be a top player when it comes to processing projects in this field. "You can feel the enthusiasm, maybe even a little bit of gold fever, in all participating employees – that makes it fun," Dirk Howe has observed.

Zero complaints – high technical competence

Twenty years ago mill heads and trunnions were either steel-welded constructions or gray iron castings. In continuous operation both constructions are prone to cracking due to hard shocks and impacts during high dynamic loads.

Siempelkamp's work starts by being involved in the design process of the required mill heads and trunnions. "Customers trust in our many years of experience in the areas of materials, angular adjustments, and material properties such as mechanical properties. The highly stressed components have to be planned in an intensive technical dialogue with the customer. Zero com-

plaints about our parts following their installation have convinced our customers of our technical competence," describes Dirk Howe.

A top raw casting in regard to geometry and material is the basic prerequisite for a high-quality finished product. Prior to the actual making of each component part, it is simulated on a computer. When planning the pattern, Siempelkamp is taking unusual but successful steps in order to increase the efficiency during production. We cast the mill heads including the trunnions, with diameters of approx. 8 m, in one piece. Heads with a larger diameter are produced in several segments (2 x 180° or 4 x 90° segments) and the trunnion is produced separately. At first glance, the segments seem simple, however, due to the unfavorable properties of these castings including a small wall thickness but a large area, these parts are very tricky to produce. In order to reduce costs during mechanical machining, Siempelkamp focuses on filling the mold quickly without turbulences, on avoiding breaking on the sand moulding edges and on minimal dross. Our successes in the area of manufacturing accuracy were a shared team effort. Indispensable in this regard are the workshops that have been developed specifically for this purpose.

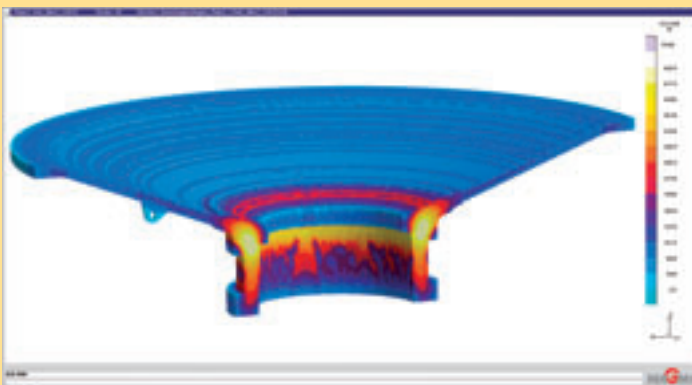
Spectacular and stress-free

The Siempelkamp scope of supply does not only include the raw casting but also the mechanical machining of the casting and its



Removal of the trunnion from the mold

Pattern of a trunnion during molding



Mold filling and solidification simulation for mill head production





Mechanical machining – mill head on a vertical boring and turning mill

Mill head and trunnion ready-packaged for the transport to the end customer



Wooden pattern of a 180° mill head segment

transport. The mechanical machining of large mill heads requires experience, know-how and up-to-date machinery.

The sight of a rotating mill head with a 14 m (46 ft) diameter and a weight of 280 t (307 US tons) on a vertical boring and turning mill is spectacular. Customers and mine operators from all over the world such as Xtrata, Rio Tinto, BHP from Australia, Chile, and Peru come to Krefeld to experience this unique sight.

The art of this machining process is the stress-free clamping of these segments onto the machine. A drilled bolt pattern of 13,500 mm, consisting of 76 mm diameter holes and accuracy H7 in excess of a maximum tolerance of 0.1 mm at bolt circle diameter are the technical standard. When machining the segments they tend to flex. "We treat them like raw eggs," is the statement of a production supervisor.

After successful acceptance and careful packaging, our order processing department comes into play one more time. Now the



Mill head with trunnion on its way to the mechanical machining

task is to transport these huge parts (dimensions of up to 12 m x 8 m) on time to the port and to coordinate the loading onto ships. Once a project is successfully completed, the next project either has already started or is about to begin.

The investments in new machinery for the mechanical machining have made a quantum leap in terms of size and weight possible and offer our Group the opportunity of securing a number of unique selling points against a fierce competition. These opportunities have to be exploited in order to gain further market shares. This field remains exciting!

Gold reserves of the world's nations

Countries	Gold reserves in tons	% of the total currency reserves
1. USA	8,134	72.8
2. Germany	3,407	68.1
3. International Monetary Fund	2,967	no data
4. Italy	2,452	67.0
5. France	2,435	65.6
6. SPDR Gold Trust	1,300	no data
7. China	1,054	1.6
8. Switzerland	1,040	24.1
9. Japan	765	2.8
10. Russia	669	5.5
11. Netherlands	613	55.2
12. India	558	7.5
13. European Central Bank	501	27.1
14. Taiwan	424	4.3
15. Portugal	383	82.2
16. Venezuela	364	47.6

With Siempelkamp back to a greenfield



Experimental nuclear power plant of Kahl prior to dismantling

How can a nuclear facility be dismantled all the way to a greenfield without risking radiation exposure? For 15 years, NIS Ingenieurgesellschaft has been involved in the dismantling of the experimental nuclear power plant of Kahl (Versuchsatomkraftwerk Kahl – VAK). With this work NIS has set a milestone in nuclear technology. For the first time, a nuclear power plant with an operation time of almost 25 years is completely dismantled.

By Bernd Truetsch

MThe dismantling of systems and buildings completely to a greenfield is supposed to return the site to its original condition. The proof that no more radioactivity remains is the requirement for a facility to be withdrawn from the ambit of the Atomic Energy Act.

In the case of VAK the actual dismantling of the plant began after the last fuel elements were removed in 1989 and the approval for the decommissioning according to the Atomic Energy Act was received.

Through nuclear fission and after many years of operation, certain operational systems are exposed to radiation. Therefore, precise and plant-specific planning of the dismantling process is indispensable. The impact on man and environment must be ruled out.

Only after the detailed assessment and approval by the authorities, dismantling measures and modifications may com-

mence. Reviewers assigned by the nuclear regulatory authority monitor the compliance with and abidance by the regulations.

The underwater and remotely-handled disassembly of the reactor pressure vessel (RPV) and its internals represented the highlight of the dismantling process. The thick-walled steel of the RPV was cut into pieces with a water-jet cutter and then packed in special containers. This work was carried out between November 1999 and Mai 2000.

Safe and effective: NIS activities for the dismantling process of VAK

Dismantling of the fuel element storage pool

During the operation of the reactor, the fuel element storage pool was used to

handle and store spent fuel elements. The pool was always filled with water because water has the good characteristic to contain radioactive radiation. Compared to today's designs, where the pool is lined with stainless steel, the storage pool at the VAK was tiled. The surface area had the dimensions of 4.10 m x 5.00 m, the pool's height amounted to 7.82 m.

For the dismantling process the NIS team used a conventional concrete saw. In this way the storage pool was cut into transportable reinforced concrete segments with a weight of approx. 5 t.

Dismantling of the biological shield

The biological shield is a massive cylindrical concrete structure placed around the reactor pressure vessel (RPV). This structure absorbs the radioactive radiation from the RPV. With advancing operation, the steel and concrete parts became radioactive themselves so that

Dismantling of the fuel element storage pool

the dismantling process at VAK had to be carried out remote-controlled.

A radio-controlled demolition excavator on a height-adjustable work platform disassembled the radioactive concrete and steel. In order to operate the excavator, the team relied on cameras. The excavator operators received special training to carry out this task. The entire work area was protected by a housing which prevented dust leakage to the outside and was equipped with high-performance ventilation systems.

Altogether approximately 400 t (441 US tons) of concrete and steel were disassembled.



Facts and data about VAK

After a construction period of only 29 months, VAK, the first nuclear power plant in Germany, started operation on November 13, 1960. The boiling water reactor, built according to American standards, was designed with an electrical power output of 16 million Watts (16 MWe).

This plant was built with the objective to gain experience for nuclear power plants planned for the future.

Another focus was the education and training of nuclear power plant personnel. VAK, an investment company (80% RWE and 20% E.ON), produced in its 25-year lifespan a total of 2.1 billion kilowatt-hours of electricity. On November 25, 1985 the plant was shut down according to schedule. During operating times, reactor physics engineers from NIS were responsible for the deployment planning of fuel assemblies at VAK.



Handling of the dismantled storage pool segments

Atomic Energy Act

Nuclear facilities are subject to the regulations of the Atomic Energy Act. The act regulates by law the peaceful use of atomic energy and the protection against its risks. With the increasing use of nuclear energy in Germany, the Atomic Energy Act became legally binding on December 23, 1959. The dismantling of a plant also takes place within the framework of the Atomic Energy Act.

Core removal from the reactor building

In order to close the controlled area of a building, proof must be provided that the thresholds for radioactivity, mandated by law, are maintained.

The proof that all wall and floor areas of a controlled area comply with the allowances for radiation protection is provided by very sensitive measurement devices. At the same time, surveyors, assigned by public authorities, carry out and check measurements.

For structural reasons the approval of the VAK reactor building as a complete structure was not possible. Therefore, the entire inner concrete structure was dismantled, treated, and the radiation levels were measured.

The reactor building had an internal diameter of approximately 14 m (46 ft) and a height of approx. 42 m (138 ft). The largest part of the reactor building was built underground. The base of the building was approx. 20 m (66 ft) below the surface.

More than 4,000 t (4,409 US tons) of concrete and steel were dismantled in the course of this renaturation project.

Only a very small part of the mass described above, less than 0.1 %, had to be disposed of as radioactive waste. After the dismantling of the inner concrete structure and the required clearance measurements, the controlled area status of the reactor building was cancelled.



Dismantling of the biological shield with a remote-controlled demolition excavator

Dismantling of the outer reinforced concrete shell of the reactor building

Parallel to the activities inside the reactor building, the outer concrete shell with a building height of approx. 23 m to the dome was dismantled down to 3 m above ground. The steel-reinforced concrete had a thickness of 80 cm. For the dismantling tasks NIS used an oversize concrete saw which cut the vertical structures utilizing hydraulic pressure.

Afterwards, concrete blocks of approx. 50 t were cut and removed with a heavy-duty crane. Altogether the team disassembled approx. 1,400 steel-reinforced concrete blocks.

NIS engineers were also working at the forefront during the waste disposal and its documentation. For the handling, disposal and management of radioactive waste, NIS developed a computer software (AVK, waste flow tracking and product control system) which was certified. A number of data had to be entered into the system so that at any given time the current status and the traceability of the generated waste could be retrieved.



Placing of the disassembled RPV segments into storage containers



Core removal from the reactor building: Dismantling begins 18 m above ground and ends 20 m below ground



Sawing of the dome segment with a concrete saw

After the dismantling of the plant components, the tasks necessary for the release of the building structures began.

For this last and important phase which resulted in the release of the building and plant premises, the NIS engineers developed a concept for the internal clearance measurements and coordinated the approach with the authority and surveyors.

The radiation measurements necessary for the clearance of the building and premises were carried out between 2007 and the beginning of 2010. At the same time an authorized expert assigned by the nuclear regulatory authority carried out control measurements.



Heavy-walled steel parts are cut with a band saw



Decontamination using steel-grit blasting for a targeted surface abrasion



With the completion of all facility-specific control measurements, all controlled areas ceased to exist in May 2009. After the local clearances were completed, the unrestricted release of the entire premises as well as the release of the building for conventional demolition followed in May 2010.

The release of the VAK location from the requirements of the German Atomic Energy Law was authorized in October 2010. The closing celebrations on October 22/23, 2010 took place on a greenfield which

was formerly the grounds of VAK. More than 500 people from the industry, political officials, and members of society visited the marquee at the site. The VAK management as well as the board of directors for RWE Power and E.ON Kernkraft, as the partners of VAK GmbH, recognized the historical achievements which were accomplished here.

The controlled area

A controlled area becomes necessary when the level of radiation exposure from the handled radioactive material reaches such high values that it becomes a requirement by law. For the maintenance of controlled areas and for the safety of the employees working there, certain facilities are necessary, for example, a controlled air ventilation system for the building, an exhaust air system, changing rooms, an access control system as well as systems that measure the amount of radiation exposure of employees. Inside controlled areas, strict rules of conduct have to be kept, for example, no smoking or eating is allowed.



On-site release measurements of the building structure



Area sampling: on-site measurements on fixed areas



From left: Prof. Dr. Gerd Jäger (Board member of RWE Power AG), Walter Hackel (Technical Director VAK GmbH), Prof. Dr. Markus Söder (Minister of State for Environment and Public Health)

Prod-IQ® successfully in use:

The solution for multiple objectives

A 2.5% reduction in material used and a 6% increase in production speed without sacrificing quality – is this wishful thinking? Not at all. These are realistic goals that can be achieved when all the available data of a wood based panel-board plant's production process is used to its full potential. Siempelkamp's solution to achieving these objectives is Prod-IQ®, a process control system.

