

DEPARTMENT OF INDUSTRY, SCIENCE AND RESOURCES

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Offshore Safety and Security, Petroleum and Electricity Division

AUSTRALIAN OFFSHORE PETROLEUM SAFETY CASE REVIEW

Future  
Arrangements  
For The  
Regulation  
Of Offshore  
Petroleum Safety

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# 1 Executive Summary

## 1.1 Background

In 1999, the Commonwealth Government commissioned a review of offshore safety management in response to the Government's 1998 commitment to review the Australian offshore safety case regime and Commonwealth concerns as to the adequacy of the current regulatory arrangements. This report provides the background to the current regulatory system, details the objectives and mechanisms of the review, discusses the findings of the evaluation of the regime by an independent team of offshore safety experts and details the Commonwealth's response to this and other inputs.

## 1.2 Structure of the Review

A tripartite safety review steering committee, drawing its membership from the National Oil and Gas Safety Advisory Committee and the ANZMEC Upstream Petroleum Sub-Committee, oversaw the review, ensuring its independence and continued focus. The steering committee endorsed proposed terms of reference and agreed to a three phase process.

Phase 1, a compilation of statistical and best practice information, informed Phase 2, the core of the review, comprising an independent evaluation of the Australian offshore legal and administrative arrangements relating to safety. This was conducted by an international team of offshore safety experts (the Independent Review Team) whose report was submitted to the Commonwealth on 30 March 2000.

Phase 3 involved consideration of the implications of the Independent Review Team's recommendations and the development of preferred policy options by the Commonwealth. This was undertaken in close consultation with the Review Steering Committee and senior State/NT officials.

## 1.3 Findings of the Independent Review Team

The primary conclusion reached by the Independent Review Team was:

*“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.”*

In particular, the Independent Review Team found that:

- there are too many acts, directions and regulations regulating offshore petroleum activities, their boundaries are unclear and application is inconsistent, different sets of legal documents apply for each of the different States/NT and there are overlaps in legislation
- the State/NT safety regulators lacked regulatory skills, capacity and consistency and did not have a clear view of their role;
- the Commonwealth did not have sufficient resources, technical expertise, credibility and authority to drive the required changes.

The Team made two central recommendations:

- the current Commonwealth safety case regime's framework of legal documents should be revised;
- the current safety case regime's regulatory system should be restructured.

In particular, it recommended that a national petroleum regulatory authority, similar to AMSA, should be developed to oversee the regulation of safety in Commonwealth offshore waters.

#### **1.4 Stakeholder's Response to the Independent Review Teams Report**

The findings and recommendations of the Independent Review Team in regard to all matters other than those relating to deficiencies in the regulatory structure were for all intents and purposes, non-contentious and agreed by all parties.

Phase 3, therefore, concentrated on developing the preferred policy option to recommend to Government the future structure of offshore safety regulation in Australia. The process was long and protracted and involved close liaison and negotiation with State/NT regulators, industry and employees in bilateral and multilateral forums. This group of stakeholders hold a range of views that each strongly believes to be valid. The consultation process was aimed at accounting for the range of polarised views that existed and attempting to reconcile the differences to achieve a consensus outcome.

In summary, the State/NT jurisdictions, whilst agreeing that some change is necessary, strongly argued for the retention of the current dis-aggregated

system. APPEA, the body representing the upstream petroleum industry, stated that it does not believe that the case made by the States/NT for the continuation of the current regulatory arrangements is either compelling or convincing, and that in its view, the development of a national regulatory authority would give the best possible administrative outcome. Workforce representatives have indicated their conviction that only the development of a single national safety authority will achieve effective uniform processes across jurisdictions and an appropriate level of expert human resources with salary and conditions that can stem the drain of personnel from the Designated Authorities.

The tripartite Review Steering Committee representing stakeholders concluded its input to the review process with the development of a position paper "The Views of the Steering Committee" (see Section 6.2.4). The Committee was unable to agree on the form of the future regulatory structure, but summarised the consensus views of the member of the Committee in regard to the future directions for the Australian offshore safety case regime. In essence, the Committee agreed that:

- the necessary steps should be developed to establish an offshore safety administration that is nationally consistent;
- all necessary steps to achieve consistency between jurisdictions should be developed and implemented;
- all Commonwealth offshore safety jurisdictions should be adequately resourced as fast as possible.

## **1.5 Legislative aspects**

The Commonwealth has agreed with the stakeholders to form a tripartite working group to consider the implications of these findings and to agree on the actions required to implement corrective actions. The Working Group membership is the National Oil and Gas Safety Advisory Committee (NOGSAC) and the new Minerals and Petroleum Council. This activity will also need to be consider the legislative implications of implementing the proposed independent safety authority. The Department has already embarked on a consolidation of the PSLA regulations which will give effect in part to the Team 's recommendations.

## **1.6 The Commonwealth Preferred Option for the Future Regulation of Offshore Safety**

As noted, agreement could not be reached between all parties on the best structural arrangements for that national safety administration. The Commonwealth's view was that proposals had to be defensible and supportable in the light of world best practice.

Considering the IRT's findings and recommendations, the strongly-held views of the workforce and the industry and the Commonwealth's long standing concerns regarding the adequacy of the State/NT administration of safety, the Commonwealth is obliged to give priority to best practice safety regulation in Commonwealth offshore waters.

The Commonwealth therefore proposes that the regulation of safety in its offshore waters be undertaken by a single safety authority, answerable directly to the Federal Minister, using uniform policy and procedures throughout, and with pay and conditions which make it possible to recruit and retain appropriately skilled and experienced staff.

Such unilateral action by the Commonwealth, whilst achieving improved safety regulation for Commonwealth waters, could result in a number of undesirable side effects for the States/NT and for industry operating in both Commonwealth and State/NT jurisdictions.

The State/NT Departments that administer offshore safety have additional responsibilities which extend beyond Commonwealth offshore waters and they currently use the same human resources to regulate petroleum safety in State waters and aspects of onshore operations. These resources are increasingly scarce and costly, and the creation of another safety regulator for Commonwealth waters will result in expensive duplication and increase the competition for essentially the same limited pool of expert regulatory personnel.

Accepting that the creation of a single regulator for Commonwealth offshore waters will not be optimal for the wider regulation of States/NT petroleum operations, the Commonwealth proposes that an independent authority be developed that will regulate both Commonwealth and State petroleum safety activities.

Conceptually, the same personnel would undertake safety regulation in both State/NT jurisdictions - reporting to the Commonwealth Minister for activities in Commonwealth waters and to State Ministers for State activities.

This would effectively result for the States/NT in similar structural arrangements as at present, with reporting and accountability to relevant State/NT Ministers for jurisdictional activities. It would, however, allow the Commonwealth to directly control the administration of safety in Commonwealth offshore waters, with reporting and accountability to the relevant Federal Minister.

The amount of work required and the time taken to develop the legislative, structural and procedural requirements to implement the new safety authority will be extensive. In the meantime, the Independent Review Team has identified a number of deficiencies in the present arrangements,

and the tripartite Steering Committee has agreed with the Commonwealth on a number of actions that urgently need to be undertaken. The immediate improvement of the current offshore safety regulatory arrangements is an imperative for the Commonwealth, and as made clear in the views of the Safety Review Steering Committee, also for Designated Authorities, industry and employees.

In view of the priority set on these measures by both the tripartite Review Steering Committee and the Independent Review Team, the Commonwealth feels that their implementation must be undertaken as soon as possible, and cannot be set aside whilst the process for developing either the independent national or Commonwealth Offshore Safety Authority is in train.

The Commonwealth therefore recommends a move forward on two parallel fronts:

- implementation of the improvements to the current legislative framework and regulatory arrangements as per the measures described above and a formal Purchaser-Provider arrangement between the Commonwealth and the States/NT to underpin the Commonwealth's requirement for standardisation of procedures, development of technical guidelines, etc; and
- concurrent development of the new authority (including consultation on the form and charter of the new authority, procedures, drafting of new legislation, development of agreements on reporting and accountability arrangements, etc).

These activities will need to be adequately funded and it is proposed that a new hypothecated industry safety levy be implemented for this purpose.

## **1.7 Industry Safety Performance Measurement - Future Directions.**

A number of issues of concern in regard to safety performance measurement have arisen during the course of this review relevant to the ability of the Commonwealth to collect, analyse and usefully apply safety performance information and to benchmark the performance of the Australian industry and offshore safety case regime against international best practice.

In view of evidence that the level of risk in UK and Norwegian offshore jurisdictions is increasing and that there is a raised potential for a major accident event, it is of particular concern that the Commonwealth is unable to determine whether or not Australia is also experiencing a national upward trend in high potential incidents. It is therefore felt to be appropriate to review the scope of Australia's incident data collection system to ensure that it is meaningful for the future.

Australia's continued involvement in an international safety performance benchmarking project that has the potential to develop a suite of standardised global indicators, both lag and leading, that can be used by industry for their own internal benefit and which will also allow benchmarking between companies on an international basis is also supported.

## 2 Introduction

In the last four decades, the extraction of petroleum products from offshore fields throughout the world has presented many challenges. Knowledge and technology has advanced and, with that, the risks to personnel on the offshore structures used to extract oil and gas have also changed. Moreover, the perceptions and understanding of risks have changed as a direct result of experience, a prime example being the Piper Alpha disaster in the UK sector of the North Sea.

The regulation of offshore health and safety has also evolved over these decades, although many countries still vary in their approach. Prior to Piper Alpha, most approaches involved the detailed prescription of the safety resources required. As a direct result of the Piper Alpha disaster, the UK altered its regulation by creating an independent offshore health and safety regulatory body, adopting a goal setting approach to legislation and creating a safety case regime within that approach. Australia similarly adopted safety case and goal setting regulation in response to Piper Alpha. The legislation for this regime was introduced in 1992 and the regime was fully operational from 1996.

The advancement of offshore knowledge and technology has continued as the Australian offshore petroleum industry activities themselves have grown and developed. It is important that health and safety matters are integral to this continuing change. Inherent in this is the requirement that health and safety regulation keeps pace with current best practice. It must provide a motivation for the industry to look at their health and safety responsibilities in terms of continuous improvement, and not just bare minimum compliance. This places a responsibility on those who determine and maintain the sphere of regulation to ensure that the provisions are “fit for purpose” and reflect the current state of an ever changing industry.

With this in mind, the Commonwealth of Australia in 1999 commissioned a review of the regulatory system for offshore health and safety, demonstrating a proactive attitude towards this issue. This report provides the background to the current regulatory system, details the objectives and mechanisms of the review, and discusses the findings of the evaluation of the regime by an independent team of offshore safety experts. The recommendations of the review team are analysed, taking into account consultation with the stakeholders, to arrive at an implementation strategy.

# 3 THE PURPOSE AND STRUCTURE OF THE REVIEW

## 3.1 Why Conduct a Review?

An objective-based safety case regime has now been in operation in the Australian offshore petroleum industry for some six years and, it was timely to conduct a comprehensive review of the Australian arrangements for administering safety in the offshore petroleum sector. This was foreshadowed in the Commonwealth's 1998 *Minerals and Petroleum Resources Policy Statement*, which committed the Government 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". From this commitment terms of reference were identified for a review of the safety arrangements and performance of the petroleum industry in Commonwealth offshore waters.<sup>1</sup>

The Commonwealth review is timely from a number of aspects:

- after this length of operation as a Commonwealth program, it is pertinent to examine the regime to ensure that it is delivering appropriate, effective and cost efficient outcomes for the Australian community;
- the Commonwealth aspires to see offshore safety administration conducted in a manner consistent with world best practice. It is therefore appropriate to measure Australia's performance in managing offshore safety in comparison to world best practice and to identify areas for improvement.
- audits by the Commonwealth of the State/NT Designated Authorities have raised a number of concerns as to the adequacy of their regulatory resources and the consistency of the application of the safety case legislation on a national basis;

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<sup>1</sup> For the purposes of this report, the terms 'Commonwealth offshore waters' or 'Commonwealth waters' mean the adjacent areas to which the provisions of the Commonwealth's Petroleum (Submerged Lands) Act 1967 apply.

- the Commonwealth is aware that there is criticism from industry and the State/NT regulators as to the adequacy of its own safety resources;
- the report of the Longford Royal Commission, even though examining specifically an onshore incident under State legislation, has raised issues such as the effectiveness of implementation of safety management systems which are pertinent to the implementation of safety cases in the offshore industry; and
- an integral component of the safety case regime is continuous improvement. International best practice requires regular assessments to monitor the effectiveness of the regime and make improvements where possible.

### **3.2 Objective of the Commonwealth Review**

As set out in the terms of reference, the objective of the review is 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;
- the appropriateness, effectiveness and cost efficiency of 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 is to make recommendations to improve the overall operation of the Australian offshore petroleum safety case regime. The full text of the Terms of Reference is in Appendix A.

### **3.3 Oversight by Safety Review Steering Committee**

Oversight of the Review was through a steering committee (the Review Steering Committee) comprising representatives of the Commonwealth and States/NT, the offshore industry and the workforce. The membership was drawn from the tripartite National Oil and Gas Safety Advisory Committee, the Australia-New Zealand Minerals and Energy Council Upstream Petroleum Legislation Sub-committee and the Australian Petroleum Production and Exploration Association. It was Chaired by the Commonwealth Department of Industry, Science and Resources.

### **3.4 General Approach**

The Review was managed and coordinated by the Offshore Safety Section of the Petroleum and Electricity Division. The approach selected was to conduct the review in three phases:

- Phase 1 involved collection of objective evidence;
- Phase 2 was an independent evaluation of the regime, including extensive stakeholder interviews, by an international team of safety experts (Independent Review Team) and culminated in their submission of an independent report; and
- Phase 3 entailed the consideration of policy options and the development of recommendations for the Commonwealth Government.

#### **3.4.1 Phase 1**

Historical data relating to the safety performance of the Australian offshore petroleum industry together with public submissions and the report of the Longford Royal Commission was analysed to provide an objective background to the performance of the safety case regime, and to establish a context for inquiry.

