

Working Paper 9

**Principle, Process, Performance or What? New Approaches to OHS
Standards Setting**

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Principle, Process, Performance or What? New Approaches to OHS Standards Setting

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1. Introduction

In designing occupational health and safety (OHS) standards, it is vitally important to determine what kinds of measures are most likely to produce best policy outcomes, influence organisational behaviour and achieve genuine improvements in OHS performance, while being enforceable and able to be implemented at an acceptable cost. Crucial considerations in designing OHS standards that meet these criteria are the *content and coverage* of standards, the *type* of OHS standards, and the *policy framework* within which standards are developed and implemented. These issues have major implications not only for regulators, duty holders and potential victims of work-related injury and disease, but also for the overall effectiveness of the regulatory regime. This paper examines these three aspects of OHS standards setting with the aim of developing approaches to standards setting that are capable of meeting OHS regulatory challenges in the 21st century. The particular focus of this paper is standards setting¹ under OHS statutes, regulations and evidentiary standards (explained further in Section 4.5).

Section 2 of the paper identifies major structural changes in the nature of work, responsibility and risk, which provide an important context within which standard setting for the early 21st century must take place. It then canvasses some of the challenges presented by the goals of providing comprehensive coverage of OHS risks, extending the influence of OHS regulation to all of the key parties contributing to OHS risks, and ensuring effective coverage of all those exposed to those risks.

Section 3 examines the various types of standards that might be invoked to protect OHS, with reference to four main options available: specification, general duties, performance-based and systematic process/systems-based standards. In doing so, it aims to develop a clearer conceptualisation of types of standards, the distinctions between them, and their respective strengths and weaknesses. Section 4 identifies some considerable shortcomings of existing standard setting arrangements and proposes a substantially different mix of standards, which in combination would be more effective in achieving OHS objectives in the context of 21st century work and organisations. These initiatives are designed to stimulate systematic OHS management, to define OHS performance outcomes and targets more clearly, and to specify particular preventive measures, when required.

Finally, the broader policy framework for OHS standards setting is briefly surveyed in Section 5. There are recognised challenges posed by concerns about: national consistency; the most appropriate forums and forms of representation to take account of a cross-section of interests; and the processes and criteria for decision-making in OHS standards setting. Some alternatives are canvassed as to how best to achieve a suitable policy framework for OHS standards setting.

2. Challenges for OHS regulation for the 21st century.

In this section we canvass some of the challenges of OHS regulation for the 21st century. We argue that if the broad goal of OHS regulation is to prevent or at least minimise occupational fatalities, injuries and ill-health,² then achieving this goal will involve: (1) harnessing the preventive effort of key parties that contribute to OHS risks; (2) ensuring that all workers are protected under OHS law; and (3) addressing all sources of OHS risks, whether these are physical, chemical, ergonomic, biological, psychosocial or organisational. In turn, this involves consideration of the changing nature of workplaces, organisation of work and the labour market.

2.1 The changing nature of work, responsibility and risk

As we enter the 21st century, Australian workplaces, the nature of work performed and employment arrangements are quite different from the world of work observed by the Robens Committee in 1972. Work is no longer predominantly undertaken by full-time employees, with relatively stable employment, working for large, unionised organisations in "blue collar" industries or in the public sector. A series of interlinked economic, political, managerial and organisational influences have contributed to a significant alteration in the economy, the labour market and the structure of organisations. As these changes and their impact on OHS will be explored further in later papers at this conference, we will simply summarise these changes here, for the purposes of discussing their implications for standard setting.

Key changes include: (1) a shift in employment away from "blue collar" sectors such as manufacturing, engineering and mining towards the service sector; (2) reduced public spending, with a resultant decline in public sector employment and pressures on OHS in this sector; (3) fragmentation and downsizing of organisations with the break up of larger business units into smaller businesses or networks of production, and devolution of managerial responsibility (but not necessarily managerial authority); (4) a rise in sub-contracting and use of agency labour, characteristic of a deregulated labour market; (5) a rise in self-employment as a proportion of total employment and an increase in small enterprises - as many people are self-employed or work for micro-organisations (< 10 employees) as work for larger private or public sector organisations; (6) an increase in casualisation, part-time work and short-term employment; (7) an increase in employment of women; (8) an increase in business system franchising with at least 750 franchisors and 50,000 business franchises in Australia;³ (9) declining union membership and representation on OHS issues; (10) an increase in the duration of working hours (per shift); (11) a trend to aging of the workforce; (12) a significant level of unemployment which is now a sustained feature of the economy; and (13) an increase in trade in goods and services globally, associated with the removal of trade barriers and mutual recognition of standards.⁴

In consequence there have been significant changes in the parties contributing to OHS risks; the persons exposed to risks and their relationship to these "risk producers"; and to the nature of risks to health and safety at work. These changes have important implications for the design of OHS standards.

2.2 Who has responsibility and for whom?

In the new work arrangements, influences from outside the organisation may have significant control over the work performed, conditions of work, methods of work organisation, time pressures, equipment and work facilities, all of which have significant implications for OHS. This is undoubtedly the case in contractual arrangements such as outsourcing, franchising, sub-contracting and self-employment. These arrangements "therefore represent a stumbling block for regulatory strategies based on the traditional concept of the employment relationship".⁵

Responsibility properly lies with those who control the generation of risks and who are in a position to eliminate or minimise risks. As well as employers (large, medium and small), this includes: principals (in sub-contracting relationships); host employers (of agency labour) and labour hire firms; those procuring goods and services; franchisors and franchisees; and those that plan, design, produce and supply workplaces, plant, substances and other goods used at work, as well as work systems. To add to the complexity, these roles are often overlapping. For example, a manufacturer of workplace machinery is also an employer, may be a principal contractor who outsources some work to sub-contractors, may be a host employer engaging labour hire workers to cover staff shortages, and may procure equipment, specifying requirements that impact upon OHS.

Those exposed to risk, are not only employees, that is, persons working under a contract of service. The "risk exposed" include sub-contractors, self-employed, labour hire workers, franchisees and their employees, the occupants of workplaces and the users of plant, equipment, substances, materials and systems designed, produced and supplied by a variety of sources. Again, these roles are overlapping. For example, a self-employed person may be the occupier of premises owned and controlled by others, use equipment supplied by others and supply services, as a sub-contractor, to others.

Thus there are multiple, and overlapping, relationships between those with real control over OHS in contemporary working life and those exposed to risk. Only some of these relationships are addressed under existing OHS law and the scope of responsibility varies between the ten Australian OHS statutes. While the principal duty holder is the employer (to employees and others), the self-employed and employees also have responsibilities (to themselves and others). Other parties with responsibilities, in at least some jurisdictions, are: persons in control of workplaces, premises or plant; designers, manufacturers, importers, suppliers, installers and erectors of plant; and manufacturers, importers and suppliers of substances. Those who design buildings and structures that consist of and comprise workplaces have a duty of care under the SA and WA OHS statutes.⁶

There is a more confusing picture of who has responsibility, and the scope of that responsibility, in relation to contractors, labour hire workers and business franchises⁷. In regard to sub-contractors and labour hire workers, the OHS statutes adopt different approaches as to whether responsibility rests with sub-contractors and labour hire firms, or principal contractors and host employers, or whether responsibility is shared. Thus there are weaknesses in the protection of these contingent workers. The OHS statutes are silent on the responsibilities of franchisors, in relation to franchisees and their employees. As a common characteristic of franchising arrangements is the tight control that the franchisor has over the way that the franchisee's enterprise is managed and operated, the systems of work and sometimes facilities, equipment or substances used, it follows that the franchisor's conduct of

their business or undertaking has the potential to impact significantly on OHS in the franchisee's operations. Yet in only two states, Victoria and Queensland, could the duties of employers and self-employed persons to others, extend to franchise arrangements. In these jurisdictions the duty to others extends to OHS risks arising from the conduct of the undertaking, which has been interpreted broadly.⁸

To harness and require the preventive efforts of all the key parties that have real control over OHS and contribute to OHS risks, we propose that a duty of care should apply in the following relationships: (1) employer to employees; (2) employers and self-employed to others; (3) principal contractor to sub-contractors and their employees (and down the line); (4) host employer to labour hire workers; (5) franchisors to franchisees and their employees; (6) those that plan, design, produce (manufacture, construct), supply, import plant, substances and other goods, workplaces and systems used at work, or as workplaces. In the latter case the duty of care should extend to those who might be exposed to risk in end use of the "product" as well as those involved in its construction or manufacture. We return to this in Section 4 where we discuss the reform of OHS standards.

2.3 Comprehensive coverage of risks

With the rapid changes to the nature of work and organisations, and associated changes in the risks confronted at work, as outlined in Section 2.1, it is crucial that OHS standards are designed to ensure attention to the wide range of occupational health, safety, ergonomic, biological, psychosocial and organisational risks encountered. Not least, they must effectively address risks arising from the changing patterns of employment and the nature of work; issues like fatigue, occupational violence and stress, routine and repetitive work, along with more long standing problems that continue to give rise to occupational injury and ill-health. This is integral to a comprehensive approach to risk assessment and risk control

Currently, the primary hazards or hazardous work that are addressed under OHS regulations in most jurisdictions are physical or chemical hazards including plant, noise, manual handling, hazardous substances, confined spaces, dangerous goods, slips and trips, working at heights, access and egress, electricity, fire and explosion. Regulations also typically address some particular forms of hazardous work such as abrasive blasting, welding, electroplating, lead processing, foundry work, logging, spray painting, excavation, demolition, mining, construction work, diving, remote or isolated work.⁹ There are also evidentiary standards (such as approved codes of practice) for some of these hazards. Other hazards addressed under some (usually a minority of) OHS regulations are aspects of the work environment including working space, lighting, heat and cold. In one or two jurisdictions, evidentiary standards extend to such matters as: air conditioning, screen based work stations, HIV and blood borne pathogens, legionella, cash in transit, aquaculture, occupational violence, fatigue management for commercial drivers, the wine industry, educational establishments, laboratories, smoke-free workplaces, and work in the sex industry.

Thus while OHS regulations and evidentiary standards do address some newer as well as a range of long standing OHS problems, coverage of hazards is incomplete. There is a need to review the coverage of issues, with the aim of presenting a consistent, complete and strategic approach to tackling the risks arising in contemporary working life. These are matters which are taken up and addressed in Section 4.

For present purposes, the key issues are: what *types* of standard should be invoked to address the challenges of 21st century work, under what particular circumstances should they be used, and in what combinations. In section 3 we describe the main options and their strengths and weaknesses, and in section 4 we describe how each can best be used in the regulator's toolkit.

3. Types of OHS Standards – Specification, Duties, Performance or Process

3.1 Overview

The choice of the *type* of standard is crucial to effective and efficient OHS policy, as it influences the measures implemented to improve OHS performance, compliance with OHS law, whether regulatory objectives are achieved and enforceability. OHS law incorporates four, main, conceptually distinct, types of standards. These are specification, general duties, performance-based and systematic process-based standards. This classification is not exhaustive. Other types of standards can also be identified, such as documentation standards (which require duty holders to document compliance with particular standards and are arguably a sub-category of process-based standards), and technical standards (which are a sub-category of specification standards).¹⁰ However, the four types discussed here are by far the most important. In the remainder of this section, to facilitate a better understanding of the options available for standard setting, we define each of these types of standards and what makes it conceptually distinct, we provide examples of how it works in practice, and we summarise its potential strengths and weaknesses. It should be noted that each type of standard is an “ideal type”, unlikely to be found in its pure form.¹¹ As such, actual standards can be located along a spectrum, most being, for example, more or less, rather than exclusively, specification, general duty, performance, or system based.

3.2 Specification standards

A specification standard tells duty holders precisely what measures to take and requires little interpretation on their part. Such a standard identifies “inputs”, that is, the specific preventive action required in a particular situation, rather than OHS outcomes. Thus, a specification standard tells employers and other duty holders *how* to meet a goal by providing precise and detailed information on what is required of them. Some examples of specification provisions are presented in Table 1 (over page). In addition to these simple examples of specification provisions, more detailed requirements may be specified in technical or design standards, such as Australian Standards, referenced under OHS regulations.