By Gregor Bernardy

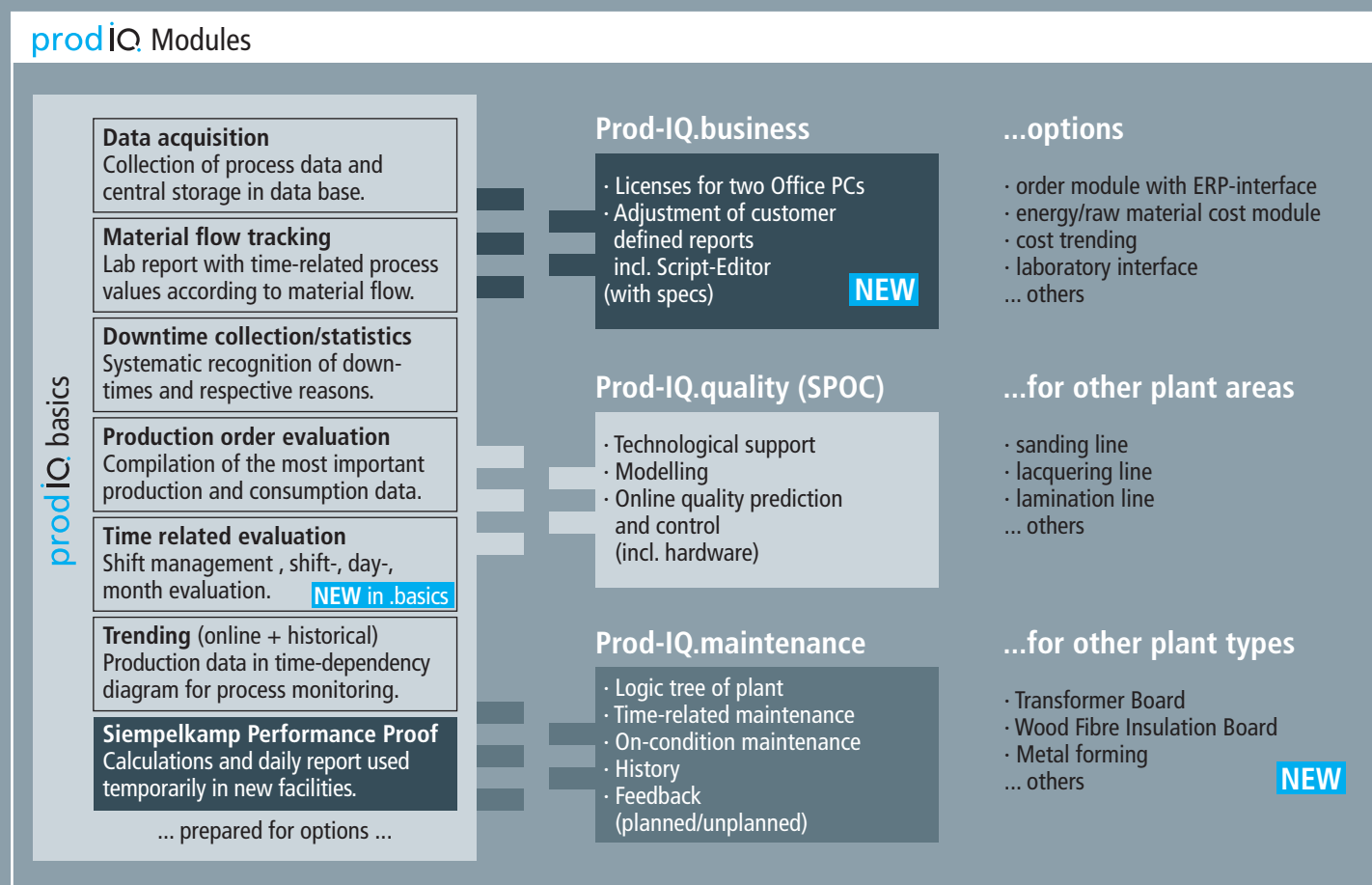


Figure 1: Prod-IQ® modules

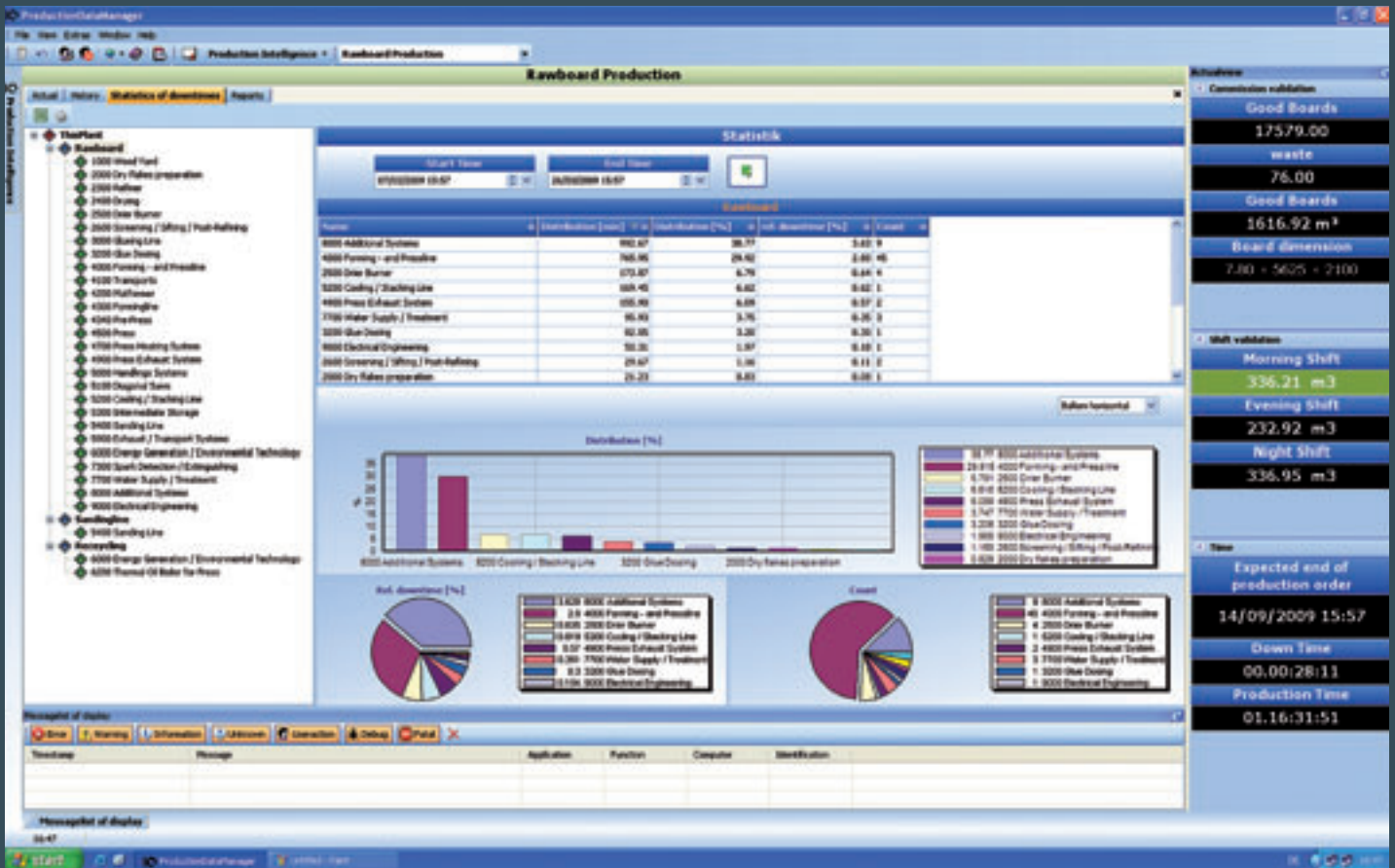


Figure 2: Down time statistics in Prod-IQ® ProductionDataManager

Prod-IQ® stands for “Production Intelligence” and has been used successfully for many years to make Siempelkamp plants more efficient. With the help of cause studies, the process control system makes information usable and the production process becomes more transparent and reliable. The advantages of Prod-IQ® became especially apparent when the global economic crisis hit in 2009. During difficult economic times it is important to make the most of a plant by using all available process and production data effectively.

Every new Siempelkamp ContiRoll® press is equipped with the basic package Prod-IQ.basics. This standard version contains modules that collect, evaluate

and assess all process and production data from the wood yard to the cooling and stacking line (figure 1). With regard to the “Total Cost of Ownership,” the plant operator is provided all consumption and performance data for a performance analysis.

An example: The position of the mat reject nose in front of the press is monitored. When the nose opens, Prod-IQ® detects that production has come to a stop and that no board is produced. When the nose closes, production resumes. From this information alone, Prod-IQ® draws valuable, automatically collected and unerring conclusions: When did the plant come to a stop? How reliable does the plant operate? What part of the plant causes the most

down times? The benefits are obvious – if the weak points are known, they can be improved and the reliability of the plant can be increased.

Another example: Prod-IQ® collects data from the board counter of the cooling and stacking line as well as from the consumption counter for wood, glue, gas, oil, dust or electricity of a plant. The process control system uses the data to calculate how many cubic meters of board and waste are produced with each shift, day, month and order. Thus, the system documents clearly the performance of a plant and helps to obtain the efficiency statement at the time of the acceptance test. How much glue and how many other resources are used? The system helps to

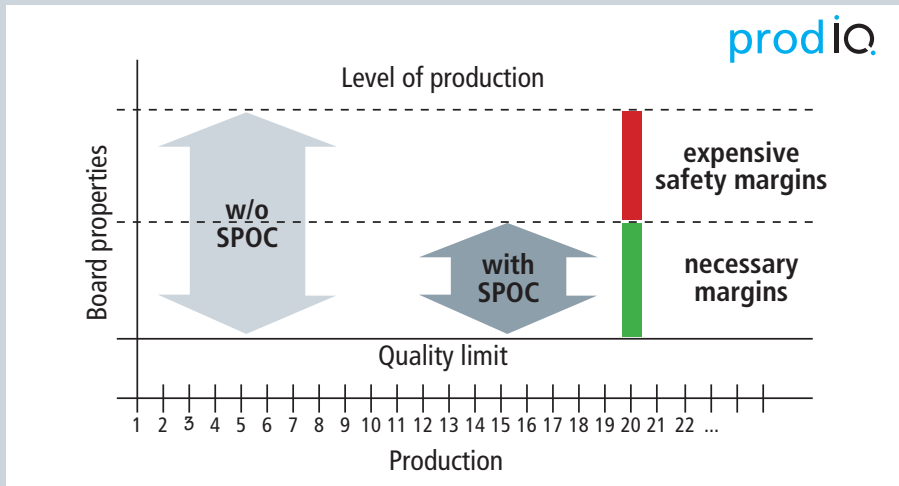


Figure 3: Reduction of necessary safety margin with Prod-IQ.quality (SPOC)

determine the specific values needed to evaluate the production in regard to production costs.

All evaluations regarding the availability, performance and consumption of a plant are available to the user in automatically created MS Excel reports and can be analyzed via a user interface, the ProductionDataManager (figure 2).

From Prod-IQ.business to Prod-IQ.quality: Realize the possibilities!

Prod-IQ.business is the tool for customers that wish to use the information outside the control room on office computers and want to edit standard reports. The scope of supply includes shift, day, and month evaluations as well as special evaluations such as management, formaldehyde, and dryer reports.

Prod-IQ.maintenance helps customers perform and systemize the condition-based maintenance and servicing of a plant. In this way, maintenance costs can be reduced.

Material flow detection and laboratory data management help to document and demonstrate in a traceable way which parameters lead to certain qualities. This aids technologists to better understand the process, analyze the causes, and improve the process. Furthermore, with each new laboratory sample, the system

learns more on how certain production parameters influence board quality.

Prod-IQ.quality (also called SPOC) is able to "learn" and calculate which processing conditions lead to certain product quality. This can be done with high precision as many applications confirm. Tensile and bending strength as well as thickness swelling can be forecast with a 95% reliability; the raw density even with 99% reliability. The users of Prod-IQ.quality also profit from speed. They do not have to wait for time-consuming laboratory results



to find out what quality their boards have. They know the quality of their boards the moment the board leaves the press.

This peace of mind can be used to focus on minimizing margins (figure 3). Thus, the material usage (raw density) of the boards could be reduced by more than 20 kg/m³, the glue usage could be cut by up to 2% and the production speeds increased by up to 6% – all this without sacrificing quality.

**Focus on the essentials:
SAP connection**

Another highlight is the new SAP connection which contributes to further streamlining production processes and optimizing time. Prod-IQ® receives from SAP a

list of orders to be processed. When the operator selects the order, its data is automatically written into the control system by Prod-IQ® without any effort on the operator's part.

Once the order is finished, Prod-IQ® notifies SAP automatically and without any manual input by the operator of all production stops, outputs, waste and consumption quantities. Our customers appreciate this error-free process. One customer said: "I can proudly announce that the direct data transfer from Prod-IQ® into SAP has been a great success. The new data transfer is a great benefit especially for the production team. Because the manual input of data is gone, our operators are gaining more time to concentrate on the process and are able to

reduce their set-up times during change-overs."

These days managers know that their decisions can only be as good as the information given to them. Nobody can do without transparency in production. Prod-IQ® is Siempelkamp's answer for this – not only for customers and not only for the wood-based materials industry. The advantages of Prod-IQ® are also used in metal forming plants and on Siempelkamp's own production floor (figure 4).

Machine run-time collection via Prod-IQ®



Reactor core simulator at the nuclear power plant Gundremmingen:

Prepared for the 26th operating cycle with NIS support



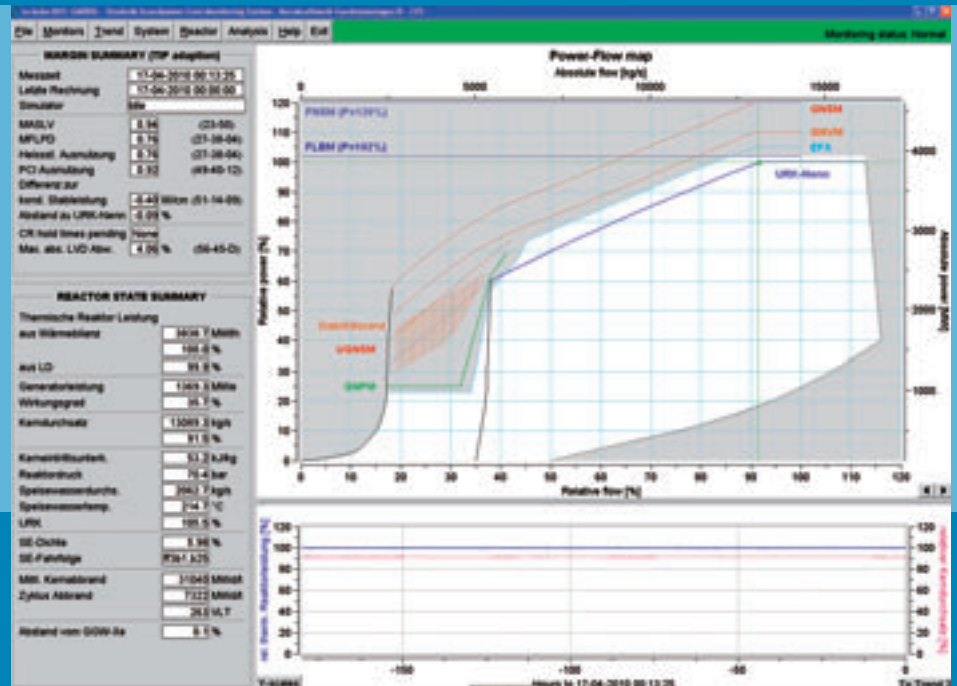
Photo: Felix König

The RWE nuclear power plant Gundremmingen

For the 26th time, in July and August of 2010, the fuel assemblies at the Gundremmingen nuclear power plant, Unit B, were inspected and exchanged: The refueling cycle is repeated every year during which the plant is shut down and about 120 "spent" fuel assemblies are replaced. Because the core simulator had to be set up for the new cycle, NIS Ingenieurgesellschaft mbH was on-site during this process.

