

Electric actuator specialist Bernard: Partner of the nuclear industry



The SN range of newly qualified 1E actuators.

As a manufacturer of electric actuators, L. Bernard S.A. is a company that is watching the ongoing international revival of nuclear power generation with great interest. With its headquarters in Gonesse, France - a country where nuclear power has always been high on the agenda - Bernard is now in an excellent position with all knowledge and capabilities necessary to serve this demanding niche market. On a recent visit to Gonesse, we renewed our acquaintance with Company President Mr. Etienne Bernard, General Secretary Mrs. Christine Bernard, Marketing Manager Mr. Fabien Lemaitre, General Sales Manager Mr. Jean-Yves Pinvidic and R&D Engineer Mr. Damien Pillac.

By David Sear and Esther Aiking-Martensen

The last time we had the pleasure of talking to Mr. Bernard was back in 2005. At that time he told us: "there is no magic secret behind Bernard's success. All we do is understand and then fulfill customers' expectations. We create and manufacture products that people will want to use. Wherever

the market, we are one step ahead of the business." This statement is as true today as it was then. Listening to – and working closely with – its customers is an essential element of how the company operates and one of the reasons for its continued success in the marketplace.

Quality and reliability are other important factors for Bernard as its actuators are often used in extreme or harsh environments where safety is a key issue. All actuators have a rugged, durable design, which can be tailored to the specific environment where the actuator will be used. They can, for



"Bernard's success is based on understanding and then fulfilling customers' expectations."

nuclear power industry. The so-called "nuclear renaissance" seems to be on everyone's mind right now, and especially so in countries where policy-makers turned away from this form of energy in recent decades. Now of course nuclear power is being promoted as both a way to secure energy supplies and help reduce carbon emissions. In France, however, nuclear power has always been a mainstay of the energy sector, and indeed some 80% of the country's electricity needs are met by nuclear power plants. And, as Mrs. Bernard points out, this puts Bernard in an advantageous position: "Unlike many other actuator manufacturers, we have always remained active in this market, in France but also abroad. This means that throughout the years we have been able to accumulate a solid knowledge base about this industry which has enabled us to develop a range of first class actuators specifically dedicated to the nuclear industry."

Mr. Pillac adds: "Our nuclear actuators are highly specialized products as the

nuclear power industry has very stringent demands regarding reliability and safety. Our philosophy is that our nuclear actuators are designed from scratch as such to integrate those demands but their construction rely on many technologies already used and proven on former nuclear qualified ranges and in other types of industries." In doing so, Bernard is not afraid to think outside the box and to come up with innovative solutions that make the actuators more user-friendly in a nuclear environment. Bernard's newest range of nuclear actuators, for example, contains a variety of novel features, all to optimize product operability and maintainability. Should it be necessary, for instance, to carry out maintenance within the hot areas, then engineers can quickly and simply perform setting or maintenance operations. This helps to drastically reduce personnel radiation exposure.

Partner of the nuclear industry

Bernard has four key selling points when it comes to supplying actuators to the nuclear power industry. The first

example, be built to operate in extremely hot or cold environments, to withstand different levels of corrosive atmosphere, or be adapted for continuous modulating duty. "Whatever the situation, we offer the client the best actuator for his application," says Mrs. Bernard. As a result, Bernard actuators can be found in the oil & gas industry, in water treatment facilities and in shipbuilding, to name just a few market segments, but also in nuclear power plants, where safety and reliability are, of course, paramount.

Advantageous position

Bernard is certainly in the right position – both literally and figuratively speaking – when it comes to serving the global



Bernard's fail-safe FQ actuator (spring action in case of loss of power) is ideal for ventilation safety applications.



one, as said, is the experience the company has accumulated over the past four decades. "And this is not limited to France alone," Mr. Bernard is quick to underline. "Our actuators can be found in nuclear plants across the globe, in Europe, the ex-CEI and China. In fact, more than 80 nuclear power plants worldwide use Bernard actuators. They are used throughout the nuclear island, in both the primary loop and the secondary loop. These are some of the most critical components of the plant so reliability and safety are paramount and that is exactly what we offer our clients." To support this global customer base, the company has manufacturing facilities not only in France but also in Houston, Texas and in Beijing, China and subsidiaries or distributors in more than 30 countries.

The second advantage Bernard offers is the incredible array of products designed specifically for the nuclear industry. Says Mr. Pinvidic: "We offer actuation solutions for the entire nuclear sector. So not just for nuclear power plants but also for nuclear waste treatment facilities and uranium enrichment plants, etc. The EURODIF enrichment plant in Tricastin, France, for example, has between 6000 and 7000 of our actuators installed." Nuclear submarines form another important niche market for Bernard, Mr. Lemaitre adds: "These submarines essentially carry small nuclear plants on board. As you can imagine, in addition to safety and reliability, space is of the essence here as well. We took on this challenge and, working closely with the French Navy, we developed a range of small, compact and light actuators that perform excellently. An added advantage for us was that we were able to further boost our own skills and technology with this project, which helped us improve other nuclear actuators as well."

The third advantage for the nuclear industry is the fact that Bernard's newly qualified range of actuators for nuclear power plants are all designed according to the specifications of the GEN III+ plants. Mr. Pillac: "They comply with all the new safety constraints, for example the demand to be able to withstand an airplane crash conditions. Furthermore, all of our actuators undergo a three stage qualification test, which includes a seismic evaluation and a LOCA (loss of coolant accident) test to see how the actuator withstands pressure, changes in temperature, humidity, steam and chemical spray. Of course the actuators are also designed to fit the changes in the GEN III+ plants' processes and design. Our experience of four decades in this industry has been very beneficial in engineering our products to these new standards."

