

Creating a New Offshore Petroleum Safety Regulator

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Peter Wilkinson, Department of Industry, Tourism and Resources, Australia

Abstract

The Commonwealth Government of Australia is developing a new national offshore petroleum safety authority, NOPSA. The policy is set, concept selection has been made, detailed design almost finished and construction about to start. This paper will describe the background, the problems encountered and how they are being solved in consultation with stakeholders including the offshore industry and its workforce. The goal is an effective and efficient offshore petroleum safety regulator that is respected for its professionalism by all stakeholders.

Offshore Oil and Gas in Australia

In world terms Australia has a small offshore oil and gas industry. It has around 60 facilities in production but with large proven hydrocarbon reserves, especially gas. By world standards Australia is relatively unexplored. The industry is of great importance to Australia and is important regionally with a long standing LNG export industry to Japan. The recent signing of a A\$ 25 billion LNG export deal with China is Australia's largest ever export order.

Constitutional Background

Government regulation inevitably reflects the political context. Australia has a Commonwealth structure. The States and Territories, (Western Australia, Victoria and the Northern Territory are the most important from an oil and gas perspective) have their own governments, and substantial sovereign rights. In the offshore context, the States/Northern Territory have title and power to make laws up to the three mile limit and the Commonwealth Government has "title" to all petroleum seaward of the three mile limit, but in practice authority is exercised jointly with the relevant State or Territory, which is empowered to exercise all day to day regulatory powers, including

safety. This agreement called "The Offshore Constitutional Settlement" has generally served Australia well.

Offshore Petroleum Safety Regulation

The States and the Northern Territory carry out day to day offshore petroleum safety regulation using a mixture of State and Commonwealth law. Until the 1990s this law was of the traditional prescriptive type. After the Piper Alpha disaster, Australia carefully considered what lessons could be drawn from this disaster that were applicable to Australia. It was decided to introduce a safety case approach and the law was modified although some prescriptive aspects remain. This approach was judged a success by all parties and will be maintained.

Administration of the offshore petroleum law

Although the law was changed in the 1990s to introduce the safety case approach, the administrative arrangements to implement it were not. In the Joint Authority of the Commonwealth and State/Northern Territory Governments, the States/Northern Territory are responsible for day to day safety regulatory decision taking, the systems and procedures they use and for recruiting and employing the staff applying them. The Commonwealth Government has legal and political accountability but does not have the authority to determine how the laws are applied on a day to day basis.

Problems with this system

The Commonwealth Government was concerned about the quality of offshore petroleum safety regulation and was committed to reviewing the success or otherwise of introducing safety cases, following the Piper Alpha disaster. The Review was started in 1999 and was overseen by a steering committee consisting of representatives from the

Commonwealth Government, the States/Northern Territory, industry and the workforce to help ensure its independence and continued focus. The core of the Review was an evaluation of the system of regulation by an international team of offshore safety experts who reported in March 2000.

Independent Review Team (IRT) Findings

The IRT were asked to assess the effectiveness of the structure and implementation of Australia's offshore petroleum safety case regime. They consulted extensively. They interviewed operators of facilities, executives and line management, workforce representatives, State/Northern Territory regulators and Commonwealth officials.

The IRT identified shortcomings in the legislative and administrative structures. They concluded:

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 efficient regulation of the offshore petroleum industry...Much would require improvement for the regime to deliver world-class safety practice.

In particular they found that:

- There are too many acts and regulations, their boundaries are unclear, there are overlaps and application is inconsistent; different sets of laws apply for each State/Northern Territory;
- The State/Northern Territory safety regulators lacked regulatory skills, capacity and consistency and did not have a clear view of their role;
- The Commonwealth Government did not have sufficient resources, technical expertise, credibility and authority to drive the required changes.

They recommended:

- The current framework of laws be revised, and;

- The regulatory system be restructured by establishing a national petroleum regulatory authority to oversee safety regulation in Commonwealth offshore waters.

Policy Development

Developing an appropriate policy to recommend to Government was a protracted process involving close liaison and negotiation with all stakeholders, and notably with the State/Northern Territory Governments who, whilst agreeing that change was needed, argued strongly for retention of the existing system. The Australian Petroleum Producing and Exploration Association (APPEA), representing the upstream petroleum industry, did not accept that the case made for retention of the existing system was compelling or convincing. Workforce representatives indicated that a single national authority was necessary. Negotiations continued.

