

DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES

Offshore Safety and Security, Petroleum and Electricity Division

AUSTRALIAN OFFSHORE PETROLEUM SAFETY CASE REVIEW
FEBRUARY-MARCH 2000 STAKEHOLDER SURVEY

Report of the Independent Review Team

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1 Executive Summary

On 9 July 2000 the Commonwealth Minister for Industry Science and Resources the Hon. Senator Nick Minchin formally announced the commissioning of an *independent* review of the offshore petroleum safety managements arrangements that apply in Commonwealth waters under the provisions of the Commonwealth *Petroleum (Submerged Lands) Act 1967*.

In August 1999 a tripartite steering group established under the joint auspices of the National Oil and Gas Safety Advisory Committee and the Australia-New Zealand Upstream Petroleum Legislation Subcommittee met and agreed to the terms of reference for this review.

In November 1999 the tripartite safety case review steering committee appointed Messrs Magne Ognedal and Odd Bjerre Finnestad of the Norwegian Petroleum Directorate and Mr Ed Spence of Integral Safety Ltd as the independent expert team to conduct phase two of the review - the Stakeholder Survey. The survey formally commenced on February 15, 2000.

The Review Team was asked to assess the effectiveness of the structure and implementation of Australia's offshore petroleum safety case regime.

The stakeholder survey itself was conducted over a total of 37 days. During this period the team travelled to Canberra, Melbourne, Perth and Darwin conducted 52 sessions/interviews and meeting with approximately 200 stakeholders. Interviews were conducted for 1 hour and sessions for 3 hours.

In addition during this period the review team conducted audits on the Commonwealth's behalf of the Western Australian, Northern Territory, and Victorian Designated Authority safety case administration systems for Commonwealth waters (The physical audits took 1 day plus preparation close-out and write-up). As well as an information session and audit of the Timor Gap Joint Authority (1 day).

Finally, the team participated in two one day workshops organised by the Commonwealth. The first considered the role of the regulator in a safety case regime and the second looked at developing performance measurement for the offshore petroleum industry.

Due to the extremely tight program for the review the team worked during the evenings, as well as on weekends, writing up findings from the day's meetings. The final drafting of the report took 7 days. This included a one-day meeting to present preliminary findings to the safety case steering committee

The Review Team's main conclusion is that:

The Australian legal and administrative framework, and the day to day application of this framework, for regulation of health, safety and environment in the offshore petroleum industry is complicated and insufficient to ensure appropriate, effective and cost efficient regulation of the offshore petroleum industry.

Much would require improvement for the regime to deliver world-class safety practice.

The Review Team has found that:

- There are too many Acts, Directions and Regulations regulating Australian offshore petroleum activities.
- Their boundaries are unclear and application is inconsistent.
- Different sets of legal documents apply for each of the different states/NT.
- There are overlaps in legislation and the framework is incomplete in that fundamental terms are not properly defined.
- Provisions for graded sanctioning of non-compliance are absent.
- There is still much unnecessary prescription.
- The requirements of the framework of legal documents are open to inconsistent interpretation by regulators.
- There is inconsistency between the state regulators in the way in which they interact with the companies.
- Guidelines are often applied as if they were compulsory regulations.
- States, by the Directions in the P(SL)A have been given the freedom to decide whether or not to apply their state law for important safety areas in Commonwealth waters, so long as these laws do not conflict with commonwealth ones.
- The team takes the view that the role of the regulator should be agreed and committed to paper and that the processes employed should be as transparent as possible.
- The view of the team is that it would be more cost effective and deliver a better, more risk reducing, result, if all safety cases were assessed by a single group with the critical mass to do the assessment in house.

- Regulator dichotomy in development portfolios - The balance of evidence is that there is no present problem here other than the competition for budget, but that perception could change very quickly after an accident.
- The review team believe that DISR should have real clarity on who is 'carrying the can', and should act accordingly.
- The review team support the widely held view that the DISR unit should be strengthened and should take a firmer line. What extra power is needed to achieve this is not clear to us, but it is clear that the achievement of the desired consistency will ultimately save on wasted resources in duplication by the state regulators, as well as reducing risk by releasing scarce industry safety expertise to make a positive contribution, instead of chasing legislative differences.
- The review team believe that the regulators should keep a little distance between themselves and the companies as the industry in Australia matures.
- With regard to a combined HSE Case, the team feels that this is an issue of administrative efficiency with only a second order effect on safety.
- The Review Team support the view that the complete Safety Case does not necessarily need to be living in terms of frequent updating.
- On Performance Standards - the Review Team are of the view that this is a shortcoming of the Australian regime, and that performance standards are an important tool in verifying that the design assumptions, (and the risk figures that flow from them), remain valid over time.
- The review team supports the objective of developing lead indicators and note that this is an international search and encourage DISR in carrying this to the International Regulators' Forum.
- The team found huge variability in the extent of workforce involvement and believes that some cross fertilisation of the enthusiasm felt in some areas, would significantly benefit others.
- The team received no concrete evidence of serious reductions in safety as a result of cost pressures, but the potential is clearly ever present.
- The review team believes that there has indeed been a significant improvement in Safety Culture and that it is not important in what ratio it is driven by multiple inputs.

The Review Team was also asked to make recommendations to improve the overall operation of the Australian offshore petroleum safety case regime where appropriate. The recommendations were to cover separately, the

effectiveness of *regulatory arrangements*, and the effectiveness of the *implementation* of the safety case regime in Australia.

The Review Team is of the opinion that the shortcomings of the current regulatory regime split clearly into the two areas above. The team, therefore make two main recommendations:

1. *The DISR should consider launching a project to revise the current Australian Commonwealth Safety Case regime's framework of legal documents.*
2. *The DISR should consider launching a project to restructure the implementation of the Safety Case regime's regulatory system.*

Canberra, 29 March 2000

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2 Introduction

2.1 The Commissioning of the Review

In the 1998 Commonwealth Government Minerals and Petroleum Resources Policy Statement the Federal Government made a commitment to “*look for opportunities to further improve Australia’s offshore safety record by commissioning an independent evaluation of all aspects of Australia’s safety case regime, with the assistance of a team of recognised practising safety experts from countries demonstrating world best offshore practice*”.

On 9 July 2000 the Commonwealth Minister for Industry Science and Resources the Hon. Senator Nick Minchin formally announced the commissioning of an **independent** review of the offshore petroleum safety managements arrangements that apply in Commonwealth waters under the provisions of the Commonwealth *Petroleum (Submerged Lands) Act 1967*.

In August 1999 a tripartite steering group established under the joint auspices of the National Oil and Gas Safety Advisory Committee and the Australia-New Zealand Upstream Petroleum Legislation Subcommittee met and agreed to a terms of reference and methodology for the review.

The following were the terms of reference for this review:

To assess the effectiveness of the implementation and regulation of Australia’s offshore petroleum safety case regime and in particular to examine and comment on the appropriateness, effectiveness and cost efficiency of:

- the legal and administrative framework;
- industry's implementation of the regime;
- the day to day application of the above; and
- the overall delivery of world's best safety practice by the safety case regime.

Where appropriate, the review was to make recommendations to improve the overall operation of the Australian offshore petroleum safety case regime. The recommendations were to separately cover the effectiveness of regulatory

arrangements, and the effectiveness of the implementation of the safety case regime in Australia.

2.2 Methodology

The review team also endorsed a methodology for the review comprising three phases

- Phase 1 - information gathering eg statistics, public submissions etc
- Phase 2 – independent stakeholder survey
- Phase 3 - policy development.

2.3 Phase 1 - Input

Documents considered included:

- Petroleum (Submerged Lands) Act 1967
- Petroleum (Submerged Lands) (Management of Safety on Offshore Facilities) Regulations
- Barrell findings
- ISR audit reports State/NT safety case administration systems
- Research papers - petroleum Mining Safety & Longford
- Accident incident statistics for the offshore petroleum industry
- United Kingdom Safety Case Evaluation Report
- Public submissions

Information collected through phase one of the review was forwarded to the review team shortly prior to the formal commencement of the review.

- Annexure 1 - Public Submissions
- Annexure 2 - Petroleum Mining Safety

2.4 Phase 2 Stakeholder Survey

In November 1999 the tripartite safety case review steering committee appointed Messrs Magne Ognedal and Odd Bjerre Finnestad of the Norwegian Petroleum Directorate and Mr Ed Spence of Integral Safety Ltd as the independent expert team to conduct phase two of the review - the Stakeholder Survey.

2.4.1 Independent Stakeholder Survey

Phase 2, the Stakeholder survey formally commenced on February 15, 2000. While in Canberra in the first week the Review Team met with Mr Warren Entsch (MP) Parliamentary Secretary to the Minister for Industry Science and Resources. At this meeting Mr Entsch reconfirmed the commitment of the federal government to achieving worlds best safety practice in the Australian Offshore Petroleum Industry.

The framework for the stakeholder sessions/interviews was based on the Commonwealth Government Petroleum Safety Review Issues Paper (Annexure 3). Throughout the review the team alternated the role of chair and took each group through a tailored question set. Stakeholders surveyed included:

- Petroleum Industry Chief Executive Officers
- Petroleum Industry Senior Managers
- Petroleum Industry line Managers (eg engineers, safety managers, offshore facility managers etc)
- Petroleum Industry Employee Health and Safety Representatives
- Petroleum Industry contractors (including seismic and drilling)
- Petroleum Industry consultants
- Petroleum Regulators
- Petroleum and Contract Industry Associations
- Unions representing the offshore workforce

During the review the Review Team also distributed a questionnaire, which, based on the issues paper, provided a quality check of findings and provided a statistical basis for comparison between the different stakeholders.

