GENIOS is a user friendly system capable of allowing for furnace bath homogenisation.
Fives Solios’ technological offer which fulfils operational flexibility. To meet this need, its product quality while maintaining well as better and faster alloy homogeneity and electronic control system for optimum transfering molten metal to all from a single unit. This device can be fitted simply and safely to a wide range of furnace types using its patented interface and mounting concept. The in-house electromagnetic inductor is operated by means of a solid state power and electronic control system for optimum process management. With the Genios solution, aluminium producers will achieve energy savings, as well as better and faster alloy homogeneity while reducing cycle times, maintenance and environmental impacts. This innovative solution further completes Fives Solios’ technological offer which fulfils aluminium producers’ requirements.

When was Solios Services Al-A’ali established? How many people work for this subsidiary?
Solios Services Al-A’ali was established in Bahrain in 2003 when Fives Solios was working on the line-5 project at Alba. At the beginning of 2010, we have 6 employees who work in two departments, Technical & Administration.

Why did Fives Solios decide to open this subsidiary?
As part of the Alba Line-5 project, which was a major contract, Fives Solios decided to create a subsidiary in the Gulf region. The main purpose of this subsidiary is to provide after-sales services to all customers in the Middle East, while tightening Fives Solios’ presence in this area.

In order to develop a long term business activity, this subsidiary has been set up through a Joint Venture with a first class local company: Ahmed Mansoor Al-Ali.

Solios Services Al-A’ali proposes the supply of spare parts, audits, upgrading projects, maintenance activities, and also supports Fives Solios’ commercial activities in the Middle East.

"Thanks to Solios Services Al-A’ali, Fives Solios demonstrates its willingness to be close to its customers by offering continuous services with Arabic language speakers.”

Which areas or countries do you cover?
We cover the Gulf and Middle East countries. The main customers in the region are Aluminium Bahrain (AlBA), Sohar Aluminium, Dubai Aluminium (DUBAL), Gulf Aluminium Rolling Mill Company (GARMCO), Egypt Aluminium (EGYPTALUM) and Almahdi Aluminium in Iran.

Two new customers have just entered the market in 2009: Qatar Aluminium (QATALUM) and Emirates Aluminium (EMAL) in Abu Dhabi.

How do you collaborate with other Fives Solios companies?
Regarding the spare parts activity and the audits, we work in collaboration with the After-Sales department in each Fives Solios entity, depending on the equipment concerned. When engineering or upgrading projects are requested by the customer, we work in close collaboration with a Proposal Engineer or a Sales Manager within a Fives Solios entity. In addition, we collaborate and support Fives Solios companies during major local projects execution (e.g. Qatalum) by providing site assistance. Our employees and Fives Solios’ Technical and Commercial Departments work hand in hand.

What is the impact of your presence on the local market?
Thanks to Solios Services Al-A’ali, Fives Solios demonstrates its willingness to be close to its customers by offering continuous services with Arabic language speakers. With a high level of reactivity, a quick supply of spares and better flexibility, Fives Solios’ local After-Sales service assures continuous support for the plants and equipment operation.

In recent years, the Middle East, specifically the Gulf area, has become very attractive for companies involved in the aluminium industry. The presence of Solios Services Al-A’ali provides opportunities for long term relationships with Fives Solios’ customers.

Interview with Hussain Al-Madeh, the Managing Director of Solios Services Al-A’ali

Hussain Al-Madeh, the Managing Director of Solios Services Al-A’ali answers five questions to explain his role.

Fives Solios Services in the Middle East

Since 2002, Fives Solios has opened four subsidiaries in South Africa, Bahrain, China and Russia. Our main objective is to develop a long term partnership with our customers while providing after sales services and local assistance. Hussain Al-Madeh, the Managing Director of Solios Services Al-A’ali answers five questions to explain his role.

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In 2009, Fives Solios has commissioned some of its facilities at the Qatalum Smelter. In executing this project, Fives Solios has been actively participating in the construction of one of the largest and most efficient aluminium smelters in the world.

The first shipment of pitch was unloaded at the Fives Solios’ Liquid Pitch Marine Terminal in November 2009. The Qatalum Production team loaded the first cold metal into Fives Solios’ Melting Furnaces at the beginning of December. The Green Anode Plant was handed over to Qatalum Operations at the end of November 2009, ready to produce the first anode.

In September 2008, Emirates Aluminium (EMAL) awarded Fives Solios with a turnkey contract for the supply of the hot bath cooling and processing plant for its new smelter in Abu Dhabi (UAE). This smelter will be one of the largest worldwide, with an initial capacity of 750,000 tons per year of aluminium.

