

Feasibility of Benchmarking OHS Performance in the Australian Meat Processing Industry

A Report

prepared by

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Contents

ABBREVIATIONS.....	III
EXECUTIVE SUMMARY	1
OHS BENCHMARKING AND PERFORMANCE MEASUREMENT	1
ADVANTAGES AND DISADVANTAGES OF BENCHMARKING OHS FOR THE MEAT INDUSTRY	2
INDUSTRY INTEREST AND PREPAREDNESS	2
OHS PERFORMANCE MEASUREMENT MODEL FOR THE INDUSTRY	2
RECOMMENDATIONS.....	3
SECTION 1 INTRODUCTION	4
OBJECTIVES	4
THIS REPORT	5
SECTION 2 APPROACH AND METHOD	6
APPROACH.....	6
BENCHMARKING AND PERFORMANCE MEASUREMENT	6
METHOD	6
SECTION 3 APPROACHES TO BENCHMARKING	8
WHAT IS BENCHMARKING?	8
BENCHMARKING OHS	9
APPROACHES TO BENCHMARKING.....	10
PROBLEMS WITH A NUMERIC APPROACH	11
REASONS FOR BENCHMARKING	12
THE PROCESS OF BENCHMARKING	13
FACTORS WHICH SUPPORT AND HINDER BENCHMARKING	14
PREREQUISITES FOR EFFECTIVE BENCHMARKING	15
PREPAREDNESS OF THE MEAT INDUSTRY FOR BENCHMARKING	16
ADVANTAGES AND DISADVANTAGES OF BENCHMARKING OHS FOR THE MEAT INDUSTRY	16
SUMMARY.....	17

SECTION 4 APPROACHES TO PERFORMANCE MEASUREMENT	18
TYPES OF PERFORMANCE INDICATOR	18
TRADITIONAL APPROACH	20
THE BEHAVIOURAL APPROACH.....	21
ATTITUDE SURVEYS AS PERFORMANCE INDICATORS	22
SYSTEM AUDITING APPROACHES	22
PROCESS SAFETY MANAGEMENT	23
FACTORS THAT SUPPORT AND HINDER OHS PERFORMANCE MEASUREMENT IN THE MEAT INDUSTRY.....	25
<i>Supporting factors</i>	25
<i>Hindering factors</i>	25
SUMMARY.....	26
SECTION 5 REVIEW OF EXISTING MODELS.....	27
THE BALANCED SCORECARD.....	27
Note: Use of the Balanced Scorecard in Canada.....	28
SITE SAFETY METER	28
MICRO-PERFORMANCE INDICATORS.....	29
THE OXENBURGH PRODUCTIVITY MODEL – NZ APPLICATION	30
WELLWORKS 2.....	31
THE COMPARATIVE PERFORMANCE MONITORING PROJECT.....	32
ACCURATE	33
SECTION 6 REVIEW OF OTHER INDUSTRIES.....	35
MINING	35
<i>Minerals Council of Australia</i>	35
<i>NSW Minerals Council</i>	35
<i>Industry progress</i>	36
CONSTRUCTION.....	37
MARITIME.....	38
HEALTH	38
LESSONS FOR THE MEAT INDUSTRY	40
SECTION 7 EXPERIENCES AND VIEWS OF THE INDUSTRY.....	42
PREVIOUS INDUSTRY EXPERIENCE.....	42
<i>OHS Best Practice Project</i>	42
<i>Hardwick’s Learning Organisation Project</i>	44
<i>MISHCIF evaluation</i>	46
<i>Injury Management Project</i>	46
<i>Other industry networks</i>	47

INDUSTRY VIEWS	47
CONCLUSION	48
SECTION 8 PROPOSED MEAT INDUSTRY MODEL.....	49
PRINCIPLES FOR OHS PERFORMANCE MEASUREMENT	49
PREREQUISITES FOR OHS PERFORMANCE MEASUREMENT	49
AN OHS PERFORMANCE MEASUREMENT PROCESS	50
INDICATIVE INDICATORS	53
IMPLEMENTATION.....	55
SECTION 9 CONCLUSIONS	56
1. DEVELOP POSITIVE PERFORMANCE INDICATORS FOR THE INDUSTRY	56
2. DEVELOP THE SCOPE FOR A PRODUCTIVITY MODEL WHICH CAN BE USED BY THE INDUSTRY	56
3. INVESTIGATE INDUSTRY INTEREST IN UNDERTAKING BENCHMARKING ACTIVITIES.....	57
SECTION 10 RECOMMENDATIONS.....	58
RECOMMENDATION 1.....	58
RECOMMENDATION 2.....	58
RECOMMENDATION 3.....	58
RECOMMENDATION 4.....	58
REFERENCES	59

Abbreviations

LTIFR	Lost Time Injury Frequency Rate
MLA	Meat and Livestock Australia
OHS	Occupational health and safety
DWHS	Division of Workplace Health and Safety
MISHCIF	Meat Industry Safety and Health Continuous Improvement Framework
MRC	Meat Research Council
NHMBWG	The National Health Ministers' Benchmarking Working Group
NOHSC	National Occupational Health and Safety Commission

Executive Summary

Improving the OHS performance of the Australian meat industry has been a key element of research and development in the industry for many years. In particular, projects over the last decade have focussed on supporting the implementation of systematic approaches to OHS management. While OHS performance measurement and benchmarking have received attention in this research, there are clearly significant gaps in the industry's approach in this area. This report examines the industry's experience and outlines a possible strategy for an industry approach to benchmarking of OHS performance.

The project was undertaken in three stages:

- Stage 1 - Review previous experience in the meat and other industries
- Stage 2 - Consult with the industry
- Stage 3 - Prepare and present the project report

OHS benchmarking and performance measurement

Essentially, benchmarking involves communicating and sharing ideas between organisations. It has been used in many contexts and can involve examination of business processes or the comparison of performance data. Benchmarking clearly is a separate process from performance measurement, although the two are related. Indeed, benchmarking may be used to determine appropriate performance indicators, while some performance indicators can help determine those processes that would benefit from benchmarking.

The traditional reliance on LTI and other outcome measures of performance are inadequate for improving OHS performance in the meat industry and a combination of other approaches may be more useful. If the organisation has an improvement focus (rather than a need to justify a position), then reliance on the traditional outcome performance indicators (such as injury rates and compensation data) will be inadequate for the task. These indicators do not give adequate information and can be seriously flawed.

Advantages and disadvantages of benchmarking OHS for the meat industry

The advantages for the meat industry of benchmarking OHS performance include:

- Such a process would provide information and drive for change that is difficult to obtain through other strategies. The OHS CIP evaluation identified that many meat industry enterprises over-estimated the effectiveness and adequacy of their OHS management strategies. Examining strategies in other enterprises and other industries would demonstrate where gaps exist, as well as reinforce where achievements have been made.
- Because benchmarking requires a participative approach, it reinforces the value of those in an enterprise working together to solve enterprise problems.
- Benchmarking opens people's eyes to the scope of what is possible and breaks down artificial boundaries to change.

The disadvantages of benchmarking OHS performance for the meat industry include:

- Benchmarking requires openness about OHS performance and practices with which most meat industry enterprises are not experienced.
- Benchmarking requires real participation and consultation with the workforce, which results in power shifts.
- Many necessary improvements to OHS management in the meat industry do not need the validation of benchmarking. They could be implemented immediately. As a result, benchmarking may divert attention and delay action from obvious and necessary solutions.

Industry interest and preparedness

We conclude that benchmarking, both within and outside the meat industry, would be a useful tool to support the development of improved approaches to OHS performance measurement in the industry. Unfortunately, however, the industry is not thoroughly prepared for OHS benchmarking and interest is somewhat guarded. There is some scepticism about the value of benchmarking with outside industry, especially for those with little experience of benchmarking. Individuals who had been previously involved with OHS benchmarking and networking activities were much more positive than those who had not been involved in industry activities. This suggests that for some their negativity was related to lack of exposure and not negative experiences of sharing information. In contrast, networking has strong industry support and should be built into any subsequent MLA OHS improvement projects.

OHS performance measurement model for the industry

A model for OHS performance measurement which could be used at both an industry and an enterprise level consists of the following elements:

- Principles for OHS performance measurement;
- Pre-requisites for OHS performance measurement;
- A process for OHS performance measurement;
- Indicative measures of OHS performance (these indicate the kinds of measures which could be used at an industry and enterprise level); and
- A proposed implementation process.

These are described in the body of the report.

Recommendations

Recommendation 1

That the four step implementation process for the proposed meat industry OHS performance measurement model be put into effect. In particular, industry consideration of the findings and recommendations of this report should occur.

Recommendation 2

That the development of a productivity model for the industry is not pursued.

Recommendation 3

That networking is built into any future MLA OHS improvement projects.

Recommendation 4

That the barriers to effective OHS benchmarking which exist in the meat industry as identified in this report are addressed. Piloting any benchmarking or performance measurement activities should be considered as strategies to address at least some of these barriers.

Section 1 Introduction

Improving the OHS performance of the Australian meat industry has been a key element of research and development in the industry for many years. In particular, projects over the last decade have focussed on supporting the implementation of systematic approaches to OHS management. While OHS performance measurement and benchmarking have received attention in this research, there are clearly significant gaps in the industry's approach in this area. This report examines the industry's experience and outlines a possible strategy for an industry approach to benchmarking of OHS performance.

OHS performance measurement has traditionally focussed on the measurement of only outcome indicators, such as lost time accident frequency rate, claims data and the like. While such indicators are critical, they do not provide the rich and comprehensive data needed to inform effective preventive strategies. Data that provide performance information about the management processes that create and sustain OHS performance are also critical. As previous projects in this area for the meat and other industries have suggested, positive or process performance indicators can be a most useful support to prevention efforts.

Benchmarking is also a useful strategy for improving prevention strategies. It is the process by which an enterprise can gather information about how other enterprises carry out processes of critical importance. It involves identifying the critical processes for an enterprise, identifying other enterprises which are "best in class" at undertaking these processes and learning from them.

Objectives

As specified in the brief, the objectives of the project are to:

- Develop positive performance indicators for the industry;
- Develop the scope for a productivity model which can be used by the industry;
- Investigate with the industry their interest in undertaking benchmarking activities;
- Report on strengths and weaknesses of existing tools and models;
- Report on advantages and disadvantages to the industry associated with benchmarking their performance;
- Investigate suitable indicators (positive and negative) for the meat processing industry;
- Report on initiatives by other industries in this area;

- Recommend to the industry a methodology for measuring performance at a site level and an industry level; and
- Consult with the industry regarding their interest/ experience in benchmarking OHS performance.

Each of these objectives is addressed in the body of the report.

This report

This report is presented in ten sections:

1. **Introduction** – which outlines the background to the report.
2. **Method** – detailing the manner in which the data were collected.
3. **Approaches to Benchmarking** –describes the approaches to benchmarking found in the literature.
4. **Approaches to Performance Measurement** – describes the approaches to performance measurement found in the literature
5. **Review of Existing Models** – reviews the strengths and weaknesses of existing models of performance measurement and benchmarking.
6. **Review of Other Industries** – reviews the approaches taken in the mining, health, maritime and construction industries.
7. **Experience and Views of the Industry** – outlines the findings of previous research and discusses the views of people in the meat industry to performance measurement and benchmarking.
8. **Proposed Meat Industry Model** – proposes a model that could be used in the meat industry nationally.
9. **Conclusions** – summarises the findings of the report in relation to the objectives.
10. **Recommendations** – sets out the recommendations.

Section 2 Approach and Method

Approach

This project was undertaken using the experience of a range of other industries, namely construction, health, mining and maritime, as well as experience within the meat industry. Each of these industries has taken a distinct approach to the issues, with varying outcomes. This report makes a clear distinction between the processes of benchmarking and of performance measurement. While clearly related, the purposes, methodology and outcomes of these two processes can be distinct, as outlined below.

