RISKworld

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In This Issue

Welcome to Issue 24 of RISKworld. If you would like additional copies please contact us, and feel free to pass on RISKworld to other people in your organisation. We would also be pleased to hear any feedback you may have on this issue or suggestions for future editions.

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Risktec

Emerging Challenges in Safety

At Risktec we are continuing to develop our services to respond to the growing needs of our market sectors. We are very pleased that direct feedback from our clients confirms that we are achieving our aim of being a dependable, long-term supplier, providing high quality and value for money, whilst being 'easy to do business with'.

In this edition of our biannual newsletter, we focus on some of the emerging challenges in safety, including the importance of safety leadership values, stakeholder communication, proportional risk assessment, and building and maintaining competence.

Every organisation has its own characteristics and safety culture and every facility is a unique combination of safety issues, design, operating parameters, age, condition, etc. On top of this, operators are bombarded by a plethora of evolving legislation, standards, guidance, methods, targets, advice and opinion.

To make sense of all of this, a clear focus is required to make the right decisions and prioritise resources. Not surprisingly, tackling 'softer' issues is often taxing for highly technical organisations where there are no simple formulae or rule books to follow. Embracing safety as a core value has the potential to reinvent an organisation's approach to safety, but is hard to achieve in practice without challenging people's underlying beliefs.

More tangible is advice for managing stakeholders throughout the safety case lifecycle, which is simple in concept, but often forgotten in the heat of project delivery.

Maintaining organisational safety competence in an era of technical skill shortages is a particular challenge, but one that can be addressed with some smart thinking and forward planning.

Cutting across everything is the principle of proportionality, which should focus effort and resources where they are needed most – to manage the risks that matter.

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Leadership matters: Safety as a value?

The previous issue of RISKworld focused on the things that leaders need to do right to assure major hazard safety. Whilst a list of things to do can be insightful for a motivated leader, the list simply adds to things that a leader already has to do, whether commercial, technical, human resources, etc. For example, traditional safety leadership tends to focus on what to do rather than addressing what may be considered to be 'deeper drivers' of safety leadership, such as holding safety as a value.

Beliefs and personal values

One 'deeper driver', that more enlightened training in safety leadership explores, is the issue of personal values of leaders towards safety (including health and the environment).

In order to understand personal values, it is important to first define what beliefs are. A belief is an idea that a person holds as being true. A person can base a belief upon provable absolutes (e.g. mathematics), life experiences, the acceptance of cultural and societal norms (e.g. religion) or what other people say (e.g. peers, teachers or mentors).

Once a person accepts a belief as truth, they are willing to defend it. For example, the leader who truly believes that all incidents are preventable and the organisation's goal of zero harm is achievable, is likely to commit fully to that goal. The leader who does not believe that all incidents are preventable is unlikely to be as committed (see Box 1). As Henry Ford once said, "Whether you think you can or you think you can't, you're probably right."

Values are stable, long-lasting core beliefs about what is important to a person. They reflect a person's sense of right and wrong. They reflect who we are and why we do what we do. They guide how we make choices and the order we do things. A belief will evolve into a value when the person's commitment to it develops and they see it as being important. From these values individual attitudes are formed, which in turn direct the person's behaviour. For example, if you hold safety as a strong personal value and you are leaving work in a rush to get home in time to watch your favourite sports team but notice one of your car tyres is somewhat underinflated, you would still take the time to inflate the tyre even if it means missing the start of the game.

Box 1 – Zero harm

If you are not convinced that all incidents are preventable, ask yourself why, if it is possible to achieve zero incidents for a period of time (many facilities go months or years free of any leaks or injuries), should it not be possible to achieve this level of performance all of the time?

Your personal values

It follows that you should be able to articulate clearly your values in order to be rational, responsible and consistent in your decision-making. Leave your values ambiguous and you'll constantly wonder how you keep getting into so many messes. An insightful exercise for any leader is to write down the ten values that are most important to them.

Running this exercise during safety leadership training reveals some commonly held values, such as happiness, achievement, family, integrity and faith. Most people will also choose health. Some people will hold a value around environmental responsibility. But even when safety is included on a list of values to select from, it is surprisingly unusual for someone to pick it.

At first glance this might suggest that safety is not that important to leaders. However, safety is strongly related to other values often chosen by leaders. For example, virtually everyone will hold family as a top personal value; but what could be more important to a family than the safety of everyone in it? Indeed, one way for a leader to build meaningful relationships with others is to relate safety to values such as family and health by telling pertinent personal stories and using impactful language, e.g. "everyone goes home safe, everyday, everywhere".

