

Safety Cases for Tomorrow

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Safety Cases for Tomorrow

Oil and Gas UK Major Hazards Technical Group

Safety Cases - Background

- Past
- Changes since '92
- Other Safety Case considerations
 - Nimrod and Ladbroke Grove
 - Operational Integrity
- Present
 - Success
 - Issues

Safety Cases for Tomorrow

- Workshop
- Four initiatives for industry and HSE

Safety Cases Fit for the Future

Oil and Gas UK Major Hazards Technical Group

Purpose	To share knowledge and expertise to improve industry performance by promoting good management of major hazards, especially process hazards through consideration of People, Process and Plant.
Meets	Every 3 months
Involvement	From almost all Operators, many consultancies and other parties e.g. integrity management companies
Generates	<ul style="list-style-type: none">• Agreed Positions (possibly requiring HSE endorsement)• Guidelines (including)<ul style="list-style-type: none">• Operational Risk Assessment• Risk-Based Decision Making (ALARP)• Cumulative Risk• Recently – Good Practice in Fire Management in Offshore Accommodation Cabins



Guidance on Risk Related
Decision Making

Issue 2
July 2014

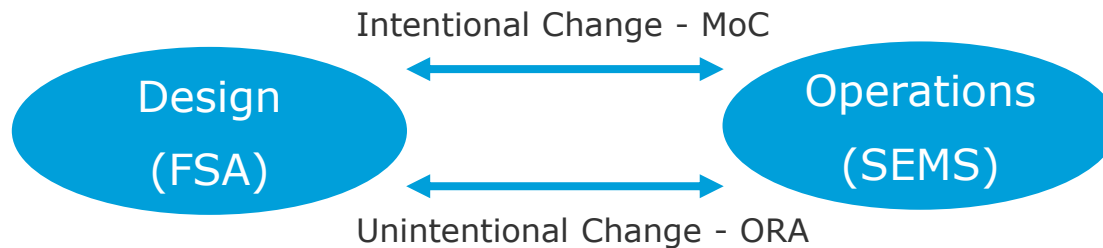
Past

- Before Piper Alpha, legislation was certification-based
 - Did not promote understanding, or ownership of major hazards
- Lord Cullen recommended safety cases be adopted (recommendations 1-13)
 - Clause 17.35
 - **Primarily the safety case is** a matter of ensuring that every company produces an Formal Safety Assessment (FSA) to **assure itself that its operations are safe** and gains the benefits of the FSA already described.
 - Only **secondarily** is it a matter of **demonstrating this to the regulatory** body.
 - That said, such a demonstration both **meets a legitimate expectation of the workforce and the public and provides a sounds basis for regulatory control.**

Changes since 1992 impacting Safety Cases

- Industry

- Hazards are owned by Operators
- Hazards are better understood onshore and by the workforce e.g. through Elected Safety Rep (ESR) training
- Hazard assessment is now ingrained into design and operations



- Technology

- Design and SEMS documentation electronic and extensive

- UKCS

- Fewer new developments requiring new safety cases
- Small subsea tie-backs and other mods potentially requiring material change
- New Operators

Other Incidents

- *"Safety Cases were intended to be an aid to thinking about risk, not an end in themselves"* (Lord Cullen, 2009 - Piper and Ladbroke Grove reports)
- *"... There is an existing tendency for safety cases to become bureaucratic and I have no wish to encourage that tendency. It should be sufficient if the safety case points to the methods which have been used and to where the details can be found."* Lord Cullen - Ladbroke Grove
- RAF Nimrod crash in Afghanistan in 2006 - The Hon. Mr Justice Haddon-Cave QC (2009)
 - Report summarised as *A Failure of Leadership, Culture and Priorities*
 - *Safety Cases should ... conform in the future to the following six principles:*

– Succinct	Home-grown
– Accessible	Proportionate
– Easy to understand	Document-lite
 - Lack of analysis:
 - *It appears that the process of initial probability categorisation was fairly rudimentary*

Safety Case Comparison

	Onshore	Offshore	Nimrod
At risk	Public nearby the facility	People on the facility	Passengers
Scale of interest			 <p>DCP 0221.jpg</p>

Case points to the methods which have been used and to where the details can be found