Last but by no means least, the fact that Bernard is a global organization is beneficial to its customers as well. It means that they can draw upon the company's expertise wherever their facilities may be located. Mr. Lemaitre explains: "Generally speaking, our actuators are made to install and forget. All that is needed are periodic checks on-site. We help our customers to establish proactive maintenance systems for this purpose. However, in a nuclear power plant some additional checks will be necessary, due to the criticality of the system. In these cases, we can on request send Bernard supervisors to oversee the work, wherever the plant may be located." In China, arguably the most exciting place to be for any company involved in nuclear power generation, a Bernard subsidiary opened its doors in 2004. The Chinese-speaking staff in

Beijing Bernard Control Equipment's eye-catching new premises.



Beijing supports plant operators in China, providing service and maintenance programs on-site.

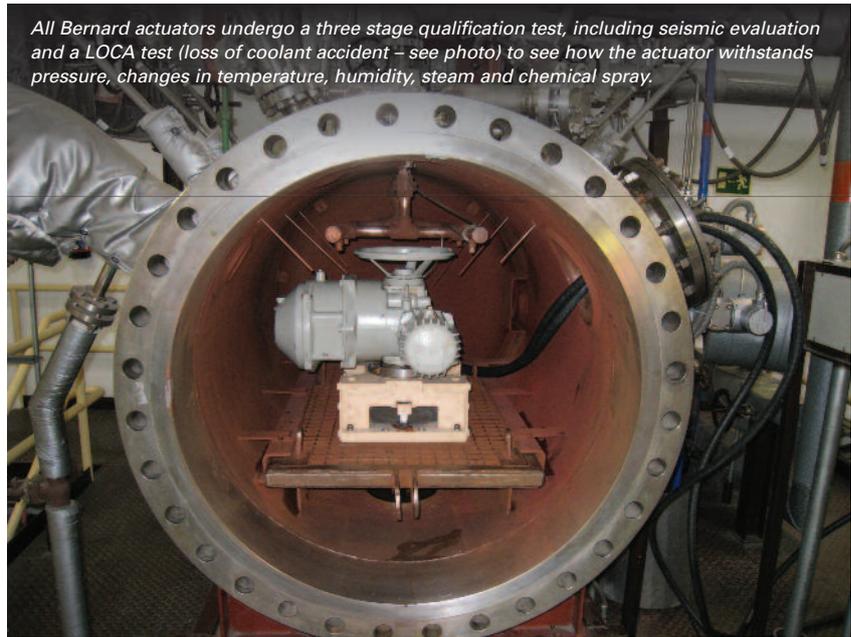
Teamwork

When asked if he could sum up his company philosophy in just one word, Mr. Bernard’s answer comes without a moment’s hesitation: teamwork! “That is what it is all about. Teamwork is essential and it is something that is stressed throughout the company and in the relationships with our clients. Especially in nuclear power, where safety is of the utmost importance, we have to be able work with the other parties very closely. That is why we try to establish partnerships with all the parties involved, with the end user, the engineering companies and the valve manufacturers. These partnerships can be very complex but it is essential that we communicate as a team to make sure that the operator receives a cost-effective, safe and reliable solution as expected.”

Mr. Pinvidic explains in more detail: “We need to be able to communicate on different levels with all the parties: With the end user we discuss maintenance and operability, with the engineering company how the actuator will, for instance, interface with the control system and with the valve maker about the valve/actuator combination. We are involved in the project in every stage so it is important that we are in constant communication and work closely with all of these parties. This is an aspect that we can’t stress enough.”

Continued development

According to Mr. Bernard, the future of nuclear power is a bright one. “I feel that now it is back on the agenda, it is here to stay. And I firmly believe that Bernard is in a leading position to support coming nuclear power plant programs across the globe. Our actuators will equip many of the GEN



All Bernard actuators undergo a three stage qualification test, including seismic evaluation and a LOCA test (loss of coolant accident – see photo) to see how the actuator withstands pressure, changes in temperature, humidity, steam and chemical spray.

II+ and III+ reactors that are currently on the drawing board or already under construction. Based on the long-term partnerships we value, we will continue to make actuators that satisfy the requirements of this niche market. At the same time, we will continue the development of our present

technology to match any new critical requirements of the nuclear industry. Such as actuators for the “next generation” GEN IV plants. In the years to come, clients can rest assured that electric actuator specialist Bernard will still be their partner in the nuclear industry.”

Facts & Figures	
Name:	L. Bernard SA
Headquarters:	Gonesse, France (Paris area)
Manufacturing sites:	Europe: Gonesse and Grandvilliers (France) Americas: Houston (USA) Asia: Beijing (China)
Distribution:	Subsidiaries in Belgium, China, Germany, The Netherlands, Spain, USA and offices in Thailand and UAE
Distributors:	in over 30 countries
Products:	Electric actuators (quarter-turn, multi-turn, modulating, failsafe, intelligent controls, fieldbus connection, additional gearboxes),
Quality certifications:	ISO 9001-2000, CSA, GOST-R, GGTN, CE, NEMA, ATEX, Germanischer Lloyd, ABS, and many more
Nuclear certifications:	IEEE, RCC-E, KTA
Main applications:	Thermal & nuclear power, oil & gas, water treatment, industry automation, shipbuilding
NPP equipped:	Over 80 nuclear reactors equipped worldwide
Main clients:	end users, engineering companies, valve manufacturers, systems integrators
Sales:	EUR 43 million in 2008
Employees:	320
Website:	www.bernard-actuators.com