Benchmarking and performance measurement

Often, benchmarking and performance measurement are treated as if they were the same process. However, the two processes are quite distinct, albeit related. As explained by the National Health Ministers' Benchmarking Working Group, performance measurement,

is a process that provides performance indicator data, while (benchmarking) is the process of using such information to identify opportunities to improve performance (National Health Ministers' Benchmarking Working Group, 1998: 62).

As clarity about concepts and their application is critical to this report, a section has been devoted to each of these concepts. Section 3 examines approaches to benchmarking and Section 4 examines performance measurement with respect to OHS.

Method

The project was undertaken in three stages:

Stage 1 - Review previous experience

In this stage, a brief literature review was undertaken in order to identify any recent international material. We also reviewed experience in the meat and other industries. From this, we are able to report on:

- strengths and weaknesses of existing tools and models;
- advantages and disadvantages to the industry associated with benchmarking their performance;

- possible suitable indicators (positive and negative) for the meat processing industry;
- initiatives by other industries in this area; and
- a possible methodology for measuring performance at a site level and an industry level.

Stage 2 - Consult with the industry

Consultation with the industry was conducted via phone and personal interview and at a meeting with the MLA's OHS reference committee.

The feedback from industry has been reviewed and informs this report.

Stage 3 - Prepare and present the project report

In the final stage this report has been prepared using the data collected in Stages 1 and 2.

Section 3 Approaches to Benchmarking

The distinction between benchmarking and performance measurement has been made in Section 2 and is important to keep in mind when analysing the approaches to benchmarking. Approaches to benchmarking exhibit considerable variation, from direct comparison of output to detailed examination of process improvements. This section describes approaches to benchmarking evident in the literature.

What is benchmarking?

Essentially, benchmarking involves communicating and sharing ideas between organisations. It has been used in many contexts, both government and business, and can involve examination of business processes and comparison of performance data. While comparison of data can be useful, the main benefits of benchmarking result when the processes that give rise to the outcomes are subjected to careful examination. In this way, the reasons behind good performance can be identified and the lessons adapted for application in the benchmarking enterprise. For enterprises that are lagging in their field, the comparison of numbers may only suggest how far away the leaders are.

Camp, arguably the originator of the term ‘benchmarking’, developed his ideas about the process during his work with the Xerox Corporation in the 1970s. He defined benchmarking as ‘a positive, proactive process to change operations in a structured fashion to achieve superior performance’ (Camp 1989a: 62). Most specifically he stated that benchmarking is not a process of ‘determining resource reductions’, a panacea, a ‘cookbook process’ or a fad (Camp 1989b: 70-71). Camp’s work underpins much of the literature on benchmarking, including the work done in Australia.

Developed during the days of the Australian Best Practice Demonstration Program, the *Benchmarking self help manual* was designed to provide an overview of benchmarking and to assist organisations using benchmarking to get the most out of it (Australian Best Practice Demonstration Program and NIES 1993: v). This manual provided the most accessible guidance on benchmarking for many Australian organisations in the 1990s. The manual defines benchmarking as

An ongoing, systematic process to search for and introduce international best practice into your own organisation, conducted in such a way that all parts of your organisation understand and achieve their full potential. The search may be of products, services, or business practices and processes, of competitors or those organisations recognised as leaders, in the industry or specific business processes that you have chosen (Australian Best Practice Demonstration Program 1993: 4).

This definition contains the key principles of benchmarking; a systemic approach, the examination of the processes within the organisation and comparison with others to find 'best practice'. The same definition is used in a sister publication, the *Key performance indicators manual* (Baker 1995: 167). In examining Australian approaches to benchmarking, Macneil and Testi et al propose the simple explanation of benchmarking as 'copying best practice processes' (MacNeil, Testi, Cupples, and Rimmer 1994: 4). They assert that benchmarking is one of the techniques of quality management, but is outward looking, 'tracking any process to the industry or country where excellence is to be found and a profitable lesson learned' (MacNeil, et al 1994: 6). They define benchmarking as:

... a method for continuous improvement that involves an ongoing and systematic evaluation and incorporation of external products, services and processes recognised as representing best practice (MacNeil, et al 1994: 15).

In her crystallisation of definitions from many sources, Evans proposes the following definition,

Benchmarking is deciding what is important; understanding how you now do it and how well you do it; learning from others how they do it; and applying what you have learnt in a way that leads to your doing it better than before. Then you do it all again (Evans 1994: 7).

This uses everyday language to explain the basic principles of benchmarking that are discussed above. How then, does benchmarking relate to OHS?

Benchmarking OHS

Recently the Ontario Workplace Safety and Insurance Board conducted a pilot project on OHS benchmarking. The report detailing an evaluation of this project (Lindeman 2000) defines OHS benchmarking as:

the search for successful occupational health and safety practices so that workplaces may identify opportunities for improving their organization's performance (Lindeman 2000: 10).

Following an extensive literature search (see Shaw and Blewett 1994) and empirical research on benchmarking OHS in Australia, we produced the guidelines, *Benchmarking occupational health and safety* (Blewett and Shaw 1996), a 'how-to' manual designed to be used in conjunction with the *Benchmarking self help manual*. In that publication we defined benchmarking as

... a tool that allows you to assess the differences between your enterprise and world-class performers. It includes an examination of the methods, processes, procedures, products and service performance of your enterprise against those of enterprises that consistently rate as world-class in the same category of performance. If done correctly, benchmarking will increase your knowledge of the improvements you need to make to become world-class. Benchmarking is a guide on the road to best practice (Blewett and Shaw 1996: 1).

This definition of benchmarking is adopted in this report, both for its simplicity and because it adequately describes the variety of approaches to benchmarking OHS that we have observed empirically.

Approaches to benchmarking

MacNeil et al (1994: 14) identify three forms of benchmarking: *internal*, *industry* (or competitive), and *process* or (generic). They go on to assert that most benefit is to be gained from benchmarking processes, rather than numbers. That is, rather than focus on a comparison with other's achievements, it is more useful to examine how those achievements are gained (MacNeil et al 1994: 19).

Internal benchmarking can be undertaken within the operations of a business and has the advantage that sensitive information about processes can be exchanged with little risk. The disadvantage is that good ideas from outside the business are not canvassed. Industry (or competitive), and process (or generic) benchmarking are both conducted external to the organisation. Industry benchmarking is conducted in the same product (or service) markets. The advantage of this is that the processes investigated are likely to be closely aligned with those of the benchmarker. The disadvantage is that these companies are likely to be competitors and may be less willing to share information. Process benchmarking is conducted between enterprises in *different* industries that have common processes, such as recruiting new employees, or managing the distribution of product. The advantages of this type of benchmarking are that there is less threat to the benchmarking enterprises because they are not dealing with direct competitors and there is increased opportunity to examine very different ways of doing the same processes. The disadvantage is that it is sometimes difficult to believe how much can be gained from looking outside the industry and it may therefore be difficult to commit resources to do this.

The *Benchmarking self help manual* provides a matrix to categorise the different approaches. This is expanded on in Table 1 below. The distinctions used are whether benchmarking is done *internally*, within different parts of the same organisation, within the *same industry*, or *outside the industry* and whether the focus is on numbers or processes. A number of researchers recommended that benchmarking in different industries is of most value. For example, Kingdom found in his work in the water industry that benchmarking out-of-industry partners resulted in significant innovation (Kingdom 1998: 273).

Table 1. Types of benchmarking

	Numbers	Processes
Internal	<i>Performance benchmarking:</i> conducted between different parts of an organisation but restricted to comparing metrics.	<i>Functional benchmarking:</i> different units within an organisation compare the way they manage similar processes.
Within Industry	<i>Competitive benchmarking:</i> where metrics within the industry are compared. Some industry associations collect numerical data and make it available for benchmarking.	<i>Industry benchmarking:</i> where specific processes are compared between organisations in the same industry.
Outside Own industry	<i>Generic benchmarking:</i> where an enterprise subscribes to a database or undertakes comparisons of specific statistical performance with enterprises in other industries. Benchmarking is driven by the form of the data that is compared and may not be comparing “apples with apples”	<i>Process benchmarking:</i> comparing the way particular business activities are conducted in organisations in different industries. The benchmarking partners might be from very diverse areas. Evans claims that this type of benchmarking is most likely to lead to the generation of ‘breakthrough ideas for change’ (Evans 1994: 15).

(Adapted from Australian Best Practice Demonstration Program 1993: 9)

Other forms of benchmarking that we have observed fit in either the comparison of numerical data or the comparison of processes columns. The comparison of numerical data between organisations might consist of absolute data, data in the form of rates or disaggregated data to allow finer comparison between organisations, across geographic location or across time. Such data are limited in value, however, because they merely identify how far ahead the leaders are, or where the organisation fits on a performance scale. In fact, unless the data are reliably comparable, it may not even do this. The comparison of process has been identified as the more useful form of benchmarking as this can lead to process improvement; that is, it can lead to the identification of what the leaders actually did to become leaders. Sometimes numerical benchmarking is used to locate benchmarking partners who might prove useful in the exchange of information leading to process improvement, but as we discuss below, even this can be misleading.

Problems with a numeric approach

Interestingly Camp’s original approach to benchmarking did not include the simple comparison of numeric data, although he recognised that this was attractive to managers. Instead he warned that benchmarking

...should be approached on the basis of investigating industry practices first. The metrics that quantify the effect of the practices can be obtained or synthesized later. The reverse is not always possible, and it could mislead or defeat the purpose of benchmarking (Camp 1989a: 63).

When benchmarking is concerned only with metrics it has the capacity to cloud thinking about improving performance and focus attention on data gathering for its own sake. At best it can be used to convince management that parts of the enterprise are performing well (although this might not necessarily be so) and at worst can be used as a weapon by management ('get a better measure than X or else') as we have observed (Blewett and Shaw 1995b: 238). Walleck et al found that such an approach 'can actually delay managers from coming to grips with the root causes of inefficiency, waste and lethargy, and can even lead a company off in the wrong strategic direction' (Walleck, O'Halloran and Leader 1991: 7).

There are often difficulties comparing data because of differences within the same industry as experienced by the Australian health industry and discussed in Section 6 of this report.

Comparison of metrics has extremely limited value when it comes to process improvement and should be used with caution. For enterprises that are lagging in their field, the comparison of numbers may only suggest how far away the leaders are. Considerable effort has been expended to establish databases of numerical information that can be accessed by organisations (usually for a charge). Organisations rely on such databases to 'peg' themselves against other organisations and may use this information for reporting purposes. However, this so-called benchmarking approach is unlikely to result in attempts to improve *what* is being done in the organisation. Rather, emphasis is placed on obtaining better figures, a costly approach that may well have little to do with improving corporate practices.

Reasons for benchmarking

Given the range of improvement strategies available to enterprises, there are specific reasons why benchmarking may be of greatest benefit. Elnathan points out the value of benchmarking in helping organisations to predict how changes in their operational processes may affect outcomes, by looking at what has happened in other enterprises (Elnathan and Oliver 1995: 347).

One of the key benefits cited in the literature is the impetus for change provided by an effective benchmarking process that involves people from within the organisation. Walleck et al state that:

Benchmarking is a skill, an attitude, and a practice that ensures the organisation always has its sights set on excellence, not merely on improvement. ... A properly designed benchmarking exercise ... builds enthusiasm and commitment for change. (Walleck, et al 1991: 10).

The Australian Manufacturing Council similarly argued that benchmarking by an organisation 'can set the scene for a breakthrough that might enable them to take a quantum leap over their competitors and gain that elusive competitive advantage' (Australian Manufacturing Council 1994: 41).

The National Health Ministers' Benchmarking Working Group also cites the value of benchmarking as it creates, '... an environment for change, builds awareness of current capability versus best known capability and encourages people to move from a position of inertia to positive action' (National Health Ministers' Benchmarking Working Group 1999: 47). They propose a push-pull model for why enterprises in the health industry have undertaken benchmarking, 'organisations are pushed into benchmarking as they need to account for their utility while they are pulled toward benchmarking by the attraction of its benefits' (*ibid*).

