Part 2

+ Proposals for reform

History

+ Major change is required
+ Coal mining in New Zealand
+ A failure to learn

CHAPTER 18

Major change is required

Introduction

1. In this part of the report the commission sets out in detail its proposals for reform and makes its recommendations. This chapter brings together a number of key conclusions that are contained in later chapters.

2. The proposals arise from the commission's review of health and safety in underground coal mining but may often have relevance to other industries. They are based on an assessment of the evidence the commission received during its inquiry, a review of best practice overseas and research into past disasters in New Zealand and elsewhere.

New Zealand's poor health and safety performance

Injury and fatality rates

3. New Zealand's rate of work-related injury and fatality is far above that of the best-performing countries. The rate is about one third greater than Australia's. Country-specific differences in industry and hazards may account for some differences in performance, but it is clear that New Zealand performs poorly.

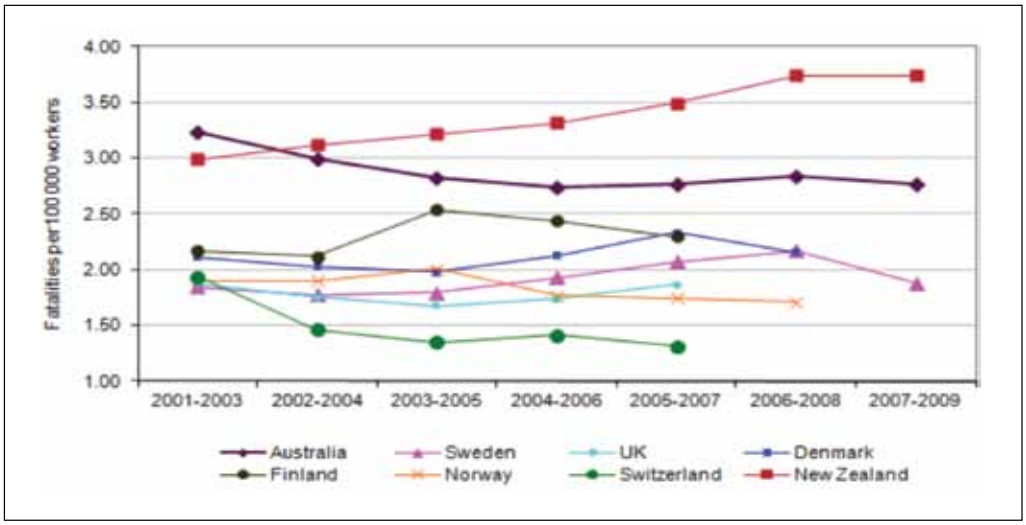

Figure 18.1: Comparison of work-related injury fatality rates with best-performing countries[1]

4. The Department of Labour (DOL)'s *State of Workplace Health and Safety in New Zealand* of June 2011 paints a bleak picture. It is the first time key statistics have been brought together and it is intended that they be published annually.[2]

5. There were approximately 85 workplace deaths in 2008[3], 445 serious injuries in 2009 and 228,300 accident compensation claims in 2008. The notified fatalities for 2010, including those at Pike River, are described as indicating a likely increase in the death rate.[4]

6. Data from the International Labour Organisation (ILO) shows that New Zealand's fatality rates are worse than those in many other advanced countries.

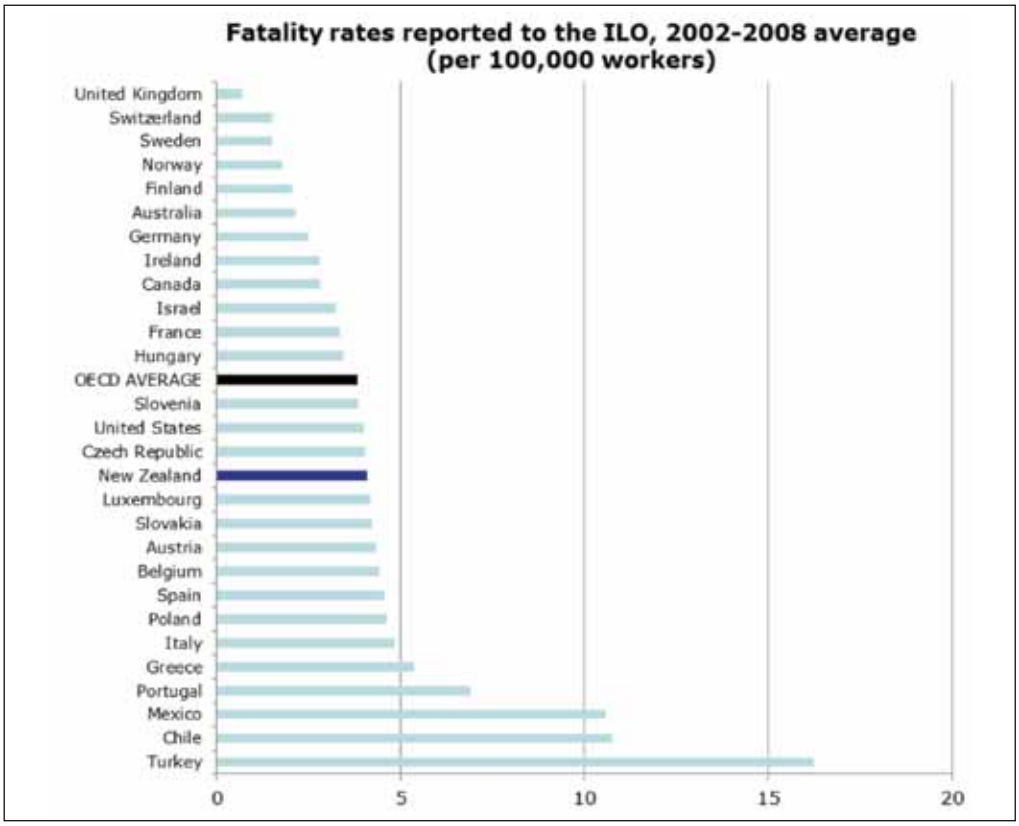

Figure 18.2: Fatality rates notified to ILO [5]

7. Australia's fatality rates have reduced significantly over the last 10 years.[6] Rates in the United Kingdom have reduced substantially since it introduced modern health and safety legislation in 1974.[7]

Occupational disease

8. Accident compensation claims for workplace disease were 27,000 in 2008, an increase of 26% over six years. Workplace disease accounts for an estimated 700–1000 deaths annually. There are inadequate measures of occupational disease, but *State of Workplace Health and Safety* mentions the development and piloting of a model for the surveillance of occupational cancer, respiratory diseases and dermatitis.[8]

Industry and worker involvement

9. New Zealand has about 470,000 workplaces and two million workers. Eighty-nine per cent of businesses say they have processes in place to manage health and safety in the workplace and 85% of employees consider that health and safety risks are being well managed; 39% of small and medium enterprises say they have difficulty dealing with or setting up health and safety systems; 66% of businesses say that they train their staff in health and safety.[9] The number of people completing ACC-funded health and safety representative courses dropped from 9735 in 2008–09 to 4153 in 2010–11 mainly as a result of a 44% funding cut in 2009–10.[10]

Overseas health and safety regimes

10. The commission has looked at the health and safety regimes that apply to mining in other countries. The most relevant and useful regimes have proved to be in Australia, especially the major mining states of Queensland and New South Wales. These regimes are recognised as representing best practice.[11]

11. Further, those states have kept pace, legislatively and administratively, with modern developments in a way that New Zealand has not. Much of the comparative analysis by the commission has therefore focused on Queensland and New South Wales.

Resources available to the regulator

12. New Zealand generally has fewer resources allocated to policing health and safety than the Australian states.

Figure 18.3: Field inspectors (excluding mining inspectors) per 10,000 employees by jurisdiction, 2009–10[12]

13. The total of 145 inspectors employed by DOL in 2009–10 equates to 0.8 inspectors per 10,000 employees. As shown in Figure 18.3, Western Australia was the lowest of the Australian jurisdictions, but still had a ratio of inspectors to employees almost 20% higher than New Zealand's.[13]

14. The latest benchmarking data shows that New Zealand also has the second lowest government expenditure on health and safety regulation per employee (at a little over two-thirds the Australian average).[14] This comparison is illustrated in Figure 18.4.

Figure 18.4: Occupational health and safety expenditure per employee by jurisdiction, 2008–09[15]

15. New Zealand is not well resourced on a per employee basis compared with Australian jurisdictions. In 2008–09 DOL spent approximately $19 (Australian) per employee, compared with more than $40 for the highest two jurisdictions. The average across all Australian states was $30 per employee.[16]

The 1972 Robens committee[17]

Principles still relevant

16. In 1972 the Robens committee reviewed the entire framework of health and safety in the United Kingdom and recommended far-reaching changes. The recommendations heavily influenced health and safety developments across the Commonwealth, including the 1992 legislative changes in New Zealand. Thinking has developed over the last 40 years but the commission has found that the core principles remain relevant.

17. The Robens committee recognised that health and safety standards cannot be improved without the contribution of employers, workers and the government regulator. More self-regulation was required, under which everyone accepts appropriate responsibilities for health and safety. This includes the board of directors and senior managers, who should, as part of their normal functions, set the policies and promote the right attitudes to health and safety throughout the company.

18. The committee recommended the replacement of 'prescriptive' legislation and regulation, which had tended to focus on specific hazards, with legislation based on principles that could be flexibly applied to the health and safety issues facing employers. But it also stressed that the new legislative approach would not be effective without the right approach to implementation.[18] Three aspects are especially relevant.

Implementation

19. First, employers should be provided with more prescriptive guidance through regulations and codes of practice which could be easily amended. Such guidance was expected to be necessary for general matters relating to most forms of employment, specific types of hazards and particular industries such as agriculture, mining or construction.

20. Second, worker participation was essential when designing and monitoring health and safety policies in the workplace. Without worker co-operation and commitment real progress was impossible.[19]

21. Third, the regulator should be a single purpose, professional organisation. Robens recommended an autonomous authority whose functions should include both policy advice and operational delivery (including advice and inspections), administering standards (including codes of practice), working with industry and employee associations and conducting research, education and training. A forward-looking and systematic approach to accident prevention was needed, rather than relying wholly on backward-looking injury rates.

22. The Robens committee considered that the regulator should focus solely on health and safety. It should be subject to broad policy direction by a minister. It should be headed by a senior executive reporting to an executive board chaired by a person publicly recognised in the field. The committee warned against the board being merely advisory on the grounds that its advice may not be followed.[20]

23. The executive board would be supported by expert advisory and technical bodies. The authority should not be placed within a government department because it would not have a separate identity. As the Robens committee noted, 'responsibility is diffused vertically in departmental hierarchies that eventually culminate in senior civil servants and ministers who devote to the subject whatever time they are able to spare from other competing preoccupations.'[21] The eventual result was the establishment of the United Kingdom Health and Safety Executive Agency.[22]

The Health and Safety in Employment Act 1992 (HSE Act)

24. Twenty years after the Robens committee report, most of its legislative recommendations were included by New Zealand in the HSE Act. This legislation imposed a general duty on employers to 'take all practicable steps' to ensure the health and safety of workers.

25. Administration of the legislation was placed in the multi-functional DOL (now part of the Ministry of Business, Innovation and Employment),[23] but the department lost focus and did not keep up with modern thinking in policy, regulation, strategy and operations. This deterioration was not restricted to administration in respect of underground coal mining.

26. Long-term health and safety strategy was based mainly on backward-looking injury rates and took little account of lead indicators or the special features of high-hazard industries. In the mining context employers were left alone with little guidance or oversight, and no approved codes of practice. There was little emphasis on worker participation and no routine contact between the inspectorate and employee representatives.

27. The inspectorate lost its capacity and focus. Resource allocation was not based on solid risk analysis and data. Compliance strategy, including enforcement, was outdated. Only two inspectors were left to service the underground coal mining industry and they had other duties as well.

Recent government initiatives

The High Hazards Unit

28. Following the Pike River tragedy, in September 2011 the government established the High Hazards Unit within DOL. Its focus is health and safety in the mining and petroleum and geothermal sectors.

29. The unit has been a welcome improvement, but some problems remain. These are discussed in Chapter 24, 'Effectiveness of the health and safety regulator'.

Funding increases

30. In May 2012 the New Zealand government announced an extra $37 million funding over four years for the health and safety regulator. The purpose is to increase the number of field inspectors by 20%, from 148 to 180, by 2015. At the same time, the minister of labour ordered a fundamental review of the health and safety system by an independent taskforce.[24]

What should be done

31. It is primarily in the implementation and administration of the health and safety legislation that New Zealand has lost its way, with knock-on effects on industry performance. In Part 2 of the report the commission analyses what needs to be done about it. The starting point is reform of the regulator.

32. Major and rapid change is required. The Pike River tragedy is a wake-up call for all industries, not just for those in underground coal mining. It is also a wake-up call for the government and for regulators.

33. There are 16 primary recommendations in this report, which are supported, where necessary, with more detailed recommendations. The commission trusts that those charged with responding to this report will also attach weight to the views and conclusions in the text. Those recommendations couched directly in terms of the underground coal mining industry may have wider relevance.

34. Recommendations are found at the end of the relevant chapters that follow and are reproduced in Volume 1.

ENDNOTES

1 Safe Work Australia, Comparative Monitoring Report: Comparison of Work Health and Safety and Workers' Compensation Schemes in Australia and New Zealand, October 2011, p. 5, http://www.safeworkaustralia.gov.au/AboutSafeWorkAustralia/WhatWeDo/Publications/Documents/609/Comparative_Performance_Monitoring_Report_13th_Edition.doc

2 Department of Labour, The State of Workplace Health and Safety in New Zealand, June 2011, p. 1.

3 The document does not provide the same categories of data for any one year.

4 Department of Labour, State of Workplace Health and Safety, p. 3.

5 Kate Wilkinson (Minister of Labour), Cabinet Paper – Proposal to Increase Investment in Safe Skilled Workplaces Using Unallocated Revenue from the Health and Safety in Employment Act Levy, 4 April 2012, DOL7770060003/7, paras 31–32.

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7 Ragnar E. Löfstedt, Reclaiming Health and Safety for All: An Independent Review of Health and Safety Legislation (Cm 8219), 2011, http://www.dwp.gov.uk/docs/lofstedt-report.pdf

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10 Department of Labour, Response of the Department of Labour to Request for Information, June 2012, DOL7770060067/5, paras 10–11.

11 Gunningham and Associates Pty, Underground Mining Information: Contextual Advice on International Standards and Literature Review (RFP 234) – Report for the Department of Labour, 2009, DOL0010020402/3; Michael Quinlan, Report Comparing Mine Health and Safety Regulation in New Zealand with Other Countries, DOL4000010001/3, para. 4.

12 Department of Labour, Phase Four Paper, 16 March 2012, DOL4000010005/90.

13 Ibid.

14 Ibid., DOL4000010005/73, para. 310.2.

15 Ibid., DOL4000010005/89.

16 Ibid.

17 Lord Robens (Chairman), Committee on Safety and Health at Work, Safety and Health at Work: Report of the Committee 1970–72, 1972, HMSO, 1972.

18 Lord Robens (Chairman), Safety and Health at Work, pp. 49–50.

[19] Ibid., pp. 21–23.
[20] Ibid., pp. 36–39.
[21] Ibid., p. 35.
[22] For information on the agency see: http://www.hse.gov.uk
[23] Aviation and maritime health and safety are administered by Crown agents, the Civil Aviation Authority and the Maritime Safety Authority, which are close to the Robens model.
[24] Kate Wilkinson, (Minister of Labour) Media Release: Workplace Safety to Get Funding Boost, 2 May 2012, http://www.beehive.govt.nz/release/workplace-safety-get-funding-boost

CHAPTER 19

Coal mining in New Zealand

Introduction

1. This chapter gives an overview of the characteristics of the coal resource and the coal mining industry in New Zealand and in Australia.

New Zealand coal fields

Main characteristics

2. New Zealand's coal resources are estimated to be over 15 billion tonnes, 80 to 85% of which are South Island lignites. The recoverable quantities of the 10 largest deposits are estimated at over 6 billion tonnes. Sub-bituminous and bituminous resources are estimated to be 3.5 billion tonnes; the recoverable quantity is uncertain.[1] The coal basins generally range in size from 150km^2 to 1500km^2. They often contain small coal fields.

3. New Zealand straddles the Pacific and Indo-Australian tectonic plates. Consequently coal seam geology can be complex, with changes in thickness and dipping over short distances. There can be marked structural disturbance, including multiple partings or splits, normal and reverse faulting and overfolding. The quality, thickness, structure and integrity of the seams can vary significantly over short distances. The faulting and complexity at the Pike River mine are not unusual.

4. The coals vary from lignite to semi-anthracite. They can be prone to spontaneous combustion and gas outburst. Gas content can vary within and between mines and ranges from non-gassy to highly gassy. The coals can have high water content. Some fields are located in areas of high rainfall. Inundation can occur, sometimes from old workings.

5. Many coal fields lie near regions of high ecological significance. Rock may be sulphur bearing, with potential for acid mine drainage and subsequent environmental damage. Streams and other natural resources require protection in accordance with environmental legislation.[2] Additional protections and consents are required to mine in land administered by the Department of Conservation (DOC).

6. The topography is often difficult, making access challenging and requiring mines to have relatively self-contained infrastructure and rescue facilities. The weather is variable, with many areas prone to high rainfall, fog and cloud cover. The weather can impede search and rescue operations, as was the case at the Pike River mine.

7. The complex geology, especially faulting and steep dipping, means that conventional mechanised mining methods are sometimes not very effective. Solid Energy New Zealand Ltd, the largest New Zealand underground coal mine operator, has responded by using hydro mining on the West Coast. This method was also used at the Pike River mine. A technique uncommon in most of the world, it requires specialised equipment and training. Combined with the geological conditions of the West Coast, hydro mining provides challenges for safety management.[3]

8. Some countries, especially those on the Pacific Rim, have coal fields similar to those in New Zealand. But those distant from tectonic plate boundaries, including Australia, South Africa, India, Western Europe and the eastern United States, are often of much greater lateral extent, and have simpler and more predictable geology.

Production

9. The large lateral seams found overseas can accommodate substantial underground coal mines with high production rates. By contrast, underground coal mines in New Zealand are small and have not been able to sustain

high production rates. The highest reported production by a New Zealand underground coal mine in one year was 500,000 tonnes, from the Spring Creek mine. Initial expectations had been up to 1.8 million tonnes per annum.[4] Production at Pike River was initially estimated to be up to 1.3 million tonnes per annum,[5] but that was revised downwards. By October 2010 the production forecast to June 2011 was 320,000–360,000 tonnes.[6]

10. Difficult geology, low production rates and New Zealand's distance from international markets make mining here economically challenging. Two factors offset these problems: the high quality of some New Zealand coal, especially that from the West Coast, and the commodities boom over the last decade and consequent increase in international coal prices.[7]

Planning

11. Great care is needed when planning, developing and operating underground coal mines. Detailed exploration is required. Insufficient resource definition has resulted in many mines being uneconomic or facing unforeseen health and safety risks. Three of the six large underground coal mines commissioned in New Zealand in the last 35 years have failed.[8]

12. Even successful mines have had problems. Solid Energy gave the example of its Spring Creek mine, situated about 20km as the crow flies from the Pike River mine. There was exploration in the 1980s and 1990s but the joint venture partners were not prepared to commit the major capital required to develop a large mine. Instead they adopted the less costly option of accessing a high-quality seam nearer the surface. The preliminary plan and budget were approved in 1999, 'under time pressures, with too little geological and resource investigation completed and with only a short-term view of the future mine plan. These combined decisions compromised the mine for the next 12 years, resulting in challenges for safe and economic mining that have had to be overcome with difficulty ever since and are still felt today.'[9]

13. Spring Creek did not achieve its initial production targets. Costs escalated. By 2001 the mine was placed on care and maintenance. This means that production is halted but the site is managed so that it remains safe and stable, ready to be reopened if circumstances alter.

14. In 2002 Solid Energy became the sole owner. It reopened the mine and carried out further drilling to improve the resource information. As Dr Donald Elder, chief executive officer of Solid Energy, said, '[i]n mining, where certainty of geological information is the key to good mine planning and operations, the unexpected only ever has negative consequences. So it was with Spring Creek. For the next six years the mine struggled and repeatedly failed to meet its production and financial plans.'[10]

Observations

15. This leads to three observations. First, the economics, the timeframe from design to production, and the technical and legal requirements of underground coal mining in New Zealand cannot be directly determined by overseas experience.

16. Second, New Zealand operators may require knowledge and expertise, including in hydro mining, that overseas operators may not have. Everyone involved – miners, supervisors, management, the board, training institutions, advisers and regulators – must possess this specific and specialised background. Similarly, particular mining equipment may be required. Some overseas equipment may not be suitable.

17. Third, the principles underlying safe mining in New Zealand are the same as those overseas. Mine operators need to control the risks of the unforgiving underground environment by comprehensive measures including hazard identification and safety management, strata control, ventilation and gas management systems and equipment. Suitable equipment, trained workers and expert advisers are essential.

New Zealand coal mining industry

18. New Zealand has produced coal since the late 1840s. It was a major energy source, but from the 1950s to the 1970s hydro power, cheap imported oil and then gas from the Taranaki region became significant energy sources. There was a general decline in demand for coal and many small and inefficient mines began to close.[11] The number of coal mines reduced from 216 in 1952 to 78 in 1973. Currently there are approximately 22 coal mines, five of which are underground. Production has been suspended at two underground mines, including Pike River, and two open cast mines.[12] The industry is dominated by Solid Energy and otherwise comprises very small operators.

19. Correspondingly, the number of people employed in the industry decreased from approximately 5000 in the 1950s to 1500 by the 1970s. In 2010 coal mining employed between 1030 and 1700 people,[13] of a total New Zealand workforce of approximately 2 million.

20. Over the last few decades annual coal production has grown, to about 5 million tonnes in 2011 (see Figure 19.1). That trend is predicted to continue.

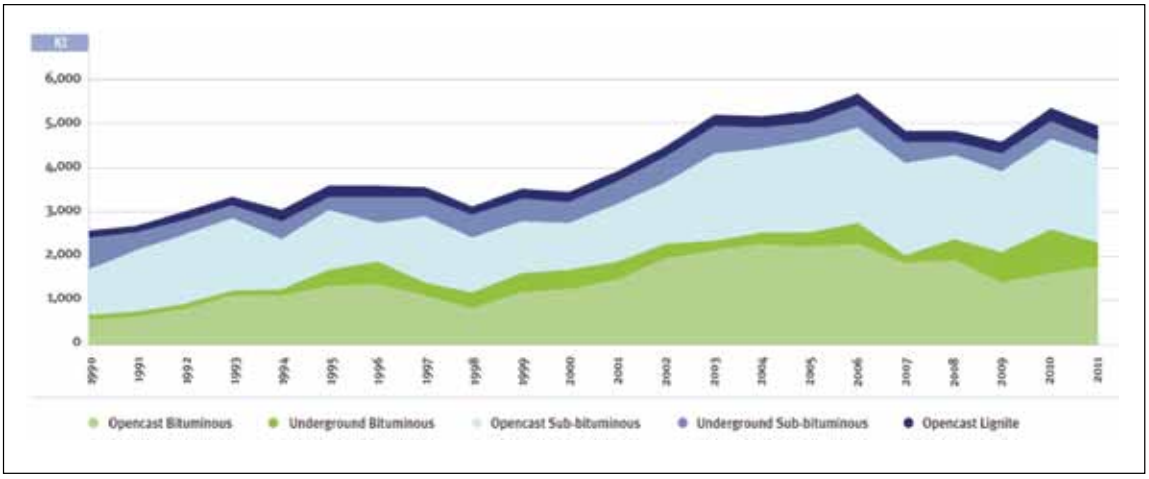

Figure 19.1: New Zealand coal production[14]

21. There have been significant changes in the way in which coal is mined in New Zealand. Up to the 1940s coal was mined almost exclusively using underground methods. Since the Second World War open cast mining has been in the ascendancy (see Figure 19.2). By the 2000s only about 20% of annual coal production came from underground mines.

Figure 19.2: Open versus underground mining[15]

22. Underground coal mining still has a place in New Zealand. It is practised by several operators, including Solid Energy at its Huntly East mine in the North Island and at Spring Creek.

Australian coal mining industry

23. New Zealand's largest coal mining neighbour is Australia. It is one of the largest producers in the world and has the fourth largest coal reserves. In 2010–11, Australia produced 347.6 million tonnes of saleable coal, approximately 22% (76.1 million tonnes) of which was produced by underground methods and approximately 72% (271.5 million tonnes) by open cast methods. New Zealand's total coal production represents less than 2% of Australian coal production.

24. Approximately 97% of Australian saleable coal is produced in Queensland and New South Wales.[16] In the 2010–11 year Queensland produced 179.8 million tonnes from 59 mines, 15 of which were underground. The industry directly employed 32,453 people. New South Wales produced 156.9 million tonnes from 61 mines, 30 of which were underground. The industry directly employed 21,126 people. Western Australia, South Australia and Tasmania produced approximately 11 million tonnes in seven mines employing about 1000 people. The Northern Territory does not produce coal.[17]

25. The industry includes large multinationals, some of which own several mines. Many mines are large scale, using high production methods such as longwall mining. Hydro mining is not used.

26. Australian coal industry workers tend to be paid more than their New Zealand counterparts. That attracts New Zealand workers, contributing to a shortage of experienced coal mine workers on this side of the Tasman. As a result New Zealand operators may be required to train workers or source them from overseas.

Conclusions

27. Coal mining in New Zealand has some unique characteristics, which must be accommodated at all stages of mine design, development and operation. But the need for careful health and safety management, and the systems required to achieve this, are the same as overseas.

28. Despite the differences in scale, New Zealand can benefit from close co-operation with Australia, especially the main mining states of Queensland and New South Wales. That theme is reflected in this report.

ENDNOTES

1 Ministry of Economic Development, New Zealand Petroleum and Minerals, Coal Resources, 14 March 2012, http://www.nzpam.govt.nz/cms/coal/coal-resources

2 See the Resource Management Act 1991.

3 Donald Elder, transcript, p. 6.

4 Ministry of Economic Development, Phase Four, 16 March 2012, MED4000010001/29, para. 101.

5 Ibid. This was to come from a combination of production and roadway development.

6 Pike River Coal Ltd, Activities Report: Quarter ended 30 September 2010*, DAO.007.11332/2.

7 Donald Elder, witness statement, 8 June 2011, SOL306956_1/16, para. 32.

8 Huntly West mine exploded in 1992, producing little further coal before being closed. Mount Davy suffered rock, coal and gas outbursts and fatalities before closing three years after first development and the Pike River mine exploded before any significant production. Ministry of Economic Development, Phase Four Paper, 16 March 2012, MED4000010001/26, para. 91.

9 Donald Elder, witness statement, 8 June 2011, SOL306956_1/19, para. 44.

10 Ibid., SOL306956_1/21, para. 52.

11 Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/10–11, paras 18–19.