One policy option was to simply adopt the IRT's recommendation of establishing a single regulator for Commonwealth waters. The Commonwealth Government had the authority to do so and most oil and gas production is in Commonwealth jurisdiction. However, in the case of Western Australia there is a substantial amount of hydrocarbon production in coastal waters within Western Australia's jurisdiction. If this policy were to be adopted some companies operating offshore Western Australia would be faced with two regulators – one for State coastal waters and a second for Commonwealth waters.

Accepting that the creation of a single regulator for Commonwealth offshore waters was not the optimum policy option, the Commonwealth Government proposed that an independent authority be developed to regulate both Commonwealth and State/Northern Territory waters. In the (Southern Hemisphere) spring of 2001 this proposal was adopted as part of the election manifesto of the Coalition of the Liberal and National parties who were re-elected and in turn this became Commonwealth Government policy. Shortly after the Western Australian Government indicated their support for this policy and finally on Friday 13th September 2002 all the Governments agreed.

Policy Implementation

One of the key findings of the IRT was that the Commonwealth Government did not have sufficient resources, technical expertise, credibility and authority to drive the required changes. To address these deficiencies, they strengthened the offshore safety team, hiring two offshore safety specialists in June 2001. This strengthened team has subsequently played a key role in negotiating with stakeholders and developing the proposals for improving offshore safety regulation.

Co-operation with the States/Northern Territory(NT)

To achieve the policy objective of a single regulator for all Australian waters, detailed discussion and negotiation with all the States/NT was needed. This was done via the Ministerial Council on Mineral and Petroleum Resources (MCMPR) on which all Australian Governments are represented. The MCMPR endorsed a set of principles for regulation of safety of petroleum activities in Commonwealth and State/NT offshore waters. These principles state that:

- An enhanced and continuing improvement of safety outcomes in the Australian offshore petroleum industry is a priority for Governments, industry and the workforce.
- A consistent national approach to offshore safety regulation in both Commonwealth and State/NT waters is essential for the most cost-effective delivery of safety outcomes in the offshore petroleum industry
- The safety case approach is the most appropriate form of regulation for the offshore petroleum industry to deliver world class safety by developing appropriate behaviour within the industry.

Efficient and effective safety regulation requires:

- a legislative framework that is clear and enforceable and that requires operators to discharge their responsibilities for safety;
- competent and experienced personnel forming a critical mass of appropriate skills;
- structure and governance of the regulatory agency that demonstrates independence, transparency, openness and cost efficiency;
- an independent approach in implementing legislative responsibilities and in dealings with industry; and agreed performance criteria.
- the industry and its workforce to be empowered to identify and report potential hazards and to ensure that appropriate control measures are implemented.
- The streamlining and coordination of approval processes in safety, titles, environment and resource management to ensure no undue delay to project development in the offshore petroleum industry.

Concept Selection

In conjunction with representatives of all stakeholders a set of criteria was developed to give practical effect to the Ministerial principles and against which possible organisational models could be assessed. The criteria covered the capacity to improve safety outcomes, consistency, effectiveness and efficiency, independence, accountability and meeting the needs of the industry and workforce.

Four organisational models were considered against these criteria. The four models were:

- A single national agency (the Commonwealth Governments preferred option);
- An enhanced version of the status quo - a so called "Added Competence Model;"
- Retention of the existing State/Northern Territory based system but with a separate

agency for safety case evaluations and investigations of major accidents, the “Cooperative Model;” and

- A fully outsourced or “Privatisation model.”

Assessment of the four organisational models was carried out at a round table forum with all governments and stakeholders represented. All the models proposed could meet in full at least one of the criteria. Model 4 the “Privatisation Model” was discarded because of fundamental problems associated with the lack of confidence by stakeholders and governments due to its lack of demonstrable independence and its inability to meet the efficiency and effectiveness criteria.

Some models could meet a number of the criteria, (notably models 2 and 3). However, models 2 and 3 failed to meet the efficiency and effectiveness criteria as well as not meeting stakeholders' objectives, nor the consistency criteria.