In the context of regulatory agencies, the Workplace Relations Ministers' Council benchmarks information and compliance activities because this will,

improve service delivery by facilitating the exchange of information and ideas between jurisdictions on alternative approaches to information and compliance activities (and) assist the workplace relations harmonisation process (Workplace Relations Ministers' Council 2000b: 1).

However, Dervitsiotis sounds a warning that, at times of significant turbulence in operating environments, benchmarking may be of only limited benefit (Dervitsiotis 2000: S645).

The process of benchmarking

Camp identified four 'philosophical steps' to benchmarking and these form the basis of much of the later work by other authors. He asserts that these steps are 'fundamental to success'. The process starts with self-assessment ('know your operation'), identify industry leaders or competitors, emulate the strengths of the best and finally 'gain superiority' (Camp 1989a: 63). Most benchmarking processes are a variation on this approach.

A seven step process is outlined as a generic benchmarking process in the *Benchmarking self help manual*. The steps in *Benchmarking occupational health and safety* are based on our examination of benchmarking OHS in industry as well as our examination of the literature. A comparison of the two processes is outlined below.

<i>Benchmarking self help manual</i>	<i>Benchmarking occupational health and safety</i>
Recognise need and set scope	Establish benchmarking project
Identify processes to benchmark	Select teams and train them ¹
Select teams and train	Identify processes to benchmark
Analyse your own processes	Analyse your own processes
Partner selection process	Select benchmarking partners
Build relationships and conduct the visit	Build relationships and conduct visits
Analyse gaps and develop implementation strategy	Analyse performance gaps and develop improvement strategies

(from Australian Best Practice Demonstration Program and NIES 1993: 22 and Blewett and Shaw 1996: 1)

Factors which support and hinder benchmarking

The central importance of the selection of benchmarking partners is a key lesson reported in the literature. A number of studies conclude that the greatest benefit is gained from partners from outside the benchmarker's industry. This reduces potential difficulties associated with commercial confidentiality and the potential for not gaining enough information to make effective changes (Tucker, Zivan and Camp 1987; Pryor, 1989). This advice is reinforced by recent Australian experience in the health system in which it was found that direct or indirect competition for funding or market share was a factor that impeded successful benchmarking (National Health Ministers' Benchmarking Working Group 1998: 64). Other hindrances identified in this study were:

- compulsory involvement;
- inadequate identification of practical operational issues; and
- wariness of information being given to others, including government agencies (*ibid*).

Factors that support successful benchmarking were identified as:

¹ The two steps, 'Identify processes to benchmark' and 'Select teams and train them' are transposed in these two models. There are two reasons for this. Firstly, the *Benchmarking self help manual* was designed to be used in any business investigation thus it would make sense to define the processes to benchmark before selecting team members to ensure that people with appropriate skills were recruited to the benchmarking team. *Benchmarking occupational health and safety* on the other hand, was written specifically about OHS processes, thus team members could be selected before processes to benchmark could be identified. Secondly, *Benchmarking occupational health and safety* has a stronger emphasis on consultation and participation as being important to benchmarking and participation by the benchmarking team in the selection of processes to benchmark is regarded as a critical step.

- confidentiality and mutual trust;
- commitment to sharing information;
- collection of data that is of practical relevance;
- common goals and interests; and
- the partners are not in competition for funding.

Prerequisites for effective benchmarking

All types of enterprises can benefit from benchmarking. However, certain management practices must be in place to allow benchmarking to succeed as a tool for continuous improvement. These so-called ‘foundation stones’ include:

- **commitment to the process of benchmarking OHS at all levels in the enterprise starting with senior management.** Everyone should recognise that OHS is important for the success of the enterprise and that the benchmarking process is a valuable tool for improving OHS. Without such commitment, real change is unlikely to result.
- **the existence of preventive rather than reactive approaches to OHS systems.** Enterprises with proactive approaches to OHS have more success integrating ideas gained from benchmarking partners than those with reactive approaches.
- **a commitment to adopt an open, consultative and participative approach to managing OHS.** Ownership of change comes about when there is wide involvement in making decisions about change.
- **recognition that OHS is a central aspect of the successful management of the enterprise.** In other words, OHS should be viewed as part of how the enterprise is managed, not just something looked after by the OHS officer.
- **the presence of management systems which allow effective management of OHS.** These systems will be both specific OHS management systems such as hazard procedures or accident/incident reporting systems, and general management systems which address OHS as part of meeting broader organisational needs, eg maintenance procedures and training programs.
- **ability to analyse OHS management systems in the enterprise rigorously.** Benchmarking team members need to be familiar with analysis tools such as process flow-charting and cause and effect analysis (fish bone charts) and with various problem-solving tools.
- **an ability to convene and manage teams.** Since benchmarking OHS is done by teams, the ability to work together cooperatively is essential. External assistance to facilitate the work of the team may be required if this experience does not exist in the enterprise.
- **preparedness to commit the necessary people and time.** Benchmarking OHS does require resources; but it can reap rewards. The commitment to

support the process right through is essential. Without this commitment there is the risk that the process will be stopped before benefits are seen.

- **experience in project management.** The benchmarking team needs to be able to manage its project in order to work efficiently towards desirable outcomes.

By critically examining the enterprise against these foundation stones a decision can be made about the readiness of the enterprise for benchmarking. (Blewett and Shaw 1996: Introductory Guide – 3).

Preparedness of the meat industry for benchmarking

From the above, there are some significant considerations about whether the Australian meat industry is prepared for the prospect of benchmarking OHS:

- Preparedness to share information and data is not universal;
- Recognition of the value in learning from outside industries is not common – many enterprises have no confidence in ideas that are “not invented here”.
- The industry lacks adequate data collection systems, both across the industry and within many enterprises.

The preparedness to commit resources to change processes, particularly human resources, is lacking.

On the positive side, there is widespread enthusiasm for industry networking and most enterprises contacted for this review expressed commitment to allocating human resources to such a process. Sections of the industry have demonstrated that they are prepared to share with and learn from competitors within a structured and commercially safe process, eg the NSW Injury Management Project.

Advantages and disadvantages of benchmarking OHS for the meat industry

The advantages for the meat industry of benchmarking OHS performance include:

- Such a process would provide information and drive for change that is difficult to obtain through other strategies. The OHS CIP evaluation identified that many meat industry enterprises over-estimated the effectiveness and adequacy of their OHS management strategies. Examining strategies in other enterprises and other industries would demonstrate where gaps exist, as well as reinforce where achievements have been made.
- Because benchmarking requires a participative approach, it reinforces the value of those in an enterprise working together to solve enterprise problems.
- Benchmarking opens people’s eyes to the scope of what is possible and breaks down artificial boundaries to change.

The disadvantages of benchmarking OHS performance for the meat industry include:

- Benchmarking requires openness about OHS performance and practices with which most meat industry enterprises are not experienced.
- Benchmarking requires real participation and consultation with the workforce, which results in power shifts.
- Many necessary improvements to OHS management in the meat industry do not need the validation of benchmarking. They could be implemented immediately. As a result, benchmarking may divert attention and delay action from obvious and necessary solutions.

Summary

Benchmarking clearly is a very separate process from performance measurement, although the two are related. Indeed, benchmarking may be used to determine appropriate performance indicators, while some performance indicators can help determine those processes that would benefit from benchmarking. The next section examines performance measurement.

Section 4 Approaches to Performance Measurement

While benchmarking is undertaken on business processes, assessing and measuring OHS performance is necessary both to identify possible benchmarking partners and to measure or rate any improvements that are implemented as a result of benchmarking. There are other reasons for requiring information about the OHS performance of an enterprise, not the least of which is to convince OHS jurisdictions that the organisation is a healthy and safe place to work or to encourage boards of management to apply resources to improving the health and safety of the workplace. Indeed, the motivation for measuring performance will determine the approach that is taken. If the organisation has an improvement focus (rather than a need to justify a position), then reliance on the traditional outcome performance indicators (such as injury rates and compensation data) will be inadequate for the task. These indicators do not give adequate information and can be seriously flawed as discussed below. Whatever the motivation, most organisations would prefer to use a single indicator that would encapsulate their OHS performance. Alas, as many have observed, no such indicator is possible. However, there is a range of approaches to performance measurement and performance indicators and this is reviewed below.

Types of performance indicator

In order to measure the performance of a business or any portion of a business, performance indicators need to be determined that will have meaning for those collecting the data and those using the data.

Carter, Klien and Day (1992: 49) describe performance indicators as being of three types: *dials*, *tin-openers* or *alarm bells*. In this categorisation, dials are *prescriptive* performance indicators, that is, they are linked to objectives or targets. They provide measures of inputs and outputs against normative standards. An OHS example might be the number of new employees trained in relevant OHS courses compared to the requirements of the training plan. These measures have the appearance of being unambiguous and incontestable. Tin-openers are *descriptive*. By opening up a 'tin of worms' they record change while prompting more investigation and assisting in asking the right questions. An OHS example would be attendees' assessment of OHS training. Implicit in such measures is the assumption that performance is a contestable notion, far from being black and white, good or bad, performance measurement is complex and full of ambiguity (Carter, et al 1992: 50). For example, in the tin-opener performance indicator above, OHS training may not be simply either 'good' or 'bad', questioning may reveal that it had the right content but was delivered poorly. Alarm bells are, as the name suggests, *proscriptive*, marking the occurrence of something that should

never happen in a well-managed organisation. OHS examples are the traditional outcome measures such as Lost Time Injury Frequency Rates (LTIFRs) and workers' compensation costs. Carter et al argue that a good system of performance measurement needs a suitable balance between the three types of indicators. We have found this to be a useful means for improvement-oriented organisations to judge the value of their performance measurement systems because it puts outcome measures into an appropriate perspective and encourages consideration of the antecedents to workplace injury and illness.

In our practice in organisations we have identified another form of performance indicator, 'busy-ness indicators'; so called, because they show how busy an organisation is rather than how effective it is. An example of a busy-ness indicator is the number of people attending training. Busy-ness indicators have their uses, but organisations need to beware of using them exclusively for there will be no way of demonstrating effectiveness or lack of it, and no guidance on improvement strategies. For example, using the busy-ness indicator just cited could tell management what size the training budget needs to be and how many OHS trainers should be recruited. Before the funds are spent, however, a fiscally responsible manager will want to be assured that the training is effective (that is, it makes a difference) not just that it's been done.

Performance indicators can be either quantitative or qualitative. In organisations where people with strong numerical skills predominate in the management, there may be considerable reluctance to use performance indicators that provide qualitative data. This is unfortunate because quantitative data, which seem beguilingly concrete, can be very spongy unless their measurement criteria are carefully established. Dials and alarm bells are often quantitative in nature, whereas tin-opener performance indicators tend to be qualitative. When used in conjunction with each other they can build a clear picture of the organisation and its operation.

In fact, it is useful to consider each performance indicator as a piece of a jigsaw. A single piece of a jigsaw is fairly meaningless; it only gains meaning when it is connected to other pieces to form a picture. So it is with performance measurement. No one indicator can tell all there is to know about how an organisation is functioning, but a collection of well selected performance indicators considered together can present enough information to see what is going on. What is needed is a balance of different types of performance indicator with each one being capable of telling part of the story. What constitutes a good performance indicator?

We have devised a checklist for the parameters that constitute a good performance indicator. They are represented by the acronym, ACCURATE, which means:

Assessable or measurable – allowing for both quantitative and qualitative indicators

Controllable – able to be changed by the activity. As Craig et al suggest, a good performance measure is one that leads to improvement of the measured attribute itself *and* the performance of the thing of which it is a part (Craig, Gurd and Thorne 1994: 9 original emphasis).

Central and relevant to the activity

Understandable and clear

Reliable – providing the same measures when assessed by different people

Accepted by the users as true indicators of performance

Timely

Efficient to monitor

The ACCURATE checklist is discussed further in Section 5. Five broad approaches to OHS performance measurement that are used in industry are canvassed below. They are the traditional, behavioural, attitude survey, safety auditing, and process safety management approaches.