By Robert Holzer

Main screen with overview and operating map



In 1994 NIS supplied the Gundremmingen nuclear power plant with a core simulator which was completely replaced two years ago. After the refueling cycle was completed, NIS had to ensure that the simulator was correctly coupled to the fuel assemblies inside the reactor core.

In this way, NIS does its share in making sure that the power plant can supply a large city like Munich and the surrounding communities with electricity for one year.

One power plant unit has a capacity of 1,340,000 kW which would be enough to supply e.g. 1.34 million hot plates of an electric kitchen stove with electricity.

Together with other monitoring and control systems, the NIS core simulator makes its contribution to a safe, reliable, and economical electricity generation. This is reason enough to take a closer look at the core simulator concept.

Core simulator: a sophisticated system

The core simulator is a computer system that simulates the reactor core. By doing so it monitors the physical properties of the reactor.

Inside the nuclear reactor a neutron collides with a uranium isotope. During this collision, the uranium absorbs the neutron, fissions into two smaller isotopes releasing two to three additional neutrons. The fission process, which takes place inside the fuel rods filled with uranium pellets, produces energy. The fuel rods become hot. Consequently, the water (cooling element) sur-

rounding the fuel rods becomes hot and begins to boil. The generated steam spins the turbine and drives the generator.

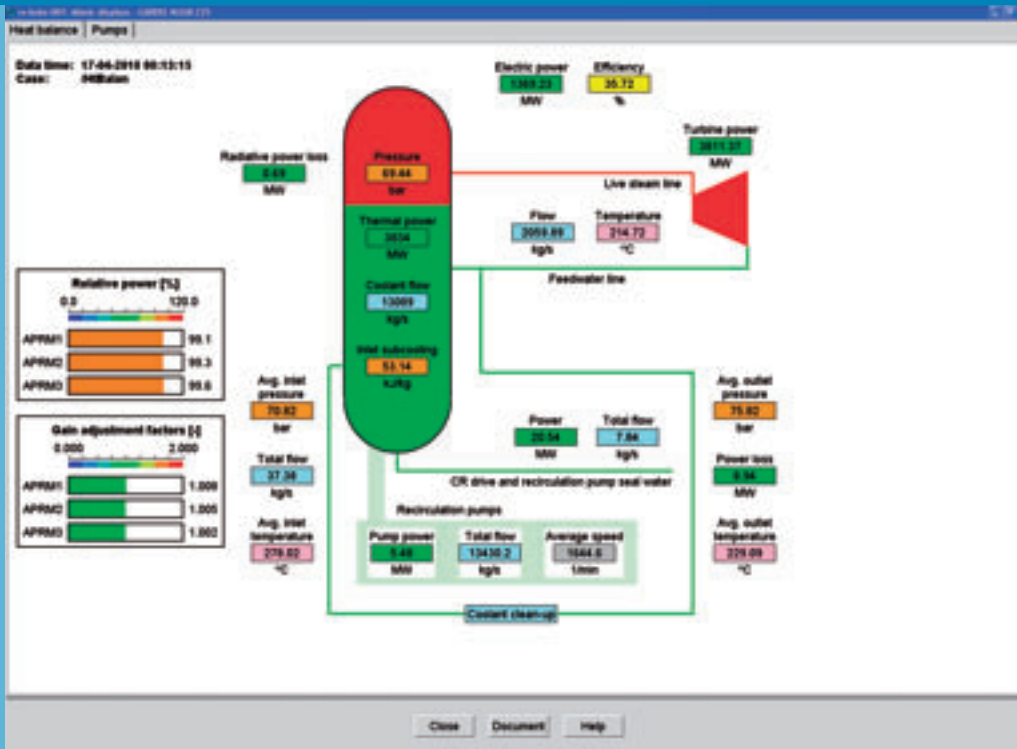
If a fuel element becomes too hot in one area, it becomes unusable. This means there is a maximum temperature for the fuel element that cannot be exceeded. This temperature, however, cannot be measured, only computed.

This is when the core simulator comes into play: Its primary part is a program that computes the neutron distribution and the resulting heat generation inside the nuclear reactor. This program simulates the resulting heat generated for each of the approx. 72,000 fuel elements inside the 784 fuel assemblies, which make up the core, in 24 axial planes. The program compares the results with the allowable limit value and provides a warning if the calculated results come too close to the limit value. All this happens automatically. Every five seconds the measured data is recorded and no later than 30 seconds the results can be seen on the screen.

The perspective of the reactor operator: everything at a glance

In reality the core simulator supports the reactor operator with the challenging day to day tasks. The reactor operator has the core simulator directly on screen in front of him. A green bar on the overview image means everything is under control.

Let's look over the shoulder of the reactor operator onto the main screen: At the top right-hand side you can see the



Plant cooling circuit schematic

operating map which shows the operating point, the current condition of the reactor (green cross hairs) in the image displaying the power throughput and coolant flow rate. If the operating point goes up, there is more power throughput without increasing the coolant flow rate, therefore, more power would be generated. However, the limit values would soon be reached and the consequence would be an automatic shut down of the reactor by inserting the neutron-absorbing control rods.

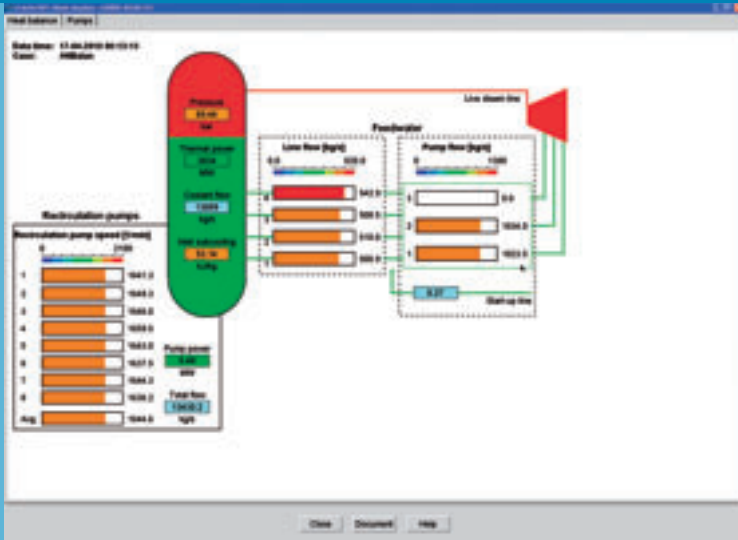
If the operating point shifts to the right, resulting in a higher coolant flow rate without increasing the power throughput, the fuel rods are cooled better, but less steam is generated, and therefore less electricity. Therefore, the objective is to achieve an optimal combination of flow-rate and power output which is identified by the blue curve ("URK-Nenn") in the image.

In the current operating map, the reactor operator sees immediately that the plant operates within the optimum range (marked

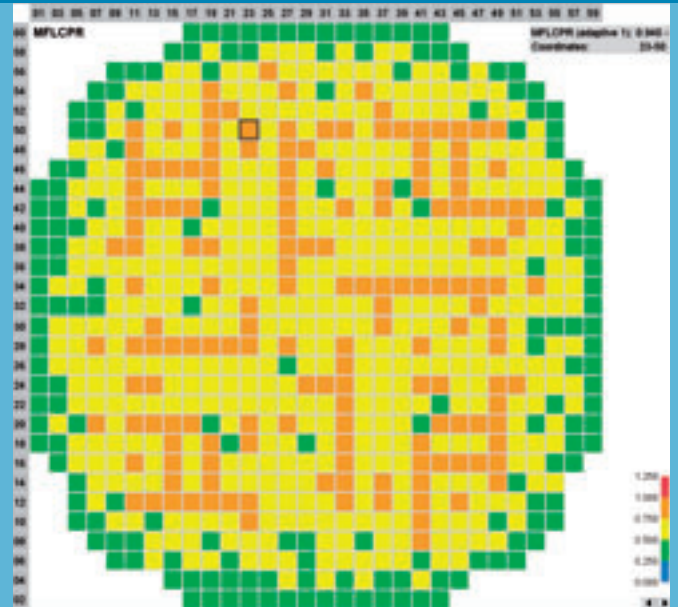
with white backing) and knows that the operation is within the limit values. At the bottom of the screen he can see the history of the power output progression and can identify what tasks were carried out by an earlier shift.

More in-depth information is available to the reactor operator on demand: He can, for example, select a plant diagram which displays entered, measured and arithmetic values. By clicking on a numerical value, he can have a chronological sequence displayed immediately and find out how this value has changed over time.

The plant diagram "cooling circuit" demonstrates in a simplified way how the coolant is heated inside the reactor, is turning into steam (red), and is then fed to the turbine. Here the energy is released, the steam condensates to water which is then fed as water back to the reactor.



Plant pump schematic



General view of the fuel elements power outputs

This does not happen totally on its own: Pumps are used in the process, for example, the feed-water pumps which pump the coolant from the turbines back into the core or the coolant circulation pumps which maintain the coolant flow in the reactor. These pumps can also help control the reactor. If less electricity is needed, the reactor operator reduces the pumping speeds. This, in turn, reduces the reactor’s power output.

The image of the core is another available view. For each of the 784 fuel elements the difference between the output to the limit value is illustrated in color here. A red mark would mean the limit value is almost reached or has been exceeded. In this image everything is working normally.

Core simulator: intelligent and proactive

A core simulator can plan ahead for future events: If on a weekend when less electricity is needed, the plant is supposed to run at partial load but then on Monday back at full load, the core simulator can calculate these events in advance. The program instructs the user on which measures have to be taken at what time so that the desired condition for the reactor is reached quickly and safely.

Conclusion: The core simulator is an important system for a nuclear power plant. Without it the reactor operator is blind. If the simulator fails, the plant operation is limited which results in a reduced power output.

Therefore, the core simulator has to be available at all times, which means, it has to have a backup. The core simulator in Gundremmingen exists in quadruple redundancy – two processors in Unit B and two in Unit C. One of the two processors per Unit is always in stand-by mode. This secondary processor is supplied with measured data constantly without ever taking actions. If, however, the primary processor should fail, the secondary will take over immediately.

With more than three decades of experience in the area of core simulators, NIS is the ideal partner for generating electricity safely, reliably, and economically. This also includes the 26th operating cycle at Gundremmingen!

Siempelkamp Logistics & Service GmbH (SLS) in Bad Kreuznach, Germany:

Dedicated service from head to toe

By Ralf Griesche

The Siempelkamp service division morphed into a complete service company: In the beginning of May a new Siempelkamp subsidiary, Siempelkamp Logistics & Service GmbH (SLS), started business operations. At the Bad Kreuznach location, specially trained employees are dedicated to the standard spare parts business and the logistical supply of Siempelkamp production locations. The advantage for the customer: a quicker, more cost-efficient and customer-friendly spare parts supply by bundling competence.

The managing directors of the new company are Stefan Wissing and Thomas Dahmen, both of them with many years experience in the area of machine and plant engineering. The SLS-Team consists of existing employees from the Krefeld headquarters, new employees from Bad Kreuznach and the surrounding areas as well as employees from the Hombak Maschinen- und Anlagenbau GmbH, which has been part of the Siempelkamp Group since 2009.

The new location in Bad Kreuznach was a good logistical decision. The proximity of SLS to the Frankfurt airport and the highway network near the hall exit provide excellent conditions for supplying spare parts quickly. This is an important customer advantage especially in an area where time is of the essence. The hall capacities at the Hombak premises also provide excellent conditions to have an extensive assortment of spare parts available. The team in Krefeld continues to exclusively supply spare parts that require technical assistance or parts for upgrades. For these parts, close contact to the design department is essential in finding the optimal customer solution.

Bad Kreuznach's primary focus is on one thing – speed without loss of quality at a top price for standard spare parts! From the time the order is received to the delivery, the satisfaction of the customer is dependent on the speed of the delivery combined with a price advantage and consistent high quality. Since the founding of SLS, the team increased the order volume dramatically and secured business for Siempelkamp which customers could have alternatively handled through other dealers! Many plant operators trust in all-round service by purchasing 70 to 80% of their spare parts and more directly from the OEM Siempelkamp. This is a pleasing reference that demonstrates that our customers not only rely on us in a single case that is hard to handle alone, but anytime!

Management of Siempelkamp Logistics & Service GmbH,
Stefan Wissing and Thomas Dahmen



SLS in an interview: Advantages that lead to an accelerated spare parts supply!

Interview with Stefan Wissing and Thomas Dahmen

SLS increased business dramatically. What is the foundation for the business concept and the positive customer responses? The managing directors of SLS, Stefan Wissing and Thomas Dahmen, report in an interview about the promising SLS business start.

Keyword “standard spare parts business” – What priorities do plant operators have in mind when they decide for a service partner and refrain from ordering spare parts on their own?

Stefan Wissing: A customer who needs spare parts in order to bring a plant up to speed expects tempo in all areas of the service performance chain. This translates into quick response times for the order request, purchasing and delivery. That this service has to be performed at an attractive price goes without saying.

Speed on the one hand, price advantage on the other: How did SLS manage to convince with both advantages in such a short time?

Thomas Dahmen: For each request, a customer receives an offer the same day. In the ideal case the customer knows the part or item number; sometimes, however, we receive requests which only give the position number of the spare part or a description. Within a short time we can provide an offer. If the offer turns into an order, our new electronic data exchange contributes an important part in delivering the part quickly to the customer. Via Electronic Data Interchange (EDI) we perform a quick information transfer with the customers – we are currently expanding this electronic data processing support.

How big of a role can such a system play in the scope of the entire bundle of advantages? Doesn't the concrete service primarily count, that is, the correct and low-priced spare part?