It was agreed that the Commonwealth Government's preferred option, that of a single national agency, could best satisfy the principles and was recommended to the MCMPR for adoption. This option was also always the institutional arrangement strongly supported by the industry and its workforce.

Following a meeting on 13 September 2002, the MCMPR recommended that safety of offshore petroleum activities in Commonwealth and State/NT coastal waters be regulated by a single national statutory authority formed under Commonwealth legislation.

Health, Safety and Environment?

The inclusion of environmental regulation raises some additional complexity but, on balance, could be a rational aggregation of functions which could deliver operating efficiencies and receive the support of most States, industry and workforce. MCMPR recommended that consideration be given to including environment regulation if agreeable to jurisdictions, and if this does not delay the commencement of the safety authority. In practice the need for further detailed work means that at least initially, environment regulation will fall

outside the remit of NOPSA.

From Concept to Detailed Design

Having decided on the broad concept for an offshore petroleum regulator, it was now necessary to design an effective and efficient organisation. The aim is to create an effective offshore petroleum safety regulator, staffed by personnel with appropriate qualifications, which is efficient in its operations and respected by all stakeholders, the workforce, companies and governments.

The Role of the Regulator

Before questions of NOPSA's location, structure and its staff can be discussed, the overall purpose of the organization needs to be considered. The safety regulator provides an extra and independent layer of assurance to society, governments, the industry and its workforce that companies in collaboration with their staff, have identified the risks to health and safety and have put appropriate measures in place to control these risks. The primary method of doing this is by means of a safety case which is produced by the company and assessed and once accepted monitored by the regulator. These formal interactions enhance public confidence in the robustness of the duty holder's risk control measures.

Absolute safety cannot be guaranteed by any form of regulation. Neither legally nor in any other way does safety regulator acceptance of a safety case amount to a guarantee that all risks have been removed or reduced to as low as is reasonably practicable – this is not the role of the regulator, as the responsibility for managing risk lies with the duty holder.

The safety regulator's task is:-

- to evaluate whether the evidence from the safety case and other activities indicates that the duty holder has effective arrangements to manage health and safety ;
- to test these arrangements and to seek further information in cases of doubt;
- to take action to secure compliance with the law where necessary and;

- to stimulate action on offshore petroleum safety through leadership, guidance and education.

For the regulator to be credible and effective it needs to be:-

- targeted and proportionate in its inspection activities and examination of safety cases;
- consistent in approaching similar situations to achieve similar outcomes;
- transparent in its assessment of the duty holders safety cases;
- sufficiently expert to be able to assure itself that duty holders are capable of discharging their responsibilities;
- independent and challenging, yet willing to cooperate with, and offer guidance to those it regulates and others in the pursuit safety.

The NOPSA Organisation : Location, Staff, Structure and Making it Work

To make NOPSA work will need adequate resources, an appropriate structure, effective leadership, staff of the requisite quality, as well as systems and procedures backed up by an appropriate ethos. All of these issues will require further detailed discussion and in particular it is reasonable to expect the CEO to have a major role in the design and operation of these internal managerial arrangements. An estimate of NOPSA's running costs, based on the assumptions set out in this paper are for A\$7.2 million in year one and A\$6.6 million per year thereafter.

Location

There are a number of factors, which need to be taken into account when considering the location of the agency. Perhaps the most important is the location of the industry, including its offshore facilities and its onshore management.

Offshore Facilities

Regulatory staff need to be able to visit the offshore facilities and the staff responsible for managing the facility. Access to the facility is needed to examine the extent to which the policies, procedures and systems of work, described by the operator in the safety case, are implemented offshore. This is done by a combination of activities usually described as "inspection," "investigation" and "audit". These are all relatively infrequent activities and probably

amount to a few visits per facility per year. In addition, on rare occasions urgent access to a facility will be required, usually following incidents.

Operators Offices

Safety case processes require a higher level of engagement by the regulator with an operator's staff, compared with some other regulatory approaches. This occurs at all stages in the facility's lifecycle, before the case is submitted, especially during the assessment phase and post acceptance. These activities inevitably involve regular meetings with an operator's staff onshore.