Specification standards have the virtue of identifying what preventive measures must be implemented by the duty holder, and thereby also of enabling workers and inspectors to readily ascertain whether the duty holder has breached those standards. They have particular attractions to small and medium enterprises (SMEs), which may lack the technological sophistication or resources to apply broader based, less precise standards, to the particular circumstances of their own operation.¹² These standards also offer administrative simplicity and ease of enforcement. Empirical evidence confirms some reluctance to relinquish the detail of specification standards in favour of broader based, more discretionary and perhaps more ambiguous, general duties.¹³ It is also argued that highly competitive and in industrially conflictual industries (such as construction) OHS performance is more likely to be improved through specification standards which create a level playing field by establishing clear “rules” and reduce disputation caused by more ambiguous standards.¹⁴

Table 1: Examples of Specification Provisions for Different Types of Hazards

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| <p>Hazardous substances</p> <p>It is prohibited to use at work any material that consists of or contains asbestos, other than for the purpose of sampling or analysis, or for maintenance or removal purposes.</p> |
| <p>Confined spaces</p> <p>If the concentration of a flammable contaminant in the atmosphere of a confined space is found to be 10% or more of its “lower explosive limit (LEL)”, no person must enter or remain in the confined space.</p> |
| <p>Manual handling</p> <p>Mechanical aids or team lifting must be used for lifting, carrying, lowering or otherwise handling any load that weighs more than 16kg.</p> |
| <p>Occupational violence</p> <p>Public contact work stations must be designed to include an escape route to enable retreat to a safe place in the event of a violent incident.</p> |
| <p>Machinery</p> <p>Any earthmoving machinery within the scope of AS 2294 <i>Protective structures for earthmoving machines</i> must be securely fitted with an appropriate combination of operator protective devices, except where the earth moving machinery was manufactured, imported or originally purchased before 1 January 1989.</p> |
| <p>Underwater diving</p> <p>An operational recompression chamber, operated by a person who holds an ADAS diving certificate for operating a recompression chamber, must be located at or near any dive site where diving work is undertaken at a depth of more than 30 metres or diving work requiring a decompression stop.</p> |
| <p>Work at heights</p> <p>Where there is a risk that a person could fall at least 2.4 metres or the pitch on a roof is more than 26° the risk of falling must be prevented by: (a) edge protection; or (b) a fall protection cover placed over an opening; or (c) a travel restraint system. If prevention of falling is not practicable the risk of death or injury due to falling must be prevented or minimised by: (a) use of a fall-arrest harness system; or (b) an industrial safety net.</p> |

There are however, disadvantages to the use of specification standards across the board. Some specification standards, to be effective, must be detailed to cover different aspects of hazard management, and even then, may be incapable of preventing many work injuries and diseases.¹⁵ Such an approach tends to result in a mass of detailed law, difficult to comprehend and keep up to date. At the same time, specification standards may fail to address behaviour or dangers involving significant risks, because the form of regulation is focused on particular problems, and can result in unspecified problems being overlooked¹⁶ Moreover, because such standards are prescriptive they do not allow duty holders to seek least cost solutions and may be less cost-effective in many of circumstances. They may, for example, require too much investment in circumstances where the costs of regulation exceeds the benefits.¹⁷ Similarly, they inhibit innovation and do not encourage best practice.

Specification standards are more appropriate to some circumstances than to others. For example, they are better suited to control hazards that arise from static features of a workplace, rather than from the organisation of work therein.¹⁸ Conditions such as occupational stress, musculoskeletal injuries or occupational overuse syndrome, demonstrably lend themselves to a different approach, one that is either outcome or process-oriented. On the other hand, specification standards remain particularly important where there is a high degree of risk and there are specific prohibitions or control measures which are applicable to all circumstances where the risk occurs, and which are essential to control the risk. Such circumstances commonly arise in relation to the design, manufacture, maintenance and use of plant and materials, and in relation to the control of risks with acute and significant consequences, and the potential to kill or maim. Examples of the latter include the storage of dangerous goods, work at heights and work in confined spaces. Indeed, in some circumstances, mandatory technical requirements are more appropriate. "For example, it may be more efficient to have key safety elements included in the design of plant and equipment than to engineer them in subsequently".¹⁹ This rationale underpins the design standards for plant referenced under NOHSC's *National Standard for Plant*.²⁰

Notwithstanding the contribution that specification standards may make to improving OHS in circumstances where a precise and detailed requirement is warranted to address specific risks, they have a substantial limitation. They only encourage the duty holder to address OHS problems as specified in OHS regulations and they do not provide incentives or encouragement to continuously improve²¹ OHS performance or to strive for outcomes above minimum requirements. A specification standard, for example, might prescribe a specific way of guarding a machine, utilising a particular method or technology. Once that has been done there is no requirement or even encouragement to go further to devise methods that might achieve far higher levels of OHS. Thus specification is most appropriately reserved for addressing OHS problems where effective solutions are known and where alternative courses of action are not desirable, for example because of the need to control specific and significant risks in a particular way.

3.3 General duties

General duties are sometimes known as "principle based"²² "effects-based"²³ or "target" standards.²⁴ We note that general duties are sometime included under the umbrella of performance-based standards.²⁵ We deal with them separately in this paper because of: (1) the particular role that they play under the OHS statutes; (2) the much broader nature of general duties as compared with other types of performance-based standards (described further in Section 3); and (3) the fact that they do not specify a clear performance outcome.

General duties were introduced into the OHS statutes as a direct consequence of the 1972 Robens Report. Robens argued that there were too many Acts and regulations and that as a result, employers had difficulty identifying what their legal obligations were. The more general problem with the proliferation of specific regulation was said to be that it: "encourages rather too much reliance on state regulation, and rather too little on personal responsibility and voluntary, self-generating effort".²⁶ Robens' solution, intended to dispel apathy and to offer employers and others signposts as to how to achieve the "more effectively self-regulating system" which he believed to be desirable, was the introduction of a series of general duties of care, complemented with codes of practice and, to a lesser extent, by regulations of a different nature from the specification-based ones previously applied.

There are general duty provisions in each of the main Australian OHS statutes which apply to particular parties.²⁷ Although the precise wording of these duties differs significantly between jurisdictions, in broad terms the duty of the employer is to ensure, so far as (reasonably) practicable, the health, safety and welfare of employees. The duties of employers and others are further elaborated in the relevant statute (a duty to provide a safe place of work, training and supervision etc). These general duties can be traced directly to the influence of the "Robens model". They codify previously established common law principles.

A key virtue of general duties is their all-encompassing character. For example, compliance with a broad statement of principle requiring the employer to ensure the health, safety and welfare of employees arguably requires attention to a wide range of hazards. This could include physical hazards such as machinery, substances and noise, as well as ergonomic problems, manual handling, psychosocial factors and risks arising from the way that work is organised. The broad scope of the duty also means that it does not date quickly and there is considerable flexibility for the duty holder to determine the action to take to suit their operations. In this regard, there is the potential for duty holders with the resources and capacity to do so, to be innovative in their solutions to OHS problems. Examples of general duties are presented in Table 2 (over page).

The very breadth and flexibility of general duties entail considerable uncertainty for duty holders as well as for OHS inspectors. The lack of guidance provided to duty holders about the outcomes required of them or the means of ensuring OHS mean that it is uncertain whether the duty of care has been complied with until and unless a matter is actually tested in court. As a result, there has been a tendency to flesh out the duties of care in regulations and evidentiary standards.²⁸ in order to describe an acceptable standard of care or at least some processes for achieving it. The latter provide non-mandatory guidance about how to achieve the principles set out in the general duties. Robens intended that such evidentiary standards fill in much of the detail which was lacking in the general duties, but to do so in a more flexible and participatory fashion than had occurred in the past using regulations. Both duty holders and OHS inspectors have tended to overlook OHS problems not specifically addressed in regulations or evidentiary standards, even though a wider range of issues are embraced by the broad general duties.

Although the general duties provide “umbrella” coverage of a wide range of OHS issues, they do not explicitly require attention to a wider range of organisational factors influencing OHS performance. Nor do they directly encourage organisations to develop an OHS culture or to "build in" OHS considerations at every stage of their operations. These are matters to which we return below.

Table 2: Examples of General Duties for Some Different Duty Holders

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| <p>Employer – duty to employees An <i>employer</i> shall provide and maintain so far as is practicable for employees a working environment that is safe and without risks to health.</p> |
| <p>Employer and self-employed – duty to others Every <i>employer</i> and every <i>self-employed</i> person shall ensure so far as practicable that persons other than employees are not exposed to risks to their health and safety arising from the conduct of the undertaking of the employer or self-employed person.</p> |
| <p>Designer of buildings A person who designs a building that is reasonably expected to comprise a workplace must ensure so far as reasonably practicable that the building is designed so that people who might work in, on or about the workplace are, in doing so, safe from injury and risks to health.</p> |
| <p>Designers, manufacturers, importers and suppliers of plant and machinery A person who designs, manufactures, imports or supplies plant for use at work shall ensure so far as is reasonably practicable that the plant is designed and constructed so that people who might use, clean or maintain the plant are, in doing so, safe from injury and risks to health.</p> |
| <p>Employee An employee shall take reasonable care: (a) to ensure his or her own health and safety at work; and (b) to avoid adversely affecting the health or safety of any other person through any act or omission at work.</p> |

3.4 Performance-based standards

A performance standard is one which specifies the outcome of the OHS improvement or the desired level of performance but which leaves the concrete measures to achieve this end open for the duty holder to adapt to varying local circumstances. It defines the duty holder's obligation in terms of problems they must solve or the goals they must achieve. That is, rather than specifying exactly how to achieve compliance, a performance standard sets a goal and lets each duty holder decide how to meet it. As such, performance standards are outcome-based and the means of achieving that outcome are not prescribed.²⁹

For the purposes of OHS standard setting it is helpful to differentiate further the types of performance standards. First, there are *performance target* standards for which achievement of the OHS outcome is measurable, for example the exposure standards for noise or for hazardous substances under OHS regulations. Second, there are performance provisions, which as the name implies, are concerned with *performance outcomes*. Some examples of each type of performance standard are presented in Table 3 (over page) to illustrate the concepts.

A considerable attraction of performance standards is that because they focus on the outcomes to be achieved rather than on the precise means of achieving them, they can accommodate to changes in technology and organisation of work (unlike specification standards which commonly fail to keep pace with technological change). They also allow firms to determine the most suitable and cost-effective means of achieving compliance and permit innovation. Moreover, the outcome focus of performance standards permits this flexibility whilst at the same time enabling the preventive efforts of duty holders to be more effectively focused on specific risks or problems to be addressed.

While the application of performance-outcome and performance-target standards under the OHS regulatory framework is currently quite limited, there is considerable potential to develop the application of these types of standard. If carefully crafted, performance standards have the potential to balance the apparently conflicting policy objectives of flexibility and certainty, at least in terms of the OHS problems to be addressed and the performance outcomes to be achieved.

Notwithstanding the potential for performance-based standards to play a more important role under OHS law, these standards share a limitation with both the general duties and specification standards. Because of their focus on OHS outcomes required in relation to particular OHS problems, they do not require a holistic approach to risk management or attention to wider organisational factors influencing OHS performance. Nor do they provide an incentive or encouragement to continuously improve OHS performance or to strive for best practice, although they do not preclude this. Performance-based standards prescribe particular outcomes but do not imply that further improvements are necessary, once that outcome has been achieved.

Table 3: Examples of Performance-Outcome and Performance-Target Provisions

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| <p>Hazardous substances</p> <p><i>Performance outcome</i> Exposure to any hazardous substance, whether by inhalation, by skin contact, by absorption, or by ingestion, must be prevented or minimised.</p> <p><i>Performance target</i> The airborne concentration of a hazardous substances in the breathing zone of any worker must be below any relevant exposure standard for that substance, determined according to the National Occupational Health and Safety Commission's <i>Exposure Standards for Atmospheric Contaminants in the Occupational Environment</i>.</p> |
| <p>Ergonomics</p> <p><i>Performance outcome</i> Work and work stations must be designed and arranged to avoid prolonged or frequently occurring bending, twisting, postures that use the hands above shoulder height or below knee level, or the exertion of force.</p> |
| <p>Repetitive work</p> <p><i>Performance outcome</i> Work must be designed and organised to eliminate or minimise physically monotonous, repetitive, closely controlled or restricted work routines.</p> |
| <p>Remote and isolated work</p> <p><i>Performance outcome</i> Regular communication must be established and maintained with any person who works alone in an area that is remote or isolated from others because of the time, location or nature of the work.</p> |
| <p>Machinery control</p> <p><i>Performance outcome</i> Machinery must be designed, constructed and maintained so that: (1) moving parts cannot start up while they are within the operator's reach; (2) the exposed person cannot reach moving parts once they have started up; (3) they can be adjusted only by means of an intentional action, such as the use of a tool, key etc; (4) the absence or failure of one of their components prevents starting or stops the moving parts; and (5) there is protection against any risk of ejection of materials or parts.</p> |
| <p>Noise</p> <p><i>Performance target</i> Exposure to noise, measured at the worker's ear position, without taking account of any protection afforded by personal hearing protectors, must not exceed:</p> <ul style="list-style-type: none"> (a) an eight hour equivalent continuous A-weighted sound pressure level, $L_{Aeq,8h}$ of 85dB(A); and (b) for peak noise, a C-weighted peak sound pressure level, L_C, peak of 140dB(C). |
| <p>Vibration</p> <p><i>Performance target</i> Exposure to vibration from hand-held tools, must not exceed:</p> <ul style="list-style-type: none"> • $1.8 \text{ m/s}^2 a_{hv}$ for a total daily exposure of 4-8 hours; • $2.5 \text{ m/s}^2 a_{hv}$ for a total daily exposure of 2-4 hours; • $3.6 \text{ m/s}^2 a_{hv}$ for a total daily exposure of 1-2 hours; and • $5.0 \text{ m/s}^2 a_{hv}$ for a total daily exposure of <1 hour. |

3.4 Systematic process and systems-based standards

By the mid 1990s a new phase of regulation could be identified, based on the development of OHS management systems (discussed further below). The precursor to this development was the evolution of *systematic process standards* in the late 1980s. These standards identify a particular process, or series of steps, to be followed in the pursuit of safety. They may be applied to the management of nominated hazards or to key arrangements for managing OHS. For example, the national standards for manual handling, plant, hazardous substances, major hazardous facilities, the storage and handling of dangerous goods, and certification for hazardous occupations, all incorporate systematic processes.³⁰ The most important characteristic of the OHS regulations or evidentiary standards (ie approved codes of practice/advisory standards) resulting from this initiative, is their consistent approach to managing hazards by incorporating the three fundamental steps of hazard identification, risk assessment and risk control. Thus duty holders are obliged to assess risks and to regularly evaluate and improve control measures.