12 Ministry of Economic Development, New Zealand Petroleum and Minerals, Operating Coal Mines, 16 March 2012, http://www.nzpam.govt.nz/cms/coal/coal-resources/operating-coal-mines

13 It has not been possible to ascertain the exact number of people employed in the industry, in part due to conflicting data and, it is assumed, different definitions of the categories of people that should be included, e.g. whether contractors should be included.

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15 Alan Sherwood and Jock Phillips. 'Coal and Coal Mining', Te Ara: The Encyclopaedia of New Zealand, 24 September 2011, http://www.TeAra.govt.nz/en/coal-and-coal-mining/6/5

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CHAPTER 20

A failure to learn

Introduction

1. This chapter discusses previous tragedies and the failure to learn from them.

New Zealand coal mine tragedies

2. New Zealand's main New Zealand main coal mine tragedies, not including the Pike River mine tragedy, are set out below.[1]

DATE	WHAT HAPPENED	DEATHS	INQUIRY	MAIN PROBLEMS
21 February 1879	Explosion of methane at Kaitangata coal mine, Otago	34	Coronial inquest	Warnings about dangerous practices were not heeded. Insufficient gas record keeping and ventilation. Use of naked light (open lamp) despite previous detection of methane.
26 March 1896	Explosion of methane and coal dust at Brunner coal mine, West Coast	65	Royal commission of inquiry	The explosion was the result of ignition of coal dust from 'blown out shot' fired contrary to rules of the mine, in a part of the mine where no one should have been working. Miners believed there had been an accumulation of methane and inadequate ventilation, which was not accepted by the commission.
28 January 1900	Substantial fire at Westport-Cardiff coal mine, Mokihinui. (The mine had been closed in September 1899 due to a failure to produce marketable coal and lack of funding.)	0	Royal commission of inquiry	Presence of conditions supportive of spontaneous combustion. The mine was not adequately monitored. (During operation of the mine, there was inadequate ventilation and insufficient enforcement of statutory requirements.)

DATE	WHAT HAPPENED	DEATHS	INQUIRY	MAIN PROBLEMS
21 June 1907	Fire burning at Nightcaps colliery, Southland	3	Royal commission of inquiry	The management of the mine was poor, there was inadequate ventilation during the shift and inadequate daily examinations. Naked lights were used instead of safety lamps and workers were not withdrawn when conditions were dangerous. There was also lax enforcement by the inspector.
12 September 1914	Explosion of methane and coal dust at Ralph's colliery, Huntly	43	Royal commission of inquiry	Inadequate examinations for gas in old workings and inadequate ventilation. Naked lights were used instead of safety lamps. Failure to report injury caused by a previous explosion. Shot-firing in dusty mine. The inspector failed to ensure strict and immediate compliance with recommendations, failed to require use of safety lamps and did not properly examine old workings.
3 December 1926	Explosion of coal dust at Dobson colliery, Dobson	9	Royal commission of inquiry	Laxity in issue of oil safety lamps. Lamps were left unattended in the mine. There was inadequate stone dusting despite the requirement by the inspector to stone dust all roads.
15 November 1929	Explosion of methane and coal dust at Linton coal mine, Ohai	3	Royal commission of inquiry	Inadequate ventilation, stone dusting, supervision of shot-firing (which was non-compliant) and detection of contraband (matches taken underground).
24 September 1939	Fire at Glen Afton No. 1 coal mine, Huntly	11	Royal commission of inquiry	Fire initially caused by cigarette or naked light, not completely extinguished. Inadequate reporting at mine of fire. Ventilation fan not on while men in mine.
6 November 1940	Explosion of methane at Kayes coal mine, Ten Mile Creek, Greymouth	5	Commission of inquiry	Methane ignited by worker lighting cigarette.

DATE	WHAT HAPPENED	DEATHS	INQUIRY	MAIN PROBLEMS
31 August 1955	Inrush of mud and water at Renown colliery, Huntly	1	Commission of inquiry	The majority considered the tragedy was unforeseeable in light of existing knowledge and previous experience. Management was efficient and up to accepted standard. The minority considered the accident was foreseeable. Mine manager failed to inspect the surface following a large roof fall beneath a watercourse. The deputy and underviewer were not told of the watercourse above the pillaring operation.
17 January 1958	Explosion of methane at Westhaven coal mine, Collingwood	4	Commission of inquiry	Inadequate ventilation, failure to search for contraband (matches and lighter taken underground) and failure to carry out examinations. Mine manager made untrue entries of searches and examinations and presence of fifth man working the mine concealed.
19 January 1967	Explosion of methane and coal dust at Strongman coal mine, West Coast	19	Commission of inquiry	Insufficient pre-shift examinations, insufficient gas testing, failure to report occurrences of gas, non-compliant shot-firing and inadequate ventilation. The district and chief inspectors had failed to take action despite being aware of dangerous practices, including the non-compliant shot-firing and ventilation problems.
18 September 1985	Fire caused by spontaneous combustion at New Imperial (Boatmans No. 4) coal mine, Reefton	4	Court of inquiry[2]	Pillaring conducted too close to return airway, failure to detect signs of spontaneous combustion due to lack of examinations, mine plans not submitted to the inspector and poor ventilation management practices – main fan not running and ventilation door connecting the intake and return was kept open. Inspector not able to make frequent inspections of mines in his area due to workload.

DATE	WHAT HAPPENED	DEATHS	INQUIRY	MAIN PROBLEMS
23 September 1992	Explosion of methane caused by spontaneous combustion at Huntly West coal mine, Waikato	0	Investigation by mines inspector	Insufficient reporting to mines inspector and mines rescue service, failure to adequately extinguish fire and failure to immediately withdraw workers when smoke encountered.
4 June 1998	Outburst of coal, mudstone and methane at Mount Davy coal mine, West Coast	2	Coronial inquest	Unforeseeable and unavoidable event in light of industry knowledge at the time.
8 March 2006	Inrush of water at Black Reef (Tiller) coal mine, Greymouth	1	Coronial inquest	No effective health and safety system in place, no risk assessment undertaken, inadequate information, inaccurate mine plans, the knowledge and experience of the underground manager was insufficient and no training plan was established for him, and failure to plan for possibility of inundation.
8 September 2006	Unplanned goaf fall at Roa coal mine, Blackball	1	Coronial inquest	Manager's support rules not followed, no strata management plan and no review of pillaring operations.

Figure 20.1: New Zealand coal mine tragedies

3. Recurring themes include:

- an insufficient regulatory framework;
- the health and safety regulator not properly conducting inspections nor ensuring legislative compliance;
- operators not identifying and managing hazards, including inadequate ventilation and gas management systems;
- operators not providing miners with proper training, equipment and oversight; and
- miners not following safe practices.

Overseas tragedies

4. Similar themes are apparent in overseas coal mining tragedies, some of which are outlined below.

Westray

5. On 9 May 1992 a methane and coal dust explosion in the Westray mine, Pictou County, Nova Scotia, Canada killed all 26 miners underground. The mine had been open for nine months. Sparks from the cutting parts of a continuous miner provided the source of the ignition. There was inadequate ventilation, treatment of coal dust and training. Westray was a 'stark example of an operation where production demands resulted in the violation of the basic and fundamental tenets of safe mining practice'.[3] Management failed to instil a safety mentality in its workforce. It ignored or encouraged a series of hazardous or illegal practices. The body responsible for the mine planning

approval process did not perform its duties properly. The body most responsible for regulating the safety of the mine failed to enforce the law.

Moura No. 2

6. On 7 August 1994 a methane explosion at Moura No. 2 mine, Queensland, Australia, killed 11 miners. Ten survived. A second explosion two days later led to the mine being sealed. The bodies of the miners have never been recovered. The investigation found that the ignition was caused by spontaneous combustion in a sealed panel.[4] Factors contributing to the first explosion included failing to prevent heating in the panel, failing to capture and evaluate signs of heating over an extended period, failing to identify that sealing the panel could result in accumulation of methane within it and failing to withdraw people from the mine when there was potential for an explosion. Management did not ensure that all miners underground were aware the panel had been sealed. It did not inform miners that they could choose not to go underground.

7. In 1996 the Moura No. 2 investigation report was reviewed by a New Zealand task force led by the Ministry of Commerce, which was then responsible for health and safety in underground coal mines.[5] It made recommendations directed at managing spontaneous combustion, training, the need for underground coal mines to have ventilation officers, gas monitoring, sealing and emergency facilities.

Sago

8. On 2 January 2006 an explosion at the Sago coal mine in West Virginia, United States, killed 12 miners. Sixteen miners survived. The Mine Safety and Health Administration (MSHA) report dated 9 May 2007 identified the likely immediate cause of the explosion as a lightning strike, which transferred energy to an abandoned pump cable within a sealed area of the mine, igniting accumulated methane. The explosion destroyed the seals and filled parts of the mine with carbon monoxide. Failings included not building the seals in accordance with the approved plan and not immediately notifying the MSHA and mines rescue of the accident. Even so, rescue teams would not have been allowed underground immediately because of the high levels of toxic gases and the risk of a further explosion. An internal review into the MSHA's actions identified weaknesses in its performance, including a failure to follow established inspection procedures, poor and uncorrected performance of the inspectors, weaknesses in enforcement actions, a failure to recognise a deficiency in the approved emergency plan and outdated and unclear procedural instructions.

Upper Big Branch

9. On 5 April 2010 a coal dust explosion that resulted from a methane ignition at the Upper Big Branch coal mine, West Virginia, United States, killed 29 workers and injured two others. The MSHA found that the operator 'promoted and enforced a workplace culture that valued production over safety, including practices calculated to allow it to conduct mining operations in violation of the law'.[6] In the four years before the explosion, miners did not make health and safety complaints to the MSHA because they were intimidated by management and told that raising safety concerns would jeopardise their employment. Because health and safety inspectors had given prior notice of visits, violations could be hidden. The operator had two sets of health and safety hazard records. One was required by law and available to miners and inspectors. The other, not available to miners or inspectors, contained internal production and maintenance reports. It included hazards not noted in the first set.

10. Basic safety measures could have prevented the explosion. The longwall shearer was not maintained safely and was, therefore, an ignition source. The methane monitoring, ventilation and stone dusting were inadequate and ventilation and roof control plans were not followed. Mine examinations were not properly performed and obvious hazards were not identified. Workers were not adequately trained and refreshed about their tasks, health and safety, and hazard recognition. The MSHA inspectors failed to follow established policies and procedures, compromising enforcement efforts. In the 18 months before the explosion, the Upper Big Branch mine received 684 citations for violations, yet the MSHA failed to use other enforcement mechanisms. The inspectors did not identify many of the mine's failings. There was inadequate review of the operator's record books.

11. International coal mining tragedies have received significant media coverage, including the Upper Big Branch mine tragedy, which occurred only six months before the Pike River tragedy. Domestic and international mining tragedies provided a strong warning about the need for strict management of underground coal mine hazards and effective regulation. Non-coal mining tragedies also provided relevant lessons.

Non-coal mining tragedies

Erebus Flight 901

12. On 28 November 1979 Air New Zealand flight TE901 crashed into Mount Erebus in Antarctica, resulting in the death of all on board. A royal commission of inquiry analysed the organisational factors that contributed to the accident by allowing human error or failing to negate it. It led to the creation of a specialist New Zealand Civil Aviation Authority (CAA). The CAA establishes standards, monitors adherence to standards, and investigates accidents and incidents. A scientific approach is used. It 'collects data on error and violation producing conditions, supervisory and organisational issues and reports on these formally on a quarterly basis'.[7] That data underlies safety initiatives, including education campaigns, monitoring and compliance action. This scientific approach has still not been fully reflected in the Department of Labour's regulatory approach.

BP Texas City oil refinery

13. On 23 March 2005 an explosion at the BP Texas City oil refinery, United States, killed 15 people and injured more than 170 others. The BP US Refineries Independent Safety Review Panel (the Baker panel, as it was known) identified it as a process safety accident. BP had neither effective safety leadership nor adequate safety systems to address the risk of catastrophe. Process safety was not established as a core value across its US refineries nor effectively incorporated into management decision-making. The Texas City refinery had 'not established a positive, trusting, and open environment with effective lines of communication between management and the workforce',[8] a required part of a good process safety culture. The process safety education and training at BP was inadequate. The Baker panel found 'significant deficiencies existed in BP's site and corporate systems for measuring process safety performance, investigating incidents and near misses, auditing system performance, addressing previously identified process safety-related action items, and ensuring sufficient management and board oversight'.[9] Many of the deficiencies were identifiable in lessons from previous process safety incidents. The issue of process safety had been highlighted as long ago as the Piper Alpha oil rig tragedy in 1998, when 167 people lost their lives.

Cave Creek

14. On 3 July 1995 a viewing platform collapsed at Cave Creek, on New Zealand's West Coast. Fourteen people died. There had been significant failings by the relevant regulatory agency, the Department of Conservation. The commission of inquiry recommended that the government institute a combined regional disaster and trauma plan for the West Coast, to provide for unambiguous overall leadership of emergency responses, the prior resolution of all likely conflicts and the co-ordination of all services involved. Following Cave Creek, the co-ordinated incident management system (CIMS), described in Chapter 16, 'Search, rescue and recovery' was developed. The 2005 West Coast regional plan provided for the control of mine emergencies (by the police). But underground coal mine emergencies were not included in CIMS training and the 2010 West Coast regional plan did not state who would control them.

15. The Cave Creek commission also recommended that a family liaison officer be appointed immediately after a tragedy to make all appropriate information available to those with an interest greater than that of the general public. The aim was to allay as much as possible the fear and anxiety of the victims' friends and family.

Conclusions

16. As its inquiry proceeded the commission noted the extent to which the themes identified by inquiries into previous tragedies were repeated at Pike River. History demonstrates that lessons learnt from past tragedies do not automatically translate into better health and safety practice for the future. Institutional memory dims over time. This confirms that good health and safety performance is only achievable with the effective, continued involvement of the three key participants: employers, employees and the government regulator.

ENDNOTES

[1] For a history of coal mine tragedies see W.P. Brazil, A Summary of the Evolution of Coal Mining Safety Legislation Together with a Traditional Viewpoint, May 1995, DOL0010010001. There are other tragedies not listed that resulted in coronial inquiries. See CAC0177.

[2] Under s 181 of the Coal Mines Act 1979, the minister of energy could direct a formal investigation be held into accidents resulting in death or injury where a mines inspector believed the accident was caused by the owner, mine manager, engine driver or any other person employed at the coal mine. The investigation would be held before a court of inquiry, consisting of a magistrate appointed by the minister.

[3] K. Peter Richard, 'Prelude to the Tragedy: History, Development, and Operation', in The Westray Story: A Predictable Path to Disaster: Report of the Westray Mine Public Inquiry, November 1997, http://www.gov.ns.ca/lae/pubs/westray/summary.asp#prelude

[4] Queensland Warden's Court, Wardens Inquiry: Report on an Accident at Moura No 2 Underground Mine on Sunday, 7 August 1994, 1996, CAC0152.

[5] Ministry of Commerce, Mining Inspection Group, Review of the Recommendations from the Wardens Inquiry into the Accident at Moura No 2 Mine, Queensland on Sunday August 7 1994, 1996, EXH0003.

[6] United States Department of Labor, Mine Safety and Health Administration, Coal Mine Safety and Health, Report of Investigation: Fatal Underground Mine Explosion April 5, 2010 – Upper Big Branch Mine-South, Performance Coal Company, 12 November 2011, p. 2, http://www.msha.gov/Fatals/2010/UBB/FTL10c0331noappx.pdf

[7] Kathleen Callaghan, witness statement, 31 October 2011, FAM00042/19, para. 69.

[8] BP U.S. Refineries Independent Safety Review Panel, The Report of the BP U.S. Refineries Independent Safety Review Panel, 2007, p. xii, http://www.bp.com/liveassets/bp_internet/globalbp/globalbp_uk_english/SP/STAGING/local_assets/assets/pdfs/Baker_panel_report.pdf

[9] Ibid., p. xiv.

The regulators

+ Collaboration between government agencies
+ The decline of the mining inspectorate
+ Management of the mining inspectorate
+ Effectiveness of the health and safety regulator
+ A new regulator

CHAPTER 21

Collaboration between government agencies

Introduction

1. The mid-1980s and early 1990s were a time of significant change in New Zealand. The economy was deregulated and major reforms were introduced in the state sector. It is within this context that a new legislative framework was established for health and safety. The Crown Minerals Act 1991, the Resource Management Act 1991 and the Health and Safety in Employment Act 1992 all came into force. Industry-specific legislation applying to mining was repealed.
2. This chapter provides an overview of the Coal Mines Act 1979 and of the changes that led to separate regimes for permitting, resource management and health and safety in coal mining. It then covers some of the consequences of the separation of functions. Of most concern is the lack of consideration given to health and safety during the various approval processes. This is a significant gap in regulatory oversight.

Law reform

Coal Mines Act 1979

3. Before the changes the Coal Mines Act 1979 was the main statute governing mining activities. It provided a prescriptive set of rules and regulations specific to the coal mining industry and was administered by one government agency. It covered coal prospecting, mine licensing and the regulation of coal mines, including coal mine management, certificates of competence, safety, employment, and accident notification and investigation. This act and other legislation – the Coal Mines (Licensing) Regulations 1980, the Coal Mines (Mine Management and Safety) Regulations 1980 and the Coal Mines (Electrical) Regulations 1980 – treated coal mining as a specialist area requiring highly prescriptive standards. The act was administered by the Mines Division of the Ministry of Energy.
4. The minister of energy granted coal mining licences over defined areas. Applications for licences were made to the Mines Division and their assessment included review by mines inspectors. Notice that a licence application had been lodged was served on landowners and occupiers and publicly notified. Local authorities had to report on environmental effects. Copies of applications were forwarded to the commissioner of Crown lands and to the relevant catchment boards or the Soil Conservation and Rivers Control Council for review and comment.
5. After consultation, the minister approved a work programme and set the conditions of the licence. These covered many matters, including resource extraction, environmental effects and mine safety.[1] The chief inspector of mines had input into the application and licence conditions. The mines inspectors were involved from the outset.
6. It was a standard condition of all mining licences that mining operations be carried out in accordance with an approved work programme. This covered the proposed development of the mine, extraction of coal and general plans for future development. As well as these site specific conditions, licences contained general conditions such as rents and royalties and supplying information. Operators were also required to use the licence land 'only for coal mining purposes in accordance with the Act and any regulations issued under the Act'.[2] That included compliance with health and safety provisions.
7. Coal mine owners had a statutory duty to make financial provisions and ensure the coal mine was managed, worked, planned and laid out in accordance with the Coal Mines Act. This included requirements on safety matters such as shafts and outlets, removal of pillars and control of dust. The act allowed for workmen's inspectors. The regulations had detailed provisions relating to certificates of competence and qualifications, conduct of the people

employed and the duties of mine managers. They included standards for mine systems and equipment such as ventilation and use of explosives.

Changing times – the 1990s

8. Both the Coal Mines Act 1979 and the Mining Act 1971, which applied to gold and silver mining, emphasised the use of land for mineral development over other uses. During the 1980s this became 'increasingly unacceptable' as the legislation governing mining was 'seen to unreasonably override the rights of land owners'.[3]

9. In 1986 the Ministry of Energy released a discussion document on mining legislation. One of its purposes was to find a better balance between the interests of the mining industry and the concerns of other parties, including local authorities and landowners. Many other parts of the mining legislation were in need of change because of matters concerning mineral ownership, mining titles, environmental protection, public participation, complex licensing procedures, and the roles and responsibilities of the various authorities.[4]

10. A major review of natural resource management, including mining, started in the late 1980s, and led eventually to the separation of the allocation of mining permits from management of the environmental effects of mining. This was reflected in the Crown Minerals Act 1991 and the Resource Management Act 1991.

11. The environmental reforms, which also resulted in the Environment Act 1986 and the Conservation Act 1987, and the establishment of the Ministry for the Environment and the Department of Conservation (DOC), changed the balance between environmental protection and economic production and the shape of the government agencies managing natural resources.

12. In 1992 the Health and Safety in Employment Act (HSE Act) was passed. It imposed general duties on all employers, including mine operators, to take all practicable steps to ensure health and safety. The prescriptive Coal Mines Act was repealed. Mine operators were to determine how to manage health and safety using appropriate hazard management practices. The drive to deregulate the economy and improve business competitiveness was evident in the new act. Initially the legislation lacked some key elements, such as strong employee participation provisions, and the delays in developing new regulations can be traced in part to a belief that the HSE Act was operating effectively without them.[5]

13. Like some other hazardous industries, including construction, geothermal energy, petroleum and quarries and tunnels, mining was no longer subject to a separate legislative scheme. Regulation regarding permitting, health and safety and environmental issues was allocated to various national and local government organisations, which were expected to act independently and impartially. It was expected, too, that the potential for conflicts of interest would be minimised, for example between the Crown's commercial interest in mining and its role in preserving the environment or making decisions about health and safety. This did not mean agencies should not work cooperatively.

The regulatory framework

Mining permits and land access

14. The Crown Minerals Act 1991 deals with the way in which rights to extract minerals and petroleum resources are allocated by the government. It sets out the rights and responsibilities of resource users and the functions and powers of the minister of energy. Exploration and mining permits are issued in accordance with government policies set out in the minerals programmes, which were prepared by the Ministry of Economic Development on behalf of the minister and issued by the governor-general.

15. New Zealand Petroleum and Minerals (formerly Crown Minerals) is the operating division of the ministry responsible for granting permits, monitoring compliance with permit work programmes and collecting royalties. It also promotes new investment in the minerals estate.

16. New Zealand Petroleum and Minerals aims to allocate resources efficiently and to generate a fair financial return for the Crown. It does not consider health and safety matters.

17. The Crown Minerals Act 1991 and Conservation Act 1987 together regulate mining on the conservation estate.

18. If mining is to occur on conservation land, the minister of conservation authorises access, taking into account the need to preserve and protect the area. Mining activities can be approved, irrespective of whether they are contrary to conservation purposes, provided there are safeguards against the potential adverse environmental effects of mining.[6]

19. When assessing applications for land access, DOC looks principally at the above ground effects of the operation. Ongoing monitoring of operations has a similar purpose. DOC does not consider whether a mining proposal involves workplace health and safety risks.

Resource management

20. The purpose of the Resource Management Act 1991 is to promote the sustainable management of natural and physical resources.

21. Local councils are responsible for its implementation. They grant land use and resource consents required for mining operations to proceed. The focus is on managing the actual and potential effects of an activity on the environment. Health and safety can be considered, but in practice the emphasis is on public, not workplace, health and safety.[7]

Health and safety

22. The HSE Act promotes prevention of harm to all employees. DOL helps employers to meet their obligations, determines whether they are complying, or likely to comply, with the act and takes enforcement action if necessary.

23. No approvals are required from DOL before mining operations start. DOL's oversight begins as soon as there is a workplace and may therefore include the exploration phase. However, despite the preventative approach of modern health and safety law, DOL has no involvement in the consenting stages of a mining operation. It does not contribute to decisions on granting mining permits, access arrangements or resource and land use consents. It is not required to approve mining activities before operations start.

The need for collaboration

24. The commission has not found anything to suggest fundamental flaws in the separation of permitting, mining safety and environmental law. It is common practice in other jurisdictions, such as New South Wales and Queensland, and in the main Canadian coal mining state of Alberta. New Zealand is not out of step.

25. The problem is not so much with the law, though there are weaknesses that are addressed later in this report, but with the way the laws were administered after the reforms. The benefits of the unified approach of the Coal Mines Act and mining inspectorate were lost.

26. The local councils – Buller, Grey and West Coast – worked together on resource consents. They appointed a lead agency and relied on reports, such as the annual planning document required by DOC, for monitoring purposes.

27. But sharp demarcation lines developed between the central agencies. The Ministry of Economic Development and DOL in particular interpreted their responsibilities narrowly, and there appears to have been little dialogue or sharing of relevant information during Pike's development.[8] Similarly, while DOC worked diligently to fulfil its statutory obligations it did not engage with either the ministry or DOL. Information collected about mining operations during approval and monitoring processes was therefore not shared.

Conclusions

28. Collaboration is required to make the system work and ensure that high-risk operations are adequately monitored. There should be closer contact between agencies, or business units within agencies, during the approval, planning and design of new mines and the production and decommissioning stages.

29. The increased collaboration required between regulators before permits are issued is in part the subject of government proposals to strengthen the Crown Minerals regime. Those proposals are dealt with in Chapter 27, 'Strengthening the Crown Minerals regime'.

ENDNOTES

[1] Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/23, para 74.
[2] Ibid., MED0000010001/23, para. 73.
[3] Ibid., MED0000010001/85, para. 294.
[4] Ibid., MED0000010001/86, paras 295–96.
[5] Department of Labour, HSE Regulations: Process, 30 May 1994, DOL0010010008/1.
[6] Crown Minerals Act 1991, s 61(2) .
[7] Resource Management Act 1991, s 5; Ministry for the Environment, Phase Four Paper, 16 March 2012, MFE4000010001/8, para. 25.
[8] Although the Conservation Act 1987, Resource Management Act 1991, Crown Minerals Act 1991 and the Health and Safety in Employment Act 1992 have different purposes there are circumstances where the same matter or information is relevant under more than one act, e.g. mining methods or access to mine plans.

CHAPTER 22

The decline of the mining inspectorate

Introduction

1. This chapter explores the history and functioning of the mining inspectorate during three periods: under the Coal Mines Act 1979, when there was a separate inspectorate for coal mines; in a transition period from 1992 to 1998, after the enactment of the Health and Safety in Employment Act 1992 (HSE Act); and from 1998, when the coal mine inspectors became part of the Department of Labour (DOL) and were known as extractives inspectors.[1]

The inspectorate under the Coal Mines Act 1979

2. Under the Coal Mines Act 1979 there was a specialist coal mines inspectorate, as it was then known, based in the Ministry of Energy, latterly the Ministry of Commerce. It was involved in major aspects of coal mining and the coal mining industry, including policy.[2]

Inspectors

3. The act provided for a chief inspector, district, electrical and mechanical inspectors of coal mines.[3] Chief inspectors could support and review the actions of the inspectors. They held first class coal mine manager's certificates and had significant coal mining expertise, usually as manager of a large and challenging New Zealand mine such as Strongman, which had problems with gas and spontaneous combustion.[4] The chief inspector attended conferences of the Australian chief inspectors.

Inspections

4. District inspectors had coal mining expertise and inspected mines within a particular geographical area. Inspections occurred with and without notice and following notification of incidents and accidents. Small mines were inspected monthly and large mines inspected weekly.[5] That reflected the mine's rate of progress and the time required for a comprehensive inspection.

5. Mines that posed a high level of hazard could receive greater attention, which resulted from discussion within the inspectorate rather than from a formal hazard assessment system.[6] Frequent inspection allowed the inspectors to become familiar with mines and to respond to problems swiftly and in an informed manner.