Information was sourced from:

- the States and Northern Territory petroleum accident/incident databases;
- a report prepared in 1996 by Dr Tony Barrell titled ‘The Regulation of Health and Safety in the Australian Offshore Petroleum Industry’;
- public submissions;
- the Royal Commission Report into the Longford gas plant explosion;
- a workshop on Regulatory Theory;
- a workshop on Performance Measurement;
- Commonwealth Audit Reports.

From this information, a paper was developed by ISR that identified a suite of issues which had the potential to confront the offshore petroleum industry. This *Issues Paper* identified 18 target areas on which the Review was to focus and is discussed in detail in the independent review team's report. The opportunity remained throughout the review to identify and include additional issues. It should be noted that the results of Phase 1 were inconclusive in terms of demonstrating whether or not the level of offshore safety had in fact improved since the introduction of the safety case regime.

### **Workshops**

Two workshops were conducted during Phase 1. These were both attended by the Independent Review Team. The first considered the theoretical underpinning of the role of the regulator in a safety case regime. The objective of this exercise was to establish some context for the issues to be raised in the stakeholder survey undertaken by the Independent Review Team. The Independent Review Team, the Safety Review Steering Committee members and State/Territory regulators attended the workshop and sessions were led by academics that specialised in the field of safety regulation. The material in Chapter 2 has generally been drawn from the workshop.

The second workshop on performance measurement was to establish a program to develop lead performance indicators for the petroleum industry and promote their adoption internationally by the International Regulators Forum. As well as the Independent Review Team, representatives from the US Minerals Management Service, State/Territory regulators and some members of NOGSAC also participated in this workshop. Subsequently, the US Minerals Management Service seconded one of their employees to work with DISR to progress the development of performance measures that could be used internationally. This is discussed further in Chapter 11.

### **3.4.2 Phase 2**

A team of three was selected by interview to conduct Phase 2 of the Review - an independent evaluation of the regime. The team comprised two senior Norwegian safety regulators (Mr Magne Ognedal and Mr Odd Bjerne Finnestad) with extensive safety regulatory experience in the offshore petroleum industry and a UK consultant and former senior executive with BP (Mr Ed Spence) with extensive safety experience in the UK offshore safety case regime.

The information obtained in Phase 1 was forwarded to the Independent Review Team to provide both a historical perspective and a current snapshot of the regime so as to detail the administrative and legislative frameworks. This material was evaluated prior to the Team undertaking stakeholder surveys.

The Team conducted extensive interview sessions with all major stakeholder groups - including the Commonwealth, the Designated Authorities, industry executive and line managers, the offshore workforce, contractors and consultants. The stakeholder survey was conducted over 37 days during which time 52 information sessions/interviews were conducted with approximately 200 stakeholders. Individual interviews were conducted for 1 hour and sessions with groups of stakeholders for 3 hours. In generating their independent report, the Team was asked to evaluate their findings in the context of international best practice and their own extensive

knowledge and experience. The report by the Independent Review Team is attached to this document as Appendix B.

### **3.4.3 Phase 3**

Following the completion of Phase 2 of the Commonwealth Review, DISR considered the Independent Review Team's report and the quite polarised views of the major stakeholders to prepare this report and develop recommendations to Government. The Review Steering Committee was particularly involved during this phase and the members played a strong consultative and representative role acting for their various constituencies. Their work culminated with the drafting of a consensus position paper "The Views of the Review Steering Committee", which is included in Chapter 7.

## **3.5 The Structure of the Report**

The remainder of this report has the following structure:

- in the next chapter some background is provided on current offshore petroleum regulation in Australia, defines the basic structure of a safety case and gives context to the safety performance of the industry;
- a brief examination is made in Chapter 5 of the theory and historical precedents of safety regulation, and from these proposes some broad principles against which proposed changes to the Australian offshore safety regime can be tested;
- Chapter 6 outlines the findings and recommendations of the International Review Team who were specifically commissioned to look at the Australian safety management arrangements, consult widely, and benchmark our performance against world best practice;
- the Stakeholders' responses to the findings and recommendations made by the International Review Team are discussed in Chapter 7;
- in Chapter 8 proposed changes to the safety case legal framework are discussed.
- in Chapters 9 and 10 are presented the Commonwealth's preferred options on the structure of the administration structure for safety regulation in Australia; and
- finally in Chapter 11, the future directions on the remaining issue of safety performance measures are discussed.

# 4 Safety Regulation in the Australian Offshore Petroleum Industry

## 4.1 Context of Current Offshore Safety Regulation in Australia

The Petroleum (Submerged Lands) Act was enacted in 1967 to legislate all aspects of the mining of petroleum in Australia's marine jurisdiction. In keeping with the practice of the day, it prescribed in specific detail the requirements it placed on persons subject to its provisions.

In response to the 1988 Piper Alpha disaster in the North Sea, the Australian Government established the tripartite Consultative Committee on Safety in the Offshore Petroleum Industry, which in 1991 recommended that key outcomes of the UK Committee of Inquiry into the Piper Alpha disaster chaired by Lord Cullen be implemented, and in particular that:

- the safety case regime be adopted in Australia; and
- new performance based regulations replace the existing prescriptive safety rules contained in the *Petroleum (Submerged Lands) Act 1967* (PSLA).

The PSLA was amended in 1992 to require safety cases for all facilities. The safety case regime has been fully operational since 1996, when detailed safety case regulations under the Act, underpinned by guidelines for their preparation and submission, came into effect. The PSLA also includes provisions for penalties and enforcement measures to ensure compliance from the shop floor to the boardroom.

## 4.2 The Safety Case Regime

Objective based (or goal setting) regimes, including the safety case regime, are based on the principle that the legislation sets the broad safety goals to be attained and the operator of the facility develops the most appropriate methods of achieving those goals. A basic tenet is the premise that the ongoing management of safety is the responsibility of the operator and not the regulator.

Within this objective-based regime there is a requirement that the operator of an offshore petroleum facility must make a formal “case” to the regulator which outlines the types of safety studies and analyses undertaken, the results obtained and the management arrangements in place to assure the continued safety of personnel on a particular facility. The ‘Safety Case’ must establish a strong enough argument, supported by evidence that will satisfy the regulator, that the operator knows what technical and human activity related safety problems exist, how they must be managed and how the safety of personnel will be assured in the event of an emergency. The safety case must also identify the methods used to monitor and review all activities to continually improve safety performance. Once a safety case has been accepted by the regulator, it forms the ‘rules’ with which the operator must comply in operation of the facility and against which those operations are audited by the regulator. In general, a breach of an accepted safety case is a breach of the regulations.

#### **4.2.1 Safety Case Concept**

A safety case is designed to:

- give the regulator confidence that the operator has the ability, commitment and resources to properly assess and effectively control health and safety risks;
- provide a working document against which the operator and regulator can check that the accepted risk control measures and safety management systems have been properly put into place and continue to operate in the way in which they are intended.

It is critical that the measures outlined in the safety case are strictly implemented and adhered to by the staff of the facility on a day to day basis. It is also critical that the safety case is reviewed throughout the life of the project and updated if improvements are identified - the fundamental safety case principle of ‘continuous improvement’.

Another fundamental principle of the safety case concept is that the employees who will be at risk from the operation of a facility must be involved in the development and maintenance of its safety case - particularly in the initial and ongoing process of identifying hazards and developing risk controls.

A typical offshore safety case comprises three elements - a Facility Description, a Safety Management System (SMS), and a Formal Safety Assessment (FSA).

The Facility Description must contain enough information about the facility to verify that the design and operating philosophy is consistent with the

SMS and the assumptions and outputs of the FSA and describes the operational environment of the facility.

The Safety Management System (SMS) is the heart of the safety case and ensures a planned, systematic, verifiable and continuously improving approach to achieving safety and health objectives. It is the mechanism that ensures targets and risk reductions strategies are identified, responsibilities are set, people are competent, and activities and actions of all personnel are coordinated to minimise risk. The SMS harnesses the cooperation of all individuals in a joint effort to manage workplace technical and occupational health and safety hazards on a daily basis.

In order to demonstrate that the operator has strategies, systems and procedures in place to comply with the various regulatory requirements that may be applicable, the SMS must be comprehensive, integrated and contain feedback loops that continually measure performance and drive change (continuous improvement).

In the FSA, each aspect of the facility design and proposed operations, including potential emergency scenarios, is analysed for possible hazards that may effect personnel. Once identified, each hazard is assessed to determine what events could result in an incident and what the likelihood, possible consequences and relative risk to personnel would be if an incident occurred.

The results of the FSA and general safety studies are used to devise methods of eliminating or controlling hazards to reduce risks. It is a demonstration that risks to personnel have been reduced to as low as reasonably practicable (ALARP).

The safety case approach has recently been applied far more widely than just to offshore petroleum facilities. It was originally applied in the nuclear power industry and then to other onshore major hazard facilities. It is also currently being used, for example, by the Royal Navy, the Royal Australian Navy and for the regulation of gas transmission.

### **4.3 Institutional Framework/ Legislative Context**

#### **4.3.1 The Offshore Constitutional Settlement**

The framework established for the administration and regulation of the PSLA reflects the Australian political context – ie, a federal system comprising a relatively small population spanning a continent governed by two primary level of governments (Commonwealth, State/Territory).

At the time the PSLA was enacted, considerable uncertainty surrounded the constitutional position of the Commonwealth and the States in the offshore area. The issue of authority over matters relating to the seabed of the territorial sea and the continental shelf was resolved in the 1970s after the States challenged the Commonwealth's assertion of sovereignty over the then 3 nautical mile territorial sea, with courts in 1975 upholding the Commonwealth's rights. As a result of this decision, a re-ordering of the powers and responsibilities of the Commonwealth and the States was required.

In June 1979, the Commonwealth and the States agreed to a series of constitutional issues known collectively as the *Offshore Constitutional Settlement* (OCS) and in 1980 the PSLA was amended to give effect to relevant aspects of the OCS. The purpose of the OCS was to generally maintain the States role in the management of offshore areas, particularly on "...topics which history, common sense and the sheer practicalities of the matter mark out for State administration rather than Commonwealth administration, in the absence of overriding national or international considerations. (eg) The enforcement of the general criminal law in the territorial sea....". [*Senator the Hon. Peter Durack, QC Offshore constitutional settlements, 1978-1979, Attorney Generals Department.*]

In summary, post OCS offshore petroleum arrangements have the following significant features:

- the States/NT have title to all waters landward of the three nautical mile limit and have the same power to legislate over these coastal waters as they do over their land territory;
- laws on both sides of the three mile jurisdictional boundary are identical in structure, thereby continuing to provide a high degree of uniformity and consistency in administration of the offshore petroleum regime;
- within coastal waters executive powers are vested in the State or Territory Minister; and
- beyond the coastal waters, cooperative governance of the Commonwealth's legislation vests executive powers jointly in Commonwealth and State/Territory Ministers (the "Joint Authority" in respect of each adjacent area) on all major decisions affecting petroleum exploration and development (with the Commonwealth Minister's view to prevail in the event of disagreement) and allows the State/Territory Ministers (the "Designated Authority") to exercise a range of day to day decision making powers on the Commonwealth's behalf.

In the main, the legislation confers on the Designated Authority (DA) the day to day administration duties and regulatory functions, with the Joint Authority (JA) not ordinarily involved in administrative matters. The JA does however have a specific role and the Commonwealth Minister can veto motions with a casting vote in matters of contention.

Although the offshore waters and coastal waters are governed by separate, if mirror, legislation, in practice the designated Authorities use the same resources to administer petroleum activities in their own coastal waters and land territories as they do to administer the Commonwealth waters.

#### **4.3.2 Safety Regulations, Directions and Guidelines**

The PSLA legislates all aspects of offshore petroleum mining, including titles, production, environment, and safety. The Act itself is supplemented and extended by regulations, directions and guidance documents.

#### **4.3.3 Regulations**

Regulations relate to issues identified in the Act and must be made through the formal law making process. Until 1997 the Schedule of Specific Directions was the primary means of regulating safety offshore under the PSLA. In 1997 the safety provisions of the Schedule were replaced by regulations to the PSLA, titled ‘Management of Safety on Offshore Facilities.’

#### **4.3.4 Directions**

The PSLA provides powers to the Designated Authority to issue, in writing, a formal *Direction* relating to any issue covered by the Act to a Permit or Licence Holder or any person involved in petroleum mining activities. In practice, two forms of Directions regulate day to day petroleum mining operations. The first is through issue of a general Direction requiring all persons involved in petroleum mining activities to comply to a set of detailed rules. The second form of Direction is through the issue of specific instructions to an individual Permit or Licence Holder (Operator).

#### **4.3.5 Codes of Practice, Guidelines and Other Supporting Information**

Supplementary technical guidance to legislation in Australia can take two forms. The first is through the use of Approved Codes of Practice, the second is through Guidelines.

Approved Codes of Practice can be any supplementary guidance, standard, rule, specification or provision relating to safety, provided powers exist under the principal Act and they are approved by a State, Northern Territory or Commonwealth Minister.

Guidelines and other supporting information provide description of good industry practice and compliance with them can be used in the demonstration of reasonable care. However, compliance with a Guideline does not generally provide direct evidence of compliance with the legislation.

#### **4.3.6 National Oil and Gas Safety Advisory Committee**

To enhance consistency between the States/NT, add rigour to the regime and provide for continual improvement in offshore safety outcomes, the Commonwealth established a non-statutory tripartite industry, government and union advisory body - the National Oil and Gas Safety Advisory Committee (NOGSAC). NOGSAC is charged with advising the Minister on offshore safety and in particular, to inquire into and report to the Minister on matters affecting health and safety in the offshore petroleum industry and with developing recommendations, guidelines and plans for measures consistent with achieving a healthy and safe environment in the offshore petroleum industry.

The Commonwealth also informally established the Safety and Environment Administrator's Forum (SEAF) of Australian offshore safety regulators with the aim of exchanging information of relevance to the State/NT safety regulators and promoting consistency across the jurisdictions.

Although not strictly part of the formal legislative framework, NOGSAC and the SEAF play valuable roles in promoting information sharing, consistency and national best practice.

