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Influencing Leadership and Culture for Safety

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Topics

- ARPANSA's Safety Analysis Section
- Holistic Safety - Concept
- The contribution of Organisational, Human and Cultural Factors to Safety and Accidents
 - Common Organisational, Human and Cultural Contributors to Accidents
- Where ARPANSA is going with Holistic Safety
- Final thought



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Safety Analysis Section

The requirement for the Section was identified in the ARPANSA Reform Programme.

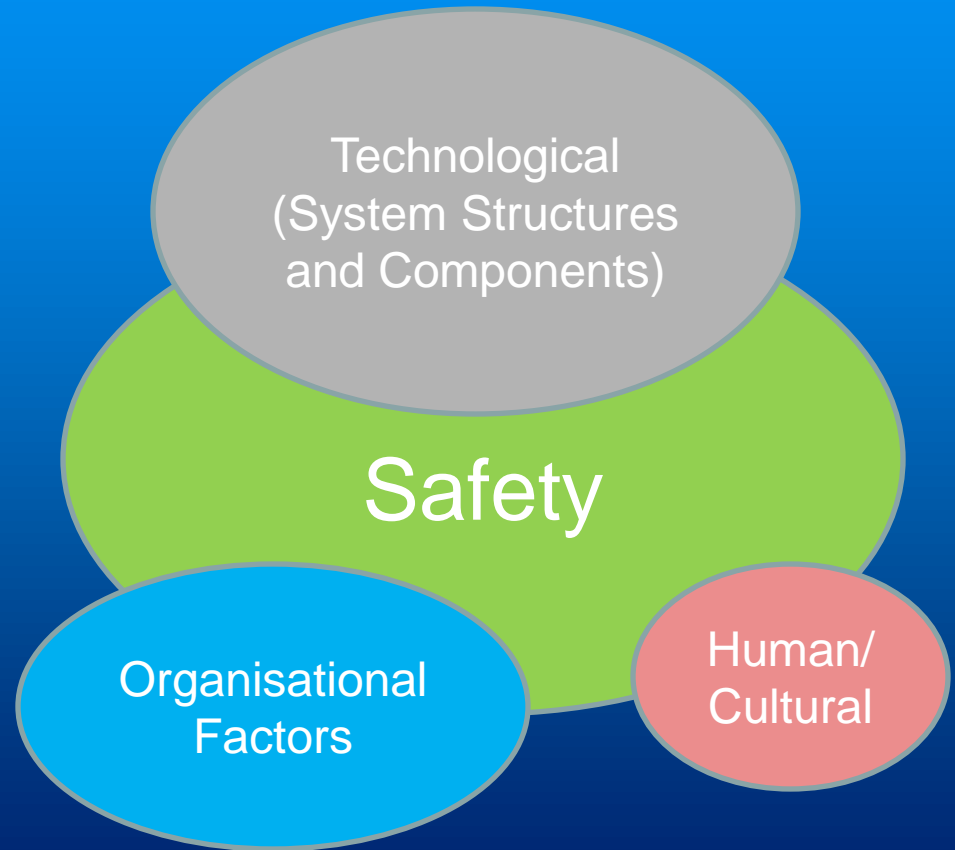
The primary objectives are:

- To develop the capability of holistic safety assessments incorporating a human and structural/organisational component.
- To provide analysis of the Australian Radiation Incident Register
- To support the function of the ARPANSA Nuclear Safety Committee.



Holistic Safety - Contributors

- Traditional emphasis on technological safety
- Less emphasis and understanding on human and cultural factors
- Human/Cultural factors maintain the whole system but are least understood



