INEOS: Focus on the supply base

"Although the valve industry and its supply base are mature sectors that have significantly improved over the years, there are still quality issues that we need to address. As an end-user, we can also tighten our grip by limiting our supply base of say three to four companies. We expect that these companies also limit their supply base as an increased focus limits the occurrence of faulty products."

By Lucien Joppen

Carl Neeskens sees ample room for the valve industry to innovate, especially in terms of metallurgies.

Carl Neeskens, a veteran in the valve community, has been working in the ethylene oxide sector for several decades. He has worked for various companies as the ethylene oxide plant in Antwerp has changed ownership several times.

"The roots of our plant were in the mid-sixties when Union Carbide constructed the plant in Antwerp", Neeskens states. "In 1978, BP Chemicals bought the production facilities, divesting some to third-parties later. In the nineties, Inspec Group became the owner. In 1998 a management buy-out, led by Jim Ratcliffe, was the origin of INEOS. (see company profile)."

Carl has been in charge of various aspects of static equipment, including procurement and spare parts management. During most of his career, he was responsible for the technological aspects related to static equipment (pipelines, coatings, insulation, valves, pressure vessels, heat exchangers, et cetera). Today, he is also managing the piping design office and project construction activities for existing assets and new projects.

Hot potatoes

In 2014, when Valve World interviewed Carl in his office in Antwerp, he mentioned several issues related to valves that were very much on his mind at the time.

Casting quality was one of these hot potatoes. Back then, he stated: "casting quality has become more of an issue since I started in engineering, and that is further exacerbated when foundries start to outsource work. This could well be the result of increasing competition in the industry. However, the focus on price should never be allowed to compromise the quality of the castings, so I believe that steps should be taken to redress the balance, even if a certain cost is involved."

When asked if the above situation has improved over the last six years, Carl's answer is not affirmative. "There are still many foundries around that are not producing up to specifications. Ultimately, you don't want these products to end up in your process installation as they inevitably lead to serious problems in the production, and might lead to costly unplanned shutdowns."

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Carl Neeskens (Belgian) holds a Master Degree in both Engineering and Industrial Management. He started his career in 1989 with BP Chemicals in Baglan Bay, Wales. From Wales, he moved to BP Chemicals in Antwerp, Belgium, in 1991. Following a management buy-out in 1998, he now works for INEOS (headquartered in Switzerland). His initial role was technical, focusing on static equipment (pipes, valves, heat exchangers, pressure vessels, etc.). He has also led the Procurement department for INEOS in Antwerp and INEOS's EOEG Project in Texas.

The INEOS-site in Antwerp dates back more than half a century.

Supply base limits

Specifically for INEOS, Carl emphasizes that his company has tightened its grip on the supply chain to minimize the chance of procuring and installing faulty products. "It is important to keep our supply base limited to three to four suppliers - with two suppliers covering more than 50 per cent of our valves - to prevent a fragmented supply base which can lead to a lack in control and oversight. We also expect from our suppliers that they keep their supply base within manageable boundaries."

INEOS also has stepped up in its demands for documentation regarding the casting quality and the underlying production process. The company demands a Minimum Level 3 (ASTMe446) for the casted valve parts. "We can't expect that every part undergoes a radiographical test, but we demand statistical evidence which confirms or denies the production quality."

According to Carl, this approach has led to fewer quality issues with valves during commissioning or production.

Consolidation

Staying with the topic of (casting) quality, it might also be an issue of the sector itself as casting is a heavily-fragmented market. Increased consolidation could function as a mechanism to separate the wheat from the chaff. Larger companies would also invest in production quality and control and simultaneously scale up production to remain price-competitive.

"This could improve overall quality as there are still casting companies around that manufacture substandard products. Compared to the early nineties, the situation has improved significantly. Back then, valve suppliers were even more abundant than they are now and individual end-users tended to rely on a greater supplier pool. Casting was also done more in-house as opposed to the current situation. However, end-users experienced many quality issues with valves as manufacturers could not adequately meet the industry's expectations."

INEOS has tightened its grip on the supply chain to minimize the chance of procuring and installing faulty products, says Carl Neeskens.

Plant history

As mentioned before, the INEOS-site in Antwerp dates back more than half a century ago. As long as Carl has been active on-site, in the early 1990s, the site has been expanded and updated to increase production to meet market demand. Have these continuous expansions led to a mishmash in terms of a supply base and various underlying specifications?

According to Carl, this is not the case. "When the plant was acquired by BP Chemicals, the company's specifications were translated to site specifications which are still in place. Of course, there are always exceptions to the rule. Recently, in 2019, we acquired a combined heat and power plant from RWE that supplies power and steam, as a critical feedstock, to the INEOS plants on the site as well as our 3rd party co-siting partners. As this CHP-facility was built based on standards that are now outdated (Stoomwezen, DIN), we need to rewrite the specifications for the static equipment, based on EN-norms. This is not a straight-forward exercise, as some pressure classes now have lower allowable pressures at specific temperatures."

Outsourced leak detection

Emission control also remains a topic within INEOS. Already in the BP Chemicals-era, the plant has invested in this domain. Carl himself was involved in this issue which the company picked up in 1993.

"We have been one of the front-runners in the petrochemical sector in tackling (fugitive) emissions. We have addressed this topic in three areas: specifications, procurement and operational. We have achieved a lot since, but we should not take our eye off the ball and avoid complacency. It is not enough to have the correct specifications and procurement strategies. It is also about leak detection and repair. Along the years, we have changed our MO. Whereas initially, our operators were responsible for leak detection, we have now outsourced this activity. These specialized companies have the latest technologies to detect leaks, such as scanning techniques."

Company profile

INEOS was established in 1998 by current CEO Sir Jim Ratcliffe. The company spun out from Ratcliffe's former venture Inspec Group. The petrochemical company manufactures and distributes a wide range of petrochemicals, speciality chemicals and oil products for many markets including Fuels and Lubricants (23.3%), Packaging and Food (18.5%), and Construction (16.1%). Other markets include Automotive & Transport, White Goods & Durables, Pharmaceutical & Agrochemical and Textiles. The majority of INEOS's geographic earnings are distributed across Germany (16.8%), USA (16.1%), UK (12.3%), France (11.6%) and Benelux (10.8%).

Durability

Apart from quality/durability and emission control, Carl also sees ample room for the valve industry to innovate. He stresses that innovation should create real value for its end users. "It is not so much about the bulk of the valve park, but more about specific challenging applications. I would like to present a case. However, as this might disclose too much information, I have to recline. Suffice to say that we had issues regarding medium temperature and pressure build-up within the valve cavity." Carl also identifies room for innovation in material technology, in particular in developing specific metallurgical grades. "It is interesting to address certain phenomena we experience in our process configuration. For example, the same duplex grades react differently to an identical medium in a specific part of our process installation. The question is: how can we improve the metallurgy to compensate for these differences?"

Finally, on a more personal note, Carl is relieved to be back full-time on the job after being diagnosed with blood cancer in 2017. "I was very fortunate that a new treatment technology was available at the time. Otherwise, it would have had serious consequences. The good thing is that you value your health which in these times is not for granted."