#### **4.3.7 The International Regulator's Forum**

In the early 1990s, the main Northern Hemisphere offshore safety regulators developed an informal network (the International Regulator's Forum (IRF)) to enhance international communication and information sharing. The Forum now involves Australia, Brazil, Canada, the Netherlands, New Zealand, Norway, the United Kingdom and the United States. Australia is represented on the International Regulator's Forum by the Commonwealth and attends with one of the DAs (on a rotating basis). Whilst, like NOGSAC, the IRF is not part of the Australian formal legislative framework, it provides an extremely valuable opportunity for exchanging information and best practice benchmarking with international regulators.

#### **4.4 Onshore Major Hazard Facility Safety Regulation**

Australia has recently started following the lead of the European nations in applying the safety case concept to major hazard facility safety regulation. Victoria now has in place specific legislation applying a safety case requirement to major hazard facilities (MHF) and has developed a sophisticated and extensive MHF safety regulatory unit.

A recent meeting of national MHF regulators discussed at length the issues involved in the wider application of MHF safety case regulations, in particular the costs involved, the difficulties in identifying and recruiting sufficient expert staff and the possibilities for resource sharing. Whilst the meeting reached no definite conclusions in regard to these issues, they agreed that recruiting suitable staff would be a major issue for the wider application of MHF safety case regulation and that they would continue to work to resolve these issues. The potential of additional competition for the same safety regulatory resources used offshore poses challenges for the Designated Authority, but there are also opportunities for achieving synergies, for example, in the wider sharing of information and possibly even resources.

#### **4.5 Industry Safety Record**

The primary focus of the safety case regime is on reducing the incidence of major accident events (MAE). The upstream offshore petroleum industry in Australia has a good record with respect to MAE.

Based on data compiled by the industry's peak representative body, the Australian Petroleum Production and Exploration Association (APPEA), Australia's upstream petroleum industry Lost Time Injury Frequency Rate (LTIFR) has decreased by over 75% in the last decade (see Figure 4.1). Furthermore, the upstream petroleum industry's LTIFR remains considerably lower than the LTIFR of many other industry sectors in Australia, including: non-petroleum mining; transport and storage; manufacturing; agriculture, fishing and forestry; construction; retail; and education (see Figure 4.2).

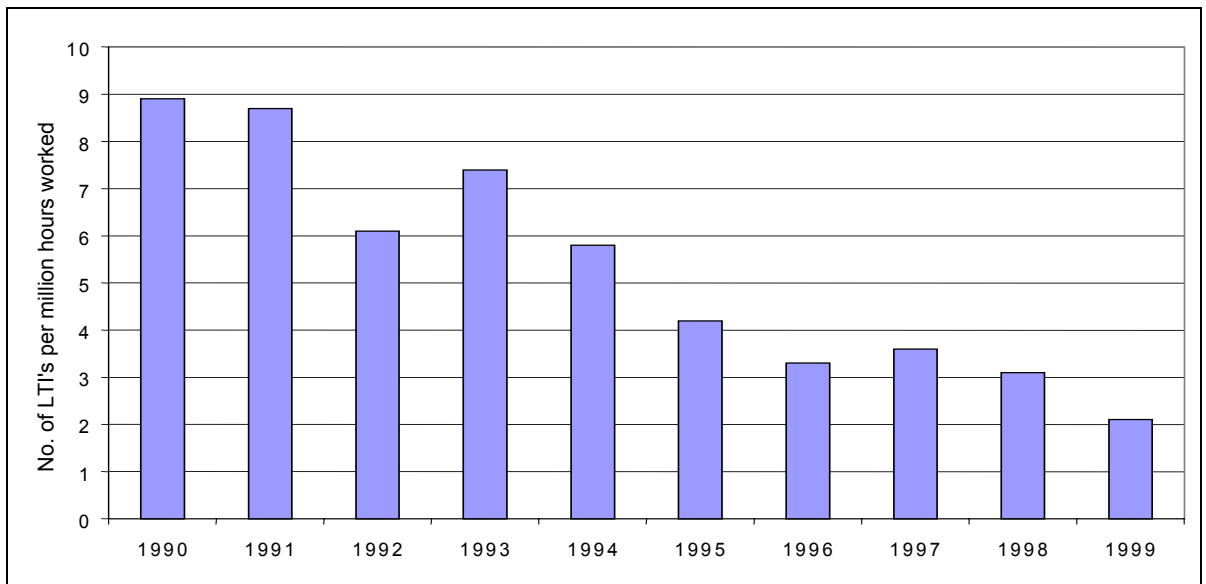


Figure 4.1: LTIFR for APPEA member companies 1990-1999. (Source: APPEA)

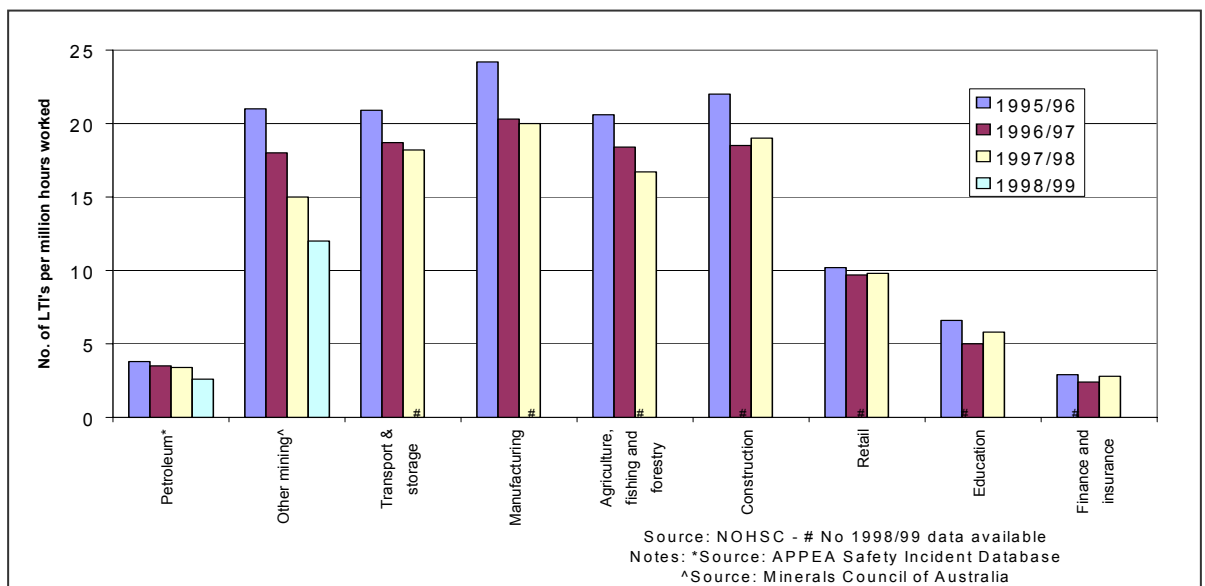


Figure 4.2: LTIFR by industry sector 1995-96 to 1998-99. (Source: APPEA)

In addition, it must be noted that the LTIFR values presented in Figures 4.1 and 4.2 are representative of all jurisdictions of Australia's upstream petroleum industry (offshore and onshore). Offshore LTIFR values are considerably lower than the overall LTIFR. LTI's in both State and Commonwealth waters are generally lower than the occurrence of LTI's onshore (see Figure 4.3).

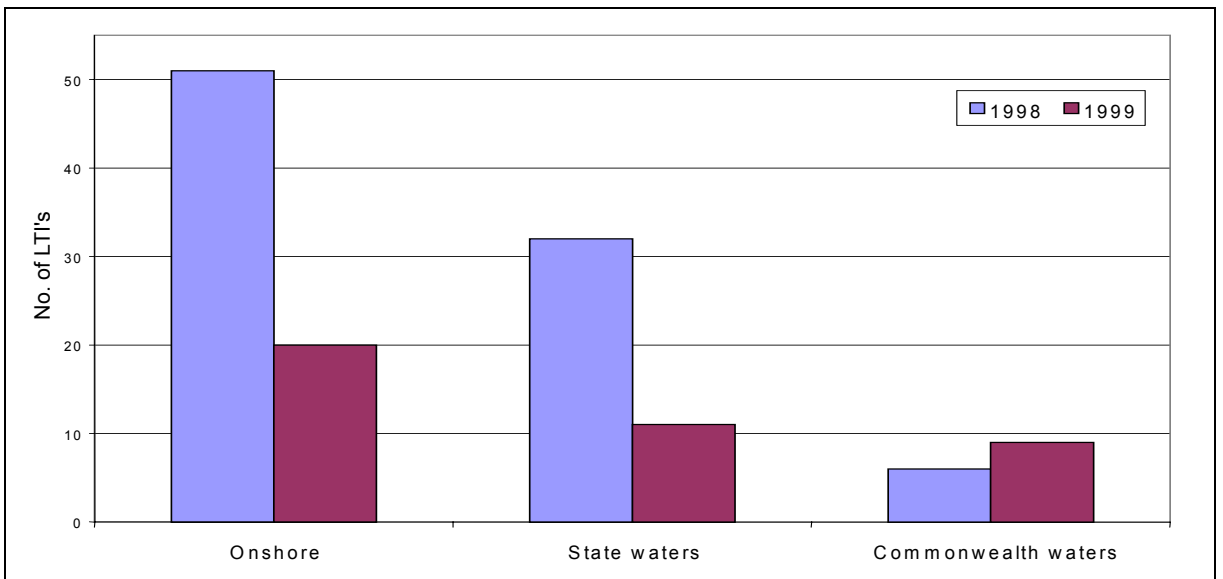


Figure 4.3: The occurrence of LTI's by jurisdiction for APPEA member companies 1998-99. (Source: APPEA)

There have been a number of upstream petroleum industry fatalities recorded in onshore incidents during the last four years (eg., the 1998 explosion at the Esso Longford gas plant). However, no offshore fatalities have been recorded by APPEA member companies during this period (see Figure 4.4).

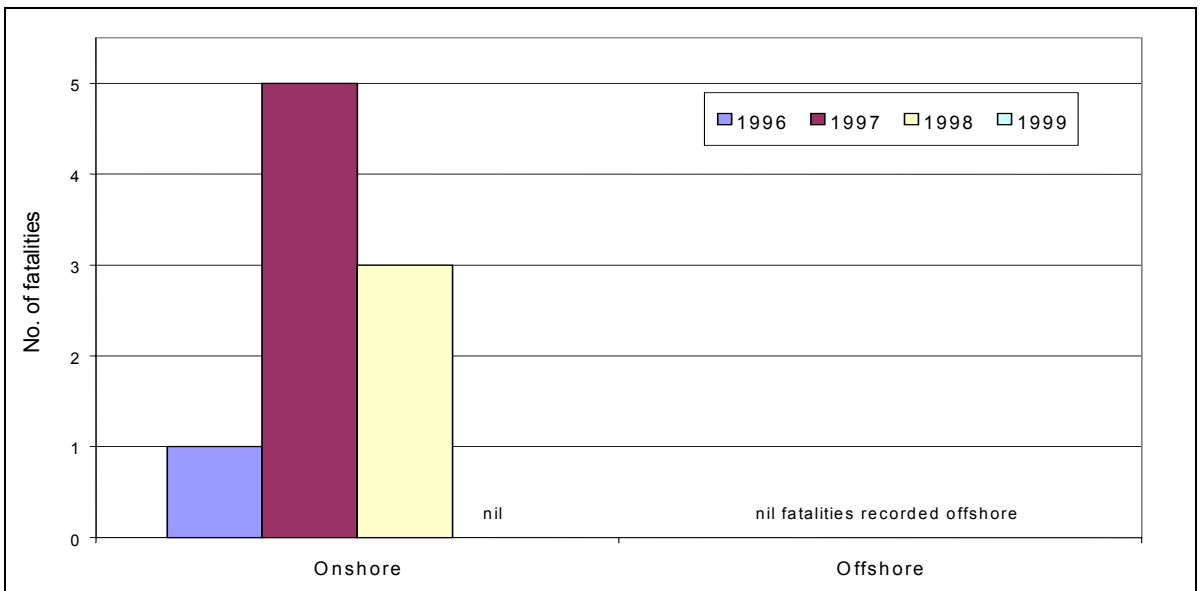


Figure 4.4: The occurrence of fatalities by jurisdiction for APPEA member companies 1996-99. (Source: APPEA)

While the low level of historical injuries are a good record, it is generally now accepted that LTI's do not provide a good correlation with the likelihood of major accident events (MAE's) in the future. Therefore other measures should also be considered when developing MAE risk management strategies. Recent major incidents that can be categorised as major accident events in a variety of industries, demonstrate this, since they have occurred in facilities that had, until that point, very low LTIFR's. The question of how best to measure offshore safety is treated in more detail in Chapter 11

## 5 Safety Regulation in Theory and Practice

In a discussion paper released in late 2000, the UK Health and Safety Executive (HSE) outlined the essential characteristics under which they operate their safety case regimes when giving consent (permission) for an operator (duty holder) to undertake an activity. These characteristics apply to their regulatory responsibilities for the railways, nuclear, offshore and onshore major hazard industries. They also apply to the Australian offshore petroleum safety case regime and they are set out in Box 4.1.

### Box 51 Principles of ‘permissioning’ regime

Through the political process, the regulator and the regulated are subject to society’s views about the tolerability of risk:

- *‘permissioning’ regimes are applied to high hazard industries, about which society has particular concerns.*

The legal duty to manage risks lies with the organisations that create the risks – ‘permissioning’ regimes require them to describe how, but a description is not sufficient without the active commitment of the duty holder in practice:

- *duty holders must identify the hazards, assess the risks, develop effective control measures and keep a current documentary record of all this;*
- *the control measures must cover design and hardware, systems and procedures and human factors in a coherent whole;*
- *duty holders must make and test arrangements for managing emergencies and mitigating their consequences.*

A goal-setting framework is preferable to a prescriptive one because it makes duty-holders think for themselves:

- *the flexibility of goal-setting is more likely to lead to arrangements for controlling risk which are tailored to the particular circumstances, and which through safety case maintenance and re-submission will remain so;*
- *within a goal-setting context, ‘permissioning’ regimes define elements of the management arrangements required.*

The involvement of the safety regulator through ‘permissioning’ should give society an added level of confidence that duty holders are capable of discharging their legal responsibilities to control the risks:

- *'permissioning' regimes impose more rigid frameworks on the safety regulator and require more positive regulator engagement than other approaches to regulation;*
- *'permissioning' regimes provide the safety regulator with additional levers, which can be developed in the light of the industry's performance;*
- *the duty holders' documentation provides part of the basis for targeting safety regulator intervention;*
- *but 'permissioning' does not provide a guarantee of safety in the operation of the duty holders' arrangements.*

Source: UK HSE

When these principles described by the HSE are applied, they become quite detailed and operationally specific. This chapter focuses on higher level principles in order to develop a framework for assessing the appropriateness of recommendations for changes to the current regulatory structure contained in Chapter 9.