Stefan Wissing: EDI works in the background. It smoothes the way with the objective to accelerate the delivery of spare parts. All details are securely archived which tremendously simplifies the search for follow-up orders. Last but not least the communication with the customer becomes quicker, more targeted and improved.

Thomas Dahmen: Another advantage: Our international subsidiaries are directly accessing our system after the request for quotation was received at their location. The ability of our local service offices to connect to our system represents another “accelerator”. For the customers nothing changes. They continue to contact the usual contact persons for Siempelkamp in their areas. The Siempelkamp employees in our subsidiaries save time by directly accessing our system. Consequently, spare parts that are urgently needed can be provided more quickly.

Which other SLS competences also stand for quick reaction times?

Thomas Dahmen: The delivery itself. Here, the production locations come into play: We now provide them with supply parts without using an external logistics company as done in the past. SLS can provide the same service better and more cost-efficient with its own people! Furthermore, it will be possible to produce smaller parts, which have to be manufactured according to a drawing, in a type of fast-track production. Here, we profit from the close proximity to the production location in Hombak. Consequently, our customer benefits from another attractive service component. Due to our close vicinity to the Frankfurt airport, the largest and most important reloading point for air cargo in Europe, as well as our online connections to our logistics service providers, we can offer quick deliveries at favorable transport conditions throughout the world. The daily consolidation of air and sea freight leads to cost advantages that we can pass on to our customers.

Keyword "low price": How can SLS stand its grounds against Google orders?

Stefan Wissing: In a dialogue with our long-standing customers we have considerably lowered the prices for most of our spare parts. Thus, we have secured many orders which customers might have otherwise bought via the Internet from online retailers.

Were Siempelkamp spare parts too expensive so far?

Stefan Wissing: The price cut is the result of a long process. We have succeeded by concluding better purchasing conditions and attractive basic agreements with our suppliers. Furthermore, we have put a lot of effort in efficiency increases by optimizing our processes.

Do drastic price reductions not always lead to losses in quality?

Stefan Wissing: No – our spare parts are still characterized by high quality. Our customers can be assured that the parts

they receive from us for their equipment are optimally tailored to their needs. Of course not all parts reflect the same low price. Rising raw material prices, for example for steel, cannot be ignored. However, in cases for which we have optimized purchasing conditions or internal processes, we offer our customers products with attractive prices.

Thomas Dahmen: In connection with the quality demands and beyond the price discussions, our extensive know-how has always paid off for the customer. Siempelkamp offers concentrated experience – by the way, at the Bad Kreuznach location we are also handling the spare parts business for Kuesters presses!

After barely six months, SLS now awaits a successful start into 2011. What is on the SLS strategic agenda?

Thomas Dahmen: We will further fine-tune and extend the electronic data exchange with our customers. Furthermore, we will continue to shape our pricing structure in an attractive way and in dialogue with our customers. A new

Back row from left to right: Niklas Wilmen, Michael Panza, Carmen Lorch, Uwe Lampert, Thomas Vogel, Fabian Scheele and Stefan Wissing. Front row from left to right: Lisa Noheimer, Jan Krick, Gabi Renger and Julia Kießler



service is about to be launched: Customers with lines that are approx. ten to 15 years old will receive tailor-made spare parts catalogues including current prices in order to be prepared for emergency situations. As a core service we will also continue to extend our spare parts storage.

Stefan Wissing: After initially only providing spare parts for the original Siempelkamp scope of supply, during the past few weeks SLS has started to provide spare parts for Kuesters presses and old Bison machines as well as all machines for SHS finishing lines. The customer will have one contact for spare parts, orders can be bundled, and processes for customers are simplified and performed more quickly.

In May of this year, Siempelkamp conducted a survey on customer satisfaction of which the results offer valuable clues for the spare parts business (see box). We will use the feedback from our customers as an incentive to further improve the quality of our parts and their availability from stock!

Spare parts supply according to our surveyed customers: top arguments

In May 2010 approx. 500 customers were asked: "How satisfied are you with Siempelkamp's spare parts supply?" The responses confirm: Everything is working – but a little improvement never hurts! Following, the most important results.

- According to our survey, **92%** of our customers are 'very satisfied' to 'satisfied' with the **quality** of our parts.
- **88 %** appreciate the fact that the **shipment** of our spare parts is correct and complete – there is no friction involved!
- In regard to **delivery schedules**, **76%** of our customers compliment us.
- Our **personnel** know their stuff: **84%** appreciate the cooperation with Siempelkamp service technicians; **84%** are evaluating the technical know-how of our teams with 'very satisfied' to 'satisfied'. **83%** of our customers are either 'very satisfied' or 'satisfied' with the quality of the results.

What can we improve? Next to the topic already discussed involving lower prices, our customers provided important advice for a better spare parts service:

- Extension of the spare parts availability in stock and shorter delivery times in general
- Further improvement of the communication in case of delivery delays
- Periodic information to customers about technical innovations

Compliments included: As part of their feedback, many customers expressed only positive aspects and thanked us for the positive cooperation, the good service, and, in many cases, the long-standing contact to our employees. **We would like to return the same type of gratitude to our customers!**



Shipment of spare parts

SHS production plant for mineral wool sandwich panels: The benchmark for size and innovation!



From May to November 2009 Siempelkamp built a complete production plant for mineral wool sandwich panels in Alajärvi, Finland. With the completion of this order, Ruukki, a specialist for metal-based materials, components, systems and integrated systems to the construction and engineering industry, started operating the largest and latest production plant of this kind.

By Wolfgang Inhof



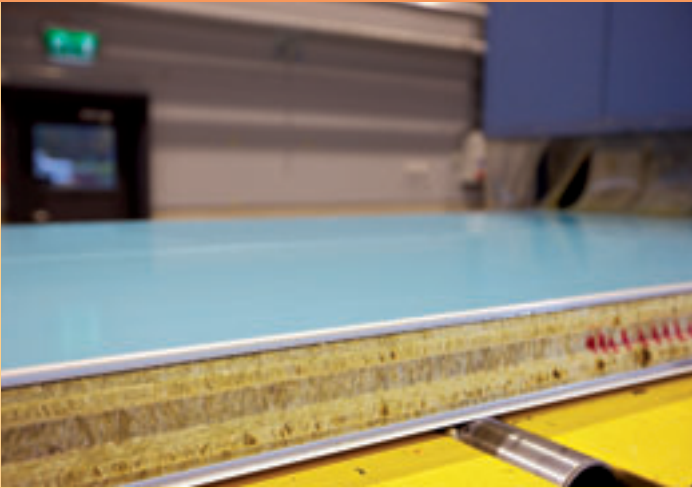
With the initial plan developing in 2007, the new plant in close proximity to the existing production location started to take shape. In spring of 2008 Ruukki signed the contract for the supply of the new plant. For Siempelkamp this order meant supporting a big player in the European steel industry. Ruukki, also called Rautaruukki, takes up a leading position in the manufacturing of steel products and custom-made components for the construction and engineering industry. Founded in 1960 by the Finnish government, the company has developed into an internationally recognized and versatile steel and technology company.

The Siempelkamp scope of supply consisted of the complete production plant ranging from the 4-station de-coiling system for steel sheet layers to the transfer system of mineral wool stacks from a fully-automatic high-bay storage system for mineral wool. The order is completed with the transfer of the ready-packaged stacks to another fully-automatic high-bay storage for finished products. The plant is designed for a daily production capacity of up to 8,000 m² in three-shift operation. For the first time, all products with a finish-thickness of up to 260 mm (10.2 in) are produced at constant production speeds of at least 8 m/minute.

Precision from the start

What is necessary to provide high quality and reliability from the start? The top priority is precision. At the start of the production line, the sheet coils from the adjacent coil storage are put on the uncoiling reels and the sheet metal layers are brought into the line with remote controls. "The sheets are connected with a fully-automatic riveting system. In order to avoid damaging the profiling rollers, the notching process of the outer sheet edges is fully automated which ensures that only one sheet layer is run through the profiling rollers," explains Wolfgang Inhof, sales manager for double-belt presses, building materials, and sandwich panels at Siempelkamp.

Cutting and automatic feeding of mineral wool strips



Finished mineral wool panel leaving the double belt press



The double belt press: the core machine of the plant



Strip trimming to control the tolerances



Automatic strip cutting of mineral wool boards

At the same time the correct type of mineral wool is retrieved from the high-bay storage system and transported to a cutting system where the wool is cut into strips. During this process, a newly developed double feeder for mineral wool slabs is used. The feeder's cycle times are short enough to ensure that enough slabs can be fed to the production line even for the production of thick final products for which a mineral wool slab can only be cut into three to four strips. "Compared to production lines for panels made of Polyurethane, production lines for mineral wool panels produce at the same speed irrespective from the product thickness. For thicker products, less strips can be cut from one mineral wool slab which results in a lower cycle time per slab," explains Wolfgang Inhof.

Due to exchangeable saw shafts, the strip cutter allows quick product changeovers. Following the strip cutter, the strips are turned in a star turner. The customer benefit: The turning of the strips allows for a significantly higher functional reliability compared to the generally used unguided tilting of the strips along a transport belt. The old process oftentimes resulted in many malfunctions and consequently, plant shutdowns, especially when producing thick end products.

From the beginning on, Ruukki attached great importance to product quality. Therefore, the plant contains several systems that help adjust the tolerances of the mineral wool strips in order to achieve a continuous mineral wool strand without gaps.

After turning of the strips, the longitudinal edges are cut in order to even out the length tolerances. The main line is equipped with a surface milling machine to even out surface irregularities. A sophisticated system of speed-controlled transport belts ensures that the strips are continuously joined without a gap and without interlocking.



Automatic feeding of sealing strips



Packing line for panel stacks

At this stage in the production process, the line has produced a continuous mineral wool strip. Now the mineral wool is glued onto the cover layers. This is done with a high-pressure application machine, which applies the two-component Polyurethane adhesive via recirculating mixing heads onto the steel layers. The strong focus here was on flexibility and future compatibility.

Therefore, the machine can process all types of adhesives and can adjust the applied quantity within a wide range to amounts even below 100 g/m². This is possible due to a mixing head that applies the adhesive intermittently, that is, the head opens during the stroke and closes during the return stroke of the oscillation. Due to the recirculation technology, the mixing head is self-cleaning. "This means that neither an environmentally-harmful cleaning solution has to be used nor mixing tubes have to be exchanged as in the commonly used low-pressure machines. By using the high-pressure process, the adhesive can be directly sprayed onto the cover layers. This means less adhesive penetrates the mineral wool which results in glue savings," says Wolfgang Inhof. Again we have illustrated to what extend the customer benefits from Siempelkamp equipment!

The double belt: optimal pressure distribution thanks to electronically controlled height adjustment!

After joining the three layers (two cover layers and a mineral wool core), the assembled panel is transferred into the double belt laminator for curing. The double belt is heated up to 70°C via a modular heating system, which is integrated into the double belt frame. This system guarantees an exact and reliable curing of the adhesive even if the belt has to be stopped. Furthermore, this heating system is extremely economical to operate. The previously common energy losses were minimized by eliminating the heating channels outside of the double belt.

The electronically controlled hydraulic height adjustment of the double belt press is a special feature. With it, the thickness of a board can be corrected even during operation. This results in an optimal pressure distribution onto the glued joint.

Following calibration and curing, the boards are cut to size with a band saw according to the corresponding customer order. The subsequent stacking of the boards is carried out with a vacuum suction frame. In a packaging station, the stacks are weather-proofed by wrapping plastic foil around them. For a secure transport of the stack, a piece of wood is put on top of the stack and a strapping machine applies a strapping around the stack. The ready-packed stacks are transported into a finished-products storage area where they are stored until a truck comes to pick them up.

Band saw for cutting of the panels to length





Glue application and joining of mineral wool core and cover layers

Custom-made control system – complete quality control

The control system for such a highly-complex production line plays an important role. The Finnish customer made great demands on Siempelkamp regarding such a system.

The control system is divided into several levels. The PLC machine controller ensures the functional sequence of all machines, records the process data for the adjustment of the plant parameters and the production values for the determination of cutting lengths and stack sizes.

With an ERP system, the customer develops the upcoming production list including all data concerning raw material, product and customer. This information is transferred to an SQL database which handles the data exchange. According to this data, Siempelkamp machinery retrieves the corresponding mineral wool from storage, adjusts the glue application machine, the heating system of the double belt and many other process parameters which are stored in recipe databases.

When the production of one batch is completed, the actually produced product parameters are recorded to the database. At the same time, a number of other information about the production is put into the database including the measured process values regarding the temperature, pressure, glue amounts, and production time. "With the help of such complex details, the

Strip turning system





Offset feeding of the strips

customer can achieve complete quality control and in the case of a product defect, the customer can analyze all production conditions," explains Wolfgang Inhof.

Due to rising fire protection requirements in many countries and due to the new standard for sandwich panels according to EN 14509, the demand for sandwich panels with a mineral wool core is increasing in Europe. The requirements can no longer be satisfied with other sandwich panels, for example, those made with an insulating core made of plastic foams.

Cross transfer of the strips



Questions and answers about the benefits for the customer

What makes the Ruukki production line so custom-fit? Wolfgang Inhof, sales manager for double belt presses, building materials and sandwich panels at SHS, summarizes the benefits.

What features in the production of mineral wool sandwich panels lead to a high product quality from the start?

Wolfgang Inhof: Primarily, it is important to achieve a completely even and continuous mineral wool strip. To ensure this type of strip, we have equipped the Ruukki plant with several systems that even out the tolerances.

The control system plays a significant role in such a complex production line. What are the demands on such a system?

Wolfgang Inhof: The keyword here also involves "completeness," at this time in the form of a complete quality control system. From the production list to the process data acquisition, our customers are able to perform a complete analysis of all production conditions.

What are the components that bestow this new plant with the reputation of being the latest of its kind in Europe?

Wolfgang Inhof: I could name many plant details, for example, the automatic insertion of sealing cords into grooves or the applying of partition foil for the production of longitudinally-divided smaller elements. These features complete the picture of this highly flexible production plant, which is supplying our customer with a comprehensive range of services! Furthermore, the plant is set up for future line extensions, for example, to incorporate a leveling station for especially smooth panels that have to meet very high surface demands.