Relations with workers

6. Inspectors had close relations with workers and workmen inspectors, who inspected mines on behalf of the workers. Those close relations were supported, and in some cases required, by the Coal Mines Act 1979. For example, inspectors had to inspect a mine as soon as practicable after notice of a serious accident and notify workmen inspectors of the proposed inspections. Workmen inspectors could accompany the inspector and make their own report to the mine manager.[7]

Scrutiny of mine plans

7. Inspectors scrutinised mine plans at two stages. First, not less than three months before the beginning of each calendar year mine managers had to submit plans showing the proposed development and extraction for that year and the next nine years. Significant detail was required for the upcoming year – the haulage roads, airways, stoppings, boreholes and pump sumps – and increasingly less detail for the later years. Work could not be carried out until the plans were approved by an inspector.[8]

8. Second, mines producing up to 12,000 tonnes of coal per annum had to provide plans every 12 months, and mines producing more than 12,000 tonnes every six months. If an inspector believed a plan to be incorrect, a survey could be required, paid for by the mine owner.[9]

9. The plans enabled inspectors to understand what was going on within a mine. They would be checked against legislative requirements and for indications of sound mining practice, a concept that incorporated health and safety. Any issues would be raised with the licence holder.[10]

Licensing

10. The involvement of the inspectorate started at an early stage. There were two types of licence: coal prospecting and coal mining. Each included conditions, into which the chief inspector could have input. Coal mining licences commonly included resource extraction, environmental and safety conditions.[11]

Competence of workers

11. The inspectorate was involved with competence assessment. A board of examiners ascertained the suitability of applicants for mining certificates of competence. Its membership was specialised and included the chief inspector and two holders of a first class coal mine manager's certificate with at least 10 years' coal mining experience and active involvement in the industry.[12]

High-voltage electrical equipment

12. The electrical inspector within the inspectorate assessed the use of standard voltage electrical equipment. Separate from the inspectorate was an Energy Safety Group, based in the Ministry of Energy, which authorised the use of and surveyed the high-voltage electrical lines often used by mines to supply electricity to underground equipment.[13] The group's results went to the inspectorate.[14]

Summary

13. The inspectorate was influential and had comprehensive involvement in major aspects of coal mining. It could ensure that health and safety was taken into account from an early stage. But this period should not be viewed through rose-tinted glasses. There were still accidents during the 13 years of the Coal Mines Act 1979. One, the fire at the Boatmans No. 4 mine, Reefton, on 18 September 1985, resulted in four deaths.[15]

The transition period from the early 1990s to 1998

The late 1980s/early 1990s

14. In 1989 the Ministry of Energy was abolished.[16] The coal mining inspectorate, by then known as the Mining Inspection Group (MIG), was transferred to the Energy and Resources Division of the Ministry of Commerce. Following the Resource Management Act 1991, the MIG's resource management function was transferred to regional authorities. Consequently, its staffing was reduced and its work became more concerned with health and safety.

15. By 1992 the MIG's annual budget was approximately $3 million, funded almost entirely by levies collected from the extractive industries.[17] There was some industry resistance to the cost of levies, which led to an independent review in 1991, but there was 'agreement on the efficacy of the group and the quality of its inspection and advisory services'.[18]

Transfer of the Mining Inspection Group deferred

16. In 1993 consideration was given to transferring the MIG to DOL, in order to rationalise staffing and resources, and to improve the effectiveness of the delivery of health and safety services 'through the availability of additional disciplines and support staff in the Department of Labour'.[19]

17. As a 1994 briefing paper of the Ministry of Commerce and DOL noted, both the MIG and the mines it serviced resisted the transfer, claiming it would have a bad effect on occupational safety and health in the industry.[20] The briefing paper also raised legislative and administrative difficulties. These included the fact that, because of the 'different institutional histories of the inspectorates', the extractives industries considered the MIG to be 'more "professional"'. This was reflected in generally higher qualifications and more experience, 'leading to…generally better terms and conditions of employment'. DOL also believed that attempting to integrate such staff into Occupational Health and Safety would be likely to 'create a number of management issues' including 'Branch Managers having responsibilities for staff and activities they do not fully understand'.[21]

18. The transfer did not proceed at that stage. The MIG remained with the Ministry of Commerce to provide occupational health and safety services for the mining, quarrying, petroleum and geothermal industries. DOL retained policy responsibility for those industries. The arrangements were agreed at ministerial level.[22]

19. In July 1998 MIG was transferred to DOL, with Cabinet approval.[23] There were two exceptions. First, the Energy Safety Group, by then in the Ministry of Commerce, continued to provide electrical safety services to the sector. Second, the permitting function remained with the Ministry of Commerce.

Staffing

20. From 1993 to 1998 the MIG consisted of about 20 to 25 people.[24] In 1995, for example, there were three coal inspectors, three mining engineers, five quarry inspectors, one electrical/mechanical engineer, two petroleum/geothermal inspectors, two regional managers, one group manager and eight support staff.[25]

Inspection frequency

21. The inspection frequency reduced. In 1993–94 all underground mines were to be inspected every two months. In 1995 that reduced to every three months because an 'increased emphasis on education and training' made the greater frequency unrealistic.[26] A 1996 mining inspectorate report 'indicates that a continued shortage in staff numbers and an increase in educational activities resulted in a reduction in field inspection work'.[27] The declining number of minerals and coal inspections over the 1991–97 period is shown in Figure 22.1.

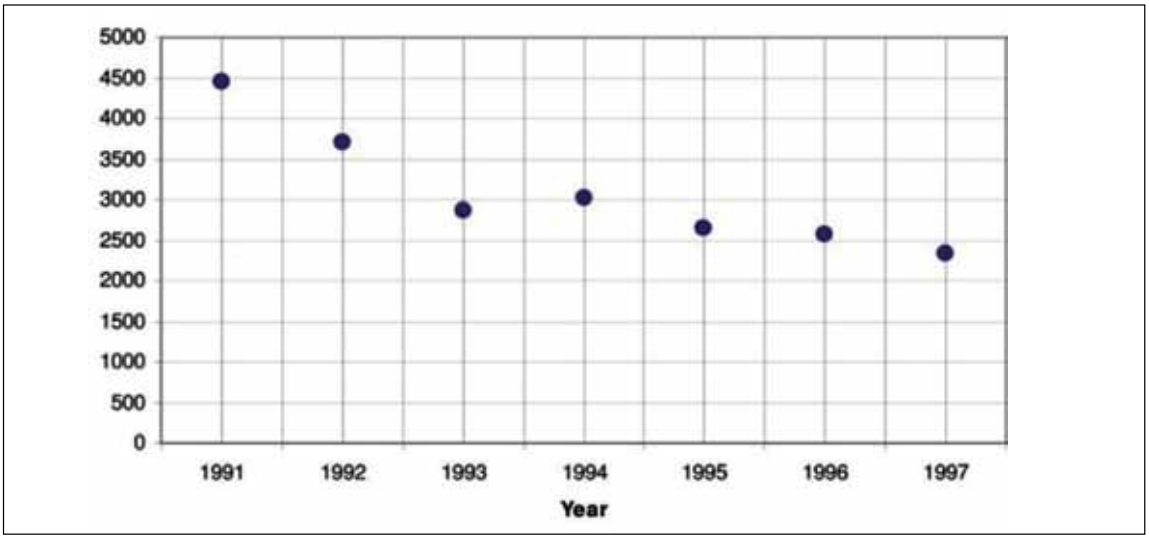


Figure 22.1: Number of minerals and coal inspections 1991–97[28]

Serious harm frequency rates

22. At the same time, mining serious harm frequency rates increased, as shown in Figure 22.2. The MIG's 1995 annual report noted that mine operators considered 'reduced inspection frequency and lack of mining regulations' were contributing factors.[29]

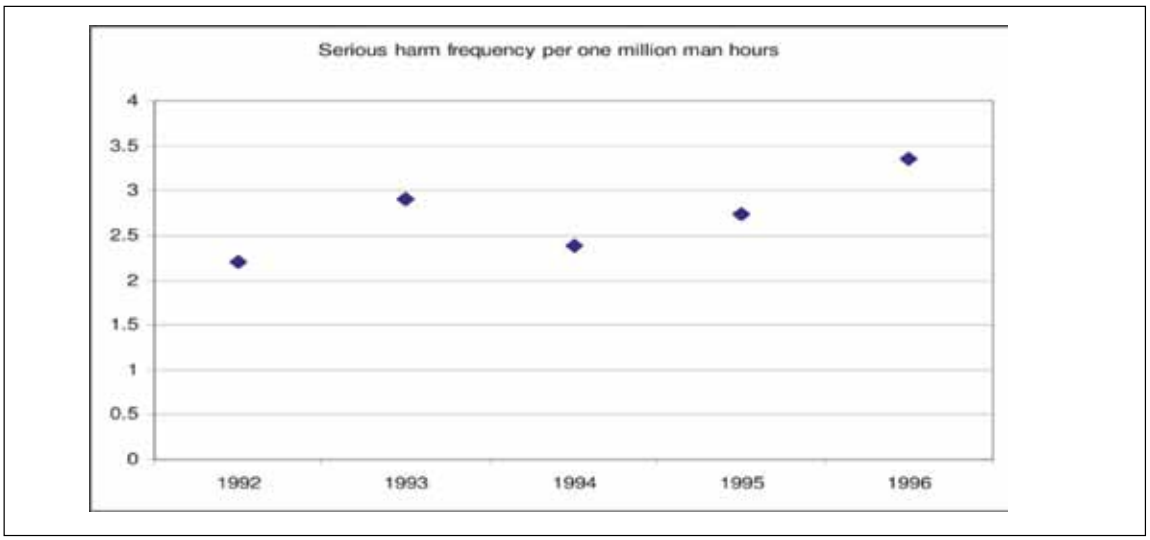


Figure 22.2: Serious harm frequency rates[30]

Education

23. The MIG's involvement in education lessened. The board of examiners had been disestablished and the Extractive Industry Training Organisation (EXITO) now provided training and issued certificates of competence.[31]

Responsibilities

24. Responsibility for health and safety was increasingly seen as falling squarely on the operator. This was seen as allowing reduced but targeted surveillance.[32]

Summary

25. The period, from the early 1990s to 1998, was the beginning of the decline of the mining inspectorate. By the end of the period it had no statutory role in permitting and environmental matters. The number of inspections was reducing and reported serious harm rates were increasing.

The mining inspectorate from 1998

26. There was continued decline after July 1998, when the MIG was transferred to DOL. The separate mining inspectorate ended.

27. Following the transfer, the inspectors fell within a department responsible for inspecting almost all New Zealand workplaces. They became part of the body of approximately 140 warranted health and safety inspectors within DOL,[33] who were mainly generalist inspectors but could access technical expertise.[34]

28. The mining inspectors were responsible for all 1000 or so coal and metalliferous mines, tunnels and quarries. Because they were also generalist health and safety inspectors and inspectors under the Hazardous Substances and New Organisms Act 1996, they had some responsibility for non-extractives matters.

29. The inspectors were not required to have expertise in the mining method used by the mines they inspected.[35] The two extractives inspectors in 2009–10, Michael Firmin and Kevin Poynter, did not have hydro-mining expertise, the method used by two main underground coal mines, Pike River and Spring Creek.

30. Underground coal mines tended not to be inspected by inspectors with other skills. This meant that neither mechanical inspectors nor those with expertise in workplace fatigue were inspecting underground coal mines.[36]

31. From 2009 DOL assumed increasing responsibility for electrical equipment inspection,[37] but lacked the required expertise. By July 2011 it had appointed an electrical inspector, but he did not have coal mine electrical expertise.

This is a complex area requiring specialist knowledge,[38] for example of sensor systems for gas and ventilation, variable speed drives and flameproof and intrinsically safe equipment.

32. The department did not have enough expertise to inspect the range of major hazards in underground coal mines, including geological, geotechnical, strata, spontaneous combustion, poor ventilation, methane and electrical. Assessing those and their controls requires a diverse range of expertise. Compliance cannot be assured by someone with mine manager qualifications physically inspecting a mine.[39] DOL told the commission that 'the technical nature and potential for catastrophic (low-frequency high-consequence) events in the underground extractives sector, particularly coal mining, is recognised and the sector is serviced by two full-time mines-qualified Health and Safety inspectors.'[40]

Too few mining inspectors

33. At the time of the transfer several mining inspectors resigned, meaning only two transferred to DOL.[41] Aside from February 1999 until early 2001 when there were three mining inspectors, DOL did not increase their number for three reasons:

    - there was no longer a legislative requirement to collect specific levies on coal mining,[42] this was seen as removing the need to inspect each workplace at least annually, and provide a minimum level of service;
    - although the numbers of inspectors had fallen, the inspection rates and inspector ratios were still higher than for any other sector, making it difficult to justify increases;[43] and
    - other authorities had taken over a number of functions previously performed by the MIG.[44]

34. From 2001 to October 2011 the number of mining inspectors fluctuated between one and two.[45] From April 2008 the two inspectors were Mr Firmin and Mr Poynter. Mr Firmin was based in Dunedin. He had been an inspector since 1995, but his warrant was only extended to include underground coal mines in February 1999.

35. Mr Poynter was based in Westport and started in April 2008. He received his certificate of appointment in June 2009, after completing training.[46] That allowed Mr Poynter to use the powers, including of inspection, under the HSE Act. But before completing training and being warranted he was conducting inspections. He would have had to involve a warranted inspector were enforcement steps required.[47]

36. Mr Poynter resigned in June 2011, which left only Mr Firmin for three months until September 2011. This was not the first time Mr Firmin was alone. Since February 1999 he had been the sole mining inspector on three other occasions: from March 2001 to June 2001, from October 2004 to July 2005 and from December 2006 until April 2008, all periods when an inspector had left but not yet been replaced.[48]

37. Because there were no mining inspectors in the North Island, Mr Firmin and Mr Poynter were responsible for inspecting all New Zealand extractives workplaces.[49] They alternated responsibility for the North Island on a six-monthly cycle.[50]

38. From the 2004–05 business year onwards there were 20 quarry inspectors, but they were generalist inspectors whose warrants were extended to include quarries. Only some received additional training, given by the extractives inspectors. It is unclear how many actually inspected quarries. Many quarries were not being inspected.[51]
In Mr Firmin's recollection, the last dedicated quarry inspector had left DOL about five years before the July 2011 commission hearing.[52]

Expertise and professional development

39. Mining inspectors must meet prescribed qualification and experience criteria, which are not specific to underground coal mining.[53] DOL requires them to hold a first class mine manager's certificate of competence,[54] and provides initial training in such topics as legislation, compliance assessment and prosecution. This does not focus on underground coal mines and is not taught by people with mining expertise.[55] Mr Poynter's training did not deal

with the main mining regulations, the Health and Safety in Employment (Mining – Underground) Regulations 1999. His ventilation training was 'based on ventilation principles in normal workplaces like factories or warehouses'.[56] The compliance training did not focus on complex mine systems.[57] In essence, his first class mine manager's certificate of competence was seen as reflecting sufficient industry-specific expertise.

40. There was no requirement for ongoing professional development, but Mr Firmin attended a Queensland risk management course in 2010.[58] There were training deficiencies in hazard identification,[59] auditing, workplace culture,[60] management practices, emergency response, inspections and investigations. In their review, Gunningham and Neal stated that 'the mines inspectors felt particularly disadvantaged, seeing themselves as specialists within a generalist inspectorate which did not see the need to equip them with mining specific skills they needed'. They quoted Mr Firmin:

> *Management's approach is – all you need [is] to check people's systems and any inspector can [do this] … but I say I want ventilation, engineering training, geotechnical training, and they say it's not your responsibility why do you need training to that degree. … sometimes I say I am coming [to a mine] to do ventilation, show us all you have done, but I need the qualifications to ask, is it adequate? ... You have to have continuous professional development … I need to be competent, up with developments … I want to be current, go on courses, sit exams. It helps my credibility on site.*[61]

Fewer inspections

41. In the year to 30 June 1997, before the MIG transferred to DOL, it completed 2246 compliance inspections, 157 of which were of 18 underground coal mines – an average of 8.7 inspections a year.[62] By the late 2000s DOL had decided that underground coal mines would be inspected four times a year. Additional visits occurred in response to incident notifications. That inspection frequency had to be justified. Mr Firmin recalled:

> *about three years ago when people at the Mining Steering Group started to challenge, 'Well, do you need to go to these places. How long do you need to go there?' And they weren't sort of trying to stop us, just saying, 'Well, do you need to do this? You need, there's less inspectors why do you need to go to these places this often?'* [63]

42. A reduction in the number of inspections, called workplace assessments,[64] is reflected in data supplied by DOL.

Count of workplace assessment processes conducted in terms of the ANZSIC classification of B11 (Coal, black coal & brown coal mining) 1998–2011	
YEAR	**WP ASSESSMENT PROCESS**
1998	109
1999	211
2000	190
2001	53
2002	154
2003	184
2004	137
2005	43
2006	8
2007	58
2008	42
2009	47
2010	36
2011[65]	17
TOTAL	**1289**

Figure 22.3: Mining – the number of workplace assessments

43. From 1999 to 2005 there was a steady increase in the number of serious harm notifications from the extractives sector.[66]

44. The inspection regime reflected the number and workload of mining inspectors rather than the risks posed by individual underground coal mines.[67] In Queensland the inspection regime is based on a systematic assessment of the hazards of individual mines, using a mines inspection planning tool.

45. Nothing in the way inspectors carried out their duties meant that four inspections per year gave the same assurance as the previous average of 8.7.[68]

Nature of inspections

46. Inspectors have to be notified at least 14 days before a mine is worked or a tunnel is started.[69] By then the design will have been finalised. Notifications do not include detailed design information.[70] Thus the inspectors have limited influence in this area.

47. Inspections were notified in advance,[71] rather than a mixture of with or without notice, as used under the Coal Mines Act 1979 and in many overseas jurisdictions.

48. Between four to eight hours was spent inspecting a large underground coal mine.[72] That time allocation and four inspections per year made it impossible to inspect all the workings of a large underground mine and assess the safety management and incident and accident reporting systems. Even allowing for a targeted approach, the inspection time and frequency were inadequate.

49. Inspections usually involved going under ground to check such aspects as the ventilation, roof bolting, stoppings and stone dusting. But mines were not systematically checked for compliance with the HSE Act and its regulations. As Gunningham and Neal note, the

> *starting point was certainly not an audit or other assessment of the company's health and safety management systems. They did not, for example, concern themselves specifically with whether the mine's occupational health and safety management system met legal requirements, complied with recognised practices or were subject to periodic review.*[73]

50. Inspectors were not trained to audit mine systems,[74] despite auditing being one of the prescribed areas of examination for a health and safety inspector.[75] Nor did they have an audit tool.[76] Mr Firmin said that auditing was 'generally not something that anybody in the department, to my knowledge, does'.[77] He recalled the mining inspectors raising the matter, but nothing came of it.[78] Following the Pike tragedy, the government commissioned an urgent audit of underground coal mines using Australian experts, supported by DOL.

Contact with workers, worker representatives and health and safety officers

51. There was limited contact with workers and their representatives. The inspectors usually spoke to workers, but not in a systematic way. They did not always give workers feedback about investigations. DOL did not provide workers with the inspectors' contact details. Mr Firmin could not recall underground coal mine workers ever phoning to raise a health and safety issue.[79]

52. Worker representatives rarely raised issues with the inspectors.[80] Only once had Mr Firmin received a hazard notice issued by a worker representative under the HSE Act, which related to an open cast coal mine.[81] When concerns were identified, inspectors did not always contact health and safety representatives, missing the opportunity to inform them and also gather relevant information.[82]

53. The inspectors' contact was often with the mine manager or operational management. For example, Mr Poynter had little contact with the health and safety manager at Pike, partly because of time pressure.[83]

Culture

54. The inspectors had raised internally the subject of their assessing workplace safety culture in mines, but they lacked the training to do this. DOL had developed a general workplace safety culture questionnaire, but it was not used by inspectors at underground coal mines.[84]

Education and experience

55. The inspectors conducted information visits, which involved giving workers health and safety information, but it is not known how effective these were. Although inspectors were not involved in either granting qualifications or industry training, they were concerned about the adequacy of qualifications.[85]

56. Inspectors generally did not assess the ratio of experienced to inexperienced workers or routinely focus on the adequacy of workers' training and experience for particular tasks.[86]

Gathering and use of data

57. Ideally, health and safety regulators should gather and analyse a range of modern health and safety data – lag and lead indicators and personal and process safety data. The legislation requires notification of some, but not all, of that data. The regulator needs the capacity to analyse it.

58. DOL received serious accident data from underground coal mines but did not analyse it to identify patterns.[87] The inspectors lacked the time for this task and had not been trained to do so.[88] Certain categories of high-potential incidents had to be notified to DOL,[89] but it did not analyse them.[90] Underground coal mine process safety data did not feature. DOL did not gather lead indicator data for underground coal mines.[91]

59. The inspectors lacked a proper profile of underground coal mines, for example of their operations, key personnel, systems and hazards.[92] This was a result of a failure by DOL to collect and collate relevant information. Mr Firmin gave evidence that INSITE can produce a summary of the compliance history of an operator, but that summary does not include negotiated agreements, even if they have been breached.[93] It seems that INSITE cannot be readily searched to identify whether the same problem has arisen before with an employer. Inspectors needed to check the record of each interaction with a mine operator, which was time-consuming.

Enforcement

60. DOL aimed to seek voluntary compliance by using the minimum regulatory intervention.[94] The mining inspectors favoured low-level enforcement tools, particularly negotiated agreements, rather than requiring compliance through improvement, prohibition and infringement notices, and prosecutions. As Figures 22.4 and 22.5 show, there has been increased use of prohibition notices since the Pike River tragedy.

Improvement and Prohibition Notices issued in respect of coal mines 1 January 2005 – 30 June 2011

YEAR	IMPROVEMENT NOTICE	PROHIBITION NOTICE
2005	73	0
2006	5	1
2007	10	3
2008	16	0
2009	16	0
2010	2	2
2011	1	5
TOTAL	123	11

Figure 22.4: Improvement and prohibition notices

Negotiated Agreements and Infringement Notices issued in respect of coal mines 2004/2005 – 2009/2010		
YEAR	NEGOTIATED AGREEMENT	INFRINGEMENT NOTICE
2004/2005	-*	13
2005/2006	203	4
2006/2007	909	12
2007/2008	667	17
2008/2009	662	7
2009/2010	528	4
TOTAL	2969	57

*Negotiated agreements have only been in use since 2005.

Figure 22.5: Negotiated agreements and infringement notices

61. Prosecutions occurred in response to accidents, but usually only when serious harm resulted.[95]

62. There was a suggestion that higher approval was required for use of prohibition notices. Mr Poynter said in relation to Pike: 'A prohibition notice would likely have to be approved by someone other than myself … So a prohibition for a – that stopped a mine producing coal would – that's a decision that would have to have [sic] asked from higher above.'[96] Although prior consultation and sometimes legal advice may be desirable, inspectors should have authority to take decisive enforcement action.

Summary

63. From 1998 onwards the number and range of expertise of people inspecting mines declined. The mining inspectors' workload was formidable and the inspection frequency reduced. Training was insufficient. Modern health and safety data was not used to assess the risks posed by individual mines and focus the inspectors' efforts. Workers and worker representatives were not sufficiently involved with inspectors.

Conclusions

64. Since the HSE Act came into force, there has been a substantial decline in the capacity and effectiveness of the mining inspectorate and a loss of identity. It was understaffed, especially in later years. It lacked the required range of expertise. Its approach was outdated and its training and systems limited. There was inadequate contact with workers and worker representatives. The inspectors could not properly do their job of ascertaining and taking reasonable steps to assure health and safety compliance in underground coal mines.[97]

ENDNOTES

[1] This report uses the terms 'mining inspector' and 'mining inspectorate'.
[2] Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/56, para. 213.
[3] Appointments were made under the State Services Act 1962. See Coal Mines Act 1979, ss 8–10.
[4] Robin Hughes, transcript, pp. 234–35.
[5] Ibid., p. 238.
[6] Ibid., pp. 239–40.
[7] Coal Mines Act 1979, ss 173, 177(2)–(3).
[8] Ibid., ss 136, 136(1).
[9] Ibid., s 151(3).
[10] Robin Hughes, transcript, pp. 244–45.
[11] Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/23, para. 74.
[12] Coal Mines Act 1979, ss 210, 214.
[13] High-voltage lines meant until they were stepped down by transformer to less than 650 volts.
[14] Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/55, para. 210.
[15] There were 12 mining related fatalities between 1980 and 1991, Coronial Services, Mining deaths between 1979 and 2006, 21 December 2010, CAC0177/1
[16] Ministry of Energy (Abolition) Act 1989.
[17] Department of Labour, Tier Two Paper, 10 May 2011, DOL0000010001/47, para. 140.
[18] Ibid., DOL0000010001/48, para. 142.
[19] Ibid., DOL0000010001/48, para. 143.
[20] Department of Labour and Ministry of Commerce, Administration of Health and Safety in Employment Act in Mining, Quarrying, Petroleum and Geothermal Industries, 8 April 1994, DOL0010010011/2, para. 6.