Recent Major HCRs – HSE – March 17

	Causal Factors	Lead Underlying Cause
1	SBT, Management of Change	Operational Integrity
2	CUI, Inspection & Maintenance	Asset Integrity
3	SCTA, Procedures, Supervision, MoC	Operational Integrity
4	RA, MoC, Procedures, Supervision	Operational Integrity
5	SCTA, Procedures, Supervision, Competence	Operational Integrity
6	PTW, Supervision, Competence	Operational Integrity
7	MoC, Supervision, Procedures	Operational Integrity
8	MoC, RA, SCTA, Procedures, Supervision	Operational Integrity
9	Corrosion, Inspection and Maintenance	Asset Integrity

- Frequent Causes:
 - Supervision, Management of Change (MoC) and corrosion
- Easy to identify safety cases that have limited description of these issues
 - This is not the same as saying the issues are not managed

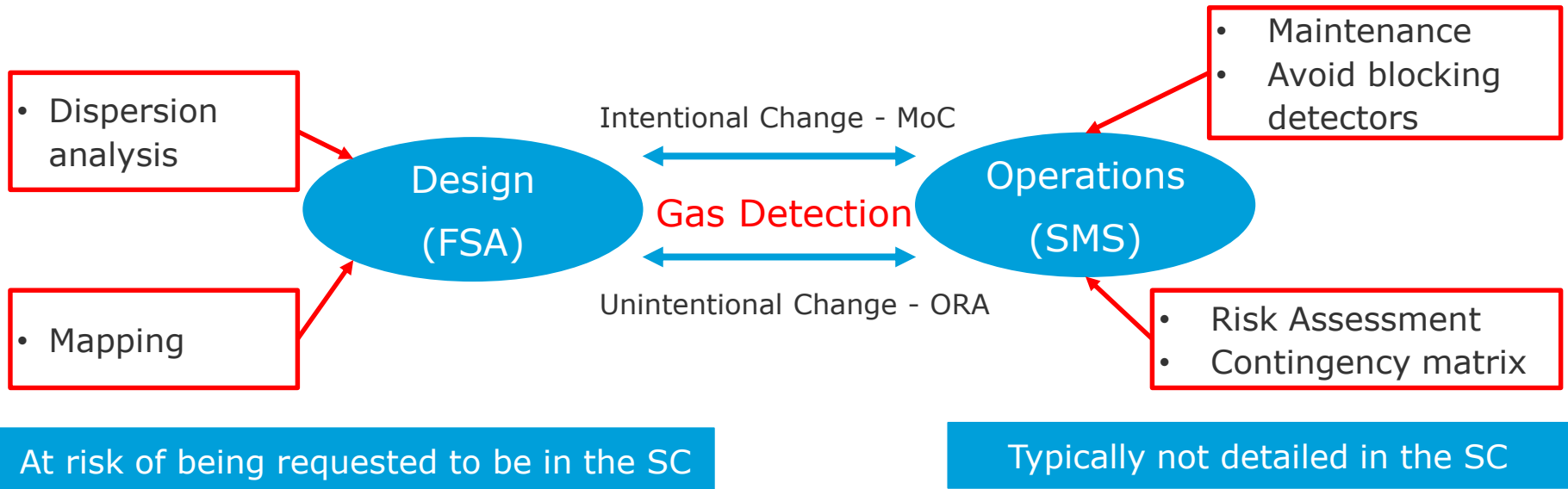
Present - Success

- Safety cases precipitated a cultural change in the industry
 - Operators and owners understand, assess and own the MAHs on their installations
- Has led to better design – for new installations and retrospectively for old ones
- Has led to better operations e.g. operational risk assessment
- With this ownership, other initiatives have produced results e.g. hydrocarbon leak reduction

- Application of the safety case regime across Europe is clear endorsement of the process

Present - Industry Frustrations

- Consistency of approach to Material Change
- Regulatory requests for more and more information to be in a safety case
- Challenge to an Operator of a issue that is applicable industry-wide
- Focus on the SC itself rather than the hazard management processes that it is the summary of
- CMAPP – some required by the regulator to be many pages while others are 2 pages
- Cause of some of this is the dichotomy between the detail needed for design and operations