On its way to the port terminal



Innovative technology for feed storage depot:

Siempelkamp crane system replaces wheel loader

Siempelkamp Krantechnik (crane technology) has set foot into a new application area: For the first time a company, the J. Müller AG in Brake, carries out the cargo handling inside its feed storage depot with a bridge crane. For this reference project Siempelkamp Krantechnik supplied a double-girder bridge crane with a special design.

By Ute de Vries



The port-terminal company J. Müller on the Weser River, Germany



Production hall at Siempelkamp Krantechnik in Moormerland, Germany

The location for the new crane system will be at J. Müller AG in the port of Brake on the Weser River. The port-terminal company owns one of the largest silo complexes in Europe. 360,000 t (396,832 US tons) of storage capacity is used for the handling, storage, and processing of grain, feed, and oilseeds among others. The modern transport organization offers the release of orders 24 hours a day, seven days a week in an efficient and customer-specific manner.

The company ordered an innovative Siempelkamp crane concept for its latest storage depot. Its area consists of four storage compartments with a total capacity of 40,000 t (44,092 US tons). The innovative automated crane will be used for distributing the goods into the four compartments. This technology is used for the first time for the storage of grain and animal feed!

The concept: On the one hand the storehouse is connected with one silo installation via a conveyor belt bridge. On the other hand sensitive products can be discharged gently via a crane and a conveyor belt from ships into the storehouse. The advantage of this innovation: Grain, feed as well as sensitive products such as wood pellets can be handled individually and appropriately.

Superior solutions for ambitious challenges

The crane system that was custom-built for this application is supplied by Siempelkamp Krantechnik. The crane is designed as a double-girder suspension crane with grab operation for the handling of different dry bulk materials in and out of storage as well as reloading processes.

The double-girder suspension crane moves on a 125 m (410 ft) long welded custom crane track which has also been supplied by Siempelkamp. These tracks have been installed at a height of 11 m above the floor of the wooden roof construction hall. The bridge crane with a span of 26 m (85 ft) and cantilever arms of 7 m (23 ft), resulting in a total girder length of 40 m (131 ft), stretches over the entire width of the building. The bridge crane is equipped with a double-rail trolley including an open winch hoist. To optimize the mounting dimensions, the trolley between both bridge girders has a lowered design.

All movements of the crane are controlled by frequency converters. The crane as well as the simultaneously movable double-rail trolley can reach speeds of up to 63 m/min. Combined with a maximum lifting speed of 38 m/min, 400 m³/hour of cargo can be handled by the crane.

A motor-driven dual scoop grab serves as the load suspension device. The grab has a dead weight of 7 t and a volume of 12 m³. The load capacity of the grab is 9 t, the supporting structure of the crane has been designed for a total load capacity of 16 t.

The crane controls are located outside the building inside a control container. In manual mode the crane installation is operated via a remote control. In automatic mode a programmable logic controller with a connection to the control room is used. The power supply to the crane and trolley is handled via energy chains.

A design with many “special effects”

Since the building, including the wooden roof construction, was existing at the time the contract started, one challenge was not to exceed the maximum given wheel loads. For us that meant considering the maximal allowable total weight of the crane installation for every construction step and to save weight without sacrificing the structural engineering of the grab crane. For a better distribution of the wheel load onto the crane runway girder, the crane was equipped with joint end carriages including eight wheels per crane track side.

An important customer requirement was that no stored material would remain on the side walls, front walls and dividing walls of the storage depot after emptying of the compartments. Due to the minimum approach dimensions resulting from this, the crane bridge as well as the double-rail trolley had to be designed as compact as possible. Approach dimensions of crane and trolley that are optimally adjusted to the conditions in the building allow for the dual scoop grab to cover and completely empty the entire storage area in all four compartments.

The implementation of the optimized lifting height also called for a special solution. Here, all necessary clearances during the move of the grab over the dividing walls of the compartments and over the customer’s bulk storage bunkers had to be taken into account. Because of the existing building height, this could only be carried out with special measures, for example, by using a compact special hook block for the grab.

Since the crane cannot be reached via lifting platforms during normal operation when the depot is full, we have equipped the crane bridge and trolley with maintenance catwalks and platforms. The effect: All components are accessible for maintenance and repair purposes; safe working conditions for the service personnel are guaranteed. Optimizing the approach dimensions resulted in extremely tight spaces for the inspection works on the crane and trolley. One solution for this included traveling platforms that can be brought in when needed. In this way the crane approach dimensions could be optimized and at the same time, maintenance and repair works on components can be performed safely.



The finished crane system prior to acceptance by Siempelkamp Krantechnik

When planning the maintenance catwalks and platforms as well as the access to the crane, safety took first priority. During this part of the process, the team of the Siempelkamp Krantechnik worked closely together with the customer and its trade association. Solutions for the difficult basic conditions were developed together. In part special exemption permits were issued on the basis of our statements and risk analyses.

Another challenge: The bulk materials handled by the crane are mostly flammable solids which have a significant dust content. In this respect swirling dust particles must be expected when handling the material. To date, the material was moved with a wheel loader to minimize the development of an explosive dust atmosphere. To avoid dust explosions during the planning of the Siempelkamp crane installation, significant attention was paid to explosion protection measures and other safety measures. For example, all drive motors and control elements were designed for explosive environments.

This premier project was completed within seven months. The assembly and start-up of this crane system took place from May to June 2010. The inspection prior to the first start-up and operational hand-off to the customer took place in mid-July 2010.



Assembly at the port-terminal company

Fully-automatic suspension crane system with grab fully assembled inside the depot



Crane know-how for Krefeld: Nothing is impossible!

Founded in 1987 as E&W Anlagenbau GmbH, Siempelkamp Krantechnik GmbH (Crane Technology) has been a part of the Krefeld Group since late 2008. What brought crane technology and Krefeld together? How has business been two years after Siempelkamp Nukleartechnik (Nuclear Technology) acquired E&W Anlagenbau? Heinrich Kampen, Managing Director of Siempelkamp Krantechnik, goes into more detail in an interview.

By Ralf Griesche

Crane technology from East Friesland, Germany, meets nuclear technology from Krefeld – what is the foundation for this alliance?

Heinrich Kampen: Our companies first met in 2005 when we successfully completed a joint project regarding drum storage facility in Taiwan. Back then, the scope of supply consisted of two cranes with grabs for the handling of storage containers containing radioactive waste at the Lungmen nuclear power plant.

Through this project we acquired a desire to work together in a strategic cooperation. Products and services around the reactor are Siempelkamp Nukleartechnik's specialty – only a crane manufacturer was needed to complete this portfolio.

The acquisition of E&W Anlagenbau in 2008 was the natural outcome which provides Siempelkamp customers with even more manufacturing capacity.

Are your cranes exclusively used in nuclear power plants?

Heinrich Kampen: We are supplying approx. 25 to 30% of our crane systems to be used in nuclear applications. However, the largest part is used in many different applications for customers from different industries.

What is the secret for success which Siempelkamp Krantechnik uses to score in its markets?

Heinrich Kampen: Our biggest factor for success is our high competence as a niche provider. In this way we were able to position ourselves as a provider to nuclear power plant operators whose highly specialized area of responsibility requires a high administration effort due to many regulations. As a cooperation partner we have to meet these requirements on the highest possible level. We also focus on the individual needs of our customers. We advise, develop and build in the 80 to 200,000 kg weight class. This has been a decisive factor for our existing customers for a long time. Because of our comprehensive know-how in the control area we were able to extend our program of innovative products.

How comprehensive is the range of products?

Heinrich Kampen: Since 1987 we have produced standard and special crane systems and have supplied 5,000 cranes of all sizes to national and international customers. Our customers have ordered single and double-girder bridge cranes, special cranes, load suspension devices, and gantry cranes. We have the know-how and experience to develop customer-specific solutions for almost any application. This goes especially for special cranes of all kinds which we develop in many different designs. "Nothing is impossible," is the slogan we use here in East Friesland.

Do you produce everything yourself?

Heinrich Kampen: We carry out the steel construction and the electrical engineering. Components like wheels, drives, cable pulls and winches are purchased.

Heinrich Kampen, Managing Director of Siempelkamp Krantechnik



Siempelkamp Krantechnik: scope of services at a glance

- Single-girder and double-girder bridge cranes
- Ceiling and suspension cranes
- Wall and pillar slewing cranes
- Wall-bracket cranes
- Load-lifting beams and fastening devices
- Special cranes of all makes, crane tracks
- Small crane systems
- Radio remote controls
- Frequency controls and circuit for DC controls
- Crane automation
- Electric chain hoists and electric cable hoists
- Crane components and accessories
- Modernizations and modifications

How many employees work in your production and how have sales developed over the last few years?

Heinrich Kampen: Currently, we have 57 employees and eight trainees. In regard to the annual sales, we have had a continuously increasing sales volume over the last five years. From 2005 to 2007 we have increased our sales volume from 6.3 million Euros to 10.5 million Euros. Last year we even reached 14.2 million Euros.

What have been your largest orders recently?

Heinrich Kampen: An important order for us was the delivery of 21 crane systems to AREVA. These systems with a load capacity ranging from 500 kg to 90 t including runways were made for the Finnish EPR™ reactor in Olkiluoto. Equally gratifying was the delivery of customized double-girder bridge cranes for Urenco Deutschland GmbH in Gronau, Germany and special overhead cranes and double-girder bridge cranes for Meyer Werft GmbH in Papenburg, Germany. Another recent milestone includes the refurbishment (in collaboration with Siempelkamp Nukleartechnik) of a polar crane at the Brokdorf nuclear power plant.

From today's perspective – how is the 2010 business year going to develop?

Heinrich Kampen: We can feel the upward trend of the German industry. As mentioned earlier we did not experience a plunge in orders in 2009. This was due to our high order backlog. This 'wave' has carried us through the crisis year right into the new economic upswing.

A personal note at the end: For 23 years you have been an established player for Siempelkamp Krantechnik GmbH – in 1987 you started your work as a service technician. What do you appreciate most about your company and what project was your biggest personal challenge?

Heinrich Kampen: Utilizing a small powerful team to develop creative solutions for manifold and exceptional transport demands for customers from many different sectors is the part I like best about my job.

The biggest challenge for me was to secure the AREVA deal including 21 crane systems for the Finnish EPR™ reactor in Olkiluoto. To receive an order of this dimension, back then when we were still E&W, was a true challenge.

Siempelkamp's 4' concept goes to China:

Product and communication placement with bite!

"The bait must taste good to the fish and not the angler," is a well-known rule in marketing-communication. However, not every fish is the same. From the product to the key message to the PR, the Krefeld Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG tailors its activities exactly to international markets and the corresponding customer requirements. Best example: the 4' ContiRoll® concept for China and its supporting communication concept. Eleven (11) sold plants in thirteen months confirm that the bait is the right one!

By Michael Bischof

In 2007 Siempelkamp introduced the 4' concept for continuous presses to the market in order to meet the special needs of the Chinese plant operators. The main benefit includes: The 4' model is well suited for smaller plants and allows for shorter distances to raw material sources and selling markets. This concept is

especially interesting when there is a high demand for MDF in the premium segment and a short supply of raw materials. The conservative use of wood and glue is also an advantage. The small ContiRoll® is suitable as a green-plant investment as well as a replacement of an older multi-daylight press (see box).

4'ContiRoll®: the concept

Key data:

- Lengths: 33.8 and 38.7 m
- Speed: 1,200 mm/s
- Capacity: 350 – 610 m³/day
- Thickness range: 2.5 – 40 mm
- Board density: 500 – 1,000 kg/m³

Why a 4' ContiRoll®?

- increasing shortage of raw materials
- steadily increasing transport costs make shorter distances to raw material sources and selling markets necessary
- increasing quality awareness of the consumer in the premium segment
- large investments increasingly more difficult to finance
- replacement for daylight presses, more efficient use of increasingly expensive raw materials (about 10% less raw wood; approx. 1–2% less glue)





Sales success for 4' presses at the trade fair in Beijing

- adding to or completing equipment with Chinese machinery and plant technology possible without difficulty – high local content
- direct manufacturing of finished boards possible; therefore no masterboards; small storage areas
- quick installations and start-ups (approx. four months to acceptance test)
- optimal for smaller plants

All features of large 8' and 12' presses incorporated:

- best pressure distribution
- very low thickness tolerances
- quick start-ups
- stable ramp-up curves
- unsurpassed high availability

Another advantage especially for the Chinese market: "The popular Asian board sizes 4' x 8' as well as 4' x 9' can be produced directly. Thus, the 4' ContiRoll® makes the need for a costly cut-to-size line obsolete. Last but not least, the overall concept allows for a high integration of local content and simplifies logistics for the plant operator," summarizes Heinz Classen, Management Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG.

The broad spectrum of product advantages is one reason for the success of the 4' concept. The good climate in the local market

is another. Although China did not remain unaffected by the economic crisis and acted hesitantly during the first half of 2009, during the fourth quarter China showed a clearly growing propensity to invest and has continued its way to the top of the large economies of the world. The driving forces for this development include urbanization and growth potentials due to growing incomes and strong exports which have made China an attractive market for the wood-based materials industry.

These are good conditions for positioning an optimal product in a growing market.

However, without the right marketing and communication strategy, the 4' concept bait would have lacked the necessary taste. Product placement, image development, and media relations follow certain rules which have to be known and observed. Each market faces different challenges: language barriers, different market conditions, different laws and regulations and an unknown consumer behavior can prevent or delay the placing of a product. Therefore, Siempelkamp dedicated special attention to the following question: Which marketing-communication concept is suitable to effectively place the product in the market?

Lishui III 4' ContiRoll® forming and press line



Advertising in China

www.siempelkamp.com

八月份双月刊

原创

Siempekkamp
Maschinen- und Anlagenbau

辛北尔康普公司

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- 更低公差值
- 耗费更少的原材料
- 一流的生产效率
- 极短的运输时间和快速的装机速度
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Integrated marketing-communication concept: "Re Nao" counts!

Siempekkamp has a representative office in Peking. However, this office is concentrating on service and sales and not on the marketing and advertisement of products.

That is why our marketing-communication concept started with the search for a suitable local B2B-agency partner. We decided on a cooperation with a consulting company – the determining factors for this decision included the trilingual team in Beijing, its comprehensive ex-

perience in the Chinese machinery and plant engineering, its broad service range and quick capacity of reaction.