[21] Ibid., DOL0010010011/3, paras 13–14.
[22] Department of Labour, Tier Two Paper, 10 May 2011, DOL0000010001/49, para. 148.
[23] Ibid., DOL0000010001/50, paras 150–51; Cabinet Office, Delivery of Occupational Safety and Health Services to the Extractive Industries, 23 March 1998, CAB (98) M 10/5D(1), MED0010040034/1.
[24] 23.5 full-time equivalents.
[25] Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/81, para. 280.
[26] Ibid., MED0000010001/82, para. 282; Ministry of Commerce, Report of the Ministry of Commerce for the Year Ended 30 June 1995, MED0010040027/71.
[27] Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/82, para. 283; Mining Inspection Group, Ministry of Commerce, 1996 Annual Report, 1997, MED0010040030/12.
[28] Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/83, para. 287. The commission does not have inspection data dealing discretely with the 1993–98 period.
[29] Mining Inspection Group, Ministry of Commerce, 1995 Annual Report, 1997, MED0010040032/12; Ministry of Economic Development, Tier Two Paper, 6 May 2011, MED0000010001/82, para. 285.
[30] Ibid., MED0000010001/83, para. 286. It is not known whether increased compliance with serious harm reporting requirements contributed to the increase.
[31] Regulation 17 of the Health and Safety in Employment (Mining Administration) Regulations 1996 grants the secretary of labour power to recognise an organisation as being able to issue certificates of competence. The only organisation so recognised is EXITO. See Department of Labour, Department of Conservation, Ministry of Economic Development and Ministry for the Environment, Joint Legislative Framework Paper, 6 May 2011, CLO0000010001/92, para. 315.
[32] See, for example, George Munro, 'Opening the Doorway to Self-Management in the Mining Industry – The Reduced Site Surveillance Programme', in 1997 New Zealand Minerals and Mining Conference Proceedings, MED0010040031.
[33] About half of the inspectors are also warranted as inspectors under the Hazardous Substances and New Organisms Act 1996. Contractors also undertake audits under that act.
[34] Susan (Lesley) Haines, witness statement, 20 June 2011, DOL7770010001/4, para. 15.
[35] Michael Firmin, transcript, p. 2810.
[36] Ibid., p. 603. The exception is inspections under the Hazardous Substances and New Organisms Act 1996.
[37] Department of Labour, Tier Two Paper, 10 May 2011, DOL0000010001/64, para. 228.
[38] Michael Firmin, transcript, pp. 603–04, 635.
[39] Ibid., pp. 635–38, 2809.
[40] Geraint Emrys, witness statement, 20 June 2011, DOL7770010002/5, para. 25.
[41] Letter, Brett Murray to Aedeen Boadita-Cormican, 6 July 2012, MBIE3000010002/1.
[42] Ministry of Energy (Abolition) Amendment Act 1998, s 3, which came into force 1 July 1998.
[43] Department of Labour, Tier Two Paper, 10 May 2011, DOL0000010001/52, para. 161.
[44] Ibid., DOL0000010001/52, para. 162.
[45] Letter, Brett Murray to Aedeen Boadita-Cormican, 6 July 2012, MBIE3000010002/1.
[46] Kevin Poynter, transcript, p. 2965.
[47] Kevin Poynter, witness statement, 19 October 2011, DOL7770040003/8, para. 27.
[48] Letter, Brett Murray to Aedeen Boadita-Cormican, 6 July 2012, MBIE3000010002/1.
[49] Michael Firmin, transcript, pp. 597–98.
[50] Neil Gunningham and David Neal, Review of the Department of Labour's Interactions with Pike River Coal Limited, 4 July 2011, DOL0100010001/38–39, para. 114.
[51] Michael Firmin, transcript, p. 598; Memorandum, Department of Labour Mining Steering Group to Workplace Services Management Team, 12 February 2010, DOL0020020022/2.
[52] Michael Firmin, transcript, p. 601.
[53] Health and Safety in Employment (Prescribed Matters) Regulations 2003, reg 6.
[54] Neil Gunningham and David Neal, Review, DOL0100010001/50, para. 159.
[55] Kevin Poynter, transcript, p. 2966.
[56] Ibid., pp. 2966–67.
[57] Ibid., pp. 2966–68.
[58] Michael Firmin, transcript, pp. 2812–13.
[59] Kevin Poynter, transcript, p. 2968.
[60] Ibid., p. 2983.
[61] Neil Gunningham and David Neal, Review, DOL0100010001/98, para. 346.
[62] Department of Labour, Tier Two Paper, 10 May 2011, DOL0000010001/50, para. 153.
[63] Michael Firmin, transcript, pp. 643–44.
[64] Department of Labour, Answers to Questions for Department of Labour, 31 August 2011, DOL7770010009/6–7, paras 14, 19 (Table 4).
[65] Figures to 30 June 2011, the end of 2010/11 financial year.
[66] Department of Labour, Tier Two Paper, 10 May 2011, DOL0000010001/52, para. 165.
[67] Michael Firmin, transcript, pp. 643–45.
[68] Ibid., p. 644.
[69] Health and Safety in Employment (Mining – Underground) Regulations 1999, reg 8.
[70] Michael Firmin, transcript, pp. 630–31.
[71] Ibid., p. 628.
[72] Ibid., p. 629; Michael Firmin, witness statement, 22 June 2011, DOL7770010005/5, para. 21.
[73] Gunningham and Neal, Review, DOL0100010001/89, para. 306.
[74] Michael Firmin, transcript, p. 2810.
[75] Health and Safety in Employment (Prescribed Matters) Regulations 2003, reg 6(1)(a)(vi).
[76] Kevin Poynter, transcript, p. 2985.
[77] Michael Firmin, transcript, p. 2810.
[78] Ibid., p. 2811.
[79] Ibid., p. 612.
[80] Ibid., pp. 640–41.
[81] Ibid., p. 641.
[82] Ibid., p. 2832.
[83] Kevin Poynter, transcript, pp. 3118–20.
[84] Michael Firmin, transcript, p. 640.
[85] Kevin Poynter, transcript, pp. 2993–96.
[86] Michael Firmin, transcript, p. 641; Kevin Poynter, transcript, p. 2996.
[87] Michael Firmin, transcript, p. 614.
[88] Ibid., pp. 614, 639.
[89] Health and Safety in Employment Act 1992, s 25; Health and Safety in Employment (Mining – Underground) Regulations 1999, reg 10.
[90] Kevin Poynter, transcript, pp. 2979–80.
[91] Michael Firmin, transcript, pp. 2813–19.
[92] Ibid., pp. 2830–31.
[93] Ibid., p. 2829.
[94] Susan (Lesley) Haines, witness statement, 20 June 2011, DOL7770010001/6, para. 30.
[95] Department of Labour, Answers to Questions, DOL7770010009/29, paras 67–69.
[96] Kevin Poynter, transcript, p. 3081.
[97] Health and Safety in Employment Act 1992, s 30; Michael Firmin, transcript, p. 2809.

CHAPTER 23

Management of the mining inspectorate

Introduction

1. This chapter explores how the mining inspectorate was managed, supported and reviewed within the Department of Labour (DOL).

Management and support

2. Mining inspectors were managed or supported by a team leader, the senior advisor high hazards (extractives) and the Mining Steering Group (MSG).

Their direct reporting line

3. Mr Firmin and Mr Poynter, and non-mining inspectors, reported to team leaders in Dunedin and Christchurch respectively. Those team leaders reported to service managers, who reported to the southern regional manager.[1] In keeping with DOL's policy of merging the mining inspectors with the generalist inspectorate, line management had no mining expertise.

4. The structure had several consequences. First, line management did not adequately understand the needs of an underground coal mining inspectorate. As one of the inspectors told Gunningham and Neal, 'There is a gap between generalist staff and us. I have had four managers in the past 11 years – each comes in assuming mining is no different from anything else and I try and educate them.' This lack of understanding sometimes made it difficult for the inspectors to carry out their duties effectively. Mr Firmin was once temporarily refused permission to travel 'because of resource limitations, which would have had the consequence of preventing him from engaging in almost all mine inspections required in his workplan'.[2]

5. Second, the two mining inspectors lacked adequate specialist support and their geographical separation made it hard for them to support each other.

6. Third, there were administrative and budgetary tensions because each region 'administered its own budget but funding inspectors to travel to the North Island came from the Southern region'. Even in the South Island the inspectors had to travel extensively, 'so travel and overnight accommodation costs arose as an issue'.[3]

7. Every month the inspectors reported in detail to their team leaders. For example, Mr Poynter reported that at Pike:

    - during the development stage of the mine, methane ignitions had been notified, the number of which were only discovered as part of an investigation;[4]
    - the stone dusting appeared inadequate;[5]
    - there appeared to be a breakdown of the strata management plan because pull testing of bolts had not been done for a long time;[6]
    - workers had raised the issue of the second means of egress, which was 'up the shaft, which is a 120m climb';[7] and
    - given the plans for production and an increase in the number of workers underground, it was agreed 'that the existing second egress should be enhanced by the completion of another egress as soon as possible'.[8]

8. The reports, both on Pike and other mines, contained information that should have caused a review of the department's approach to compliance. For example, from March 2010 to June 2010 Mr Poynter reported that a gold mine was operating in breach of the requirement to have two means of egress:[9]

> *Single access into [undisclosed] Mine has been open and operating since approx [undisclosed] and has had several visits from previous Inspectors. This has not been raised before. Owner managing risks. Have raised issue with Owner but have nor [sic] issued any notices at this stage … Breach of the HSE Underground Mining Regulations.*[10]

9. In evidence Mr Poynter described the gold mine, which had operated for many years, as having a long single entry and no other way out.[11] Even after Mr Poynter raised the issue in March 2010, enforcement was slow. Reports for June 2010 and July 2010 record that Johan Booyse, then the senior advisor high hazards (extractives), and Mr Firmin were to visit the mine.[12] The August 2010 report records that an improvement notice had been issued and was being disputed.[13] By September 2010 Mr Firmin was 'working on Negotiated agreement to construct Second Egress'.[14] The October 2010 report records 'Second egress agreed and Neg Agreement with Dol [sic] to complete'.[15]

10. A mine was allowed to operate unlawfully for many years in a way that had potential for serious harm or death. Inspectors who visited before Mr Poynter had not acted. After Mr Poynter's involvement, enforcement action still took approximately six months.

11. Health and safety concerns were often identified or reported at extractives sites, including a roof fall that resulted in serious injury,[16] and another fall that buried a mining machine.[17] These and other health and safety concerns should have raised questions about the effectiveness of DOL's scrutiny of the industry.

12. The shortage of mining inspectors featured regularly in reports. From August 2009 to September 2009 Mr Poynter reported that:

> *With only two warranted Inspectors covering the country resources are extremely stretched. In addition there is a lack of knowledge or inspections of high-risk extraction sites throughout the lower half of the North Island.*
>
> *Plans to inspect Underground Tunnel in Auckland Area but nothing has been down to evaluate the need in the lower half of the NI.*
>
> *The impact or risk on the Department should anything occur is high.*[18]

13. Mr Poynter's November 2009 to October 2010 reports repeated those comments and added, 'We are attempting to ensure all high-risk underground operations are visited but there are a large number of high-risk quarries that will not be proactively inspected.'[19] Mr Firmin also reported problems: 'Not able to inspect some high-risk sites in Auckland and Waikato. Partly because manager limited travel. Issue of what needs to be inspected needs to be addressed.'[20]

14. These problems went to the heart of the inspection function. The team leaders were unable to address major issues, which involved significant policy and resource implications, but the issues were known about higher up in DOL.

The senior advisor high hazards (extractives)

15. This position, based in the national office in Wellington, existed from 1988, although by another name. The role included:[21]

> *Work to bring about a significant improvement in workplace health and safety in the extractives sector …*
>
> *Provide professional and technical advice to the Department in the development of policy and standards as they apply to workplace productivity in the coal mining industry …*
>
> *Build effective relationships with key national and international stakeholders in the mines and quarries industries to ensure New Zealand mining and quarrying operations are managed in a safe and productive manner consistent with international best practice and to meet the strategic needs of the country.*[22]

16. The role was not concerned wholly with health and safety. The senior advisor and mining inspectors were part of the workplace group, whose functions include 'workplace relationships', 'productivity' and 'health and safety'.[23] This reflected the breadth of DOL's portfolios, 'which include labour, immigration, employment and accident compensation'.[24]

17. No significant improvement in health and safety was possible, given the limited number of mining inspectors and the inadequate systems. Additionally, the senior advisor had no staff or budget.[25] Mr Firmin thought the lack of budget and authority 'frustrated him [the senior advisor] in his efforts to try and work with us within the industry'.[26]

18. The role did not include direct oversight of the mining inspectors.[27] As Gunningham and Neal state, Messrs Poynter and Firmin had 'far less contact' with the senior advisor than they did with their team leader. 'He did not supervise their operational duties. They would contact Mr Booyse primarily when they needed specialist advice on an issue or in relation to the quarterly meetings of the Mining Steering Group.'[28] Following the Gunningham and Neal review, the structure was changed and by July 2011 the inspectors reported to the senior advisor.[29]

19. The inspectors needed expert support and guidance, but the senior advisor was not required to have underground coal mine expertise. The advisor was a member of the MSG and privy to the major issues facing the inspectors. Like their team leaders, he was probably powerless to remedy them.

Mining Steering Group (MSG)

20. This group, which was created following two underground coal mine tragedies in 2006, was to:

> *be a forum for national planning and setting of operational priorities across the sector*
> *… be a means of monitoring and resolving emergent mining issues*
> *… be responsible for improving the consistency of approach by mines inspectors in relation to regulatory checks and visits*
> *… enable the coordinated involvement of relevant line managers*
> *… assist with Dept's development of industry standards, guidelines and operating procedures.*[30]

21. According to the deputy chief executive of DOL's Labour Group, the MSG brought together 'all the resources working … on mining, and their managers, to maximise the effectiveness of their efforts'.[31]

22. Its members were the mining inspectors, the senior advisor and relevant team leaders, service managers and regional managers. Mining expertise was limited. For example, at one point the group questioned the need to store copies of the mine plans sent by operators to the inspectors and queried their purpose. The senior advisor and inspectors had to explain the importance of the plans. The group agreed to 'Seek legal opinion on what responsibilities flowed to the DOL following the handover from the MED [Ministry of Economic Development]'.[32] This was in 2010, over a decade after the department took over mines inspection.

23. The group was supposed to meet every three months but did not always do so.[33] It met between two and four times per year, although DOL stated that 'minutes may not always have been formally recorded and circulated after every meeting'.[34] The group discussed issues that, if addressed, could have substantially improved health and safety in mining.

24. Forming operational links with other agencies was seen as desirable, especially with the Ministry of Economic Development, to whom permit holders had to submit proposed mining plans. Those plans, if sufficiently detailed, may have assisted the inspectors. To Mr Firmin's knowledge, that link had not been established by July 2011.[35]

25. Professional development was discussed but thwarted by budget constraints. The July 2009 minutes record that the senior advisor was to 'look for opportunities for funding and for appropriate courses etc to increase inspectors [sic] development ASAP'.[36] In Gunningham and Neal's words:

> *A concern that the training provided to the mining inspectors might be inadequate is hardly new. During a 2006 review*[37] *concerns were expressed (particularly given the anticipated growth of the industry) not just about the need for specialist training but also regarding the inspectorate's core skills in areas such as investigation, report writing, record keeping, work planning and legal knowledge, machinery guarding etc.*[38]

26. The MSG discussed whether 'Johan [Booyse], Kevin [Poynter] and me [Mr Firmin] would go out and do some audits but again we were, you know there was lack of funding and it was just something we'd work on once we well could get some funding for that and put into the action plan for next year.'[39] DOL's mining business plan for 2010–11 contemplated the inspectors conducting a joint audit or inspection, but Mr Firmin said this did not happen.[40]

27. In July 2009 the group discussed making available a 'basic H & S [health and safety] Management plan for small business to use'.[41] By November 2011 it had not been produced. The senior advisor was concerned about the adequacy of the mining information on the DOL website, in particular the lack of mining regulations, guidelines, safety statistics, good practices and audit tools,[42] but much of this material did not exist.

28. Mr Poynter discussed with the MSG and senior managers his concerns about not reporting to a mine expert. He considered 'it made it a little bit dysfunctional in that with Michael [Firmin] reporting to somebody in Dunedin, me reporting to somebody in Christchurch and Johan [Booyse] reporting to somebody in Wellington, we were hardly an inspection or a mining inspection group. It was really difficult to try and have a co-ordinated approach.'[43]

29. The MSG was unable to tackle the problems confronting the inspectors. It appears to have lacked a budget and the authority to make key decisions.[44] It was disestablished on 19 August 2011.[45]

Lack of guidance information

30. The mining inspectors lacked sector-specific departmental guidance material. They had generic guidance, including an *Investigations Best Practice* manual and DOL operational procedures and guidance, but these had no focus on underground coal mines.[46] These deficiencies were compounded by the absence of codes of practice and guidelines for the industry, upon which the mining inspectors could have relied. Consequently, the inspectors sometimes used regulations issued under the repealed Coal Mines Act 1979, or overseas material.[47]

31. DOL did not compare its level of enforcement in underground coal mining with that for other industries, or with overseas levels.[48] A comparison could have helped the inspectors to evaluate their approach.

Inadequate reviews of inspectors

32. Performance reviews were intended to be, but were not always, conducted quarterly.[49] Because they were undertaken by a team leader, not a coal mining expert, it was not possible to carry out a qualitative evaluation. The approach Mr Firmin took to inspecting particular coal mines, including Pike, was never reviewed.[50] Mr Poynter said:

> *Nobody with a technical background ever sat down with me and discussed that performance approach. In fact, I was praised from time to time for being what they termed trying to follow the modern regulator view and work with voluntary compliance. The first major review of any work that we'd done, I guess, came after the November 19, and done by Gunningham and Neal.*[51]

33. DOL policy required that, where possible, inspectors contacted health and safety representatives to seek information and keep them abreast of compliance action. But the inspectors did not know about this policy.[52] Mr Firmin was not aware of any check upon the extent to which he performed this function.[53]

34. The inspectors' accident investigations were reviewed by team leaders or service managers,[54] not someone with coal mining expertise.

Resourcing of the mining inspection function

35. Higher levels of DOL, in particular the Workplace Services Management Team (WSMT), knew about the inadequate resources and shortage of extractive inspectors. The WSMT consisted of the group manager workplace services, the national support manager, the chief adviser health and safety, the chief adviser workplace relationships, and the four regional managers.[55]

Request for more resources

36. From mid-2009, the MSG focused increasingly on the shortage of mining inspectors. The group's July 2009 minutes record concern that adequate inspection services could not be maintained. One inspector, John Walrond, had left and was not replaced. Mr Poynter had 'pointed out that in Tasmania before the Beaconsfield Accident, the Chief Inspector of Mines had written to his minister stating he was not in a position to provide an adequate inspection service with the resources at his disposal.'[56]

37. The MSG considered the shortage again on 10 December 2009,[57] and decided to raise it with the WSMT. A group member cautioned that 'this is a difficult decision for WSMT, with no funds available, and may mean a trade-off with other staff.'[58] In February 2010[59] the group provided to the WSMT a memorandum dated 12 February 2010, which described the shortage as posing 'significant political, reputational and service standard/delivery risks to the DoL.'[60] The potential for catastrophe was described as 'very real'[61] The group pointed out that '[b]ased on the current staffing levels, there is no realistic means for the DoL to service all high-hazard mining, tunnel or quarry operations, low-risk operations are not currently serviced.'[62]

38. The memorandum identified that the shortage had an adverse effect on other projects, for example developing a safety management system for small mines, technical guidance and an employee participation plan.[63] The position was likely to get worse due to productivity growth in New Zealand. Put simply, there were too few inspectors to inspect all extractives workplaces, advise the industry and help workers, both then and in the foreseeable future.

39. The WSMT rejected employing a third mining inspector.[64] By the July 2011 commission hearing, an additional inspector had still not been appointed. The WSMT was disestablished as from 31 August 2011.[65]

Staffing costs

40. DOL provided the direct salary and superannuation costs of staff employed in the mining inspection area from 2004–05 to 2010–11. These remained fairly constant:

2004/05	$331,000
2005/06	$294,000
2006/07	$248,000
2007/08	$178,000
2008/09	$371,000
2009/10	$348,000
2010/11	$323,000

Figure 23.1: Salary and superannuation costs for the mining inspection function

41. Those costs do not equate to salaries of the two mining inspectors. Before the Pike River tragedy, a mining inspector's salary was up to about NZ$76,000.[66] This does not compare well with industry and overseas equivalents.

42. In Mr Poynter's view, the mining inspection function was not set up and resourced sufficiently to fulfil the statutory function of ascertaining whether the Health and Safety in Employment Act 1992 has been, or is likely to be, complied with.[67]

Oversight of the mining inspection function

43. DOL did not review the effectiveness of moving the mining inspectorate from the Ministry of Commerce to DOL: 'After the Cabinet decisions were made to transfer the MIG to the department it considered there was no mandate to complete a review.'[68]

44. Nor, before the Pike River tragedy, did it review the resources, size, operations, support and training of the inspectorate.[69] DOL stated that resourcing decisions took place within the wider workplace services business planning process.[70] It is unclear how this was done without first assessing the effectiveness and needs of the inspectorate.

45. There appears to have been no formal system for reviewing the mining inspectorate after a serious injury or fatality in a mine.[71] Mr Firmin thought there would be a procedure for reviewing performance following criticism by a coroner or court, but he had no knowledge of this occurring.[72] The 2006 Black Reef and Roa mine tragedies resulted in the formation of the MSG and a 2006–09 mining policy review.[73]

The Gunningham and Neal review

46. DOL commissioned Professor Neil Gunningham and Dr David Neal to review its interactions at the Pike River mine.[74] The problems they identified included a lack of general systems audits by the mining inspectors, a failure to ensure the development of codes of practice, insufficient professional development, inadequate written guidance for inspectors and managers' lack of mining expertise.[75]

47. Gunningham and Neal considered that '[g]iven the small size of the mining industry, its statistical profile and the anticipated level of risk, the Department's allocation of resources to mine inspection is reasonable.'[76] The inspectors' workload was considered reasonable and their performance and compliance approach at Pike River appropriate, because Pike was perceived as co-operative and responsive to informal safety recommendations. Safety culture was seen as 'largely intangible' and did not lend itself to ready investigation.[77] DOL was seen as a modern regulator. Evidence before the commission does not support these conclusions.

2006–09 mining policy review

48. Following the 2006 fatalities at Black Reef and Roa, the then minister of labour asked DOL to review whether the regulatory framework was 'effective in the high-hazard underground mining environment, and whether there was a case to return to greater regulatory prescription and re-establish a separate mining inspectorate'.[78]

49. The policy review began in mid-2006 and, according to a DOL briefing paper, was 'conducted over a significant period of time in order to ensure a thorough, consultative review of a technical regulatory framework, and to avoid ad hoc reactions and unnecessary regulation'.[79] The review appears to have been given little priority.

50. Initially DOL took a broad approach. In 2006 it identified a possible need for clearer regulatory requirements, third-party checks for some underground activities and a code of practice focusing on small business operations.[80] Various papers were developed, including a consultation paper titled *Improving Health and Safety Hazard Management in the Underground Mining Industry*,[81] which sought feedback about safety cases, hazard notification, better guidance, improving employee participation and improving health and safety inspections.

51. There was a wide range of submissions.[82] There was support for mines to have health and safety systems and hazard management plans from the outset,[83] and for risk management to be supported by detailed guidance or approved codes of practice.[84] Greater prescription was not supported.[85] Unions and workers backed improving employee participation by using check inspectors, but employers and the industry did not.[86] Several submitters sought increased inspectorate resourcing and more frequent inspections.[87]

52. As time went on, the review increasingly focused on small mines. Two of the three main recommendations concerned small mines while other problems identified at an early stage were not dealt with.

53. In July 2009 a briefing paper to the minister of labour proposed that:[88]

    - operators of small mines be required to document their health and safety system and hazard management plans when operations began. The minister disagreed;

- the competency requirements for managers of small underground coal mines (fewer than eight people) be raised. The minister agreed, and this was changed in 2010; and[89]
- DOL should address worker and union concerns about the quality of employee participation in underground mining through improved information and employee participation provisions. The minister agreed.

54. The MSG was concerned that they had not been allowed enough time to provide effective feedback into the review.[90] This is consistent with an insufficient connection between the inspectors and DOL's policy group.[91] James Murphy, the policy manager, workplace health and safety, who joined DOL in September 2008, could not recall the mining inspectors, senior advisor or the MSG ever raising policy issues.[92]

Risk registers

55. The DOL risk registers from 2005 to 2011 identify risks relevant to the mining inspectorate. In March 2010 the following risk was added: 'Limited mining resource. May have service failure, certainly very constrained service. Reputational risk in an event.'[93] This identification of reputation at risk is understandable but overlooks the real issue, the health and safety of mine workers.

56. The April to June 2011 risk register records that DOL had known for a considerable time that a Waikato mine was operating with one egress in breach of the regulations.[94] It also notes, essentially as a result of the demands of the Pike investigation, 'a significant business risk of some service delivery and/or business function failing due to unsubstainable [sic] work load of a Team Leader being shared across other staff.'[95]

Conclusions

57. Management and oversight of the mining inspectors were deficient, leaving the inspectors inadequately supported. Problems affecting the inspectorate and the resulting risks were known at many levels of DOL, but were not competently addressed. Generally there was an inadequate focus on the health and safety risks posed by the underground coal mining industry.

ENDNOTES

[1] Neil Gunningham and David Neal, Review of the Department of Labour's Interactions with Pike River Coal Limited, 4 July 2011, DOL0100010001/38, para. 110.
[2] Ibid., DOL0100010001/38, para. 113.
[3] Ibid., DOL0100010001/39, para. 115.
[4] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 5 December 2008, DOL3000090027/2, 7.
[5] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 2 September 2010, DOL3000090046/3.
[6] Ibid.
[7] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 7 May 2010, DOL3000090042/3.
[8] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 2 September 2010, DOL3000090046/3.
[9] The requirement is imposed by reg 23 of the Health and Safety in Employment (Mining – Underground) Regulations 1999.
[10] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 7 April 2010, DOL3000090041/6; Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 7 May 2010, DOL3000090042/7; Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 7 May 2010, DOL3000090043/7; Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 5 July 2010, DOL3000090044/7.
[11] Kevin Poynter, transcript, p. 3085.
[12] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 5 July 2010, DOL3000090044/7; and Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 2 August 2010, DOL3000090045/7.
[13] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 2 September 2010, DOL3000090046/7.
[14] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 6 October 2010, DOL3000090047/6.
[15] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 1 November 2010, DOL3000090048/6.
[16] Michael Firmin, ORP April 2010, DOL3000090018/1.
[17] Michael Firmin, Operational Review Process Monthly Report – Staff Member, 3 November 2008, DOL3000090001/4.
[18] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 3 September 2009, DOL3000090035/6.
[19] Kevin Poynter, Operational Review Process Monthly Report – Staff Member, 3 December 2009, DOL3000090038/6.
[20] Michael Firmin, Operational Review Process Monthly Report – Inspectors, 3 September 2010, DOL3000090022/11.
[21] That role was current as at 31 August 2011: Department of Labour, Answers to Questions for Department of Labour, 31 August 2011,

DOL7770010009/14, para. 33.

[22] Department of Labour, Answers to Questions for Department of Labour: Appendix H – Position Description Senior Advisor High Hazards, 31 August 2011, DOL7770010009_02/3.

[23] Ibid., DOL7770010009_02/2.

[24] Ibid.

[25] Ibid., DOL7770010009_02/3.

[26] Michael Firmin, transcript, p. 605.

[27] Department of Labour, Answers to Questions, DOL7770010009/14, para. 33.

[28] Neil Gunningham and David Neal, Review, DOL0100010001/38, para. 112.

[29] Michael Firmin, transcript, p. 600.

[30] Department of Labour, Mining Steering Group, Minutes, DOL0020020011/1.

[31] Susan (Lesley) Haines, witness statement, 20 June 2011, DOL7770010001/7, para. 32.

[32] Department of Labour, Mining Steering Group, Minutes, 31 March 2010, DOL0020020011/8 and /9.

[33] Michael Firmin, transcript, p. 606.

[34] Department of Labour, Answers to Questions, DOL7770010009/15, para. 37.

[35] Michael Firmin, transcript, p. 610.

[36] Department of Labour, Mining Steering Group, Minutes, 10 July 2009, DOL0020020011/24.

[37] Review of Coverage of Clients by the Extractives Inspectorate, 2006, as cited by Neil Gunningham and David Neal, Review, DOL0100010001/98, para. 347.

[38] Neil Gunningham and David Neal, Review, DOL0100010001/98, para. 347.