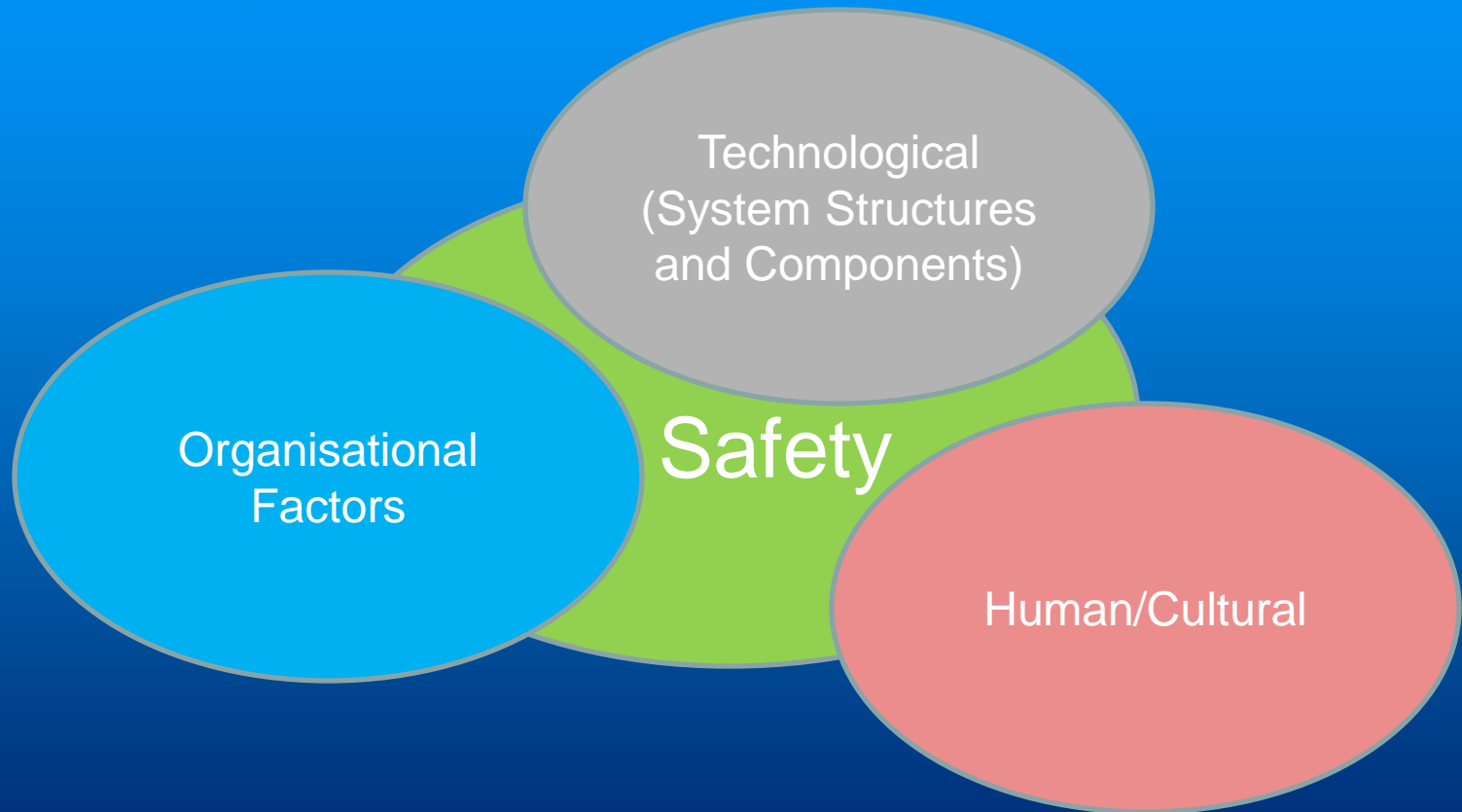
“Hard Systems” are embedded in “Soft Systems”



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Holistic Safety - Contributors



“Hard Systems” are designed, implemented and maintained by “soft systems”



Holistic Safety – The Journey

- A developing concept (both here and elsewhere) which avoids silos in safety approaches
- A journey to take together. ARPANSA will welcome engagement in this process
- ARPANSA would like to see how safety tools are developed and applied
- We recognise that this will be a process of continual and progressive improvement

Good holistic safety performance has benefits other than safety
Productivity, morale, recruitment, staff turnover



Why Do Organisational, Human and Cultural Factors Matter

- Research into contributing causes of major accidents indicates that there are a range of common contributing causes¹.
- As the world continues to experience major accidents we need to ask ourselves whether risk management is effective, is focused in the right area or has gaps?
- Whilst world attention is on major accidents, the same contributing causes can be seen in smaller accidents