Although the "identify, assess, control" approach is the most obvious example of the process-based approach it is by no means its only manifestation. Other examples include the requirements for manufacturers and suppliers of hazardous substances and plant to ensure testing and examination, and to provide information for end users, and the requirements for employers to ensure health surveillance or environmental monitoring for hazardous substances. Requirements for consultation, provision of induction and training, reporting and recording of incidents are further examples of process standards. See further Table 4 (over page)

Process-based approaches address Robens' criticism of old style regulation as failing to take account of organisational factors. However, they represent only a partial approach to organisational management of OHS because they are largely confined to specific hazards or, even when they are incorporated generally,³¹ they still concern only one aspect of a fully developed and comprehensive approach to systematic OHS management (OHSM).

There is increasing interest in systematic OHSM, as an organisational strategy for the ongoing prevention of work-related injury, ill health and death *across the organisation or facility as a whole*. Such an approach involves the assessment and control of risks and the creation of an inbuilt system of maintenance and review.³² Its focus is on the organisational structure, responsibilities, practices, procedures, processes and resources for implementing and maintaining OHS management. Systematic OHSM "spans the entire organisation by relating the organisation to its environment, setting the goals, developing comprehensive, strategic, and operational plans, designing the structure, and establishing control processes".³³ In doing so, it encourages organisations to address OHS in a more proactive and holistic way. Moreover, because systematic OHSM involves identifying responsibility at each level of the organisation, including the top, it directly makes responsible and engages management and workers at different levels. There is growing evidence from a variety of countries that this approach is having at least qualified success, notwithstanding particular challenges relating to small and medium sized organisations, and a variety of implementation challenges including paper rather than substantive compliance, insufficient inspectoral oversight, over-reliance on management and inadequate worker input.³⁴ Importantly, although developed in the context of employer responsibilities, this approach is not confined to duty holders who are employers. It might also be applied to designers, manufacturers and other duty holders.³⁵

Table 4: Examples of Process-based Requirements

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|---|
| <p>Hazard identification</p> <p>(1) Foreseeable hazards that may arise from the conduct of the undertaking, and have the potential to harm the health, safety or welfare of employees or other persons who could be exposed to those hazards, must be identified.</p> <p>(2) In particular, this includes hazards arising from:</p> <ul style="list-style-type: none"> • work premises and locations (including work in, on or about these); • systems of work, work practices, shift work arrangements, psychosocial hazards and fatigue; • plant, machinery and equipment (including transport, installation, erection, commissioning, use, repair, maintenance, cleaning, dismantling, storage or disposal); • hazardous substances (including production, handling, use, storage, transport or disposal); • manual handling and overuse hazards; • layout and condition of the workplace, including layout, lighting and work station design; • biological organisms, products or substances; • the physical working environment (including electrical hazards, fire or explosion, contact with moving or stationary objects, noise, heat, cold, vibration, radiation, static electricity, contaminated atmosphere, atmospheric pressure, and the potential for slipping, tripping, falling or drowning; and • the potential for occupational violence. <p>(3) Hazards must be identified:</p> <ul style="list-style-type: none"> • immediately prior to using premises for the first time as a place of work; • before and during the installation, erection, commissioning or alteration of plant in a place of work; • before changes to work practices and systems of work are introduced; • before hazardous substances are introduced into a place of work; • while work is being carried out; and • when new or additional information becomes available from an authoritative source. |
| <p>Risk assessment</p> <p>The risk of harm to the health, safety or welfare of employees or other persons who could be exposed to each identified hazard must be assessed.</p> |
| <p>Risk control</p> <p>(1) Risks must be eliminated, or where that is not reasonably practicable, effectively controlled by redesign, substitution, engineering controls or isolation.</p> <p>(2) Safe work practices and training needs must be identified to ensure that risk control measures are effectively implemented and maintained.</p> |
| <p>Action plan</p> <p>Measures required to eliminate or control risks to health, safety and welfare must be recorded in an action plan, indicating when each measure is to be implemented and responsibility for its implementation.</p> |

While much of the action taken by organisations to manage OHS is voluntary, in some countries systematic OHSM is mandated under OHS law. Key examples are found in the legislation of member states of the European Union, implementing the systematic process requirements of the *Framework Directive*.³⁶ In Sweden and Norway, OHS legislation goes a step further than the *Framework Directive* requiring systematic OHSM or "internal control".³⁷ All employers must implement a preventive system to plan, organise, implement and maintain action to implement OHS law. There are also examples of mandatory OHSM under Korea's *Industrial Safety and Health Act 1990* and Singapore's *Factories (Amendment) Act, 1999*. In the United States OHS management is not mandatory but there are federal and state-based programs offering organisations the opportunity for exemption from routine, programmed OSH inspections if they implement an OHS management program. The current Australian approach is perhaps best characterized as "a hybrid mixture of regulatory mandate and incentives to promote the 'voluntary' adoption of OHSM systems by employers".³⁸ While Australian OHS law does not explicitly mandate systematic OHSM, OHS regulations in New South Wales (2001) and in South Australia (1995), and the Queensland *Workplace Health and Safety Act 1995* come closest to this goal (in terms of risk assessment, control and worker consultation).

In addition to regulatory requirements in some countries, there are many voluntary initiatives to manage OHS undertaken by private sector and government organisations. Some (larger) organisations have developed their own corporate OHSM systems and various proprietary products have been developed and marketed.³⁹ Government OHS authorities also provide models and guidelines on OHSM.⁴⁰ Since the mid-1990s rapid developments have also taken place in standardisation of systematic OHSM.⁴¹ Countries developing OHSM standards or guidelines include Australia and New Zealand, the Netherlands, Norway, Spain and the UK. The International Labour Organisation (ILO) has also published OHSM guidelines.⁴² Along with developments in standardisation of OHSM has come pressure for certification of these systems.⁴³ Certification is undertaken by private certifying agencies which may use national standards as benchmarks or develop their own criteria.⁴⁴

In summary, there is a proliferation of corporate systems, proprietary products, standards, guidelines and certification tools, as well as some mandatory requirements to apply a systematic approach to OHSM. There is considerable variation between these different initiatives and different priorities and emphases are evident in the various examples. While there is no universal understanding of the concept or the practice of OHSM, there is nonetheless some agreement internationally about core structures and processes for managing OHS.⁴⁵ These common elements provide a broad framework for systematic OHSM (as outlined in Section 4.3).

4. Reforming OHS Standards for 21st Century OHS Regulation

4.1 The mix of standards - different types of standards for different contexts

As discussed in Section 3, contemporary OHS law makes substantial use of general duties, incorporates some process-based standards and some specification standards. Limited use is made of performance outcome and performance target standards. The considerable changes in organisations and the nature of employment, as outlined in Section 2.1, provide both a challenge and an opportunity to consider whether a different mix of standards, would better

suit the diversity of work and organizations and achieve improved OHS outcomes. The different types of standards have different characteristics and can be expected to suit different contexts or sectors and meet different regulatory objectives, more or less effectively. These characteristics are summarised in Table 5.

Table 5: Characteristics of Different Types of Standards

| Characteristic | Types of Standards | | | |
|---|--------------------|----------------|--------------------|-----------------|
| | Specification | General Duties | Performance | Systematic OHSM |
| Specifies preventive measures | √ | | | |
| Defines OHS outcomes | | Very broadly | √ | |
| Provides processes for pursuing OHS improvements | | | | √ |
| Comprehensive coverage of hazards | Only as mandated | √ | Only as mandated | √ |
| Accommodates to changes in technology and work | | √ | √ | √ |
| Allows alternative preventive measures and innovation | | √ | √ | √ |
| Addresses organisational factors influencing OHS performance | | | | √ |
| Encourages compliance above minimum requirements and continuous improvement | | | | √ |
| Provides benchmark of compliance (for duty holders and enforcers) | √ | | if clearly defined | |

With these characteristics in mind, we propose that consideration be given to the most appropriate mix of standards, recognising that it may be necessary to formulate different approaches to suit different OHS problems as well as organisations that are more or less advanced in their approach to OHS. The optimal mix is a matter for debate and as each type of standard has different strengths and weaknesses, it is likely that a combination of approaches is needed. In the following sections we explore how the different types of standards that might be used, taking account of both their merits and their shortcomings.

4.2 General Duties and their relationship to other standards

The value of general duties is that they establish the broad goals of OHS law, providing unifying themes that clarify the intentions of the law. They define who has responsibility, the duty holders, and the broad scope of their responsibilities. They also require, implicitly if not explicitly, attention to a wide range of OHS problems and permit alternative preventive measures to be taken to address them. This type of standard also has the considerable advantage of filling in the many and inevitable cracks between the various specification and performance standards spelt out in codes and regulations. That is, even though the general duties are very broad, they still provide a valuable framework within which duty holders must operate, which will be particularly important where no more practical guidance is available from other sources.

The general duties, by their very breadth, have the capacity to address new hazards and forms of work as they emerge, to enable new information to be taken account of and to allow new technologies and systems of work to be adopted at an early stage. They are also concerned "with influencing attitudes and with creating a framework for better safety and health organisation and action by industry itself".⁴⁶ Moreover, there is considerable evidence that employers, regulators and courts have generally accommodated to the general duties and found the degree of guidance they offer to be more useful in the majority of circumstances.⁴⁷ Many (but by no means all) unions also support this approach. Similarly the Australian inspectorates, after a considerable period of adjustment, are increasingly comfortable working with this type of standard. For example, it is now unusual for inspectors to resort to specification standards in addition to the general duty requirements in bringing prosecutions.⁴⁸

For all these reasons, the general duties continue to play a valuable role and should not only be retained, but should, as we argued in Section 2.2, be *extended to cover a wider range of duty holders*. This approach involves framing the general duties to require responsibility in all the key relationships between those with real control over OHS risks and those exposed to risks arising from the conduct of their business or undertaking. The general duties should also, as we argue below, be *extended to include systematic process-based standards*, relevant to all duty holders. Moreover, given their very general nature, and their inability to provide concrete guidance, the general duties and systematic processes should be used in combination with a range of other types of standards, raising further issues as to how this should be done and in what circumstances particular types of standards should be used.

In brief, we will argue that the general duties should be complemented with a set of process-based standards, designed to promote the systematic management of OHS by all duty holders. The rationale for this, as expounded in Section 4.3, is to move OHS from an ad hoc and piece meal function, to a proactive and systematic approach in which OHSM is integrated with other aspects of business management.

Second, we propose that *greater use be made of performance outcome and performance target provisions*. These performance-based standards have the advantage of providing flexibility to choose the most cost-effective solution for the organisation while also focusing attention on specific hazards or problems that need to be addressed, and specifying the particular outcomes that need to be achieved. As we argued in Section 2.3, there is a need to more comprehensively address the risks arising in contemporary working life. Performance standards provide one means to expand this coverage.

Third, because performance standards do not provide guidance as to *how* to achieve compliance, (the particular preventive measures required), they should be *underpinned by industry or sector specific codes of practice* to provide the desired prescription, especially for industries and sectors (such as franchising) with a high proportion of small businesses. These evidentiary standards would identify suitable preventive measures for the specific industry or sector to enable them to meet the performance standards, while allowing for alternative actions that achieve an equivalent or better standard of care.

Fourth, we argue that *specification standards should continue to have a crucial place* in certain contexts, namely: (1) where there are specific, significant risks and particular solutions required to prevent or control them; and (2) to provide technical standards for safe design, for example, for high risk plant and installations. Finally, we explore the particular mix of

instrument types necessary to achieve effective and efficient policy design and optimal OHS outcomes.

In these proposals, the elements that present a new, or at least less familiar, approach are the inclusion of process-based standards under the OHS statutes, to encourage systematic OHSM, and the greater use of performance-based standards. As these are also initiatives in relation to which there is significant controversy, we address them in detail below.

4.3 Systematic management of OHS

We propose that an over-arching framework of systematic process-based standards be incorporated under the Australian OHS statutes. These process-based standards would be designed to provide the impetus for developing systematic OHSM at the organisational level. The aim is to develop a proactive approach to managing OHS, to “get OHS into the bloodstream” of organisations, providing systematic strategies for achieving this goal. Such an approach would also have a number of other benefits.

First, it would complete the partial framework of OHS management already incorporated, through provisions of different types, and spread between the OHS statutes, regulations or evidentiary standards. Typically, there are statutory requirements on employers to provide a safe system of work; to provide information, instruction, training and supervision; to monitor the health and welfare of employees and/or working conditions; and to keep information and records relating to work-related injuries. There are also provisions relating to consultation with workers.⁴⁹ In addition, Australian OHS regulations generally require risk management, either in relation to specific hazards (to identify hazards, to assess and control risks)⁵⁰ or as a generic requirement to implement risk management processes (requiring that a range of hazards are addressed).⁵¹ Thus, Australian OHS law, (adopting what Saksvik and Quinlan describe as a ‘hybrid approach’),⁵² provides some elements towards a framework for managing OHS but it does not explicitly require a planned and organised approach to managing OHS along with other business functions.

