Introducing Risktec Solutions Limited

Welcome to the first issue of our company newsletter.

Risktec Solutions Limited surged onto the industrial scene in September 2001, and is now carrying out multiple consulting contracts with blue-chip clients. Specialising in high-risk sectors, such as nuclear and defence, oil and gas, chemical, marine and major corporations, Risktec offers services in three business streams - safety and risk assessment, business risk management and advanced risk engineering. A subsidiary of Nutec Centre for Safety Ltd, the UK's safety and survival training wing of Nutec Global, Risktec's launch mirrors a similar move into risk management by Nutec Global in the Netherlands. "Each year, tens of thousands of professionals operating in some of the world's most hazardous workplaces come to Nutec's centres for training to safeguard not just their livelihoods but their very lives," said Risktec Director Andre ter Weele. "We are therefore uniquely placed to help employers manage risk not only to their employees - arguably their most valuable asset - but also to help to assess, manage and where possible eliminate many of the risks associated with the business's other assets, such as equipment, materials and processes." Risktec's head office is in Warrington, Cheshire. Risktec, but, reflecting an increasing involvement in the oil and gas and petro-chemical industries, also operates from Nutec's centres in Teesside and Aberdeen. Its clients are predominantly UK-based, but already the nature of Risktec's expertise has secured contracts all around the world - and in some of the harshest environments imaginable.

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Choosing between deterministic and probabilistic analysis

A United Cold Front

Risktec helps to solve problems in some of the world's extreme environments

Centre pages

Reflections: "Considering that we only started full operations in September 2001, the positive response from the markets to our service has been very pleasing," Andre ter Weele reflected. "Clients across major hazard and high asset value sectors have been very supportive of our approach - which is to focus on providing solutions, not more problems - and they like the blend of "can do" attitude and professionalism." There are now 28 people in Risktec in the UK and in its flexible project teams. "They are all very highly motivated, and everyone has made a great contribution to making Risktec happen over the past eight months," Andre emphasised.

Astute beginnings for Risktec

Risktec is taking part in a prestigious project to prepare Nuclear Safety Cases for the Royal Navy's next generation of nuclear submarines. The Astute class hunter-killer, the biggest and most powerful attack submarine to be built for the Royal Navy, will replace Swiftsure Class submarines at the heart of the UK's naval fleet. Significantly, the Astute will be the first Royal Navy submarine to be covered by a modern standards whole boat safety case.

Risktec is assisting in nuclear safety case preparation for Rolls Royce Naval Marine, which is designing the reactor plant, and BAE SYSTEMS Marine, at whose shipyard at Barrow-in-Furness, Cumbria, the first stages of construction are now proceeding.

Steve Pearson, project manager for Risktec, said: "The Astute is a challenging project and very much a project of the future. We are proud to play a part in the development of such a seminal safety case."

Early industry plaudit for Risktec

Risktec was awarded BS EN ISO 9001:2000 accreditation for its quality management system with three months of starting operations. Quality Assurance Manager Mel Davies explained: "If we are going to go to industry and say this is the best practice you should adopt to manage safety and business risk, we have to be seen in every respect to be practising what we preach."

The system covers all aspects of the business, from sales and marketing, to finance and business development, to health, safety and environmental, and IT support. "We have a true business management system, not just a project quality assurance system," Mel emphasised.

Tripod software success

Risktec Consulting BV, Risktec's Dutch sister (previously called Advise Safe), has been awarded a contract by the Stichting Tripod Foundation to develop and support the Tripod-Beta incident analysis software. Tripod-Beta is used to conduct analysis of an incident to enable investigators to confirm facts and identify the underlying causes. The underpinning Tripod methodology is based on the renowned incident causation research carried out by Manchester and Leiden Universities. Risktec will market and sell Tripod-Beta and provide expert consulting and training in its use.

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Risktec Solutions Limited is bringing its consultancy expertise to bear in some of the planet’s harshest environments.

The company has won contracts providing HSE (Health, Safety and the Environment) cases in areas of outstanding natural beauty and extremely environmental sensitivity. Risktec Consultant Andy Lidstone said: “An HSE Case is designed to ensure operations are carried out without endangering personnel, the environment, the asset or the company’s reputation.” By observing and assessing a variety of industrial installations in areas of extreme climatic change, we have gained a body of knowledge of potentially hazardous effects of extreme cold on operations and employees.

There are limits for when you can and cannot use cranes due to the weakening effect on steel of freezing temperatures, while people working at temperatures below -40°C, even with full PPE, will perhaps have 30 minutes before they need to go to a heated shelter.”

Risktec applies to REPI radiation protection

Risktec Solutions is working with a number of nuclear industry clients, both in the civil and military sectors, to apply REPI – the Radiation (Emergency Preparedness and Intervention) Legislation – to existing plans for coping with an offsite radiation emergency.

The legislation, which came into effect in September 2001, complements existing requirements for continuity planning (S999).

Its application is based on the quantities of radioactive substances involved in work, process or transport, and consideration of “reasonably foreseeable” incidents that could result in a significant release of radiation off-site.

The definition of “reasonably foreseeable” and the specification of a “radiation emergency” in terms of off-site dose uptake has effectively required the re-examination of the hazard identification and risk evaluation, and therefore emergency planning, for a major nuclear licensed sites.