Traditional approach

The traditional performance indicator for OHS is the Lost Time Injury Frequency Rate (LTIFR), although other outcome measures may also be used. While the focus of the OHS management literature is moving away from reliance on outcome measures (eg Frick and Wren 2000), a remarkable number of enterprises still focus on performance measurement based on such measures, as is reflected in case study data and in the annual reports of public companies.

The theoretical literature provides major criticisms of the use of LTIFRs (Haines and Kian 1991; and Krause and Finley 1993). In summary they suggest that

Accident data:

- Measure failure, not success.
- Are difficult to use in staff appraisal.
- Are subject to random fluctuations; there should not be enough accidents to carry out a statistical evaluation. Is safety fully controlled if, by chance, there are no accidents over a period?
- Reflect the success, or otherwise, of safety measures taken some time ago.
- Do not measure the incidence of occupational diseases where there is a prolonged latent period.
- Measure injury severity, not necessarily the potential seriousness of the accident.
- May under-report (or over-report) injuries and may vary as a result of subtle differences in reporting criteria.
- Are particularly limited for assessing the future risk of high consequence, low probability accidents (Amis and Booth 1992: 44).

These criticisms are not new. As Kletz (1993) states,

I have worked in production and safety for over forty years and for the whole of that time most safety professionals have believed that the LTA [Lost Time Accident] figures have only limited value. ... If senior managers pay great attention to the LTA rate and nothing else they are sending out the message that they do not really know why accidents occur and what should be done and, if this is so, safety cannot be very important ... we obviously need some measure of performance in order to show up trends and compare one plant with another but no one parameter is adequate (Kletz 1993: 409).

It is important to remember that these criticisms are not levelled at the use of output data *per se*; but rather at their use as the **sole indicators of performance**. Thus, the traditional approach is tried and found wanting. An OHS performance measurement system with an improvement focus will need to incorporate measures of OHS outcomes, but these must be balanced with other measures of performance.

The behavioural approach

Another significant theme in the literature is the measurement of OHS performance on the basis of individual behaviour. This approach advocates an OHS performance measurement system based on the development of standards of individual behaviour and performance, assessment of adherence to these standards (either by observation or self-reports) and feedback as to this adherence (see Komaki, et al 1978; Sulzer-Azaroff and Feliner 1984; Barenklau 1989; Sulzer-Azaroff, et al 1990; Krause 2000). The rationale for this approach is that unsafe behaviour causes accidents. Consequently, safe behaviour will prevent occupational injury and disease. Increased adherence to standards of behaviour therefore marks improved performance. Such systems depend on extremely high compliance with rules that are enforced with strict sanctions (Wokutch and VanSandt 2000: 372).

The behavioural approach is based on theories of accident causation that stress behaviour rather than environment and system causes. Critics of this approach express concern that when emphasis is placed on individual behaviour, the focus shifts away from the fundamental concerns; the prevention and resolution of unsafe working conditions. As incentives for good behaviour tend to be built into these systems there is the likelihood that workers under-report injuries and illnesses and supervisors and managers are subtly encouraged to manipulate the data. Indeed, although such systems purport to consider 'upstream' performance indicators, they tend to place emphasis on outcome measures with all the failings of the traditional approach (Walker 1998; Howe 1998). Australian OHS law stresses 'safe place and safe system' approaches to risk control; the behavioural approach to performance measurement does not reinforce examination of the antecedents of workplace injury and illness and does not encourage fixing hazards at their source. It takes measurement one step back from system failure (an injury or disease) but does not actually address the circumstances which allow unsafe behaviours to be manifested.

Attitude surveys as performance indicators

To improve OHS performance, the antecedents of occupational injury and illness need to be addressed. These include not only the immediate causes of the outcomes, but also failures in the culture of an organisation and the systems that operate in it. It is relatively easy to see if systems operate or not, but it is less easy to assess something as intangible as workplace culture. One strategy for doing this is to conduct surveys of the workforce to identify values and beliefs about OHS (Feyer, Williamson, Biancotti and Cairns 1996; Dedobbeleer and Béland 1998). These surveys can also be used to assess the effectiveness of OHS management systems (Ojanen, et al 1988; Muir and Bailey 1994,). Such surveys reveal the 'safety climate' of an organisation, which is:

one indicator of the operation of the workplace. It can be defined as perceptions which are shared by the workers and which concern the quality and actualization of safety-relevant activities and practices within the company. ... It has been found that the perceptions of these activities relate to the accident rate of the company. (Ojanen, et al 1988: 95).

That is, attitude surveys can reveal more about OHS performance than outcome measures such as the LTI. This claim is supported by Bailey and Petersen (1989) who further claim that surveys of such perceptions, 'can effectively identify improvements in and deterioration of safety system elements if administered periodically' (Bailey and Petersen 1989: 26).

Given the current approach to OHS management is based on participation and consultation, such perception surveys have a role to play in OHS performance measurement. They have particular uses as tin-opener performance indicators, providing rich, qualitative data that can lead to improvement strategies. Of course, the value of attitude surveys will depend on the survey instrument being well designed and administered periodically so that trends can be assessed.

System auditing approaches

Auditing is an activity designed to check and review management systems and operating systems. System auditing is advocated in much of the literature as an approach to monitoring and assessing OHS management systems. A large number of proprietary methods exist, particularly the International Safety Rating System and its derivatives such as the Five Star System of the National Safety Council of Australia. OHS jurisdictions have also developed audit-based performance measures in schemes such as Safety Map and the Safety Achiever Bonus Scheme. These methods examine the features of OHS management in place in an organisation according to a prescribed list and assess these against predetermined standards (Waterhouse 1986; Farnell 1991; Wallace 1991; Deacon 1992; Waterhouse 1992). In recent years, the development of Australian Standard AS 4804 has entrenched system-auditing as an accepted means of ensuring OHS management systems are effective; a position that is open to challenge.

For many years criticism of these systems has been reported: for example, Eisner and Leger (1988) questioned

the system's long checklists [and] the great detail required by some questions ... there is no correlation between star rating and either fatality or reportable

injury rates. A danger of the scheme is the degree of complacency it appears to have engendered (Eisner and Leger 1988: 141).

Most recently, Frick and Wren observe that ‘such systems are too complex for the majority of employers to adopt ... [they] force OHS managers to hire consultants or at least buy handbooks and/or pay training fees’ (Frick and Wren 2000: 26). They also suggest that extensive certification costs are a disincentive to participate in such schemes, but there is public relations benefit in performing well. More importantly, audit-based systems ignore the socio-political aspects of work and tend to focus on safety matters to the exclusion of health matters. Being audit-based requires that the company spend significant energy and resources on documentation; thus the OHS system becomes a paper-based system of written policies and procedures even when arguably, that effort could be better spent on improving the workplace. Finally, system auditing is a disruptive and expensive process that tends to be done annually, or at most bi-annually, giving a snap-shot look at the performance of the organisation. This has limited use in a continuous improvement framework.

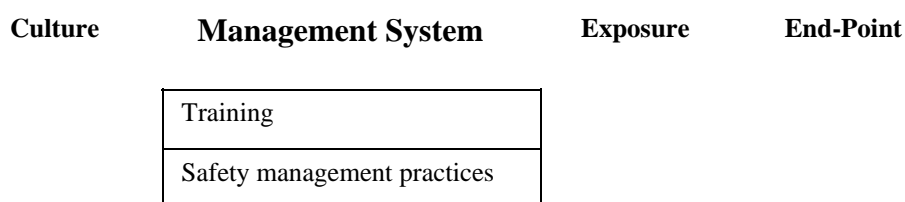
Some of these criticisms can be addressed by modifications to the auditing method used and, clearly, system auditing has an important role to play in OHS management. It is crucial for an organisation to check that OHS management strategies have been implemented effectively, in the same way that financial audits verify that accountancy practices are effective. However, the simple adoption of one or more auditing systems as an overall approach to OHS performance measurement is not appropriate. As Sweeney (1992) argues,

... these audit systems focus on program content, and attempt to quantitatively rate content against programs believed to be responsible for achieving superior performance. ... However, design and structure or 'content' as used above is only one factor in determining overall performance. (Sweeney 1992: 95-96).

Nonetheless, auditing systems provides useful guidance about some aspects of OHS management and audits are a useful part of an OHS performance measurement strategy; along with other indicators of performance.

Process safety management

This approach is based explicitly on developments in the management of quality in industry – Total Quality Management, Statistical Process Control and the like. Like system auditing approaches, it involves a focus on the system which gives rise to accidents rather than the accidents themselves. Krause and Finley (1993) provide the following representation of the safety management process:



	Facility design		
Vision	Behavioural consequences: discipline, reward, feedback	Safety related behaviours	
Values	Accountability	Conditions	
Common goals	Priorities	Equipment	INCIDENTS
Assumptions	Resources	Facilities	
	Attitudes		
	Measurement system		
	Models		

Measurement of the performance of the OHS management system consequently requires assessment of the processes involved in the management system, rather than measurement of outcomes (such as incident and accident rates). However, unlike system auditing approaches, process safety management approaches to OHS performance measurement rely on continual monitoring of indicators of performance of the relevant processes and continuous improvement in these processes.

Shell's TRIPOD system (Reason 1991; Haines and Kian 1991) is a sophisticated and practical example of process safety management. It is a system that requires the ongoing monitoring of a range of indicators of potential process failures to limit the capacity of the system itself to create the potential for accidents. These indicators are:

- Incompatible goals
- Organisational deficiencies
- Poor communications
- Design failures
- Poor defences
- Hardware failures
- Poor training
- Poor procedures
- Poor housekeeping
- Poor maintenance (management)
- Error and violation enforcing conditions (Reason 1991).

A similar approach at CIG, explicitly based on statistical process control concepts, is described by Barker (1994). After identifying the large range of variables associated with its loss control process, the company chose seven key variables and developed performance criteria for them.

Process safety management approaches to OHS performance measurement provide the strongest opportunities to gather constant information about the performance of those factors in the workplace that ultimately lead to workplace injury and illness. Its focus on improvements in the workplace culture and management systems makes this approach one that must be favoured. The approach readily allows the inclusion of other forms of performance measurement; that is, it can incorporate system auditing, attitude surveys and outcome measures as means of gaining an overall picture of an organisation's OHS performance.

Factors that support and hinder OHS performance measurement in the meat industry

Supporting factors

The 'foundation stones', described in Section 3 as being prerequisites for benchmarking, are also pertinent to the development of an effective OHS performance measurement system. In summary, these principles will support the development of OHS performance measurement systems that lead to improvement:

- A focus on improvement,
- An acceptance that OHS is a central aspect of management,
- Willingness of management and employees to work together in an open, consultative and participative manner. Developing OHS performance measures requires a participative approach, in the process it reinforces the value of those in an enterprise working together to solve enterprise problems.
- A preparedness to examine how and why the organisation operates and to ask difficult questions, and
- A willingness to commit the necessary people and time to developing, maintaining and recording performance measures

If these principles are in place, then the company is likely to develop appropriate performance indicators and put a proactive OHS system in place as a result.

Hindering factors

We have observed that the following factors already exist in the meat industry and mitigate against the successful development of effective OHS performance indicators:

- The industry lacks adequate data collection systems, both across the industry and within many enterprises.
- Senior management lacks understanding about the need for OHS performance measurement beyond LTIs and therefore lacks commitment to change.
- The preparedness to commit resources to change processes, particularly human resources, is lacking.

- Real participation and consultation with the workforce, central to the development of OHS performance measures, result in power shifts which may be uncomfortable and difficult to achieve in some areas of the meat industry.

Summary

Performance measurement and benchmarking are separate but inter-related processes. Work on benchmarking can be used to help establish appropriate performance indicators, while work on developing an effective list of performance indicators may highlight areas that could benefit from benchmarking. It is clear that the traditional reliance on LTI and other outcome measures of performance are inadequate and that a combination of other approaches may be most useful. In the next section existing models of OHS performance measurement are reviewed.

Section 5 Review of existing models

In this section we report on the strengths and weaknesses of existing tools and models found in the national and international literature.