Such meetings are essential, because it is from the operator's onshore offices that the facilities are managed. Any regulatory approach that did not involve examining the workings of safety related management processes and only visited the facility would be seriously flawed. Furthermore even to carry out the offshore element of the regulatory oversight, such as audits and investigations, visits to the operator's offices where the senior management team and technical support functions are located, are still needed.

Experience shows that there are many more visits to the companies' offices compared with visits offshore. Therefore the main factor to be taken into account when considering the location for NOPSA, is where the operators' onshore offices are located. The main focus of the industry is Perth; this is likely to continue. This would strongly suggest that the largest single group of staff should be located in Perth with smaller groups in Melbourne and Darwin. (The facilities in the Timor Sea administered by the NT Designated Authority are managed by Perth based companies).

As the largest single group of regulatory staff will be in Perth, it also makes sense for the HQ function to be located in Perth. To locate elsewhere would introduce unnecessary barriers to communication between the leader of the agency and the bulk of the industry and NOPSA's own staff.

The Numbers and Type of Regulatory Staff for NOPSA

At this point it is worth considering in more detail some of the regulatory activities NOPSA will carry out and the implications these have for staffing

NOPSA. At the highest level the regulators job is to judge if the company has the leadership, staff, systems and procedures to safely operate the facility. Where there are deficiencies, the regulator must have the capability to recognise these and develop appropriate strategies to persuade senior staff to make appropriate changes. Only rarely will legal options be necessary to enforce change. If legal options are necessary to secure change, it is at least arguable that the regulator has failed to convince the company that remedial action is needed. Regulatory staff must therefore have personal credibility with senior company staff. A key aspect of this credibility is knowledge and (preferably) first hand experience of managing a complex operation in a technically challenging environment.

At its simplest Safety Case assessment is concerned with making a judgment of whether the operator has identified the hazards, assessed the risks, implemented appropriate control measures for the risks and has an adequate management system for all these processes. Much of this activity, (but not necessarily all) is done in the offices of both the regulators and the operators. Auditing does much the same with usually greater emphasis on examining how these processes are implemented in practice and more of this activity is carried out at the facility – but again, not all.

As a result, whether one is auditing or assessing a safety case, much the same suite of personal characteristics, in terms of skills, knowledge and personal attributes are needed whether one is an assessor, auditor or does both. Separating auditing and assessment staff is unnecessary, and undesirable. Unnecessary for the reasons advanced above and undesirable because auditing, in large measure, involves examining the on site implementation of those systems and procedures referred to in the safety case and which to some degree will have been assessed. Who better to assess the implementation of a system than the person who assessed the written intentions presented in the safety case? Not to do so suggests inefficient use of staff as it implies that staff are needed who cannot do elements of both activities and hence would be very specialised. Furthermore, experience from other safety case regimes suggests that separating “assessment” staff from those

carrying out auditing and investigations can lead to unhelpful conflict within an organisation.

The skill set of a competent offshore petroleum regulatory organisation embraces a variety of knowledge, skills and personal attributes. These include operational and engineering knowledge relevant to offshore technology, personal attributes of the staff concerned and health and safety regulatory competencies. There will always be a need to hire consultants to fill particular gaps in knowledge or expertise but this should be kept to a minimum.

Discussions with senior company oil industry personnel and regulators in the offshore and other environments strongly support the importance of having technically literate people with operational experience – even if it is not from offshore petroleum. Thus staffing NOPSA is not just a question of filling a range of posts with specific technical offshore petroleum competencies. These are needed but must be supplemented with people that have a wider operational experience. Thus staff with operational experience of the onshore chemicals industry, power generations, mining and other backgrounds may also provide suitable staff for NOPSA, (as has already happened in the industry itself).

What level of salary is appropriate?

Compared with more traditional safety regulatory approaches, regulation by safety case requires a higher calibre of regulatory staff. This is because staff are needed who are able to make more fundamental judgments about the acceptability or otherwise of operators safety case, standards and work practices because there are few standards prescribed by law. If these judgements are to be credible to the industry and its workforce, they have to be founded on expertise backed by experience.