Second, the proposed approach would harness the momentum to manage OHS systematically that already exists through the range of voluntary, corporate and proprietary systems, standards, guidelines and certification tools described above, by aligning OHS statutory responsibilities with the core structures and processes reflected in these wider initiatives (as discussed above). A consistent approach would help to strengthen this preventive effort.⁵³ In particular, where workers compensation schemes require systematic OHSM as a condition of self-insurance or levy incentives, the OHS regulatory framework and workers compensation initiatives would be mutually reinforcing.

However, research indicates that there are certain characteristics of systematic OHSM that lead to improved OHS performance (see Table 6) and these, and broader contextual factors,⁵⁴ are far more important than the presence or absence of a formal system. For this reason we are not advocating adoption of a particular OHSM model, standard or guideline but rather systematic processes which would be tailored by the organisation.

The aim is to encourage organisations to progress from an ad hoc response to OHS issues (reacting to problems as they arise), to a systematic approach in which OHS is a primary organisational objective and problems are identified (before the event), prioritised, preventive action is planned, implemented and reviewed for effectiveness, and the organisation builds OHS “know-how”.⁵⁵

To encourage the progressive development of OHS management activity, regulation must make explicit the core elements of systematic OHSM, which, drawing from the various Australian and overseas standards and guidelines on OHSM, as well as from research, are as follows: management commitment and leadership; planning, organising and resourcing of OHSM; designation of responsibility and ensuring accountability; risk management involving comprehensive identification of hazards, assessment and control of risks, evaluation and review of measures implemented; worker participation; development of OHS competency of management, supervisors and workers; reporting, investigating and correcting deficiencies; OHS policy, procedures and documentation of action taken; performance monitoring, auditing and review of OHS performance; and integration of OHSM into other business activities.⁵⁶ These elements, although traditionally couched in terms of employer’s duties towards employees, can readily be modified and extended (as we argue they should be) for other duty holders. For example, for designers, manufacturers, importers and suppliers these would include requirements for hazard identification, risk assessment and control, testing and examination of products, and provision of information to end users.

The ten elements outlined in Table 6 (over page), we argue, could provide the basis for framing a set of systematic process-based requirements for incorporation under the Australian OHS statutes. This framework of OHS organisation and arrangements could be supplemented by more detailed guidance in an approved code of practice, covering matters such as allocation of management responsibilities and required competencies, planning and organising for OHS, induction and training, risk assessment and control, measuring performance and OHS auditing.

However, it is important to recognise that allocation of responsibilities and OHSM processes are not an end in themselves. Nor is a paper-based system sufficient. While OHSM policy, procedures and action taken would be documented, it is the *quality* of action taken to manage OHS that makes a difference to OHS performance and not only particular structures or processes. Case law relevant to an employer's implementation of his/her duties has clearly established the principle of non-delegability and that while, for practical purposes, OHS procedures must be implemented through managers and employees of an organisation, the employer cannot delegate responsibility for his/her obligations to employees (or others).⁵⁷ Moreover, the courts have made it clear that a paper-based system is not sufficient. An employer must ensure that its policies and procedures are fully implemented.⁵⁸

The quality of action taken is also closely related to management commitment.⁵⁹ Where management lacks the incentives to engage seriously in systematic OHS management, the outcomes are likely to be disappointing,⁶⁰ emphasising the importance of such factors as “the frequency of system monitoring by governmental or non governmental auditors, the presence of performance measures and liability for system failures, the extent to which firms perceive a collective self-interest in preventing system failure and the probability that firms will confront future, more costly technology-based or performance-based standards if they do not effectively deploy required management strategies”.⁶¹

Table 6
From Research – Characteristics of Systematic OHSM for Positive OHS Performance

| |
|---|
| <p>1. Senior management <i>drives OHSM strategy</i>, playing an active role in planning, resource allocation, hazard management and review of OHSM. (This is more than an expression of “commitment” in an OHS policy or OHS activity driven by other personnel. Management commitment is driven by concern about legal consequences, the impact of economic incentives or penalties, moral commitment and concern about reputation).⁶²</p> |
| <p>2. There is a <i>planned and order-seeking approach</i> to OHSM, setting measurable goals, and well-developed methods of problem solving, securing financial and human resources, designating responsibility for OHS and ensuring that those with responsibility are held accountable.⁶³</p> |
| <p>3. There is a <i>comprehensive approach to risk management</i> that involves: (1) identification of all potential sources of harm including those arising from work organisation, psychosocial stressors and ergonomic factors, physical, chemical and biological hazards; (2) using a variety of methods to ensure that hazards are recognised including consultation, analysis of tasks and work roles, review of published sources and analysis of past incidents; (3) a “safe place” approach to prevent or minimise risks by designing out or removing hazards at source and controlling residual risks by engineering, organisational and procedural means; (4) a “life cycle” approach to risk management that involves identification of hazards and control of risks in procurement, planning and design; in construction or manufacture; in supply and installation; in commissioning, start up and operation; in shutdown, maintenance and cleaning; and in decommissioning or demolition.⁶⁴</p> |
| <p>4. <i>Workers are actively involved</i> and have legal entitlements to perform OHS functions, and receive training and information. There is effective dialogue between management and workers on OHS issues, and worker representatives participate in planning, implementation and review of OHSM.⁶⁵</p> |
| <p>5. There is local understanding of OHSM and OHS "know-how" to support and resource OHSM activities. This includes access to or engaging <i>OHS specialist</i> advisory services and <i>developing OHS competency</i> amongst managers, supervisors, workers and their representatives, commensurate with their OHS roles.⁶⁶</p> |
| <p>6. There are arrangements to address OHS in the work of <i>contractors and other contingent workers</i>, in relation to their own and others' OHS. These arrangements are established in partnership with these groups.⁶⁷</p> |
| <p>7. The organisation <i>learns from past experience</i>, investigating incidents and adverse occurrences as a source of insight about weaknesses in OHSM arrangements and control of specific hazards, and to ensure that these deficiencies are corrected.⁶⁸</p> |
| <p>8. OHSM <i>policy, procedures and action</i> taken are documented, the complexity of documentation is minimised, and understanding and ownership of procedures by those required to implement them is maximised. The emphasis is on the quality of OHSM activity actually implemented, not merely on the documentation produced.⁶⁹</p> |
| <p>9. OHSM is monitored using <i>positive performance indicators</i> and <i>audited</i>, in order to review and continuously improve OHSM. Audits are conducted by experienced OHSM auditors and involve a deep, critical and independent examination of everything about an organisation that affects OHS, using triangulated⁷⁰ data sources.⁷¹</p> |
| <p>10. OHSM is <i>integrated</i> into the organisation's other management arrangements, distributing tasks and resources for OHSM throughout the organisation.⁷²</p> |

The importance of the quality of OHS outcomes is also illustrated by recent Scandinavian research⁷³ which suggests that systematic processes in OHS law might not lead to the qualitative improvements sought unless underpinned by organisational learning, an understanding of the wider intentions of OHS law and a fundamental examination of old routines and established norms. This research highlights the importance of making the intentions of systematic OHSM explicit in OHS law. For our purposes, this means the characteristics of a holistic, proactive and participative approach to OHSM as outlined in our ten elements above. There is also a need to support requirements for systematic OHSM with education and development of staff within organisations and ensure that the wider network of OHS professionals and consultancy services understand and promote the intentions behind OHSM regulation, as well as the emerging research evidence of what approaches are more likely to be effective in improving OHS performance. These groups have a crucial role to play in supporting the development and implementation of OHSM activities.

The need to underpin OHS requirements with OHS “know-how” deserves special comment. In most Australian workplaces there is no access to preventive OHS services, either in-house or contracted from outside services. Two jurisdictions have relevant statutory requirements. The Victorian *Occupational Health and Safety Act 1985* requires an employer to employ or engage suitably qualified persons to provide advice on OHS matters and the Queensland *Workplace Health and Safety Act 1995* requires employers with more than 30 employees to appoint a qualified person, who has undertaken a basic course of training.⁷⁴ These rudimentary provisions (non-existent in most jurisdictions) contrast with most member states of the European Union which have established legal requirements for the use and composition of OHS services, including the qualifications and skills of those providing these services.⁷⁵ We propose a statutory requirement under which all employers would be required to have access, either in-house or through accredited external providers, to OHS services. This requirement would specify the qualifications and skills to be available within these services, the tasks they would perform and level of service provided. The emphasis would be on a multidisciplinary approach, leading and supporting practical OHS management, within organisations and by organisational participants, and reporting to a senior manager of the organisation. The development of OHS “know how”, by employing or engaging OHS services is crucial to sustained improvements in OHS performance. Without it, it is unlikely that any particular form or combination of OHS standards will be successful.

By far the greatest challenge to adopting a systematic approach to OHS, confronts small and medium sized enterprises (especially in the context of the shift to contingent employment) – the very sorts of enterprises that have proliferated as a result of the changes in the nature of work performed and employment arrangements, described in section 2.1 above. This is certainly the case in Scandinavia, where systems based approaches are most advanced, but where progress has been very limited in relation to small enterprises.⁷⁶ Similarly in Queensland, an initiative requiring the development of a “workplace health and safety plan” by contractors and sub-contractors prior to commencing a building project, has achieved positive results, but small enterprises have tended to comply by adopting model work plans rather than by developing their own.⁷⁷ Such enterprises are only likely to commit resources to such an approach, rather than tokenistic efforts to comply, where they perceive a strong economic self-interest in doing so, and most commonly they do not, largely because the costs involved are tangible and up-front, whereas benefits are likely to be intangible and long-term. These obstacles are compounded by a lack of resources (time, people and money), a lack of knowledge and technical capacity to adopt systematic OHSM (there are invariably no OHS

specialists in SMEs), and a lack of market pressure to do so. Organisational restructuring and the growth of precarious employment pose further threats to systematic OHSM.⁷⁸

Nevertheless, there is evidence in the related area of environmental protection, that even small enterprises can and do benefit from adopting a systematic approach⁷⁹ and that when they are required to engage in such an approach (for example, engage in pollution prevention planning, to look at their use of materials and to improve their operations) then this stimulates positive action and improves environmental efficiency.⁸⁰ The challenge therefore, is to tailor systematic OHSM, both in terms of its content and delivery, to the particularities of SMEs.

Early evidence suggests that it is indeed possible to develop simple approaches to systematic OHSM, capable of being adopted and used successfully by SMEs, and that, despite the problems, SMEs do find advantages in adopting a systematic approach, including "spin-off" management benefits such as better organisation and business efficiency, as well as financial savings and improved environmental performance.⁸¹ Arguably, the key, at least for SMEs with less than 50 employees, is to focus on simple, accessible improvements in management practices.⁸² For a five person firm, for example, a systematic approach may simply emphasise participation and communication, hazard identification and control, and a simple action plan to keep track of implementation. Pursuing such an informal approach, the New South Wales WorkCover Authority is encouraging firms to develop their own risk management procedures (WorkCover). Here, references to formal systems are avoided, and instead, a management approach develops uniquely in each particular workplace, accommodating the needs, expectations and responsibilities of management and individual workers.

Another proposal for a systematic approach tailored to individual company circumstances is offered by Zeimet et al (1997).⁸³ Recognising that SMEs do not have the appropriate expertise available to facilitate OHS measures, they offer a simplified structure that will assist them to do so and in particular, the steps that need to be included in an employer action plan. In their view such a program would include: employer/employee endorsement of the plan; a good vision statement; designating duties and responsibilities for those involved; a compliance policy; the identification, evaluation, and control of workplace hazards; facility maintenance; ongoing accident investigation and record analysis; employee information and training; emergency preparedness; and an annual program audit.⁸⁴ Again, it would be necessary to combine such an approach with a system of incentives and an underpinning of deterrence to make it credible.

As we have said, such systematic process-based standards should not only address the responsibilities of employers in relation to their own employees, but also extend to the duties of employers to others (sub-contractors, labour hire workers) and the duties of designers, manufacturers, suppliers and other upstream parties. They should also extend to franchisors who design and manage business franchising systems which impact on the work premises, systems of work, equipment and materials used by franchisees and their employees.

Thus the proposed approach would extend to the planning and design of work and work environments, as well as to preventing or controlling OHS risks. The incorporation of processes for systematic OHSM would provide both a strategic approach for ensuring compliance with the duties of care, as well as encouraging organisations to strive for continuous improvement. Incorporating these provisions under the OHS statutes would obviate the need for the current repetition of process steps, in relation to different OHS hazards or problems, under OHS regulations or in codes of practice.

4.4 Defined performance outcomes and performance targets

As discussed, performance-based standards can either define performance outcomes qualitatively or provide measurable performance targets, such as exposure standards for noise, hazardous substances, radiation (non-ionising or ionising), vibration and other hazards. In contrast to the emphasis on process-oriented regulation in recent years, the potential of performance-based standards has not been seriously explored. Yet this approach, by focusing on outcomes, has the advantage of allowing firms the flexibility to choose the most cost-effective means of achieving specified objectives, and of accommodating, or even encouraging, technological innovation. By focusing attention on particular hazards or problems that need to be addressed, and specifying outputs to be achieved, they also provide some clarity to underpin general duties and process steps. They can be used to extend duty holders' recognition of risks from the traditional physical and chemical hazards to a wider range of ergonomic, biological, psychosocial and organisational factors. Table 7 (over page) summarises what the literature suggests about performance based regimes relative to prescriptive approaches.

