

Bruno De Cooman, Mechanical Engineer, Tractebel Engie

“Obsolescence *is* a gro

Valve World had the pleasure of interviewing Bruno De Cooman about how Tractebel Engie’s obsolescence program is helping to keep nuclear plants in good condition

By David Sear



Valve World: When and why did Tractebel start its obsolescence programme?

Bruno De Cooman: The obsolescence programme stems from a former task where Tractebel was asked by the owner to supply reserve safety related equipment and spare parts. Obsolescence is a significant and growing problem for the reliability of nuclear plants in normal and accidental conditions. A nuclear power plant can be stopped by the Safety Authorities if no spare parts or reserve equipment is available for safety related applications. Even for redundant safety systems the owner is allowed just a limited number of days to repair deficient equipment.

VW: So what are the aims of the obsolescence programme?

BD: If the original equipment manufacturer (OEM) no longer exists, or has lost his nuclear qualification, or has changed his core business, then our aim is to find replacement equipment that is of the same nuclear quality class and of the same safety qualified function.

VW: Is the programme specific to the nuclear power industry?

BD: No, it can be applied to any industry because of the modification of the strategy of various groups following the mergers amongst constructors. Tractebel’s role is to provide expertise and our team is ready to solve all kind of problems occurring on mechanical equipment, such as for example replacements, procurement, technical advice and complex equipment analysis. For example, we perform the rationalization program for the supply of spare parts for all of Electrabel’s thermal and nuclear power station audits for the management of spare parts

VW: What types of help do customers need?

BD: Generally speaking the customer or owner needs to have a new set of equipment that conforms to the service conditions, the layout and to the construction rules when replacing obsolete equipment. This can be achieved in various ways. For example: finding a new supplier who has bought the “blueprints”; locating replacement spare valves/parts from within the power plant’s existing stocks; and finding suppliers who are able and are still motivated to

“wing problem”



deliver nuclear equipment according to the technical specifications. As far as that is concerned Tractebel Engie benefits from having expertise and knowledge of all the international construction codes and standards and is therefore able to harmonise these with our client's regulations.

VW: What about reverse engineering – is that an option?

BD: Reverse engineering is only considered if the item is not available from the OEM

and a substitute cannot be found. However, there are barriers to this, such as the legal issues. We can also look for unused identical equipment whilst some components could possibly be refurbished or repaired. In some cases, Tractebel can design some components to replace the one which cannot be found on the market to avoid having to replace the entire equipment. We can also cannibalise parts from other identical equipment. For example, if obsolete valves are removed from one location, those valves could be dismantled and the components used for spares elsewhere.

VW: Could you have comparable brand new equipment made?

BD: Yes, an OEM who does not make the original equipment can sometimes be persuaded to make an identical product. However, this can be tricky since technical drawings used for manufacturing are not always updated with the latest design changes (or sometimes variants).

VW: Can't customers do this type of work themselves?

BD: It's a question of manpower and resources. Tractebel Engie has the necessary staff and experts in disciplines such as quality, qualifications, seismic calculations, safety, thermodynamics, material selection, etc. Therefore we can assist customers and discuss all necessary

issues with the Safety Authorities even if say the modifications are required when obsolescent equipment needs replacing.

VW: Can you be more specific about the types of equipment that you deal with?

BD: Our programme covers all safety related mechanical equipment, including valves (butterfly; safety relief; ball; gate; ...); pumps (submersible; centrifugal; piston; screw pump...); compressors (rotary tooth; piston; screw; ...), heat exchangers (plate; shell in tube; ...); ventilators, registers, speed regulators, actuators (electrical, pneumatic, manual, ...), gearboxes, ...; etc. IN addition, Tractebel Engie also has expert knowledge and specialised competence centres for instrumentation and controls; electrical; pipe systems and fluid properties, HVAC, etc.

VW: What would you say are some of the special challenges when working within the nuclear sector?

BD: The reliability, design and qualification of a new piece of equipment can require plant modification which is very expensive. There is a high cost for engineering, such as drafting specifications for the applicable codes, design restrictions, QA program setup, etc. All new equipment should perform, fit and in terms of function be at least the equivalent of the original components. The equipment needs to work in harsh environments such as high temperatures, pressures, ionisation and corrosive fluids and thus it can be very difficult to ensure operability during the expected and necessary lifetime of the equipment.

VW: How long have you personally been involved in the obsolescence programme?

BD: I have been working with the programme for four years. Other more senior engineers are of course also involved as they have the necessary expertise for solving problems.

VW: Can you mention any highlights or major success stories to date?

BD: The story of the obsolescence programme is written by the small achievements which are accomplished every day. One day we are able to locate an alternative in a warehouse; another day we might find an identical valve. Tractebel has performed studies and management to replace turbines, steam generators, condensers, etc. So every day brings its own challenges and rewards.

VW: Mr. De Cooman, thank you very much for your time.

Meet Bruno De Cooman

Career: During his thesis at New Holland Agriculture, Bruno was awarded patents for a design to change the movement of a sieve stroke and sieve angle. In 2013 he joined Tractebel Engie as a mechanical engineer. His responsibilities include: construction on-site supervision; tendering and bids; coordinating the obsolescence program; contract follow-up and factory final inspection of nuclear equipment; after sales service of the equipment.



Training: Bruno has completed various training courses, including: value skill program participant (program for the development of expertise in valves); welding examination; non-destructive examination; OPTIMOV training/participant/teacher; methodology of nuclear valves; nuclear steam supply knowledge/engineering and design principles of an NPP.

Hobbies: Bruno enjoys sports and motocycling.