NDA plans for the future

PRISM: A solution for plutonium management?

All change at Dounreay

R&D funding drives innovation

written by Penny Lees

Maximising the value of small businesses

New generation calls for material risk management

written by Geoff Fawkes

written by Jenny Maxim

One partner to meet all your project and asset support needs.

Interserve is one of the world's foremost support services and construction companies offering advice, investment, construction and support services for society's infrastructure and providing a range of plant and equipment in specialist fields.

Interserve has a long, successful history of delivering in a wide range of industrial markets.

We have operated within the nuclear sector for over 30 years, giving us unrivalled experience.

Our vast range of self delivered services can be provided individually or integrated to deliver a multi-discipline solution designed to meet your entire project and asset support needs.

www.interserve.com
info.industrial@interserve.com
THE SAFETY VALUE CHAIN: IT’S NOT ROCKETS SCIENCE

Interview with Tom Anderson
(Director, Blue Stream Consulting)
Words: Dr Rachel Parratt

We are all aware that the supply chain contributes to the successful operation and management of the UK’s nuclear industry, from small companies that supply mechanical valves to large-scale engineering, procurement and construction (EPC) contractors who provide turnkey solutions. But how do we describe the safety value chain? ‘Safety’ in the supply chain may be too simplistic a view – we need to know who makes up the safety value chain, and how they interact to ensure a safe working environment.

Suppliers contributing to the safety value chain include groups of individuals and alliances, from system designers and operators to safety inspectors and regulators. The idea of a safety value chain highlights the actions that members of the supply chain take to influence and contribute to accident prevention. Safety resides with every individual/alliance, and not just the end-user i.e. everyone at the different time-points along the chain has responsibility for safety. The importance of these relationships is well recognised by our client, Jacobs Engineering Group Inc. Group Vice President Bob Irvin says, “At Jacobs we work hard to engage with our contractors/suppliers/partners to ensure our philosophy and approach to safety is well understood and adhered to, and that our total commitment and discipline is shared. Working together with our supply chain partners, we integrate learnings into safety efforts to positively influence safety competency across all phases of work. Safety is at the core of everything we do, and it influences our behaviour and attitudes, both in and out of the workplace.”
What can happen if safety concerns in the supply chain are ignored?

Unfortunately, there are a number of examples of operations going wrong, either where industry has not listened to the supply chain, or where the supply chain has not listened to industry.

The US Challenger space shuttle disaster in 1986 is a good example of where NASA did not heed safety concerns from the solid rocket booster manufacturer, Morton Thiokol. Warnings that the O-rings on the shuttle’s boosters would stiffen in below freezing temperatures and lose their ability to act as a seal were overruled by NASA managers, who were under pressure to launch the shuttle on schedule. Morton Thiokol, aware that the O-rings had never been tested at such low temperatures, signed a waiver stating that the solid rocket boosters were safe for launch at the colder temperatures.2

Safety resides with every individual/alliance, and not just the end-user.

An example closer to home where the safety value chain could have prevented a major accident was the December 2005 explosion at the Buncefield oil storage depot in Hemel Hempstead. The Control of Major Accident Hazards (COMAH) report3 into the immediate cause of the explosion found that the way in which safety-critical instrumentation for a storage tank was designed, installed and maintained gave a false sense of security to end-users. The impact of the defects could have been reduced by those further down the supply chain; but as the COMAH report noted, the ordering process “fell short of what would be expected for safety critical equipment”. These omissions contributed to Britain’s most costly industrial disaster.1

How does the nuclear industry manage risk in the safety value chain?

The nuclear industry recognises that accidents typically result from the absence or breach of defences, or from violations of safety constraints. Much risk is managed using Probabilistic and Deterministic Risk Assessment techniques, and the principles of ‘defence-in-depth’. With defence-in-depth, there are multiple lines of defence or protection that would have to fail before harmful effects are caused to people, or to the environment. A supply chain that works collaboratively, proactively sharing information and learning, adds to defence-in-depth and benefits all in the safety value chain.

A supply chain that works collaboratively benefits all in the safety value chain.

Everyone in the supply chain has responsibility for, and contributes to, nuclear safety.

How is the safety value chain important to you as a contractor?

Everyone in the supply chain has responsibility for, and contributes to, nuclear safety. Companies like to talk about “safety as their number one priority”; however, in reality, when faced with direct pressures to deliver to predetermined cost and time schedules, this can lead to conflicts in the ‘production–protection space’,1 directly impacting on safety cultures in organisations.

A positive safety culture, where there is a shared commitment to safety across all levels, from senior management to front-line workers, and between all alliances and collaborations, is key to successful, safe operations. The UK Health and Safety Executive defines safety culture as “the product of the individual and group values, attitudes, competencies and patterns of behavior that determine the commitment to, and the style and proficiency of, an organisation’s health and safety management”.3

A strong belief in, and proactive approach to, safety culture is adopted by Balfour Beatty, one of our current clients. “A positive and proactive safety culture, at all levels and stages of a project, is key to achieving the high safety standards which we demand. It is essential that this culture, together with robust safety processes, is integrated throughout the supply chain, so that together we can achieve the continual improvement in safety standards which we all want. Only by setting the highest standards for ourselves and our supply chain partners will we be able to maintain the standards of quality, reliability and safety expected by our nuclear clients,” explains Phil Wright, Project Director at Balfour Beatty.

With more alliances and collaborations working together in the nuclear industry, and the increasing potential for failure paths, a positive safety culture with communications founded on mutual trust, shared perceptions of the importance of safety and preventive measures is more important than ever in the safety value chain.

References


For more information about developing positive safety cultures in the nuclear industry, contact Tom Anderson at Blue Stream Consulting:

Mob: 07880 556999
Tel: 01768 878107
www.bluestreamconsulting.co.uk