Notwithstanding the considerable attractions of performance standards and of “regulating by results” in theory, how such standards work in practice will depend upon a number of factors, including the characteristics of the performance standard in question. In particular, some performance standards encounter considerable problems at the implementation stage. As Coglianesse et al point out, they: “depend on the ability of government agencies to specify, measure and monitor performance, and reliable and appropriate information about performance may sometimes be difficult if not impossible to obtain. When implemented the wrong way, or under the wrong conditions, performance based regulation will function poorly”.⁸⁵

Government (or third party) monitoring will also be important in ensuring that firms are actually meeting the standard, and if this is difficult or extremely demanding of government resources, then it may not be practicable to enforce such standards, or only to do so at excessive cost. If performance based regulations are inconsistently interpreted by inspectors, and their consequences therefore not predictable, then regulated enterprises will react negatively.⁸⁶

Table 7: Expectations for Performance-Based Regulatory Regimes
(This table is reproduced with permission of Peter May)⁸⁷

| Criterion | Expectation ^a |
|---|---|
| <ul style="list-style-type: none"> • <i>Effectiveness</i> in reaching regulatory objectives | <ul style="list-style-type: none"> • <i>Increased</i>, but limited incentive to go beyond minimum performance objectives (Coglianese and Lazar 2002, Gunningham and Johnstone 1999). |
| <ul style="list-style-type: none"> • <i>Flexibility</i> in means of adhering to regulation | <ul style="list-style-type: none"> • <i>Increased</i>, given ability to use alternate means to reach objectives (US Regulatory Council 1981 among others). |
| <ul style="list-style-type: none"> • <i>Innovation</i> potential | <ul style="list-style-type: none"> • <i>Increased</i> incentives for innovation, but depends on industry structure and cost of innovation compared with current approaches (Office of Technology Assessment 1995). |
| <ul style="list-style-type: none"> • <i>Consistency</i> in application of rules | <ul style="list-style-type: none"> • <i>Potential for inconsistencies</i> in interpretation of what is acceptable for which the standards and skills of inspectors are important (Gunningham and Johnstone 1999). |
| <ul style="list-style-type: none"> • <i>Predictability</i> in regulatory expectations | <ul style="list-style-type: none"> • <i>May decrease</i> due to lack of understanding of what is a workable means for achieving desired ends; code of practice guidelines are useful in this respect (Foliente 2000, Gunningham and Johnstone 1999). |
| <ul style="list-style-type: none"> • <i>Cost to:</i> <ul style="list-style-type: none"> • <i>Government regulators</i> • <i>Regulated entities</i> • <i>Public beneficiaries of regulation</i> | <ul style="list-style-type: none"> • <i>Uncertain</i> - Greater costs of developing rules and enforcement (Office of Technology Assessment 1995, US Regulatory Council 1981), but not necessarily so for costs of developing rules (Gunningham and Johnstone 1999). • <i>Decreased or no change</i> in compliance costs (US Regulatory Council 1981), but some entities may choose to develop more costly alternative approaches (Coglianese, Nash, Olmstead 2002). • <i>Decreased or no change</i> - not explicitly addressed in the literature; presumably benefit from lower costs to regulated entities and innovations spurred by performance-based approach. |
| <ul style="list-style-type: none"> • <i>Distributive impacts</i> in addressing regulated harms | <ul style="list-style-type: none"> • <i>Mixed</i> - Focuses attention on a given harm no matter where it is, but leaves potential gaps in coverage of attention to harm if performance is gauged on an area-wide basis through "hot spots" (Office of Technology Assessment 1995). |
| <ul style="list-style-type: none"> • <i>Equity</i> in treatment of regulated entities | <ul style="list-style-type: none"> • <i>Uncertain</i> - Competitive differences may emerge due to large firms having advantage in developing alternative approaches (US Regulatory Council 1981) for heterogeneous industry. How rules are enforced will also affect equity. |

Notes:

^a Expectations provided by sources noted in parentheses about performance-based regulation when compared to more prescriptive-based regulatory approaches. References are not inclusive.

The potential pitfalls of a performance-based approach can be illustrated by a rare empirical study of a performance standard. Peter May demonstrates that in New Zealand, an ideologically driven shift from detailed building standards, to a performance and market based approach, resulted in the “saga of leaky buildings’ and a major scandal.⁸⁸ Under the new approach, builders were able to determine design and construction solutions without accountability, there was no performance requirement regarding the provision of shelter, there was a lack of detail concerning necessary controls for external moisture, a latitude to innovate with low-cost building material, and lapses amongst third party and local government certifiers. These failures led to a ‘race to the bottom’ in building standards, with severe economic damage to building owners, insurers, local authorities and others. At the very least, this study is a cautionary tale concerning the need to pay attention to how to characterise desired outcomes, how to measure the level of performance that is obtained, and how to build in accountability for results. More broadly, it suggests that “any regulatory regime must confront a fundamental political problem of deciding how tight controls should be in promoting consistency and accountability versus how much discretion should be granted in promoting flexibility and innovation”.⁸⁹ For some types of risks and contexts, defining preventive measures precisely may be more important than providing discretion.

Performance standards may also be loosely or more tightly defined, and this too, will have important consequences. In part these are influenced by how closely a particular performance outcome is to a relevant regulatory objective(s).⁹⁰ We make this point because our intention is to utilise performance-based standards *to provide greater clarity than is offered by general duties and process-based standards*. To this end, we are proposing to define OHS outcomes more concretely, to capture the intent or spirit of the required OHS outcomes without leaving room for interpretation. Our proposal is to use performance-based standards which meet this criterion (such as those listed in Table 3) to identify key OHS problems to be solved and to define essential OHS outcomes. These defined performance outcomes would replace the generic and rather repetitive use of process requirements such as risk assessment and control, provision of information and training, under current OHS regulations. As discussed, the latter would become part of the systematic approach to managing OHS under the OHS statutes.

As this approach is relatively untapped by current Australian OHS law, there is a challenge to explore whether it can be applied to provide the desired features of clarity and flexibility in the prevention and control of a comprehensive range of contemporary occupational health and safety problems.

4.5 Providing prescription: regulations, approved codes of practice and alternative compliance mechanisms

Notwithstanding the potential benefits of performance-based standards in some contexts, there will be others when it is not desirable to leave duty holders and OHS inspectors in doubt about what preventive measures are sufficient, or when duty holders seek more explicit guidance, as may be the case with SMEs and those less experienced in managing OHS.

We envisage two ways in which prescription can and should play an important role. First, there will be circumstances in which *mandatory specification standards still have a crucial place, and should be retained under OHS regulations*. For example, they will be crucial for addressing significant risks, such as those that have acute effects and can be life threatening, and where there are recognised solutions that are known to control the risk effectively (such as particular technologies). These standards might be specific provisions, such as prohibition

of entry into a confined space with a hazardous or explosive atmosphere. Alternatively they could be technical or design standards, referenced in regulations, where a specific and/or consistent design is required, for example, for particular plant or high risk installations.

Second, detailed guidance may be crucially important to compensate for a particular limitation of the general duties, systematic processes and performance standards, namely that they tend to require OHS resources and skills to determine *how* to achieve compliance. Thus organisations lacking OHS know-how may prefer simply to be told precisely what to do.⁹¹ Meeting this concern is crucial given the structural shift in the nature of work performed and employment arrangements described in section 2.1, and the substantial proportion of the workforce which now falls within small business.

This problem was anticipated under the original Robens-based package of reforms, and addressed through the mechanism of approved codes of practice (advisory standards in Queensland). These *codes provide non-mandatory guidance* as to means by which to meet the principles set out under the OHS statutes and in regulations respectively. That is, codes are intended to fill in much of the detail which is lacking in the general duties and process or performance standards.

They do so in a flexible fashion. Specifically, under most of the post-Robens legislation, codes have evidentiary status, in that while failure to comply with a code does not in itself involve a breach of the Act, it nevertheless has evidentiary value. That is, the onus is on the duty holder to prove, if challenged, that the action taken was at least as good as that set out in the code. For example, in most cases, the general duty states the principle (in very broad terms) and the codes identify *one* non-mandatory way of achieving it. This solution has the attraction of providing more detailed guidance as to how to meet the required standard of care while allowing the flexibility to follow an alternative course of action, provided that an equivalent or better standard of care is achieved. They are, in effect, alternative compliance mechanisms. To avoid at least one criticism of codes of practice, that they may be too general to be of value, we envisage that codes of practice would interpret and apply the relevant general duties and performance standards mandated by the OHS statutes and regulations, to particular contexts.

For example, codes of practice may provide detailed (prescriptive) guidance for particular industries or sectors or regarding particular hazards. Duty holders can then choose to follow the more specific direction provided by an approved code of practice or take alternative action, as long as they satisfy the essential requirements of the OHS statutes and regulations. Evidentiary status will sometimes also be appropriate for technical or design standards where there is a need to define an acceptable standard of care but alternative designs are permitted.

Another means of providing the technical information and detailed practical guidance that small firms need, is through *technical data sheets and other advisory material*. Such material can be issued not only by regulatory agencies, but also by independent standard setting bodies or even by industry itself. However, given the danger that the latter approach may result in lowest common denominator approaches, for reasons identified below, this is not regarded as the preferred approach.

The particular advantage of using technical data sheets rather than codes of practice, is that the former are less likely to be regarded (albeit erroneously) as *de facto* regulations, thereby contributing to the problem of regulatory overload. Because these documents would not have

any formal legal status,⁹² it is easier to modify them quickly, thereby reducing the danger of their becoming rapidly outdated. In this way, the accumulated wisdom that is often contained in specification standards would not be lost but would be located in a different form. This is similar to the developing American approach whereby most standards are written in performance language but: "some of these include specification guidelines in an appendix that small employers can follow to ensure compliance".⁹³

4.6 Combining standards

The different types of standard we have analysed above, are not mutually exclusive. On the contrary, far more is likely to be achieved by using judicious combinations of policy standards, than by adopting single standard approaches. In essence, the benefits of using some combination of standard types is that by so doing, the weaknesses of any given approach may be compensated for by building in the strengths of another standard type. However, this is not to suggest that all standard types should be used together in all situations. On the contrary, such an approach would result in regulatory overload and for that reason would be counter-productive. The challenge for policy makers is to adopt the most appropriate mix of approaches, for any given set of circumstances.

Coglianesse and Lazar have argued that the optimal choice will depend upon a number of circumstances.⁹⁴ When objectives can be clearly defined and are easily measured (or assessed), they suggest that performance-based regulations are desirable, on the basis that duty holders can be assumed to have superior knowledge to regulators about how best to achieve a given result. Such an outcome based approach will accordingly, be the most cost-effective. However, when objectives are not easily defined and measured, but the target group is relatively homogenous (ie most enterprises have similar operations and technology tends to be stable over time), then design-based or technology based standards may be both effective and efficient. In contrast, where it is difficult for government to measure performance and the target group is made up of heterogeneous firms facing heterogeneous conditions, then they argue that systems based, (what they call management based), regulation will probably be preferable to its alternatives.⁹⁵

We propose that:

- The *general duties* provide a set of principles and broad based goals to guide duty holders in all circumstances. They have value “across the board” and as we have argued, should not only be maintained but extended to cover a wider range of duty holders, on the basis of key relationships between those with real control over OHS risks and those exposed to risk.
- Standards requiring systematic management of OHS are already incorporated, to some extent, through provisions of different types, and spread between the OHS statutes, regulations or evidentiary standards. However, the present approach is neither sufficiently ambitious, nor does it permeate to all duty holders in all circumstances. These limitations can be overcome by *underpinning the general duties with requirements to engage in systematic OHSM*, along the lines we have proposed. This approach involves requiring key processes, which would be tailored to the organisation, not prescription of a particular model or standard.
- Systematic standards are process rather than outcome based. When working well they provide strategies for proactively and systematically improving OHS performance, accommodating to organisational and technological change, and allowing preventive

measures tailored to the organisation. However, they offer no benchmark of acceptable compliance and run the risk of tokenism: that some duty holders will lack commitment to the processes and in consequence, achieve little. For these reasons, *systematic standards should be underpinned, where possible, with prescriptive and/or performance based standards* (see further below). However, there will also be circumstances in which it is not practicable to identify prescriptive or outcome-based measures, in which case systematic standards, read in conjunction with the other principles and goals set out in the general duties, provide an imperfect but nevertheless best available strategy.

- Performance target and performance outcome standards (incorporated in regulations) should be used in circumstances where experience suggests they can achieve results.⁹⁶ These circumstances are not well mapped out but are likely to include those in which actual performance can be clearly defined, measured, evaluated and verified.⁹⁷ Precisely stated, performance standards have the potential to play an important role in highlighting OHS problems to be addressed and OHS outcomes to be achieved, without the inflexibility of specification standards. However, even in these circumstances, performance standards may cause challenges for some enterprises, who lack the resources and sophistication to determine for themselves, how best to achieve the specified outcome.
- The lack of concrete guidance, and the difficulties facing small companies, can be best overcome by combining performance standards with *evidentiary standards such as approved codes of practice*. Often these can best be designed on a sector or industry-specific basis. In providing detailed prescriptions as to *one* acceptable way to meet general duty requirements and any relevant performance standard, they provide firms with both specific guidance and the flexibility to chose other means (if they so wish) to achieve performance goals.