[39] Michael Firmin, transcript, p. 622–23, Department of Labour, Mining Steering Group, Minutes, 10 July 2009, DOL0020020011/25.

[40] Michael Firmin, transcript, p. 623. These planned audits were not those commissioned by the government following the Pike tragedy and undertaken by Australian experts with DOL support.

[41] Department of Labour, Mining Steering Group, Minutes, 10 July 2009, DOL0020020011/23–24.

[42] Ibid., DOL0020020011/25.

[43] Kevin Poynter, transcript, p. 2974.

[44] Michael Firmin, transcript, pp. 606–07.

[45] Department of Labour, Answers to Questions, DOL7770010009/17, para. 42.

[46] Michael Firmin, transcript, p. 2823.

[47] Ibid., pp. 647–48; Kevin Poynter, witness statement, 22 June 2011, DOL7770010006/4, para. 18.

[48] Kevin Poynter, transcript, p. 2980.

[49] Ibid., p. 2975.

[50] Michael Firmin, transcript, pp. 2817–19.

[51] Kevin Poynter, transcript, p. 2981.

[52] Michael Firmin, transcript, p. 2832; Kevin Poynter, transcript, p. 2970.

[53] Michael Firmin, transcript, p. 2833.

[54] Ibid., pp. 2820–21.

[55] Department of Labour, Answers to Questions, DOL7770010009/18, para. 46.

[56] Department of Labour, Mining Steering Group, Minutes, 10 July 2009, DOL0020020011/21.

[57] Department of Labour, Mining Steering Group, Minutes, 10 December 2009, DOL0020020011/19.

[58] Ibid.

[59] Memorandum, Department of Labour, Mining Steering Group to Workplace Services Management Team, 12 February 2010, DOL0020020022.

[60] Ibid., DOL0020020022/1.

[61] Ibid., DOL0020020022/4

[62] Ibid., DOL0020020022/3.

[63] Ibid., DOL0020020022/5.

[64] Department of Labour, Mining Steering Group, Minutes, 17 February 2010, DOL0020020021/1.

[65] Department of Labour, Answers to Questions, DOL7770010009/19, para. 47.

[66] Michael Firmin, transcript, p. 599.

[67] Kevin Poynter, transcript, pp. 3039–40.

[68] Department of Labour, Answers to Questions, DOL7770010009/10–11, para. 28.

[69] Ibid., DOL7770010009/7, para. 20.

[70] Ibid.

[71] Michael Firmin, transcript, p. 615.

[72] Ibid., pp. 615–16.

[73] The MSG minutes of 31 March 2010 record what appears to be relatively informal feedback by the investigator into the Black Reef mine tragedy. Issues were identified with DOL processes, mine plans being needed and the extractives inspectors needing to take proper file notes of their visits: Department of Labour, Mining Steering Group, Minutes, 31 March 2010, DOL0020020011/12.

[74] Professor Gunningham is a lawyer, social scientist and co-director of the National Research Centre for Occupational Health and Safety at the Australian National University. Dr Neal is a senior barrister, consultant in health and safety law and member of the Law Council of Australia's Occupational Health and Safety Committee: Neil Gunningham and David Neal, Review, DOL0100010001/6.

[75] Ibid., DOL0100010001.

[76] Ibid., DOL0100010001/9, para. 8.

[77] Ibid., DOL0100010001/12, para. 22.

[78] Department of Labour, Briefing: Underground Mining – Background on Department of Labour's Legislative and Investigative Approach, 20 December 2010, DOL0010020492/5, para. 20.

[79] Ibid., DOL0010020492/5, para. 22.

[80] Department of Labour, Answers to Questions for Department of Labour: Appendix J – Bundle of Documents Regarding 2006–2010 Review, DOL7770010009_07/17.

[81] Department of Labour, Improving Health and Safety Hazard Management in the Underground Mining Industry, March 2008, DOL0010020279.

[82] Department of Labour, Summary of Public Submissions on Discussion Paper Improving Health and Safety Hazard Management in the Underground Mining Industry, September 2008, DOL0010020323/5.

[83] Ibid., DOL0010020323/12.

[84] Ibid., DOL0010020323/12–13.

[85] Ibid., DOL0010020323/6.

[86] Ibid., DOL0010020323/16.

[87] Ibid., DOL0010020323/18.

[88] Department of Labour, Briefing: Options for Improving Health and Safety in Underground Mining, 2 July 2009, DOL0010020445.

[89] Health and Safety in Employment (Mining Administration) Amendment Regulations 2010.

[90] Department of Labour, Mining Steering Group, Minutes, 10 July 2009, DOL0020020011/24.

[91] Michael Firmin, transcript, p. 607.

[92] James Murphy, transcript, p. 503.

[93] Department of Labour, Answers to Questions for Department of Labour: Appendix M – Risk Register Extracts, March 2010, DOL7770010009_12/3.

[94] Ibid., 4 August 2011, DOL7770010009_12/2.

[95] Ibid., DOL7770010009_12/4.

CHAPTER 24

Effectiveness of the health and safety regulator

Introduction

1. This chapter evaluates the effectiveness of the Department of Labour (DOL)[1] in regulating health and safety in the underground coal mining industry. In order to do so the commission has found it necessary to examine the department's wider functions, structures and strategies, within which its regulation of the industry took place. That broader look has been limited in scope but has identified the issues described in this chapter. The commission has taken these issues into account when making its comments and formulating its recommendations.[2]

2. The chapter begins with an acknowledgement of the changes made following the Pike River tragedy.

Changes to the Department of Labour since the Pike River tragedy

3. DOL accepts that its regulation of health and safety in underground coal mining has been inadequate. Since the Pike River tragedy it has made or foreshadowed important changes to improve its performance.

High Hazards Unit

4. DOL has reviewed its approach to high-hazard industries,[3] and created, with additional funding, a High Hazards Unit for the extractives, petroleum and geothermal sectors. This is headed by a general manager in Wellington. Below are two chief inspector positions, one for extractives and the other for petroleum and geothermal workplaces. Three specialist inspectors will report to each chief inspector.[4] Risk assessment will determine the frequency of inspections and other interventions, including systems audits.[5]

5. There have been continuing difficulties in staffing the High Hazards Unit. It was established from 26 September 2011, but has had a chief inspector for the extractives sector (including mining) for only part of that time, seconded from the Queensland regulator.[6] In August 2012 the position remained vacant and the recruitment process was ongoing. Of the three specialist inspectors only one, Michael Firmin, is a warranted mining inspector. The second, Brian Harrington, who holds a first class mine manager's certificate, is still undergoing training and is expected to be warranted in September 2012. The third, David Bellett, is an experienced inspector and investigator, but does not have coal mining expertise.[7] Recruiting and retaining specialist mining inspectors will be difficult, given international demand.

6. The department has also reviewed its management of health and safety. The Mining Steering Group and Workplace Services Management Team have been disestablished and a new Labour Group Leadership Team created.[8]

Proposal to increase investment

7. Following a 2012 proposal by the minister of labour, health and safety funding will be increased by approximately $37 million from 2012 to 2016.[9] The increase comes from the Health and Safety in Employment (HSE) Act 1992 levy, not all of which has previously been allocated. There will be more inspectors and they will focus on the areas of

highest risk.[10] There will be better support for joint and industry-led initiatives and employee participation.[11] Links with the Accident Compensation Corporation (ACC) and other interested parties will be strengthened. DOL has set a target of reducing the number of workplace fatalities and serious injuries by 25% by 2020.[12] This will still leave New Zealand behind comparable countries, including Australia and the United Kingdom.

8. In the commission's view the changes are a step in the right direction, but do not go far enough.[13]

Leadership of health and safety

9. DOL now appreciates the importance of, and deficiencies in, its leadership of health and safety. As the minister's proposal noted, 'the Pike River tragedy and Royal Commission hearings indicate areas of weakness in the effectiveness and credibility of the regulator, and the ability to support industry-led activity and effective employee participation'.[14]

10. The minister proposed a strategic review of the health and safety system,[15] which Cabinet directed be undertaken by an independent working group.[16] The six-member group is to report by 30 April 2013.[17] The review is to be wide ranging and will examine whether New Zealand's health and safety system is fit for purpose.

11. Many submissions to the commission were also concerned about inadequate leadership of health and safety. As Dr Kathleen Callaghan stated:

> *failures of the system reflect leadership and governance and that is not to personalise this critical issue. … If one had to isolate the one critical factor in the scientific literature pertaining to positive health and safety performance it would be 'leadership'. Credibility of the leader is paramount ...*
>
> *The DOL, in my view, does not lead as it should. It does some very good things as this submission records. But the threats to its credibility are significant. The bar set for NZ workplaces is not being met by the Regulator itself. … Until this changes, and the Regulator leads by example, until the Regulator 'walks its own talk' the evidence suggests that there is unlikely to be any real change to OH&S in NZ. The leader will not have the confidence of the workplace. This comment goes beyond mining.*[18]

The functions and structure of the Department of Labour

Many functions

12. At the time of the Pike River tragedy, DOL had many functions. It administered 23 acts and 67 sets of regulations. Four of the acts were major: the Immigration Act 2009, the Health and Safety in Employment Act 1992, the Employment Relations Act 2000, and the Accident Compensation Act 2001.[19] It did so through six groups: Immigration, Labour, Policy and Research, Business Services, Legal and International, and Executive.[20]

13. The labour, and policy and research, groups were described as having 'substantial involvement in health and safety matters'.[21] But the labour group was responsible for employment and health and safety functions and policy advice, and accident compensation policy advice. A subgroup, workplace services, was responsible for employment and health and safety. The policy and research group's responsibilities included labour market, employment, immigration and health and safety advice.

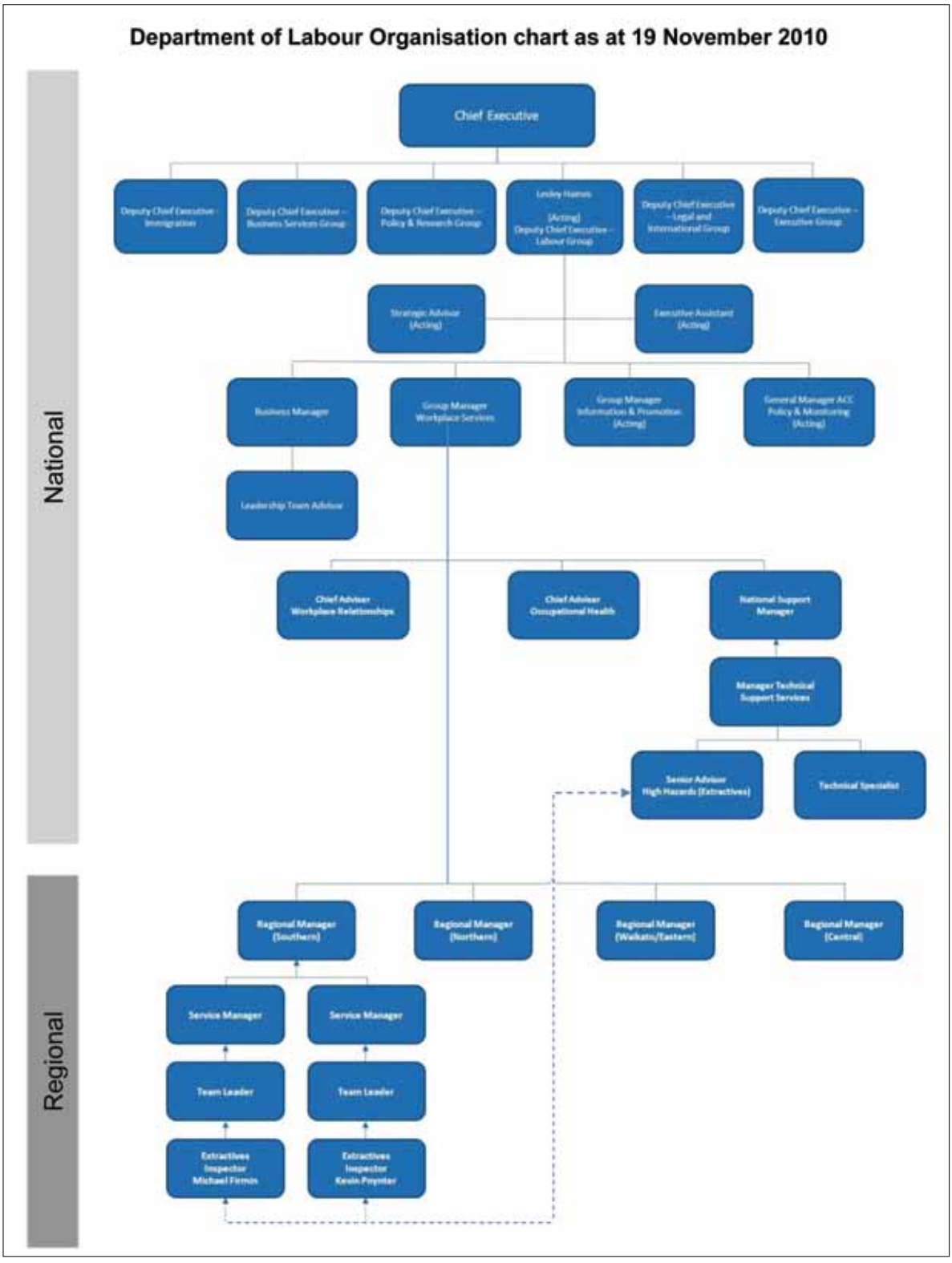


Figure 24.1: Department of Labour organisation chart as at 19 November 2010[22]

Responsibilities of the senior officers and leadership teams

14. The senior DOL officers had broad responsibilities, of which health and safety was just one.[23] That breadth was also reflected in the high-level leadership teams. At 19 November 2010 DOL had two teams relevant to health and safety. The first was the Strategic Leadership Team, made up of the chief executive and the deputy chief executives of each of the six groups:

Figure 24.2: Strategic leadership team as at 19 November 2010[24]

15. The second was the Workplace Leadership Team within the labour group. Its members included a strategic adviser, business manager, workplace services manager, information and promotion manager and ACC policy and monitoring manager:

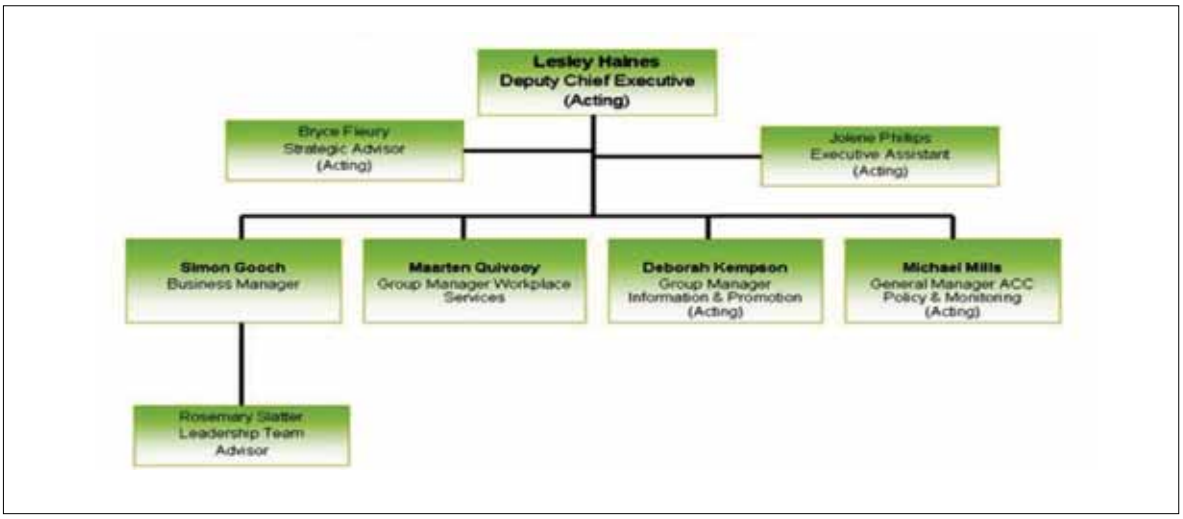


Figure 24.3: Workplace leadership team as at 19 November 2010[25]

16. The labour group leadership team created following the Pike River mine tragedy also has broad responsibilities.[26]

17. As at 19 November 2010 no one in either the strategic leadership team or the workplace leadership team had health and safety expertise, except for the acting deputy chief executive of the legal and international group, who had relevant legal experience. One member of the lower level workplace services management team had health and safety expertise.[27] Only three of the relevant members of the policy and research group appear to have had health and safety expertise. The request for an additional extractives inspector was first raised by mine inspectors at level seven of DOL, and had to pass up through two different groups over many months before it was declined.[28] The lack of understanding of the importance of the problem was clear.

Economic focus

18. Health and safety is not the main focus of DOL's statements of intent for 2010–13[29] and 2011–14,[30] which are aimed at improving economic performance. An increased focus on health and safety is apparent in DOL's statement of intent for 2012–2015.[31]

Conclusions

19. Health and safety in New Zealand was not led by a body for which improving health and safety was its sole, or even major, objective. Health and safety was just one of the responsibilities of a department with many responsibilities.

20. This diluted the attention paid to health and safety and contributed to an unwieldy structure in which senior officers had limited opportunities to develop health and safety expertise.

Shared responsibility at governance level

21. DOL recognised the importance of shared responsibility at governance level in its June 2005 10-year strategy, which proposed 'an effective governance arrangement, including a tripartite body'.[32]

22. The Workplace Health and Safety Council was established in 2007 to provide representative leadership and advise the minister responsible for workplace health and safety.[33] The members include representatives from government, employer and employee organisations.[34] The council did not seek to participate in this inquiry, but the commission received its minutes and submissions from groups represented on the council or whose members attended meetings.[35]

23. The council was to meet quarterly, but has met less often.[36] The meetings were attended by council members as well as stakeholder representatives, from ACC, DOL, Maritime New Zealand, the Ministry of Transport and Pike, among others.

24. Significant health and safety issues were referred to the council. In 2010, for example, it was told about 'limited frontline capabilities' within DOL,[37] and that 'injury stats are flat-lining with no significant decline and do not compare well with other like countries'.[38] Planned cuts to ACC health and safety representative training programmes were discussed.[39] On 18 February 2010, a council member noted frustration at 'endless reports and suggested the Council should meet in between the scheduled quarterly meetings and without other officials'.[40] The minister expressed concern that the 10-year plan and the council were 'not being as effective as they could be. She stated that both the Strategy and the Council need to have achieved more.'[41]

25. Submissions to this commission raised similar concerns. One submitter said the council:

> *has not effectively engaged with the broader health and safety community, nor been given the necessary support to perform an accountability function. As a result initiatives identified under the Workplace Health and Safety Strategy have largely been allowed to wither and been replaced by a series of somewhat disjointed Action Plans which, whilst addressing important issues, seem to be lacking in strategic insight.*[42]

26. The New Zealand Council of Trade Unions expressed concern that the council lacked power and a statutory basis, and thus could be ignored. It felt that 'those key functions… policy discussions, standard setting, oversight and monitoring of what goes on, on a tripartite basis should be done through a… statutory established national level council'.[43]

27. In summary, New Zealand lacked effective shared governance, despite its importance being recognised in the DOL 10-year strategy. As Robens concluded 40 years ago, advisory committees have little influence; an executive board is required if there is to be effective participation in decision-making.

High-level health and safety expertise

28. The 10-year strategy also identified a need for high-level health and safety expertise. It contemplated that the National Occupational Health and Safety Advisory Committee (NOHSAC), established in 2003, would continue to give independent, evidence-based occupational health and safety advice to the relevant minister.[44] Its members included experts in public health, risk management, medicine and health, and safety surveillance systems.[45]

29. NOHSAC's reports went to the heart of many of New Zealand's health and safety problems. In 2006, for instance, it noted that the 'amount of funding provided to prevent workplace harm appears to be significantly less than what actually may be required'.[46] In real terms the 2005–06 funding was less than the amount provided in 1989–90.[47]

30. This 2006 report also pointed out that existing approved codes of practice were sometimes inconsistent with best practice, and that more were needed. A 2008 report affirmed the importance of approved codes of practice and other guidance; the right ones had to be developed, disseminated and complied with.[48]

31. The foreword to NOHSAC's August 2008 fifth annual report highlighted mounting concerns. Though essential, policy documents, on their own, would not 'lead to an improvement in the prevention of occupational disease

and injury in New Zealand'. There had been 'virtually no progress on even the most basic and easily achievable recommendations'. There had, for example, been 'four years of talk, but virtually no action, on simple and easily achievable recommendations such as the recording and coding of occupation on routinely collected data such as death registrations, cancer registrations and hospital admissions',[49] which was essential to the surveillance and therefore the prevention of occupational disease and injury.

32. NOHSAC's earlier reports had shown 'significant gaps' in the guidance materials that were supposed to 'encourage and facilitate compliance'.[50] Its latest report was undertaken in conjunction with the Office of the Australian Safety and Compensation Council and both it and NOHSAC were 'concerned that very little effort has been made to identify the relative importance of codes of practice and guidance materials to the functioning of the entire OHS regulatory system'.[51]

33. NOHSAC noted with concern, too, that 'the number of field active inspectors in occupational health and safety has decreased from 1.2 inspectors per 10,000 employees in 2001 to 0.8 inspectors per 10,000 employees in 2004' and proactive workplace visits from DOL inspectors had gone down from '26,405 in 1994/95 to less than 5,000 currently'.[52]

34. NOHSAC was abolished in 2009 as part of a reprioritisation of government expenditure.[53]

35. Serious problems identified by NOHSAC remain. In 2011 there were still substantial data deficiencies.[54] As is noted in Chapter 26, 'An effective regulatory framework', codes of practice and guidance are still inadequate, at least in the extractives sector.

The Department of Labour's 10-year strategy

Principles

36. The 10-year strategy, which aims to significantly reduce New Zealand's work toll,[55] sets out four principles:

    - prevention: focusing on preventing workplace illness and injury;
    - participation: participation by all groups involved in the workplace, including workers, health and safety representatives, unions, employers, industry and government agencies;
    - responsibility: employers are primarily responsible for health and safety, although employees have some personal responsibility; and
    - practicability: health and safety is based on what is reasonable, including the potential for harm, current knowledge and the cost of health and safety measures.[56]

    The commission endorses the prevention and participation principles.

37. The responsibility principle is narrowly expressed and concentrates on employers, while recognising some role for employees. But statutory responsibility for the prevention of harm in the workplace extends to a range of people, including the self-employed, contractors and machinery suppliers and repairers.[57] More importantly, the statement on responsibility overlooks the critical role of the regulator, whose inspectors inform, educate and ensure compliance,[58] functions integral to attaining the , whose inspectors inform, educate and ensure compliance, functions integral to attaining the Health and Safety in Employment Act 1992's objective.

38. The practicability principle reflects the definition of 'all practicable steps' in the HSE Act.[59] Whether a step is practicable depends on such factors as the nature, severity and likelihood of the potential harm and the availability, cost and effectiveness of the solution. The regulator has a crucial role in disseminating information about those. This is an aspect of the inspectorate's basic functions and reinforced by DOL's role in promulgating guidance material, including approved codes of conduct.[60]

39. The way in which these two principles are explained understates DOL's pivotal role, and has been reflected in inadequate practice. That understatement is now recognised in DOL's initiatives to improve its performance.

Review of the 10-year strategy

40. A range of groups made submissions when the 10-year strategy was reviewed in 2009.[61] Their concerns, which mirrored many of those expressed by NOHSAC, included the following:[62]

- the leadership of health and safety was inadequate;
- the strategy did not provide sufficiently meaningful goals and measures;
- accident and injury rates would be most improved by refocusing the strategy on the high-hazard sectors;
- resources were inadequate;
- inspection rates had fallen to an unsatisfactory level;
- policy initiatives were not reaching the 'coal face';
- there was a lack of approved codes of practice and guidance;
- health and safety surveillance data and benchmarking data were lacking;
- managers and supervisors needed access to effective health and safety training;
- there was no approved code of practice for employee participation;
- employers and representatives needed more encouragement to use employee participation processes; and
- workplace health and safety culture needed to be improved in order to make a sustainable improvement in workplace health and safety.

41. Many of these concerns, including inadequate resources, an insufficient focus on high-hazard industries and a lack of guidance, were still evident at the time of the Pike River tragedy.

42. The 2009 review led to a National Action Agenda for 2010 to 2013, published in March 2011, which 'sharpens the focus on action'.[63] Since then there has been a more fundamental rethink about workplace health and safety in New Zealand.

Focusing on high-risk sectors

43. The 10-year strategy and national action agenda identified the need to focus on the high-risk sectors:[64]

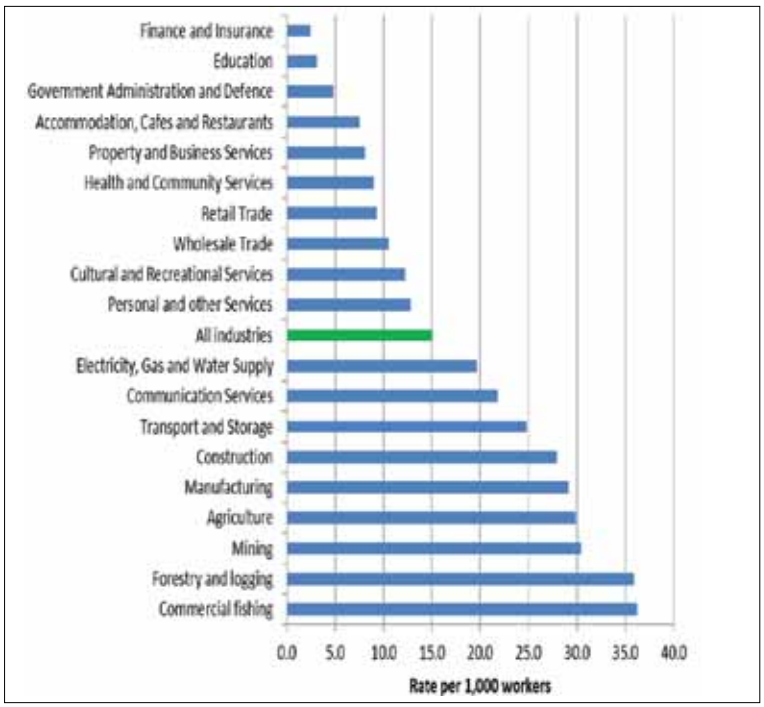


Figure 24.4: Highest risk sectors – injury rates[65]

44. Although mining had the third highest injury rate, in contrast to the construction, agriculture, forestry, manufacturing and fishing industries, it was not seen as a priority area.[66] This seems to be because of a focus on industries with 100,000 or more full-time equivalent workers.[67] This approach was too blunt.

