



# Velan: 60+ years of nuclear valve innovation

**Velan was founded in 1950 by Mr. A.K. Velan and today has an annual turnover of around USD 500 million. The company currently employs more than 1,800 personnel in 15 manufacturing plants located in North America, Europe, and Asia. With over 60 years of experience in developing and producing high quality valves for the nuclear industry, the company has a global footprint and has supplied 350 reactors around the world. Velan France President Mr. Jean-Claude Cennac explained how Velan has maintained its position as a leading manufacturer.**

*By Joanne McIntyre*

“Our company has grown significantly during the past five years at a constant rate of 20% per annum,” explains Mr. Jean-Claude Cennac, the President of the French branch of the company. “We have doubled the capacity of the French plant since 2007 and almost doubled the number of employees in the last six years. We also doubled our manufacturing and testing facilities, enabling us to produce valves for up to 10 nuclear power plants per year. We are also paying a lot of attention to the training of our new young staff to ensure

the experience and know-how stays in the company.”

Velan is still largely a family owned company with only 28% of shares available on the stock market in Canada.

The company’s main focus is on manufacturing valves for oil and gas, power (conventional and nuclear), mining, chemical processing, and general service industries.

“Velan started to supply the emerging nuclear industry soon after its creation back in the 1950’s. It began by supplying valves to the first US nuclear submarine

(US Nautilus) and to the Oakridge National Laboratory. During the 1960’s Velan developed its full range of forged valves and successfully supplied the North American nuclear reactors. Today, Velan has supplied classified valves to approximately 350 nuclear reactors around the world and is recognized as a major player in this industry.”

During the 1970’s, when the French decided to adopt the PWR technology for its reactor fleet, Velan decided to localize its production in France in order to supply that market. Velan s.a.s. was





established in 1974 as a joint venture with the French power conglomerate Alstom until 1999, when it became a 100% subsidiary of Velan Inc. Located in Lyon, the company's French facility currently employs 250 people and has a turnover of approximately EUR 80 million. It sells into Europe, Eastern Europe, Russia, and China, while Velan's Canadian headquarters, located in Montreal, Quebec (Canada), supplies the North American market through three 'N' stamp plants located in Canada and the USA. "Our company has also inherited the experience and know-how of other prestigious valve manufacturers such as Sereg, Schlumberger, Bouvier Darling, and Adareg, through successive acquisitions," explains Mr. Cennac.

### **Maintaining the competitive edge**

While nuclear power plants require huge quantities of valves, there are a multitude of manufacturers hoping to get their products into the supply chain.

Mr. Cennac explains how Velan has maintained its competitive edge for over 60 years.

"Velan started its nuclear business in the U.S. and in Europe, and the world's very first nuclear power plants used our valves. So we have a long experience in this industry. Secondly, we have always tried to develop the right products for this very demanding market. Velan has always focused on new technologies, high-quality production, and R&D. The decision to manufacture large, three-dimensional dye forgings for our valve bodies (made in one piece) is the kind of innovation that brings additional reliability and safety as well as a service life up to 60 years: particularly important for valves that must ensure the safe operations of nuclear power plants. We also developed, in co-operation with nuclear operators, our range of modular maintenance valves that makes it possible to replace the internal workings of the valves in less than 15 minutes. This technology helps the nuclear operator save significant time and money during plant operation.

"Our focus on product qualifications has also helped us to consistently maintain such a large competitive advantage," continues Mr. Cennac. "Ninety percent of our valves are used inside the nuclear island to cool the reactor, spray water, and control the chemistry of the cooling water. We have performed a large number of tests and reports to qualify such valves during the past 60 years. Velan now owns more than 250 qualification reports certified by independent third parties.

"Another important factor in our success is the tremendous amount of feedback and expertise we've gained over the years. Most of our valves have been operating for 20 to 30 years. We clearly know whether they are good or not according to our operational experience onsite. Furthermore, our company has the appropriate size to deal with large nuclear projects worldwide. Thanks to

Velan's worldwide presence, we can also be a global partner for our clients. We can manufacture locally in any one of our 15 manufacturing plants if needed by the market or if required by our clients.

"The final point that I feel is key to our success is that we are a very stable company with a very stable ownership and management team. The company, as mentioned earlier, has been around for decades and has from day one been fully committed to the nuclear industry. This helps assure plant operators that we will always be here to supply spare parts and on-site services during the whole life of the plant. We have the ability to establish the kind of long-term partnerships that are essential in this industry."

### **Key market influences**

During the past five years, China has been the Velan's main geographical market and this has had a significant impact on the company's growth.

"Of the 45 nuclear plants either in operation or under construction in China, we have supplied valves to 41 of them, 30 of these during the past five years (mainly CPR 1000 reactors and EPR reactors)," continues Mr. Cennac. "Our group is also participating in AP1000 projects in China.



