



That happened in January:

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# Belgian Technology in China

## Belgium, the center of Europe, and a preeminent leader in nuclear cooperation with China

In 1952 Belgium created SCK•CEN one of the first European research institutes dedicated to nuclear energy.

The institute operated the reactor BR1, now dedicated to equipment calibration, the BR2 that produces the radioisotope molybdenum-99 for nuclear medicine, and the BR3, first PWR loaded with MOX fuel.

Other activities matured in the nuclear field, with leading companies still exporting their technology and expertise to China, among them we can cite Tractebel in Civil Engineering, Belgoprocess in the reprocessing of waste, GEA Courtoy in fuel manufacturing, Hamon Thermal Europe for cooling towers, and KWE Eupen in the manufacturing of electric cables.

## SCK•CEN the forefront of Belgian technology in China

The nuclear cooperation between China and Belgium is closely associated with SCK•CEN. The institute provides expertise in the fields of radiation protection and radiation monitoring, nuclear safety, nuclear technology, innovative concepts, nuclear metrology, nuclear medicine, decommissioning of nuclear installations, and management of radioactive waste.

During his official visit to Belgium in October 2010, Premier Wen Jiabao met with King Albert II and Prime Minister Yves Leterme. The leaders of the two countries signed a cooperation agreement in nuclear energy.

SCK•CEN signed two international agreements to collaborate on the Myrrha project. The first is with the China Academy of Sciences,

since China sees Myrrha as a way forward in treating nuclear waste; the second agreement was signed for the construction of a pilot plant to produce mixed oxide nuclear fuel (MOX) and for the use of MOX in Chinese nuclear reactors with CNNC.

Both projects are confidently ongoing between both governments and May 2012 Chinese Vice Premier Li Keqiang while on an official visit to Europe reiterated China's interest in attracting more technology from Belgium.

## Tractebel Engineering, a prominent engineering authority

Tractebel Engineering, a long-standing partner of Areva, has been involved in China for the Ling Ao project, and provided engineering services. The contracts were won at the price of technology transfer agreements. Recently, in Taishan's EPR project, the company was responsible for the civil engineering studies for the reactor building. The company's international activities represent 46% of its turnover. The nuclear branch, which accounts for 29% of the company's revenue, is looking to expand in China, notably in the field of project engineering, fuel & core management, core optimization studies, fuel and waste storage and disposal, radwaste management and decommissioning and training in nuclear engineering.

## Belgoprocess, a technology-driven, dynamic business partner in waste management.

In the field of waste management, Belgoprocess signed an agreement with China National Nuclear Corporation in China as part of a consortium with Nukem Technologies GmbH for a Pyrolysis plant for the treatment and reprocessing waste. The company, in a joint venture with ATAL Engineering, recently completed the design and the construction of the final disposal facility for low-level

waste for the Environment Protection Department in Hong Kong. Belgoprocess is the leading entity in charge of the decommissioning of Eurochemic, the first reprocessing factory established in Dessel in 1957, and recently involved in the decommissioning of the Belgonucleaire facility that attracts much interest from CNNC.

## **COURTOY, the world leader in fuel and the MOX rotary press**

This company, recently acquired by the German group GEA, located in Halle, near Brussels, has been at the forefront of technology innovation for fuel pellet fabrication. Involved in almost every type of nuclear fuel, the company supplied its "Courtoy" to the Baotou and Yibin plants for the Chinese fuel, including the fuel for Candu, VVER, M310 and other reactors. Even though the local competition is growing in China, Courtoy anticipated the market and expanded with a factory in Shanghai to remain the leading rotary press manufacturer and service supplier for its customers.

Its unique knowledge of the rotary press for MOX fuel positions the company as the preferred partner of CNNC's subsidiaries. Tonie Van Zegbroeck, the head of technology for Courtoy, will introduce the company's business in this area.

## **Hamon Thermal Europe, the integrator for a "cool" environment**

In the eighties, Hamon transferred its cooling towers technology for coal-fire plants to China. Twenty years later, the company was required to build the tallest and safest natural draft cooling towers for the inland nuclear power plants. Its latest technology "the water collecting device" attracted all the engineering companies such as CNPE, CNPEC and SNDPRI for the domestic and overseas projects. Even if Fukushima slowed down the inland projects, Hamon was required to provide its safety-cooling tower, such as the "Civaux NPP type" a unique construction dedicated to the coolant of the primary pumps and resistant to any type of accident.

Hamon has opened a factory in the nuclear industrial Park at Haiyan, close to Qinshan, to provide elements of the cooling tower and has trained a support team in Beijing. As the president of

Hamon, Jean-Francois Lambilliotte says: "for nuclear power, we design and build the biggest, safest and tallest towers in the world, and we will continue to transfer our technology to China". Jean-Christian Martin and Eric Binard, from the Sales Department at Hamon will present their company's business in this area.

## **Kabelwerk Eupen: More than 260 years of history in cables**

Kabelwerk Eupen's history can be traced back to 1747. At that time, the Bourseaux family had a modest workshop making all kinds of jute ropes and hawsers. Their wide knowledge and experience, acquired over many decades, led the brothers Carl and August Bourseaux to begin manufacturing cables towards the end of the 19th century. By the early 1980s the company was supplying safety cables to nuclear power plants in Europe and recently to Tianwan NPP phase 1 in China.

While facing fierce competition from local manufacturers, the company has launched an ambitious strategy in China. Its product director, Edgar Heinrichs gave an exclusive interview of Eupen history and future expansion in China.

The phasing out of nuclear power from some European countries seems to overshadow the industrial jewels located in the EU.

Belgium has been at the forefront of the nuclear power industry since the 1950's and continued to invest in nuclear research, such as the Generation IV and ITER. The rapid expansion of the Chinese market creates a need to import mature and proven technology from industrialized countries such as Belgium, and more companies. Government organizations such as the Wallonia Foreign Trade & Investment Agency (AWEX) and Flanders Investment & Trade (FIT) support this market which benefits China and at the same time creates jobs in Belgium.

Other European countries, such as Germany, Switzerland and Italy should follow the Belgian's example and support their industry to expand in China and transfer more technology rather than letting small lobbying groups bury years of technology and expertise.