## **5.1 Should the Commonwealth be involved in offshore safety regulation?**

There are some fundamental propositions which provide the rationale for the involvement of the federal government in safety regulation. These are:

- under international law, the rights to explore and exploit (or develop) the offshore petroleum resources reside with the Commonwealth, not the States/NT;
- through the PSLA legislation, the Government allows private companies to develop the resource, and requires secondary taxation payments for this entitlement;
- companies have a responsibility to the Government, the wider community, and the workforce to recognise and control the externalities that they create. For offshore petroleum production, these externalities particularly relate to environment and safety issues; and
- because of the legislative underpinning of the companies' actions, the Government has the responsibility for ensuring that the companies meet their safety and environment responsibilities.

These propositions are entirely consistent with the growing emphasis on triple bottom line reporting (covering economic, environmental and social outcomes). They reflect the Government's concern that the offshore workforce is entitled to the provision of a safe work environment.

Quite apart from the risk to individuals, there is also a public expectation that governments will regulate the activities of offshore petroleum producers to ensure that there are no major offshore accidents entailing hydrocarbon release which could damage the environment or which would disrupt national or regional energy supplies.

## **5.2 Is a Safety Case Regulatory Regime Appropriate?**

Most of the health and safety law currently applying in safety case regimes and elsewhere is goal-setting in terms of controlling specific risks; it sets out what duty holders must achieve, but not how they must do it. Much of this law replaced earlier prescriptive requirements, which instead spelt out exactly what physical controls duty holders had to put in place.

It is worth reviewing at this stage why a goal-setting safety case regime is the most appropriate regulatory regime for the Australian offshore industry. In considering approaches to safety regulation, three styles can be identified.

### **5.2.1 Prescriptive Regulation**

There are two inherent problems with regulation which relies entirely on prescription. The first is that the changes in technology which are constantly occurring in an industry such as offshore petroleum production means that the prescriptive regulations will become outdated very quickly, and could become an impediment to changes leading to greater efficiency, cost reduction or risk minimisation. To address this would require a large number of personnel dedicated to updating the regulations.

The second problem is that if governments decide and regulate what is appropriate to minimise risk, and companies comply with the regulations, the government has effectively accepted the role of risk minimisation for itself. The Commonwealth's view is that the responsibility for risk minimisation must lie with the operator. This view is entirely consistent with the observations made by the UK HSE in Box 5.1.

### **5.2.2 Goal Setting Regulation**

The 1972 Robens report in the UK marked the beginning of a revolution in the general approach to regulation of safety. Robens recommended that, rather than specifying standards and procedures to enhance safety, legislation should specify the policy goal itself - safety, and require employers to ensure the safety of their workers, so far as practicable. In principle it would be up to the employer to decide how best to achieve this

goal. Many jurisdictions have now adopted the principle of goal-setting legislation, also known as outcome-oriented or performance-based legislation.

Under goal setting legislation employers could not be expected to guarantee the safety of their workers absolutely. The requirement, therefore, was to ensure safety as far as practicable. But how could employers be sure that they had done what was practicable? They needed guidance, in the form of codes of practice and guidelines. Provided they complied with these, then in the event of an injury or fatality occurring, courts would conclude that they had done what was practicable and were therefore in compliance. In practice, therefore, the goal oriented regulatory regime tended to revert to prescription through guidelines.

### **5.2.3 Safety Case Regulation**

In recent years, regulatory requirements have undergone a further shift. Increasingly legislation is requiring employers and facility operators to introduce safety management systems. In some jurisdictions this has simply been a way of specifying what it is that employers must do to comply with the general obligation to ensure safety. But in the case of major hazard facilities, safety management systems have been mandated as part of a broader, safety case strategy.

Following major accidents in England (Flixborough, 1974) and Italy (Seveso, 1976), the European Union issued a directive to its member states to implement a safety case strategy for major hazard facilities (the 1982 Seveso Directive, replaced in 1996 by the Seveso II Directive). The radically new feature of the safety case strategy is that it requires operators of major hazard facilities to *demonstrate* to the regulator that they have identified, assessed and controlled the hazards in question. Among other things the Seveso Directive spells out in some detail the nature of the safety management systems which operators must implement. This is a further reversion to quite detailed prescription. The difference is that whereas earlier regimes specified technical details, the most recent approaches are specifying details of how safety is to be managed.

It should be pointed out that the move from Seveso I to Seveso II involves an increase in prescriptive control. The new Victorian major hazard regulations are based on this Seveso II approach.

It is also worth noting that in the Norwegian offshore safety regime which has for some years been goal-oriented, debate is now occurring about reintroducing some elements of technical prescription, such as the need for certain physical defences, regardless of the operator's risk assessments. The UK Health and Safety Executive is also adopting some elements of

prescription in its safety case regulations, for example conforming with approved guidelines.

Safety case regimes have not been confined to the petroleum production sector. They have for instance been adopted in the rail industry, in both the UK and Australia. The current Cullen inquiry into the Paddington rail accident in the UK has led to some doubts about whether the safety case strategy is being effectively implemented in this industry, and has raised questions about whether prescriptive elements are needed. But the inquiry has not cast doubt on the applicability of the safety case strategy to the oil and gas industry.

In its conclusions, the report of the Longford Royal Commission recommended that Esso's Longford facility be brought under a safety case regime, and noted that the PSLA (Management of Safety on Offshore Facilities) Regulations, (1996) provided a sound model.

### **5.3 Resourcing the Regulator**

The effective regulation of highly technical hazardous industries is critically dependent on the regulator being able to employ skilled personnel who have a close knowledge of the industry and its inherent risks. Without such resources the regulator will be unable to evaluate and independently judge the adequacy of the operator's risk minimisation measures.

With the establishment of the UK Health and Safety Executive's Offshore Division following the Piper Alpha accident, the number of safety regulators was increased to about 250, approximately 20 times the number that had been previously employed in the Department of Trade and Industry. These regulators were needed to implement the introduction of the safety case regime, and particularly to assess the large number of safety cases that were developed for North Sea operations. However the need for involvement by regulators does not necessarily decrease after a safety case has been accepted. For example, regulators are required to carry out searching audits of elements of the safety management system which require ongoing activity, such as incident reporting systems and management of change requirements, as well as checking on active employee participation in the ongoing management of safety. Therefore the size of the regulatory establishment would not necessarily be reduced after the regime has reached maturity.

The Victorian Government has accepted the need to employ competent, experienced personnel to regulate major onshore hazards and has appointed eight technical experts to its Major Hazards Unit which will operate under a safety case regime.

## **5.4 Clear and Effective Legislation to Underpin Regulation**

Safety regulation should be based on a comprehensive, clear and relevant legislative framework. This is important because industry's compliance with the legislation will be more difficult and more costly if these requirements are not met. The regulatory role of government will also be made more difficult if there is complicated or overlapping pieces of legislation including subordinate legislation.

The best approach by regulators to ensure that industry complies with legislative requirements is one of persuasion and education. However, it must also be clear that they can and will impose penalties in some circumstances. In this regard, offshore regulators need to have a graduated range of administrative penalties available to them up to the point of prosecution or closure.

In order to be in a position to impose penalties from time to time, regulators must have an arms length relationship with the companies they regulate.

There is a tension between regulation and industry facilitation, on the basis that there is potential for conflict of interest arising if the one organisation is responsible for both aspects. This is best known in relation to the UK Cullen inquiry following Piper Alpha, which recommended separation of these two functions.

## **5.5 Workforce Involvement**

The success of a safety case will be largely dependent on workforce understanding of its fundamental philosophy and application of the relevant parts of its safety management system in the work place. A safety case is considered "live" or "in force" if employees, contractors and managers are working within it and playing an important role in its development, implementation and improvement.

Accident prevention involves a three stage process: first, hazard identification, second, risk assessment and third, the implementation of appropriate controls. Employee participation is vital for the first and third stages. Investigations invariably show that major accidents occur, not because the risks have been incorrectly assessed, but because of inadequacies in the first or third stages of the process, i.e. hazards have not been identified (eg the hazard of cold temperatures at Longford) or controls which were supposed to be in place were not operating as intended (eg the failure of the permit to work system on Piper Alpha).

Furthermore, risk calculations sometimes assume that certain controls are in place, but if these controls are in fact defective, the risk assessments may under represent the actual level of risk. All this suggests that the efforts of both regulators and the regulated should be focussed, less on the details of the QRAs and more on hazard identification and on ensuring that controls which have been put in place to deal with identified hazards are working as intended.

Employee participation can be difficult to engage. For instance, the size, complexity and highly technical nature of the safety case may not be conducive to employee involvement and understanding. For example, Quantitative Risk Analysis uses a high level of statistical methodology which is considered by some employees as a “black art” with little relevance or meaning. It can also be difficult for employees to find the opportunity and motivation to engage with safety case material when competing with heavy shift work (when on-swing at the facility) and family and life issues off-swing.

## **5.6 Cost Efficiency**

The Government requires regulatory initiatives to be subjected to regulation impact assessment, which seeks to answer the question of whether the benefits of the regulatory system justify the costs. A regulatory impact statement prepared by the Victorian government in relation to its proposed major hazard regulations concluded that while the costs of the new regulations could be estimated very approximately, the benefits could not be accurately quantified. Thus quantitative cost benefit comparisons could not be made. The same difficulty arises in trying to evaluate the benefits of offshore safety regulations.

An alternative approach is a cost efficiency analysis which looks at ways of minimising the cost for a given level of benefit. Ensuring that regulatory systems are as simple as possible to operate and to administer would be important ways of minimising costs.

The need to avoid unnecessary duplication of resources will also avoid costs, although some redundant capability is probably necessary in any system to ensure that the system can continue to operate even if some elements fail. However this is really another way of stating the need for regulatory effectiveness

## **5.7 Consistency**

Given the level of uncertainty about what constitutes optimum safety regulation, it is inevitable that autonomous jurisdictions will develop different styles of regulation and different enforcement strategies. For

companies that operate across jurisdictions, as most companies dealing with major hazards do, this causes administrative difficulties and additional costs. Moreover this complexity decreases the transparency of regulation both for the regulated and for others wishing to scrutinise the process. All parties concerned with the regulation of major hazards therefore have an interest in developing consistent, or harmonised regulation across relevant jurisdictions. For this reason, in a federal jurisdiction like the United States, industries such as coal mining, coastal activities and nuclear power are controlled by federal legislation and federal regulators. In Europe, the Seveso directives represent an effort to harmonise legislation in relation to major hazards.

In Australia consistency of approach in offshore safety regulation is potentially made more difficult by the Federation and the dis-aggregated nature of the current regulatory system involving the Designated Authorities.

## **5.8 Summary of Principles for the Regulation of Offshore Safety in Australia**

1. It is appropriate for the Commonwealth to be actively involved in offshore petroleum safety regulation.
2. The safety case is the most appropriate form of regulation for the offshore petroleum industry.
3. Adequate resources for the regulator, and in particular competent and experienced personnel, will be critical for the effective regulation of hazardous industries under a safety case regime.
4. The effectiveness of safety regulation is dependent on the clarity and enforcability of the legislative framework, and the independence of the regulators who administer the legislation.
5. Effective implementation of safety cases requires the active participation of the workforce focusing on potential hazard identification and their control measures.
6. The best regulatory arrangements will be those which meet the effectiveness requirements of the other principles at minimum cost to industry and government.
7. Consistency of approach to safety regulation is highly desirable.

# 6 FINDINGS OF THE INDEPENDENT REVIEW TEAM

## 6.1 Objectives of the Independent Review Team's Evaluation

The Independent 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.

They undertook extensive stakeholder interview sessions with all interested stakeholder groups, including facility operators (including executive and line management), APPEA representatives, facility workforce representatives, contractors, consultants, State/NT safety regulators and Commonwealth officials. They considered the Australian offshore petroleum regime against the background provided by the papers prepared for them in Phase 1. In generating their report, they evaluated their findings in the context of international best practice and their own extensive knowledge and experience.

## 6.2 The Team's Findings Regarding the Australian Offshore Regime

In regard to the effectiveness of the regime's legal and administrative framework, the Team indicated that the shortcomings of the current regime fell into two areas – legislative complexity and regulatory structure.

## **6.2.1 The Team's Findings and Recommendations Regarding the Australian Offshore Legislative Framework**

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

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 (to offshore regulation) 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.

The Team recommended that the legislative framework be revised to ensure that it is comprehensive, clear, relevant and workable, facilitates effectiveness and efficiency and provides for better cohesion between the regulatory principles, which are expressed in the PSLA, and other more prescriptive legislation.

They felt that, to achieve consistency across the separate jurisdictions and ensure Commonwealth control over which State-legislation is made applicable to the Commonwealth offshore petroleum industry, attention needs to be given to the interaction between Commonwealth and State legislation - particularly the implications of Sections 9 and 11 of the PSLA. They further recommended that necessary graded sanctions should be included in the PSLA Safety Management regulations.

To achieve this revision, the Team recommended that the Commonwealth establish a working group consisting of representatives from all stakeholders to define a project scope, decide upon future structure of regulations and underpinning guidelines and minimum standards, and

develop a project organisation, an execution plan and a budget, for the revising of the framework of legislation.

The Team noted that the resources in terms of staff and funds for regulation of offshore petroleum activities are very limited and that extra funding is therefore necessary to increase the capacity of the regulators in order to execute the project. They felt that, 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, project funding should be supplied by the industry.