For the first time, the bath processing plant, with a capacity of 34 tph of standard bath, will implement CELSIOS, the Fives Solios clean bath processing solution, which combines two sub-processes with a proven track record:
- The first section for pre-cooling and crushing: the hot bath is received at an average temperature of 600°C. This technology is based on the use of a specifically designed crusher and a low speed metallic pan conveyor. These technologies have already been successfully implemented in several European plants to cool the bath from up to 900°C down to 80°C, and have been confirmed as robust, clean and efficient.
- The second section, for final bath cooling and crushing, involves the fully air swept autogenous mill which has been already successfully implemented by Fives Solios in 17 plants in the last 25 years, with the valuable advantages of reliability, cleanliness, and reduced maintenance (almost no mechanical handling of the crushed bath is required). Over sweeping the mill with process air allows the production of coarse bath up to 0-20 mm.

The plant has been designed to meet EMAL’s high environmental standards. The dust content at stack will match the benchmarking request of less than 5 mg/Nm³, and the flow of fluorinated fumes collected on the cooling pan conveyor will be directed to the high efficiency pot lines gas treatment centers (GTC). Both will contribute to drastically reduce the smelter total Fluorine emission levels.

The first cold bath was crushed on November 30th, 2009, and it was the first plant to be commissioned in the Carbon area. The performance tests with hot bath at full production capacity are scheduled for the end of March 2010.

The main advantage in combining these two sub-processes is to benefit from the process air flow through the mill to ensure the final cooling step from around 230°C down to less than 100°C, thus reducing the pan conveyor length by about 40%. As such, the required conveyor length for cooling purpose does not exceed the length required to lift the pre-crushed bath to the top of the 1,000 t buffer silo.

The plant also includes a ski hoist for feeding tapped bath ingots into the autogenous mill, a 1,000 t storage silo for standard bath plus a 200 t storage silo for pure bath, a big bag loading station for pure bath and two options for delivering the crushed bath either by pneumatic transportation or by bins.

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The first xelios vibrocompacting machine has been in operation in a smelter since the end of 2008 and is producing green anodes with density up to 1.70. Good results have also been achieved in terms of green anode consistency and anode flatness. The Xelios vibrocompactor which is produced under commissioning at Qatalum will confirm these results.

Xelios has been installed at Hindalco, Mahan and Aditya smelters. Fives Solios has received the Provisional Acceptance at Qingtongxia Maike in China for a twin table vibro-compacting machine fitted with a vacuum system and top back pressure. The first anode was produced in August 2009.

Fives Solios has successfully started up several Firing Equipment and Control Systems:
- In India for the Anode Baking Furnace no.3 at the Vedanta Jharsuguda plant,
- In China for the Anode Baking Furnaces at Chuangyang, Qinghai and Yunnan, this last one being supplemented by the Helios Combustion Monitoring system.

Meeting strict European environmental standards
Fives Solios has recently received the final acceptance for the casthouse furnaces supplied by Solios Thermal to a major secondary aluminium producer in Switzerland. The scope included the supply of the basic casthouse engineering, the project management, five pre-heating furnaces and six melting holding furnaces. The equipment complies with the strict emissions specifications required by Swiss environmental regulations.

CONTRACTS

FIC in Kazakhstan
In November 2009, Riedhammer GmbH, a German specialist in the construction of anode baking furnaces, awarded Fives Solios with a contract for the design and supply of a Fume Treatment Center for the Greenfield smelter project carried out by Kazakhstan Aluminium in Pavlodar, Kazakhstan. Fives Solios has been selected for its experience in achieving high levels of performance in extreme operational conditions. The filters will be fabricated in China through Fives Engineering in Shanghai while other manufactured items will be procured in Russia through Fives Solios Vostok in Moscow.

Solios Services contracts
In 2009, Solios Services A/A-dh, the Fives Solios services subsidiary in Barhain, was awarded two contracts in the Middle East. The first one consisted of the revamping of the autogenous mill for the Alba Bath Processing facility (line 4), in Bahrain. The second one concerned the upgrading of the Sohar Aluminium vibrocompacting unit, in the Sultanate of Oman, in order to produce larger anodes needed for the pot amperage increase.

The second section, for final bath cooling and crushing, involves the fully air swept autogenous mill which has been already successfully implemented by Fives Solios in 17 plants in the last 25 years, with the valuable advantages of reliability, cleanliness, and reduced maintenance (almost no mechanical handling of the crushed bath is required). Over sweeping the mill with process air allows the production of coarse bath up to 0-20 mm.