The stakeholder survey itself was conducted over a total of 37 days. During this period the team travelled to Canberra, Melbourne, Perth and Darwin conducted 52 sessions/interviews and meeting with approximately 200 stakeholders. Interviews were conducted for 1 hour and sessions for 3 hours.

In addition during this period the review team conducted audits on the Commonwealth's behalf of the Western Australian, Northern Territory, and Victorian Designated Authority safety case administration systems for Commonwealth waters (The physical audits took 1 day plus preparation close-out and write-up). As well as an information session and audit of the Timor Gap Joint Authority (1 day).

Finally, the team participated in two one day workshop organised by the Commonwealth. The first, considered the role of the regulator in a safety case

regime and the second looked at developing performance measurement for the offshore petroleum industry.

Due to the extremely tight program for the review the team worked during the evenings as well as on weekends, writing up findings from the days meetings. The final drafting of the report took 7 days. This included a one day meeting to present preliminary findings to the safety case steering committee

2.5 Phase 3 - Policy Development

The Review Team understands that this report will provide the basis for a meeting of the safety case review steering committee and the National Oil and Gas safety Advisory Committee later this year to make policy recommendations to the Minister for Industry, Science and Resources to improve offshore safety management.

3 The legislative framework

3.1 Clarity and Comprehensiveness of the Legislative Framework

3.1.1 Introduction

The offshore safety regime of Australia is meant to provide for a comprehensive, clear, relevant and workable legislative framework that facilitates effectiveness and efficiency.

The *Petroleum (Submerged Lands) Act 1967 (P(SL)A)* creates the legislative framework for offshore petroleum mining. This legislation provides for the creation of subordinate legislation, i.e. Directions and Regulations (e.g. the Management of Safety Regulations). It also provides for the application to offshore waters of numerous State/Northern Territory legislation as well as interfaces with several other principal Commonwealth Acts including the *Navigation Act 1912*.

3.1.2 Findings of the Review Team.

3.1.2.1 GENERAL

The Review Team heard that the safety regulations of the states did not always mirror Commonwealth P(SL)A legislation in terms of compatibility and that there is a structural complexity and diversity in the legislation across the states.

The framework of acts, schedule of Directions, regulations and guidelines were frequently characterised as: “Complex”, “ambiguous” and “confusing”. Many complained that the old directions, which are prescriptive in nature, remain unrevoked, and that legal terminology makes interpretation difficult.

3.1.2.2 CLARITY AND CONSISTENCY

Some stakeholders find the legislation clear for preparation of safety cases, however, most complained that the actual application of legislation offshore is not clear. They feel that the Safety Case Regulations are clear, but conflict with other laws and regulations.

Regulators felt that the understanding of legislation between Designated Authorities (DA's) and companies was clear.

Others found the P(SL)A good, but complicated by a plethora of state rules and regulations, which are prescriptive and conflict with it.

Stakeholders frequently complained that the Navigation Act of 1912 application to FPSO's is not consistent with the spirit and intent of the Safety Case legislation.

Survey contractors complained there are inconsistent legislative requirements for survey vessels around Australia.

3.1.2.3 APPLICATION OF STATE LEGISLATION

The Review Team found this particular issue of lack of legislative and jurisdictional clarity to be a great contributor to confusion and a cause of much concern for the industry. Apparently, by the directions under the P(SL)A, the States are free to apply other safety related legislation of the State in Commonwealth waters. The problem is that few seem to have an overview of what legislation has actually been made applicable. Thus, it is unclear if - or which State acts, such as for example, health, electrical safety, dangerous goods, as well as, regulations under these, prevail offshore.

Stakeholders also said that the Safety Case guideline was applied differently in different states.

Although it was strictly not an issue for the review, which concerns Commonwealth waters, stakeholders who have installations offshore connected to an onshore facility by a pipeline in the same State, found it unreasonable to adhere to up to 4 regulatory regimes for what they regard as one system.

3.1.2.4 OVERLAPS AND INTERFACE ISSUES OF THE P(SL)A TO OTHER LEGISLATION

The Review Team heard that the Safety Case regime as such is highly regarded, but the interfaces between State regulators, State and Commonwealth regulators and Commonwealth-to-Commonwealth regimes are a major issue in achieving good industry safety practice.

The team also understands there is much confusion with regard to FPSO's being under both the Navigation Act and the P(SL)A and that there are overlaps between the Safety Case under the P(SL)A and the International Safety Management system (ISM Code) under the Navigation Act 1912.

3.1.2.5 SCOPE OF LEGISLATION

Many stakeholders found the regime comprehensive, but so complex that it effectively hinders application.

The Review Team found that union representatives and employees at all levels feel much more open to prosecution, since the Safety Case regime also transfers the responsibility for ensuring safe operations to the company and the company "delegates" the responsibility for specific procedures down the line thus holding the work force responsible for working in accordance with the procedures. The work force sees this as a contributor to increased personal liability.

3.1.2.6 REQUIREMENTS THAT DO NOT IMPROVE SAFETY

Requirements of the safety regulations that do not actually improve safety is a common problem with many internationally. In the Australian stakeholders review, the Review Team did not particularly probe for this, but heard of an example where the maritime authority requires to test FPSO freefall lifeboats by dropping them in the ocean while in the field, an action that could lead to the loss of the lifeboat. The companies are convinced that a function test would be adequate.

3.1.2.7 LOOPHOLES IN LEGISLATION

In particular, regulators find it difficult to use the Safety Case regulatory sanctions as these do not allow for progressive sanction application, e.g. there is no provision for Improvement Notices. Nor do they provide for suitable prohibition powers, except for the ultimate halting of operations. Because of this, the regulators find it more convenient to use the corrective powers provided for by the states' OH&S acts

There is nothing specifically in the legislative framework which regulate cranes

Union representatives of contractors, claimed that the phrasing of the requirements of the law gives the oil companies responsibility for only their own employees and this raises a major issue: Oil companies' employees are being treated well if they become injured. Since the majority of offshore work force is employed with contractors, they are not similarly well treated.

Similarly, maritime workers will not be entitled to compensation where FPSO's are operating under the P(SL)A unless the FPSO is declared by the owner to be a ship under Australian maritime law.

3.1.2.8 PRESCRIPTION VS. PERFORMANCE

There was that too much residual and unnecessary prescription remains in legislation of both Commonwealth and the states.

The Review Team was told that flagged FPSO's are required to operate under the performance-based regulations of the P(SL)A, and simultaneously to comply with the prescriptive requirements of the Navigation Act.

Most of the prescription in the P(SL)A has been repealed, and this is acceptable to most stakeholders so long as the regulator ensures implementation of the intent of the residual prescription rather than of the exact words.

Stakeholders also stated that the regulator's proper interpretation of performance-based regulation depends heavily upon regulatory competence. This being the case, there should be guidance to facilitate consistent regulator interpretation.

The contractors said diving regulations were too prescriptive. One contractor, for example, wanted to use one of their divers as a medic, but this was not possible, since, although he had the necessary qualifications, the regulations prescribed he had to be a recognised “SR Medic or St John’s Ambulance” – the Stakeholders. John’s qualification is very minimal.

The work force representatives said they prefer performance-based regulation, but it needs a few ‘hard points’. They were also of the opinion that one of the shortcomings of performance-based legislation is the variable interpretation of the regulator based on background, experience, and personality. They said that correct adherence to objective oriented requirements also depends on the maturity in the industry.

Union representatives emphasised that when there were prescriptive HSE requirements, representatives had something to measure against. Now, under the Safety Case regime, this is more difficult, because for example QRA is not well understood at this level.

CEO’s stated that objective regulation is the best way to regulate. It makes the companies feel more responsible for their safety, but some felt that it puts more onus on the company, so that companies are more likely to be prosecuted.

Some unnecessary prescription remains for example for pressure vessels that must meet stipulated standards with test certificates being provided to the regulator, and that too many prescriptive requirements for operation prevail in the Pipeline Licence.

Many stakeholders saw a problem in objective regulations being more open to interpretation. It seems to take time to find a level and even regulators are not consistent

3.1.3 What stakeholders said should be changed

- There should be one set of offshore safety regulations, and ideally one regulator.
- Legislation should be streamlined to ensure consistency.
- Employees should be involved in the development of regulations.
- There should be a hierarchy of legislation that makes the Safety Case regime prevail.
- The Commonwealth should conduct a project to improve the legislative framework.
- FPSO’s should only have to work under one regulatory regime.
- There must be clarity in what legislation applies where.

- The P(SL)A needs an update of its underlying documents.
- There need to be more effective graded enforcement measures to sanction non-compliance under the P(SL)A.
- A requirement for early submission of a plan for development of Safety Cases would give the regulator opportunity to get in early (and initiate work force involvement if necessary).
- Under the P(SL)A we have Safety, draft Environment, and planned Drilling and Pipeline regulations. All these issues could have been incorporated with performance requirements in the Safety Case regulations. There would then be no need for separate regulations.
- Some residual prescription needs removal, but minimum standards are still needed.
- Some of the standards in the new Safety Case guidelines should be made mandatory to set minimum standards. The adherence will then be easier for the work force to assess.
- Performance based legislation underpinned with comprehensive guidelines is the optimum balance

4 The regulatory system

4.1 What is the role of the regulator in a safety case regime?

4.1.1 Introduction

The Australian safety case regime is described as a co-regulatory regime - implying active roles for the operator and the regulator. However, lack of clarity as to what is meant by co-regulation has resulted in subjective interpretation by the different Designated Authorities and could lead to inconsistent regulatory practices across Australia.