In certain situations, *specification standards*, such as those which mandate particular technologies or prohibit particular practices, will be the most effective means of achieving desired OHS outcomes, and should be used in preference to performance standards or to evidentiary standards. In such circumstances, general duties and systematic OHSM will have little resonance since meeting the prescriptive standard will discharge all the duty holders' responsibilities.

In summary, the mix of standards we propose is designed to strike a balance between the objectives of pursuing a proactive and systematic approach to managing OHS, while providing clarity about OHS problems to address and outcomes to be achieved and, when necessary, specifying preventive measures for high risk, technical and design matters, or providing prescriptive guidance for particular industries and sectors, especially for SMEs and others seeking greater clarification of action required to ensure compliance.

5. Policy Framework for OHS Standards Setting

A discussion of OHS standards setting is not complete without, at least briefly, considering the policy framework within which OHS standards setting takes place. Here we canvass three key policy issues: *national consistency*, *forums and forms of representation*, and the *processes and criteria* for setting standards.

In the Australian context, OHS law making is a Commonwealth, state and territory based function, although the National Occupational Health and Safety Commission has a statutory function to declare national model standards and codes of practice.⁹⁸ In the often protracted processes involved in determining regulatory reforms, there is plenty of opportunity to introduce jurisdictional variations in OHS standards, even where the starting point is a nationally agreed model standard. As a result, OHS legislation continues to retain many state/territory determined features because intrinsically state/territory concerns and regulatory impact processes consistently predominate in OHS standards setting.

There are three well-recognised strategies for achieving national consistency: template legislation, national legislation, using a relevant Constitutional head of power, and referral of state/territory powers to the Commonwealth. The strategy that best accommodates state/territory interests while achieving national consistency is that of *template legislation*, where an agreed template is passed in one jurisdiction and then adopted consistently and comprehensively as law in all jurisdictions. The process requires governments to resolve differences of approach and drafting before the law is adopted.⁹⁹ There are successful examples of nationally consistent template legislation in the areas of road transport and the uniform companies and securities legislation. In contemplating OHS standard setting for the 21st century we argue that it is incumbent upon OHS regulators to identify the means to achieve genuine consistency in OHS legislation.

A second policy issue of some importance is the nature of the forums and the forms of representation in OHS standards setting. An innovation of the Robens Committee was tripartite decision making, which has been reflected in forums at Commonwealth, state, territory and industry levels, since the mid-1980s. The tripartite model, like other Robens' initiatives, was designed in an era when most workers were employed by larger organisations, and represented by unions which, as we established in Section 2.1, is no longer the case. In light of the fundamental economic and labour market changes, there is cause to contemplate whether the tripartite forums and methods of public consultation currently used are representative and effective. If they are not, then there is a considerable risk that the standards set will not be accepted, understood or implemented by those responsible. Nonetheless, we acknowledge that there is no clear answer about how this is best achieved. It may be that *new avenues* are required to *provide insights about the effectiveness of proposed strategies*, along the lines of pilot projects and intervention studies that enable direct participation, implementation, feedback and evaluation of strategies. Alternatively, there may be opportunities to explore representation of interests more directly with industry sub-groups and trade associations, employee advocates and OHS professional groups.

The third policy issue that we have identified is that of the processes and criteria for decision making, that is, *what values should be served by regulation?*¹⁰⁰ For example, should these be values or criteria of fairness, effectiveness, expertise applied, efficiency, the trinity of transparency, accessibility and congruence,¹⁰¹ or otherwise. The current regulatory review

policy requirements of Commonwealth and state/territory governments offer little scope to consider criteria of "good regulation" other than identification of market failures and cost/benefit analysis.¹⁰² What is striking about such policy frameworks is the way that "arguments based around ethics and social justice that held sway in debates on protective legislation since the early years of factory reform, appear to have given way to arguments about the cost effectiveness of improved OHSM."¹⁰³ It is therefore worth flagging that these are not the only criteria available. In the wider European context of standard setting, alternative criteria are explicit, in particular, the application of the precautionary principle, which is associated with a shift toward more risk averse and more stringent regulatory policies in Europe.¹⁰⁴

In summary, there are some crucial policy issues impacting upon OHS standards setting for the 21st century. We have briefly canvassed three of these and suggest that discussion of the future of OHS regulation is not complete without wrestling with the challenges of national consistency; effective representation of relevant interests and the criteria for, and values enshrined in, decision-making on OHS standards.

6. Conclusion

This conference is concerned with designing *OHS Regulation for the 21st Century* with the aim of preventing or minimising occupational fatalities, injuries and ill-health. In this, the goal should not simply be the prevention of existing risks but the planning and design of workplaces, systems of work, work equipment and materials to enhance and sustain the quality of OHS into the future. In exploring the lessons in standards setting, we conclude that all types of standards and regulatory instruments have a role to play but there is merit in exploring a different balance and mix of these.

In essence, we envisage a regime in which: (1) the OHS statutes comprise general duties and systematic process-based standards, covering each of the principal relationships between risk producers and risk exposed; (2) OHS regulations provide comprehensive coverage of hazards encountered in contemporary working life, by achieving the right balance between carefully defined performance outcomes and performance targets, and specification standards for significant risks; and (3) evidentiary standards are the vehicle for industry and sector specific guidance, as well as for some technical standards, where both a clear benchmark of compliance and flexibility are desirable features. These strategies offer a firmer regulatory basis for meeting the changing demands placed upon OHS regulation in the 21st century.

¹ We note that standard setting is also undertaken by workers compensation agencies, for example in developing performance standards for self-insurers or participation in bonus or incentive schemes, and by government agencies setting standards for contracting services that incorporate OHS requirements. This paper may also be of interest to those involved in these other areas of standard setting.

² We use the term occupational "ill-health", rather than the traditional concept of occupational disease, quite deliberately, in order to reflect the wider view of the impact of the changing economy and organisation of work on health. See D Walters, 'Change and continuity: health and safety issues for the new millenium', (1999) 3(1) *Journal of the Institution of Occupational Safety and Health*, 7 at 18.

³ According to a survey undertaken by C McCosker and L Frazer (Griffith University) for the Franchise Council of Australia, there are at least 750 franchisors in Australia, involving nearly 50,000 business franchises and employing some 650,000 people. See www.franchise.org.au.

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- ⁴ J Burgess and A de Ruyter, 'Declining job quality in Australia: another hidden cost of unemployment' (2000) 11(2) *Economic and Labour Relations Review* 246-269;
NOHSC, *Small Business OHS Statistics*, National Occupational Health and Safety Commission, Canberra, online at <http://www.nohsc.gov.au>, 2003;
M Quinlan and C Mayhew, 'Precarious employment, work re-organisation and the fracturing of OHS management' in K Frick, P Jensen, M Quinlan and T Wilthagen (eds) *Systematic Occupational Health and Safety Management. Perspectives on an International Development*, Pergamon, Amsterdam, 2000, 175-198;
D Walters *Health and Safety In Small Enterprises. European Strategies for Managing Improvement*, SALTSA – Joint Programme for Working Life Research in Europe, PIE – Peter Lang Sa, Brussels, 2001, 31.
- ⁵ D Walters, *Regulating Health and Safety Management in the European Union*, PIE-Peter Lang, Brussels, 2002, 311.
- ⁶ For an overview of duties see R Johnstone, *Occupational Health and Safety Law and Policy. Text and Materials*, LBC Information Services, Sydney, 1997, chapters 5 and 6.
- ⁷ The confusion is compounded when the separate but related legislation for workers compensation is considered. The usual practice of workers compensation schemes is to make the immediate employer responsible for workers compensation coverage (rather than principals, host employers or franchisors). As a result, parties that have a key influence on the quality of OHS, are not responsible for the costs of work-related injury and illness.
- ⁸ For a discussion of the duties of employers and self-employed persons to others, including contractors, labour hire workers and franchisees, and relevant case law, see R Johnstone 'Paradigm crossed? The statutory occupational health and safety obligations of the business undertaking' (1999) 12 *Australian Journal of Labour Law* 73-112.
- ⁹ For Australian OHS regulations see CCH, *Australian Occupational Health and Safety Law*, volumes 1 to 3, CCH Australian Ltd, Sydney, 2003.
- ¹⁰ For further discussion of types of standards see:
R Baldwin and M Cave, *Understanding Regulation. Theory, Strategy and Practice*, Oxford University Press, Oxford, 1999, 118-124;
K Frick, 'Enforced Voluntarism - purpose, means and goals of systems control', National Institute for Working Life, Solna, Workshop on Integrated Control/Systems Control, Dublin, August 1996, 29-30;
N Gunningham, 'From compliance to best practice in OHS: The roles of specification, performance and systems-based standards' (1996) 9(3) *Australian Journal of Labour Law* 221- 246.
- ¹¹ For example, a standard requiring guard rails to be "at least 100 cm in height, with at least one lower bar in the middle and of at least 100 kp strength" would be readily recognisable as a specification standard. Yet it is still silent about many details: what materials must be used; how should the railings be constructed; or other technical specifications. In the absence of legislative guidance, courts are likely to interpret these matters against a performance (outcome) standard: what is adequate to guard against accident by falls? Thus even a seemingly clear cut specification standard contains some performance-related elements.
- ¹² C Mayhew, 'OHS in Australian "micro" small businesses: evidence from nine research studies' (2000) 16(4) *Journal of Occupational Health and Safety - Australia and New Zealand*, 297 at 301.
- ¹³ C Coglianesi, J Nash and T Olmstead, *Performance-Based Regulation: Prospects and Limitations in Health, Safety and Environmental Protection*, Regulatory Policy Program Report No RPP-03, Harvard University, Cambridge Massachusetts, 2002, 10;
La Trobe/Melbourne Occupational Health and Safety Project (W Carson, B Creighton, C Henenberg, R Johnstone), *Victorian Occupational Health and Safety: An Assessment of Law in Transition*, Department of Legal Studies, La Trobe University, Victoria, 1989.
- ¹⁴ A number of industry and government submissions to the Royal Commission into the Australian building and construction industry favoured a more prescriptive approach under OHS regulations. For example, see T R Cole *Final Report of the Royal Commission into the Building and Construction Industry, Reform – Occupational Health and Safety*, Volume 6, Commonwealth of Australia, Canberra, 2003, 23-27.
- ¹⁵ P W McAvooy, *OSHA Safety Regulation*, Report of the Presidential Task Force, American Enterprise Institute, Washington DC, 1977.

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- ¹⁶ R Baldwin, C Scott and C Hood, *A Reader on Regulation*, Oxford University Press, Oxford, 1998, 15.
- ¹⁷ R Hahn (ed), *Risks, Costs and Lives Saved: Getting Better Results from Regulation*. Washington DC, Oxford University Press, 1996.
- ¹⁸ A Brooks, 'Rethinking Occupational Health and Safety Legislation' (1988) September *The Journal of Industrial Relations*, 348 at 353.
- ¹⁹ Industry Commission, *Work, Health & Safety: Inquiry into Occupational Health & Safety* Volume I Report and Volume II Appendices Report No 47, AGPS, Canberra, 1995, 75.
- ²⁰ *National Standard for Plant*, [NOHSC:1010], Worksafe Australia, Sydney, 1994.
- ²¹ Continuous improvement may be defined as "an approach to improving organisational performance beyond the level of minimum compliance with standards, leading to superior OHS performance".
- ²² Industry Commission, *Work, Health & Safety: Inquiry into Occupational Health & Safety*, Volume II Appendices, AGPS, Canberra, 1995, Volume II, 356.
- ²³ See K Frick, 'Enforced voluntarism - purpose, means and goals of systems control', National Institute for Working Life, Solna, Workshop on Integrated Control/Systems Control, Dublin, August 1996, 29-30.
- ²⁴ R Baldwin and M Cave, *Understanding Regulation. Theory, Strategy and Practice*, Oxford University Press, 1999, 120.
- ²⁵ See C Coglianese, J Nash and T Olmstead, *Performance-Based Regulation: Prospects and Limitations in Health, Safety and Environmental Protection*, Regulatory Policy Program Report No RPP-03, Harvard University, Cambridge Massachusetts, 2002.
- ²⁶ Robens Committee (Committee on Safety and Health at Work), *Report of the Committee on Health and Safety at Work 1970-1972*, HMSO, London, 1972, 7.
- ²⁷ See CCH, *Australian Occupational Health and Safety Law*, CCH Australia, Sydney, 2003.
- ²⁸ Evidentiary standards are known as approved codes of practice in all jurisdictions except Queensland where the term "advisory standard" is used.
- ²⁹ C Coglianese J Nash and T Olmstead T, *Performance-Based Regulation: Prospects and Limitations in Health, Safety, and Environmental Protection*, Regulatory Policy Program Report No RPP-03, Harvard University, Cambridge Massachusetts, 2002;
- N Gunningham, 'From compliance to best practice in OHS: The roles of specification, performance and systems-based standards' (1996) 9(3) *Australian Journal of Labour Law*, 221- 246;
- N Gunningham and R Johnstone *Regulating Workplace Safety – Systems and Sanctions*, Oxford University Press, New York, 1999, 22-32.
- ³⁰ For details of these national model standards see the National Occupational Health and Safety Commission (NOHSC) online at <http://www.nohsc.gov.au>.
- ³¹ For example the risk management provisions under Queensland's *Workplace Health and Safety Act 1995* (WHS Act (Qld): s 22(2)).
- ³² B Bottomley, 'Systems approach to prevention', paper presented at Future Safe Conference, Sydney, May 1994, 2.
- ³³ F Kast and J Rosenzweig, *Organisation and Management: A Systems Approach* (2nd Ed), McGraw-Hill, Tokyo, 1974, 113.
- ³⁴ For a review of the evidence see Per Oystein Saksvik and M Quinlan, 'Regulating systemic occupational health and safety management' *Industrial Relations* 2003 58(1), 45-49. Paper compliance, insufficient inspectorial oversight, over-reliance on management and inadequate worker input are identified as particular problems. See also K Nytrø, P Saksvik and H Torvatn, 'Organisational prerequisites for the implementation of systematic health, environment and safety work in enterprises' (1998) 30 *Safety Science*, 297-307; and P Saksvik, H Torvatn and K Nytrø, 'Systematic occupational health and safety work in Norway: a decade of implementation' (2003) *Safety Science*, article in press.
- ³⁵ E Bluff, 'Producing risks: creating safety - how is product safety addressed in management systems?' in W

Pearse, C Gallagher and E Bluff (eds) *Occupational Health and Safety Management Systems*, Proceedings of the First National Conference, Sydney, July 2000, 101-121.

