

100 years of the BPVC code

[“A Century of Safety”](#) – The title of the ASME article celebrating the centenary of the BPVC (Boiler and Pressure Vessel Code). The BPVC is the mother of all American codes. The existence of this code and its derivatives mean that the engineering industry is a much safer place. Perhaps we should take some time to thank the people who made and contributed to the codes. These are people, famous as well as ordinary, who have charted the territory which we as engineers of today can confidently navigate. We are greatly indebted to these forefathers of our profession and hats off to people behind BPVC and all other engineering codes around the world, like our own AS2885 or the international ISO14692, ASME B31.1, B31.3, B31.8 and many others.

Here are a few lines from the article published by ASME that will give you a bit of taste of history:

“When ASME’s founders—including Henry R. Worthington, Alexander Lyman Holley and John Edson Sweet, along with other prominent industrialists and technical innovators of the nineteenth century— gathered in New York City for the first time in 1880, the main topic of discussion centred on the need for standardized tools and machine parts as well as uniform work practices in the dawning industrial age. Engineering standards, the founders agreed, would ensure safety, reliability and operational efficiency in machine design and mechanical production.

ASME issued its first standard, Code for the Conduct of Trials of Steam Boilers, in 1884. This paper evolved into Rules for the Construction of Stationary Boilers and for Allowable Working Pressure—the first edition of ASME’s now-legendary Boiler and Pressure Vessel Code (BPVC)—issued in 1914 and published in 1915.”

It has been a long way since. By far the BPVC has done its job right in standardising designs, building safety into design, preventing the loss of lives and harm to environment and property.

But what exactly is a code? Put simply, it is a book where all the collective engineering experience and knowledge is compiled to “ensure safety, reliability and operational efficiency.” But a book is useful only as long as it is read. So the legislation has instilled regulation and our profession implements those through internal review, peer review, safety in design review, HAZOP, independent third party review, design verification, MDR validation and code compliance. When these processes are followed diligently with the assistance of the right people, the result is a much safer and productive installation, low on maintenance and high on availability, therefore high on profitability.

There was a popular phrase till a few decades ago: There is no royal road to education. Similarly there is no short cut to safety. Given the scale of industrialisation that has happened throughout the world, and the new heights that technology has scaled we know that we have achieved greater safety standards than hundred years before. But the goal of zero harm is yet to be reached.

We have heard of Chernobyl, 3 mile Island, Deep water horizon, Fukushima Daichi, Varanus Island and Pike River. The memories of these incidents make us think and rethink our role as engineers. Every time an industrial incident happens anywhere in the world, as engineers we ask, why did this happen? Could this have been averted? What can we do to prevent accidents like this in the future? Then when we get the opportunity to do a root cause analysis, we use the same process of questioning to find the cause to prevent future recurrence. That’s our duty of care. From my experience of two decades of engineering, the lesson I learnt is to abide by the code to make a safe and efficient installation. I learnt to enhance and bring clarification to the code and to raise awareness about codes such as the BPVC and their purpose to make societies and communities safer.