45. The creation of the High Hazard Unit improves matters by recognising the risk profile of the mining, petroleum and geothermal industries. But Dr Callaghan, after consultation with Acting Professor Mark Taylor of the Light Metals Research Centre, University of Auckland, considers there are significantly more high-hazard industries.[68] DOL agrees.[69]

46. Interestingly, the highest risk sectors were identified primarily according to personal injury data – the consequences of individual accidents – but high-hazard industries are at risk of catastrophic process safety accidents, which are, by their nature, low frequency high consequence events. As the Pike River mine tragedy demonstrates, a focus on personal injury rates alone is not adequate to identify the ultimate workplace hazards. Until recently, there was no sign that catastrophic risk featured in the department's strategic thinking.

Accountability and review of the department

Performance measures

47. DOL lacks sufficient measures of its health and safety regulatory performance. Its 2011 annual report records that it had 'delivered' on the four intermediate 2010–11 outcomes, including that 'workplaces are healthier and safer'.[70] The performance measures upon which this conclusion was based included:

    - *The percentage of customers who indicated they were satisfied with the overall quality of service delivery received …*
    - *The percentage of investigations completed within five months of notification of the event.*
    - *The percentage of workplaces that, after six months, have satisfactorily addressed the compliance or enforcement requirements identified.*
    - *The percentage of e-enquiries requiring a substantive response that are responded to within three working days.*
    - *The percentage of workplace assessments targeted at industries identified in the Workplace Health and Safety Strategy Action Plan.*[71]

48. Those measures did not demonstrate how the core statutory health and safety functions have been performed and whether health and safety compliance has improved. As a consequence substantial problems with DOL's health and safety regulatory performance were largely invisible.

49. The *Performance Information for Appropriations: Vote Labour* for 2011–12 shows additional measures that improve the situation somewhat, including the number of approved codes of practice developed, revised or revoked.[72] However better, qualitative, measures are needed, and should be included in the 10-year strategy and lower level plans.

Review and audits

50. DOL has had at least eight reviews and restructurings from when the HSE Act came into force until May 2012.[73] Those were 'in response to policy changes, tightening financial constraints, and the need to realign the Department's health and safety function with those of other agencies (such as the Department's Employment Relations Service and ACC's injury prevention function)'.[74]

51. DOL's internal reviews of its health and safety performance have been limited. They include a review commissioned in August 2010 of the quality of its investigation decision processes. The report of May 2011 found that significant improvements to investigation and compliance processes were needed.[75] Certain changes were agreed to in November 2011 and have been or are being implemented.[76]

52. The health and safety performance of the regulator should be regularly reviewed and audited, using appropriate health and safety performance measures. The reviewers should include external health and safety experts.[77]

Conclusions

53. DOL has been ineffective as the regulator of health and safety in the underground coal mining industry and its strategic approach to health and safety in general provides cause for concern. The reasons include:

- a lack of national leadership by the department, which has damaged its credibility;
- no shared responsibility at governance level, including the absence of an active tripartite body;
- not following the expert advice from NOHSAC on, for example, the need for approved codes of practice; and
- insufficient departmental focus and expertise regarding health and safety, especially at the senior management levels, caused by its multiple functions, its organisational structures and management groups, gaps in its multi-year strategies and planning, poor performance measures and infrequent self-review.

54. The government and DOL have made significant changes since the Pike River tragedy. The setting up of the High Hazards Unit, the ministerial task force and the increased funding are steps in the right direction. For those improvements to be sustainable, and for New Zealand's poor health and safety record to be improved, the right administrative platform needs to be created, in the form of an expert regulator focused solely on health and safety. The characteristics of such a regulator are discussed in Chapter 25, 'A new regulator'.

ENDNOTES

[1] Now part of the Ministry of Business, Innovation and Employment.

[2] See the commission's Terms of Reference, para. (i), in Volume 1 of this report.

[3] See, for example, Department of Labour, Practical Proposals for Improving the Department of Labour's Approach to High Hazard Industries, July 2011, DOL3000180051.

[4] Department of Labour, Additional Submissions on Questions Arising During Final Submissions, 16 April 2012, DOL7770010010/3, paras 4–6; Letter, Brett Murray to Cameron Mander, 24 July 2012, MBIE3000010004/2.

[5] Department of Labour, Additional Submissions, DOL7770010010/3, para. 7; Department of Labour, Phase Four Paper, 16 March 2012, DOL4000010005/18–20, paras 62–69.

[6] Gavin Taylor, Chief Coal Mines Inspector, Queensland: Letter, Brett Murray to Cameron Mander, 24 July 2012, MBIE3000010004/1–2.

[7] Letter, Brett Murray to Cameron Mander, 24 July 2012, MBIE3000010004/1–2; Michael Firmin, transcript, p. 616.

[8] The Mining Steering Group was disestablished from 19 August 2011 and the Workplace Services Management Team from 31 August 2011: Department of Labour, Answers to Questions for Department of Labour, 31 August 2011, DOL7770010009/17, 18–19, paras 42, 47.

[9] Kate Wilkinson (Minister of Labour), Proposal to Increase Investment in Safe and Skilled Workplaces Using Unallocated Revenue from the Health and Safety in Employment Act Levy, 4 April 2012, DOL7770060003/20; Cabinet Minute of Decision: Proposal to Increase Investment in Safe and Skilled Workplaces Using Unallocated Revenue from the Health and Safety in Employment Act Levy, 16 April 2012, CAB Min (12) 12/14, DOL7770060004.

[10] Kate Wilkinson (Minister of Labour), Proposal to Increase Investment in Safe and Skilled Workplaces, DOL7770060003/11–12, paras 57–61; Cabinet Minute of Decision: Proposal to Increase Investment in Safe and Skilled Workplaces, DOL7770060004/2, para. 5.

[11] Kate Wilkinson (Minister of Labour), Proposal to Increase Investment in Safe and Skilled Workplaces, DOL7770060003/2, para. 9.

[12] Ibid., DOL7770060003/3, para. 10; Cabinet Minute of Decision: Proposal to Increase Investment in Safe and Skilled Workplaces, DOL7770060004/3, para. 13.1.

[13] Similar views are apparent from submissions. For example, Impac Services Ltd expressed concern that DOL's post-Pike River changes are not the start of 'a widespread and sustainable set of initiatives': Impac Services Ltd, Submission by Impac Services Ltd to Phase 4 of the Pike River Royal Commission, 9 March 2012, IMP0001/6.

[14] Kate Wilkinson (Minister of Labour), Proposal to Increase Investment in Safe and Skilled Workplaces, DOL7770060003/8, para. 36.

[15] Ibid., Appendix 1, DOL7770060003/23–24.

[16] Cabinet Minute of Decision: Proposal to Increase Investment in Safe and Skilled Workplaces, DOL7770060004/3, para. 14.

[17] The members are Robert Jager, Chairman of Shell New Zealand and General Manager of Shell Todd Services (chair); Mavis Mullins, Director at Paewai Mullins Shearing; Michael Cosman, Managing Director of Impac Services Ltd; Paula Rose, former National Manager Road Policing; William Rosenberg, Policy Director/Economist for the Council of Trade Unions; and Paul Mackay, Manager Employment Relations at Business New Zealand: Kate Wilkinson (Minister of Labour), Health and Safety Review Taskforce Appointed, 6 June 2012, http://www.beehive.govt.nz/release/health-and-safety-review-taskforce-appointed

[18] Kathleen Callaghan, witness statement, 23 March 2012, FAM0058/10–11, paras 47–48.

[19] Department of Labour, Annual Report for the Year Ended 30 June 2011, p. 127, http://www.dol.govt.nz/publications/general/ar1011/annualreport1011.pdf

[20] Ministry of Business, Innovation and Employment, Structure, http://www.dol.govt.nz/about/organisation/our-org-structure.asp. The ministry is currently planning restructuring, the nature of which is not yet fully settled.

[21] Christopher Blake, witness statement, 20 June 2011, DOL7770010004/4, para. 17.

[22] Compiled from publicly available documents and the charts shown in

Neil Gunningham and David Neal, Review of the Department of Labour's Interactions with Pike River Limited, 4 July 2011, DOL0100010001/36, 174–75.

[23] Neil Gunningham and David Neal, Review, DOL0100010001/174.

[24] Ibid., DOL0100010001/175.

[25] Ibid., DOL0100010001/174.

[26] The minutes of the current labour group leadership team show that it deals with a diverse range of matters, only some of which are related to health and safety: Department of Labour, Labour Group Leadership Team Meeting Minutes, 1 September 2011–1 May 2012, DOL3000180001–DOL300180035.

[27] Dr Geraint Emrys.

[28] See Chapter 23, 'Management of the mining inspectorate'.

[29] Department of Labour, Statement of Intent 2010/11–2013/14, 2010, http://www.dol.govt.nz/publications/general/soi2010/soi-2010.pdf

[30] Department of Labour, Statement of Intent 2011–2014, 2011, http://www.dol.govt.nz/publications/general/soi2011/soi-2011.pdf

[31] Department of Labour, Statement of Intent 2012–2015, 2012, http://dol.govt.nz/publications/general/soi2012-2015/soi-2012-2015.pdf

[32] Ruth Dyson (Associate Minister of Labour), Workplace Health and Safety Strategy for New Zealand to 2015, June 2005, CAC0004/16.

[33] The role and terms of reference were revisited by the council at various times, see for example: Workplace Health and Safety Council, Meeting Minutes, No. 11, 18 February 2010, CAC0003/45–46.

[34] Its members are identified as the Hon. Kate Wilkinson, Minister of Labour; Helen Kelly, President of the New Zealand Council of Trade Unions; Phil O'Reilly, Chief Executive of Business NZ; Andrew Casidy, a union official and advocate; Fritz Drissner, Health and Safety Co-ordinator for the New Zealand Amalgamated Engineering, Printing and Manufacturing Union; Paul Jarvie, Manager Occupational Health and Safety, Employers and Manufacturers Association; and Panu Raea, a lawyer and General Manager of Safety and Employee Well-being at Air New Zealand (http://www.dol.govt.nz/whss/whsc/whsc-members.asp).

[35] Accident Compensation Corporation, Air New Zealand, the Department of Labour, the New Zealand Amalgamated Engineering, Printing and Manufacturing Union, the New Zealand Council of Trade Unions and Pike.

[36] From the minutes published on the Ministry of Business, Innovation and Employment, Labour Group's website, in 2010 it appears to have met only three times and twice in 2008 and 2011: http://www.dol.govt.nz/whss/whsc/meetings.asp

[37] Workplace Health and Safety Council, Meeting Minutes, No. 11, 18 February 2010, CAC0003/46.

[38] Workplace Health and Safety Council, Meeting Minutes, No. 12, 12 May 2010, CAC0003/33.

[39] For example: Workplace Health and Safety Council, Meeting Minutes, No. 8, 13 May 2009, CAC0003/69–70; No. 9, 17 September 2009, CAC0003/60–62; No. 12, 12 May 2010, CAC0003/37–38.

[40] Workplace Health and Safety Council, Meeting Minutes, No. 11, 18 February 2010, CAC0003/45.

[41] Ibid., CAC0003/44. The minutes for 12 May 2010 record that the council discussed the minutes from this meeting and 'confirmed that they were correct, if a little harsh in their recording of the discussion with the Minister over the Council's role and achievements': Workplace Health and Safety Council, Meeting Minutes, No. 12, 12 May 2010, CAC0003/31.

[42] Impac Services Ltd, Submission, IMP0001/7.

[43] Ross Wilson, transcript, p. 5503.

[44] Ruth Dyson (Associate Minister of Labour), Workplace Health and Safety Strategy, CAC0004/26.

[45] National Occupational Health and Safety Advisory Committee, First Annual Report to the Associate Minister of Labour, June 2004, pp. 3–4, http://ohsnetnz.org.nz/images/pdfs/NOHSAC_AR_03-04.pdf

[46] Allen & Clarke Policy and Regulatory Specialists Ltd, Occupational Health and Safety in New Zealand (NOHSAC Technical Report 7), 2006, p. v, http://ohsnetnz.org.nz/documents/NOH11098TechRep7Web.pdf

[47] Ibid.

[48] Gunningham & Associates, Review of Key Characteristics that Determine the Efficacy of OHS Instruments (NOHSAC Technical Report 9), 2008, http://ohsnetnz.org.nz/documents/EfficacyofOHSInstrumentsTechReport9.pdf

[49] National Occupational Health and Safety Advisory Committee, Fifth Annual Report to the Minister of Labour, August 2008, p. 1, http://ohsnetnz.org.nz/documents/AnnualReport2008.pdf

[50] Ibid., p. 2.

[51] Ibid., p. 1.

[52] Ibid., p. 2.

[53] Department of Labour, Response of the Department of Labour to Request for Information, June 2012, DOL7770060067/8, paras 16–17.

[54] Department of Labour, State of Workplace Health and Safety in New Zealand, June 2011, http://www.dol.govt.nz/whss/state-of-workplace/DOL%2011724%20State%20of%20Workplace.pdf; Impac Services Ltd, Submission, IMP0001/5; Chapter 22, 'The decline of the mining inspectorate'; Chapter 23, 'Management of the mining inspectorate'.

[55] Ruth Dyson (Associate Minister of Labour), Workplace Health and Safety Strategy, CAC0004/9.

[56] Ibid., CAC0004/10.

[57] Health and Safety in Employment Act 1992, ss 6, 16–19.

[58] Ibid., s 30.

[59] Ibid., s 2A.

[60] Ibid., s 20.

[61] They included academics, employees, unions, employers, industry, and local and central government. The sectors included agriculture, construction, education, government, health and safety, medical and transport: Department of Labour, Review of the Workplace Health and Safety Strategy for New Zealand to 2015: Summary of Written Submissions, 2009, CAC0001/4.

[62] Ibid., CAC0001/13–17.

[63] Department of Labour, National Action Agenda 2010–2013, March 2011, DOL0020010015/4.

[64] Ruth Dyson (Associate Minister of Labour), Workplace Health and Safety Strategy, CAC0004/28.

[65] Kate Wilkinson (Minister of Labour), Proposal to Increase Investment in Safe and Skilled Workplaces, DOL7770060003/8.

[66] Department of Labour, National Action Agenda 2010–2013, March 2011, DOL0020010015/6.

[67] Ibid., DOL0020010015/15.

[68] Kathleen Callaghan, witness statement, 23 March 2012, FAM0058/11–12, para. 54.

[69] Department of Labour, Practical Proposals for Improving the Department of Labour's Approach to High Hazard Industries, July 2011, DOL3000180051/9.

[70] Department of Labour, Annual Report for the Year Ended 30 June 2011, 2011, p. 19, http://www.dol.govt.nz/publications/general/ar1011/annualreport1011.pdf

[71] Ibid., pp. 56–57.

[72] Performance Information for Appropriations: Vote Labour: Economic Development and Infrastructure Sector – Information Supporting the Estimates 2011/12, DOL0020010007/14–15.

[73] Department of Labour, Response of the Department of Labour to Request for Information, 15 May 2012, DOL7770060002/2–3, paras 2–7. This may not include the Labour Committee, Inquiry into the Administration of Occupational Safety and Health Policy: Report of the Labour Committee, 1996.

[74] Ibid., DOL7770060002/3, para. 8.

[75] Department of Labour, Response of the Department of Labour to Request for Information, June 2012, DOL7770060067/12, paras 28–32.

[76] Ibid., DOL7770060067/12–13, paras 33–35.

[77] For example the Civil Aviation Authority is externally audited by the International Civil Aviation Organisation http://www.caa.govt.nz/publicinfo/ICAO_audit.htm

CHAPTER 25

A new regulator

Introduction

1. A new regulator concerned solely with health and safety is required if New Zealand's poor health and safety record, including in underground coal mining, is to be improved. This chapter discusses the functions, form, strategy and resources of a new regulator.

Functions

2. The purpose of the health and safety regulator is to promote the prevention of harm to everyone in or near a workplace. The regulator should promote excellence in management, including systematic management, of health and safety. As part of that, it needs to ensure that inspectors carry out their functions properly. These functions include providing advice and information to employers, employees and other people, ascertaining compliance with the Health and Safety in Employment Act 1992 (HSE Act) and taking action to ensure compliance.

3. The regulator should:

    - advise the minister on workplace health and safety policy and operations;
    - administer and review the legislation and regulations, including promulgating codes of practice and guidance material;
    - provide workplace health and safety information to industry, employers, unions and workers;
    - promote and co-ordinate research, training and education;
    - carry out monitoring activities, including inspections and system audits; and
    - work with a wide range of other bodies, including industry, unions and safety organisations both in New Zealand and overseas.[1]

4. To credibly perform these functions, the regulator should have:

    - a sole focus on health and safety;
    - effective leadership;
    - a flat structure with minimum levels of management;
    - expertise in health and safety at all levels;
    - access to a broad range of external expertise;
    - well-qualified and trained inspectors;
    - a strong connection between its policy advice and compliance functions; and
    - effective relationships with government agencies and other stakeholders.

Form of a new regulator

5. There are three options:

    - the status quo, integrated into the Ministry of Business, Innovation and Employment

- an autonomous function, within the ministry; or
- a Crown entity, with its own executive board.

First option – the status quo

6. The Department of Labour (DOL) lost public and industry confidence. Because it had multiple functions, it was unable to maintain sufficient focus on health and safety policy, strategy and operations. Health and safety expertise was lacking. The people with that expertise were mainly at the lower levels of the department. DOL is now part of the new Ministry of Business, Innovation and Employment, which is also responsible for many functions.

7. The commission has been briefed on the high-level design of the new ministry.[2] The proposal separates policy and regulatory administration. Health and safety administration is to be part of a regulatory practice group responsible for administering a range of laws and regulations.

8. The minister has announced major initiatives to improve health and safety, including a fundamental review of the health and safety system to ensure it is fit for purpose. The commission agrees with those initiatives but considers it will be difficult to achieve necessary change if responsibility for health and safety administration remains essentially as it was – in a ministry mixed with other functions. Senior officials are likely to continue facing the same difficulty in maintaining focus on health and safety, a difficulty predicted by Robens.

Second option – an 'autonomous' function within the ministry

9. The commission has considered whether an 'autonomous' health and safety function should be established within the new ministry. There are two possibilities: a dedicated health and safety group with a statutorily independent function, or establishing the health and safety regulator as a 'departmental agency', in line with the recent government proposals for 'better public services'.[3]

10. A dedicated health and safety group within the ministry would be an improvement on the current proposal, but would it provide the right platform to drive the major reforms required? The group head would be subject to ministry priorities, would be bidding internally for the group's budget and is likely to be drawn into more general departmental management issues.

11. In Queensland, the administration of health and safety laws for the extractive industries is performed as part of an autonomous function within a department. The regulator operates through a division of the Department of Natural Resources and Mines and administers health and safety laws only in respect of the mining, petroleum and gas industries. The division is headed by the deputy director-general, safety and health, who is also the commissioner for mine safety and health.[4] The division is well regarded internationally, as is Queensland's mine safety record.

12. The departmental agency model envisaged by the government's recent proposals offers more hope of success than the status quo. Departmental agencies are an adaptation of the executive agencies structure used in the United Kingdom. If health and safety is to be administered through a departmental agency the agency would form part of the 'host' ministry but would be headed by its own chief executive, who would be employed (and subject to performance reviews) by the state services commissioner.

13. The chief executive of the departmental agency would be directly accountable to the minister for the agency's operational performance. People working for the agency would be employed by the host department, but employer responsibilities would be delegated to the chief executive of the departmental agency.

14. The chief executive of the ministry would be responsible for administering the departmental agency's funds. The agency would work according to the policy and funding of the ministry. The ministry's chief executive, in consultation with the chief executive of the departmental agency, Treasury and the State Services Commission, would be responsible for agreeing on the agency's strategy, policy and resources. The ministry would advise the minister on the agency's strategy, policy and funding. It follows that the departmental agency will be essentially concerned with operational delivery in line with externally determined strategy, policy and funding.

The government introduced an omnibus bill, including the departmental agency proposal, into Parliament on 30 August 2012.

15. A regulator constituted as a departmental agency has some attractions in setting the right focus on health and safety. But its role would not be wide enough to drive the much-needed major reform, which will require policy, legislation, regulation and operational changes. Another concern is that the departmental agency concept is unproven in New Zealand, and health and safety may not be an appropriate area in which to pioneer the new approach.

16. The United Kingdom has recently considered reducing its number of public bodies, including making some of them executive agencies. Importantly, it decided not to change the status of the regulator, the Health and Safety Executive, which will remain the equivalent of a New Zealand Crown entity.[5]

Third option – a Crown entity

17. The minister's proposals recognise that in international best practice responsibility is shared between employers, workers and regulators.[6] This approach is at the heart of the 1972 Robens report, which identified that:

> *the 'user interests' in this field – that is to say the organisations of employers and workpeople, the professional bodies, the local authorities and so on – must be fully involved and able to play an effective part in the management of the new institution. A principal theme … is the need for greater acceptance of shared responsibility, for more reliance on self-inspection and self-regulation and less on state regulation. This calls for a greater degree of real participation in the process of decision-making at all levels. … It is essential, therefore, that the principles of shared responsibility and shared commitment should be reflected in the management structure of the new institution.*[7]

18. Lord Robens recommended governance by a board comprising a chairman, regarded by the public as authoritative about health and safety, an executive director and a number of non-executive directors. Their expertise would encompass the industrial management, trade union, medical, educational and local authority spheres. All members would be involved in policy and decision-making and implicated in the decisions made.[8] An executive, not advisory, board was needed:

> *The distinction is vital. It is no secret that the main representative advisory committees which currently provide advice to government in this field … have not been altogether successful. They have met infrequently. They have no executive function. The fact of their existence has apparently done little to reduce the pressures which lead to protracted consultation on new or revised statutory regulations ... Representative advisory bodies of this kind have no way of ensuring that their advice really affects what the Government actually does … What is needed is participation in the actual making of decisions, both at technical level … and also in the overall management of the system, at the level where policy is determined.*[9]

These principles are reflected in the current structures of the UK Health and Safety Executive.

19. If the health and safety regulator were established as a Crown entity, it would be directed by a focused executive board appointed according to the general criteria set out in the Crown Entities Act 2004. These require board members to have appropriate knowledge, skills and experience which, in this case, would include recognised health and safety expertise. Unlike the other two options, the Crown entity option would enable that expertise to be directly involved in setting policy and strategies. The board would oversee the reform programme, set strategy and performance measures and appoint the chief executive.

20. The minister would appoint board members for fixed terms. The board would have independent statutory responsibilities, for example in the audit and inspection programmes, which would be delegated to the chief executive.

21. The minister would approve the regulator's strategic statement of intent and the regulator would report regularly

to the minister. It would provide an annual report to Parliament. It would be monitored by the ministry on behalf of the minister. The ministry would give the regulator advice and support. On policy advice and legislative reform, the regulator would work closely with the ministry and would bring direct experience from its operations.

22. The commission has considered which form of Crown entity would be most appropriate. Two other health and safety regulators, Maritime New Zealand and the Civil Aviation Authority, are classified as Crown agents, a form of Crown entity with the least independence from ministerial direction. The new regulator could be classified in the same way. As a Crown agent, the regulator would be required by the minister to give effect to government policy and follow 'whole of government' directions.

Preferred option – a new Crown agent

23. On balance, the commission prefers the creation of a new Crown agent with an exclusive focus on workplace health and safety because:

- the health and safety regulator will have its own identity and could start to rebuild public confidence;
- an executive board would give the chief executive strategic direction and support as well as directly appraising performance;
- the appointment of an executive board would ensure that a broad range of expertise, including health and safety expertise, is available at the highest level;
- the remuneration structure would be aligned more directly to the marketplace for specialists such as mining inspectors;
- policy advice to the minister would be improved by drawing on the expertise of the new Crown agent, which would have a small policy division;
- the regulator would be on the same footing as the Civil Aviation Authority and Maritime New Zealand; and
- a Crown agent would provide the right platform to drive the required major improvements to New Zealand's poor health and safety performance, identified in recent government proposals for reform.

Compliance strategy

Introduction

24. The new regulator will need a modern and effective compliance strategy superior to that used by DOL.[10] The strategy will need time to become fully effective.

25. A compliance strategy typically involves a wide range of interventions; enforcement is only one element. Other interventions include providing advice and education, issuing guidance and approved codes of practice, and recommending changes to laws and regulations. Compliance strategies should promote and maintain public confidence that health and safety legislation is being administered fairly and consistently. An effective strategy will reduce costs for businesses which have not previously received the help they need to comply with the HSE Act.

Best practice compliance strategy

26. The compliance strategy should include clear policies on the use of enforcement tools and penalties. The strategy should be communicated to employers, who need to know exactly what to expect from the regulator and how it will respond to breaches of the law.

27. A best practice strategy takes an evidence and risk-based approach to deciding which compliance tools are appropriate for individual cases or for groups within an industry. That typically involves identifying specific risks,

assessing the likelihood that they will happen and what impact they will have, and then managing the most significant risks. Assessing the type and level of risk helps with making decisions about how closely and when to monitor an entity's compliance. The level of intervention should be proportionate to the level of risk and the likely seriousness of the non-compliance. The regulator needs to address the causes, and not just the symptoms, of non-compliance.

28. To implement an effective risk-based strategy, the new regulator needs a clear picture of the risks and drivers of compliance within an industry. That requires gathering and analysing reliable and relevant information about operators, the industry and the regulatory environment. The information should include comprehensive data, which indicate the preventative measures being taken to avoid harm to workers and the effectiveness of those measures.

Field inspection programme

29. The field inspection programme should define the types of activities to be carried out, by whom, how often and how they will be reported. The frequency of activities will depend on the potential consequences of non-compliance, the operating environment of the industry, technological complexity and the compliance profile of the particular workplace. Visits by inspectors to a workplace should be a mixture of announced and unannounced visits.

30. The Queensland Mine Inspectorate's compliance activities are guided by the Mine Inspection Planning System (MIPS),[11] an electronic tool that assists inspectors to schedule their activities and allocate resources. Resources are initially allocated based on the mine's inherent hazard profile, but are then based on the performance of the mine. So a high-risk mine might be initially subject to a high level of monitoring, but that would decrease if the mine shows it is managing health and safety well. The opposite is also true. This dynamic process allows the mines inspectorate to respond to changing circumstances at a mine, such as a change in management, and allocate resources accordingly.

Implementation by inspectors

31. Inspectors need clear guidance and training to ensure that their actions follow the regulator's strategy. The compliance strategy needs to feed into policies and procedures. Inspectors need training in conducting inspections and audits, and in the use of the enforcement tools. Inspectors specialising in an industry need specific, industry-focused training as well as generic health and safety training. Inspectors need to collaborate with their counterparts overseas and stay up to date with international best practice.

32. The inspectors' activities should be regularly reviewed by their manager, who needs to have relevant expertise. Such reviews should include checking that decisions are consistent and in line with policy. Inspectors need quick access to legal support in complex situations.

Review of the strategy

33. The new regulator should regularly monitor the effects of its strategy on compliance behaviour. Only by doing so can the regulator check whether progress is being made. This requires designing qualitative and quantitative performance measures that can demonstrate progress. Lessons learnt should be used to improve strategy, policies and procedures. Appropriate benchmarks should be developed against other agencies in New Zealand and overseas.