### **6.2.2 The Team's Findings and Recommendations Regarding the Offshore Regulatory Structure**

The Review Team made the following findings and recommendations with regard to the current regulatory arrangements:

- the role of the Designated Authorities is unclear and undefined;
- the regulators appear to have inconsistent philosophies, procedures and approaches to regulation, both in regard to the discharge of their role in safety case development and assessment, and in regard to auditing activities;
- the use of consultants to assess safety cases can potentially cause a conflict of interest if they or other consultants have been involved in the safety case preparation. Also consultants have closer ties with the companies than with the regulators.
- the work processes of regulators are not sufficiently transparent;
- the role of the regulator should be agreed and committed to paper and the processes employed should be as transparent as possible;
- The regulators should keep a little distance between themselves and the companies - especially on long term assignments;
- some regulators are light in resources in terms both of number and competence of personnel, and salary levels make it difficult to recruit and retain critical mass.

In considering the current Australian offshore regulatory arrangements, the Independent Review Team's expert view was that:

- a competent and consistent regulator is of prime importance in a safety case regime;
- a prerequisite of delivery of world's best practice is adequate funding and competitive salary levels for the regulator;

- obtaining the funding to support the desired competent regulatory regime through an industry fee system be investigated;
- the application of special salary structures with improved remuneration levels for petroleum industry regulators be evaluated;
- 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.
- DISR should establish clearly who has responsibility for ensuring safe operations in Commonwealth waters (who is 'carrying the can'), and should act accordingly;
- the DISR safety section should be strengthened and should take a firmer line to ensure consistent regulation of the offshore industry across the states. (The Team further observed that they believed that this was a near impossible task given that the Commonwealth appears to have no corrective levers to apply to ensure consistency);
- there should be a single regulator and one set of regulations, at least for Commonwealth waters. The Team felt that this 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; and
- 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. The Team felt the DISR Safety Section was not equipped with the necessary levers to undertake these functions in relation to the Designated Authorities, nor were they sufficiently resourced.

The Review Team regarded this situation as serious and recommended that it be quickly improved. In their view, the Commonwealth 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, they recommended that the resources would need to be increased to 6 to 8 people, falling back to 5 or 6 on completion.

### **6.3 The Team's Proposals for Alternative Structures**

As noted above, the Independent Review Team recommended that the regulatory arrangements be re-structured to develop a simple administrative and organisational system that promotes clarity, consistency, efficiency and predicability in regulatory activities and decision making, which in turn will facilitate efficiency and cost-effectiveness in industry operations.

The Review Team were of the view that the best solution for Australia was the development of a single national offshore petroleum safety authority

reporting to the Commonwealth Minister for Industry, Science and Resources. The Team were, however, aware of the Offshore Constitutional Settlement and the legislative complexity of the Australian offshore arrangements. They therefore proposed the following three alternative regulatory structures which they believed could contribute, in varying degrees, to improving the regulatory system:

### **6.3.1 Model 1: The “Executive Committee” Model**

This model is based on the existing regulatory system but introduces an Executive Committee, chaired by DISR. The primary functions of the Executive Committee would be to seek, promote and ensure maximum consistency in the States/NT approach to regulation of the petroleum industry and in the application of their differing legislative frameworks.

The DISR Safety Section would act as the Secretariat for the Executive Committee and a NOGSAC sub-committee would provide advice/input to the new body.

This model does not change the current reporting lines to Ministers or the activities of the State/Territories in their jurisdictions. The current Designated Authority structure is retained, duplication of resources is avoided and there would be a minimal impact on funding and resources.

However, this arrangement does not address the industry and workforce concerns about inconsistency and their priority for a national regulator, nor does it provide the Commonwealth with the ability to control the consistency of the safety case assessment and audit procedures, the level of regulatory resourcing or the quality and remuneration and employment conditions of the regulatory staff.

The independent review team did not favour this model, considering that its success depended on the willingness of the Designated Authorities to accept DISR leadership and authority- a willingness they found to be highly variable - and therefore had very little potential for driving improvement and should only be adopted if efforts to establish models 3 or 2 totally fail.

### **6.3.2 Model 2: The “Commonwealth Technical Competence” Model**

This model is also based on the existing regulatory system and utilises the Executive Committee concept with the same structure and role as in Model 1. In addition, it proposes the establishment of a Technical Expert Unit, with the capacity, necessary expert technical skills and responsibility to assess all safety cases for facilities in Commonwealth waters and to advise the Designated Authorities in technical matters. The unit would be administered by ISR, under the surveillance of the Executive Committee.

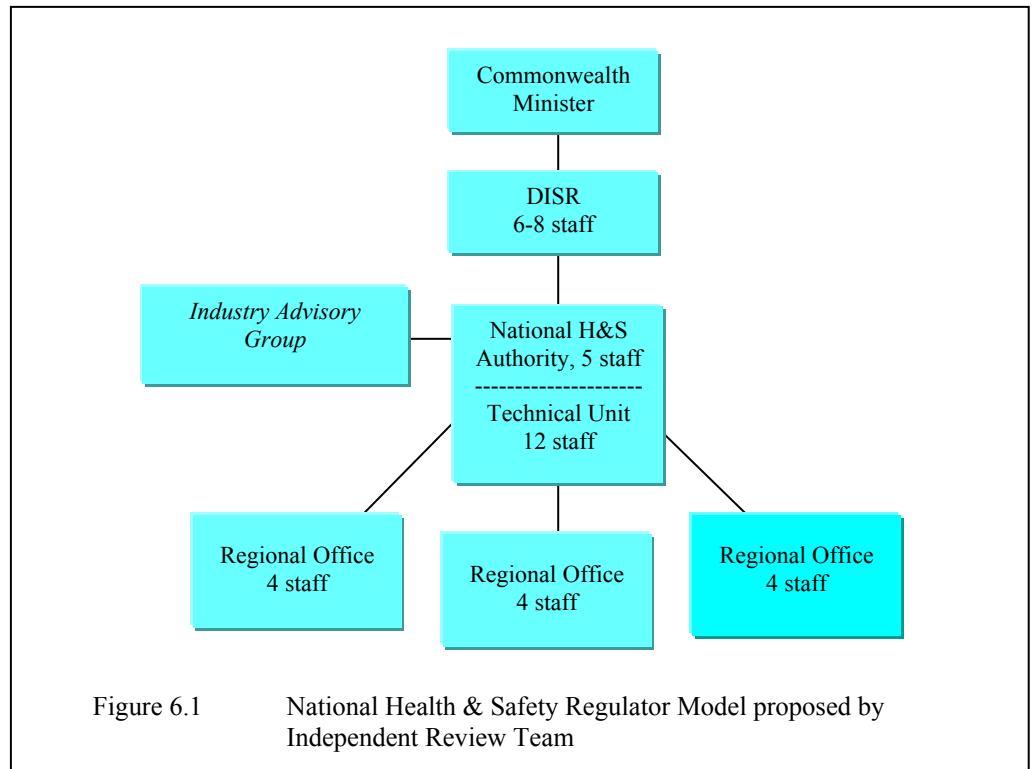
Under this model, the main roles of the Designated Authorities are to audit the adherence of the oil companies to their safety cases. To be effective, they should have access to, and be able to call for assistance from, the expertise of the Technical Expert Unit. They would also act as a focal point for the industry's contact in all health and safety matters.

This model provides a central pool of expert resources nationally, which would be available for the States/NT to access and therefore should minimise competition for scarce technical resources. National consistency in safety case assessment would be ensured for Commonwealth waters. The Commonwealth's credibility as national regulator would be enhanced and the Designated Authorities dependency on consultants, who in general have close relationships with industry, could be removed.

However, the model does nothing to promote consistency of regulatory interpretation and application across State/NT internal waters and onshore. If the States/NT do not downsize their resources, the addition of another regulatory unit to the structure could perversely increase the demand for already scarce expert resources. There is also the potential for regulatory overlap, leading to inefficiencies and inconsistency.

### **6.3.3 Model 3: Single Regulator for Commonwealth Waters**

As the name suggests, this model proposes the centralisation of safety regulation for offshore petroleum activities in Commonwealth Waters under a single national safety regulator with 3 regional offices. It is based on the understanding of the industry, workforce and the Independent Review Team as to what is actually needed to ensure an appropriate, effective and cost efficient regulation of offshore safety in the Australian offshore petroleum industry. The structure of the model is illustrated in Figure 6.1 and as in the case of Model 2, incorporates a Central Technical Unit.



The main functions of the national authority would be to establish consistency in the regulatory approach and the application of the legislative framework, undertake all assessment and acceptance of offshore safety cases and manage the regional offices including their auditing activities.

The main functions of the regional offices would be to undertake an audit on the oil companies for their adherence to their safety cases (calling on the expertise of the Central Technical Unit as necessary); and to be a focal point for the industry's contact in all health and safety matters.

The headquarters could be located anywhere in Australia. There would be regional offices in States where petroleum activities in adjacent Commonwealth waters are planned or are currently being conducted. The authority would report to the Commonwealth Minister for Industry, Science and Resources.

The Team acknowledged that implementation of Model 3 would present some difficulties. Considerable additional resources would be required, as the State/NT needs for a petroleum regulator in their waters and on-shore would not disappear. There would be competition for resources and furthermore, this model conflicts with the agreements of the Offshore Constitutional Settlement, which together with the PSLA would need to be changed.

Whilst acknowledging these difficulties, the Independent Review Team felt strongly that the formation of a national offshore health and safety regulator is necessary to ensure appropriate, effective and cost efficient regulation of safety issues in the Commonwealth offshore petroleum industry.

This structure would ensure national consistency of safety case assessment, audit and administration in Commonwealth waters, significantly improving the national effectiveness of safety regulation. The requirements of the industry and the workforce would be met and the Review Team's perceived weaknesses in the Australian offshore safety regime would be addressed. The issue of potential dichotomy with regulators based in pro-development portfolios would be resolved.

#### **6.3.4 The Team's Observations Regarding Implementation Issues**

Based on the relevant issues in the paper prepared by DISR in regard to the implementation of Australia's offshore petroleum safety case regime, the Independent Review Team made the following observations:

- in regard to regulator dichotomy in development portfolios - the balance of evidence is that this issue is not currently a problem here, other than the competition for budget, but that perception could change very quickly after an accident;
- performance standards are an important tool in verifying that the design assumptions (and the risk figures that flow from them) remain valid over time, but the Australian regime is not doing this well;
- the issue of whether health, safety and environment should be integrated under one set of regulations and one reporting framework was an issue of administrative efficiency with only a second order effect on safety;
- the complete safety case does not necessarily need to be living in terms of frequent updating;
- the objective of developing lead performance indicators is an international objective and DISR is supported and encouraged to progress this through the International Regulators Forum;
- there is huge variability in the extent of workforce involvement and some cross fertilisation of the enthusiasm felt in some areas would significantly benefit others;
- there is no concrete evidence of serious reductions in safety as a result of cost pressures but the potential is there; and
- there has indeed been a significant improvement in Safety Culture, which, because of the complexities of company cultures, it is not possible to attribute to one specific factor (e.g. the implementation of the Safety Case regime) or factors.

## **6.4 Review Team's Primary Conclusion and Recommendations**

At the completion of Phase 2 of the evaluation, the Independent Review Team compiled a report (see Appendix B) detailing their findings and recommendations. The Team's primary conclusion was:

*“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.”*

The Team made 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.*

The Commonwealth's response to these recommendations is discussed in the following chapters.

## **6.5 Summary of Review Team's Findings and Recommendations**

A summary of the Independent review Team's findings and recommendations comprises the following:

- there are too many Acts, Directions and Regulations regulating 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 companies;
- guidelines are often applied as if they were compulsory regulations;
- States, by the Directions in the PSLA 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 role of the regulator should be agreed and committed to paper and the processes employed should be as transparent as possible;
- 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 this issue is not currently a problem here, other than the competition for budget, but that perception could change very quickly after an accident;
- DISR should have real clarity on who is 'carrying the can', and should act accordingly;
- the DISR Safety Section unit should be strengthened and should take a firmer line;
- the regulators should keep a little distance between themselves and the companies as the industry in Australia matures;
- the use of consultants to assess safety cases can potentially cause a conflict of interest if they or other consultants have been involved in the safety case preparation. Also consultants have closer ties with the companies than with the regulators;
- with regard to a combined Health, Safety and Environment Safety Case regime, the Team felt that this was an issue of administrative efficiency with only a second order effect on safety;
- the complete Safety Case does not necessarily need to be living in terms of frequent updating;
- performance standards are an important tool in verifying that the design assumptions (and the risk figures that flow from them) remain valid over time, but the Australian regime is not doing this well;
- the review team supports the objective of developing lead performance indicators and notes that this is an international objective. DISR is encouraged to progress this through the International Regulators Forum;

- as there is huge variability in the extent of workforce involvement, some cross fertilisation of the enthusiasm felt in some areas would significantly benefit others;
- there is no concrete evidence of serious reductions in safety as a result of cost pressures but the potential is there; and
- there has been a significant improvement in Safety Culture. However, because of the complexities of company cultures, it is not possible to attribute this to one specific factor (e.g. the implementation of the Safety Case regime) or factors.

# **7 Phase 3 - Stakeholders**

## **Responses to IRT report**

### **7.1 Phase 3 Process**

In April 2000, the Commonwealth began Phase 3 of the Review. The findings and recommendations of the Independent Review Team in regard to all matters other than those relating to deficiencies in the regulatory structure were for all intents and purposes, non-contentious and agreed by all parties. The Commonwealth's response to these legislative matters is in Chapter 8.

Phase 3, therefore, concentrated on developing the preferred policy option to recommend to Government the future structure of offshore safety regulation in Australia. The process was long and protracted and involved close liaison and negotiation with State/NT regulators, industry and employees in bilateral and multilateral forums. This group of stakeholders hold a range of views that each strongly believes to be valid. The consultation process was aimed at accounting for the range of polarised views that existed and attempting to reconcile the differences to achieve a consensus outcome.

### **7.2 Views of the Stakeholders**

#### **7.2.1 States/NT**

The State/NT jurisdictions, whilst agreeing that some change is necessary, have strongly argued for the retention of the current dis-aggregated system for the following reasons:

- their view that the current arrangements are delivering adequate results and do not need to be changed. They feel that the recommendations of the Independent Review Team are not soundly based and, in essence, have no validity;
- their lack of confidence that the Commonwealth can adequately manage resources of strategic importance to the States/NT;
- their concern that such a move will set a precedent for dealing with environment and administration;

- the need to use their safety resources to regulate petroleum activities in State waters and onshore as well as in Commonwealth waters;
- their concern that it may impinge on State rights and have implications for state legislation; and
- their unwillingness to change any of the elements of the Offshore Constitutional Settlement especially in regard to the regulatory funding arrangements.