Industry and HSE Initiative

- All of the above have been discussed at the MHTG
- Agreed by all that SCs have helped achieve cultural change in the North Sea, but need to **continue to develop the SC** to maintain it as the pinnacle of the regulatory process
- Safety Case workshop announced at MHTG in March and held 20th April 2018

Conor Crowley	Atkins-SNC (chair)	Dave Walker	HSE
Trevor Stapleton	Oil and Gas UK	Andrew Rushton	ESR
Peter Gedge	BP	Liam Briody	Atkins-SNC
John Morgan	DNV GL	Azzam Younes	ABB
Mark Taylor	ERM	Danielle Barnes	Nexen
Murray Gow	Repsol-Sinopec	Janis Watt	Apache
Nick Courtier	HSE	Tommy Munro	Total
John Evans	MMI	Nikkii Ng	Lloyds Register
Howard Harte	HSE	Shannen Murray	Atkins-SNC
Alex Guild	Chevron	David Piper	Total
Lee Gascoigne	Shell		

- Ideas and discussion distilled into four initiatives for HSE and industry
- They will improve the SC now and position it to be fit for the future

Thorough Review

What is it?	<ul style="list-style-type: none">• Duty holder review of their SC and whether any changes in technology, or condition on the plant (including age) have been appropriately assessed• The duty holder can identify issues and resolve them
Issue	<ul style="list-style-type: none">• Significant variation in thorough review submissions and Operator processes with questionable benefit of parts of the process especially those that check against areas that have not changed

Material Change

What is it?	<ul style="list-style-type: none">• Resubmission of the SC to the regulator when there is a planned material change on the installation.
Issue	<ul style="list-style-type: none">• There is an inconsistent application, industry confusion, or conservative application.

Workforce Engagement

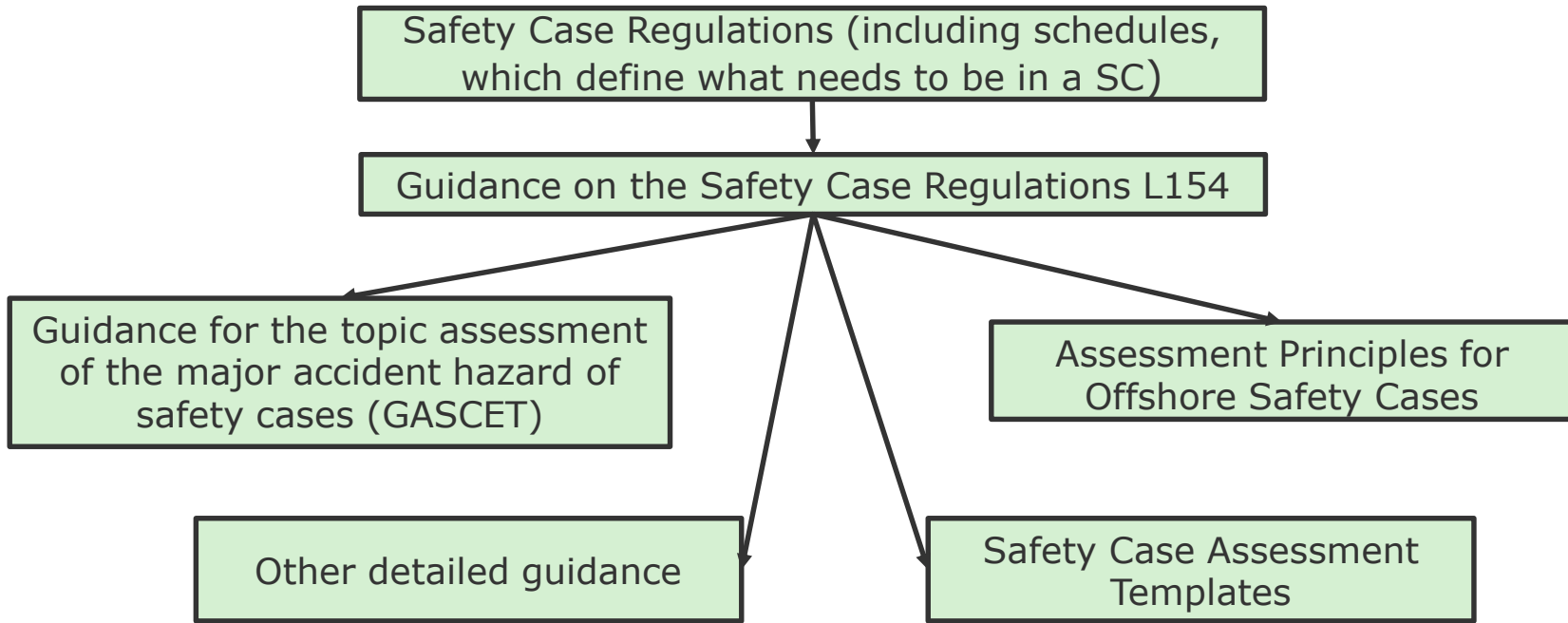
What is it?