4.1.2 Findings of the Review Team.

The Review Team heard stakeholders express a variety of views on this issue. They thought the state regulators role should be :

- Participating in the development of Safety Cases
- Reviewing QRA's and challenge assumptions
- Assessing Safety Cases in a transparent process
- Auditing compliance with Safety Cases and monitoring day to day activities
- Developing regulations and guidelines
- Setting criteria for the range of risk acceptability
- To be a watch dog but co-operative also
- Be a policeman in administering the P(SL)A
- Be a facilitator of education and learning
- Conducting accident and incident investigation
- Promoting best practice

Many stakeholders were uncertain on what the role of the regulator is, and thought that even the regulator is unclear about his role. They said it would be useful to have a role description on paper and more transparent processes for regulatory activities.

The stakeholders said it was important that regulators should visit facilities to establish first hand assessment of health of safety. The auditing role is important, but the regulator should also make contact with the workforce. Some were of the view that checking of compliance should be more important

to the state regulator than fixing the regulations. The regulators should periodically check the physical reality as well as the paper systems

4.1.3 What the stakeholders thought the regulators should do

- Ensure consistency in approach to regulation within and between Designated Authorities
- Conduct investigations with experienced people
- Participate in HAZOPs and ALARP workshops
- Audit rigorously
- Be a one-stop shop for Safety Case development and provide constructive guidance and help throughout the Safety Case development – not holding back and rejecting Safety Cases later
- Allow contractors to deal directly with regulators
- Have insight and understand the industry
- Have strong negotiating skills, good judgement and be prepared to enforce the full punitive measures of the legislation where necessary.

4.1.4 Co-regulation

The Review Team found that there was overwhelming support for the principle of co-regulation in the Australian regulatory regime and that participation by the regulator in companies' development of Safety Cases, accident or incident investigation and internal auditing was regarded as very useful. Some stakeholders, however, stated that, although co-regulation implies co-operation, some regulatory agencies put up more hurdles than necessary.

Industry believes that the regulator should take a proactive role in the development of the safety case and formally accept the safety case as required under a co-regulatory regime. An audit process can only verify the effectiveness of the SMS element at a point in time. At a minimum the regulator should be capable of challenging and validating all components (from a quality assurance perspective) of a safety case, although in practice, this is currently constrained by the regulator's lack of in depth knowledge of the offshore industry.

To many a co-regulatory regime means that the regulator must be capable of, and prepared to participate throughout the development and review of a safety case, by providing advice and guidance with the safety case documentation being developed by the operator.

Others were concerned that co-regulation has potential for "capturing". They thought that possibly it was necessary when the Safety Case regime was introduced that companies and regulator closely cooperated and all parties had

to go through a learning process. Now, however, the regulator should step back and become an independent verifier, who has the necessary courage to do what is required to ensure safe operations. A situation should not arise where the regulator is very close to the company.

4.2 Regulatory Capability and Consistency

4.2.1 Introduction

The role of the regulator in a performance-based regime is more difficult to undertake than in a prescriptive regime, since the basis of that role is to question assumptions and probe the adequacy of risk reduction measures and the effectiveness of procedures. This approach places more reliance on the intellectual rigour and maturity of judgement of the regulator than a straightforward 'check listing' inspection role.

The difficulty of achieving consistency in approach to assessment, auditing and enforcement is further exacerbated in Australia by the decentralisation of regulation.

What in-house technical and human resource capacity should the regulator possess in order to effectively satisfy its responsibilities and the reasonable expectation of the community?

4.2.2 Findings of the Review Team.

Most stakeholders were of the impression that regulatory resources are thin and that this makes it very difficult to get regulators involved in development of operator's Safety Cases and in company audits. A small minority felt that regulators had too many technocrats that were too concerned with details and not enough with systems. Most felt that regulators should have high-level technical expertise.

Stakeholders were concerned that formal work processes within regulators were not evident.

There is full agreement among stakeholders that strong, capable and consistent regulators are the best support the industry can have.

All stakeholders were of the opinion that regulators need to be adequately paid to retain quality staff. One consequence of recruiting low paid officers is their tendency to apply a tick box approach to regulation and for the individuals to display inconsistent views. Regulators cannot attract or keep the best competence because salaries are significantly below industry levels. Some regulators have really good people, but critical mass could be better achieved if regulators shared resources in some unitary authority.

Some felt that officers of regulators have various approaches to enforcement – some assess against guidelines as if they were mandatory regulations, whereas

others focus on intent rather than words, which is much better. A strong regulator feels more comfortable in agreeing to new developments, which push the boundaries of rules and regulations (continual improvement), but this is much lacking in Australia.

Many were of the opinion that regulators must have skilled auditors who are familiar with the oil industry business, and someone in-house who understands QRA, but not necessarily a full practitioner.

Union representatives were in doubt as to whether regulators have the skills or the numbers, since they had no in-depth experience. They thought the regulator must understand the industry and be as competent as the industry. He should have people qualified to have expert opinions and be well enough informed to make good decisions. He must be independent and strong, but when the people at the coalface have to tell the regulator exactly where to look for a problem, they lose faith.

Some stakeholders complained that regulatory audits are often superficial, although some were of the opinion that the competency of regulators is growing. Industry size and multiple operators are important factors that should allow regulators to carry or grow the necessary skills.

4.3 Regulatory Funding

4.3.1 Introduction

Closely linked to the issue of regulatory capability is the question of the adequacy funding within the regulators.

Funding for offshore regulation is derived from the exploration license fees paid by the industry to the Commonwealth, some of which in turn is transferred to the States to pay for all the administration/regulation activities conducted on the Commonwealth's behalf. These revenue streams are not quarantined, being paid directly into State/NT consolidated revenue.

There is no specific allocation of revenue for safety regulation identified at the Commonwealth level, and so the amount spent on safety by the Designated Authorities reflect their priorities, and their ability to negotiate funding from their state treasuries.

4.3.2 Findings of the Review Team

Some senior stakeholders pointed out that the industry pays substantial taxes and fees so the governments should have the funds to adequately resource the regulators. In order to overcome some of their constraints, regulators should have staff interchanges and secondments (including with the Commonwealth) to help each other.

Many others had the view that, since the regulator is clearly under resourced and the level of service that reflects these constraints impacts the industry, some levy across APPEA might be appropriate and this would save money in the end. They would, however, “prefer to fund one highly competent regulator rather than 6 semi-competent ones.”

Among the regulators there were different views on their own situation. Some expressed satisfaction with their available resources both in terms of numbers and funding, and that they had adequate government support. Others had severe concerns and needed to buy in consultants as a tool to manage low levels of resources.

In general, a charging system for regulatory services was not viewed as a proper means of providing the regulators with adequate resources.

4.4 Regulator Outsourcing

4.4.1 Introduction

An issue arising from resource constraints is that State/NT regulators are placing an increasing reliance on private contractors to augment their technical capability and capacity to respond to heavy work demands. To date, this contracting of services has included administrative support, and assessing and auditing compliance with safety cases.

4.4.2 Findings of the Review Team.

It was a general view that in the small Australian petroleum industry it is unreasonable to expect regulators to have all necessary skills in-house to meet their responsibilities, so outsourcing is inevitable. However, this creates potential for conflict of interests.

Stakeholders felt it is important that the regulator has sufficient expertise in-house to make key decisions. Regulators should not outsource any function, which they do not have internal competence to effectively manage.

Special skills areas and more mechanistic things such as possibly QRA’s as well as highly technical items could be outsourced provided the regulator has the technical expertise to understand and assess the work of consultants.

Regulators should not outsource core areas of interpretation and formal assessments or conducting audits. Some stakeholders, however, had the view that outsourcing auditing activities was acceptable so long as the terms of reference are clear and the lead auditor is an officer of the regulator.

The market place for petroleum consultants in Australia is very small. Outsourcing to consultants has a potential for conflict of interest, and consultants should not assess work of other consultants.

Trade union stakeholders had the view that ideally the regulator should complete all work in-house since outsourcing denies the regulator the opportunity to learn. Where necessary to outsource work, they should ensure there was no conflict of interest and that the consultant was under competent supervision by the regulator. Consultants should not assess or accept Safety Cases.

There was general agreement in general that the implications of outsourcing regulatory functions in addition to loss of opportunities for regulators to learn by experience and increased risk of conflict of interest, include: loss of operator's confidence in regulator's capabilities, inconsistency in assessment, approach and application of the legislation, loss of skills within the regulatory authority, indication of unsuccessful safety case regime and lack of ongoing correspondence and working relationship between operator and regulator.

Some regulators have concerns, and would not outsource Safety Case assessments, auditing or incident investigation. They would, however, buy in help with audits but the providers must work under the regulator's supervision. Other alternatives, such as receiving assistance from other government agencies or from the other D.A.'s were viewed as better solutions. At least one regulator would prefer to outsource to Commonwealth if the skills were there, and thought it would be a good idea if the Commonwealth had an approved panel of providers

4.5 Regulators Based In Pro-Development Portfolios

4.5.1 Introduction

Currently, the same Designated Authority has the functions of administration of oil and gas exploration and development policy, and safety regulation for the State or Territory. (The regulation of environment issues is shared between the DAs and other agencies).

This dual role has the potential to raise public concerns with respect to transparency of regulatory process and the independence of the umpire.

Following the Piper Alpha incident, which killed 167 men, the United Kingdom separated these regulatory functions into two portfolios. They are also separated in Norway.

4.5.2 Findings of the Review Team

The Review Team heard that most stakeholders did not regard this as a problem, or could not see it from their level. The regulators considered development and safety to be quite distinct branches with a clear-cut division of responsibilities and processes.