Resourcing

34. The budget will need to be assessed by the new board when it has determined the regulator's strategy and programmes.

Health and safety levy

35. Currently, all businesses pay the same flat rate for the health and safety levy. That requires review because some businesses receive a far greater level of service than others. The amount spent administering health and safety in the mining and petroleum sectors, for example, may exceed the levies collected.

36. The levies have not traditionally been fully allocated to the regulator. In principle the levies should be spent on health and safety administration and be fully allocated to the regulator.[12] The new Crown agent should be able to transfer funds between years as needed.

Recommendation 1:

To improve New Zealand's poor record in health and safety, a new Crown agent focusing solely on health and safety should be established.

- The Crown agent should have an executive board accountable to a minister.
- The chief executive of the Crown agent should be employed by and be accountable to the board.
- The Crown agent should be responsible for administering health and safety in line with strategies agreed with the responsible minister, and should provide policy advice to the minister in consultation with the Ministry of Business, Innovation and Employment.
- The ministry should monitor the Crown agency on behalf of the minister.
- The Crown agency should be funded by the current levies but the basis of the levies should be reviewed for high-hazard industries.

ENDNOTES

[1] These responsibilities are drawn from those identified in the Robens report and remain applicable to the health and safety regulator: Lord Robens (Chairman), Committee on Safety and Health at Work, Safety and Health at Work: Report of the Committee 1970–72, 1972, HMSO, 1972, p. 36.

[2] Ministry of Business, Innovation and Employment, Decision Document: High Level Design, 31 July 2012, MBIE300010006.

[3] For the proposed departmental agency model, see Bill English (Deputy Prime Minister) and Jonathan Coleman (Minister of State Services), Better Public Services Paper 3: Departmental Agencies, 4 May 2012, http://www.ssc.govt.nz/sites/all/files/bps-2306543.pdf

[4] For more information, see Queensland Government, Mining and Safety, Safety and Health, 16 July 2012, http://mines.industry.qld.gov.au/safety-and-health/default.htm

[5] United Kingdom Cabinet Office, Public Bodies Reform – Proposals for Change, 14 December 2011, p. 24, http://www.cabinetoffice.gov.uk/sites/default/files/resources/Public_Bodies_Reform_proposals_for_change.pdf

[6] Kate Wilkinson, (Minister of Labour) Proposal to Increase Investment in Safe and Skilled Workplaces Using Unallocated Revenue from the Health and Safety in Employment Act Levy, 4 April 2012, DOL7770060003/8, paras 37–38.

[7] Lord Robens (Chairman), Safety and Health at Work, p. 36, para. 114.

[8] Ibid., p. 37, para. 118.

[9] Ibid., para. 117.

[10] The best-practice approach for government agencies in New Zealand is set out in Achieving Compliance: A Guide for Compliance Agencies in New Zealand, published in June 2011. It was produced by the central government's Compliance Common Capability Programme Steering Group and sponsored by the Department of Internal Affairs.

[11] Queensland, Department of Employment, Economic Development and Innovation, Mine Inspection Planning System (MIPS), April 2011, CAC0109.

[12] There are other organisations with valid claims to the HSE levy, such as Maritime New Zealand and the Civil Aviation Authority. They should continue to receive funds from the levy required for the purposes of administering the HSE Act in their specialist areas.

The regulatory framework

+ An effective regulatory framework
+ Strengthening the Crown minerals regime

CHAPTER 26

An effective regulatory framework

Introduction

1. The health and safety regulatory framework for underground coal mines should be changed so that it is effective and consistent with best practice. This chapter considers the changes needed and how they should be achieved.

The general regulatory framework

Legislative hierarchy

2. New Zealand's health and safety regulatory framework is largely based on the British Robens model. At the apex is the Health and Safety in Employment Act 1992 (HSE Act), which imposes general duties and contemplates a supporting framework of regulations and guidance, including approved codes of practice and standards. The HSE Act repealed sector-specific legislation, including the Coal Mines Act 1979 and its associated regulations, leaving New Zealand with no health and safety legislation specific to coal mines. The legislation, however, allowed for more detailed regulations and approved codes of practice.

Regulations

3. Regulations are intended to elaborate on the duties in the HSE Act. The Robens report envisaged them covering general matters applicable to most forms of employment, particular types of hazard and particular industries.[1] They can impose duties on a wide range of people, including employers, employees, those who control places of work, and manufacturers and suppliers of equipment. Their scope can include registration, licensing and notification of use of plant and places of work, incident notification and investigation, certification of competence and recognition of training organisations. A breach of regulations is an offence.[2]

Approved codes of practice

4. Approved codes of practice are intended to provide guidance about how to fulfil duties. They can cover a wide range of matters, including work practices, characteristics for manufactured plant, protective equipment design and employee participation. Compliance with approved codes of practice is not mandatory, but the courts may have regard to relevant approved codes when determining whether the HSE Act has been breached.[3]

Other forms of guidance

5. Other guidance can include domestic, international and industry codes,[4] Australian/New Zealand standards and overseas legislation. Certain categories, for example Australian/New Zealand standards, documents published by or by the authority of the New Zealand government and overseas legislation, may be incorporated by reference into, and thus form part of, regulations.[5]

Developing regulations and guidance

6. The governor-general makes regulations by order in council, on the recommendation of the appropriate minister. Approved codes of practice are prepared at the direction of and subject to the approval of the minister.[6] In practice, the regulator should identify the need for regulations and approved codes of practice and, having sought ministerial approval, lead their drafting. Approval is not required for voluntary guidance, which may be developed by the Department of Labour (DOL) or others involved, preferably with departmental support.

The adequacy of the general supporting framework

7. A supporting framework of regulations and guidance, including codes of practice, is an essential element of the general duty-based regime. But the development of a framework in New Zealand has been unsatisfactory. In 1996 the parliamentary *Inquiry into the Administration of Occupational Safety and Health Policy* emphasised its importance. Some specific industries, including mining, required some prescription, and both employers and employees asked that more resources be put into the development of codes.[7]

8. Various regulations and approved codes of practice were then promulgated, but in the 2000s that largely ceased. In 2008 the National Occupational Health and Safety Advisory Committee (NOHSAC) expressed concern that 'the Robens model of performance-based legislation has not been fully implemented or supported in New Zealand'. There was a clear need for approved codes and guidance materials, but there had been a 'lack of commitment over the last decade to providing information to workplaces in line with the Robens model'. NOHSAC regarded it as 'imperative, therefore, that the full model of the Robens approach to OHS [occupational health and safety] regulation is implemented and appropriate codes of practice, and particularly guidance material, provided for workplaces immediately'.[8]

9. Contributing factors identified by NOHSAC included insufficient departmental resources, difficulties regarding the development of approved codes of practice, problems with removing outdated codes, and a lack of collaboration between the professional disciplines and government agencies.[9]

An inadequate framework for underground mining

10. Reflecting those general concerns, the supporting framework for underground coal mining is inadequate:
    - there are sector-specific regulations, but they are not comprehensive and need revision;
    - there are no approved codes of practice; and
    - other guidance is insufficient. There are some Australian/New Zealand standards of relevance,[10] but they are not tailored for the sector. The extractives industry association, MinEx Health and Safety Council, developed industry guidance, but lacked sufficient DOL support.

11. The effect on health and safety in underground coal mining is serious. Duty holders may not know the best method of complying with the HSE Act. Some may develop and use effective methods but others may not. Researching and developing those methods is a business cost and requires skill and resources that employers may lack.

12. Without approved codes of practice, DOL mining inspectors have occasionally consulted repealed legislation and overseas legislation, regulations and standards when ascertaining compliance with the HSE Act. The absence of these codes meant that DOL's investigation report relied heavily on overseas material.

13. This situation compares unfavourably with many overseas jurisdictions. DOL engaged Professor Michael Quinlan to review several of those, as part of a detailed submission supporting the development of an improved framework.[11] Most of the jurisdictions reviewed had detailed supporting regulations, codes of practice or guidance for major mining hazards. It was a common theme of submissions to the commission that the supporting framework needs revision.

The mining regulations

14. The Robens report expressly recommended regulations for particular industries including mining,[12] but from 1992, when the HSE Act came into force, until 1996 there were no sector-specific regulations. In 1996 a New Zealand review committee led by the Ministry of Commerce considered the recommendations of the Australian inquiry into the 1994 Queensland Moura No. 2 tragedy.[13] It recommended a supporting framework addressing the 'risks

to employees arising from fires and explosions' and strengthening mine management through clearly defining responsibilities. The committee noted 'considerable consternation'[14] about the lack of specific coal mining legislation:

> *To regard coal mining as being 'the same as any other industry', for the purposes of statute, is to ignore the findings of a number of Commissions of Inquiry and the historical fact that it has been, and continues to be, a potential source of multiple fatalities in a workplace. The uneven progress of the HSE (Mining Council) Regulations through the consultation process is due in no small part to the failure of various key agencies to understand the unique hazards and difficulties facing the industry and a readiness to interfere with the process of putting these regulations in place on the basis of undemonstrated pretext …*
>
> *The pursuit of deregulation in the context of underground coal mining would have a highly negative – indeed, potentially dangerous – effect on the industry. It has been tried, in fact it pre-existed the current regime in England and Europe during the 18th and 19th centuries when the victims of coal mine disasters were counted in their hundreds. Regulation of specific duties and functions for colliery management structure has been reiterated following colliery explosions time and time again. How often does it need to be said?*[15]

15. Sector-specific regulations were introduced in the 1990s. The Health and Safety in Employment (Mining Administration) Regulations 1996 reinstated competency requirements that existed before the HSE Act came into force. The Health and Safety in Employment (Mining – Underground) Regulations 1999 addressed many, but not all, major hazards. In 2011, as a result of DOL's 2006–09 mining policy review, competency requirements for small mine management were increased.[16] But problems remained.

All practicable steps

16. The 1999 regulations often repeat the 'all practicable steps' phrase used in the HSE Act. The all practicable steps test depends on the relevant circumstances, including the nature, severity and knowledge about potential harm and the cost of addressing that harm.[17] Using that phrase in regulations maintains flexibility but can lead to ambiguity and imprecision.

17. For example, regulation 23 deals with outlets and requires employees to 'take all practicable steps to ensure that … every mine or tunnel has suitable and sufficient outlets', having regard to a range of factors. Regulation 29 deals with measurement of air from fans and requires employers to take 'all practicable steps' to ensure that the quantity of air flow is measured and any recirculation prevented. These matters are critical to safety: an all practicable steps qualification is unacceptable.

Focus and scope

18. Some regulations have an inadequate focus or scope. For example, regulation 10 of the Health and Safety in Employment (Mining – Underground) Regulations 1999 requires notification to DOL of certain incidents or accidents, including fires. During commission hearings, there was dispute about whether fires include sparks, a source of ignition, and thus constitute a high-potential incident that could result in serious harm or catastrophe. The underlying issue is that the regulations should require notification of all high-potential incidents.

19. Regulation 4 of the Health and Safety in Employment (Prescribed Matters) Regulations 2003 prescribes the content of accident and serious harm registers that workplaces must keep.[18] They must record any investigation, but the prescribed form only requires advice of whether an investigation was undertaken. If a summary or details of any investigation had to be included, then inspectors who review registers would be able to identify the central issues and assess the effectiveness of the investigation. The regulation is also unclear about whether employers are required to investigate all incidents and accidents.

Lack of support for a safety management system

20. The HSE Act requires potential and actual hazards to be systematically identified and assessed. Significant hazards must be eliminated, isolated or, failing that, minimised. The legislation does not prescribe how this should be done,

but in complex organisations and high-hazard industries a documented health and safety system is necessary. The mining regulations do not expressly require such a system.

21. DOL is developing a model health and safety management system for small mines, but all underground coal mines should have such a system.[19]

Scrutiny of mine design

22. Professor Quinlan noted that poor design, planning and technical flaws were causal factors in a number of mining incidents.[20] Similarly, Impac Services Ltd noted that research had illustrated the 'importance of planning and design … Approximately 40% of fatal accidents were found to have their origins in decisions made prior to work starting'.[21]

23. Effective regulatory involvement in health and safety should start at an early stage. The HSE Act envisages this, but regulation 8 of the 1999 regulations only requires a health and safety inspector to be notified of an operation in which a mine is worked or a tunnel is made 14 days or more before mining starts.[22] By then, design would have been finalised.

Safety cases

24. Submissions to the commission raised the introduction of safety cases. A safety case comprises a comprehensive suite of documentation showing that an operation is acceptably safe.[23] The safety case is assessed by a regulator, who approves the start or continuation of an operation. In New Zealand safety cases are used in the offshore petroleum industries[24] but overseas their use extends to a greater range of hazardous industries.

25. Safety-case documentation is extensive and can include the operational control arrangements, the hazard identification and management system, procedures for managing change, contractor management, competency, emergency arrangements, incident and accident investigation, communication and workforce consultation, auditing and quality assurance.

26. There were conflicting views about requiring safety cases in underground coal mines. The New Zealand Council of Trade Unions and the Amalgamated Engineering, Printing and Manufacturing Union supported partial safety cases, including regulatory approval.[25] The Construction, Forestry, Mining and Energy Union supported the Queensland approach,[26] which requires underground coal mines to have documented safety management systems, but stops short of requiring regulatory approval.

27. Solid Energy did not support safety cases. Because they have not been implemented elsewhere it sees risks in New Zealand 'going it alone'. It considers that the safety case will use departmental resources that could be better applied elsewhere.[27] DOL did not support safety cases. It preferred early disclosure of certain safety management documents for new underground mines and when there was a change of ownership. It considered these could be assessed but not approved.[28] Professor Quinlan suggested the selective use of a safety-case regime when mining conditions warrant it.

28. The commission is not convinced that, at this stage at least, safety cases should be mandatory. More research is needed about their efficacy and content in underground coal mining. The regulator would need significant resources and skills to scrutinise them, which it currently lacks. Immediately necessary are early notification of proposed mines, and operators providing, and the regulator reviewing, mine plans and core health and safety documents.

The penalty regime

29. Penalties must deter potential offenders and ensure that health and safety obligations are taken seriously. Dr Kathleen Callaghan stated that to do so the range of punishments must be sufficient to cause discomfort.[29]

30. New Zealand has significantly lower maximum penalties than those in some comparable overseas jurisdictions. The penalty for the most serious health and safety offence is up to two years in prison and a fine of up to NZ$500,000,[30] whereas in some Australian states serious health and safety offences carry penalties of up to AUD$3 million for a corporation, AUD$600,000 or five years' imprisonment for an officer or person conducting a business and AUD$300,000 or five years' imprisonment for a worker.[31]

31. The possible introduction of an offence of corporate manslaughter was also raised with the commission. In 2008 the offence of corporate manslaughter was introduced in the United Kingdom.[32] It allows prosecution of companies and organisations when serious management failures result in death, reflecting community outrage at serious health and safety failures by management.

32. The New Zealand regime should be reviewed. Increased penalties for companies should be considered, as should the introduction of an offence of corporate manslaughter.

An effective supporting regulatory framework for underground coal mining

33. An effective supporting regulatory framework for underground coal mining is required. Mining regulations should be reviewed and approved codes of practice and guidance issued and periodically reviewed. Comprehensive coverage of major underground coal mining hazards is vital. Decisions are needed about whether regulation, approved codes of practice, other guidance or a combination are appropriate for any particular hazard. Professor Quinlan preferred major hazards to be addressed in regulations because guidance is not forceful enough.[33]

34. As the Robens report recommended, drawing up regulations requires the best available expertise from independent organisations and industry.[34] The commission considers there should be a single focus expert task force whose members include health and safety experts, and mining industry, regulator and worker health and safety representatives, supported by technical experts such as ventilation and geotechnical engineers. The task force should be separate from the 2012 ministerial task force carrying out a broad review of health and safety.

35. Adopting, with amendment, relevant parts of the Queensland and New South Wales underground coal mining frameworks, which are more developed than New Zealand's, would save significant time.

36. Some urgent and obvious changes could be included in new approved codes of practice, to be later replaced by regulation. This would provide early guidance to the industry, workers and the regulator.

Changes for the task force to consider urgently

37. The commission has identified specific changes it suggests the expert task force should consider urgently. No doubt the task force will identify more.[35] They include:

- the removal of the 'all practicable steps' qualification from the mandatory provisions of the regulations, including those relating to ingress and egress;
- the provision of better health and safety information by the employer to the regulator, including notification of all high-potential incidents;
- requiring employers to have a comprehensive and auditable health and safety management system;
- mandating the statutory positions necessary to ensure healthy and safe mining (including a statutory mine manager and ventilation officer), and identifying their key functions and the relevant qualifications, competencies and training;
- defining standards for ventilation control devices, such as stoppings;

- defining the requirements for underground gas monitoring systems;
- prohibiting the placement of main fans underground and requiring them to be protected against explosions and other hazards, in accordance with the most appropriate international standards;
- clarifying the restricted zone within which electrical equipment requires protection; and
- updating electrical safety requirements in the light of new technology.

38. Other recommendations relating to health and safety laws, regulations or approved codes of practice are detailed in other parts of this report: Chapter 27, 'Strengthening the Crown minerals regime'; Chapter 28, 'Improving corporate governance'; Chapter 29, 'Improving management leadership'; Chapter 30, 'Worker participation'; Chapter 31, 'Qualifications, training and competence'; Chapter 32, 'Improving the emergency response'; and Chapter 33, 'Improving emergency equipment and facilities'.

39. A more detailed list for the expert task force to consider follows:

TOPIC	TO BE CONSIDERED
All practicable steps test	Its use in regulations can cause ambiguity, lacks precision and should be minimised.
Electrical hazards	Technology advances need to be better accommodated and regulated.
	The nature of the restricted zone needs clarification. The extent to which electrical equipment may be placed in coal measures, and the necessary protections, require addressing.
Emergency equipment and facilities	Emergency equipment, including self-rescuers and compressed air breathing apparatus (CABA), should be required at suitable places and spacings underground.
	Changeover or refuge stations should be defined and required.
	The need for at least two means of ingress and egress must be stated more clearly.
	The means of ingress and egress must accommodate workers, rescue personnel and equipment.
	The mine should also accommodate swift sealing and emergency inertisation.
	Emergency navigational aids to egresses, self-escape facilities and equipment should be mandatory.
Emergency response	There should be comprehensive operator emergency response management plans addressing: • the facilities and training required to enable and support self-rescue and rescue; • how atmospheric conditions will be monitored following an emergency; and • emergency mine sealing and inertisation, including airlocks and docking stations.

TOPIC	TO BE CONSIDERED
	Operator emergency management plans should be compatible with CIMS, the co-ordinated incident management system used by New Zealand's emergency services.
	Operator emergency management plans should be provided to the Mines Rescue Service (MRS), the regulator and other relevant emergency services.
	Emergency response should be tested internally and subject to training exercises involving external agencies.
Roles, expertise and competency	Roles important to health and safety should be mandatory.
	Minimum competencies should be provided and/or reassessed for all important health and safety roles.
	The level of training and supervision required for new and inexperienced workers should be clarified.
Gas monitoring	Underground atmospheric monitoring requirements need defining and strengthening.
Governance	The statutory responsibilities of directors for health and safety should be reviewed.
Health and safety management systems	Documented health and safety management systems should be expressly required. Documentation and the corresponding systems should: • cover key risk areas such as mine ventilation, spontaneous combustion, gas management, methane drainage, strata control, training, employee and contractor oversight and emergency response; • cover or integrate with the health and safety systems of contractors; • provide for change management; and • be reviewed when there is significant change in mine plans or operations.
	Key health and safety management system documentation should be provided to and scrutinised by the regulator at an early stage and when there are substantial changes, including of ownership.
	Health and safety management systems should be regularly audited and reviewed.

TOPIC	TO BE CONSIDERED
Incident and accident notification and investigation	All high-potential incidents must be notified.
	Whether incidents and accidents must be investigated by the operator or employer should be clarified.
	Sufficient detail of incident and accidents and their investigation should be more readily available to regulators.
Methane control, monitoring and drainage	The requirements for monitoring and managing methane need better definition and strengthening.
	Methane drainage, including pre-drainage, should be required in appropriate circumstances.
Management	The health and safety roles and responsibilities of the mine manager should be defined and strengthened.
Mine plans	The minimum requirements for the content of mine plans, including those showing stoppings and ventilation, should be reviewed. Plans should be certified by a registered surveyor, and be made available to inspectors and the MRS on a regular basis.
Spontaneous combustion	Regular testing and monitoring should be required.
Strata control	Strata management plans should be required.
Ventilation	The notification requirements for uncontrolled accumulations of flammable or noxious gas need strengthening.
	A ventilation officer, responsible for key aspects of the ventilation system, should be required.
	Placement of main fans underground in coal mines must be prohibited.
	Explosion protection should be required for main fans.
	Design and construction standards for ventilation control devices, such as stoppings and overcasts, are required.
Withdrawal of workers when gas present or ventilation fails	The requirements to withdraw workers from a mine following a ventilation failure or uncontrolled accumulation of flammable or noxious gas need strengthening.

TOPIC	TO BE CONSIDERED
Worker participation	Employers should have to make available to all workers, without request, the results of monitoring of workplace conditions that affect health and safety.
	Workers should be involved in the development of health and safety management systems, principal hazard plans and safe operating procedures that bear on their health and safety.
	All underground coal mines should be required to have a documented worker participation health and safety scheme.
	Contractors should have similar rights to employees to participate in processes to improve health and safety in the workplace.
	The functions and powers of health and safety representatives should include inspections and stopping activities when there is immediate danger of serious harm.
	Area inspectors appointed and paid for by unions representing coal mine workers should be introduced with the power to stop activities when there is immediate danger of serious harm.

Figure 26.1: Considerations for the expert task force

Recommendation 2:

An effective regulatory framework for underground coal mining should be established urgently.

- The government should establish an expert task force to carry out the work. Its members should include health and safety experts and industry, regulator and worker health and safety representatives, supported by specialist technical experts.
- The expert task force should be separate from the ministerial task force that is reviewing whether New Zealand's entire health and safety system is fit for purpose.
- The expert task force should consult the Queensland and New South Wales frameworks as best practice.
- In the interests of time, the expert task force should consider the immediate development of approved codes of practice, to be replaced by regulation where appropriate.
- The expert task force should consider addressing urgently the specific issues identified by the commission including:
  - the removal of the 'all practicable steps' qualification from the mandatory provisions of the regulations, including those relating to ingress and egress;
  - the provision of better health and safety information by the employer to the regulator, including notification of all high-potential incidents;

- requiring employers to have a comprehensive and auditable health and safety management system;
- mandating the statutory positions necessary to ensure healthy and safe mining (including a statutory mine manager and ventilation officer), and identifying their key functions and the relevant qualifications, competencies and training;
- defining standards for ventilation control devices, such as stoppings;
- defining the requirements of underground gas monitoring systems;
- prohibiting the placement of main fans underground and requiring them to be protected against explosions and other hazards, in accordance with the most appropriate international standards;
- clarifying the restricted zone within which electrical equipment requires protection; and
- updating electrical safety requirements in the light of new technology.

ENDNOTES

[1] Lord Robens (Chairman), Committee on Safety and Health at Work, Safety and Health at Work: Report of the Committee 1970–72, 1972, HMSO, 1972, p. 43, para. 136.
[2] Health and Safety in Employment Act 1992, ss 22, 23(1), 50(1)(c).
[3] Ibid., ss 29(1), 20(9).
[4] For example, International Labour Organisation, Code of Practice on Safety and Health in Underground Coalmines, 2006 and the MinEx Health and Safety Council, Industry Code of Practice: Underground Mining and Tunnelling, October 2009, MINEX0005.
[5] Health and Safety in Employment Act 1992, s 23(2)–(3).
[6] Ibid., ss 21, 20.
[7] Labour Committee, Inquiry into the Administration of Occupational Safety and Health Policy: Report of the Labour Committee, 1996, DOL0010010023/5, p. 9, para. 3.1.
[8] Neil Pearce, Evan Dryson, Philippa Gander, John Langley and Mark Wagstaffe, Review of the Key Characteristics that Determine the Efficacy of OHS Instruments: Report to the Minister of Labour, 2008, p. 17, http://ohsnetnz.org.nz/documents/Review_of_the_key_characteristics_that_determine_the_efficacy_of_OHS_instruments-2.pdf
[9] Ibid.
[10] For example, Standards Australia and Standards New Zealand, Risk Management – Principles and Guidelines (AS/NZS ISO 31000:2009), 20 November 2009; Standards Australia and Standards New Zealand, Occupational Health and Safety Management Systems – Specification with Guidance for Use (AS/NZS 4801:2001), 15 November 2001; and Standards Australia and Standards New Zealand, Occupational Health and Safety Management Systems – General Guidelines on Principles, Systems and Supporting Techniques (AS/NZS 4804:2001), 15 November 2001.
[11] Michael Quinlan, Analysis Report: Reviewing Evidence to Assess Whether the Conclusions & Recommendations of the 2006–2009 Mine Safety Review are Still Relevant and Changes in the Regulatory Framework the Royal Commission Might Consider, DOL4000010003/17, para. 36.
[12] Lord Robens (Chairman), Safety and Health at Work, p. 43, para. 136.
[13] Ministry of Commerce, Mining Inspection Group, Review of the Recommendations from the Wardens Inquiry into the Accident at Moura No 2 Mine, Queensland on Sunday August 7 1994, 1996, EXH0003.
[14] Ibid., p. 17.
[15] Ibid.
[16] Health and Safety in Employment (Mining Administration) Regulations 1996, reg 11, amended on 13 January 2011 by Health and Safety in Employment (Mining Administration) Amendment Regulations 2010, reg 4(1).
[17] Health and Safety in Employment Act 1992, s 2A.
[18] That requirement is imposed by s 25(1)–(1B) of the Health and Safety in Employment Act 1992 and applies to all workplaces.
[19] In July 1994 a code of practice that supported a hazard management approach was promulgated but it was not tailored to underground coal mines: Department of Labour, Occupational Safety and Health Service, Managing Hazards to Prevent Major Industrial Accidents, 2004, http://www.osh.dol.govt.nz/order/catalogue/pdf/hazardac.pdf
[20] Michael Quinlan, Survey Report Reviewing Evidence from High Hazard Incidents and Matters Related to Regulation in Underground Mining, DOL4000010002/11–14, paras 40–47.
[21] Impac Services Ltd, Submission by Impac Services Ltd to Phase 4 of the Pike River Royal Commission, IMP0001/10.
[22] In some cases the timeframe is shorter: Health and Safety in Employment (Mining – Underground) Regulations 1999, reg 8.
[23] Tim Kelly, A Systematic Approach to Safety Case Management (SAE Technical Paper 2004-01-1779), 2004, SAE International.
[24] The regulations are currently being reviewed: Department of Labour, Review of the Health and Safety in Employment (Petroleum Exploration and Extraction) Regulations 1999: Discussion Paper, 2012, http://www.dol.govt.nz/consultation/petroleum-regulations/petroleum-regs-discussion.pdf
[25] New Zealand Council of Trade Unions, Submission on Phase 4 Issues on Behalf of New Zealand Council of Trade Unions Te Kauae Kaimahi, 16 March 2012, NZCTU0001/11–12; New Zealand Amalgamated Engineering, Printing and Manufacturing Union, Final Submissions of the New Zealand Amalgamated Engineering, Printing and Manufacturing Union, 26 March 2012, EPMU0035/5.
[26] Construction, Forestry, Mining and Energy Union, Submission on Behalf of the Construction, Forestry, Mining and Energy Union in Respect of Phase Four: Policy Aspects, 30 March 2012, CFMEU0041/11, para. 21.5.
[27] Solid Energy New Zealand Ltd, Final Submissions to the Royal Commission on the Pike River Coal Mine Tragedy, SOL545717/70, para. 21.73.
[28] Department of Labour, Phase Four Paper, 16 March 2012, DOL4000010005/57, para. 243 and DOL4000010005/23, para. 86.
[29] Kathleen Callaghan, witness statement, 23 March 2012, FAM0058/29, para. 3.17; New Zealand Council of Trade Unions, Submission, NZCTU0001/36–37, para. 14(a)–(d).
[30] Health and Safety in Employment Act 1992, s 49.
[31] See Queensland's Work Health and Safety Act 2011, Division 5, Offences and Penalties. The act does not apply to coal mining, which is subject to the Coal Mining Safety and Health Act 1999, pt 3, s 34. The Coal Mining Safety and Health Act 1999 has lesser penalties than the Work Health and Safety Act 2011, but they are still higher than those in New Zealand.
[32] The Corporate Manslaughter and Corporate Homicide Act 2007, which came into force on 6 April 2008.
[33] Michael Quinlan, Analysis Report, DOL4000010003/24-25; Department of Labour, Phase Four Paper, 16 March 2012, DOL4000010005/54, para. 229.
[34] Lord Robens (Chairman), Safety and Health at Work, p. 49, para 159.