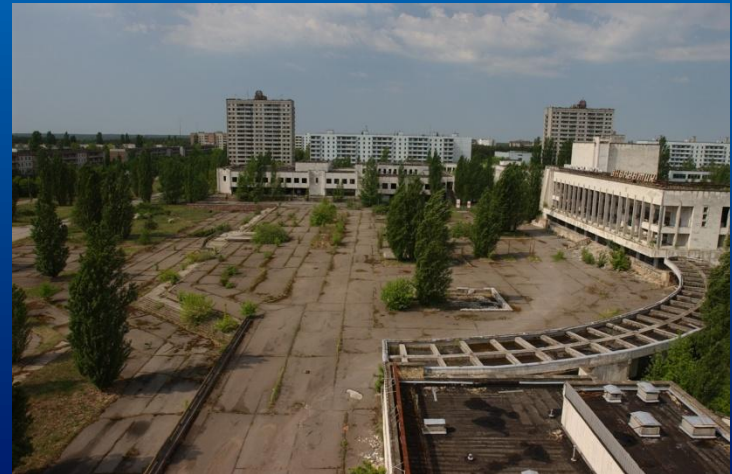
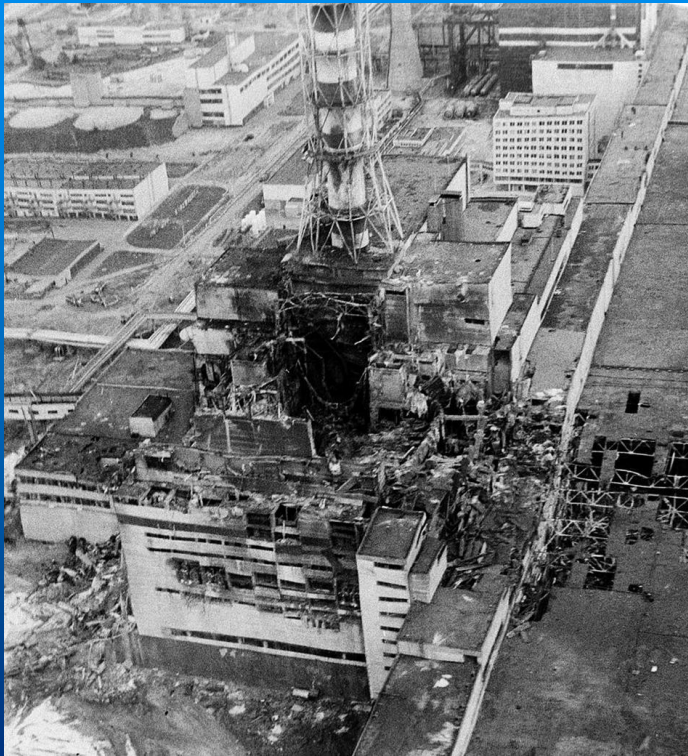
¹ Prof. Richard Taylor, University of Bristol (UK)
Safety Systems Research Centre



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Major Accidents from Recent History



- Chernobyl 1986



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Major Accidents from Recent History



- Herald of Free Enterprise (UK) - 1987



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Major Accidents from Recent History



- Longford 1998



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Major Accidents from Recent History



- Columbia - 2003



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Major Accidents from Recent History



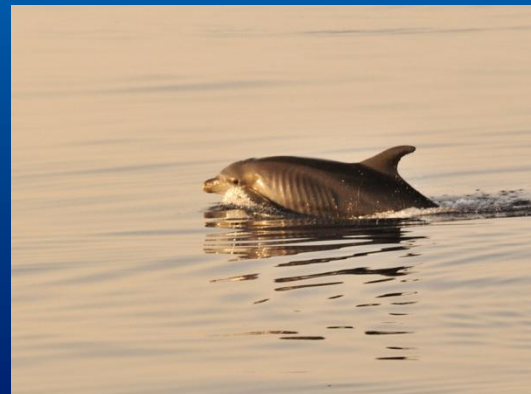
- Nimrod Fire and Crash - 2006



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Major Accidents from Recent History



- Montara Oil Rig - 2009



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Major Accidents from Recent History



- Mocondo Oil Spill - 2010



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Major Accidents from Recent History



- Fukushima 2011



Common Contributors to Accidents

These events achieved international notoriety. Regardless of scale, the human consequences (physical and psychological) can be the same. In addition there is impact on the environmental, economic interests, reputation, and prestige.

Contributing causes may be grouped into:

- Leadership issues
- Operational attitudes and behaviours
- Organisational (Business) environment
- Competence
- Risk assessment and management
- Oversight and scrutiny
- Organisational learning
- External regulation

Communication underpins each group



Leadership

Leaders have a major impact on safety and staff perceptions at the sharp end. Leaders need to;

- Demonstration that process safety is a core value
- Set a consistent, highly visible example
- Communicate values and expected behaviours
- Maintain strong oversight, undertake informed questioning and maintain tight control
- Ensure the SMS is effective, is 'not just paper' or 'over bureaucratic' and has clear accountabilities
- Recognise external pressure and change issues





Operational Attitudes and Beliefs

Attitudes and beliefs are strongly influenced by leaders. Issues include:

- Procedures work, are used, respected, and fit-for-purpose - with associated risks understood
- Questioning attitude— risks not ‘normalised’
- Constructive challenge is welcomed
- Conservative decision making - clearly supported by management
- Avoidance of ‘organisational drift’/complacency
- Communication between teams and organisational boundaries
- Involvement of all in improvement and challenge



Organisational (Business) Environment

Pressures that lead the organisation to lose the safety/production 'balance'. Issues include:

- Impact of poorly conceived or implemented change
- 'Initiative overload'
- Continuous resource reduction – 'salami slicing'
- Outsourcing/contractorisation with poor control
- 'Perverse' incentives
- Careful 'review' of policy/business decisions in terms of their potential impact on process safety



Competence

- Gradual erosion/loss of key skills and knowledge
- Leaders do not always understand the risks – need to be suitably qualified and experienced (SQEP) and able to work outside their comfort zone – “rocking the boat”
- Competence in abnormal conditions
- Avoidance of ‘tick box’ training
- Systemic review of competence with standards and appraisal
- Development of non-technical skills (e.g. team working, communication).