However, many could appreciate that there was an obvious potential for conflict of interest.

Some stakeholders felt there is evidence that pro-development management has pushed development at cost of safety and that facilitation of development often gets more money because there is more government focus on industry growth.

Some felt that at Commonwealth level this should not be a problem, since the unit responsible for offshore safety do not have a direct influence on safety outcomes.

Some stakeholders had the opinion that safety regulators do not fit in pro-development portfolio at all and should therefore be completely separated from any arrangement that has a potential for dichotomy.

4.6 Commonwealth Role

4.6.1 Introduction

The offshore petroleum industry that falls under Commonwealth jurisdiction is regulated by Commonwealth legislation. Under administrative arrangements agreed with the States/Northern Territory, the Designated Authorities are the Commonwealth's agents, and are responsible for day-to-day safety regulation. The Commonwealth safety role is to develop policy and legislation and to promote continuous improvement in the offshore safety case regime, including consistency in regulatory approach.

Specifically, the Commonwealth undertakes annual audits of State/NT regulatory systems and procedures, administers the tripartite National Oil and Gas Advisory Committee (NOGSAC), and provides leadership to the States/NT in the development of guidelines for the interpretation of the regulations (this is done by drawing on the expertise of stakeholders), and the commissioning of reviews such as the inquiries by Dr Tony Barrell and this review.

4.6.2 Findings of the Review Team

4.6.2.1 THE ROLE OF THE COMMONWEALTH'S DISR

The Review Team heard that stakeholders thought the role of the Commonwealth was of providing leadership, developing policy, developing regulations and guidelines, co-ordinating regulatory activities and promoting uniformity and consistency in the approach to regulation across the states. They should have a watchdog role for primacy of safety cases and consistency of application of the guidelines. Their relations are with the industry - not the company. DISR has also a role of keeping the Federal Minister informed.

4.6.2.2 THE PERFORMANCE OF THE COMMONWEALTH'S DISR

Many stakeholders held a positive view on the performance of DISR in regard to offshore activities. They thought the Commonwealth is effective in the

things they do, for example, in introducing the Safety Case regime, in commissioning the Dr. Barrell review and also the current review. The Commonwealth had performed excellently in formulation of policy and the NOGSAC committee was a good initiative.

Many said that Commonwealth is administratively good and they would prefer to keep them as an administrative group. They said the Commonwealth is good at getting people to do things, for example, to develop policy and legislation. The Commonwealth has been good at involving the workforce in policy development

Others were more critical. They thought Commonwealth function is poorly discharged. In theory the Commonwealth should control States/Northern Territory, but in reality they had ceded most powers to the States/Northern Territory. They were of the opinion that the Commonwealth is not active enough in coordinating the States/Northern Territory and in promoting consistency and benchmarking.

The regulators complained that the Commonwealth had no technical capacity and no experience from which to offer guidance. Some thought DISR audits of the DA's have been too shallow.

Some stakeholders were very critical. They thought DISR do not deliver on time. They have no direct experience and are subject to periodic panics. They said the Commonwealth are too much focussed on wrong things, such as diving. But others explained that this was because the Commonwealth had delegated development of drilling and diving regulation to a State regulator, who just failed to deliver.

Some complained that Commonwealth is not visible from work force position. The work force do not have an ownership in the legislation, because the Commonwealth has delegated it to the States "to make them liable".

Stakeholders said that DISR spends endless time trying to get consistency into the Safety Case regime, but that it doesn't work and they need the power to enforce. One interviewee summed it up in saying: "Commonwealth is seen only by their failure to create national uniformity."

4.6.3 What the stakeholders thought the Commonwealth should do

The stakeholders had a number of issues on which they thought the Commonwealth should improve:

- The Commonwealth has no competency to effectively audit the State/NT safety case administration systems. To meet effectively their role they need more resources, including technical competence to audit the auditors.
- The Australian petroleum industry is so small that they should pool the regulators in one single agency. Somebody should suggest an alternative consolidated regulatory model, with a process sketch that effectively change

the line of accountability and promotes sharing of resources. Previously, a unitary model was proposed to the Commonwealth, but the States/Northern Territory opposed it since they saw a diminution in their role.

- Ideally, there should be one, single regulator for all Australian Commonwealth waters.
- The Commonwealth should set State/NT regulator performance standards to ensure that regulators are up to scratch and consistent. The Commonwealth should audit the Regulators. They need to become stewards of shared resources and take a firmer line with the states.
- Are sized for facilitation and lobbying not for technical role – two technical authorities would not be good
- Should fix interface with Navigation Act 1912.
- Commonwealth should solve legislative problems.
- Preference would be for a one-stop shop for regulation, but the states and public may not like it. A possible alternative model could be based on the US model with area offices.
- Commonwealth should have at least one, preferably more, technical people who can give advice. They should take part in State/Northern Territory audits from time to time. The States/Northern Territory currently have nobody to consult – the Commonwealth don't have enough people. They would need 6 to 8 to conduct a project that would fix the system. Then they might reduce to 5 or 6.

5 Implementation Issues

5.1 Integrating Environment, Health and Safety Regulation

5.1.1 Introduction

The current Australian legislative framework is predicated on the independent management of health, safety and environment under separate regulations, and in some cases, separate Acts. There have been some suggestions from industry that this situation could be rationalised by integrating health, safety and environment under one set of regulations and one reporting framework. As their management principles are essentially the same, there could be efficiencies in moving towards this end.

It should however, be noted that there are significant sensitivities associated with the management of environment legislation and the combining of the regulations is likely to add more prescriptive elements and a further level of complexity to assessing and accepting safety cases.

5.1.2 Findings of the Review Team.

The Review Team heard many stakeholders say that from an industry perspective, combining health, safety and environment in one Safety Case makes good sense. The two issues use the same methodology, so there will be significant synergies. For example, any big accident has environment consequences. The subjects are related by common hazard assessments, and the industry is already heading this way. The stakeholders thought legislation should allow a combined HSE case, but not require it.

There was a general view that a HSE case would be more efficient, since the framework can be the same. There are, however, different assessment regimes for safety and environment between the States/NT and Commonwealth, so the regulators would need to unify the processes for maximum benefit to be realised. Some stated that the regulator would also need a skill set increase.

Some felt that combination would necessitate the major political achievement of bringing the Petroleum and Environmental legislation together. There is an unclear interface between the new Environment Protection and Bio-diversity Conservation Act 1999, (and consequent requirements for the Minister for Environment to approve all activities to be undertaken in the marine environment Commonwealth), and the P(SL)A, and this may complicate the process. Some predicted that at the legislative level it could take 20 years to get environment regulators to agree to such a convergence.

Other stakeholders were more concerned about the effect on safety and pointed to the risk that focus will be taken off safety, which would be

unacceptable. The Safety Management System and Environment Management System are similar, but risk assessments are conducted on different criteria and different time scales and this could limit the notional efficiency gain.

5.2 The status of the safety case

5.2.1 Introduction

The United Kingdom Health and Safety Executive Evaluation in the UK safety case review stated :-

“The safety case should be a living document, easy to change, an effective management tool, useful to the workforce and provide a sound basis for audits.”

5.2.2 The findings of the Review Team

On this issue, the Review Team heard that most interviewees thought the Safety Case was not living, but that the Safety Management System within it is – and that is the important part. Some had the Safety Management System networked on computer and constantly updated.

Safety Cases are just books - what you do as a result is living - for example, updating procedures, engineering change control, Safety Management System updating.

Attitudes to the Safety Case varied, some seeing Safety Cases as a cost of compliance - something that has to be done and get out of the way.

Some felt that Safety Cases are formatted primarily for assessment of the regulator whereas they should be formatted as a meaningful tool for the operator. Due to the cumbersome nature of Safety Case, suggestions for improvement are sometimes dropped because it would mean updating of the case.

Most said that the Safety Case is in itself too big to be a living document, but the Safety Management System is living and the Formal Safety Assessment and Quantitative Risk Assessment come to life when there is a ‘significant’ change.

Only a minority were of the opinion that in legal terms the Safety Case is living, that it is updated regularly and that this adds value. One said that this discipline had helped change the company culture. For example, historically, a worker who demanded a pre-job safety analysis would have been sacked, whereas now he is likely to be sacked if he doesn’t.

Stakeholders were concerned that the workforce does not have ownership of Safety Cases. Some felt that perhaps a summary, in plain intelligible language explaining the major risks identified in the safety case, would help.

Workforce personnel who move frequently from installation to installation are not much interested to see or have ownership of a particular safety case – this applies especially to seamen.

There appears to be widespread confusion as to what constitutes a ‘significant’ change, which will result in Safety Case resubmission.

5.3 Use of Standards and Measuring of Performance in the Safety Case regime

5.3.1 Introduction

Under the safety case regime, the selection and use of particular design and operating standards and codes of practice is no longer a prescriptive requirement.

Standards are, however, still an integral part of safety case development. They define a minimum quality for the design of hardware and may also predicate the development of meaningful auditable procedures and operating practices against which performance may be measured. Concerns have been raised as to the appropriateness and ready availability of standards for such purposes.

There is lack of defined “performance standards” in the formulation of many safety cases.

Performance standards are criteria established by the operator that indicate, particularly in respect of safety critical systems, what has to be done, and at what frequency to preserve the risk figures assumed in the design. They are performance indicators against which operators can verify the constancy of risk over time, and should be a part of the safety case. If these criteria are not embodied in a safety case, or are too vague, then it will be impossible to verify compliance with the design assumptions.