In determining the NOPSA design concept it is assumed that staff will be recruited with the requisite level of expertise and experience and that a smaller number of good quality staff will achieve more compared with a larger number of average quality staff. The salary structure is predicated on the need to attract and retain staff of a quality commensurate with the needs of an offshore petroleum industry. Whilst the salary levels do not

need to match the international oil and gas industry, they do need to be sufficiently high, in combination with other aspects of the job, such as the location of the offices and hence lifestyle and intrinsic interest of the work to attract and retain appropriate staff.

How many staff?

Deciding the number of staff needed to run an effective and efficient offshore petroleum regulator is highly judgmental. This question has been faced by all similar regulators. There are no simple formulae that can be applied. It is widely accepted that the existing Designated Authorities do not have the appropriate numbers of staff with all the requisite qualities. It is relatively easy to identify the requisite skills, knowledge and personal characteristics required, however to decide on the number of staff needed is more complicated than merely adding together what each existing State/Territory believes they need to do their area of work. Such a calculation would not take account of efficiencies of scale.

A certain range of competencies are needed and a certain number of staff who possess these competencies, even if these staff only spend part of their time working on offshore safety. In practice some staff spend time on other work such as onshore petroleum safety regulation and other types of regulatory work such as titles and resource management. Internationally it is no easier and many regulators have tried to develop formulae to determine the appropriate number of staff.

Based on current and likely workloads and the need to provide a critical mass of expertise within NOPSA it is estimated that the minimum number of regulatory specialists needed to discharge the functions of NOPSA, (including internal managerial tasks) is 24. A further 9 or 10 other professional staff are also needed to support the frontline operational work.

Organisational Design Assumptions

- NOPSA is set up as a matrix structure with at most two levels between the most junior member of the team and the CEO;
- all staff are expected to play a part, as required, in developing and managing the organisation;

- these roles will be concentrated at CEO, Team Leader and in the Executive Team;
- each team will have an Executive Assistant to provide support to their allocated team and more widely to the Executive Team;
- no one team, (wherever it is physically located) is self contained and will draw on support from other teams;
- all regulatory staff will have a “front line” role in dealing with the industry and may also have an additional role in providing a focus for advice for NOPSA in a particular specialism or discipline;
- all regulatory staff, (including the CEO) will be expected on recruitment to be able travel offshore regularly.

Making the Organisation Work (1) – Regulatory Professionals

NOPSA will have a single, consistent mode of operation across all Australian waters. It is proposed that most, (if not all), regulatory staff will have some assessment, investigation and auditing responsibilities. The proportion of this work will vary according to circumstances. It is assumed that the regional offices in Melbourne and Darwin will not be stand alone self contained offices. Furthermore *all* staff will be required to play a part in developing the organisation.

Effective teamwork will be essential to carry out this work effectively. It is envisaged that all parts of the organisation will have to call on resources located elsewhere, from time to time.

A possible way to structure the regulatory aspects of the organisation is for each team to be allocated a range of companies. These teams will:

- provide the first point of contact for their allocated companies;
- manage the assessment of safety cases, calling in expertise from other parts of the organisation as required;
- devise and manage an audit programme, (in consultation with others);

- provide an initial response for incident investigation.

In addition, depending on the expertise within the team, one or more team members will have topic responsibility for a particular area of expertise. So for example a process engineer would have day to day responsibilities for those companies and facilities allocated to his or her team, and would also have some responsibility for maintaining and developing their expertise in their discipline. They would then be the first point of call for other staff in the organisation, wherever they are physically located, seeking advice on this specialism.

Where there is more than one person with a particular area of expertise they collectively would provide the focus for the specialist topic. This would fall into two main types - case specific work relating to a particular facility and work to help to guide the organisation in its operational priorities in relation to the topic. The balance of work, between managing the day-to-day interactions with their allocated companies and of providing a source of advice to their colleagues, is of course a matter for judgment. There are two reasons for having this sort of arrangement – effectiveness and consistency

Effectiveness and Consistency

Effectiveness in a goal setting environment requires a broad exposure to a variety of offshore petroleum operations. Inevitably, this exposure is limited by the State/NT based system. Without a broader exposure regulators cannot accurately decide what is appropriate in any given circumstance. Experience of a variety of different offshore operations and operators is required because of the nature of goal setting regulation. In the absence of fixed legislative standards to work against, how does a regulator decide if the standards presented in a safety case are appropriate? The required knowledge to help make these decisions comes from a variety of sources. In part, it may come from a regulator's prior work experience. However, principally it comes from experience of regulating a variety of different companies and their operations. Comparing the standards achieved in different firms allows regulators, in a goal setting environment, to "calibrate" their decisions as to what is "acceptable." In other words the more experience a

regulator has, both organisationally and individually, the better able they are to define benchmarks against which judgements can be made. The same argument applies to "consistency". It is difficult to be consistent in a goal setting regime if individual regulators have too narrow a field of responsibility.