The Balanced scorecard

Description

Gallagher, Underhill and Rimmer (2001: 61) suggest the Balanced Scorecard (BS), as a useful tool that can be applied to determine the performance of a firm's OHS management. The BS, first proposed by Kaplan and Norton (1992; 1996), is a set of measures that takes four different perspectives on the performance of an organisation: financial, customer, business or internal, and innovation and learning. The purpose of the BS is to force management to focus on a small number of critical measures. They regard the four perspectives as generic to all businesses, but observe that the actual measures chosen will vary between organisations.

In adapting the BS to OHSMS, Gallager et al have asserted that its use is as a 'strategic decision-making framework' (Gallagher, et al 2001: 65) that would need to be applied with consultation in order to identify the actions necessary to implement a successful OHSMS.

Strengths

- Provides a strategic planning framework.
- Examines four perspectives: business, organisational and financial; internal and external stakeholder; internal business process; and learning and growth.
- Requires consultation to be effective.

Weaknesses

- The four perspectives may not prompt a sufficiently wide view of the organisation to deal with the human resource or socio-political implications of OHS.
- Makes suggestions about the broad types of data that might be useful, but gives no insight into how those data might be defined. For example, PPI (positive performance indicators) are mentioned frequently as appropriate types of data but there is no guidance on how to determine the PPI.

- A sophisticated model that could only be used effectively if the organisation has the resources and commitment to develop a wide range of OHS data in a consultative manner.

Note: Use of the Balanced Scorecard in Canada

A project in its initial stages at the Institute for Work and Health in Toronto also has relevance for benchmarking. The Healthy Workplaces Project includes the examination of strategies to deal with workplace health promotion and the development of a way to measure “Healthy Workplace”, using a balanced scorecard framework. The four dimensions chosen for the scorecard are:

- Healthy workplace initiatives;
- Workplace determinants of job exposures;
- Hazardous job exposures; and
- Health outcomes (Robson 2000).

The issue that the developers are grappling with at the moment is how to choose indicators that fit under each of these dimensions.

Site Safety Meter

Description

The site safety meter is an audit-style approach to performance measurement developed for use in the construction industry by Trethewy, Cross, Marosszeky and Gavin (2000) and based on earlier work by Laitinen and Ruohomäki (1966) in Finland. Trethewy et al have attempted to move the original work from its behaviour-modification emphasis to include examination of physical and technical hazards in the workplace. The site safety meter consists of a score sheet that is used by an observer who conducts a ‘measurement walk around’ and scores activities and the physical working environment. The categories of safety issues included in the site safety meter are: working habits, order and tidiness, electrical and lighting, scaffold and ladders, protection against falls (by persons) and falling objects, and plant and equipment. Within each category sampling principles (eg ‘observe each worker’) are established and the criteria for a correct score laid down (eg ‘the person is using the required PPE correctly and is not taking any obvious risks’). The observer scores ‘correct’ or ‘not correct’ for all observations under each of the six categories and calculates the percentage of correct scores to total observations. The scores are intended to be used as feedback and to determine improvements over time. Trethewy et al claim that this approach is useful because it gives positive, rather than negative feedback.

Strengths

- Conducted on site and can be conducted by employees or OHS personnel.
- Does not require expert input to conduct

- Users appreciate being told what they are doing right, rather than what they are doing wrong.
- Inter-observer reliability appears to be quite good.
- Results are easily communicated.

Weaknesses

- Percentage measures give scores based on the quantity of observations, they give no assessment of risk.
- Scores are used to determine where corrective action should be focussed, but this attention may be misdirected if risk is not considered. That is, many small consequence items may be attended to at the expense of a single high-risk matter.
- There is a significant focus on worker behaviour implicit in the site safety meter that may direct attention away from controlling hazards.
- The site safety meter does not explain what control measures need to be implemented; the emphasis is on counting what is right and wrong. Additional work has to be done to deal with ‘defects’.
- Easily used as a competition rather than as an improvement tool.
- Confuses “positive feedback” with “positive performance indicators”.
- Goal displacement – people tend to focus on the things they’ll be measured on rather than seeking those matters which will lead to overall improvement.

Micro-performance indicators

Description

Proposed by Trethewy and Gardner (2001), micro-performance indicators are designed for the construction industry to complement earlier attempts by NOSHC (1999) to identify positive performance indicators for the industry. Trethewy and Gardner’s focus is on enabling the industry to deal effectively with the health and safety of contractors. The authors emphasise the importance of being able to compare the performance of different companies.

The authors offer a list of closed (that is, answer yes or no), audit-style questions that are then given a numerical score ranging from 0 (no system in place) to 4 (full compliance). By combining and averaging scores, the authors assert, organisations can determine a score that will allow accurate inter-organisation comparison of key area to do with contractors. However, they suggest that other, ‘more descriptive information may also be required in order to identify how improvements can be made’ (Trethewy and Gardner 2001: 532).

The authors discuss only one of the NOHSC-determined key areas: planning and design. This is expanded from five indicators to 31 detailed indicators, determined by the authors.

Strengths

- The scoring method is simple.
- The method is based on a well-researched model.

Weaknesses

- Focus is on intra-industry comparison rather than on improvement in the organisation.
- The ‘micro-performance indicators’ are prescribed and may not necessarily be applicable to all organisations.
- Does not give a method for determining indicators that are enterprise-specific.
- Model assumes that all questions are of equal value, that is, that each contributes equally to the assessment of the health of the workplace. This is not necessarily so and may skew the results.
- The prescriptive nature of the model removes the value of the descriptive (tin-opener) performance indicators that characterised the NOHSC model.
- There is no guidance on what descriptive information might be useful or how it should be obtained.

The Oxenburgh Productivity Model – NZ application

Description

Maurice Oxenburgh’s Productivity Model was used in a project conducted jointly by New Zealand’s Meat Industry Association and Accident Compensation Commission. This project sought to establish the total direct and indirect costs of injury in New Zealand’s meat export processing industry. The productivity model applies dollar values to different activities and consequences of work-related injury, ie wages, fill-in/replacement costs, costs of quality or productivity losses associated with injuries. Thus, this model includes an estimate of the indirect costs of injury such as staff turnover and reduction in quality resulting from workplace injury. For the NZ application, this data was collected from 34 plants using a questionnaire. From this data, the study estimated that the total cost of injury to the industry was \$21.8 million, 5.7 times the cost of new claims for the same period (\$3.8 million).

Strengths

- Assigns a dollar value to workplace injury.
- Highlights the size of indirect costs, which are often ignored.
- Highlights the financial consequences of poor OHS.
- Demonstrates the value of investment in OHS.

Weaknesses

- Relies on the accuracy, validity and reliability of data input to the model (ie if estimates of time on training replacements because of injury are inaccurate, the data is not valid).
- Does not assist in identifying strategies for improvement.
- Focuses attention on work absences, not on whether the workplace is safe.
- Does not focus attention on the management strategies that are in the control of plants. Absences may be more influenced by workers compensation systems and treating doctors' approaches than by anything the plant does.

Wellworks 2

Description

Wellworks 2 is a case-control intervention study of 15 manufacturing plants in the USA, seeking to improve OHS. A measurement tool has been developed to assess whether the interventions are improving the physical work environment and OHS systems with respect to OHS. The project intends to develop measures to address the workers' perspective. At this stage, the tool has two components:

1. Physical environment, measured by a walk-through hazardous substances exposure index, derived from an inspection conducted by an occupational hygienist;
2. Management systems, measured by an index derived from the US Occupational Safety and Health Agency's Program Evaluation Profile (PEP). Four "essential elements" were used:
 - management commitment and employee participation;
 - workplace analysis;
 - hazard prevention and control; and
 - OHS training and education.

Evaluation items for each of these elements consisted of audit standards, such as:

OHS audits, inspections or walk-arounds are carried out on a regular basis

Strengths

- When completed, the measurement tool will be comprehensive.
- It is linked to the priorities of the jurisdiction.
- It makes the performance standards explicit.
- It focuses attention on hazardous exposures, not outcomes.

Weaknesses

- At this stage, it does not include outcome data.
- It requires considerable technical expertise to collect and analyse.
- It is more an audit score than a performance measure at this stage.

The Comparative Performance Monitoring Project

Description

The Workplace Relations' Ministers Council undertakes an annual collection of workers' compensation and return to work data to provide a Comparative Performance Monitoring (CPM) report. The data used come from the National Data Set, workers' compensation data from the states, New Zealand and insurance companies and the Australian Heads of Workers' Compensation Authorities' Return to Work Monitor. As the most recent report recognises, the OHS indicators provided in the report:

do not provide detailed information about why different jurisdictions and industries are achieving different outcomes (Workplace Relations Ministers' Council, 2000a: 5).

In order to investigate factors that influence final outcomes, the most recent report tells of a cross-jurisdictional industry based study, which was in preliminary stages at the time.

Strengths

- It provides a comprehensive collection of workers' compensation and return to work data.
- It allows an estimate of the scale of work-related injury and ill-health.

Weaknesses

- It provides little information about how the outcomes have been achieved.
- It underestimates the extent of occupational disease.

- It understates the extent of occupational injury and disease in particular industries and labour market sectors (eg agriculture, subcontractors, casual workers).
- It focuses attention on the legal framework of workers' compensation systems rather than prevention as a strategy to improve performance.

ACCURATE

Description

Developed by the authors, this is a simple checklist for assessing the value of particular performance indicators. ACCURATE is an acronym standing for:

- A**ssessable or measurable
- C**ontrollable - able to be changed by the activity
- C**entral and relevant to the activity
- U**nderstandable and clear
- R**eliable - providing the same measures when assessed by different people
- A**ccepted by the users as true indicators of performance
- T**imely
- E**fficient to monitor

Performance indicators that meet these requirements are deemed 'accurate' and thus able to be used with confidence. The ACCURATE checklist is designed to be used in conjunction with our ASET process (Blewett and Shaw 1995a:18) as part of a process for determining positive performance indicators. This process is derived from the work of Carter et al (1992) who define different types of performance measurement and a modification of Krause and Finley's (1993) approach to workplace injury. The ASET process encourages the user to examine and assess the 'upstream' processes that lead to workplace injury and ill-health; the processes to do with organisational culture and beliefs and the organisational systems that are in place. These tools have been successfully used in a wide variety of industries and organisations (NOHSC 1999: 78-81).

Strengths

- Part of a process that allows positive performance indicators to be identified.
- Simple to use and generic in its application.
- Applicable at enterprise and industry level.
- To be successfully used it requires a strongly participative environment.

Weaknesses

- Not widely published.

- Needs to be used in a participative environment, which can take considerable resources.
- Benefits from implementation by an external facilitator who can encourage the organisation to face questions that are usually unasked.

Section 6 Review of Other Industries

As previous sections have described, the limitations of traditional approaches to performance measurement are widely recognised. A number of industries in Australia have addressed this problem and are actively working to develop alternative approaches. This section describes this work and draws relevant lessons for the Australian meat industry.

Mining

Of all Australian industries, the mining industry has probably addressed this issue most thoroughly. This is not surprising: the limitations of traditional outcome measures have considerable impact in mining, which faces significant high consequence, low probability risks. For example, the effectiveness of control over explosions will not be measured by the rate of lost time injuries, which are mostly manual handling injuries in the mining industry as elsewhere.

Minerals Council of Australia

The Minerals Council of Australia (MCA) collects and reports outcome data annually (Minerals Council of Australia 1998, Minerals Council of Australia 1999, Minerals Council of Australia 2000). These data are compared nationally between jurisdictions and industry sectors and internationally with data from South Africa and Canada. The MCA recognises the limitations of such comparisons and is actively seeking other types of measures. To this end, the Council has piloted a national OHS Culture Survey and undertakes the annual MINEX Awards for excellence in OHS management in the industry. The MINEX Awards provide a valuable opportunity for benchmarking of processes, both for applicants and through publication of case studies of award winners. In addition, the MCA is seeking more useful outcome measures and has instituted a system for reporting and sharing information about significant incidents.