It has become apparent from Phase one of the review, (information gathering), that there is a real desire to identify lead measures of safety management, which will reflect the overall effectiveness of safety management and can be used to monitor and drive continuous improvement. If such measures could be standardised, benchmarking between companies both locally, and potentially, internationally, might be possible.

5.3.2 Findings of the Review Team

5.3.2.1 STANDARDS FOR DESIGN AND OPERATION

The Review Team heard that the industry initially drew on UK standards, but now uses APPEA codes and guidelines. EPIA guidelines are also regarded as useful.

The industry in Australia has recently developed eight guidelines to aid safe operation. These, coupled with government-produced and international standards and guidelines are viewed as sufficient.

Industry would, however, like further clarification of what are considered to be "significant " design changes which carry the obligation to resubmit the safety case. This would ensure uniformity.

5.3.2.2 PERFORMANCE STANDARDS IN THE SAFETY CASE

Performance standards are said not to be a requirement of the Australian safety case regime.

Some stakeholder companies have more performance standards in place than the regime demands, and some have now begun linking hazards with performance standards, so there is evolution.

Some stakeholders said and that the regulator should formalise a requirement for performance standards so that performance can be measured. There should be a guideline on measuring performance accompanied by a suite of examples of performance indicators. The regulator should hold the industry responsible for making progress in regard to improving safety.

Some stated that the issue of Safety Case performance standards is poorly understood. When performance standards are not properly defined, people call what they like a performance standard. There is a requirement for some performance standards in the legislation, but this receives little attention by the regulator, because it is not well understood here either.

Performance standards are an essential component of the internal verification process. The Review Team was told that at least one company has independent internal verification but that most rely on the regulator. The regulator, however, is not verifying performance standards.

This is an area that requires development. It was mentioned that the UK PFEER and DCR petroleum regulations provide good models for learning.

5.3.2.3 LEAD AND LAG INDICATORS

The Review Team heard that there is wide support for development of company lead performance indicators, but little support for developing a common industry set.

Stakeholders said that some of the fundamental leading elements of the Safety Case regime, such as safety culture, can be measured through anonymous perception survey of the workforce.

There are numerous performance indicators that could be utilised and a suite of lead and lag indicators is viewed as the most effective measure.

Stakeholders thought that lead performance indicators could include

- number and quality of safety meetings/ tool box meetings,
- presence and form of safety plan,
- formalised annual safety plans,
- contractors fully integrated into safety management,
- conducted perception surveys,
- safety management systems in place,
- processes to analyse hazards and risk,
- audit program in place,
- number of minor hazard reports/STOP cards/step back 5 x 5s
- number of training days
- % completion of maintenance and inspection programs

It was mentioned that today some data, which could be used for lead indicators, is available electronically, for example, number of overrides of safety devices, number of trips, etc.

Performance indicators could also include lag indicators such as TRIFR's, LTIFR's, and number of near misses.

In terms of international comparisons, stakeholders felt that benchmarking currently could only be achieved with lag indicators such as LTIFR and TRIFR, and even here great care must be taken to ensure that the basis for recording LTI's is consistent. It was recommended that further work be undertaken in relation to establishing international standards for performance measurement.

LTIFR's are looked on with great cynicism by the workforce, who gave a number of examples of what companies had done in order to avoid personnel injuries becoming a lost time incident.

Significantly, in terms of safety case objectives LTI's do not measure the big risks

Stakeholders pointed out that although the industry realise that LTI's are not useful indicators since they are so easy to fiddle, a low LTIFR still seems to provide a competitive advantage to contractors. Thus they are effectively pressured to suppress them.

Some companies arbitrarily separate contractors' employees from their own to keep safety statistics artificially low.

5.4 Employee Involvement

5.4.1 Introduction

Successful management of safety is considered to be largely dependent on workforce understanding and 'buy in', and routine application of the relevant parts of the safety management system in the work place. A safety case is considered 'live' or 'in force' if employees and managers are working within it and playing their respective roles in its implementation and improvement.

Because of regulatory requirements, a safety case is large, complex and highly technical in nature, and is not conducive to employee involvement and understanding. For example, Quantitative Risk Analysis uses a high level of mathematical methodology, considered by many employees as a 'black art' with little relevance or meaning.

Some argue that a safety case is in fact written to satisfy the requirements of the regulator and does not promote learning and communication with the workforce.

There is also the real issue of employees finding the opportunity and motivation to engage with safety case material when working 12-hour shifts (when on-swing at the facility) or subject to family and life issues off-swing.

5.4.2 Findings of the Review Team

There was unanimous support for the view that the workforce should be involved in all appropriate stages of development of a safety case. This is important both to ensure that the workforce have a greater understanding of the safety case and that they have a sense of ownership of the document. It is also a general view that involvement by experienced workforce in development of the Safety Case provides valuable information to the case and enhances the quality of the various analyses for risk identification and assessments.

The key areas for workforce participation are hazard identification, development of risk reduction options, ALARP discussions, appropriate training, and obtaining feedback and during any review.

The Review Team heard different views with regard to workforce involvement in practice. Some stakeholders said that their workforce was participating in activities such as HAZID sessions, hazard assessment, communication surveys, perception surveys, and annual risk reviews, and that this was an effective way to ensure that workplace risk is understood by workforce.

In other companies the workforce has effectively contributed to Safety Case activities such as building the Safety Management System, reviewing the facilities description and assessing operability in projects. Some companies now have workforce involvement in design teams and many said that most of workforce are enthusiastic about safety once they are involved.

Other stakeholders had found it difficult to involve the workforce in Safety Case development. They think the present regime does not effectively drive employee involvement and are still trying to break down natural barriers to workforce involvement. In these companies employees are said to be interested in safety only where their own personal safety is impacted and it is a challenge to get safety case involvement below supervision level.

Some had the experience of Safety Cases developed by experts, which the workforce does not usually see. They do, however say that they see, and help upgrading the Safety Management System.

Regulatory stakeholders said that they encourage employee participation by giving credit where a company has done well, by talking direct with employees, by participating in monthly meetings with HSE representatives and by having regular meetings with company managers.

The regulator can verify whether employees are sufficiently and effectively involved throughout the lifecycle of the safety case through the audit process and interviews.

Some safety cases have been rejected, and among the reasons for this was the inability to demonstrate workforce involvement.

It was suggested that guidelines be developed for identifying key areas where employees could be involved in the development of a safety case.

Many said education is the key to effective employee involvement and understanding of the Safety Case and that employers need to allow workforce time for learning, which is extremely difficult when the employee's are working 12 hours shifts.

It is important that the workforce is trained to a general level of understanding of the overall safety case risks, with additional specific training tailored to their work. Weekly safety meetings do not provide sufficient involvement or a continuous focus on safety.

It seems to be difficult to integrate the contractors' workforce into the Safety Case process and perhaps more emphasis should be put on induction in Australia to offset contractor mobility.

5.5 Cost Pressures

5.5.1 Introduction

Oil industry profitability is very volatile. Early last year oil prices were very low and companies were under a lot of pressure to maintain profits and returns to investors through cost reduction initiatives (cf Australian Competitive Energy).

In a climate where all expenditures come under increased scrutiny, there is a risk of inappropriate cost savings being made that impinge on operational safety. This can take a number of forms, including the reduction of levels of human resources, changed maintenance practices, longer risk assessment intervals and selection of low cost (but not necessarily most effective) safety solutions, e.g. procedural solutions where hardware changes would be indicated.

5.5.2 Findings of the Review Team

The Review Team heard different views on the issue.

Some stakeholders said cost pressures do not impact on the effectiveness of safety management arrangements. ALARP provides the means to defend risk levels during selection of cost reduction options. Some companies “do not put cost in the same paragraph as safety” or “will not implement any initiative until risks has been reviewed”. The Review Team was told that the issue is not a big problem but that it may become so later in field life

Some companies have processes for assessing the safety impact of reduction in numbers while others just do it.

Some companies believe it is legitimate to argue for an increase in risk level if it was low to start with. Stakeholders said that companies have perspectives that range from: *No upward changes in risk*, to *as high (a risk) as reasonable acceptable*. ‘AHARA’

The Review Team heard numerous examples where there had been no consultation prior to reduction in staff numbers. Several stakeholders said that when there are budget constraints, management can, by manipulating numbers prove on paper by that things can be done with half the number of people.

Some said workers’ compensation helps keep the balance because accidents are expensive in Australia.

There is often an early impact on training budgets in hard times and this has a knock on effect on safety.

It is a question of balance, and may become more difficult later in field life.

5.6 Safety Case Culture

5.6.1 Introduction

Critical to the successful implementation of a safety case regime is the achievement of a qualitative shift in industry and regulatory safety cultures from the minimalist compliance of the prescriptive regime to the philosophy of best practice and continuous improvement.

An effective safety case regime should contribute to the development of a culture based on continuous improvement and learning.

It has been suggested that a major impediment to the development of such a climate is the litigious culture in Australia which, rather than fostering a culture of continuous improvement, actually promotes a 'blame culture'.

5.6.2 Findings of the review team

The Review Team heard many stakeholders say that the practices and attitudes within both management and the workforce have changed following the implementation of the safety case regime. Employee consultation, and employee participation in the development of the safety case, results in the change in attitude to safety among workers.

Most asserted that there had been a significant improvement, a quantum leap, in safety culture, but agreed that the change was not always translating to contractors, and has not been accompanied by a corresponding significant improvement in lag indicators.

As a proof that continuous improvement is happening we were told that what was acceptable 5 years ago is now quite unacceptable.