Safety as a value rather than a priority

Many organisations hold safety as a high priority, publically stating that "Safety is our number one priority". But priorities shift around depending on current circumstances. Values are more constant than priorities and are rarely compromised. It makes sense for leaders to talk about safety as a value rather than a priority because personal values guide our behaviour. When our actions are inconsistent with our values, we willingly adjust our behaviour to align with them. Simply pointing out the inconsistency can be sufficient to result in a positive change.

Conclusion

It is generally accepted today that treating safety as a value makes sense – it is an ethic that guides everything we do, rather than a top priority on a par with production. Because leaders create the safety culture and a culture is simply a set of common values, if leaders as individuals believe in safety as a value then the organisation's safety culture will be strong…and a vision of zero harm becomes achievable.

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Talking safety

Ten good practices for stakeholder communication throughout the safety case lifecycle

For any new facility with major hazards, a team of safety professionals is usually assigned the task of developing the safety case on behalf of the project manager. The stakeholders in this safety case are often many and varied. As well as internal stakeholders like designers, operators and senior management, there will be external stakeholders such as the regulator, the general public, partners, neighbours and activist groups.

When developing the safety case it is essential for the safety case team to recognise (and manage as appropriate) the expectations of all these stakeholders. To achieve this requires clear and regular stakeholder communication throughout the project. This article sets out ten good practices to realise this goal.

1. Identify and understand stakeholders

A simple exercise, which is often overlooked, is to identify all stakeholders and their role, and to put yourself in their position. How will they be affected and what are they expecting? This exercise should be undertaken at the start of each project phase.

2. Write down and agree a communication strategy

Plan how you intend to engage with the different stakeholders you've identified. Write down your communication strategy and plan. What are the key messages? How will you communicate them? How will you know you've been successful? Who has to do it and by when? What are the priorities?

3. Define what information is required

The safety case team needs to define what information is needed from which stakeholders. If the information isn't available it may be possible to determine how to proceed (e.g. agree assumptions) whilst the information is being generated.

4. Share information, knowledge and experience

The whole team must be open to sharing. Information should cascade down and bubble up. When people feel informed they are more likely to be advocates. In a good project, the project aims take precedence over personal or parochial views.

5. Communication should be unambiguous and two-way

Colleagues must both speak and listen. Listening, understanding and retaining information is potentially the most difficult behaviour for experienced engineers to demonstrate. As the author Stephen Covey highlighted, one of the seven habits of highly effective people is to "Seek first to understand, then to be understood."

6. Avoid unnecessary jargon

The language of safety cases is often overly-complicated and full of jargon that makes them difficult to understand. Safety cases need to be written for the benefit of the reader, not the writer. As William Penn, the founder of Pennsylvania, put it, "Speak properly, and in as few words as you can, but always plainly; for the end of speech is not ostentation, but to be understood."

7. Set realistic and achievable programmes

The safety case programme needs to explicitly reflect the design and review milestones. The right safety studies have to be done at the right times. The safety case team needs to understand and communicate its role in the programme and the iterations required to arrive at an optimal solution.

8. Communicate changes clearly to stakeholders

This is a two-way process. Designers may modify the design to enhance the facility's production or reduce cost but inadvertently increase the risk, whereas the safety case process may propose changes to reduce risk but to the detriment of production. Whatever the source, changes must be clearly communicated and assessed, and judgements made on the optimal solution.

9. Agree and apply realistic standards

In a goal-setting regulatory regime there is often a temptation to try to be "leading edge." This can either ratchet up standards for future projects, or be impossible to achieve in reality. Agree realistic standards up front.

10. Communicate regularly and consistently with external stakeholders

Successful organisations prioritise the messages they wish to communicate. Experience has shown that the more often external stakeholders are in contact with an organisation, the more favourable they tend to be.

Conclusion

These suggestions are hardly revolutionary, but could mean the difference between project success and failure. As the playwright George Bernard Shaw once said, "The single biggest problem in communication is the illusion that it has taken place."

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Proportionality – Avoiding 'one size fits all' solutions

Proportionality is a fundamental attribute of modern risk management. But what do we mean by proportionate? Put simply, we should target our efforts and resources into those facilities, and hazards, where the risk is greatest and not expend unwarranted levels of effort where risks are low.

This article explores three facets of proportionality:

1. The level of effort and detail put into analysing risk.
2. The time, cost and trouble expended on actually reducing risk.
3. The resources allocated during operations to manage risk.

The work of sculptor Jaume Plensa, entitled 'House of Knowledge', is to many, perfectly proportioned

Level of detail

The goal of any good risk assessment is to provide sufficient information to help stakeholders make robust risk-informed decisions. The higher the level of risk or magnitude of the consequences, the greater the certainty that is needed from the analysis. For example, the assessment of a nuclear power station with the potential for widespread off-site consequences necessitates more comprehensive and advanced analyses than an offshore oil platform where the impact is largely localised, which in turn would require more detail than an onshore chemical site with a small inventory of flammable materials.