The main issue defined by Siempekkamp and the agency included increasing the public awareness and the trust in Siempekkamp.

kamp as a partner for Chinese wood-based materials producers. All activities were preceded by targeted research. Customers and experts of the Chinese market were surveyed about their information habits,

for example, concerning the specialized press. The communication concept then targeted a well-coherent chain of three links including an advertisement campaign, the presence at trade fairs and PR activities.

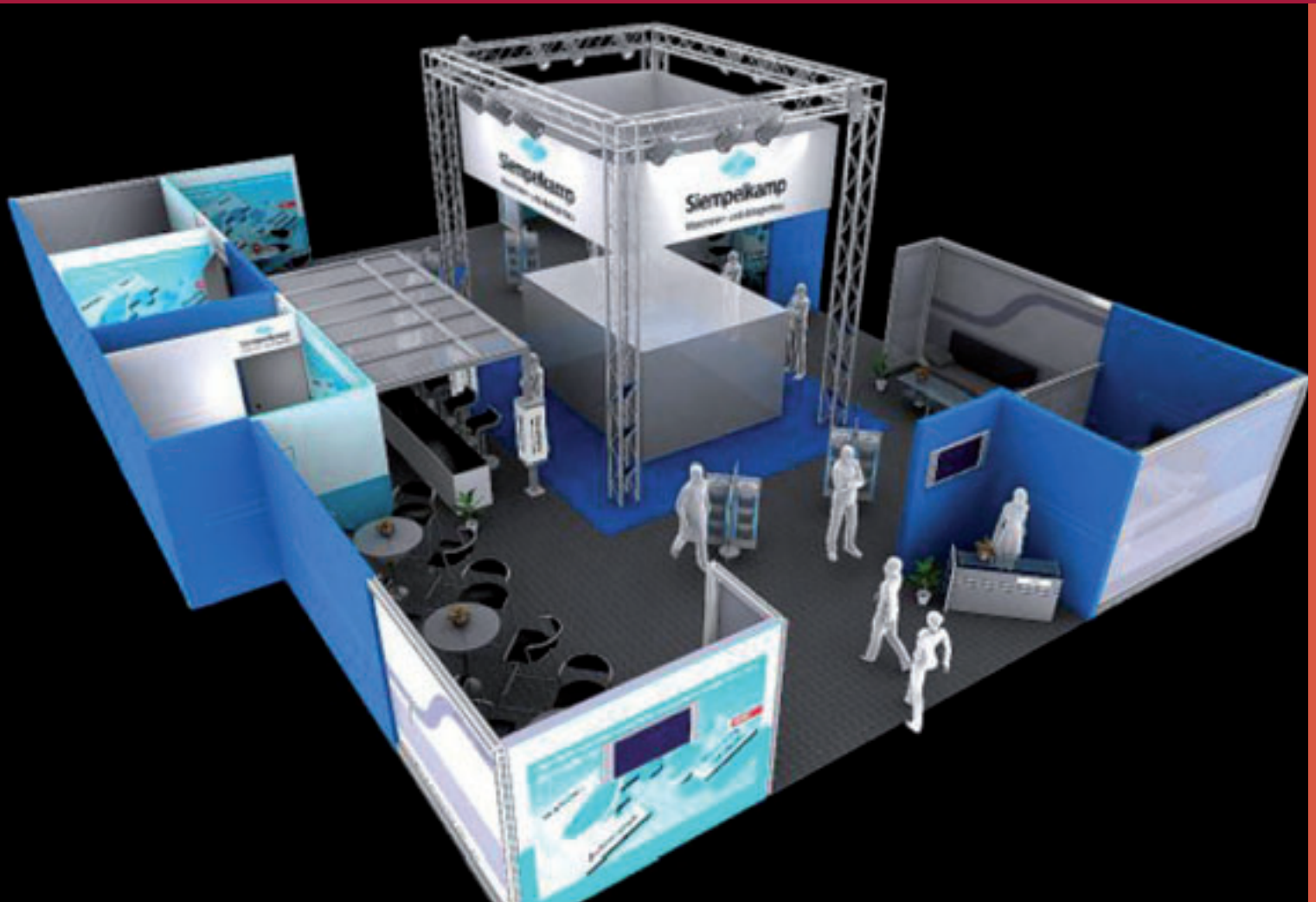
According to our consultants marketing in China has to be "Re Nao" – which is literally translated into "hot and loud". Dancing lions and dragons as well as small gifts for customers and journalists are part of this concept.



From the advertisement concept to the interview: the communication mix for China

"As bold as possible," was the recommendation for the advertisement of the 4' concept. Existing ads for the European market were modified according to the Chinese taste and placed in relevant specialized media. This method was completely successful: "Customers, interested parties and industry representatives noticed our Chinese ads immediately. It proved to be especially effective that we referred to our previous successes in the Chinese market. Each ad has been stating how many 4' plants have been ordered to date," says Ralf Griesche, Marketing Director for Siempelkamp.

Similar to ads, the focus at Chinese trade fairs has also been directed towards presenting the advantages and successes of the manufacturer and customers. This was the case at the International Exhibition on Woodworking Machinery and Furniture Manufacturing Equipment (WMF) in Beijing in March 2010. A Siempelkamp press provides customers with the security to have purchased the "Mercedes" of the 4' presses. This concept had to be communicated in a perfect environment: A 250 m² booth focused on the special needs of the Chinese professional visitors. Well-suited video material was especially important. The local agency in China created a product presentation which was effectively communicated via six large screens. The eye catcher was a centrally positioned section of a ContiRoll® press of which many visitors took a picture. This display was not just a pretty face but resulted in a



Booth at the Woodmac, Beijing 2010

provable success: one 4' plant was directly sold in advance at the WMF.

Complementary to advertisements and fair PR, Siempelkamp forced its media relations in China. A backgrounder and targeted press releases about Siempelkamp in China resulted quickly in meaningful reporting. The development of further media contacts resulted in neutral and bold reporting within a short time. The industry's online services also reacted quickly to the active communication. Interviews with Heinz Classen and Ralf Griesche completed the PR work effectively.

Eleven (11) sold plants

The combination of concentrated product advantages, an optimal market climate, as well as a well-developed marketing and communication strategy resulted in eleven (11) sold 4' ContiRolls® between September 2009 and October 2010. These presses with lengths of 33.8 and 38.7 m were sold to Chinese wood-based material producers, among them customers which have already installed their third Siempelkamp line. These operators include Huayi I and II in the Guangdong province, Luyuan III in Zhejiang, Tianjuan in Hubei, Gulin in Yunnan, Jianfeng in Sichuan, DongZheng I

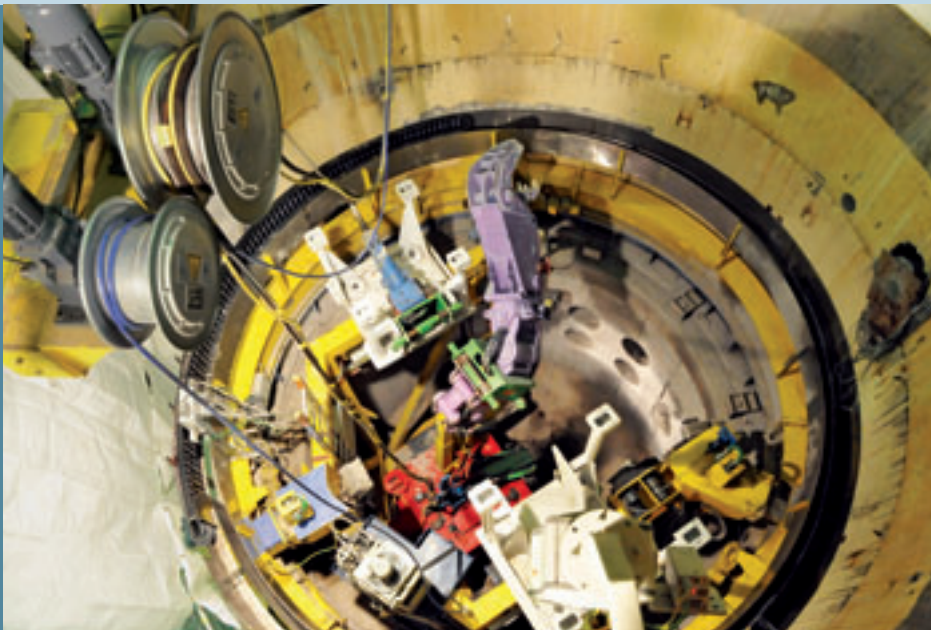
in Hubei and DongZheng II in Guangxi as well as Aosheng, Yichang and Sanmao. These new plants provide the Chinese market with an additional capacity of round about 1.5 million m³ of MDF/HDF.

The applied communication strategy which was delicately geared towards the Chinese market played an important part in the success of the 4' concept. Furthermore, without an agency partner with the corresponding expertise, the fish would not have taken the bait.

Maintaining personnel competence in nuclear technology: Siempelkamp trusts in

Three basic conditions justify why the maintenance and expansion of personnel competence have a high priority on the strategic plan of nuclear technology: 1.) a decreasing number of college graduates in general, 2.) a decreasing number of graduates with a background in nuclear technology, 3.) high demands on the safety engineering of nuclear facilities. How does Siempelkamp Nukleartechnik face this challenge? There is more than one way to solve this problem.

By Stefan Klute



Dismantling of a biological shield at the multi-purpose research reactor: SNT-supplied equipment includes standing and hanging frame with remotely-operated special-purpose machines

The topic of maintaining the personnel competence is a task that has earned the respect of the entire economy, not only the nuclear technology sector. However, the general conditions in nuclear technology make it even harder to find skilled trainees. Both the decreasing number of college graduates from technical schools and the controversy regarding the pros and cons of using

nuclear energy have caused the number of graduates with a background in nuclear technology to become very low.

The professional world, however, has agreed for some time now: Irrespective of the future use of nuclear energy in Germany, it is important to ensure that dependable technical knowledge continues to be available through young well-

educated talent. "This is a task for the complex structure of science and technology including manufacturers, operators, permit and supervisory authorities, and expert organizations. As a manufacturer of components and systems solutions as well as a provider of engineering services for nuclear facilities, Siempelkamp Nukleartechnik has faced this task for several years. In view of our broad spectrum of

trainees with insight

products, maintaining as well as expanding our personnel competence is indispensable in national and increasingly in international business," says Michael Szukala, Managing Director of Siempelkamp Nukleartechnik GmbH. Special

engineering) has been rising in the last few years, the market still has a deficit of skilled graduates.

In order to offset this deficit, SNT is pursuing a number of strategies:



Control room for remotely-operated dismantling process

knowledge is essential not only for building new nuclear facilities but also for equipping, retrofitting or decommissioning them!

Even though the number of students at colleges and universities that offer nuclear technology studies (included in the departments of electrical engineering, mechanical engineering, and power

- SNT is attracting and training students at an early stage by offering course-related general internships and supporting students during their mandatory internships. Next to interns that stay three to six weeks to get insights in the company, two students per year complete internships of six months each in the engineering area of SNT.



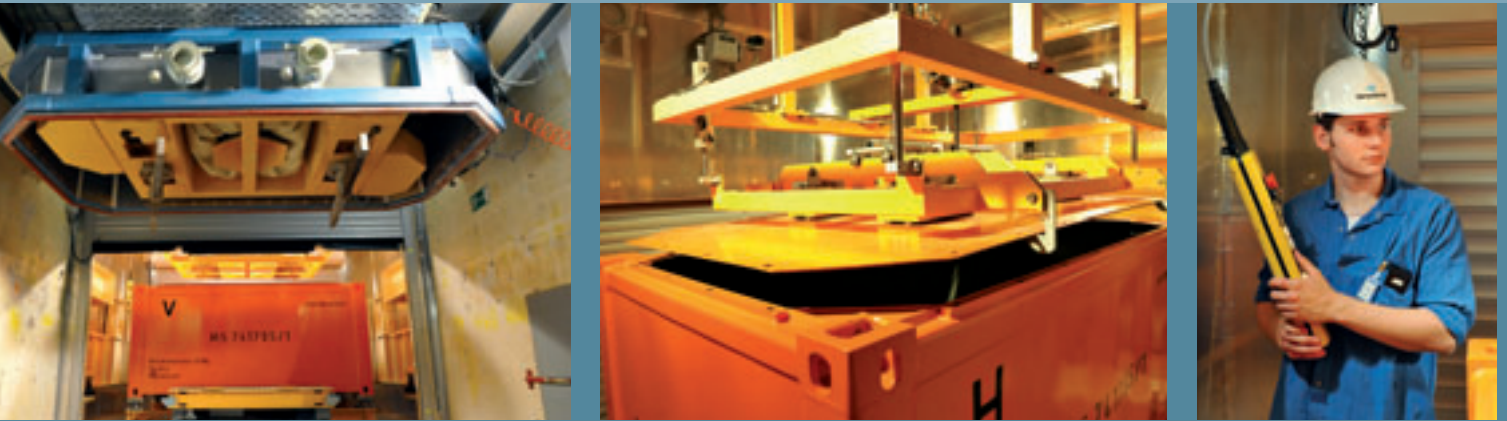
Michael Bodmer at the premises of the Karlsruhe Institute of Technology

Michael Bodmer: from the Karlsruhe Institute of Technology (KIT) as an intern to his bachelor's thesis

Michael Bodmer (student at the Karlsruhe Institute of Technology at the Department of Mechatronics) completed his internship with an SNT contracting authority on the premises of the former research center Karlsruhe which is now the Karlsruhe Institute of Technology (KIT).

Because of the positive experiences and the close contact to the deployed project team on site, he decided to continue working with SNT after his internship. For ten months he worked as an assistant (with student status) on the SNT project involving the dismantling of a biological shield at the multi-purpose research reactor in Karlsruhe.

Because a large part of the dismantling work at the multi-purpose research reactor had to be handled remotely, Michael Bodmer received subject-based, hands-on training parallel to his studies and gained relevant experience. The logical consequence resulting from this: Currently, Michael Bodmer is working on his bachelor's thesis in the area of engineering. However, his thematic focus has shifted from the decommissioning to the new development of a hot cell and to the design of a lifting device that is operated fully remotely.