³⁶ European Commission 'Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work', *Official Journal L 183*, 29/06/1989, pp 1 – 8; and

Walters, D, *Regulating Health and Safety Management in the European Union*, PIE-Peter Lang, Brussels, 2002.

³⁷ The term internal control is used in Norway. This country is not a member of the European Union and derived its internal control initiatives from the safety case regime of the offshore oil industry. For details of the Norwegian and Swedish regulation of systematic OHSM and internal control see:

P Lindøe and K Hansen 'Integrating internal control into management systems: a discussion based on Norwegian case studies', in K Frick, P Jensen, M Quinlan and T Wilthagen (eds), *Systematic Occupational Health and Safety Management. Perspectives on an International Development*, Pergamon, Amsterdam, 2000, 437-455;

K Nytrø, P Saksvik and H Torvatn, 'Organisational prerequisites for the implementation of systematic health, environment and safety work in enterprises' (1998) 30 *Safety Science*, 297-307;

P Saksvik, H Torvatn and K Nytrø, 'Systematic occupational health and safety work in Norway: a decade of implementation' (2003) *Safety Science*, article in press;

Swedish Work Environment Authority, *Systematic Work Environment Management: Provisions of the Swedish Work Environment Authority on Systematic Work Environment Management, Together With General Recommendations on the Implementation of the Provisions*, Swedish Work Environment Authority, Stockholm, 2001.

³⁸ See further Per Oystein Saksvik and M Quinlan, 'Regulating Systemic Occupational Health and Safety Management' (2003) 58(1) *Industrial Relations*, 45-49.

³⁹ See for example:

P Hudson, 'Safety management and safety culture - the long, hard and winding road' in W Pearse, C Gallagher, C and E Bluff (eds), *Occupational Health and Safety Management Systems. Proceedings of the First National Conference*, Crown Content, Sydney, 2000, 3-31 (for a discussion of OHSM at Shell);

Dupont *Safety Resources*, 2003, online at <http://www.dupont.com/safety/workplace/> (for Dupont's OHSM program);

R Wokutch and C VanSandt, 'OHS management in the United States and Japan', in K Frick, P Jensen, M Quinlan and T Wilthagen (eds), *Systematic Occupational Health and Safety Management. Perspectives on an International Development*, Pergamon, Amsterdam, 2000, 367-389 (for an outline of Dupont and Toyota's approaches to OHSM).

⁴⁰ Overseas examples are:

HSE, *Successful Health and Safety Management*, HSG 65, Health and Safety Executive, HSE Books, Norwich, 1997;

OSHA, *Safety and Health Program Management Guidelines; Issuance of Voluntary Guidelines*, Federal Register 54, 3904-3916, Occupational Safety and Health Administration, Washington DC, 1989;

OSHA, *An Overview of VPP*, 2003, online at <http://www.osha.gov/oshprogs/vpp/overview.html>.

In Australia there are various examples including:

Victorian WorkCover Authority, *SafetyMAP: Auditing Health and Safety Management Systems*, 4th edition, Victorian WorkCover Authority, Melbourne, 2002;

SA WorkCover Corporation, *Safety Achiever Business System*, SA WorkCover Corporation, Adelaide, 2003, online at <http://www.workcover.com/employers/levy/LevySchemeSABS.htm>;

WorkSafe Western Australia, *WorkSafe Plan. Assessment of OHS Management Systems*, Worksafe Western Australia, Perth, 1999;

Queensland Division of Workplace Health and Safety, *Tri Safe. Management System Audit*, Queensland Department of Industrial Relations, Brisbane, 1999.

⁴¹ G Zwetsloot, 'Developments and debates on OHSM system standardisation and certification', in K Frick, P Jensen, M Quinlan and T Wilthagen *Systematic Occupational Health and Safety Management. Perspectives on an International Development*, Pergamon, Amsterdam, 2000, 391-412.

⁴² For examples of OHSM standards and guidelines see:

BSI, *Guide to Occupational Health and Safety Management Systems*, BS 8800, British Standardisation Institution, London, 1999;

ILO, *Guidelines on Occupational Safety and Health Management Systems*, International Labour Office, Geneva, 2001;

NNI, *Nederlands Praktijkrichtlijn NPR 5001, Model voor een Arbomanagementsysteem*, Technical Report NPR 5001: *Guide to an Occupational Health and Safety Management System*, Standardisation Institute of the Netherlands, Delft, 1996;

SAA, *Occupational Health and Safety Management Systems - General Guidelines on Principles, Systems and Supporting Techniques*, AS/NZS 4804, Standards Australia, Sydney and Standards New Zealand, Wellington, 1997;

SAA, *Occupational Health and Safety Management Systems - Specification With Guidance for Use*, AS 4801, Standards Australia, Sydney and Standards New Zealand, Wellington, 2001.

⁴³ G Zwetsloot, 'Developments and debates on OHSM system standardisation and certification', in K Frick, P Jensen, M Quinlan and T Wilthagen (eds), *Systematic Occupational Health and Safety Management. Perspectives on an International Development*, Pergamon, Amsterdam, 2000, 391 at 396.

⁴⁴ The Joint Accreditation System of Australia and New Zealand (JAS-ANZ) accredits third party providers of OHSM system certification to evaluate OHSM systems against:

Victorian WorkCover Authority, *SafetyMAP: Auditing Health and Safety Management Systems*, 4th ed, Victorian WorkCover Authority, Melbourne, 2002;

British Standard 18001 *Guide to Occupational Health and Safety Management Systems* BS 18001, British Standardisation Institution, London, 1999;

SAA, *Occupational Health and Safety Management Systems - Specification With Guidance for Use*, AS 4801, Standards Australia, Sydney and Standards New Zealand, Wellington, 2001.

⁴⁵ Structural elements are persons (or groups such as committees) with responsibility for OHSM, while process elements are the steps or procedures for taking action. A Waring, *Safety Management Systems*, Chapman and Hall, London, 1996, 7.

⁴⁶ R Hahn (ed), *Risks, Costs and Lives Saved: Getting Better Results from Regulation*. Washington DC, Oxford University Press, 1996.

⁴⁷ For example, the Australian Industry Commission, reporting in 1995, found that most employers were satisfied with, and in the case of larger employers, preferred, a performance based approach, *including the general duties*. See for example the submissions to Industry Commission (1995) by the Australian Mines and Metals Association (Inc), Tasmanian Branch and Tasmanian Chamber of Mines, *Occupational Health & Safety*, Submission Number 212 to the Industry Commission, November 25, 1994 at p 5, the Australian Chamber of Commerce and Industry, *Occupational Health & Safety*, Submission Number 133 to the Industry Commission, September 30 1994 at p 26 and the South Australian Employers' Chamber of Commerce and Industry, *Occupational Health & Safety*, Submission Number 95 to the Industry Commission, October 1994 p 24 in Industry Commission, above, n 11, Vol 1 pp71-2 and 90.

⁴⁸ For an overview of some relevant cases see chapters 4 and 5 of R Johnstone, *Occupational Health and Safety Law and Policy, Text and Materials*, LBC, Sydney, 1997. In Queensland no prosecutions have been undertaken for breach of regulations, other than for failure to register a workplace or plant, since 1989. See also Industry Commission, above, Vol 1 p 110 and A Hopkins, 'Patterns of Prosecution' in *Occupational Health and Safety Prosecutions in Australia: Overview and Issues*, R Johnstone (ed), Centre for Employment and Labour Relations Law, The University of Melbourne, Melbourne, 1994, 2.

⁴⁹ For a discussion of the employer's duty of care under Australian OHS law see R Johnstone, *Occupational Health and Safety Law and Policy. Text and Materials*, LBC Information Services, Sydney, 1997, chapter 5.

⁵¹ In Queensland there is a statutory requirement to implement risk management processes under the *Workplace Health and Safety Act 1995* (s 22(2)).

⁵² P O Saksvik and M Quinlan, 'Regulating Systemic Occupational Health and Safety Management' (2003) 58(1) *Industrial Relations*, 45-49.

⁵³ The Norwegian regulation on internal control consists of a simple, systematic approach to implementing the requirements of existing OHS law, has led to improvements because this approach has been continuously applied and enforced by OHS authorities and inspectors over a ten year period, without fundamental changes, and thus it is regarded as an approach that will continue to be supported rather than a passing “fad”. See further P Saksvik, H Torvatn and K Nytrø, 'Systematic occupational health and safety work in Norway: a decade of implementation', *Safety Science*, (article in press).

⁵⁴ Over and above the quality of implementation of core processes for managing OHS, there are a wide range of contextual factors that may influence organisational thinking and action on OHS. These factors include the internal culture and sub-cultures, power relations, business priorities, production pressures, downsizing and contracting out, workloads, formal and informal structures, communication mechanisms, decision-making processes and styles, and conditions of employment. There are also external influences that may impact on OHSM including technology and production changes that are outside the control of the organisation, systems and conditions of work imposed by contractual arrangements such as franchising and sub-contracting, customer requirements to meet quality and other standards, the role played by external suppliers of goods and services, general trading conditions and markets, labour market trends and shareholder influences. These factors may be powerful influences on organisational behaviour, affecting whether and how OHS is managed, quite apart from state initiated forms of regulation including OHS law, enforcement policy and workers compensation penalties and incentives. It is likely that successfully improving OHS performance demands analysis of and attention to an array of internal characteristics of organisations as well as external influences. In essence, it is not only *what* organisations do to manage OHS but also *how* they go about it, and *what else* is going on in the organisation or outside it that impacts on OHS management. For further discussion see:

G Aronsson, 'Contingent workers and health and safety' (1999) *Work, Employment and Society*, 13: 439-459;

K Frick and J Wren, 'Reviewing occupational health and safety management - multiple roots, diverse perspectives and ambiguous outcomes', in K Frick, P Jensen, M Quinlan and T Wilthagen (eds), *Systematic Occupational Health and Safety Management. Perspectives on an International Development*, Pergamon, Amsterdam, 2000, 19;

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M Simard and A Marchand, 'A multilevel analysis of organisational factors related to the taking of safety initiative by work groups' (1995) 21 *Safety Science*, 113-129;

A Waring, *Safety Management Systems*, Chapman and Hall, London, 1996, 25-34 & 39-58.

⁵⁵ Here we are drawing on the work of G Zwetsloot, 'Developments and debates on OHSM system standardisation and certification', in K Frick, P Jensen, M Quinlan and T Wilthagen (eds) *Systematic Occupational Health and Safety Management. Perspectives on an International Development*, Pergamon, Amsterdam, 2000, 391-412. Zwetsloot distinguishes four stages of maturity in organisational OHSM, characterised as follows:

- in the *ad hoc stage* the organisation has little OHSM expertise and reacts to problems as they arise, for example when an accident occurs, with high absenteeism due to sickness, following an inspector's visit or in response to internal disputes on OHS;
- in the *systematic stage* the organisation carries out periodic risk assessment, action planning, prioritising of problems and implementation of planned control measures - in this stage several people in the organisation are developing know-how on OHSM but external OHS expertise may be sought as the organisation is still developing internal OHS competency;

- in the *system stage* the organisation implements and maintains an OHSM system by continuous structural attention to OHS which is organised before the start of new activities - procedures and accountabilities are clear, the focus is on prevention and control, there is periodic auditing and management review of the OHSM system;
- in the *proactive stage* the organisation integrates OHSM into other management systems such as those for quality and environment, and/or integrates OHSM into its business processes; the focus is on continuous improvement and initiatives for improvement are expected from everyone; direct participation is important in order to have short and proactive feedback loops; more effort is directed at the design stage of products, processes, workplaces and work organisation, and the associated technological and organisational choices; collective learning is fostered; OHSM is seen as contributing to a positive company image, by the labour market and customers.

⁵⁶ Relevant standards and guidelines include:

HSE, *Successful Health and Safety Management*, HSG 65, Health and Safety Executive, HSE Books, Norwich, 1997;

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ILO, *Guidelines on Occupational Safety and Health Management Systems*, International Labour Office, Geneva, 2001; AS/NZS 4804, Standards Australia, Sydney and Standards New Zealand, Wellington, 1997;

SAA, *Occupational Health and Safety Management Systems - Specification With Guidance for Use*, AS 4801, Standards Australia, Sydney and Standards New Zealand, Wellington, 2001.