In all cases, however, the key is to begin analyses at as high a level as practical and only perform more detailed evaluations in areas where the additional effort will significantly help decision-makers. In general, the more detailed the analysis the greater the confidence and the more certain the conclusions, but the greater the resources invested.

As you can imagine, this is not quite as straightforward as it might first appear. For instance, complex analysis can give the appearance of robustness but if it is based on unfounded assumptions or large uncertainties in data, then the old adage "garbage in, garbage out" will apply. Too much analysis can paralyse an organisation, as decision-makers wait for it to arrive or are overwhelmed by options or reams of detailed results. Moreover, excellent decisions to reduce risk can often be made on the basis of surprisingly simple analysis, or even by judgement and common sense.

Reducing risk

The concept of proportionality should already be familiar to anyone who has used the principle of ALARP – As Low As Reasonably Practicable. The ALARP principle sits at the heart of risk management in the UK, as well as a number of other countries and many global corporations. The principle is a 'gift' to decision-makers because it recognises that whilst risk reduction is desirable it is not always warranted.

For example, hazards found to lie in the 'tolerable if ALARP' risk region will require further risk reduction measures unless the money, time and trouble (the 'sacrifice') involved in implementing them can be shown to be grossly disproportionate to the benefit gained.

Many organisations develop a sliding scale to determine gross disproportion, whereby the higher the risk the greater the factor and hence the more likely it is that additional risk reduction measures will be adopted.

Managing risk

It is common in the major hazard industries to specify the required safety performance of engineered systems and their human operators. For instance, the importance of a safety-critical system that provides the primary barrier in preventing a major accident is clearly higher than a system which would only be called upon after several other independent barriers had already failed. This concept drives a proportionate approach whereby the higher the required safety performance of a system, the greater the frequency and depth of assurance activities such as design substantiation, commissioning, maintenance, inspection and testing, as well as verification activities like auditing and management review.

This approach ensures that design, operations and maintenance resources allocated during the facility's lifetime are focused on where risks are highest.

Conclusion

The concept of proportionality should drive the level of detail of risk analysis, the resources expended on risk reduction measures and the ongoing resources allocated to establish and maintain safety system performance. Proportionality is a very powerful tool in the effective management of risk, avoiding 'one size fits all solutions'. In short, proportionality helps funnel resources where they are needed to manage the risks that matter.

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Safety Cases for the Offshore Wind Industry

Safety cases well and truly divide opinion. Their critics see an isolated exercise of complex analysis and written work that does not reflect the real world and sits on a shelf gathering dust. Whilst regrettably there is historical evidence to justify these views, a good safety case is an excellent way of ensuring projects are conceived and executed safely (see Box 1).

But is the safety case approach relevant and appropriate for the wind industry? For the majority of onshore wind farms in remote, rural locations, the answer is most likely to be 'no'. The potential risk to people and assets can be readily discounted through observation and judgment without the need for a formal safety case. For offshore wind farms the situation is quite different. Managing offshore assets, and in particular getting people on and off safely, presents a number of significant challenges and risks.

Box 1 – What is a good safety case?

Imagine giving someone a document on their first day of work at your facility. It describes the facility, operations and processes very clearly. It identifies the potential risks and provides appropriate, proportionate arguments and evidence to demonstrate that they have been reduced, and defines what needs to be done to maintain this position. They find it easy to read and continuously refer to it as they get up-to-speed in their new role. This represents a good safety case!

All about the journey

Whilst a safety case is the written demonstration of why a plant or facility is safe, it should not be seen as a retrospective justification or a piece of creative writing to 'get away with' an inadequate solution. A truly safe outcome can only be achieved by fully integrating design and safety assurance activities to build and develop the safety case as the project progresses.

Understand the scope

From the outset, you should be clear on what plant and operations the safety case covers. For example, it might not have to include the onshore substation or access vessels if these are operated by others. That said, it would need to dove-tail seamlessly with any interfacing safety justification.

Involve key stakeholders

You should involve key stakeholders to ensure that interfaces are managed pro-actively. Moreover, involving people with hands-on experience of the design and operation of a wind farm is critical. They know what goes on in the real world!

Don't re-invent the wheel

Safety cases have been around a long time in other industries, particularly nuclear power and oil & gas. A huge amount of time and effort has gone into developing best practice, which can be cherry-picked for an offshore wind farm safety case. This applies equally to the overall approach as well as the tools and techniques.

Proportionality is key

The level of safety case detail, and the depth of supporting analysis should be proportionate to the associated risk. Too little and your safety case may be weak or inadequate. Too much and you'll waste valuable time, effort and resources. Safety cases may be large and complex for a nuclear installation or very brief and simple for less hazardous facilities such as wind farms.

