

Salzgitter Mannesmann Stainless Tubes

An uncompromising focus on quality

Pre-heating of billets at SMST's Montbard (France) facility.

Salzgitter Mannesmann Stainless Tubes is a leading manufacturer of seamless stainless steel and nickel based alloy tubes and pipes. Headquartered in Germany, the company continues to expand its wealth of knowledge and technical excellence in producing tubular products for the nuclear industry. With one of the largest product portfolios in this sector, the company's success strategy is firmly supported by 3 pillars of qualification: ASME III, RCC-M (as "Label Fournisseur Areva"), and HAF 604 for both hot and cold finished tubes. Able to deliver fully qualified products anywhere in the world, the company maintains a high ethical standard of business practice and an uncompromising focus on quality.

By Joanne McIntyre

Salzgitter Mannesmann Stainless Tubes (SMST) has a clearly defined two-part strategy which has remained unchanged since they last featured in Nuclear Exchange in 2009. The first part of their strategy is to be

the world's premium high quality, reliable supplier for critical tubing. Secondly, for non-critical Class 3 and non-nuclear products SMST aims to be a high quality, high service supplier with a flexible approach to the supply chain. By fulfilling

these aims, the company has positioned itself as a leading supplier for the complete range of tubing products for the nuclear industry.

Mr. Christophe Le Rigoleur, Managing Director of the SMST Group, explains the





company's strategy further: "We work very closely with designers and EPCs so that we have a thorough understanding of the end application and service of the product. This means we understand the safety requirements and the logic behind the technical specifications. We engage in close discussions with the customer to contribute our ideas as a tube manufacturer. If a customer has any in-service concerns or queries about how to increase the safety or service life, we draw on our many years of experience and highly skilled personnel to present them with the best possible solutions. Engaging in this type of intense dialogue and cooperation means SMST is able to be absolutely clear about the product

required and the service which needs to be offered to support it."

Mr. Deepu Balasubramaniam who is Key Account Manager for Nuclear Power Engineering at SMST continues: "Critical products are made in line with stringent technical and specification requirements, for which a highly dedicated technical team will engage closely with the customer. It's not a case of just selling a product; we are there for the life of that product to provide on-going advice and expertise."

Continuing investment

"After the Fukushima accident we did notice a slow-down in activity in the nuclear industry, with more time being taken to make the decision to commit to projects," continues Mr. Le Rigoleur. "However it was still a busy time for us as we have continued supplying projects that had been started up beforehand. This includes the Barakah site in the United Arab Emirates. Globally there was obviously not the level of activity that had been expected beforehand, however we were able to maintain enough activity that we could continue to progress in our technical development and know-how. In the past two years we have worked with some of the reactor designers to address technical issues for which they wanted to find a solution. One example is an improvement in the quality of the tubes used for the primary loop, with a particular focus on the cleanliness of the tubes. This level of background activity



Christophe Le Rigoleur: "We understand the safety requirements and the logic behind the technical specifications".

mean that despite the global turndown we were in a good position to continue investing in R&D."

"A positive side-effect of the overall slow-down since Fukushima is that it has enhanced the importance of safety and quality in the nuclear industry. This is the area on which we have focused for many years. Customers have realized that they cannot take any risks with products, so they have returned to the high quality and reliable suppliers like us. This is a significant development because in this application, and particularly in the critical part of the power plant, there simply cannot be any degree of chance. Safety is important above all else."

International presence

SMST was the first – and for a long time the only – Western stainless tubing manufacturer to gain the Chinese HAF

Small orders, speedy delivery

To secure a complete supply chain for its products with full traceability SMST has entered into an agreement with an Italian distributor called Commerciale Tubi Acciaio (CTA) specialized in small, fast deliveries of fully qualified products. "Our distributor has an inventory of fully qualified piping ready to be sent with complete nuclear specifications and qualifications," explains Mr. Balasubramaniam. "It's an ideal solution for highly qualified products which can otherwise have a very long lead time. It's not normally possible to produce a very small run of a product, so what if a customer needs 4-5 qualified tubes at short notice? By maintaining an inventory we can offer customers a quick solution to this problem with fully qualified, certified, traceable products. SMST is unique in the nuclear industry in offering this service to anywhere in the world."



ITER & LHC driving developments

The experience and the reputation gained through participating in large international projects has had wide reaching benefits for SMST. The company supplied the beam tubes in which particles are accelerated in the Large Hadron Collider - the world's largest and highest-energy particle accelerator – which is considered one of the great engineering milestones of mankind. SMST also supplied a wide range of products for the ITER project, the world's largest experimental tokamak nuclear fusion reactor. "This high level activity directly related to nuclear power generation has enabled us to discover many parallel activities for which often the standards are similar, and this is driving technological developments and high level investments at our factories," explains Mr. Le Rigoleur. "These are fascinating projects requiring us to deal with people from many different countries."



Deepu Balasubramaniam: "Our inventory means we can quickly offer customers fully qualified, certified, traceable products anywhere in the world".