### **7.2.2 Industry**

APPEA, the body representing the upstream petroleum industry, has written to DISR stating that any proposal for change in the regulatory arrangements must be well considered and demonstrate unequivocally that there would be resultant improvement in the effectiveness and efficiency in safety administration.

APPEA states that it does not believe that the case made by the States/NT for the continuation of the current regulatory arrangements is either compelling or convincing, and that in the view of its industry members, the development of a national regulatory authority would give the best possible administrative outcome.

### **7.2.3 Offshore Workforce**

The workforce have clearly and strongly stated their conviction that the present arrangements are flawed and do not achieve best practice safety regulation. Only the development of a single national safety authority committed to achieving and maintaining best safety practice will, they argue, achieve effective uniform processes across jurisdictions and an appropriate level of expert human resources with salary and conditions that can stem the drain of personnel from the Designated Authorities. In recognition of the strongly-held views of the offshore workforce, the peak union body - the Australian Council of Trade Unions - has incorporated the development of a national offshore regulatory authority into its formal policy platform.

### **7.2.4 Views of the Steering Committee**

The review process has been prolonged in Phase 3 due to the sensitivity of the issues and the need to ensure that each stakeholder was given ample opportunity to argue their positions.

As noted, the review Steering Committee functioned as representatives of their stakeholder groups during the discussions in Phase 3, with the Commonwealth attempting to broker an acceptable compromise. In the end, it was not possible to achieve a consensus view that the

Commonwealth felt was defensible and supportable in the light of world best practice.

The Steering Committee acknowledged, however, the importance of the review to the future of Australian offshore safety regulation, and - whilst agreeing to disagree on a number of issues - noted their agreement on issues which they felt were fundamental to the way ahead. These agreed views are formalised, and endorsed by all members of the Steering Committee, in the following document titled "Views Of the Review Steering Committee".

### **Views of the Review Steering Committee**

**1. The Committee agrees that the primary objective of all actions flowing from the review must be “world’s best practice” safety outcomes**

- The Committee notes that the Australian upstream offshore petroleum industry, with a Lost Time Injury Frequency rate which has decreased by over 75% in the last decade, has a safety record which compare well with any other offshore petroleum industry in the world. Furthermore, the upstream petroleum industry's LTIFR remains considerably lower than the LTIFR of many other industry sectors in Australia, including: non-petroleum mining; transport and storage; manufacturing; agriculture, fishing and forestry; construction; retail; and education.
- the Committee strongly supports the safety case approach to safety management and notes that the Commonwealth's undertaking of an independent Review of the Australian offshore safety case regime in April 2000 reflects the fundamental safety case principal of continuous improvement. The Committee supports ongoing critical review of the regime to ensure it meets and maintains best practice safety regulation.

**2. From an administrative point of view the Steering Committee notes:**

The two main recommendations of the Independent review team as presented in the executive summary and chapter seven of the report were:

- (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."**

The supporting recommendations and arguments for these two main recommendations as described in:

- ◆ **Chapter 7 (7.1) "Revising the framework of legal documents"** and;
  - ◆ **Chapter 7 (7.2) "Development of the regulatory implementation system"**
- the support of its industry and union members for the Independent Review Team's belief that the main objectives for the Commonwealth should be to enhance:
    - ◆ consistency in the regulators' approach to regulation;
    - ◆ regulatory capacity;
    - ◆ regulatory skills; and
    - ◆ the clarity and transparency of the role of the regulator.
  - the Independent Review Team's full support (in Chapter 7.2.4) for the adoption of "Model 3" presented in their report (the establishment of a National Petroleum HSE Authority), which they heard was consistent with the strong recommendation of industry and the trade unions.

The Committee therefore agrees that:

- the necessary steps should be developed to establish an offshore safety administration that is nationally consistent;
- all necessary steps to achieve consistency between jurisdictions should be developed and implemented;
- all Commonwealth offshore safety jurisdictions should be adequately resourced as fast as possible; and
- progress of these points should be reported to the 2002 meeting of the Australia New Zealand Minerals and Energy Council (ANZMEC) Ministerial Council.

**3. From an organisational structure point of view, the Committee:**

- supports the development by the Commonwealth of proposals for the establishment of a consistent national safety

administration in Commonwealth waters for consideration by jurisdictions;

- notes, in relation to developing and implementing consistency between jurisdictions, the commitment of all parties to support the development of:
  - immediate steps by ANZMEC ministers to improve the consistency and effectiveness of the current safety regulatory system. Such steps should include measures to improve the coordination of offshore regulatory activities across all jurisdictions and the levels and quality of services provided by the States/NT in administering the current safety regime;
  - standard procedures and technical guidelines for the States/NT to implement which will cover the details of safety case assessment, on-going audit requirements, investigations and enforcement procedures;
  - a review in 2005 of the effectiveness of this model in minimising duplication of regulatory resources, and in ensuring consistency of approach between the States/NT.

**4. From a training point of view, the Steering Committee supports the commitment of parties to:**

- seek the advice of the National Oil and Gas Safety Advisory Committee (NOGSAC) on what steps must be taken to ensure that Australia has sufficient safety professionals for the future.

**5. From a safety performance point of view, the Steering Committee supports the commitment of parties to:**

- a review of the existing accident/incident statistics collection framework to ensure that it provides meaningful national data that allows the identification of significant offshore safety trends;
- recommend to the Australian Petroleum Production and Exploration Association that it considers the adoption of the inclusion of an anonymous perception survey as a part of its safety performance measurement suite;
- the provision by Australia of a conceptual blueprint to put to the international performance measurement working group meeting at OTC in Houston in May 2001; and
- work with the International Regulator's Forum and the international oil and gas industry to develop a suite of global standardised safety performance indicators.

**6. From a legislative point of view, the Steering Committee supports the commitment of parties to the:**

- establishment of a joint NOGSAC/ANZMEC working group, involving industry, government and employees to review and revise the regulatory framework which underpins the Commonwealth *Petroleum (Submerged lands) Act 1967* (PSLA), the objectives of which are to include:
  - ensuring that the relevant safety case regulations still reflect best practice;
  - clearly defining the areas where the Commonwealth safety regulatory framework applies and resolving any conflict/duplication with associated State legislation;
  - introducing a series of graduated enforcement actions into the Commonwealth safety regulations;
  - assisting the ANZMEC Upstream Petroleum Working Group to produce amalgamated draft regulations which are consistent amongst the different aspects of offshore petroleum production, eg safety, environment, pipelines, facilities, etc;
  - eliminating duplication and removing any unnecessary prescription in Commonwealth waters; and
  - clarifying the incident reporting requirements under the PSLA regulations to make it consistent with relevant State legislation.

The Committee notes that government and industry are already working together to minimise the regulatory requirements placed on the operators of Floating Production, Storage and Offloading facilities.

**7. From a resources point of view, the Steering Committee supports the commitment of parties to:**

- identify the number and quality of resources required to properly administer safety case regulation;
- set up appropriate mechanisms to ensure funding is available to meet the above need; and
- set up strategies to ensure recruitment and retention of appropriately skilled and experienced staff.

In regard to this issue, the jurisdictions note the view of the Independent Review Team:

*"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."*

## 8 Revising the safety case legal framework

The Review Team recommended that the Commonwealth revise the current safety case regime's legislative arrangements with the aim of developing a comprehensive, clear, relevant and workable health and safety legislative framework (as seen by all stakeholders) for the offshore petroleum industry in Australia.

In essence there are three aspects to this task:

- simplify the interface between Commonwealth and State/NT legislation, and ensure that as far as possible, any inconsistencies are eliminated.
- ensure that the PSLA safety regulations are clear and appropriate in order to facilitate the effectiveness and efficiency of the safety case regime.
- ensure that the PSLA is not inconsistent with other Commonwealth legislation such as the Navigation Act (1912) and the Space Activities Act (1998).

### 8.1 Background to Offshore Safety Regulation

The *Petroleum (Submerged Lands) Act 1967* provides for matters relating to the health and safety of persons engaged in petroleum exploration and production activities in Commonwealth offshore waters and, under Section 97(1), places responsibility on the operator for offshore health and safety:

“A permittee, lessee or licensee shall carry out all petroleum exploration operations and operations for the recovery of petroleum in the permit area, lease area or licence area in a proper and workmanlike manner and in accordance with good oil-field practice and shall secure the safety, health and welfare of persons engaged in those operations in or about the permit area, lease area or licence area”.

Prior to introduction of the safety case regime, safety in the offshore oil and gas exploration and production industry was primarily regulated via a set of prescriptive directions (the “*Schedule of Specific Requirements as to Offshore Petroleum Exploration and Production*”) issued by the Designated Authorities under section 101 of the *Petroleum (Submerged Lands) Act 1967*. These Directions, based initially on law of the sea requirements, had been gradually developed over the previous 30 years. They were

comprehensive in scope, addressing general safety, marine facilities, drilling, production and diving, and were highly prescriptive in nature. They failed, however, to provide a regulatory framework by which the operator focused on the prevention of major accident events (MAEs).

### **8.1.1 Commonwealth/State Interface**

When the safety case regime was first proposed by Lord Cullen in his Report on *The Public Inquiry into the Piper Alpha Disaster*, the focus was on changing organisational priorities towards the systematic prevention of MAEs. In Australia, the scope of the implementation of the new safety case regulations was defined reasonably narrowly in terms of identifying which parts of the Directions should be revoked and replaced by safety case regulations.

It seems that in replacing existing prescriptive provisions with those of the objective-based approach of the safety case regulations, there was a failure to ensure they were fundamentally consistent with other regulatory mechanisms under the PSLA and furthered safety outcomes.

### **8.1.2 Application of State/NT Laws to Commonwealth Offshore Waters**

In particular, difficulties are perceived to arise from the application, by Sections 9, 11 and 140H of the PLSA, of State and Territory laws to offshore operations in adjacent areas. These provisions were applied with the intent of ensuring that a comprehensive legal environment would exist in relation to all activities and human interactions which occur in the course of offshore petroleum activities.

Sections 9 and 11 of the PSLA provide a mechanism for the application of State and Territory laws to the adjacent area to the extent that they are not inconsistent with the PSLA or other Commonwealth laws, and deal with the scope of application of State and Territory laws, including regulations, powers of State tribunals and State officers.

Section 140H of the PSLA provides that Schedule 7 of the Act, (Occupational Health and Safety), applies to each adjacent area only where the state in relation to that adjacent area does not provide occupational health and safety law.

Industry feels that the PSLA established a framework for State laws to apply offshore without establishing an appropriate and efficient administrative framework to resolve issues relating to the applicability of state regulation. When the full ambit of State laws and regulations is

examined, it is clear that often the State law was not intended, and not drafted in appropriate terms, to apply in the offshore environment.

For example, the *Victorian Dangerous Goods Act* deals with safety of persons and property in relation to the manufacture, storage, transport and use of dangerous goods and to ensure that adequate precautions are taken against fire, explosion, leakage and spillage of dangerous goods. In many respects this legislation is very relevant to an offshore facility involved in the recovery of petroleum. However, many of the provisions of this Act and subordinate regulations have been developed in the context of premises on land, such as the interaction with onshore fire protection agencies. Although the Act specifically provides for applicability criteria for ships, applicability to offshore oil and gas facilities is not addressed in the legislation.

Under current law, the Victorian *Occupational Health and Safety Act (OHS Act) 1985* applies in the adjacent area by virtue of section 9 and 140H of the PSLA. The application of the OHS Act provides important legal controls in the offshore workplace. Provisions such as the establishment of Health & Safety Representatives and mechanisms for workplace issue resolution further the objectives of offshore workplace safety without conflict or overlap with Commonwealth law. Workers from Victoria can also enter the offshore workplace with a seamless transition in terms of general occupational health and safety law.

Overlap and confusion is generally not at the level of the broad tenets of occupational health and safety law, but at the detailed level involving the application of state occupational health and safety regulation offshore. For those involved in the detailed management and administration of a comprehensive offshore safety management system, the resulting confusion and overlap may well result in resources being expended in clarifying conflicting requirements in the context of an offshore safety case. There is a lack of regulatory clarity which impacts efficiency and cost effectiveness in the offshore context and can result in attention being distracted from the main intent of preventing major accident events.

## Box 6.1 Victorian regulations under the OHS Act

### Victorian regulations under the OHS Act are;

- Occupational Health and Safety (Plant) Regulations 1995
- Occupational Health and Safety (Asbestos) Regulations 1992
- Occupational Health and Safety (Confined Spaces) Regulations 1996
- Occupational Health and Safety (Manual Handling) Regulations 1999
- Occupational Health and Safety (Noise) Regulations 1992
- Occupational Health and Safety (Lead) Regulations 2000
- Occupational Health and Safety (Certification of Plant Users and Operators) Regulations
- Occupational Health and Safety (Incident Notification) Regulations 1997
- Occupational Health and Safety (Issue Resolution) Regulations 1999
- Occupational Health and Safety (Major Hazard Facilities) Regulations 2000

In addition to the regulations listed above, many of the regulations provide further guidance with Codes of Practice.

These regulations could be grouped into three broad categories.

#### **Safe Systems of Work Regulations:**

Regulations that further prescribe workplace controls in relation to safe systems of work (asbestos, confined spaces, manual handling, noise, lead and certification of plant users).

#### **Safe Workplace Regulations:**

Regulations that further prescribe processes to ensure a safe workplace (issue resolution, incident reporting).

#### **Safety Case Regulations:**

The Major Hazard Facilities Regulations are a separate category. These regulations effectively create a different category of workplace with the recognition of its potential for a major incident and additional controls (the safety case) to mitigate the higher risk level.

### 8.1.3 The need for clarification

Industry, in endeavouring to ensure that it is complying with all of its legal obligations, has attempted to determine exactly which State/Territory laws are applied offshore. Whilst this is obvious in some cases, (eg, the application of the laws re crimes), in many other instances it is not clear whether the provisions of the safety case or State legislation actually apply.