*Mr. Jean-Claude Cennac, President of Velan s.a.s. (France), at the Lyon facility.*





*The Velan s.a.s. plant in Lyon, France, supplies nuclear qualified valves to Europe, Russia, and China.*

“In addition to China we have supplied valves to a number of EPR reactors in Europe (Finland and France) and are also active in Eastern Europe and Russia, where we have valves installed in some 25 VVER reactors. We are also involved in the supply of spare parts, new valves for modifications of existing units, and on-site services (inside containment areas), thereby maintaining our existing installed base and ensuring the valves operate at peak performance throughout the life of the plant.”

As is true of most suppliers in the nuclear industry, the Fukushima accident has had

an impact on the company, but in the long term some positive developments are emerging, explained Mr. Cennac. “It is clear that the sudden hold on many of the new nuclear station projects worldwide right after Fukushima will have a moderate impact on our activity. We have fewer new projects at the moment but there is a rising demand for safety modifications and spare parts from nuclear operators in existing plants. “Fukushima has also re-oriented the market to an even stronger focus on safety, reliability, and high-quality levels, which is perfectly in-line with

our business approach. In addition, our company already survived both the Three Mile Island and Chernobyl incidents, so we already had experience with such cataclysmic events and could anticipate quickly the consequences and re-orientate our strategy accordingly.”

### **Localization strategy**

With manufacturing locations around the globe, the company has developed a localization strategy that allows it to make the most of local opportunities as they emerge.

### **Wide range of valves**

One nuclear power plant needs around 20,000 valves for the nuclear island and the conventional island. Of these, approximately 200 are large, safety-related valves in the nuclear island, for the most part located in the main primary system and the safety injection system. Velan supplies these valves as well as approximately 4,000 smaller modular maintenance valves (safety classified types) located in the safety systems. The company focuses on high-quality and highly technical equipment for critical applications. Velan valves are also used to avoid accidents and control the reactor coolant after a severe accident.



*Jean-Claude Cennac, President, and Patrick Henry, Managing Director, Velan s.a.s. (France).*



“Velan s.a.s (France) is the result of a management decision to keep production local,” says Mr. Cennac. “We would not exist in France if our corporate management did not decide to invest in us here. This is largely because the size of the market in France is attractive (58 reactors) and we’ve already developed very good relations with the local operators in the plants, based on trust. We have all the benefits of operating locally and taking advantage of Velan’s larger global manufacturing and marketing network. “What we are doing in China in our Suzhou plant is a good example of our localization strategy. The plant was built in 2009, covering 6,000 square meters and having a staff of 50 to 60 employees. The machines in this plant — such as the welding robots — are brand new and built with leading edge technology. Even though the plant got off to a good start, we haven’t been able thus far to manufacture nuclear equipment in this plant because of Chinese regulations:



Large size high-pressure gate valve with a forged body.

the HAF601 requests that a new plant in China must have five years of experience before producing nuclear equipment. Because of this, we are currently using this plant as a subcontractor to manufacture components. In the future, we will produce more valves in China. We are moving step by step, and we haven’t made big announcements about our presence there: we’ll wait till we are able to manufacture the nuclear valves there. We prefer to be conservative in our marketing: that’s the way we like to do things.

“We are also exploring the possibility of manufacturing nuclear valves in India in our new plant located in Coimbatore. Furthermore we do not exclude the possibility of a partnership in Russia, where we already have a representative office in Moscow fully dedicated to the nuclear market.”

#### Looking to the future

“Nuclear power is, and will remain, a reliable source of energy for the future, even in a post-Fukushima context. In fact, most of the nuclear programs already launched before Fukushima have been re-confirmed, including the construction of approximately 60 new



The modular maintenance globe valve.

reactors globally. Numerous projects are on-going in India, Russia, and in the UK. What’s more, some new countries such as Vietnam, Bangladesh, Jordan, Saudi Arabia, Poland, and Turkey have expressed for the first time their interest in nuclear power.

“Regarding China, the new government reconfirmed recently its commitment to nuclear energy and we are optimistic that construction of new reactors will resume soon. We are therefore confident of the future of nuclear power industry, where safety, reliability, and quality are, now more than ever, the key words,” concludes Mr. Cennac.

### Facts & Figures

<b>Name:</b>	Velan
<b>Founded:</b>	1950
<b>No. employees:</b>	Over 1,800
<b>Products:</b>	Cast and forged steel gate, globe, check, ball, triple-offset butterfly, knife gate, highly engineered severe service valves, and steam traps.
<b>Key markets:</b>	<ul style="list-style-type: none"> <li>- Fossil, nuclear, and cogeneration power</li> <li>- oil and gas</li> <li>- refining and petrochemicals</li> <li>- chemicals and pharmaceutical</li> <li>- LNG and cryogenics</li> <li>- marine</li> <li>- HVAC</li> <li>- mining</li> <li>- water and wastewater</li> <li>- pulp and paper</li> </ul>
<b>Turnover:</b>	USD 500 million