Safety case vs OHSMS?

A safety case doesn't need to go back to first principles to demonstrate safety. A corporate or wind farm specific Occupational Health and Safety Management System (OHSMS) should provide the framework for safe operations, which can be enhanced by the output from the safety case.

Life-cycle safety case

A safety case is a living, evolving entity. As such, it is important to identify key milestones at the outset relating to the demonstration of wind farm safety at each stage, including design, construction, commissioning, operation and decommissioning. Can some of these milestones be combined? What safety case structure is appropriate for each milestone?

Future proofing

No matter how well written a safety case is, risk reduction is only achieved by implementing the safety case. Equally, as things change, such as operations, equipment and the organisation, so the safety case should evolve to capture the real world and trap any new hazards. This takes dedication and effort.

My mate, safety case

Although there isn't a one-size fits all solution because of the diversity of the wind industry, if you follow the principles outlined above you should end up with a valuable and proportionate safety case process … that doesn't leave a bitter taste in your mouth.

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Safety cases – you either love them or hate them!

Building competence through resourcing

Organisations typically look to external consultants to bridge a 'gap' in technical know-how or manpower. Generally, extra resource is needed to support specific projects or to gain access to expertise that the organisation doesn't already have. A range of commercial models can be utilised, including:

- Secondments or placements
- Packaged support
- A mixture of these

In recent years, in the area of technical safety, the resource gap has been widened by skill shortages, which has been exacerbated by ageing demographics in some countries where large numbers of experienced personnel are retiring. Gaps that may have been considered short-term can become much longer term as organisations compete for scarce resources.

Approaching resourcing decisions more strategically can provide an opportunity to build the competence of an organisation and realise additional benefits, such as:

- Gaining the capability to do work 'in-house' in the future, thus reducing costs and enabling greater flexibility.
- Becoming a more informed customer, leading to a sharper focus on what's required (and what's not), promoting better value from similar future work.
- Providing an opportunity to up-skill the organisation, creating richer career opportunities and helping staff retention.

Below, we explore the potential for different resourcing solutions to build organisational competence and capacity.

Secondments or placements

Often called 'body-shopping', consultants are contracted to work at the organisation's premises under its direct control and supervision. Usually this approach offers very limited opportunities for competence building. However, by careful definition of the requirement and selection of the consultant, it is perfectly feasible to include knowledge sharing, supervision and mentoring as part of the role. For example, the consultant could have the responsibility for mentoring inexperienced client personnel to help ensure that they are able to perform this work in the future. Of course, for this approach to be successful, in addition to the technical skills, the consultant selected will also need to have the skills and willingness to provide coaching.

Packaged consultancy support

Many organisations successfully package their requirements into specific deliverables and select suppliers through tendering or framework agreements. Packages can vary in size and complexity from small specialised studies, through to full safety cases, for example. The work is largely conducted from the supplier's offices with close contact being maintained with the client throughout. With smart planning and specification, this approach provides real opportunities for knowledge transfer and competence building in the client organisation. For example:

- Team members from the client organisation could spend time working with the supplier's team to deliver the work, thus learning 'on-the-job' while reducing external costs. Moreover, gaining exposure to the workings of the supplier will likely yield a much wider learning experience which will enhance the overall benefit to the client.
- The scope of work could include specific requirements to ensure that the supplier undertakes a comprehensive hand-over of the work undertaken, information generated and lessons learned.

Training

Training represents the most common means of building competence. Whilst effective in isolation, it is much more effective if combined with the organisation's approach to resourcing. This enables training to be specifically tailored to reflect the real work and challenges faced by the client and delivered by personnel with a good understanding of these. Training can be timed to coincide with key project stages, making it more focused and relevant than generic training. As such, learning can be tested and reinforced in the workplace.

Final thoughts

On top of the considerable challenges associated with operating hazardous facilities, organisations are often faced with the additional challenge of skill shortages. With a bit of forward planning and creative thinking it is possible for organisations to maintain and build their competence for the long term, whilst meeting shorter term resourcing pressures.

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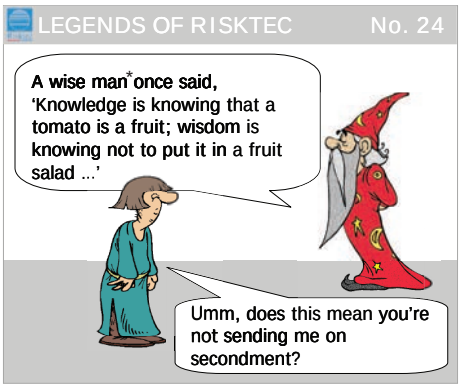
Further reading

Getting the best out of consultants (parts 1 and 2), RISKworld, Issues 7 and 8.



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