SNT concrete treatment unit for the fully-automatic crushing of radioactive concrete and subsequent packing in interim storage containers

- After completing such an internship, students in the local community have the opportunity to deepen their practical experience with a course-related job at SNT – for both parties a win-win situation!
- The final step in attaching students to the company is to support them during bachelor's, master's, and diploma theses which, after their completion, may lead to full-time employment.

“By supporting students with their theses, we were able to gain five young qualified employees for SNT last year. The methods that lead to a first encounter or to a co-operation are oftentimes very different: Our presence and our commitment at events hosted for students by the nuclear associations, at student education fairs or at other workshops associated with

colleges/universities can lead to first encounters that will become long-term relationships,” says Michael Szukala.

Better power plant know-how for trainees

As part of the company's commitment to the training of young people, SNT offers a complex trainee program. In cooperation with E.ON, Vattenfall and KIT, SNT provides the opportunity for in-service training over a time period of twelve to 15 months specializing in power plant know-how. This program includes two to three months of training at SNT as well as an assignment at a power plant

location. The objective is to establish special knowledge, to ensure the know-how transfer, and to extend the competences of both parties involved in order to guarantee a long-term qualified co-operation.

Since the beginning of the trainee program in 2007, seven trainees started their work at the nuclear power plants Brunsbüttel, Krümmel and Unterweser as well as at the KIT. Meanwhile, four of them are working as project engineers or managers for the power plant operators; the three remaining ones are still completing their traineeships. The advantages for SNT as the supplier are obvious. The



Dr. Wolfgang Steinwarz (second from left) awards Heiko Herbell from the KIT, Institute for Neutron Physics and Reactor Technology, the “Competence Prize 2010”

in-service training establishes plant-specific knowledge as well as an effective transfer of experiences to the next co-worker. For SNT employees the former trainees are now familiar and reliable contacts on site.

'Competence Prize' for high potentials

Another component in the training of young people is the workshop "Maintaining personnel competence in nuclear technology" initiated by Dr. Wolfgang Steinwarz. The workshop has become an integral part of the Annual Meeting on Nuclear Technology and has been held 12 times already. Within the context of the workshop, a 'Competence Prize,' donated by SNT, is awarded. This year 21 young scientists applied for the prize in the amount of 1,000.00 Euros. The key topics students are working on in their seminar papers, diploma theses, and doctoral theses include the areas of reactor technology and safety, the development of innovative reactor systems, radiation protection as well as the waste removal.

"The existing contacts to colleges and universities have been intensified through

the workshop in the last few years. Furthermore, we have been able to recruit qualified employees for SNT from the participants," explained Dr. Wolfgang Steinwarz.

Even though all efforts are taken to maintain the knowledge in nuclear technology in Germany, against the background of the predicted international renaissance of nuclear technology, a shortage of skilled workers can be expected. All the more important to expand and intensify the above described steps for maintaining and expanding the personnel competence within SNT.

Via foundations, grant agreements, collaborations, shared projects and personal contacts, good, long-term relationships to technical universities have been established so that the long-term protection of the trainee concept for the development of young talent is ensured.



Franziska Mayer as a fair-hostess during the Annual Meeting on Nuclear Technology 2010

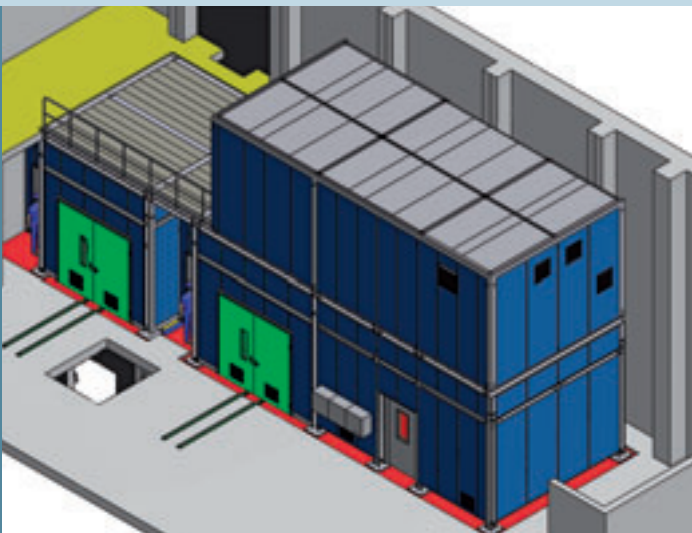
Franziska Mayer: from fair-hostess to member of the project team

For Franziska Mayer a job as a fair-hostess resulted in a challenging job related to her field of studies: To finance her studies she represented SNT during the last three years as a fair-hostess at different trade fairs.

As a student of process technology at the Technical University Dresden, a closer attachment to SNT came natural. In the course of her program of studies, Franziska Mayer completed in March 2010 an internship in engineering and supported the SNT project team as a team member with the retrofitting of the decontamination shop at the nuclear power plant Krümmel. Some of her assignments took place directly at the power plant.

Exciting insights opened up for her on site while solving the interface issues with the existing pressurized air system, water treatment system, exhaust air and water system. Also, her knowledge increased by participating in the description of the dismantling volume of the existing decontamination shop. Furthermore, she created flow diagrams for the new decontamination shop consisting of dry and wet blasting systems, a blasting agent processing system, a ventilation system, a fresh air concept as well as a waste water treatment system. She also contacted the involved subcontractors for the first time.

Currently, Franziska Mayer is completing a semester abroad. "However, we believe that we won't just see each other again at the Annual Meeting on Nuclear Technology 2011 in Berlin but that her enthusiasm in technology will endure," says Stefan Klute, Manager of SNT Heidelberg.



Planning view of the decontamination shop for the Nuclear Power Plant Krümmel

Record project: Alcoa's closed-die forging press:

A landmark will once again be updated!

This fall the last component parts for a Siempelkamp reference project set sail to Alcoa Forging & Extrusions. In 2009 Alcoa ordered a total of 14 castings and several custom components for the refurbishment of one of the world's largest closed-die forging presses located in Cleveland, Ohio. The corresponding engineering was commissioned back in 2008. After the retrofitting, the 50,000-ton press (450 MN) will be the most up-to-date and efficient forging press in its class! For Siempelkamp Foundry this order represents a world record, for the entire Group it is shared work on a 'Super Giant'.

By Ralf Griesche



World record cast: 283 t of molten iron



The cast is completed – relaxed faces

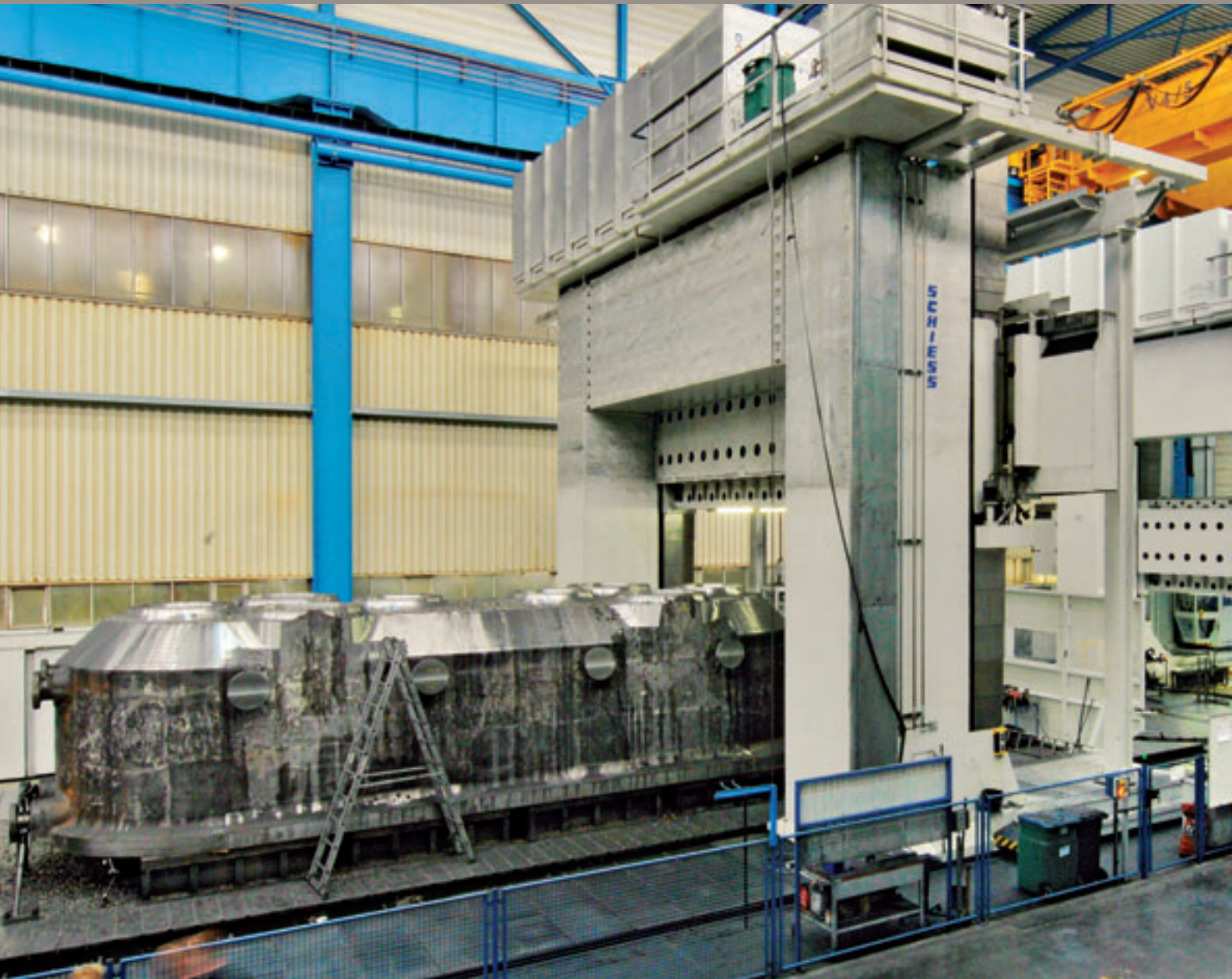
Alcoa Forging & Extrusions manufactures structural parts for the aircraft industry with the 50,000-ton closed-die forging press. The US specialist for forging and extrusions has been operating the giant press since May 1955. Due to the large press capacity and its importance in the American aircraft industry, this closed-die forging press is a 'National Historic Mechanical Engineering Landmark' in the United States. The US-based American Society of Mechanical Engineers bestows international engineering landmarks of special importance with this title. Along with the Alcoa press, other engineering marvels including



steam engines, steamships and mining pits carry the title. The press has a height of 26 m (85 ft) and a weight of approx. 8,000 t (8,818 US tons). That is enough steel to lay 65 km (42 miles) of modern railroad track. Some of the nuts used to hold the press together weigh 55 t (61 US tons) each. The forging pressure of 45,000 tons is equivalent to the pressure that would be exerted by the weight of a steel ingot higher than the Cologne Cathedral, placed on the press table of 24 m² – so much said in relation to the size of this ‘Super Giant’.

Big player needed!

As the world’s only manufacturer with the knowledge to design presses of this magnitude and the ability to produce castings of this size made of ductile cast iron in its own foundry, Siempelkamp received the order to produce the new structural parts. As part of the order, Siempelkamp cast ten structural parts for the press with weights between 200 and 245 t each (220 and 270 US tons) in the company-owned foundry in Krefeld. An additional four parts had piece weights of 70 t and 140 t each.



Machining of a segment on the Waldrich



Inspection by the customer



Machining on the large portal milling machine at Siempelkamp

Machining with two portals

For Alcoa, Siempelkamp is a well-known and trusted partner. Siempelkamp has developed and built several forging presses for Alcoa in the past. Both companies can look back on a relationship of mutual trust.

Among other parts, the scope of supply for Alcoa consisted of 14 large cast parts for the upper, cross and lower beams as well as the foundation beams. For the manufacturing of these replacement parts, Alcoa had given three requirements:

Each new part had to fit exactly into the available space of the part to be replaced and the connecting dimensions had to be the same, it could not weigh more than 247.5 US tons (224.5 t), and had to be fatigue enduring. Furthermore, the scope of supply included custom parts such as a 105 t die change plate, a 45 t protection plate, miscellaneous centering rings and stroke-limiting collars as well as a guiding system for the cross beam. The die change plate consisted of three metal slabs (3,000 mm x 3,750 mm x 550 mm)

that were welded together by electroslag remelting.

From blue prints to simulation: 50 years of engineering innovation

The starting point for the production of the new cast parts were blue prints from the 1950s. Within the framework of the order, Siempelkamp used these blue prints to analyze the original design from the 1950s, carried out calculations according to the Finite Element Method and



Ultrasonic inspection

optimized the construction according to the latest technology and a given maximum component part weight.

The Siempelkamp engineers modeled statics and dynamics according to the Finite Element Method. During this process multi-body contact systems were used to determine the interdependencies of the different components. Afterwards, the engineers determined the stress levels of each part in order to meet the high quality requirements of the customer with an optimally calculated part.

In the next step, a prototype was developed on the computer at the foundry. The entire manufacturing process of the castings for Alcoa was simulated from the pouring to the solidification to the calculation of the internal stresses in the finished casting. The process resulted in parts with an optimal design in regard

to quality. Due to modern construction and material properties, the cast parts are fatigue resistant. The challenge for the designing engineers was that the new parts, which incorporate 50 years of technological development, had to be exactly in accordance with the old parts.

Since Alcoa Forging & Extrusions was going to perform the installation of the cast parts on site, it was important that all parts fit into the existing press upon arrival. For parts with a length of 10 m, accuracy to within 0.1 mm had to be assured!

August 2010: the hot phase – a record casting

After all calculations and simulations were completed, the Alcoa parts literally entered the hot phase: On August 20, 2009 the Krefeld team cast the first

foundation beams. After all foundation and press beams were cast, the parts were machined on large-scale machines, capable of processing components with a clamping length of 22 m (72 ft) at the Krefeld factory.

Finally, on July 8, 2010 the top act was on the agenda: Since May 2009 Siempelkamp Foundry had been holding the record for the world's heaviest ductile iron casting with a raw casting weight of 255 t. Now this record was to be surpassed with 283 t of molten iron for the Alcoa closed-die forging press. With rapt attention the Siempelkamp Foundry employees had made all the necessary preparations for the casting of the upper beam with a raw casting weight of 260,000 kg.