This is particularly of issue in regard to matters where the provisions of the safety case regulations set general safety goals for operators to attain (with the specific intention of allowing the operator to choose the most appropriate solution for a particular set of circumstances), but where State/Territory legislation applies specific prescriptive conditions on industry.

This situation may, at the very least, result in a lack of clarity as to what course an operator should follow, or at worst, impose conditions on operators which are sub-optimal for offshore situations and which are in

contradiction of the safety case concept. Both outcomes are costly and inefficient for industry and will need to be addressed in achieving a solution.

A clear requirement exists to improve the interfaces between State and Commonwealth legislation applicable to the offshore industry so that a consistent series of regulatory objectives can be developed and implemented within the safety case regime. This will be especially important with the development of a Commonwealth Offshore Petroleum Safety Authority, where a number of adjacent State waters, each with its own individual set of State laws, will abut the Commonwealth jurisdiction and potentially apply different legal conditions to the facilities operating there.

A possible solution to parts of this issue may well require only a relatively simple amendment to the safety case regulations which defines those areas in relation to operations in Commonwealth offshore waters which are intended to be covered by those regulations, and by extension, those areas which are therefore not covered by the regulations.

Additional thought will need to be given to specific issues which will result from the new circumstances resulting from developing the Authority - eg the implementation of an appropriate occupational health and safety framework to apply across the whole of the Commonwealth jurisdiction.

## **8.2 Getting the PSLA to be an effective Legislative instrument**

There appear to be a number of matters that relate to this issue.

### **8.2.1 Too many regulations**

The Review Team reported a strong feeling on the part of many offshore stakeholders that the present framework of Acts, Schedule of Directions, regulations and guidelines were complex, ambiguous and confusing. Stakeholders opined that the separate sets of regulations for safety, environment, drilling, diving, pipelines, etc, could be incorporated with performance requirements in the safety case regulations and that there would then be no need for separate regulations.

The Review Team itself found that there are too many Acts, Directions and Regulations regulating Australian offshore petroleum activities, that their boundaries are unclear and there is still much unnecessary prescription.

The Commonwealth has committed to consolidating as far as practicable the different PSLA regulations. While this has been DISR's expressed

objective for some time, a timetable is now in place and work already commenced

### **8.2.2 Regulatory Guidance**

Within the context of the immediate improvements to the interim arrangements and the proposed Commonwealth Offshore Petroleum Safety Authority arrangements, it will be important to implement uniform standards of regulatory interpretation and implementation of legislation across the entire Commonwealth jurisdiction. To ensure the provision of nationally consistent, high quality safety case assessment and administration, and to set out clearly for operators what matters will be considered by the regulator in its assessment and on-going monitoring of their safety cases, the Commonwealth needs to develop detailed uniform technical guidelines and procedures for safety case assessment, auditing and inspection and enforcement.

The Commonwealth intends to commence this development work with the implementation of the improvements to the existing interim safety arrangements (see Section 10.3).

### **8.2.3 Changes Required to Safety Case Regulations**

There are a number of concerns with the existing PSLA safety case regulations.

- One is the inconsistency between the reporting requirements of the safety case regulations and the requirements under the State/Territory Occupational Health and Safety (OH&S) and Dangerous Goods (DG) Acts. State/NT regulators consider that the safety case regulations incident reporting requirements are not adequate. There are issues in regard to the indefinite nature of the time lines for incident reporting (“as soon as practicable”) under the safety case regulations and the subjective assessments by the operator as to what should be reported to the regulator. These issues will need to be dealt with in regard to the immediate improvements to the current arrangements, and in generating a legislative framework for the implementation of the Commonwealth Offshore Petroleum Safety Authority.
- A second issue is that the PLSA and safety case regulations do not provide for a graded system of enforcement, for example through the issue of improvement notices prior to the initiation of a prosecution. At present, enforcement under the Commonwealth petroleum legislation is basically restricted to mounting a prosecution against an offender. The need for a range of enforcement tools is an identified need under current arrangements, but will be a necessary part of the legislative framework for

the implementation of the Commonwealth Offshore Petroleum Safety Authority.

While the States/NT regulators do have appropriate enforcement tools under their own legislation, it is desirable that enforcement for acts or omissions relating to petroleum activities in Commonwealth waters be carried out under Commonwealth legislation. The alternative approach of relying on the provisions of the State/NT OH&S and Dangerous Goods Acts is unlikely to provide a consistent legislative framework for industry across the various jurisdictions, and will not be relevant in the proposed Commonwealth Offshore Petroleum Safety Authority.

- A third area of concern specifically noted by the Independent Review Team was the lack of safety case performance standards. 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.

The review team were of the view 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. They were concerned that there is lack of defined “performance standards” in the formulation of many Australian safety cases, and regarded this as a shortcoming of the Australian regime.

### **8.3 Mechanism for achieving change**

The difficulties inherent in the Australian offshore petroleum legislative framework outlined above affects both the industry and its employees, who have to comply with the legislation, and the regulators who have to administer the legislation. The Commonwealth has committed, through its interaction with the Review Steering Committee and NOGSAC, to establishing a tripartite NOGSAC working group initially scope the dimensions of the issues that need to be addressed, and then to devise a way to resolve those issues

# **9 The Commonwealth'S Preferred Option for Future Regulation of Offshore Safety**

As can be seen from the views of the Review Steering Committee presented in Chapter 5, it was possible during the consultation and negotiation of Phase 3 to achieve a consensus view between all parties on the need to establish a consistent national safety administration in Commonwealth waters and on a range of legislative changes. Agreement could not be reached, however, on the best structural arrangements for that national safety administration. The Commonwealth's view was that proposals had to be defensible and supportable in the light of world best practice. The Committee also agreed “that the primary objective al all actions flowing from the Review must be “world’s best practice” safety outcomes”.

## **9.1 Commonwealth Position**

As noted earlier, under the arrangements put in place by the Offshore Constitutional Settlement (OCS) of 1979, the States/NT (Designated Authorities) were legislatively required (and empowered) to undertake the day-to-day administration of offshore petroleum activities in Commonwealth waters. The Commonwealth's role has been to provide policy oversight and more lately, to ensure, through annual audit, that the DAs are discharging their own regulatory responsibilities diligently and effectively and to the level of world’s best practice.

The Commonwealth has for some time been concerned about the ability of the States/NT to adequately administer offshore safety in Commonwealth waters due to their resource constraints. A common concern that the Commonwealth’s audits had brought to light is the “thinness” of resources available to the Authorities. Whilst the Independent Review Team, in its audits of the States/NT during the review, found that generally they had adequate resources to do their jobs, they noted that it would take in some instances only the loss of one staff member or the addition of one more facility to regulate to change this assessment.

In addition, the Independent Review Team found that the separate jurisdictions appear to have inconsistent philosophies, procedures and approaches to regulation, both in regard to discharge of the role in safety case developments and assessments and in regard to auditing activities. This source of inconsistent regulation for companies operating in Commonwealth waters is of concern to the Commonwealth and industry. It introduces unnecessary compliance costs for companies operating in more than one jurisdiction and indicates that best safety practice is not applied across all facilities

The Commonwealth accepts that it has the fundamental responsibility and accountability for the adequacy and quality of the regulation of safety in offshore Commonwealth waters. It has, however, been constrained by the present legislative arrangements and the provisions of the OCS as to the degree it can influence the States/NT in the way they undertake the administration of offshore safety.

## **9.2 Concerns with a Move to a Single Regulator for Commonwealth Waters**

The Commonwealth has for some time been of the view that a directly administered single national regulator would be the ideal method for ensuring appropriate adequacy and quality of the regulation of safety for petroleum activities for Commonwealth waters. It has been reluctant to move on this, however, as it recognises that the State/NT Departments that administer offshore safety have additional responsibilities which extend beyond Commonwealth offshore waters.

- The States/NT use the same human resources to regulate petroleum safety in State waters and aspects of onshore operations as they do for offshore petroleum activities in Commonwealth waters. These resources are increasingly scarce and costly, and the creation of another safety regulator for Commonwealth waters will result in expensive duplication and increase the competition for essentially the same limited pool of expert regulatory personnel.
- Additionally, there will be the potential for the offshore petroleum industry, especially in WA, to have to answer to and do business with, two quite separate petroleum safety authorities, with potentially diverging policies, procedures and standards.
- At present, safety regulation under the PLSA is effectively integrated in the States/NT with the environmental, exploration permits, resource management and titles regulation and/or administration. This integration is held by the Designated Authorities to be advantageous and to facilitate their overall efficient administration of the offshore petroleum responsibilities.

(Whilst this may be so, it should be noted that both the United Kingdom and Norwegian offshore administrations are set up with totally independent safety regulatory authorities).

The Commonwealth has therefore recognised that to get the States/NT to move to a fully integrated national safety authority would be difficult. It is likely that few if any of the jurisdictions will be easily convinced to move away from the status quo or to move the responsibilities for State operations to an independent authority. There will also need to be substantial re-working of the existing legislation and the development of new processes and procedures, which will need to be negotiated with the States/NT and other stakeholders.

### **9.3 The Benefits of Moving to a Single Regulator for Commonwealth Waters**

Whilst these difficulties are acknowledged, the Commonwealth cannot ignore the Independent Review Team's specific concerns about the significant inconsistencies in the way the various Designated Authorities administer safety and the inability of some State/Northern Territory regulatory agencies to effectively administer the safety case regime due to resource constraints which are effectively beyond their control. It further noted that low public service salaries and competition with industry and other regulatory agencies for a scarce resource made recruiting and retention of competent staff very difficult. For these reasons particularly, the Independent Review Team strongly supported the development of a national safety authority for Commonwealth Offshore waters. Best regulatory practice also requires an independent regulator and transparency in regulations which is hard to achieve with 3 or more active safety regulators in Commonwealth waters whose operations are integrated with petroleum development activities.

In considering the option preferred by the Independent Review Team, industry and workforce, the Commonwealth in particular considers that the following matters have a bearing on the issue:

- The major exposure for the Commonwealth is the lack of direct control over the quality and adequacy of the regulation of safety in Commonwealth offshore waters. The Commonwealth, under international law, has rights and responsibilities in relation to the area and it derives substantial revenue from secondary taxation of petroleum operations, and regulates such operations (including in relation to safety) under Commonwealth legislation.

The Commonwealth must therefore be deemed to have an ongoing interest in the area and the relevant Minister, therefore, to be substantially accountable and responsible for matters to do with

operations in the area. Due to the Designated Authority arrangements arising from the OCS and resultant provisions of the PSLA, however, the Minister lacks direct control over the administration of safety by the States/NT and is reliant on the good will of the States/NT to effect any change. If the States/NT are unwilling (eg to adopt uniform assessment procedures) or unable (eg to pay higher salaries), there is little the Minister can do about the matter.

- A secondary issue is the difficulty in achieving consistency of regulation - particularly in the assessment and acceptance of safety cases, investigation of accidents and incidents and prosecution of offences. These matters (and indeed, the fundamental understanding of the role of the safety regulator), are directly influenced by the attitudes, procedures and policies of the relevant Designated Authority. They can, and do, vary widely from Designated Authority to Designated Authority.
- Additionally, the Commonwealth is unable to directly influence the resource effort allocated to the regulation of safety in Commonwealth waters or the quality of the staff. The Commonwealth has been concerned for some time at the issue of Designated Authority safety resourcing, particularly in regard to the difficulty experienced by the States/NT in recruiting and retaining appropriate staff due to the salary advantage of industry and the high degree of competition between regulators for the same limited pool of suitable personnel.

#### **9.4 Commonwealth's Preference**

Considering the Independent Review Team's finding and recommendations, the issues detailed above and the strongly-held views of the workforce and the industry subject to the regulation, the Commonwealth is obliged to give priority to the interests of best practice safety regulation in Commonwealth offshore waters over the potential of causing some duplication of State/NT resources.

The Commonwealth therefore agrees with the Independent Review Teams' recommendation that the regulation of safety in Commonwealth waters should be undertaken by a single authority, answerable directly to the Minister, using uniform policy and procedures throughout, and with pay and conditions which make it possible to recruit and retain adequate numbers of appropriately skilled and experienced staff.

# **10 The Potential for A Joint Independent Authority**

## **10.1.1 Cooperative Joint Commonwealth /State Safety Arrangements**

As noted above, the development of an independent Commonwealth offshore safety authority (National Offshore Safety Authority), whilst achieving best practice safety regulation for Commonwealth waters, could result in a number of undesirable side effects for the States/NT and for industry operating in both Commonwealth and State/NT jurisdictions.

Accepting that the creation of a single regulator for Commonwealth offshore waters will not be optimal for the wider regulation of States/NT petroleum operations, the Commonwealth proposes that an independent statutory authority be developed that will regulate both Commonwealth and State petroleum safety activities.

Conceptually, the same personnel would undertake safety regulation in both State/NT jurisdictions - reporting to the Commonwealth Minister for activities in Commonwealth waters and to State Ministers for State activities.

This would effectively result in similar outcomes to the current Designated Authority arrangements, with the State/NT reporting and accountable to their own Ministers for jurisdictional activities, but would also allow the Commonwealth to directly control the administration of safety in Commonwealth offshore waters.

## **10.1.2 Difficulties in Achieving Joint Arrangements**

The Commonwealth acknowledges that the development of joint arrangements will not be easy. It will firstly need the cooperation of the States/NT, who, as noted, do not accept the need to move away from the present arrangements and are unlikely to see particular advantage in moving to an independent authority. If there is to be any chance of achieving this change, the Commonwealth will need to guarantee to the States/NT the independence of the joint authority and to convince them of the benefits of this proposal.

There would be significant other issues to be negotiated and agreed between the Commonwealth and the States/NT jurisdictions - such matters as the cost sharing arrangements, the development of uniform procedures across Commonwealth and State/NT jurisdictions, the level and standard of human resources, the recruiting arrangements, how the various accountabilities and ministerial reporting lines will be achieved, cross jurisdictional investigation and enforcement and undoubtedly many others.

These issues will take time and require commitment and a positive approach from all parties to resolve, but the Commonwealth believes that the move to an independent national safety regulatory authority will result in optimal national safety management arrangements and, most importantly, achieve the best safety outcomes for the workforce and industry - those most directly affected by the risk of petroleum operations.