This type of organisational arrangement is sometimes called a matrix structure. As with other management structures it has its strengths and weaknesses but can facilitate this type of work, especially when the structure is designed to work as a matrix from the start.

Making the Organisation Work (2) – Administrative Professionals

To make NOPSAs work, provision must be made for such functions as information technology and communications, (ITC), training, finance, payroll, human resource management, (HR) and Departmental and Parliamentary liaison. For the purposes of this paper it is assumed that a total of nine staff, (including the team Executive Assistant) are available to contribute to this work. In particular depending on the method adopted for cost recovery this may require an additional member of staff.

In a small organisation such as is envisaged for NOPSAs, the essential support functions require a larger proportion of the total resources, (including staff) compared with a larger organisation. Careful consideration needs to be given as to how the above services can be effectively and efficiently provided. Experience from other small agencies suggests that outsourcing functions such as IT, HR and finance is a viable option. There is an active market in these areas and outsourcing can be a cost-effective option especially where this is done on an "informed purchaser" basis.

The attached organisation chart shows a possible structure. The manager of the Executive office will manage a wide range of support work for the organisation. This will include a need for good liaison with a variety of government departments and this implies, amongst other qualities, the post holder must be familiar with government administrative processes. Careful consideration will

need to be given to the other competencies in this group. In particular, if a number of functions are outsourced it is important that one of the post holders has strong contract management skills.

Making the Organisation Work (3) –Management Framework

The CEO will need to develop internal managerial arrangements to ensure that the organisation is effectively run. These will probably take the form of a number of internal committees variously chaired by the CEO, Team Leaders/Executive Office leader and other staff depending on the committee's purpose. These committees would need to cover:

- corporate planning;
- monitoring of organisational performance;
- risk management, (financial audit, compliance with NOPSA procedures, occupational health and safety of staff, emergency response, business interruption planning, etc);,
- external communications, (publications, media, web site, speeches etc);
- staff consultative committee;

In addition the CEO would need to establish arrangements to enable a continuing dialogue with external stakeholders including industry and its workforce representatives. A possible way of doing this would be to establish an industry and workforce reference group chaired by NOPSA with the objective of communicating with the industry and receiving feedback on NOPSA's performance. Such a group or a sub-committee could provide a vehicle for endorsing guidance material produced where required by NOPSA.

Measuring the performance of NOPSA

Measuring safety in "major hazard" industries is fraught with difficulty. It is the aim of regulators to ensure that companies operating such facilities do so in such a way as to minimise the probability of a major disaster. These events are characterised by their low probability but high consequences. A key

question is how should NOPSA's performance be measured?

At first sight, it may be thought that one of the traditional measures of health and safety such as loss time injury rates (LTIs) and other incident based indices could be used as a surrogate measure for NOPSAs performance. These sorts of measures grew out of work done in the manufacturing industry - mainly in the US and adopted elsewhere. Large numbers of people working in large factories with lots of easily measured but relatively minor accidents provided a good statistical basis for measurement and comparison. The concept worked well for easily observed injury type incidents. It did not work well for health related issues and does not work at all for major accident type events, although they are still widely used.

Although the deficiencies of these types of measures have long been recognised by experienced operators and regulators, the attachment to LTI type measures is strong. At best they are "lagging" indicators - measuring failures, because by definition the incident must have already happened to be measured. At worst they are akin to driving down the freeway looking in your rear view mirror!

A different approach was needed. Research has consistently shown that major accidents are always a combination of individual error, and broader managerial failure - the so-called organisational accident. The approach adopted did not throw out the old gains made by looking at LTIs or by focussing on engineering excellence. (The old idea of blaming the person nearest the accident, the "careless worker" approach had long been discarded). But it did acknowledge that they were inadequate on their own and greater emphasis on management systems and the emerging discipline of "human factors."