Workforce representatives thought continuous improvement is now beginning to happen and that workforce involvement is gearing up. They thought safety culture has improved, for example, there is now an opportunity to voice concerns without fear and with a good probability that company will follow through. In many companies the workforce is now actively involved and this was not the case prior to the introduction of the safety case regime.

Regulators stated that continuous improvement is happening, but only in a limited way. For example, there has been a reversal in safety improvements in some companies, who are using the regulator to test the upper limits of risk increase and this is unacceptable. Some other companies initially went overboard with procedures, leaving no room for judgement, but they have since made many improvements.

Most were willing to identify the introduction of the Safety Case regime as *an* initiator of this improvement, but many identified earlier events such as Piper 'A' or Exxon Valdez as earlier initiators. Some were of the opinion that a great

power for improvement is the desire of wanting to be seen as 'best in class', and that this desire is greater than regulatory pushing.

Some stakeholders were more reserved with regard to the issue. They thought continuous improvement is happening, but cost pressures are causing this to be a struggle.

Some companies have no scruples about laying blame for accidents on employees, which is not conducive to improvement or learning, but they are in a minority position. The transience of people on vessels limits the buy in of Australian workers.

Many stakeholders blamed the legal system in Australia for discouraging companies from openness. Australia is moving to "strict liability" which means that if a crewmember is hurt on a rig it is the fault of the company, and this runs contrary to the development of a healthy safety culture.

Some asserted that it would be better if the regulator were to step back and see what the company is doing after an accident before stepping in to prosecute.

A 'no blame' open culture has the potential to rebound on the company as increased liability.

Many agreed that a 'no blame' culture is not supported by the current legal system which seeks to identify what and who is at fault. If the result of an investigation into a serious incident is prosecution, this will have a negative effect on such a culture. The industry is of the opinion that legally, a formal 'approval' by the regulator of a safety case may reduce the legal burden on industry.

Change at the cultural level can be measured through perception surveys and key performance indicators which include safety.

6 Review Team Discussion

6.1 The legislative framework

The Review Team has found that

- There are too many Acts, Directions and Regulations regulating Australian offshore petroleum activities.
- Their boundaries are unclear and application is inconsistent.
- Different sets of legal documents apply for each of the different states/NT.
- There are overlaps in legislation and the framework is incomplete in that fundamental terms are not properly defined.
- provisions for graded sanctioning of non-compliance are absent.
- There is still much unnecessary prescription.
- The requirements of the framework of legal documents are open to inconsistent interpretation by regulators based on their background and personality.
- Guidelines are often applied as if they were compulsory regulations.
- States, by the Directions in the P(SL)A have been given the freedom to decide whether or not to apply their state law for important safety areas in Commonwealth waters.

The importance of clear and well-structured legal provisions in providing for safe and healthy working conditions in the offshore industry is not always fully appreciated. Because of the complexity and diversity of the petroleum industry, practitioners such as oil company engineers and supervisors must frequently consult occupational safety and health standards, including technical and operational safety standards. As these persons are not legal experts, it is particularly important that legal provisions are intelligibly formulated. Much can be done to improve legislation to this end, so that those with a duty to comply can readily assess what is required of them.

Legal provisions which are tidy and well-structured will not only facilitate the quick assessment of requirements by the users, but also reduce the need for the regulator to spend time giving information to the users on where to find all the requirements pertaining to a particular issue.

The number of provisions that must be contained in laws and regulations in order to provide for safe and healthy working conditions can be significantly reduced if they are properly supported by other types of regulatory documents, such as recommendations or guidelines, suggesting or outlining various

accepted methods for complying with the legal provisions. The resulting "slimmer" legislation will be more intelligible, thus reducing the need for the regulator to explain to the oil companies how to comply with the legal provisions.

Offshore safety legislation and regulations often contain complicated formulations of safety matters that are basically quite simple and straightforward. This may affect the industry's ability to observe formal safety requirements, as it becomes less obvious what action is required to comply. Such conditions may also reduce the effectiveness of the regulatory body, as it will have to spend time elucidating the text of any poorly formulated provisions. Obscure legal provisions are probably the most frequent cause of heterogeneous enforcement of the law by safety officers. It is consequently well worth spending time on properly formulating such provisions.

It has been said that one cannot legislate safe and healthy working conditions. This may be partly true.

The Review Team believes that well-formulated, -structured and -organised legislation is a powerful measure to enhance the observance of safety regulations.

6.2 The regulatory system

The Review Team found the role of the Designated Authorities to be unclear and undefined. Regulators appear to have inconsistent philosophies, procedures and approaches to regulation, both in regard to discharge of their role in Safety Case developments and assessments, and in regard to auditing activities. The work processes of regulators are not sufficiently transparent.

There was wide agreement among stakeholders on what the core roles of the regulator *should be*, but considerable diversity on how the regulator should behave in discharging those roles. The role of the regulator has not been committed to paper and there was wide demand that this be rectified.

The team take the view that the role of the regulator should be agreed and committed to paper and that the processes employed should be as transparent as possible. We would be happier with a situation where the regulator kept a little distance between himself and the companies – especially on longer term assignments.

Some regulators are light in resources in terms both of number and competence of personnel. Salary levels make it difficult to recruit and retain critical mass. Because of this, regulators must frequently resort to outsourcing of activities and some of these have been tasks, which normally are or should be done by the safety regulator himself.

The view of the team is that it would be more cost effective and deliver a better, more risk reducing result, if all safety cases were assessed by a single group with the critical mass to do the assessment in house.

Safety regulation is within the department responsible for facilitation of development. There is no conflict visible, but the potential for dichotomy is there and would be much more visible after a major accident, if there were political points to be gained.

The balance of evidence is that there is no present problem here other than the competition for budget, but that perception could change very quickly after an accident.

The responsibility and role of the Commonwealth is also unclear. The Review Team understands that the *function* of regulating day-to-day activities in the offshore petroleum industry has been delegated to the states/NT, but it is unclear to the team whether the Commonwealth also has “delegated” the *responsibility* for ensuring safe operations in Commonwealth waters to the states/NT. Since there is a safety unit within the Department of Industry, Science and Resources, the Review Team must assume that this is not the case.

The review team believe that DISR should have real clarity on who is ‘carrying the can’, and should act accordingly.

The stakeholders state that the role of the Commonwealth unit is to ensure consistent regulation of the offshore industry across the states. The Review Team believes this to be a near impossible task, given that the unit appears to have no corrective levers to apply to ensure consistency, other than to appeal to the DA’s that they conform to expectations.

The review team support the widely held view that the DISR unit should be strengthened and should take a firmer line. What extra power is needed to achieve this is not clear to us, but it is clear that the achievement of the desired consistency will ultimately save on wasted resources in duplication by the state regulators as well as reducing risk by releasing scarce industry safety expertise to make a positive contribution instead of chasing legislative differences.

The Review Team heard a very strong demand from the industry stakeholders for a single regulator and one set of regulations, at least for commonwealth waters.

The review team support the view that this would be the best possible solution and that it would confer considerable efficiencies and reduce the exposure of both industry and government, by a more professional approach reducing the risk of a major event in Australian waters

The principle of co-regulation, which has great support from many stakeholders, including the regulators, is a particular phenomenon that is not found in other regulatory regimes. Most regulators elsewhere would be

concerned about companies and regulators becoming too close and the potential in such a relationship for the companies gaining the upper hand. This would be particularly so where the regulator does not have a critical mass of experienced and competent staff who are able to contest the assessments and assumptions of the companies.

The review team believe that the regulators should keep a little distance between themselves and the companies as the industry in Australia matures.

6.3 Implementation Issues

The Review Team understands there is a drive in the industry for integrating environment into an HSE Case, but that the legislative and assessment ends are far apart in the governments so efficiencies may not be realised.

The team feels that this is an issue of administrative efficiency with only a second order effect on safety.

We have also heard that the Safety Case is not regarded as a “living document”, but the Safety Management Systems are, and this is the piece that matters on a daily basis.

The Review Team support the view that the complete Safety Case does not necessarily need to be living in terms of frequent updating.

We were told that there are enough *design standards* but more should be done with regard to *performance standards* so that an assessment can be made of whether risk assumptions remain valid over time.

The review team are of the view that this is a shortcoming of the Australian regime, and that performance standards are an important tool in verifying that the design assumptions, (and the risk figures that flow from them), remain valid over time.

There was complete stakeholder support for the search to find suitable lead indicators for benchmarking purposes.

The review team support the objective and note that this is an international search and encourage DISR in carrying this to the International Regulators Forum

Most stakeholders are satisfied that there is increased work force involvement in safety case development and in many other areas of the operation. Many, however, have the view that the employees are still not sufficiently involved in safety matters.

The team found huge variability in the extent of workforce involvement and believe that some cross fertilisation of the enthusiasm felt in some

areas would significantly benefit others – exactly how this could be done is not clear.

It does not appear that cost pressures are seriously affecting safety and many felt that internal procedures and the safety management processes prevent this from becoming a problem - Some however disagree.

The team received no concrete evidence of serious reductions in safety as a result of cost pressures, but the potential is clearly ever present.

Many stakeholders thought there had been a significant improvement in safety culture over the past 5 years, but they did not see the implementation of the Safety Case regime as the sole driver for the improvement.

The review team believe that there has indeed been a significant improvement and that it is not important in what ratio it is driven by multiple inputs.

6.4 Conclusion

The Review Team was asked to assess the effectiveness of the structure and implementation of Australia's offshore petroleum safety case regime and in particular to examine and comment on

- the appropriateness, effectiveness and cost efficiency of the legal and administrative framework;
- industry's implementation of the regime and the day to day application of the above; and
- the overall delivery of world's best safety practice by the safety case regime.