### **10.1.3 Need for Timely Action**

The States/NT will require to work through the implications for themselves of a single national safety authority for all petroleum activities or a single authority for offshore petroleum activities. If they do agree to cooperate in the development of single national authority, the amount of work required and the time taken to develop the legislative, structural and procedural requirements to implement the new safety authority will be extensive.

In the meantime, the Independent Review Team has identified a number of deficiencies in the present arrangements, and the tripartite Steering Committee has agreed with the Commonwealth on a number of actions that urgently need to be undertaken. The immediate improvement of the current offshore safety regulatory arrangements is an imperative for the Commonwealth, and as made clear in the views of the Safety Review Steering Committee, also for Designated Authorities, industry and employees.

Such actions include

- measures to improve the coordination of offshore regulatory activities across all jurisdictions;
- improvements in the levels and quality of services provided by the States/NT in administering the current safety regime; and
- the development of standard procedures and technical guidelines for the States/NT to implement which will cover the details of safety case assessment, on-going audit requirements, investigations and enforcement procedures.

In regard to those issues, a number of activities are supported by the recommendations of the Independent Review Team. The following

activities were specifically identified as matters which it believed should be undertaken by the Commonwealth to increase the efficiency and consistency functioning of the current regulatory arrangements:

- develop and implement common Designated Authority Safety Case assessment procedures;
- develop and implement common Designated Authority Auditing procedures;
- develop and implement common Designated Authority inspection and enforcement procedures;
- develop, form and scope an annual Designated Authority operational plan for Commonwealth activities;
- assess and respond to annual Designated Authority reports on performance with regard to annual operation plan;
- develop a DISR Policy on Designated Authority outsourcing;
- develop a procedure for auditing the Designated Authorities; and
- describe the role of the Commonwealth and Designated Authorities and make it public.

In view of the priority set on these measures by both the tripartite Review Steering Committee and the Independent Review Team, the Commonwealth feels that their implementation must be undertaken as soon as possible, and cannot be set aside whilst the process for developing either the independent national or Commonwealth Offshore Safety Authority is in train.

The Commonwealth therefore recommends a move forward on two parallel fronts:

- implementation of the improvements to current arrangements as per the measures described above, to be included in a formal Purchaser-Provider arrangement between the Commonwealth and the States/NT to underpin the Commonwealth's requirement for standardisation of procedures, development of technical guidelines, etc); and
- concurrent development of the new authority (including consultation on the form and charter of the new authority, procedures, drafting of new legislation, development of agreements on reporting and accountability arrangements, etc).

#### **10.1.4 Funding**

A fundamental issue will be the sourcing of adequate funding for the implementation of the interim improvements and the development and operation of the new authority. The Commonwealth will as a matter of priority investigate options for obtaining the necessary funding, keeping in mind the need to dedicate the funds for safety administration and the

Independent Review Team's recommendation that industry fees pay for the regulatory services.

#### **10.1.5 Commonwealth Bottom Line**

It may be that the States/NT in the end decide not to adopt the cooperative approach proposed by the Commonwealth. If that situation should eventuate, the Commonwealth feels that may have no choice but to develop the necessary legislative and structural arrangements to implement a Commonwealth-only offshore safety authority and to allow the States/NT to go their own way.

# 11 Industry Safety

## Performance Measurement - Future Directions

### 11.1.1 Limitations of current performance measures

A number of issues of concern in regard to safety performance measurement have arisen during the course of this review:

- The Norwegian Petroleum Directorates and the UK Health and Safety Executive raised at the 2000 meeting of the International Regulators Forum their concerns that, based on a plateauing of the accident/incident curve and increasing numbers of high potential near miss incidents in each of their jurisdictions, overall North Sea safety standards have deteriorated and that there is a substantial risk of a major accident event occurring in the North Sea. This has focussed the attention of both regulators strongly on the issue of safety performance. The NPD in particular has embarked on a major safety performance project to more objectively identify critical risk areas and has publicly warned operators on the Norwegian Continental Shelf to implement new measures to prevent a continued deterioration of the safety standard on the Norwegian shelf.

This is an issue that has implications for Australia. Unfortunately, the Commonwealth does not have a sufficiently robust national safety performance data base or data analysis capability to determine whether or not Australia is similarly at increased risk in Commonwealth offshore waters.

- Phase 1 of the review attempted to provide both a historical perspective of offshore safety performance over time and a current snapshot of the regime with respect to detailing the administrative and legislative frameworks.

It was impossible to determine objectively from the data gathered in Phase 1 whether or not the level of offshore safety had improved over time or with the implementation of the safety case regime. Although there was a strong feeling on the part of stakeholders that safety had improved, the data available was inconsistent and insufficient to provide any meaningful result in support of that feeling.

- The Commonwealth had also hoped in this review to compare its performance to that of the UK and Norway under their equivalent

safety case regimes. It was frustrating to discover that valid comparisons could not be made due to the use of different definitions and reporting thresholds for the same class of data. On the most basic level, Lost Time Injury (LTIs) statistics are measured completely differently in different places. This problem is reflected across a range of safety measurements and makes it impossible under present circumstances to benchmark against other international offshore safety case petroleum regimes.

- A recommendation of this report is to review the regime again in 2005 to determine whether or not safety performance has improved over that time. With this in mind, it is apparent that the same difficulties in terms of objective data will also be experienced at that time unless safety performance measurement arrangements are put in place now that allow future objective comparisons to be made.
- The HSE has very recently undertaken to closely examine its safety statistics data base and intensify their analysis of safety data to avoid or minimise the chances of a recurrence of relevant incidents and accidents. The HSE has commenced this action after becoming aware that it had for some time been recording instances of train drivers passing through stop lights, but had never acted upon this information. In the 1999 Paddington rail disaster, caused by just such behaviour (the circumstances of which are being reviewed by Lord Cullen), the HSE is concerned that there may be other instances of such 'guilty knowledge' on which they as a regulator should have acted. There is a real risk that Australian safety regulators might unknowingly be in a similar position to the HSE.

### **11.1.2 Determining Australian Safety Performance - National Accident/Incident Data**

It is an issue of concern for the Commonwealth that the NPD and the HSE have publicly warned of their concerns of increased risk levels in their jurisdictions in the North Sea and of a raised potential for a major accident event. It is particularly concerning because, as is noted above, the Commonwealth is unable to determine whether or not Australia is also experiencing a national upward trend in high potential incidents.

Each State/NT jurisdiction has developed safety performance data collection arrangements based on a set of performance data (Safety Case Administrative Procedure 905 - SCAP 905) negotiated in 1995 between the Commonwealth and the States/NT and Operators.

For a number of reasons, this national data set has never been used as effectively as initially envisaged. Although the States/NT have maintained current data collections, difficulties were experienced in achieving meaningful statistical validity because of the small size of the data set. The

Commonwealth and the States/NT lack the resources and, certainly in the Commonwealth's case, the expertise, to analyse the data to identify trends or use in any predictive sense.

With the recognition of the value of lead indicators, the lesson from the HSE's experience of the need to avoid "guilty knowledge" and the need to make more use of data analysis in a predictive sense, it is appropriate to review the scope of SCAP 905 to ensure that it is meaningful for the future. While lost time injuries and information about medical treatment may well continue to be used, additional information about high potential near misses, and other lead indicators should also be considered.

As noted, this is an area where Australia could well do more, and an area where the Commonwealth should take the lead in analysing the national data for its relevance to operations in Commonwealth offshore waters.

### **11.1.3 International Benchmarking**

As part of this evaluation the Commonwealth conducted a workshop on performance management. A key objective of the workshop was to commence a consultation and liaison process with other members of the IRF and industry stakeholders. Participants, including the US, Australia and Norway, agreed to a proposal to develop a standardised suite of safety indicators that will:

- provide companies with meaningful safety performance data to determine, areas for improvement and identify trends reliably over time;
- enable companies to benchmark their performance with industry peers, probably on an anonymous or confidential basis;
- enable countries to develop reliable and meaningful annual national safety statistics/composite measures and to identify trends over time; and
- enable national regulators to benchmark the national offshore safety performance against other participating national regulators.

The outputs of this workshop were further discussed at the 2000 IRF meeting and it was decided to convene a workshop in Houston at the Offshore Technology Conference in May 2001 to discuss the project with IRF and industry representatives.

NOGSAC was consulted on this proposal, and members agreed to participate in the development of a "conceptual blueprint" on which to base discussions at Houston Conference.

This project has the potential to develop a suite of standardised global indicators, both lag and leading, that can be used by industry for their own internal benefit and which will also allow benchmarking between companies on an international basis. If this can be achieved it will be a major step forward. Box 11.1 provides more information about the concept.

#### **Box 11.1 Development of a Standard Suite of Performance Measures**

The difficulties of using lag indicators as a measure of safety performance have been well described a number of times, particularly the shortcomings of Lost Time Injury Frequency Rates (LTIFRs), which measure after-the-fact historical data. For example, the Piper Alpha oil and gas facility had a very good LTIFR rate and yet 167 lives were lost in 1988 when the facility exploded. The LTIFR situations prior to the disasters at the Moura mine and the Esso plant at Longford similar to those for Piper Alpha.

Finding alternative measures which are sufficiently standardised to enable valid comparisons between companies in Australia, and in the future between Australian petroleum safety performance and overseas safety performance will not be easy. It will probably involve a number of different measures. Examples of possible measures include:

- Measures of near misses that could have resulted in a major accident event;
- Measures of perceptive (attitudes) towards the commitment of the organisation to safety;
- Measures of activities which are being undertaken to identify and minimise risk (audits and close out actions);
- Existing lag indicators (fatalities, LTIFR or total medical treatments for injuries).

The challenge is to ensure that the measures that are developed are valid, reliable over time and consistently defined between jurisdictions.

#### **11.1.4 Facilitating Continuous Safety Improvement**

As is noted elsewhere in this report, a fundamental tenet of the safety case is the concept of continuous improvement for all aspects of the regime. This presumes the ability and readiness on the part of all stakeholders to measure changes in the level of their performance, and to use that information to drive improvement.

The development and use of appropriate key performance indicators to measure offshore safety performance has been of continuing interest to NOGSAC. The Committee regards performance measurement as a fundamental tool for identifying areas of high risk or under performance in

an organisation, targeting resources to best effect, analysing trends over time, etc.

The NOGSAC Performance Measurement Working Group has undertaken considerable work on performance indicators and relevant papers have received considerable national and international interest and to a large degree reflect best practice for the industry.

NOGSAC noted from the start that the prime beneficiary of any performance measurement program had to be the individual organisation using the tool. It did accept, however, that indicators which allowed wider comparisons - between a range of operators, with other industries or other safety regulatory authorities across the nation or with those of other nations - would be more valuable to organisations because of the wider comparisons allowed and the opportunities to benchmark.

Additionally, such indicators would provide the States/NT and the Commonwealth regulators with an important tool for driving continuous improvement across the industry nationally and for widely comparing the performance of the offshore industry.

Out of the early NOGSAC work on performance measurement came the concept of the use of Anonymous Perception Surveys (APS) for the measurement of the 'softer' aspects of an organisation's safety performance in such areas as leadership, communication and commitment to safety. The use of perception (or attitude) surveys is increasingly recognised to be fundamental to the effective measurement of many of these qualitative leading indicators.

The use of the APS concept for enhancing safety within an organisation is being trialed by Australian offshore companies and is now in its second phase, with six companies expected to undertake the standardised process over 2001/2002. The Commonwealth plans to fund an anonymous benchmarking comparison across the participating members, with a report providing information about their general level of performance in these 'softer' safety areas scheduled for 2001.

In the longer term, NOGSAC has suggested that the peak industry body, APPEA, adopt the APS, or an equivalent, as an integral part of its safety performance measurement suite. Box 11.2 sets out more details about the APS.

## Box 11.2 Anonymous Perception Surveys (APS)

### Anonymous Perception Surveys (APS)

- APS are used to gauge a company's performance in "soft" areas of management commitment and leadership and to identify and drive cultural change.
- A survey has been developed by the National Institute of Labour Standards (NILS) which contains around 80 questions that span 14 categories and take about 15 minutes to complete.
- The survey is completely confidential.
- Woodside and BHPP participated in 1999 and four more companies have joined the project for 2001-2002.
- The approach has been strongly endorsed by employees, as is illustrated by the comment of Colin Turner, one of the employee representatives on NOGSAC:  
"I believe that the honest perceptions of the workers actually doing the work in the field are one of the best measures of the safety performance of that part of the business."
- The advantage of the APS is that it can be used to identify strengths and weaknesses of the safety management system. Results for each category are reported as the percentage favourable employee responses as shown by the following chart;

**Sample category scores from the NILS APS for a hypothetical company**  
Shown as % Favourable Response



- In the example above, employees think that management is concerned with safety and communicates them well (84%, 83%). However, employees also think that the company does not manage change well (63%).

## **APPENDIX A : TERMS OF REFERENCE AUSTRALIAN OFFSHORE SAFETY REVIEW**

In December 1993, an amendment to a schedule of the *Petroleum (Submerged Lands) Act 1967* formalised the safety case regime to apply to operators of petroleum facilities in Commonwealth waters.

The safety case regime which developed as a result of this amendment has now been in operation for some six years. Over this period, the Australian offshore industry has maintained a low incidence of lost time injuries. Nevertheless, it is timely to conduct a comprehensive review of the safety case approach to managing and improving the administration of safety in the offshore petroleum sector, as was foreshadowed in the Commonwealth's 1998 *Minerals and Petroleum Resources Policy Statement*.

To that end, in pursuit of continuous safety improvement and the achievement of world's best practice through the application of the safety case concept, the review will give consideration to:

- the recommendations of the 1996 Barrell Report, The Regulation of Health and Safety in the Australian Offshore Petroleum Industry
- the lessons learnt from the Longford gas plant fire and explosion and other recent incidents and accidents;
- relevant overseas experience;
- existing safety case documentation and arrangements.

The objective of the review is 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 is to make recommendations to improve the overall operation of the Australian offshore petroleum safety case regime. The recommendations should separately cover the effectiveness of regulatory arrangements, and the effectiveness of the implementation of the safety case regime in Australia.

**APPENDIX B: REPORT OF THE INDEPENDENT  
REVIEW TEAM**