283 t of molten iron with a temperature of 1,350°C (2,462°F) distributed over five pouring ladles was waiting to be poured.

Approximately one day was allotted for the melting process – a long time compared to the 120 seconds needed for the casting process. In this historical moment the performances of the foundry team and the experts from the machinery and plants division within the Siempelkamp Group met: “Even though we already have experience with world record castings, the stress level among all participating employees was high. The good work of the experienced team provided us the security to handle these dimensions successfully,” says Stefan Mettler, Technical Manager Siempelkamp Foundry.

After the casting process, the upper press beam inside its sand mold required approx. three and a half weeks to cool down to a temperature of approx. 300°C (572°F). At the beginning of August, the beam was then transported from the molding bay to the fettling shop where finish work was performed for approx. three weeks. Afterwards, the press beam was finish-machined on one of the world’s largest portal milling machines and finally had to undergo a quality inspection. Resulting from these process steps, the casting now met the required weight limit



Production hall at full capacity



The press frame



A stationary crosshead during final machining



240 t are being shipped



Loading at the Krefeld port

and had the following dimensions: 10,900 mm (l) x 3,950 (w) mm x 2,740 mm (h). This corresponds to a body with a size of 118 m³.

Upper beam goes West

Meanwhile the upper press beam and nine other castings started their journey to North America. The first four parts were delivered in mid 2009. The transport commenced at the Krefeld port with two river barges going to Rotterdam. There the direct handling of the goods onto a cargo ship took place on October 11. Via

Quebec the cargo reached the US city of Cleveland, where the cargo was transferred back onto a river barge. The last leg of the journey led directly to Alcoa Forging & Extrusions, which has the logistical advantage of unloading the cargo on the dock directly next to the company premises.

The last milestone, which the Alcoa team in Cleveland will set, is the installation of the new parts. In the course of their training, several junior engineers from Krefeld will participate in the installation process. Thus, in the course of the con-

struction, they will receive important impulses for their future work and an insight in the large scope of Siempelkamp services.

“The cooperation with the Alcoa team has been excellent. All topics were openly discussed; to find solutions together, all results were put on the table with appreciation for one another. This communicative component has tremendously enriched the challenging technical part of our work on the Alcoa project,” concludes Egbert Schulte, responsible for the project management at Siempelkamp.



Eleven of fourteen parts inside the ship



Loading with a pontoon crane



Waiting for the further transport or, "Christo was here"

Strothmann – the handling specialist: Best business year in the company's history!

2010 has developed into an extremely successful business year for Strothmann: New orders amounting to 25 million Euros are a record for the handling and transport technologist!

By Derek Clark



View of the production hall

Strothman at Schloss Holte-Stukenbrock, Germany



Press room automation, industrial automation or RoundTrack® floor rail system technology: Strothmann is literally on the right track. While in 2008 the total order value amounted to 20.5 million Euros, and dropped to 8.5 million Euros in 2009, 2010 has set a new record with 25 million Euros (orders through October). The company's motto "to be innovative and to make a difference for the customer" hits the mark!

Since 1976 Strothmann in Schloss Holte-Stukenbrock, Germany, has focused on effective solutions for machine engineering and handling technology. Many industrial sectors, for example, the automotive industry, machine tool manufacture, and wood-processing industry rely on the knowledge and experience of the East Westphalian specialist. With innovative strength, the company continues to set new standards and has been a much sought-after partner for almost 35 years. In particular three factors have led to the successful positioning of the company in 2010. "First of all, the demand from the industry grew noticeably after 2009, the year of the global economic crisis. Without the good reputation with the customers, this increased demand alone would not have led anywhere. The Strothmann name is backed up with first-class references so that with the increasing demand, customers chose our products. Last but not least with FEEDERplus8 we have



FEEDERplus8 in the endurance test



developed a new, precise and quick system which combines the advantages of linear feeders and articulated robots. This triad is the reason that 2010 has become the most successful business year in our company's history," says Derek Clark, CEO of Strothmann. All three divisions – press room automation, industrial automation and RoundTrack® – have met customer demands which are reflected in exciting new projects.

Strothmann 2010 press room automation: a high demand from leading automotive manufacturers

In the area of press room automation we focus on the planning and integration of the complete automation of press lines including the complete blank loading area,

blank washing machine and lubrication system, linear robots between presses and finished part racking as well as integrated control and information systems. Strothmann products are in high demand in the automotive, metal forming and household products industries.

The latest example is Volkswagen Germany: In July 2010 the company ordered the modification and replacement of the automation system for two large-capacity transfer presses. The scope of supply included the replacement of the blank loading and unloading system, the feeder for the blanks into the washing machine and lubrication system, as well as the transfer system between the presses that process automotive body parts step by step. Also included in the scope of supply are

Strothmann's CompactTransfer systems: They represent the further development of the FEEDER series and linear inductive shuttles and gantries. This development has resulted in universal, flexible and customer-specific solutions for transfer presses and multi-function presses.

In cooperation with Siemens (supplies the control system and drive technology) as well as PTC (responsible for the press modification), Strothmann will help the Volkswagen presses to more speed.

Another success story in 2010 was an order from the Magna Group: The auto parts maker was impressed with the new FEEDERplus8 concept and placed an order for such system in the amount of 2.6 million Euros. FEEDERplus8 is a highly flexible

left: Machine installation inside the new Strothmann production hall

eight axis linear robot system which can transport and orient parts in various directions. This new feeder can be installed in small press gaps with a minimum distance of 6,500 mm between the press tables. The coordinated movement of the axes allows for the processing of ten to twelve large parts, e.g. side members, per minute. The additional degrees of freedom provide for maximum flexibility in the feeding of blanks to complex dies and in parts removal. Derek Clark: "The feeder can also be installed in existing press applications with a small opening stroke because at about 250 mm, the orientation axis is very lean and can access all dies horizontally. Our advantage is apparent: one feeder per press gap is sufficient to remove the parts from the press, orient them, and feed them into the following press!"

In China the demand for Strothmann products and services has also increased: The First Automotive Works (FAW), a state-run motor-vehicle and engine manufacturer, ordered two blank loaders for each of their tandem press lines. The 2010 order consisted of a FEEDERplus6 and a FEEDERplus8 system for the press-to-press transfer of components, as well as the removal of finished parts via a conveyor system at the end of the line. Siempelkamp's Chinese production location in Wuxi is supplying the steel components for this order. Distribution and start-up is managed by the Strothmann subsidiary in Shanghai.

These highlights do not include all the sales in the area of press room automation

Strothmann

Key data

Employees:	90
Headquarters:	Schloss Holte-Stukenbrock
Representative offices:	Czech Republic, Great Britain, India, Italy, Russia, Shanghai, Spain, Turkey, USA
Combined total area of locations:	6,500 m ²
Value of orders received:	2008: € 20.5 million 2009: € 8.5 million 2010: € 25.0 million (orders through October 2010)
Certification:	DIN EN ISO 9001 – 2000

Competence areas

Press room automation:	Blank loader FEEDERplus transfer between presses Press-to-press transfer systems End of line systems Blank stacking and washing systems Tool changing and transport systems
Industrial automation:	Linear robots Handling systems ContainROB robots for logistics applications Special-purpose machines Tooling Control systems/Automation
RoundTrack®:	Synchronized flow assembly systems/Continuous flow production Transport systems Drive concepts Components
Soft skills & Service:	Feasibility studies FMEA studies (possibility of error and influence analysis) R & M analyses Control and information systems Real-time simulations Service and maintenance

in 2010: Via a Spanish press manufacturer, Strothmann press room automation is implemented for the hot-forming line of a sub-supplier in Mexico. Strothmann has many years of experience in the handling of 900°C body parts at different OEMs and tier-suppliers.

Industrial automation: maximum performance for MAG and CFK Nord

Highly dynamic linear robots form the basis for Strothmann's industrial auto-

mation sector which implements logistics and automation solutions. These robots are installed in automation cells and assembly lines where they serve to load and unload machines or transfer components between assembly stations. Strothmann also supplies a wide range of solutions for the removal of finished parts, for stacking, packaging and integrating handling components into existing production facilities. Other Strothmann services include integrated control and information systems. These solutions

result in rationalized production sequences, increased productivity through higher outputs, enhanced competitiveness through innovative technology as well as higher quality through flexible finished part handling.

In 2010 MAG Hüller Hille, specializing in the development and manufacturing of modern horizontal and vertical machine tools and flexible manufacturing centers, ordered high precision traversing axes for robots which are used in the assembly

lines at CFK Nord for the production of composites for airplanes. The CFK research center for the production of components made of carbon-fiber reinforced plastics in Stade, Germany, incorporates companies, institutions, and production facilities of different sizes which are looking for sustainable solutions regarding the use of carbon-fiber reinforced plastics, for example, in the aircraft industry.

Strothmann RoundTrack® floor rail system: Putting companies on the

right track: from the automotive industry to wind power plant engineering

No business year goes by without inquiries about our patented RoundTrack® technology. This floor rail system makes new productive forms of organization for continuous flow production and intralogistics in machine tool building possible. Due to its extremely low rolling friction, the easy to install RoundTrack® can move extremely heavy loads with minimal force. With these properties, the system is used, for example, in the aircraft industry, in pipe manufacturing, and in wind power plant engineering.

Press-to-press transfer with Strothmann feeders



Continuous flow production with RoundTrack®



In a comparative test of similar transport systems, the RoundTrack® scored the best results by far both in energy consumption and rolling resistance. The test included air cushion transport systems, unmanned systems such as motorized pallet jacks, skid conveyors, and conventional flat rails.

“Many rail transport systems have wheels with flanges,” says Derek Clark. “Since they increase rolling friction significantly, this is a major criterion when comparing the RoundTrack® against other steel/steel combinations.” Flanges on crane, railroad, and streetcar wheels cause considerable rolling friction on the rails. The rolling resistance coefficients range between .01 and .15, in contrast to .003 with the RoundTrack®. Featuring a profile similar to a gothic arch, Strothmann’s rollers do not need a conventional flange. The special profile ensures that contact with the rails is limited to two small surface areas, which minimizes rolling friction. “The low rolling resistance positively affects the performance rate and results in very low energy consumption,” says Clark. Next to energy efficiency, productivity and



RoundTrack® and moving platforms during the manufacture of rotor blades

quality improvements as well as simplified logistics make the RoundTrack® a comprehensive package of benefits for our customers.

This Strothmann development set benchmarks in the automotive industry in 2010: For a large automotive manufacturer in Germany, Strothmann developed a special trolley which can transport different vehicle models ranging from small cars to luxury cars into environmental chambers. This process is used to test the electronics and other important automotive components under extreme climatic conditions. This Strothmann innovation provides important support in this area.

Other industrial sectors also ordered the RoundTrack® concept this year: Wind power plants and machine builders have integrated the system into different applications to optimize continuous flow production. An example: Vestas, an internationally leading company for renewable

energy. In Lauchhammer near Dresden, Germany, the company produces rotor blades for the model V90 wind power plants which are deployed offshore and in desert fringes. The Strothmann RoundTrack® as well as specially developed moving platforms are used in the production process. The 44 m long blades with a hub diameter of 1.80 m and a weight of 6.5 t are automatically transported on the RoundTrack® floor rail system through a paint shop and treated by a specially programmed paint robot. The advantages for Vestas include: Thanks to reorganized operational procedures, paint consumption is minimized and consequently, the environment is preserved! Since the tracks are flush with the floor, the RoundTrack® does not create a trip hazard, which is a safety advantage.

Another 2010 highlight was the delivery of RoundTrack® assemblies and drive units for Airbus Industries, which were installed in Getafe, Spain. For the first time, the

newly developed Quadro turnstile, consisting of large turntables, is used in large-scale production. This mechanism allows the transport and orientation of large components to any area of the assembly line.

The 2010 revenue of Strothmann, broken down by divisions, is 40% made with the sale of the RoundTrack® system. "A comparable share was achieved in the area of press room automation, while the area of industrial automation brought in 20% of the sales result," summarizes Theo Becker, Commercial Manager at Strothmann. With our good mix of products and services, our company will continue to literally set things into motion in 2011!

The investments in a new production facility in 2010 and additional investments in 2011 for the expansion of the second aisle are respectable and contribute to higher productivity.



Siempelkamp

G. Siempelkamp GmbH & Co. KG

Machinery and Plants



Siempelkamp
Maschinen- und Anlagenbau
Siempelkamp Maschinen- und Anlagenbau GmbH & Co. KG



BÜTTNER
Büttner Gesellschaft für Trocknungs- und Umwelttechnik mbH



Siempelkamp
Energy Systems
Siempelkamp Energy Systems GmbH



Sicoplan
Engineering
Sicoplan N.V.



Siempelkamp
Logistics & Service
Siempelkamp Logistics & Service GmbH



ATR
ATR Industrie-Elektronik GmbH



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



STROTHMANN
Machines & Handling
W. Strothmann GmbH



CMC TEXPAN
CMC S.r.l.



Siempelkamp
Siempelkamp CZ s. r. o.



hombak
Maschinen- und Anlagenbau
Hombak Maschinen- und Anlagenbau GmbH

Sales companies/Representatives

Australia

Siempelkamp Pty Ltd.

Russia

Siempelkamp Moscow

Brazil

Siempelkamp do Brasil Ltda.

Singapore

Siempelkamp Pte Ltd.

China

Siempelkamp (Wuxi) Machinery Manufacturing Ltd., Beijing

Spain

Siempelkamp Barcelona

France

Siempelkamp France Sarl

Turkey

Siempelkamp Istanbul

India

Siempelkamp India Pvt. Ltd.

USA

Siempelkamp L.P.

Nuclear Technology



Siempelkamp
Nukleartechnik
Siempelkamp Nukleartechnik GmbH



Siempelkamp
NIS Ingenieurgesellschaft mbH
NIS Ingenieurgesellschaft mbH



Siempelkamp
Tensioning Systems
Siempelkamp Tensioning Systems GmbH



Siempelkamp
Kranteknik
Siempelkamp Kranteknik 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 Services
Siempelkamp Nuclear Services Inc.

Foundry



Siempelkamp
Giesserei
Siempelkamp Giesserei GmbH



Siempelkamp
Giesserei Service
Siempelkamp Giesserei Service GmbH

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