6.4.1 Primary Conclusion

The Review Team is of the opinion that the Australian legal and administrative framework, and the day to day application of this framework, for regulation of health, safety and environment in the offshore petroleum industry is complicated and insufficient to ensure appropriate, effective and cost efficient regulation of the offshore petroleum industry.

Much would require improvement for the regime to deliver world-class safety practice.

7 Recommendations

The Review Team was asked to make recommendations to improve the overall operation of the Australian offshore petroleum safety case regime where appropriate. The recommendations were to cover separately:

- the effectiveness of regulatory arrangements,
- and the effectiveness of the implementation of the safety case regime in Australia.

The Review Team found that the shortcomings of the current regulatory regime fall clearly into the two areas above, and make two central recommendations:

1. The DISR should consider launching a project to revise the current Australian Commonwealth Safety Case regime's framework of legal documents.
2. The DISR should consider launching a project to restructure the current Australian Commonwealth Safety Case regime's implementation of the regulatory system.

It is recognised that there are interactions between the two projects, and that they should be conducted in parallel.

7.1 Revising the framework of legal documents

The aim of the revision should be to develop a comprehensive, clear, relevant and workable HSE legislative framework (as seen by all stakeholders) for the offshore petroleum industry in Australia that facilitates effectiveness and efficiency and provides for better cohesion between the regulatory principles, which are expressed in the P(SL)A., and other more prescriptive legislation.

The basis should be:

- Commonwealth acts and regulations in force
- The principle of State mirroring Commonwealth regulations
- The principle that state laws do not apply if inconsistent with Commonwealth ones
- The principle of schedule 7 in P(SL)A, in which, by exception, State OH&S laws are allowed to prevail

The Review Team found that there are too many Acts, Directions and Regulations regulating the Australian offshore petroleum activities. Their boundaries are unclear and application is inconsistent. Different sets of legal documents apply for each of the different states/NT. There are overlaps in legislation and the framework is incomplete in that fundamental terms are not properly defined. The regime lacks provisions for graded sanctioning of non-compliance and there is still much unnecessary prescription. The requirements of the framework of legal documents are open to inconsistent interpretation by regulators based on their background and personality. Guidelines are often applied as if they were compulsory regulations.

In the projects, due consideration should be given to the interaction between:

- Commonwealth and State legislation,

and the interaction between:

- The P(SL)A and the Navigation Act
- The P(SL)A and Environment and Biodiversity Act

Due consideration should also be given to schedule 9/11 under the P(SL)A to bring this principle in line with the mirror-principle and seek Commonwealth control over which State-legislation is made applicable in the Commonwealth offshore petroleum industry. This is necessary in order to achieve consistency in framework conditions. Furthermore, necessary graded sanctions should be included in the P(SL)A Safety Management regulations

Other National Regulators' experiences with this kind of development confirm that the successful development of a contemporary industrial offshore safety legislative regime is a resource intensive activity, requiring proper resource assignment, careful planning, an interdisciplinary approach to solving the inherent issues, and extensive co-operation with the stakeholders.

It is appreciated that promulgating legislation involves a highly complicated and time-consuming process. In order to succeed, great emphasis should be given to the preparatory work. All action should be thoroughly justified, planned and supported. Success will be contingent on a dedicated project management with the capacity to carry through all proposed actions for development.

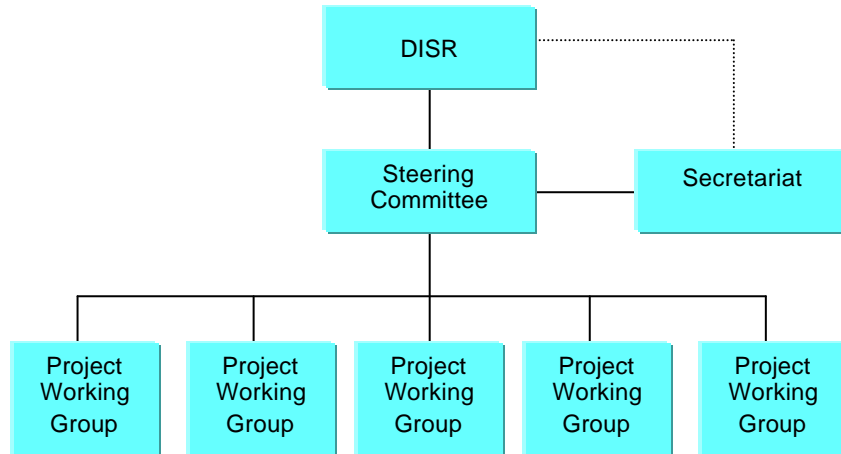
7.1.1 Main Phases of the Project

7.1.1.1 PHASE 1:

The Commonwealth should establish a working group consisting of representatives from all stakeholders. Its task should be to define project scope, decide upon future structure of regulations and underpinning guidelines and minimum standards, and develop a project organization, an execution plan and a budget, for the revising of the framework of legislation.

7.1.1.2 PHASE 2:

Set up the project organization and execute the plan. The project should be chaired by the Commonwealth who should also act as the secretariat for the proposed steering committee. The steering committee should have representatives from the stakeholders.



The resources in terms of staff and funds for regulation of offshore petroleum activities are very limited. Extra funding is therefore necessary to increase the capacity of the regulator in order to execute the project. As the project outcomes will be beneficial to both the oil companies and the government in terms of clarity, consistency and reduction of unnecessary administrative work, with associated cost, it is proposed that project funding should be supplied by the industry.

7.2 Development of the regulatory implementation system

The aim of the project should be to develop a simple administrative and organisational system that promotes clarity, consistency, efficiency and predictability in regulatory activities and decision making, which in turn, will facilitate efficiency and cost-effectiveness in industry operations.

The Review Team describe below three models, which the team believes will contribute, in varying degrees, to improving the regulatory system. Each of the models will be discussed in terms of its potential for offering improvement to the regulation of offshore petroleum activity in Commonwealth waters.

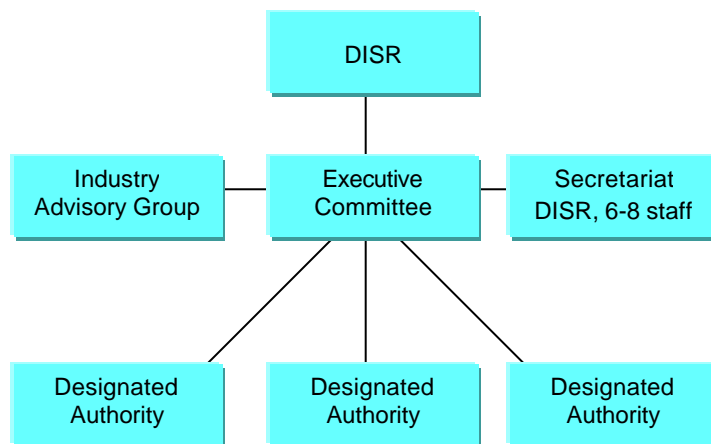
7.2.1 Model 1 – “The Minimum Effort Model”

This model is based on the existing regulatory system, but introduces an Executive Committee, chaired by DISR, where the HSE managers of the DA’s sit, together with representatives from the DISR Safety Section.

The DISR Safety Section may act as the Secretariat for the Executive Committee. An existing or new tripartite body should be established to advise the Executive Committee in its work.

The primary functions of the Executive Committee should be to:

- Seek, promote and ensure maximum consistency in the states/NT approach to regulation of the petroleum industry;
- Seek, promote and ensure maximum consistency in the states/NT in the application of their differing legislative frameworks.



This model does not change the reporting lines to Ministers.

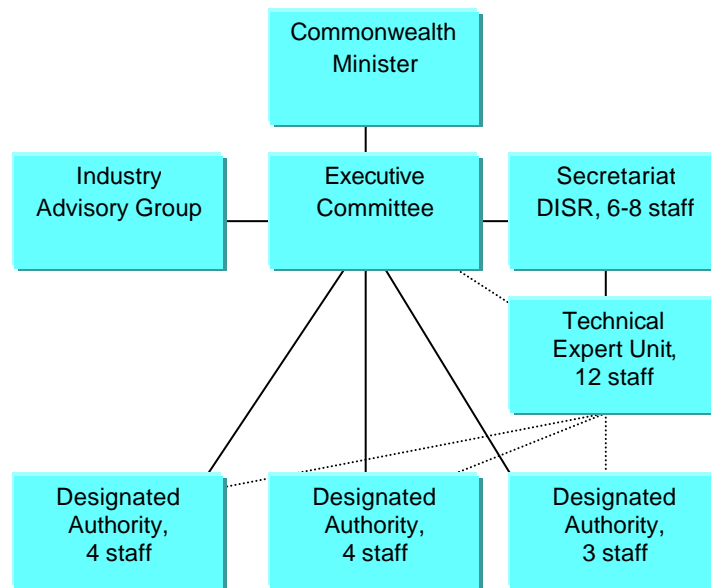
7.2.2 Model 2 – “The Added Competence Model”

This model is also based on the existing regulatory system and introduces an Executive Committee.

In addition, a Petroleum Safety Case Expert Unit, with the capacity and the necessary technical skills to assess Safety Cases, would be established. The unit would be administered by DISR, under surveillance of the executive committee. The role of the Executive Committee is otherwise the same as in the “Minimum Effort Model”.

In this arrangement, the main roles of the DA’s will be to:

- audit the adherence of the oil companies to their Safety Cases. In doing so effectively, they should have access to, and be able to call for assistance from, the expertise of the Petroleum Safety Case Expert Unit, and
- be a focal point for the industry’s contact in all safety, health and environmental matters.