The importance of management systems, often referred to as safety management systems (SMS) in this context was recognised. Companies overhauled their management systems, in some cases developed and documented them for the first time in a coherent way. This was important because it emphasised the importance of getting the right *inputs* to the management of safety, and then monitoring them to ensure they were applied properly in practice. Judging what the right input

is, in any given situation is of course a more difficult decision (for regulators as well as operators) than counting failures measured by incidents and then taking corrective action. But there is no alternative because major incidents are so rare and even minor incidents are infrequent enough to make the use of LTI indices statistically suspect.

The consequence of this is that incident based measures of safety are of little use in measuring the health of a system designed to prevent major accident incidents. This is as true for NOPSA as it is for facility operators. Additionally, NOPSA do not have direct control over how operations are run and thus measures such as LTI indices have even less relevance for regulators. However the *inputs* needed for effective regulation are known. In short these are sufficient regulators with the appropriate competencies to be able to critically examine and professionally challenge, (in a selective manner), the assertions of operators and their work practices, as described in safety cases and as carried out on facilities.

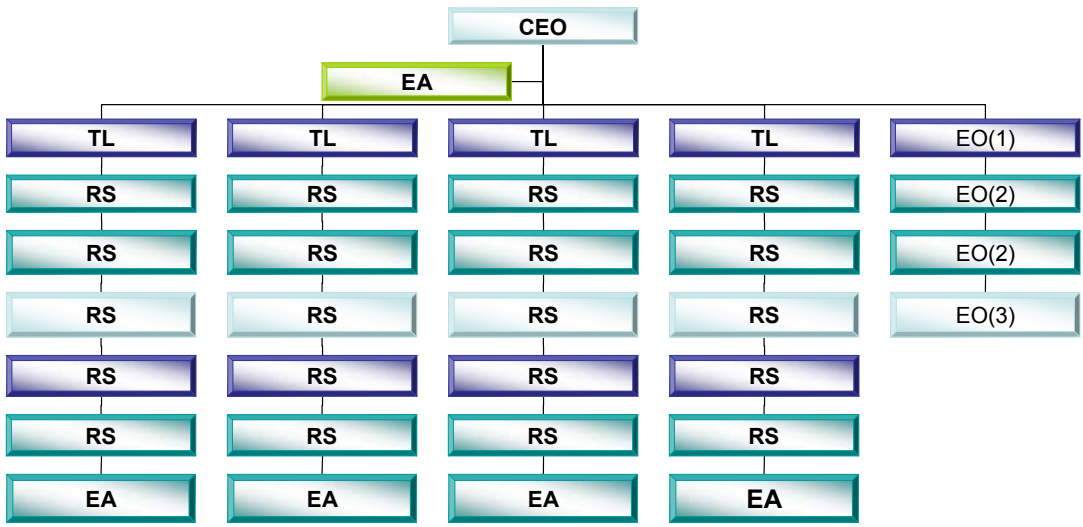
In determining appropriate performance measures for NOPSA, these should focus on appropriate regulatory inputs such as developing, implementing and reviewing the key processes necessary to make NOPSA work. At best these are surrogate measures of performance recognising that there is no simple nor easily visible link between NOPSA's performance and the industry's health and safety performance. Examples of performance measures which NOPSA could adopt include:

- Achievement of planned numbers of audits and investigations;
- Safety case assessments completed on time;
- Review and improvement of a declared number of internal systems and procedures;
- Stakeholders degree of satisfaction with regulatory performance as measured by survey;
- Degree of compliance with internal performance standards as measured by internal audit.

Conclusion

Australia is well on its way to achieving its vision of a new offshore petroleum regulator which is respected by all stakeholders. A small but highly capable organization is planned to operate on matrix management principles. It will have a very flat organizational structure with a maximum of two layers between the most junior member of the team and the CEO.

Concept selection has been made, detailed design started and in parallel construction is about to start with "production" to commence on the first of January 2005.



TL=TEAM LEADER, RS=REGULATORY SPECIALIST EO=EXECUTIVE OFFICER EA=EXECUTIVE ASSISTANT