NSW Minerals Council

The NSW Minerals Council has produced *Guidelines for OHS Performance Measurement* (Shaw 2000), which set out an agreed industry approach to OHS performance measurement. This approach focuses on the measurement of OHS performance at mine sites and is based on the following principles.

OHS performance measures should:

- relate directly to the enterprise's strategy for OHS;

- support effective management of OHS, not merely react to incidents;
- focus attention on critical areas of OHS management, especially core risks (ie high consequence, low probability risks);
- lead to and support improvement strategies;
- be developed through participation;
- change as OHS management strategies take effect, not just by manipulating data;
- be relevant to the enterprise;
- only hold individuals accountable for what they can control; and
- be as simple and easy to use as possible.

The approach uses a simple six-step process to establish an effective OHS performance measurement system at mine sites. The steps are:

Step 1: Do you understand the current OHS system and its status?

Step 2: Do you have a clear purpose or aim for OHS management?

Step 3: Do you have a statement of objectives for OHS management at your enterprise which will allow you to achieve your goals?

Step 4: Do you have strategies for OHS management which will allow you to achieve your goals and objectives?

Step 5: Do you have relevant performance indicators for your OHS performance at individual, team and company level?

Step 6: Do you have achievable but challenging targets for OHS performance?

The Guidelines provide directions on how to undertake the process, including worksheets for use by an OHS committee or team.

Examples of indicators are provided in the Guidelines, including this example of the indicators used by one site to track their improvements in OHS management:

- number of hazard reports;
- closeout on hazard reports to target;
- closeout on incident reports to target;
- implementation of safety and health plan to target;
- performance review completion and effectiveness;
- safety attitude and culture benchmarking conducted;
- competency development to target;
- audit results and improvement - corporate, internal, external.

Industry progress

In support of these Guidelines, a series of workshops were held to encourage their implementation. Evaluation of the workshops and the take-up of the guidelines was undertaken early last year.

While workshop participants provided very positive feedback about the value of the workshops and guidelines, the evaluation revealed that take up of the guidelines has not been extensive. A number of sites have developed and are using positive performance indicators at operational levels of the organisation (eg with the OHS Committee), but none reported using them at a corporate level.

The barrier here does not appear to be the guidelines themselves or the workshops - participants report being able to use the guidelines and continuing to refer to them as a source of guidance after the workshop. +Rather, the barriers appear to be the difference between the views about OHS performance measurement held by site OHS and operational personnel and those held by more senior people in organisations and within the industry. The most commonly suggested further action for the NSW Minerals Council was to encourage those at senior levels within mining enterprises and the industry to move away from narrow accident data as the sole source of performance information.

Construction

The National OHS Commission (NOHSC) undertook a project in 1999 to develop a set of OHS performance indicators for the construction industry as an example of how the process might be undertaken in other industries (NOHSC 1999). A series of case studies in different industry sub-sectors and in different states was undertaken to investigate the drivers of effective OHS and how these might be evaluated.

On the whole, the case study enterprises recognised the limitations of outcome measures that indicate levels of failure in health and safety performance. However a distinction needs to be drawn between the large industry sectors and domestic construction. The current uptake of positive performance indicators across the domestic case studies was lower than in the other sectors. The domestic sector needs practical, easy to digest, purpose specific information and tools to help identify and meet OHS requirements. Therefore additional assistance may be required to assist the domestic sector to apply and make good use of positive performance indicators.

The key high-level drivers of good OHS performance were identified through the case studies as:

- competitive advantage obtained through demonstrating and marketing successful OHS;
- obligations to employees and the public;
- compliance and enforcement proceedings; and
- reducing costs associated with poor OHS (eg insurance premiums, lost time, rehabilitation).

Critical factors in achieving a level of occupational health and safety necessary to satisfy the drivers were revealed to be:

- management commitment and capabilities;
- design and planning;

- workforce participation and capabilities;
- OHS management systems and processes;
- risk management; and
- the strength of auditing procedures.

From the data collected in the case studies, positive performance indicators were derived in five areas:

1. planning and design;
2. management processes;
3. risk management;
4. psycho-social working environment; and
5. monitoring.

The findings of the study have been widely promoted in the industry; although no “how to” workshops have been undertaken. The extent of take up of the model will be examined by NOHSC shortly.

Maritime

The maritime industry has also recognised the limitations of total reliance on outcome measures of OHS performance. Like mining and construction, the maritime industry is characterised by significant high consequence low probability risks that are poorly reflected in accident data. To address this, the Seacare Authority (the industry’s workers’ compensation agency) has established a Safety Performance Indicators (Shipping Industry) Committee. This committee has prepared a draft set of indicators which are intended to be validated by a selection of shipping companies. Once validated, the indicators will be trialled for twelve months prior to industry wide implementation (Seacare Authority 2001). The indicators which have been developed are not publicly available. The model which was used to develop this package is based on NOHSC’s construction industry project.

These indicators are specifically designed for application at the enterprise level and to complement outcome indicators from the industry’s workers’ compensation data. These are included in the Comparative Performance Monitoring data collected by the Department of Employment, Workplace Relations and Small Business (and discussed in the previous section).

Health

The health industry has not addressed OHS performance measurement as an industry. However, the industry’s experience with measuring its performance in relation to public health outcomes has clear relevance to OHS performance measurement. The National Health Ministers’ Benchmarking Working Group (NHMBWG) undertakes annual data collection and analysis of performance of acute care facilities in the health industry, providing ‘league tables’ of specific

quantitative measures (eg rate of post-operative infection). They identify a number of problems with performance measurement in the health industry:

- complexity of measurement issues (validity and reliability);
- lack of coordination across jurisdictions;
- the time required to establish and implement national data standards; and
- insufficient effort in understanding and investigating differences in data (National Health Ministers' Benchmarking Working Group 1998: 66).

The most recent report reiterated such difficulties, finding that, '... the performance of a component of the health sector may reflect its relationship to other parts of the system more than its own performance' (National Health Ministers' Benchmarking Working Group, 1999: 6).

As well as comparisons of statistical data relating to performance, the reports also review benchmarking activities within the health industry. The first report identified the following problems with identifying world-class outcomes in health:

1. difficulties in reliably measuring outcomes;
2. inconsistent measurement techniques;
3. changes in the influence of different dimensions; and
4. historical reluctance to share information (National Health Ministers' Benchmarking Working Group 1996: 62).

Despite such problems, benchmarking of processes appears to be growing in the health industry. Annually, the NHMBWG also reports on an increasing number of different benchmarking networks that meet to share information and strategies for improvement to the management of health facilities. Indeed, one informant suggested that this growth is due to increasing dissatisfaction with the bald comparison of numbers. One network has been particularly successful, resulting in more than 200 improvements in the member hospitals. The Health Roundtable Limited has identified the following success factors for the use of benchmarking:

- voluntary participation by hospital chief executives;
- emphasis on practical operational issues with solutions that can be implemented now;
- direct control of the agenda and priorities by the members themselves;
- focus on face-to-face discussion of real data with peers from other hospitals;
- active involvement of hospital managers and clinicians from several disciplines;
- recognition that all member hospitals have innovative practices to contribute;
- confidence that the information shared within the group will not be revealed to others and will not be used to the detriment of any member; and

- independent, professional analytical support by the benchmarking organisation (National Health Ministers' Benchmarking Working Group 1998: 60).

Another successful network identified the following six reasons for success:

- education;
- honest exchange;
- site visits;
- compilation of statistics;
- establishing best practice; and
- networking (National Health Ministers' Benchmarking Working Group 1998: 60 – 61).

On the whole, the health industry has found that benchmarking is of most use at the organisational level because the industry data they collect does not allow the identification of best practice. As the National Health Ministers' Benchmarking Working Group concluded in 1998:

The value of benchmarking is not in simply comparing where a health unit or health delivery system is in relation to a benchmark, but in understanding the reasons for variation and thus in identifying opportunities for improvement (National Health Ministers' Benchmarking Working Group 1998: 7).

Lessons for the Meat Industry

As the above review suggests, there is already considerable experience in Australia with industry approaches to OHS performance measurement. While most of these initiatives are in their early stages and formal evaluations have not been widespread, there are clear lessons for the meat industry:

- An industry approach is valuable. While individual enterprises can take initiatives independently, the coordination and support of an industry body of one sort or another makes a considerable difference to the coherence and effectiveness of the process.
- Industry support should include basic 'how to' support through such activities as workshops and meetings, as well as distribution of publications.
- Active steps must also be taken to encourage the take up of initiatives at *senior* levels in the industry. OHS professionals generally accept and understand the limitations of outcome measures. Senior managers, in contrast, may need further explanation and encouragement to accept positive, lead measures.
- Enterprises of different sizes and with different levels of OHS sophistication will need different kinds of support. For example, the construction industry project found that smaller enterprises in the domestic sector had quite different needs to those of larger enterprises in other sectors.
- As well as quantitative data, an effective industry approach incorporates capturing and sharing qualitative data about how processes are undertaken.

- As emphasised in previous sections, openness and preparedness to share information are essential criteria before such a process can be effective.
- Unless the industry is prepared to resource such a process, it has little chance of success.

The final sections of this report examine the extent to which these lessons could be applied in the meat industry to result in an industry approach to benchmarking OHS performance.

Section 7 Experiences and Views of the Industry

OHS performance measurement and benchmarking have been the focus of previous OHS improvement projects in the meat industry. As well as this previous experience, the current views of industry parties were sought in the course of this project to investigate the industry's interest in undertaking benchmarking OHS performance.

Previous industry experience

OHS Best Practice Project

The OHS Best Practice Project of 1993 – 1996 incorporated OHS benchmarking and performance measurement, with one of the objectives of the project being 'to develop key performance indicators in OHS'. The evaluation of the project concluded that the development of new forms of performance measurement was not a prominent feature of participants' projects. Preliminary activities were undertaken as part of an industry project specifically addressing a benchmarking project and by two participants.

The evaluation found that problems with developing alternative or even traditional systems of performance measurement in the meat industry did not just occur with respect to OHS. At the time, the meat industry did not tend to measure performance in any area of operations in a consistent or transparent, repeatable way. For example, quality monitoring, while very common, tended to rely on measures such as 'visually clean', which could and often did depend upon the individual inspector.

The evaluation found that few participants measured their performance in OHS even on traditional outcome indicators. Some participants were dissatisfied with their OHS performance measurement system, but this appeared to be dissatisfaction with access to any kind of data, rather than dissatisfaction with traditional accident measures *per se*. Only two participants developed process indicators of OHS performance.

Blue Ribbon Meat Products developed an OHS performance matrix, measuring performance in 16 process parameters:

- Commitment and acceptance
- OHS planning and ownership
- PPE and OHS policy audits
- Accident and incident management
- Emergency training and planning
- OHS legal requirements
- Standard operating procedures

- Contractor management
- OHS training and evaluation
- Induction
- Skills training
- Supervisory training
- Return to Work
- Medical
- Pre-employment practices
- Health and environmental monitoring

Indicators were developed against each of these parameters and performance against them tracked. Throughout the course of the project, substantial improvements against almost all of the parameters were demonstrated, except contractor management and standard operating procedures. Significantly, Blue Ribbon was the only participant completely satisfied with their measurement system (5 versus an average satisfaction rating of 3.3).

Hardwick's also used process indicators, but in relation to evaluating effectiveness of specific interventions. Indicators in this case included employee satisfaction with the intervention, as well as relevant quality data.

In addition to projects at individual plants, it was recognised that industry wide efforts in some areas would be effective to address industry-wide issues. A project on OHS benchmarking was one of six industry-wide projects that were undertaken. Seven of the participating plants from Victoria, Queensland, NSW, Tasmania and South Australia participated in this project, representing a range of organisational sizes and types of meatworks. The project involved:

- Establishment of benchmarking teams in each enterprise (these were sub-groups of pre-existing project teams);
- Preparation by the team through completion of an OHS benchmarking workbook, which guided the teams through a process to identify areas for benchmarking;
- A two-day workshop for representatives of each team to undertake training;
- Benchmarking by the teams themselves.