The proposed capacity of the units is based on current industry activity.

The Review Team believes that the creation of a Petroleum Safety Case Expert Unit with critical mass will

- Save money by efficiency
- Increase the knowledge of the regulator
- Promote more professional and faster handling of safety cases
- Make safety case assessment fully consistent
- Reduce outsourcing and conflict of interest
- Solve the salary problem
- Have the size to promote training and education
- Provide improved career paths for professionals in the safety field in Australia

It will also provide the federal authority with an additional tool for achieving consistency.

The resources of the unit, as well as being available to the Das, could potentially be made available to other government departments with a need for risk assessment, at times when the unit had spare capacity.

The unit could be located anywhere in Australia convenient for the conduct of their tasks.

This model does not change the reporting lines to Ministers either.

7.2.3 Model 3 – “The Offshore Petroleum Single HSE Regulator Model”

This model is based on the Review Team’s, and also the stakeholders, understanding of what is actually needed to do to ensure an appropriate, effective and cost efficient regulation of HSE issues in the Australian Commonwealth waters offshore petroleum industry.

In this model the Review Team suggests that a National Petroleum HSE Authority is established. This authority would own, among other things, the Technical Unit of “The Added Competence Model”.

The headquarters can be located anywhere in Australia. There should be Regional Offices in States where petroleum activities in adjacent Commonwealth waters are planned or are currently being conducted. The National Petroleum HSE Authority should report to the Commonwealth Minister for Industry, Science and Resources.

The main functions of the National Petroleum HSE Authority should be to:

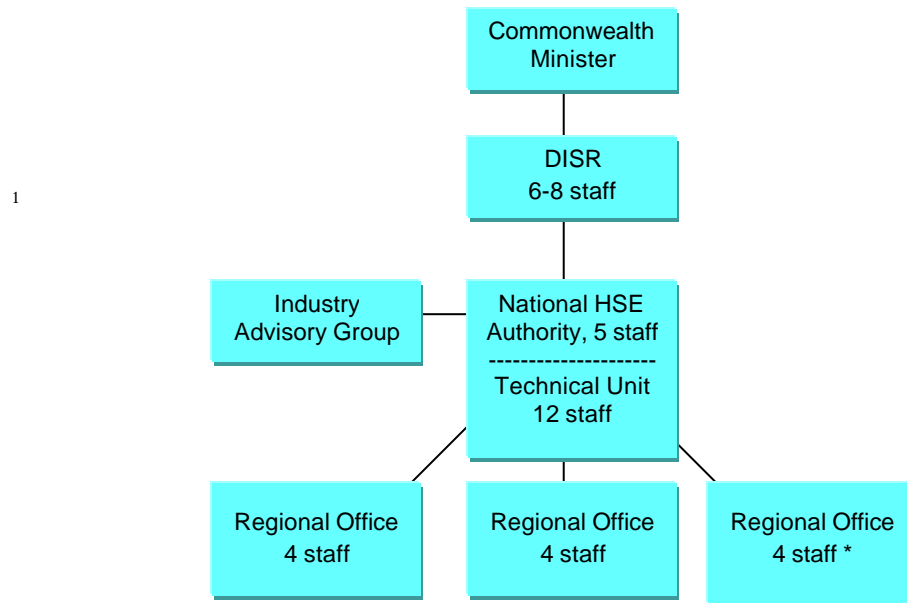
- Establish consistency in the regulatory approach
- ensure that oil companies adhere to the Safety Case regime;
- maintain the legislative framework;
- establish consistency in the application of the legislative framework;
- assess and accept Safety Cases;
- manage the regional offices including their auditing activities.

To undertake these tasks the headquarters must have:

- 5 staff for administration;
- 12 expert staff for assessing safety cases;
- 4 expert staff in each regional office for auditing activities(3 in NT if ZOCA do not use).

The main functions of the regional offices should be to:

- audit the adherence of the oil companies to their Safety Cases. In doing so effectively, they should have access to, and be able to call for assistance from, the expertise of the National Petroleum HSE Authority, and
- be a focal point for the industry’s contact in all safety, health and environmental matters.



The proposed capacity of the units is based on current industry activity.

7.2.4 Discussion

As has been stated in this report, the Review Team believes that the main problems of the current regulatory regime are:

- lack of consistency in regulators’ approach to regulation;
- lack of regulatory capacity;
- lack of regulatory skills;
- lack of clarity with regard to what the role of regulator is.

The adoption of one of the proposed models will, to a smaller or greater extent, improve on the situation.

The Review Team has heard both the industry and the trade unions strongly recommend that model 3 – the National Petroleum HSE Authority be adopted, since this model will totally solve the identified problems.

The Review Team fully supports this view and would recommend the adoption of this model.

The Review Team has also been informed that the *Offshore Constitutional Settlement 1979* may contain clauses that limit the rapid introduction of this

* 3 if ZOCA do not use

model - we recognise this potential difficulty but continue to be of the view that the benefits will outweigh the difficulties.

The Review Team has not assessed the implications of model 3 with regard to the States/NT current regulation of petroleum activities in their territorial waters, including the likelihood of duplication of effort where the states have inshore petroleum installations. It is important to identify and assess the implications of such issues. On the positive side the model offers the opportunity for the States/NT to draw on Commonwealth resources for such needs.

In assessing the capacity of Models 1&2 to solve the problems of the current regime, the Review Team draw attention to the fact that the offshore industry in Australia is comparatively small and the availability of competent people with the necessary skills to work as regulatory officers within a Safety Case regime is extremely limited. This is illustrated by the fact that oil companies, contractors, consultants, and regulators compete for the same people. There is also competition for competent staff between regulators.

Given the current lack of both competence and capacity within the regulatory system much regulatory work has to be outsourced. The consequence of this is that important experience and learning becomes an asset of the consultants and not the regulator.

The Review Team is of the opinion that this situation must be improved. The implementation of model 2 - "The Added Competence Model" - would be an important step toward achieving this end, since in that model it will not be necessary for each regulator to possess a critical mass of specialists to properly conduct his functions in his area. The competition between regulators for qualified staff can thus be eliminated; also, learning and experience from regulating the offshore industry will remain inside the regulatory system.

Should the adoption of model 3 - "The National Petroleum HSE Authority Model" not be possible in the short term, the Review Team would recommend adoption of "The Added Competence Model" as a stepping-stone towards that ultimate objective.

Model 1 - "The minimum effort model" will have potential, at least, to drive improved co-operation, co-ordination and consistency in regulatory activities. Its success, however, will, to a large extent, be contingent of the willingness of the involved agencies to accept DISR's leadership and authority, and to contribute to achieving the goals of DISR.

Since such willingness to support the DISR is highly variable among the DAs, it is the view of the Review Team that this model has a very limited potential for driving improvement. It should be adopted only if efforts to establish models 3 or 2 totally fail.

7.2.5 Secondary Restructuring Issues

Industry and work force have strongly expressed the view that a competent and consistent regulator is of prime importance in a Safety Case regime. This in turn implies sufficient funding and satisfactory salary levels.

The Review Team supports this view and recommends that every effort is made to achieve this goal.

To successfully achieve this goal, funding and competitive salary levels will be key factors.

This is a prerequisite of delivery of world's best safety practice.

The Review Team does not have sufficient insight into the Australian government salary levels or the funding system to be able to offer advice.

It is, however, true that in many countries government funding is insufficient to support a competent regulatory regime. Some of these countries have successfully introduced a charging/fee system in which the industry pays for regulatory services. The Review Team is of the clear impression that Australia has insufficient resourcing of HSE regulation in the petroleum offshore industry.

We recommend investigating the feasibility of introducing a charging system which would, in part, pay for regulatory services, as a part of the restructuring process.

Other countries have found it necessary to apply special salary structures for petroleum industry regulators.

The Review Team recommends that this possibility be evaluated as a part of the restructuring process. In particular the implementation of models 2 or 3 should offer powerful arguments for improved salary levels.

The issue of potential dichotomy in the regulators was raised at several points. If model 3 is adopted this is largely solved.

The Review Team recommends that the issue of potential for dichotomy is addressed in the restructuring process and that to the maximum possible extent HSE regulation is separated from facilitation of development.

The Review Team understands that the main functions of DISR today, (and this would remain true if Model 1 or 2 were adopted), are to:

- develop policy for HSE regulation
- develop the legal framework for safety and environment regulation; and

- ensure consistency across the States/NT in the regulation of the industry.

To support the above role, DISR should, at least, establish the following activities:

- Develop and implement common DA Safety Case assessment procedures;
- Develop and implement common DA Auditing procedures;
- Develop and implement common DA inspection and enforcement procedures;
- Develop form and scope of annual DA operational plan for Commonwealth activities;
- Assess and respond to annual DA reports on performance with regard to annual operation plan;
- Develop a DISR Policy on DA outsourcing;
- Develop a procedure for auditing the DA's;
- Describe the Commonwealth and DA's roles and make it public.

Based on a description of the role of the DA's, DISR should see to it that a competence/capacity profile for each DA and for the Commonwealth be developed. Based on this, each agency should develop training plans with resources necessary for filling the gaps. If the gaps cannot be filled, the role and organization of the regulator must be adjusted accordingly.

In the view of the Review Team that the DISR Safety Section is currently not equipped with the necessary levers to undertake these functions in relation to the DA's, nor are they sufficiently resourced.

The Review Team regard this situation as serious and recommends that it be quickly improved. The capacity should be increased to 5 to 6 staff regardless of whether the recommendations of the Review Team will be implemented or not. If the recommended projects are mounted the resources would need to be increased to 6 to 8 people, falling back to 5 or 6 on completion.