⁵⁷ See *R v British Steel plc* [1995] 1 WLR 1356 ('British Steel'); *R v Associated Octel Co Ltd* [1996] 4 All ER 846; and *R v Gateway Foodmarkets Ltd* [1997] 3 All ER 78 at 81-83.

⁵⁸ See *Inspector Schultz v Council of the City of Tamworth (t/a Tamworth City Abattoir)* (1994-95) 58 IR 221 at 226-7; and *Sydney City Council v Coulson* (1987) 21 IR 447 at 480.

⁵⁹ In a recent study in the related area of environmental protection management commitment was found to be a potentially powerful tool in the hands of those who have determined to improve their environmental performance, but of limited value in the absence of such commitment. N Gunningham, R Kagan and D Thornton, *Shades of Green: Business, Regulation and Environment* Stanford University Press, 2003, Ch 5.

⁶⁰ See generally C Coglianese and J Nash (eds) *Regulating from the Inside* RFF, 2000.

⁶¹ C Coglianese and D Lazar 'Management based regulatory strategies', in J Donaghue and J Nye (eds) *Market-Based Governance*, Brookings, 2002, p219.

⁶² For research and discussion on management commitment see:

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⁶³ For research and discussion on planning and organising OHSM see:

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- A Hale and J Hovden, 'Management and culture: the third age of safety. A review of approaches to organisational aspects of safety, health and environment', in Feyer, A and Williamson, A (eds) *Occupational Injury. Risk Prevention and Intervention*, Taylor and Francis, London, 1998, 147-149;
- A Waring, *Safety Management Systems*, Chapman and Hall, London, 1996, 83-85 & 98-101.
- ⁶⁴ For research and discussion on risk management see:
- European Commission, 'Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work', *Official Journal L* 183, 29/06/1989, 1 – 8;
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- ⁶⁵ For research and discussion relevant to worker participation in OHSM see:
- J Braithwaite, *To Punish or Persuade: Enforcement of Coal Mine Safety*, State University of New York Press, Albany, USA, 1985;
- A Cohen, B Smith and A Cohen, *Safety Program Practices in High vs Low Accident Rate Companies - An Interim Report*, National Institute of Occupational Safety and Health, Publication No 75-185, Cincinnati, 1975;
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- C Gallagher, *Health and Safety Management Systems: an Analysis of Systems Types and Effectiveness*. National Occupational Health and Safety Commission, Sydney, 1997, s 6.2;
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⁶⁶ For research and discussion on the contribution of OHS expertise and the development of OHS competency see:

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N Ellis, *Work and Health: Management in Australia and New Zealand*, Oxford University Press, Melbourne, 2001, 256-269;

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⁶⁸ CCH, 'Accident investigation', in *Managing Occupational Health and Safety*, CCH Australia, Sydney, 2003;

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F Haines, *Corporate regulation: Beyond "Punish or Persuade"*, Oxford University Press, Oxford, 214.

H Torvatn, *Factorer Som Fremmer Eller Hindrer Innføring av IK-Systemer i Mindre Bedrifter*, SINTEF, Institute of Social Research in Industry, Trondheim, Norway, 1997.

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- A Waring, *Safety Management Systems*, Chapman and Hall, London, 1996, 170-172 & 178-182.
- ⁷² For research and discussion on integration of OHSM into business systems see:
- C Gallagher, *Health and Safety Management Systems: an Analysis of Systems Types and Effectiveness*. National Occupational Health and Safety Commission, Sydney, 1997, ss 5.2, 5.6, 6.1 & 6.2;
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- ⁷³ See P Jensen, 'Risk assessment: a regulatory strategy for stimulating work environment activities?' (2001) 11(2) *Human Factors and Ergonomics in Manufacturing*, 101-116;
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P Saksvik, H Torvatn and K Nytrø, 'Systematic occupational health and safety work in Norway: a decade of implementation' (2003) *Safety Science*, article in press;

H Torvatn, *Factorer Som Fremmer Eller Hindrer Innføring av IK-Systemer i Mindre Bedrifter*, SINTEF, Institute of Social Research in Industry, Trondheim, Norway, 1997.

⁷⁴ See (1) the Victorian *Occupational Health and Safety Act 1985* which requires an employer to “employ or engage persons who being suitably qualified in relation to occupational health and safety are able to provide advice to the employer in relation to the health and safety of employees of the employer” (OHS Act (Vic): s 21(4)(c)); and (2) the Queensland *Workplace Health and Safety Act 1995* which requires, in workplaces with more than 30 employees, the appointment of a qualified person (who holds a certificate of authority) as a “workplace health and safety officer” (WHS Act (Qld): ss 91-93).

⁷⁵ P James and D Walters, *Regulating Health and Safety at Work: the Way Forward*, The Institute of Employment Rights, London, 1999, 43.

⁷⁶ P Jensen, ‘Assessing assessment: The Danish experience of worker participation in risk assessment’ (2002) 23(2) *Economic and Industrial Democracy*;

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⁷⁷ R Johnstone, *Evaluation of Queensland Construction Safety 2000 Initiative* Queensland Division of Workplace Health and Safety and National Occupational Health and Safety Commission, Canberra, 1999, 22.

⁷⁸ For example, they have increased the number of workers in isolated and inadequately planned work settings, encouraged potentially dangerous forms of work disorganisation, placed additional demands on inspectors, and weakened the capacity of unions to vet OHS performance. See P Saksvik and M Quinlan, ‘Regulating systemic occupational health and safety management’ (2003) 58(1) *Industrial Relations*, 49-50.

⁷⁹ Most recently, in March 2003, a unique investigation in the United States, known as the National Database on Environmental Management Systems study, which worked with 83 facilities in 17 states, concluded that generally, EMSs had positive effects on facilities' environmental performance. While big, publicly traded corporations fared better with EMSs since they had more money and staff, government and smaller independent operations used them to build previously unavailable capacities to do a better job “Study concludes environmental management systems can boost performance, compliance” http://www.eurekaalert.org/pub_releases/2003-03/uonc-sce030603.php accessed 12/03/03.

⁸⁰ In particular, the experience of state mandated pollution prevention planning in the USA suggests that SMEs benefit from mandated planning which has given them a framework of structured analysis and/or the motivation to realise potential improvement opportunities *A Benchmarking study of Pollution Prevention Planning: Best Practices, Issues and Implications for Public Policy Environment Task Force*, White Paper for The Business Roundtable, Washington DC, 1998, www.brtable.org

⁸¹ Environmental Data Services (ENDS Report), *New Environmental Management Models for SMEs* ENDS Report 290, 1999, 5; and ENDS, *DTI Study Identifies Barriers to Small Firms Uptake of EMS* ENDS Report 299, 1999, 9.

⁸² For some examples see:

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⁸⁴ While such an “action plan” may not be substantially different from a formal (albeit simplified) OHSMS, this approach has the virtue of not intimidating SMEs about the formality or scale of what is being required of them. This is for example, the approach of the New South Wales WorkCover Authority, which encourages employers

to take certain steps without imposing any formal “systems-based” approach upon them.

⁸⁵ C Coglianese, J Nash and T Olmstead, *Performance-Based Regulation: Prospects and Limitations in Health, Safety, and Environmental Protection*, Regulatory Policy Program Report No RPP-03, Harvard University, Cambridge Massachusetts, 2002, 3.

⁸⁶ P May and R Wood ‘At the regulatory frontlines: Inspectors’ enforcement styles and regulatory compliance’ *Journal of Public Administration Research and Theory*, in press.

⁸⁷ P May 'Performance-based regulation and regulatory regimes: the saga of leaky buildings', Paper prepared for the 2003 Meeting of the Law and Society Association, June 5-8, Pittsburgh, 2003. The references cited in Table 7 are:

C Coglianese and D Lazar “Management-based regulation: prescribing private management to achieve public goals”, Working Paper 02-11, AEI-Brookings Joint Centre for Regulatory Studies, Washington DC, 2002;

C Coglianese, J Nash and T Olmstead “Performance-based regulation: prospects and limitations in health, safety and environmental protection”, Regulatory Policy Program Report RPP-03, Kennedy School of Government, Harvard University, Cambridge MA, 2002;

G Foliente “Developments in performance-based building codes and standards” (2000) 50(7/8) *Forest products Journal*, 12-21;

N Gunningham and R Johnstone *Regulating Workplace Safety, Systems and Sanctions*, Oxford University Press, Oxford, 1999;

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US Regulatory Council *Performance Standards, a Practical Guide to the Use of Performance Standards as a Regulatory Alternative*, Report of the Project on Regulatory Alternatives, Administrative Conference of the United States, Washington DC, 1981.

⁸⁸ P May ‘Performance-Based Regulation and Regulatory Design: The Saga of Leaky Buildings’ paper prepared for 2003 meeting of the Law and Society Association, June 5-8, Pittsburgh, USA.

⁸⁹ P May ‘Performance-Based Regulation and Regulatory Design: The Saga of Leaky Buildings’ paper prepared for 2003 meeting of the Law and Society Association, June 5-8, Pittsburgh, USA, 19.

⁹⁰ C Coglianese, J Nash and T Olmstead *Performance-Based Regulation: Prospects and Limitations in Health, Safety, and Environmental Protection*, Regulatory Policy Program Report No RPP-03, Harvard University, Cambridge Massachusetts, 2002, 4-5.

⁹¹ Industry Commission, Work, Health and Safety: Inquiry into Occupational Health and Safety, AGPS, Canberra, 1995.

⁹² ⁹² Although they might still be used as evidence of industry practice by a defendant seeking to establish that they did what was "reasonably practicable". Nevertheless the *perception* of technical data sheets is likely to be that they are less constraining than codes or regulations.

⁹³ L Davey, ‘Specification versus performance language in safety standards’ Fall 1990 *Job Safety and Health Quarterly*. Similarly in Australia, the current approach under national standards acknowledges that detailed specification standards can be a supporting element of process-based regulations. For example the NOHSC *National Standard for Plant* contains broad process-based criteria in conjunction with a number of quite detailed technical specification requirements.

⁹⁴ C Coglianese and D Lazar, ‘Management based regulatory strategies’ in J Donaghue and J Nye (eds) *Market-Based Governance*, Brookings, 2002.

⁹⁵ See also C Coglianese and D Lazar ‘Management-based regulation: prescribing private sector management to achieve public goals’ forthcoming, *Law and Society Review*.

⁹⁶ For a comprehensive analysis see C Coglianese, J Nash and T Olmstead, *Performance-Based Regulation: Prospects and Limitations in Health, Safety, and Environmental Protection*, Regulatory Policy Program Report No RPP-03, Harvard University, Cambridge Massachusetts, 2002,

⁹⁷ C Coglianese, J Nash and T Olmstead, *Performance-Based Regulation: Prospects and Limitations in Health, Safety, and Environmental Protection*, Regulatory Policy Program Report No RPP-03, Harvard University, Cambridge Massachusetts, 2002, 11-14

⁹⁸ *National Occupational Health and Safety Commission Act, 1985* (s 8);
E Emmett, 'Occupational health and safety in national development - the case of Australia', (1997) 23, *Scandinavian Journal of Work, Environment and Health*, 325 at 327.

⁹⁹ R Johnstone, *Occupational Health and Safety Law and Policy. Text and Materials*, Law Book Company, Sydney, 1997, 98-99;
Industry Commission, *Work, Health and Safety: Inquiry Into Occupational Health and Safety*, Volume 1. Commonwealth of Australia, Canberra, 53-68.

¹⁰⁰ R Baldwin, C Scott and C Hood *A Reader on Regulation*, Oxford University Press, Oxford, 1998, 33.

¹⁰¹ See C Diver 'The optimal precision of administrative rules' in Baldwin R, Scott C and Hood, C (eds) *A Reader on Regulation*, Oxford University Press, Oxford, 1998, 219-226. Diver suggests that regulatory precision has three elements: (1) *transparency* - the quality of using words with well-defined and universally accepted meanings within the relevant community (of regulatees); (2) *accessibility* - a standard that is accessible to its intended audience is one that is applicable to concrete situations without excessive difficulty or effort; and (3) *congruence* - a standard that is *congruent* is one where the substantive content of the message communicated produces the desired behaviour and thus is congruent with the underlying policy objective. There are inevitable trade offs among these elements as different factors drive standards towards one or the other. Each dimension implicates different values. Transparent standards help to ensure equality by defining the situations they apply to and by divorcing the outcome from the decision makers. An accessible standard promotes dignitary or communal values because regulatees can participate in its application. Congruence fosters the aims of the law by promoting outcomes consistent with those aims.

¹⁰² For an explanation of these terms as applied by COAG refer to *COAG Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies*, Council of Australian Governments, Canberra, 1997.

¹⁰³ D Walters, *Regulating Health and Safety Management in the European Union*, PIE-Peter Lang, Brussels, 2002, 298.

¹⁰⁴ D Vogel, (2001) *The New Politics of Risk Regulation in Europe*, London School of Economics and Political Science, London, 2001, 15-16;
A Jordan and T O'Riordan, 'The precautionary principle in UK environmental law and policy' in *UK Environmental Policy in the 1990s*, St Martin's Press, New York, 1995, 70-71;
EU Commission, *Communication from the Commission on the Precautionary Principle*, European Commission, Brussels, Feb 2, 2000, 15.