While all participants reported finding the training effective and useful in the context of their enterprise's OHS Best Practice Project, not all enterprises proceeded to the final stage of the project. However all four enterprises that undertook benchmarking with other enterprises within and outside the meat industry identified and implemented successful changes to their management of OHS as a result. For example, daily 'walk and talks' by the OHS officer as key hazard identification and communication strategy; the application of problem solving approaches to OHS, and improved communication strategies were all implemented.

Involvement in this industry-wide project had the following benefits for participating enterprises:

- It opened up options outside the industry for participants, identifying enterprises from other industries as benchmarking partners;
- It reduced duplication of resources and ‘reinventing the wheel’ – participating enterprises were able to apply the lessons of other enterprises;
- It reinforced and supported networking, which was cited by all enterprises as a major benefit of the Best Practice project.

The benchmarking project also developed ‘first cut’ process indicators, focussed at the enterprise level. Indicators were developed in areas of OHS management identified as critical to superior OHS performance as follows:

Hazard identification:

- Number of problems identified versus number of problems rectified
- Percentage of identified problems rectified within agreed timeframe
- Number of repeat problems versus total number rectified.

Employee involvement:

- Evidence of mutual respect
- Evidence of a cooperative approach
- Number of employees receiving communication training
- Level of teamwork - team involvement
- Evidence of two-way communication.

Training:

- Percentage of workforce completing training
- Number of training courses conducted
- Trainee feedback.

Employment procedures and induction

- Awareness by new employees
- Appraisal of new employees
- Injuries/incidents involving new employees
- Turnover of new employees.

These were not reported to have been taken up by participating enterprises to any extent.

Hardwick’s Learning Organisation Project

Through 1996 and 1997, Hardwick’s Meatworks in Victoria extended the activities it had been undertaking through the OHS Best Practice Project to support the creation of a learning organisation. Benchmarking and OHS performance measurement were important components of this project.

One example of how the enterprise approached OHS performance measurement was in the process redesign undertaken on the mutton floor. The OHS officer drew an increase in the incidence of manual handling injuries on the mutton floor to the team's attention. Using a cause and effect analysis ('fishboning'), the team identified that the main problem was in pelting and identified a range of contributing factors. The key solution that was developed for these problems was the use of an extra processor on the line. In introducing this change, there were a number of industrial sensitivities. The team was also concerned that the changes didn't cause damage to the sheepskins.

The team therefore decided to implement the changes on a trial basis. They then faced the problem of how to decide whether the trial had worked. The team developed a series of indicators:

1. **Number of injuries** - collected according to the type of injury (eg cuts, sprains and strains) and whether it was a new injury or a recurrence of an existing injury. This information was collected by the supervisors and the OHS officer.
2. **Take off of the skins** - the percentage of the skins of the required quality for sale. This information was collected by the skin coordinator.
3. **How people felt about the changes** - according to a scale from 'heaps better' to 'heaps worse'. This information was collected by the union delegate and the supervisors.

The team agreed to trial the changed working arrangements for three months. After the first six weeks, the team reviewed the changes and performance against the indicators in order to modify the changes. After six weeks, the team found:

1. A clear improvement (ie a reduction) in the number of injuries. Over the most recent three weeks, there had been no injuries of any kind.
2. Skin take off had deteriorated briefly. However, the skin coordinator and the team explained this as the result of 'dry sheep', a seasonal problem which they had experienced at this time of the year before. In fact, the skin coordinator expressed the belief that skin take off had not deteriorated quite so much this year.
3. Everyone agreed that the work had got 'heaps better', despite the initial concerns. However, the supervisors had some practical problems with the changed working arrangements, which the team was able to address.

At the end of the trial, the trends which were apparent at the six week review had continued:

1. While there had continued to be some injuries, the rate had clearly dropped.
2. Skin take off had not deteriorated any further and had, in fact, improved as the quality of the sheep had improved.
3. The union delegate and the supervisors reported that the workers in the area now couldn't imagine doing the work any other way.

This example illustrates a number of issues that OHS performance measurement in a meatworks must address:

- OHS improvements will always have to meet a number of potentially competing imperatives. In this example, as in all meatworks, the imperatives included maintaining the quality and speed of production, respecting existing industrial relations agreements about working arrangements as well as controlling OHS risks in the area.
- the cause and effect relationship between interventions and outcomes is often not immediately apparent. For example, manual handling interventions can take many years to have full effect and occupational diseases can have latent periods in excess of 20 years. Despite the immediate reduction in injury rates in the mutton area, it is unlikely that the full effect of the intervention will be expressed for some time, particularly all benefits in relation to manual handling.
- Interventions must be able to be evaluated as you go - to fine-tune the interventions, to identify and address confounding factors and to build preparedness to at least try a new method of working. In the above example, the supervisors' practical problems with implementing the change had to be solved for the otherwise successful intervention to continue.

MISHCIF evaluation

While the pilot implementation of MISHCIF included the development of performance indicators as an objective, it proved too difficult to undertake this activity whilst also implementing a continuous improvement framework. Indeed, few sites involved in implementing MISHCIF in Queensland and South Australia were able to provide performance information of any sort. Outcome data such as workers' compensation statistics were unavailable to the evaluators at any of the plants in the evaluation. At some sites, positive trends were reported, but these were not backed with evidence. For two Queensland sites, this was because access was not possible due to plant closures. Significantly, non-participants were also unable to provide reliable outcome data.

The evaluation found that few sites undertook activities in the area of *Monitoring and Improving* (one of the MISHCIF elements) prior to or as a result of the pilot project. Any auditing or review processes were undertaken by the project consultant or initiated by them. Ongoing processes have been initiated or are planned in a limited number of sites, but this remains a significant gap in OHS management on all participating sites.

Injury Management Project

In 1999, a project addressing the establishment of effective injury management systems was undertaken in NSW. Networking, both face-to-face and electronic through email, was an important aspect of the project. While a formal evaluation has not been undertaken, two enterprises that participated in this project were interviewed as part of the evaluation of MISHCIF. These sites reported substantial benefits as a result of the networking fostered by the project. Anecdotally, other participants viewed networking positively as well.

Other industry networks

A number of formal and informal OHS networks exist throughout the industry. Many of these have been sustained independently of any outside funding or support, apart from support accessed directly by the network itself. This suggests that the participating enterprises gain benefits from participation. The extent to which these networks engage in more formal OHS benchmarking is unknown, but they could form the core of such an activity if desired.

Industry views

As the above description suggests, the industry is overwhelmingly positive about the value of networking. Everyone interviewed in preparing this report was able to cite benefits of networking, both in identifying improvement strategies and in supporting effective change within their enterprises. However, this enthusiasm is accompanied by widespread difficulties with resource allocation, to the extent that access to networking activities is limited for employees working in production. It is also tempered by some resistance to information sharing from some enterprises.

The industry also recognises the substantial gaps that exist in data collection, even with lag indicators. Larger enterprises and those which have been involved in previous OHS improvement projects are more likely to have better data systems, but lead indicators are rarely, if ever, used.

Discussions with the MLA's OHS Reference Committee raised the following key issues:

- OHS performance measurement and benchmarking must be useful to senior management;
- Any approach cannot be resource intensive;
- Not all enterprises will be prepared to share information or participate in benchmarking or networking;
- There is a need to support better collection of traditional negative measures; and
- Enterprises will need guidance in how and what to quantify and measure and how to develop positive measures.

As a result of this consultation, we conclude that on the whole, the industry's interest in benchmarking OHS performance measurement is somewhat guarded. There is some scepticism about the value of benchmarking with outside industry, especially for those with little experience of benchmarking. Individuals who had been previously involved with OHS benchmarking and networking activities were much more positive than those who had not been involved in industry activities, which suggests that for some, their negativity was related to lack of exposure and not negative experiences.

Conclusion

Clearly, the industry needs to improve its approach to OHS performance measurement. Guidance and education on how to collect basic data, both process and outcome, is important. Industry benchmarking may be a useful tool to support this. There is scope to provide more detailed guidance on positive performance indicators, which would be most useful to those enterprises with more sophisticated data collection and analysis. Benchmarking with outside industries, eg mining, may be a useful support to this.

Networking has strong industry support and should be built into any subsequent MLA OHS improvement projects. There is scope for more thorough benchmarking approaches, but these would need to be based on the prerequisites described earlier.

The next section describes a possible model for benchmarking OHS performance for the Australian meat industry.

Section 8 Proposed Meat Industry Model

This section sets out a model for OHS performance measurement which could be used at both an industry and an enterprise level. The model consists of the following elements:

- Principles for OHS performance measurement;
- Pre-requisites for OHS performance measurement;
- A process for OHS performance measurement;
- Indicative measures of OHS performance (these indicate the kinds of measures which could be used at an industry and enterprise level); and
- A proposed implementation process.

Principles for OHS performance measurement

To be effective, OHS performance measurement needs to be:

- Undertaken within an improvement orientation, ie performance is measured in order to improve.
- Focussed on effective performance rather than just activity, ie *performance* not *busyness* indicators.
- Part of a coherent management strategy – there is little point putting effort into measuring performance if OHS management is ad hoc and a low priority.
- Focussed on aspects of OHS management that are under the control of the workplace and enterprise.
- Value-adding to OHS management – any extra effort or resources must return improvements and more effective OHS strategies.

Prerequisites for OHS performance measurement

An effective OHS performance measurement approach at either the industry or enterprise level is built on the following foundations:

- The industry has to be prepared to do the work involved. While industry advisors such as the MLA and consultants have critical support roles, the process cannot be left to them.
- Enterprises have to be prepared to share information otherwise an industry measurement strategy is meaningless.

- An acceptance that OHS is a central aspect of management,
- Willingness of management and employees to work together in an open, consultative and participative manner. Developing OHS performance measures requires a participative approach, which reinforces the value of those in an enterprise working together to solve enterprise problems.
- A preparedness to examine how and why the organisation operates and to ask difficult questions, and
- A willingness to commit the necessary people and time to developing, maintaining and recording performance measures.

If these principles are in place, then the enterprise and industry are likely to develop appropriate performance indicators and put proactive OHS systems in place as a result.

An OHS Performance Measurement Process

The following six (6) step process is proposed for OHS performance measurement in the meat industry. These steps apply to both industry and enterprise level measurement.

Step 1 Identify key areas for improvement.

There are a number of ways in which this might be undertaken. The MISHCIF evaluation suggests that the MISHCIF model provides a useful framework for this. By reviewing what an enterprise is currently doing in relation to each of the five elements, it is possible to determine where improvement opportunities exist and where the greatest potential for change can be found. This could be undertaken at an industry level as well. For example, the MISHCIF evaluation has reinforced that the industry's approach to OHS performance measurement, even for lag indicators, is a considerable improvement opportunity.

Step 2 Develop improvement objectives and strategies.

Clear improvement objectives are an important support for an effective OHS performance measurement system. If the objectives are not clear, it is difficult to define performance indicators of their achievement. Without clear objectives, a 'business as usual' approach to OHS management is likely, not aiming to achieve improved performance.

Often, objectives are defined in terms of outcomes (eg zero accidents, no lost time injuries). However, many other influences outside the control of the industry or enterprise will affect achievement of such objectives. The approach of the treating doctor, the time of day of any incidents and the workers' compensation system will all affect achievement of goals expressed in terms of incident data. Objectives should therefore be defined in terms of achievements over which an industry or enterprise has control, for example:

- To make this an industry which controls risks
- To ensure that everybody is actively involved in safety every day.

The best OHS objectives can be:

- monitored so that it can be recognised when they have been achieved;
- influenced by industry, enterprise and individual actions;
- integrated with the overall goals of the business;
- communicated effectively and supported by the industry and enterprise; and
- drivers of continuous improvement in OHS performance.