It also redlines the general requirement on local authorities to provide local public information in the event of a radiation emergency.

The definition of “reasonably foreseeable” was developed to formalise current emergency arrangements for establishments handling radioactive materials and make them consistent with emergency arrangements for other hazardous materials industries, said Greg Davidson, of Risktec.

"We are helping a number of clients to revisit their emergency plans and public information procedures – and to re-assess in detail emergency scenarios where there is potential risk of an offsite release of radiation.

WHilst most nuclear installations already have a quantified risk assessment, relating to this is ‘reasonably foreseeable’ generated some debate.”

Risk recognition keeps industry safely wrapped up against the cold

Nurtec Global is the world’s largest provider of safety and emergency response training services.

The organisation has about 20 consulting offices and training centres, and more than 275 people around the world.

In Europe, Nurtec has internationally-recognised centres for excellence in workplace safety at Tresisee and Aberdeen, where more than 40,000 people a year receive industry-accredited training across six industry sectors. Offshore, maritime, aviation, military, onshore and medical services.

Nurtec Global’s consulting activities not only provide risk management services (Risktec), they also provide crisis management services (Nurtec Crisis Management) on an international scale to both the industry and the public sector.

IT applications division Planet Nurtec is scheduled to become a Microsoft Gold Certified Partner for software development later this year, a certification typically reserved for Hewlett-Packard sized companies.
Demonstrating how hazards are being properly managed

Many large companies operating hazardous facilities are required either by law or by their own corporate standards to demonstrate that the health, safety and environmental hazards associated with their operations are being properly managed. This typically means they need to conduct a formal risk assessment, demonstrating that the controls are in place for a hazard at a particular moment in time, together with a separate description of the system for ongoing management control.

What is invariably missing is the direct and visible link between the controls as they are today, and the procedures and people responsible for ensuring they will continue to be effective tomorrow.

Risktec consultants are pioneers in the use of the "bow-tie" methodology to overcome this problem.

The bow-tie diagram is an extremely powerful representation of risk control and lends itself very well to hazard management. By visually displaying the hazard, its causes and consequences, and the controls to minimise the risk, the bow-tie can be readily understood at all levels in an organisation, from senior managers to operations personnel.

Critical tasks which establish or maintain these controls are identified. Responsibilities for their execution and supervision are then assigned to positions in the organisation. It is these steps that demonstrate how the organisation’s management system ensures the ongoing management of hazards.

Assessing Risk

The key to any formal risk assessment is to identify the hazards arising from operations and the threats leading to the hazard. The risk exposure is predicted by defining the resulting impact on the business, combined with the likelihood of the impact occurring.

An example of a user-friendly risk assessment matrix is shown in Fig 1 and may be used at the outset to qualitatively assess the people, asset, environment and reputation risks. By avoiding probabilistic terms, such as 10⁻³ – 10⁻⁶ per year, the risk matrix is more widely understood.

The Bow-Tie

At this point, the "bow-tie" diagram may be introduced (Fig 2). The left side of the bow-tie highlights the controls which prevent each cause of the hazardous event at the centre of the bow-tie. On the right side, similarly, are controls which mitigate against progression of the event to the worst case consequences.

A major spin-off benefit of the workshops is that they stimulate communication between key stakeholders, whether from the company, contractors or external parties, who all have a role to play in managing a hazard.

"We found that involving our operational people in a field that has traditionally been fairly academic, really encouraged ownership of the process and certainly improved business results," said Steve Cooper, Director of HSE at BOC Gases.

Critical Tasks

Identifying the controls is insufficient in itself. The risk assessment is "static", in other words it presents a snapshot of the controls at that moment in time only. So, to ensure that the controls will still be effective tomorrow, links are made to those "critical tasks" which put in place or maintain a control in the bow-tie diagram, as shown in Fig 3.

The tasks may be inspection, operational, maintenance or administrative. It is only by the timely performance of such tasks that an organisation can be assured that risks are being managed properly.

"To energise" the assessment and make sure that risk management becomes a real part of line management activity, it is essential to specify:

- who is responsible for each critical task
- competencies needed to ensure the task is carried out properly
- the procedure where the task is defined
- how it will be verified that the task has been undertaken properly, and at what interval

Fig 1

Balancing Controls

Ideally, the cost of controls should not exceed their potential benefit. However, quantitative measurement of the true costs and benefits is often difficult. The ultimate decision on the level of control usually rests with the line manager, who would be responsible in the event of a loss, and is typically reached by consensus of the group confronted by the risk.

While the management of risk often requires a thorough overlay of checks, there is need to ensure controls do not become restrictive and lead to excessive bureaucracy.

Indeed, the challenge within many companies is likely to be judging what controls continue to be necessary as more streamlined and flexible plant operating philosophies are introduced.

Benefits of Approach

Widespread application across hazardous industries suggests that the success of the bow-tie approach can be attributed to:

- Recognition that effective risk management is only possible if people are assigned responsibilities for controls.
- The user friendly, graphical illustration of how hazards are controlled is readily understood at all levels in the organisation.
- Workshops which improve understanding of the risks and encourage ownership of the operational hazards.
- A formal methodology for demonstrating the highest standards of hazard management.
- Focusing on the practical implementation of the hazard management process at the operational level, so that it can be readily audited by corporate functions or regulators.
- Demonstrating not only what controls are in place, but why they will still be there tomorrow.