604 qualification. "We have a long history of involvement with the Chinese nuclear industry," explains Mr. Le Rigoleur. "Through our close association with Areva we have been involved in much of the Chinese nuclear program, providing heat exchanger tubing and other products. Despite China's localization policy we still provide special core tubing through contractors and so are maintaining our presence there." Despite its successes in the Chinese market however, the company has no intention of moving its production base to China. "Our strategy is clear; our manufacturing future is in Europe and America," explains Mr. Le Rigoleur. "We produce extremely high quality products in Europe and can export these all over the world. Today we see other companies either coming back to Europe or moving to other Asian countries because the low cost advantage that was once evident in China is not as great as it used to be. We believe our strategy of retaining our production facilities in Europe and America has completely paid off."

The company is active in many countries in addition to the UAE, India, South Korea and China. "For instance we have contracts for nuclear power plant maintenance in France and Sweden and the American market," continues Mr. Balasubramaniam. "In the United Kingdom we are involved in the upcoming Hinkley Point C project where four Areva EPR reactor units planned, with two

scheduled to be built in the short term. EDF and Areva have already shortlisted 50 suppliers; SMST has already completed the qualification process. Our Label Fournisseur Areva qualification, and having supplied products to the last three Areva EPR projects, certainly gave us an advantage for this project. We're well prepared and looking forward to the start of construction."

SMST supplied U-bend heat exchanger tubes for the Barakah project in the United Arab Emirates. "These very specialized products are manufactured at our Italian plant. Our participation in Barakah was secured on the basis of our long history and experience with South Korean technology; in the past we participated in Shin Wolsung and Shin Kori. The South Korean customers have been very satisfied with the quality of the products and service we have provided for these projects."

For contracts with demanding technical and quality assurance requirements, SMST appoints a dedicated team to tailor-make a contract to provide a high level of service. "In this industry we are able to provide five key requirements to ensure the successful smooth completion of contracts: experience; qualifications; quality and reliability; complete documentation with full understanding of the certification required; and dedicated project management."

Waste & fuel reprocessing

Two areas which SMST have recently moved into is manufacturing products for the nuclear waste storage and fuel reprocessing industries. Mr. Balasubramaniam explains further: "High level radioactive waste storage requires very special tubing with unique material requirements. We



SMST has been kept busy over the past two years with projects including the Barakah project in the UAE and preparations for the upcoming Hinkley Point C plant in the UK.





The company has a long history in Europe dating back over 120 years; this is the administration building at the production site in Montbard, France.

have researched how to produce tubing suitable for the task and now offer this service. The technical requirements of the waste treatment industry are advancing and we are adapting materials to meet these requirements for the future.”

“Spent fuel reprocessing is another important industry. Used fuel is treated in a solvent extraction process using boiling nitric acid to dissolve the spent fuel and extract the uranium and plutonium. This is then re-used for fuel fabrication. This is an extremely aggressive environment using highly concentrated acid at high temperatures with radioactive material, so the tubes and pipes used have unique corrosion requirements. To date mainly Japan, Russia and France are using this process. New advancements in surface technology and failure prevention are increasing the technical requirements for the tubing and this provided an opportunity to be a partner in this business. We worked closely with the customers involved to understand the application and the working environment and now supply products for this industry.”

SMRs drive US investment

With its modern facilities in Europe and the USA, SMST can produce all hot and cold finished tubing products. While the US nuclear market has always been important for maintenance and life

extension projects, the development of Small Modular Reactor technology has provided the impetus for a new injection of investment into the SMST plant in Houston.

Mr. Le Rigoleur explains: “The development of Small Modular Reactors

(SMR) in the US by Westinghouse/ Babcock & Wilcox is a very interesting development. The first SMR will be totally indigenous to the US, so we knew we had to ensure our Houston mill was ready and gaining experience before the project starts. By the time the first SMR is built our plant will have been in operation for at least 18 months and we are working closely with Westinghouse to develop the tubing they require. We are already in the process of gaining NCA 3800 certification at Houston to expand the plants’ capabilities.”

“The US also remains an important market for maintenance and life extension activities. One of our goals is serve North American with short lead time, small quantity items fit for the maintenance market and the Houston mill is able to do this. An inventory of hollows stored on site can be redrawn to the requested size at very short notice.”



These straight nuclear tubes, prepared at the company's facility in Costa Volpino, Italy are ready to be packed and delivered around the globe.

Facts & Figures

Name:	Salzgitter Mannesmann Stainless Tubes GmbH; part of Salzgitter Group
Founded:	1994, dating back to Mannesmann brothers in the 1890s.
Headquarters:	Mülheim an der Ruhr, Germany
Key markets:	Nuclear tubing, oil & gas applications, OCTG, steel tube umbilicals, boiler tubing.
Main products:	Seamless stainless steel and nickel alloy tubes and pipes. Employees: 1,050 worldwide
Employees:	1,050 worldwide
Production facilities:	Montbard, France; Costa Volpino, Italy; Remscheid, Germany; Houston, USA.
Sales:	EURO 361 million (year 2012)