- Workforce engagement is critical to management of MAHs - critical that the workforce is aware of MAH and their role in preventing them.
- SCs do not need to contain the level of detail that the workforce deal with day to day
- Workers need to be engaged in the SC and leaders encourage this

Issue

- The current workforce involvement in safety case development is often superficial

Guidance



What is it?

- Guidance is still critical in a goal-setting, safety case regime
- It helps to “set the standard”

Issue

- There are several different levels of HSE guidance - some are not up to date.
- The level of detail required in the SC is not well-defined, which means that some HSE reviewers are prone to asking for too much detail in the SC.
 - It needs to be clear that not all information should be in a SC and that it is acceptable for some level of detail to be assessed outside of the SC.

Guidance

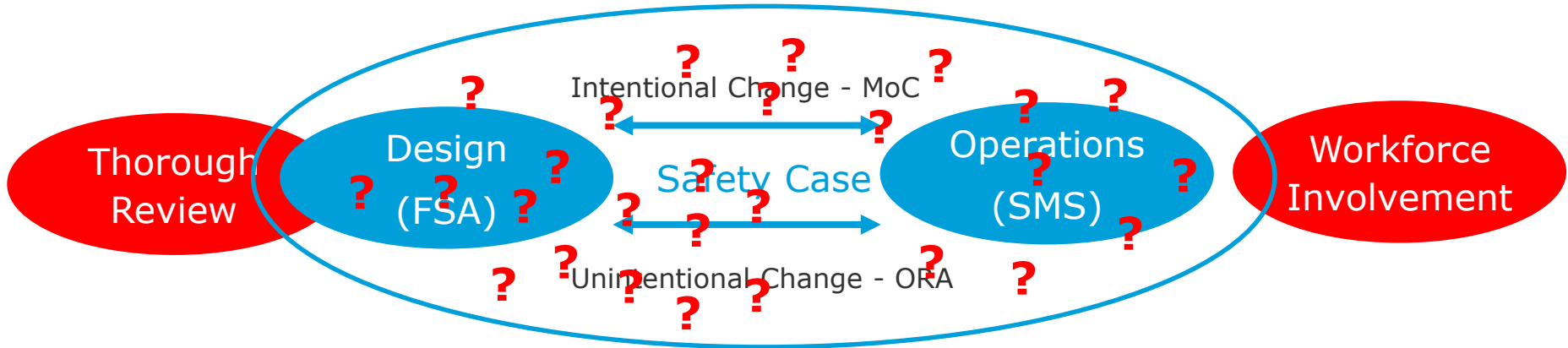
Proposed Solution

- **GASCET** Removal of GASCET with useful parts moved to HSE Assessment Templates
- **APOSC** revised to become more of a philosophy document and include
 - Direction on level of detail in SCs
 - Minimal description for elements that meet Good Practice
 - Reiterate purpose of SC as major hazards only
 - Removal of cross-over with assessment templates
 - Prescriptive minimum list of drawings
- **Specifics** – covered in L154, APOSC, or Assessment Templates e.g.
 - CMAPP
 - QRA
 - SEMS (unclear what v... is)
- **L154**
 - SC typically has sections 1-5 ↔ HSE SC Guidelines Schedule 6 has clauses 431-472
 - Provide a mapping between the two, or re-order

Guidance

Summary

Safety Case
Guidance



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