Strategies are the means by which objectives are achieved - they are the road maps to achieving objectives. Strategies introduce a new level of detail, leading to the actions which must be taken (the things which must be done), for example:

- Review current risk management method
- Seek expert advice
- Managers participate in site inspections
- Conduct training needs analysis and provide needed training.

Each of these actions should be allocated as a responsibility to relevant personnel who should be held accountable for fulfilling them.

The best strategies can be:

- monitored so that it can be recognised when they have been implemented;
- integrated with other strategies of the business;
- undertaken in a participative manner and supported by everyone in the industry or enterprise; and
- creators of continuous improvement in OHS performance.

Step 3 *Identify performance indicators of achievement in relation to these objectives.*

The process of developing performance indicators can involve the adaptation and application of pre-existing measures, eg using the indicative measures described in this report. More effectively, though, performance indicators related to the specific needs of an enterprise should also be developed. Even at an industry level, it is important that the indicators used relate to industry needs and objectives.

To develop such performance indicators, a group process which involves users is most effective. Tools such as brainstorming and consensus decision making can be used to answer the question: 'How would we know whether we are reaching our objective?'. From a long list of possible indicators, the group chooses those which best focus on the

precursors of good performance - the lead indicators - and those which tell how effective the intervention is rather than merely how much work it has required (performance as opposed to ‘busyness’ indicators). As described in Section 5, we use the ACCURATE checklist to help refine this list. The final set of performance indicators must be sufficient to allow improvements to be identified, but not so many that the measurement process becomes impractical.

Step 4 *Measure performance according to these indicators.*

Using the agreed performance indicators, the measurement process should be initiated. A variety of measurement tools will be necessary, depending upon the indicators selected. Possible tools include:

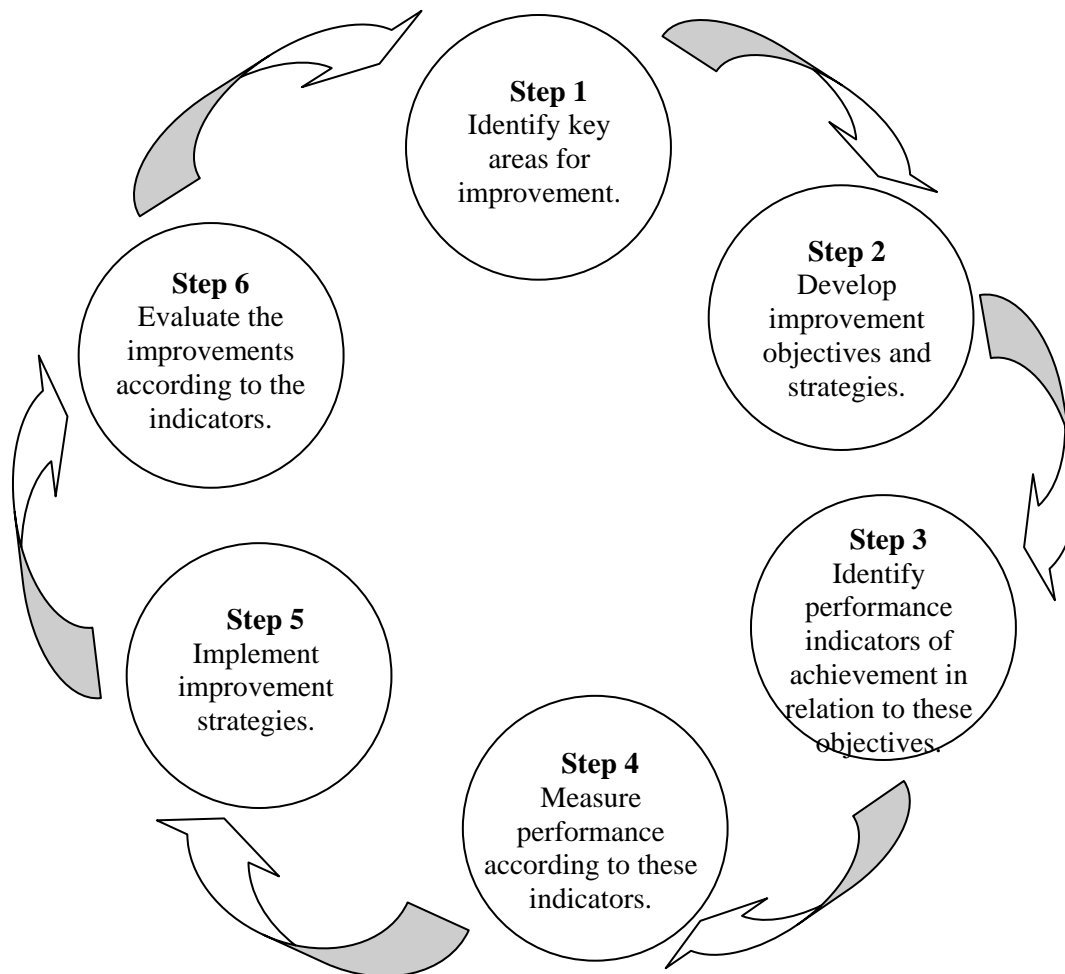
- Data analysis;
- Surveys and questionnaires;
- Audits; and
- Inspections and observations.

Step 5 *Implement improvement strategies.*

As described earlier, the measurement process is meaningless unless it results in improvement strategies. Benchmarking can be a powerful tool here, because it supports breakthrough change and can help address problems which seem entrenched and unchangeable from an internal perspective. Indeed, this report is a form of benchmarking, allowing the meat industry to learn from the experience of other industries in seeking to implement alternative approaches to OHS performance measurement.

Step 6 *Evaluate the improvements according to the indicators.*

At agreed and appropriate intervals, the indicators should be measured to monitor how effectively the improvement strategies are working. Additionally, as the industry or enterprise’s needs change, new improvement opportunities will appear, objectives and strategies will be needed and thus new performance indicators. This means that the six step process is a cycle and will repeat over time as the following diagram represents:



Indicative indicators

The following indicative indicators are proposed for each of the five MISHCIF elements. These performance indicators derive from work undertaken in the meat industry, as well as indicators which have proven effective in other industries.

1. *Leadership*

- Budget for prevention activities as a proportion of total budget for OHS (including compensation and rehabilitation).
- Workforce rating of management commitment.
- Percentage of OHS committee meetings attended by senior managers.

2. *Monitoring and Improving*

Lead indicators:

- Percentage of hazard/incident investigations completed on time.
- Percentage of audit actions completed according to schedule.

Lag indicators:

- Number, duration and nature of workers' compensation claims;
- Cost of claims per employee
- Total workers' compensation premium and premium as a percentage of payroll
- Rate of incidents reportable to the relevant OHS jurisdiction (the definition of 'reportable incident' varies slightly between states, but provides a legal definition of particular incidents which does not depend upon patterns of medical treatment).

3. *Managing People*

- Percentage of workforce successfully completing training
- Workforce feedback about the effectiveness of training programs.
- Turnover of new employees.
- Percentage of noncompliance reports about contractors.
- Percentage of targeted people receiving the information required within timeframe.
- Percentage of OHS Committee meetings held compared with schedule.
- Percentage of workforce reporting hazards and incidents.

4. *Managing Systems*

- Degree of compliance to OHS management systems.
- Percentage change in system audit scores.
- Percentage of maintenance works orders completed within agreed timeframe
- Percentage of work procedures which have been reviewed within the last 12 months

5. *Controlling Hazards*

- Percentage of identified hazards rectified within agreed timeframe
- Age of oldest outstanding action item.
- Percentage of risks assessed as high consequence.

- Percentage of inspections completed according to schedule.
- Percentage of high risk actions completed.

Implementation

The implementation process for of an industry model of OHS performance measurement should include the following four steps:

- Step 1 Industry consideration of the findings and recommendations of this report should occur.
- Step 2 Once a model has been agreed, a strategy for increasing the understanding of the issues by senior management in the industry should be developed and implemented. As the NSW minerals industry has found, unless there is some “pull” for improved performance measurement from senior management, the “push” created by having an improved model will not be sufficient to support implementation.
- Step 3 The model should be piloted with a regional network of meatworks, to test enterprise and pooled data collection. As a result of this piloting, indicators and other tools should be refined and further developed.
- Step 4 After revision, the model should be distributed throughout the industry and the formation of regional networks to support implementation should be supported. This could occur through the conduct of regional workshops on how to implement the model.

Section 9 Conclusions

This report has shown that the industry can and should improve its approach to OHS performance measurement. Guidance and education on how to collect basic data, both process and outcome, are critical needs. Benchmarking by the industry may be a useful tool to support this. In relation to the specific objectives of this project, this investigation has reached the following conclusions:

1. Develop positive performance indicators for the industry

This investigation found that, as well as positive performance indicators, the industry lacked detailed understanding and application of traditional measures such as accident data. Thus, while positive indicators are needed, attention to suitable outcome measures is also required.

A model for OHS performance measurement has been developed which incorporates both types of measures and which could be used at both an industry and an enterprise level. The model is described in Section 8 and consists of the following elements:

- Principles for OHS performance measurement;
- Pre-requisites for OHS performance measurement;
- A process for OHS performance measurement;
- Indicative measures of OHS performance; and
- A proposed implementation process.

We do not recommend that specific performance indicators are imposed on the industry at this stage. Rather, the industry needs to build skills and resources in OHS performance measurement, including both positive and outcome indicators. Indicative measures are proposed which could be further refined through the implementation process.

2. Develop the scope for a productivity model which can be used by the industry

On the basis of the New Zealand application of the Productivity Model, we do not recommend that such a model is developed for Australia. The benefits of the model are that it allows the full cost of poor OHS to be estimated. However, the weaknesses of the model are that it:

- relies on the accuracy, validity and reliability of data input to the model (ie if estimates of time on training replacements because of injury are inaccurate, the data is not valid).

- does not assist in identifying strategies for improvement.
- focuses attention on work absences, not on whether the workplace is safe.

These weaknesses undermine its value in the Australian context and the potential benefit is limited. No one we had contact with in the course of this project needed any further persuading that poor OHS costs the industry dearly and the greater cost of indirect over direct costs is well known. In an environment of competing resources, being able to derive an estimated ratio of indirect to direct costs will have only limited benefit, compared with the substantial industry need to more accurately collect the relevant data.

3. Investigate industry interest in undertaking benchmarking activities

As a result of this investigation, we conclude that benchmarking, both within and outside the meat industry, would be a useful tool to support the development of improved approaches to OHS performance measurement in the industry. Unfortunately, however, the industry's interest in benchmarking OHS performance measurement is somewhat guarded. There is some scepticism about the value of benchmarking with outside industry, especially for those with little experience of benchmarking. Individuals who had been previously involved with OHS benchmarking and networking activities were much more positive than those who had not been involved in industry activities. This suggests that for some their negativity was related to lack of exposure and not negative experiences of sharing information. In contrast, networking has strong industry support and should be built into any subsequent MLA OHS improvement projects.

There are also some significant considerations about whether the Australian meat industry is prepared for the prospect of benchmarking OHS:

- Preparedness to share information and data is not universal;
- Recognition of the value in learning from outside industries is not common – many enterprises have no confidence in ideas that are “not invented here”.
- The industry lacks adequate data collection systems, both across the industry and within many enterprises.

The preparedness to commit resources to change processes, particularly human resources, is also lacking.

On the positive side, the widespread enthusiasm for industry networking means that most enterprises contacted for this review expressed commitment to allocating human resources to such a process. Sections of the industry have demonstrated that they are prepared to share with and learn from competitors within a structured and commercially safe process, eg the NSW Injury Management Project.

Section 10 Recommendations

Recommendation 1

That the four step implementation process for the proposed meat industry OHS performance measurement model be put into effect. In particular, industry consideration of the findings and recommendations of this report should occur.

Recommendation 2

That the development of a productivity model for the industry is not pursued.

Recommendation 3

That networking is built into any future MLA OHS improvement projects.

Recommendation 4

That the barriers to effective OHS benchmarking which exist in the meat industry as identified in this report are addressed. Piloting any benchmarking or performance measurement activities should be considered as strategies to address at least some of these barriers.

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