Risk Assessment and Management

Failure to 'stand back' and assess the emerging risks as well as 'day-to-day'. Includes the following:

- A lack of understanding or awareness of the real risks
- Distractions or bad focus
- Complacency/overconfidence – 'the gambler's dilemma'
- Rigour in safety cases/assessments
- Narrow focus - Deed to see as 'symptoms' of wider issues
- Acknowledgment of weak signals - alarms/data trends etc.
- Need for SMARTER Enhancement Plans to make improvement work



Oversight and Scrutiny

- Provides an opportunity to use a ‘third eye’. Identified issues such as ●
- Need for a hierarchical layered system – seek to look at ‘reality’ not just paper trail
 - Avoiding the ‘good news culture’ – leaders need the true picture
 - Remedial actions prioritised and completed
 - Safety Departments have authority (“teeth”)
 - ‘Integration’ of sources of information to give holistic (big) picture



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Organisational Learning

Nearly all events have antecedents – ‘free lessons’. Issues include:

- Being alert and questioning
- Reporting encouraged within a ‘just’ culture
- Address real root causes
- Minimising loss of corporate memory
- Avoiding denial - ‘it can’t happen to us’ – maintaining a sense of vulnerability – keep the boat rocking enough!
- Avoiding ‘organisational silos’ - share findings
- Learning from outside



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External Regulation

Last line of defence can be first line of improvement!

- Many of above issues apply to regulator
- Regulators must move beyond technical/procedural issues and consider everything which impacts on safety holistically
- Regulators need to pick up emerging issues and act
- Follow-up and need to stand back/detach to ensure 'overview'



Holistic Approach; Where we are going

Holistic safety assessment examines the cumulative result of an organisation's human, technological and organisational components

Human Aspects

- Processes and controls that take account of vulnerabilities and strengths in human performance

Technology

- Technological Defence in Depth is applied throughout the organisation

Organisational

- Management systems integrate safety and environmental protection seamlessly into all activities

- Integration – good safety practices are learned and implemented across organisational boundaries
- Organisations build and engineer resilience into the system
- Organisations possess excellent Non-Technical Skills
- Safety Culture - All levels of an organisation possess shared values and beliefs for safety that produce behaviour norms that provide an appropriate and demonstrable attention to safety



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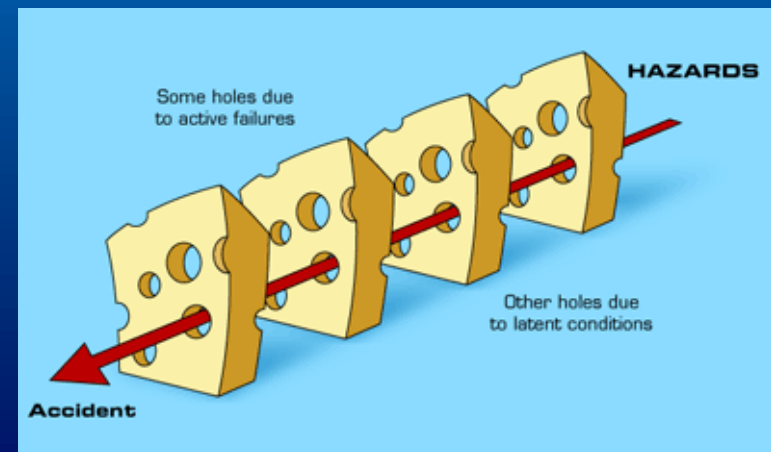
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Holistic Approach; Where we are going

- We are working on a set of detailed questions and expectations which will assist us all to identify vulnerabilities
- Our work takes account of modern research and development in regard to safety culture, human performance, and risk assessment methodologies
- We are working in consultation with national and international counterparts from the nuclear industry and beyond

Our objective:

to reduce risk by identifying and eliminating vulnerabilities and risky behaviours before they contribute to an incident or accident.





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Holistic Approach; Where we are going

- We will develop tools for assessing safety holistically which include indicators for safety culture and human factors.
- We will develop regulatory compliance criteria and undertake inspections
- We will encourage self assessment
- We will enhance our capability to investigate incidents that have human factor and cultural contributions

**Focus on outcome:
Reduced Risk**





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How good are you?

- Think about how safety is perceived throughout your workplace. This can provide a good insight into safety performance