[35] DOL has identified many areas of concern: Department of Labour, Phase Four Paper, 16 March 2012, DOL4000010005/31–33, para. 125.

CHAPTER 27

Strengthening the Crown minerals regime

Introduction

1. The Ministry of Economic Development (now part of the Ministry of Business, Innovation and Employment) looks after the Crown's economic interests in the minerals it owns. The Crown grants rights, by way of exploration or mining permits, to companies to mine for coal.
2. Mining cannot occur without a permit, which gives the operator exclusive rights to the mineral resources. The Crown has an interest in coal extraction for three reasons: economic development, security of energy supply and generation of revenue. The technical and economic viability of a proposal, and a range of other factors, are taken into account before a permit is issued.
3. The ministry's evaluation, and subsequent monitoring, of the Pike application for a mining permit was weak. This chapter analyses why and reviews the steps the ministry is taking to rectify the problems. The steps include considering health and safety at the permitting stage.

Summary of law

4. Crown-owned minerals are managed and administered through the Crown Minerals Act 1991, regulations and minerals programmes.

Crown Minerals Act 1991

5. The Crown Minerals Act 1991 sets out the rights and responsibilities of resource users and the functions and powers of the minister of energy. It provides for the allocation of Crown-owned minerals through permits to undertake prospecting, exploration or mining.
6. The minister's powers and functions under the act are delegated to the chief executive of the Ministry of Economic Development. Those functions include the preparation of minerals programmes, the granting of minerals permits and the monitoring of the effect and implementation of minerals programmes and permits. Approving changes to the terms of permits and transfers and other dealings with permits are also delegated.

Regulations

7. The Crown Minerals (Minerals and Coal) Regulations 2007 prescribe the information required for mining permit applications, the reporting obligations and the fees payable.[1] The key information required with an application is:
    - a statement of the technical qualifications and financial resources of the applicant;
    - a map of the permit area;
    - evidence for an exploitable mineral deposit or mineable resource, which must include inferred, indicated and measured mineral resources; and probable and proved reserves; and
    - the proposed work programme, with an overview of how the permit area will be worked. The statement includes information on the size, nature, extent and siting of the mining operations, the mining methods to be used and the mining and production schedule.

Minerals programmes

8. Minerals programmes outline the government's policies and procedures for allocating permits to explore and mine Crown-owned minerals and obtain a fair royalty payment in return.

9. The public is consulted on minerals programmes. They are approved by the governor-general and have a similar legal status to a regulation.

10. The first Minerals Programme for Coal was issued in 1996. The Pike permit to mine was granted under this programme. The minerals programme was updated in 2008 but is the same in principle.[2]

11. Under the 2008 minerals programme a permit will be granted if the applicant has identified and delineated a mineable mineral resource or exploitable mineral deposit, if the area of the permit is appropriate and if the intention is to economically and practicably deplete the resource in accordance with good mining practice.

12. In addition, a work programme is approved if the objective is to extract minerals through good mining practice, if the area of land is appropriate and adequate for the activities to be carried out and if mining should result in increased knowledge of New Zealand mineral resources. The applicant must have the ability the act in a technically competent manner and with diligence and prudence in undertaking the programme of work.

13. Other factors to be considered include estimates of mineral resources, mining feasibility studies, proposed mining methods, extraction schedules, geotechnical and mine design aspects of operations, project economics and whether the proposed operations are in accordance with good mining practice.[3]

Problems with permitting

No consideration of health and safety

14. Health and safety matters were not considered when reviewing Pike's proposals to develop the mine. The minerals programme for coal, which sets out the government's policy, specifically excludes this.

Insufficient information and analysis

15. The application for a permit by Pike in March 1996 contained limited analysis of the feasibility of the operation and the geological, technical and economic risks associated with it.[4] The application, approved in 1997, was based on a pre-feasibility study. It did not include estimates of initial capital requirements, the costs of the operation, expected profitability or other matters that might be required to establish economic viability. The proposed mining methods were uncertain, making it difficult to establish whether extraction was likely to be in line with good mining practice. A feasibility study was not completed until 2000.[5]

16. As Ministry of Economic Development geologist Alan Sherwood said, 'A proposition was put forward in the application with a general indication of the way in which the deposit would be worked but there wasn't anything that I would call a feasibility study with the application.'[6] The level of geological information was sufficient to establish or delineate the coal resource but not detailed enough to enable a mine to be designed.[7] The commission was also told that 'the data provided to Crown Minerals … would not be adequate to meet the evaluation of an application criteria established under the Minerals Programme for Coal (1996)'.[8]

17. The approval documents prepared by the ministry do not demonstrate a thorough evaluation.[9] No evident process was used to judge the proposal against the criteria in the coals programme, including how good mining practice was assessed.[10]

18. It seems at that time the ministry had limited expertise and experience in assessing the adequacy of applications against the comprehensive criteria for granting a mining permit or in assessing commercial risk.[11] Thorough assessment at the permitting stage is important as lack of information about factors such as geology, coal characteristics and seam gas content can increase financial and health and safety risks and the possibility that a mine would be managed 'on the run'.[12]

Monitoring of mineral permits

19. Monitoring of mineral permits is one of the four functions of the minister of energy under section 5(c) of the Crown Minerals Act 1991. After the Pike mining permit was granted, however, there is no evidence of any monitoring or auditing of compliance with the work programme, or the permit conditions. No questions were asked about the operation, despite delays in development and production, and escalating costs. There was no analysis of annual summary reports or other reports on exploration or mining activities.[13]

20. A file note dated 23 February 2007 states that the last technical material received from Pike was filed in 1997.[14] Even when annual work statements and mine plans were received there was no review of material or process to follow. 'We just ensure that that information is given and we don't now go back to the permit holder and approve anything that has been put before us.' When it was suggested to Mr Sherwood that it sounded as if such information was filed away, he replied, 'That's not too far from the truth.'[15]

21. Overall the approach to monitoring was passive, as the ministry itself has recognised. It has recently described its relationship with operators as 'somewhat reactive and correspondence based, rather than forward-looking and based on a mutual understanding of permit-specific issues'.[16]

Good mining practice

22. Both the Crown Minerals Act 1991 and the minerals programmes contain requirements that emphasise the need for mining to be undertaken in accordance with good mining practice.

23. Section 43(2)(b)(i) of the act enables the minister to withhold approval if he or she considers that the work programme is contrary to recognised good exploration or mining practice. Good mining practice is defined, in part, in the Minerals Programme for Coal 1996:

> *Good exploration or mining practice cannot be defined unequivocally. Rather, it is a concept implying that a permit holder will undertake prospecting, exploration or mining in a technically competent manner and with a degree of diligence and prudence reasonably and ordinarily exercised by experienced operators engaged in similar activities under similar circumstances and conditions.*[17]

24. The 2008 minerals programme sets out criteria for determining whether a work programme meets good mining practice.[18] These include mining methods being suitable and technically effective, given the geology of the area, and mine development and production operations being designed and conducted to maximise extraction and avoid sterilisation and waste. There must also be ongoing appraisal and definition of geology and structure of the mineral deposit so the most suitable mine development and production operations can be planned.

25. Given the prominence of 'good mining practice' in both the act and minerals programmes, it is difficult to accept the logic of excluding consideration of health and safety.

26. When asked to explain the distinction between health and safety aspects of good exploration or mining practice and the non-health and safety aspects, Mr Sherwood stated:

> *I think that's as you've inferred, sir, that's very difficult to answer because at the end of the day when you get into the business of actually operating a mine, the two become inseparable, however our key consideration is the allocation of a resource to mine and so we are precluded by the programme from considering the health and safety aspects of the same information that might contribute to that.*[19]

27. It is impossible to distinguish between good mining practice as it applies to extraction of the resource and good mining practice that enhances worker safety. The two are inextricably linked. Economic returns will not be maximised unless extraction occurs efficiently and safely. Design of mining processes must incorporate health and safety considerations. The Crown has an interest in both aspects at all stages in a mine's development. There has to be consideration of whether a mine will operate according to laws and regulations, including those relating

to health and safety. The level of scrutiny will vary depending on the stage of development of a mine and the information available.

Recent developments

Natural resources policy

28. In 2008 there was a renewed focus on New Zealand's petroleum and mineral resources and their contribution to economic growth.

29. The Petroleum Action Plan was established to encourage development of the petroleum sector.[20] It included a review of the Crown's capability and resourcing (Action 3); a review of the regulatory, royalty and taxation arrangements for petroleum (Action 5); and a review of health, safety and environmental legislation in New Zealand and other jurisdictions to assess the adequacy of New Zealand's regulatory environment for offshore petroleum operations (Action 8). The programme paves the way for better oversight of underground coal mining.

30. In September 2010, the *Comparative Review of Health, Safety and Environmental Legislation for Offshore Petroleum Operations* considered whether the health and safety and environmental framework for New Zealand's petroleum sector needed to change. The report's recommendations were based on a comparative analysis of regulatory frameworks in four other jurisdictions – the United Kingdom, Australia, Ireland and Norway.[21]

31. Two recommendations are pertinent to minerals developments: first, that the ministry be empowered to consider health, safety and environment at the resource allocation stage, and second, that a review be undertaken to identify ways to improve interagency co-ordination on health, safety and environmental regulation.

32. The third major development is a review of the Crown Minerals Act 1991, regulations and programmes. One of the key objectives is 'to ensure that better coordination of regulatory agencies can contribute to stringent health, safety and environmental standards in exploration and production activities'. The outcome of the review will be amendments to the act and new minerals programmes and regulations. The proposals, if advanced, will be an improvement on current practice. They include:

    - Assessment of an applicant's health, safety and environment policies, capability and record before or during the permitting process. This review would be undertaken by the Department of Labour and an organisation with environmental expertise.
    - More proactive management of high-risk mineral activities, including underground coal mining, owing to their high technical and geological complexity. There will be an annual review of work programmes every three years and the ministry will have annual meeting with coal mine operators.[22]
    - More information will be sought from high-risk permit holders so the Ministry of Business, Innovation and Employment can better manage and oversee activities.

33. The initiatives proposed in the review of the Crown Minerals Act 1991 and operational changes already under way are a step in the right direction. Some of the proposals remain short on detail and were not formally government policy at the time of writing. It is not clear how the initiatives will be implemented – in legislation, regulations, the minerals programme, as a condition of a permit or through voluntary agreements – and the weight that will be attached to them.

34. The proposal to consider health and safety matters at the permitting stage is a significant and welcome shift in ministry policy. The proposed consultation with mining inspectors as part of the process of approving a mining permit recognises the importance of early consideration of health and safety. This goes some way to addressing concerns regarding lack of early regulatory involvement.

35. In addition, the Ministry of Business, Innovation and Employment should formally provide information to prospective permit holders on their obligations under New Zealand health and safety laws. This will raise awareness

of health and safety obligations from the outset. In Queensland, for example, a guide to the application of coal mining safety and health legislation is provided to applicants.

36. Compliance with the Health and Safety in Employment Act 1992 and regulations should be a general condition of mining permits. This would give a clear signal of the importance placed on safe mining operations by the Crown. Failure to comply could be grounds for revocation of the permit.

Operational changes

37. In 2010 a capability review of Crown Minerals, a business unit of the Ministry of Economic Development, was undertaken by external consultants. A core finding was that 'capability is not fit for purpose in terms of realising value to the Crown of its minerals estate … the capability to manage and plan the overall permitting process, to set and monitor work plans, and to ensure compliance is inadequate to ensure that the potential value of the Crown's minerals estate is fully realised.'[23] The review led to restructuring of Crown Minerals. It is now called New Zealand Petroleum and Minerals. The new unit includes a minerals group whose role is development of minerals-related strategy, promotion and investor relations activities, and management of permitting. Staff numbers are being progressively increased from about 40 to 70.[24]

38. The review recommended that the ministry strengthen the strategic leadership and commercial orientation of the Crown Minerals group to build a credible lead agency to work with investors, industry and government and establish the necessary interagency alignment required for a whole of government approach to the sector.

39. The new business unit has a petroleum group and a minerals group. Each group has three units: strategy, planning and promotion; exploration; and production. By structuring the units in this way the different risks associated with exploration and production activities can be better identified and managed.[25]

40. These changes, coupled with the move to more proactive management of higher risk operations, including underground coal mines, should help to alleviate the problems evident in the allocation and management of the Pike permit.

Recommendation 3:

Regulators need to collaborate to ensure that health and safety is considered as early as possible and before permits are issued.

Recommendation 4:

The Crown minerals regime should be changed to ensure that health and safety is an integral part of permit allocation and monitoring.

- The proposals in *Review of the Crown Minerals Act 1991 Regime* are endorsed.
- Mining permits should have a general condition requiring the need for compliance with the Health and Safety in Employment Act 1992 and regulations.
- The Ministry of Business, Innovation and Employment should provide information to prospective permit holders on health and safety laws and regulations.
- The ministry should review the information required from applicants for mining permits and the way it assesses applications against the criteria in the minerals programme.

ENDNOTES

[1] These regulations replaced the Crown Minerals (Minerals and Coal) Regulations 1999. These were preceded by Crown Minerals (Forms – other than Petroleum) Regulation 1992, which would have applied at the time of the Pike application.

[2] Material differences include the 2008 programme not containing legislative detail or repeating the provisions of the Crown Minerals Act and changes to royalty rates and the basis for calculating royalties. Department of Labour, Department of Conservation, Ministry of Economic Development and Ministry for the Environment, Joint Legislative Framework Paper, 6 May 2011, CLO00000010001/18, para. 41.

[3] Ministry of Economic Development, Minerals Programme for Minerals (Excluding Petroleum) 2008, 1 February 2008, CLO0010010350/28, para. 8.1.

[4] Pike River Coal Company Ltd, Application to the Ministry of Commerce for a Coal Mining Permit Covering the Pike River Coal Field, February 1996, MED0010070015.

[5] AMC Resource Consultants Pty Ltd, Final Feasibility Study, 23 June 2000, DOC0010030006, Vols 1–2; NZOG0010 (Vol. 3), NZOG0011 (Vol. 4), NZOG0007 (Project Summary).

[6] Alan Sherwood, transcript, p. 398.

[7] Ibid., p. 394.

[8] Murry Cave, witness statement, June 2011, CAV0001/34, para. 91.

[9] Crown Minerals reports, Mining Permit Application 41-453, 18 August 1997, MED0010070017 and 22 September 1991, MED0010070018.

[10] Alan Sherwood, transcript, p. 389.

[11] Ibid., p. 382.

[12] David Reece, transcript, p. 4517.

[13] Richard Cook, witness statement, 17 June 2011, MED7770010004/5–6, para. 17.

[14] Alan Sherwood, Site Visits West Coast 19–22 February 2007, 23 February 2007, MED0010070049/1.

[15] Alan Sherwood, transcript, pp. 400, 405.

[16] Ministry of Economic Development, Review of the Crown Minerals Act 1991 Regime: Discussion Paper, March 2012, MED4000010004/10.

[17] Ministry of Commerce, Minerals Programme for Coal, 1 October 1996, MED0010070001/108, para. 14.3.

[18] Ministry of Economic Development, Minerals Programme for Minerals (Excluding Petroleum) 2008, 1 February 2008, CLO00010010350/21, para. 5.4.

[19] Alan Sherwood, transcript, p. 390.

[20] Ministry of Economic Development, Petroleum Action Plan, http://www.med.govt.nz/sectors-industries/natural-resources/oil-and-gas/petroleum-action-plan/

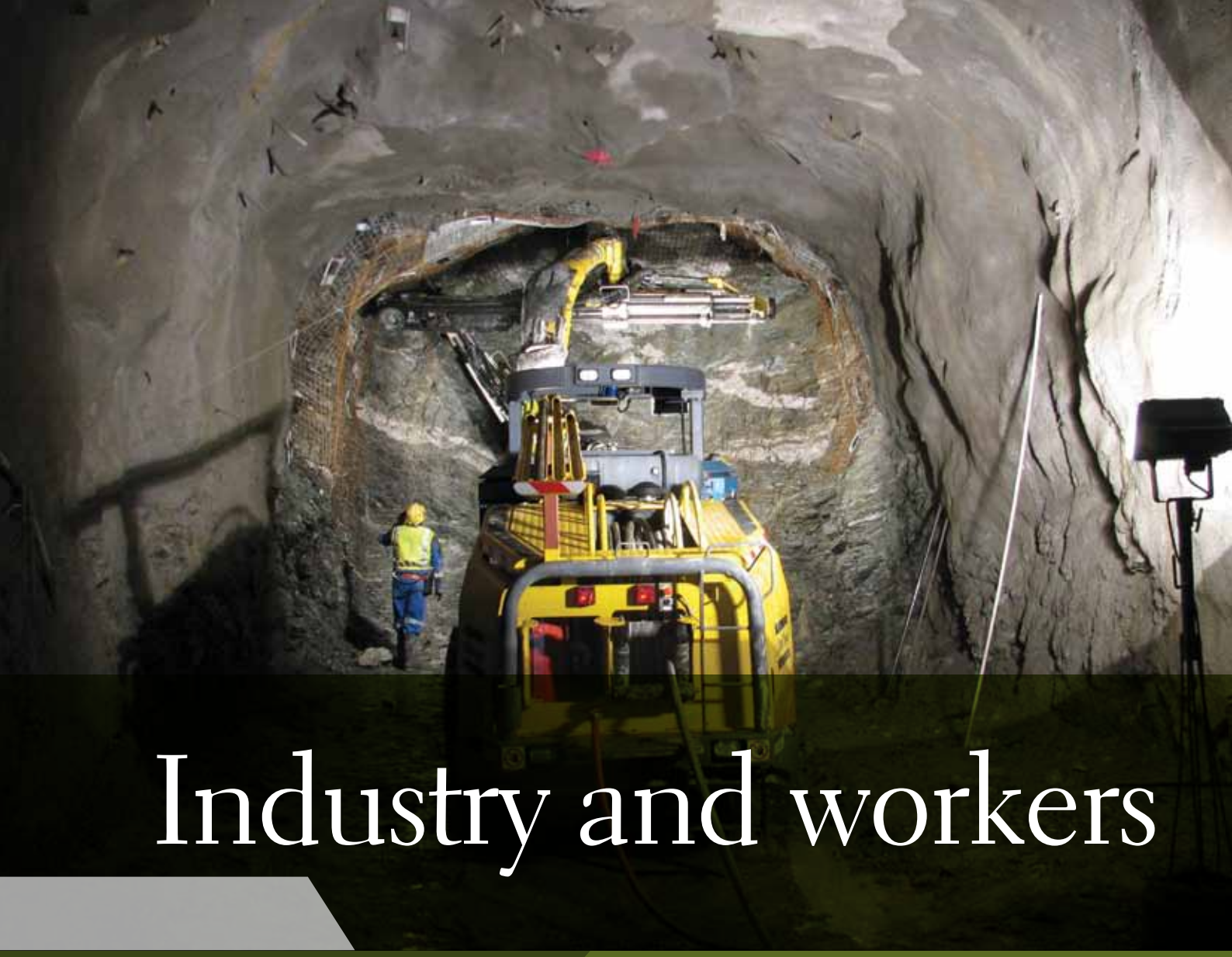
[21] Atkins Holm Joseph Majurey Ltd and ERM New Zealand Ltd, Comparative Review of Health, Safety and Environmental Legislation for Offshore Petroleum Operations, September 2010, Ministry of Economic Development, CAC0011/5, para. E.1.

[22] Ministry of Economic Development, Phase Four Paper, 16 March 2012, MED4000010001/53, para. 190.

[23] Martin Jenkins, Maximising Gains from New Zealand's Petroleum and Mineral Resources, 14 June 2010, MED0100010003/10, para. 22.

[24] Ministry of Economic Development, Phase Four Paper, 16 March 2012, MED4000010001/64, para. 236.

[25] Ministry of Economic Development, Tier Three Paper, 3 June 2011, MED0000020001/30, para. 73.



Industry and workers

+ Improving corporate governance
+ Improving management leadership
+ Worker participation
+ Qualifications, training and competence

CHAPTER 28

Improving corporate governance

Introduction

1. Protecting the health and safety of workers is not a peripheral business activity. It is part and parcel of an organisation's functions and should be embedded in an organisation's strategies, policies and operations.

2. This requires effective corporate governance. Governance failures have contributed to many tragedies,[1] including Pike River. This chapter considers how best to ensure that governance is effective.

The board of directors

The role of the board and directors

3. The board and directors are best placed to ensure that a company effectively manages health and safety. They should provide the necessary leadership and are responsible for the major decisions that most influence health and safety: the strategic direction, securing and allocating resources and ensuring the company has appropriate people, systems and equipment.

4. The directors should:

    - ensure the company has a comprehensive health and safety management plan;
    - ensure that plan is fit for purpose and reviewed regularly;
    - provide adequate resources and time for that plan to be implemented; and
    - obtain independent evidence of the effectiveness of that plan.

The legislative framework

5. The Health and Safety in Employment Act 1992 (HSE Act) supports effective health and safety governance by requiring companies as employers to take all practicable steps to ensure health and safety and to systematically identify and address significant hazards.

6. The act does not place an express duty on the board or the individual directors of a company. This contrasts with the situation of other groups. Employers, employees, those who control places of work, the self-employed, principals and those who sell and supply plant for use in workplaces, are required to take all practicable steps to ensure health and safety within their sphere of control.

7. By contrast, individual directors (and officers and agents of companies) can only be prosecuted, under section 56, if a company fails to ensure the health and safety of its workers, and a director 'directed, authorised, assented to, acquiesced in, or participated in, the failure'.[2] In those circumstances a director is liable, as a secondary party, for the breach of duty committed by the company as an employer.

8. The interpretation of section 56 can produce invidious results. In smaller companies where directors are 'hands on' and make, or participate in, operational decisions there may be scope to prosecute both the company and its directors. In a larger company the section is less likely to be applicable because the board of directors is divorced from day-to-day operational decision-making. Yet it may be health and safety failures at larger companies that cause process safety accidents leading to multiple fatalities.

9. Other countries have grappled with the problem of director liability and their experiences are informative.

The United Kingdom (UK)

10. In the UK, the Robens report identified the need for a greater health and safety focus at director (and senior management) level:

> *The boardroom has the influence, power and resources to take initiatives and set patterns … if directors and senior managers are unable to find time to take a positive interest in safety and health, it is unrealistic to suppose that this will not adversely affect the attitudes and performance of junior managers, supervisors and employees on the shop floor.*[3]

11. More recently, the UK Health and Safety Executive commissioned reviews of published research on the influence of directors on a company's health and safety performance. Professor Philip James, concluded that:

> *directors do exert an importance influence over their organisation's health and safety management and performance. … while directors appear to consider that they already face considerable legal, commercial and societal pressures to take responsibility for health and safety … their commitment to the issue is often problematic and frequently seen to be so by other managers.*
>
> *Statutory health and safety requirements, including those giving rise to individual, personal, legal liabilities, serve as one of the most important drivers of director actions in respect of health and safety. However, there would seem to be scope to explore whether … the introduction of 'positive' health and safety duties on directors would act to improve their motivation … The evidence … is seen to provide a strong, but not conclusive, basis for arguing that the imposition of such duties would … usefully supplement the liability that directors currently face.*[4]

12. Another reviewer, Professor Frank Wright, supported improved training of directors and promotion of health and safety leadership by them, in conjunction with issuing an approved code of practice addressing their responsibilities.[5]

13. Section 37 of the UK Health and Safety at Work Act 1974 contemplates prosecutions of directors where a health and safety offence is committed by the company 'with the consent or connivance of, or [was] attributable to any neglect on the part of, any director, manager, secretary or other similar officer of the body corporate'.[6] This provision is broader than its New Zealand counterpart because directors are liable where a company's wrongdoing is attributable to 'any neglect' by them that contributed to the company's breach of duty.

14. This broader provision has not been altogether successful. Neglect contemplates the existence of a duty, personal to the director, which has been breached and in a manner which contributed to the company's failure to protect its workers. If there is no such duty, then proof of neglect will be difficult and prosecution of the director unlikely.

15. In 2000 the British government published its strategy, *Revitalising Health and Safety*, which called upon the Health and Safety Executive to develop a code of practice on directors' responsibilities. The strategy also envisaged that legislation should be introduced to place directors' responsibilities on a statutory footing.[7] The subsequent code of practice provided good guidance on the role of directors in promoting health and safety. However, some companies did not adopt the code.

16. Between 2003 and 2010 three private members' bills were introduced in the UK to place a primary duty on directors to take all reasonable steps to ensure that a company met its health and safety obligations.[8] None was passed. The concept of neglect remains without a corresponding personal duty upon directors.

Australia

17. Australia has taken several initiatives on the health and safety duties of directors.

18. The proposal to harmonise health and safety legislation across all Australian states resulted in the Model Work and Safety Bill, which has been enacted at federal level, and in the Australian Capital Territory, New South Wales, Northern Territory and Queensland. Section 27 provides that the 'officer' of a corporate entity 'must exercise due diligence to ensure that the person conducting the business or undertaking complies with [their] duty of obligation'. Hence,

the primary duty of care placed on a person conducting a business to ensure the health and safety of workers, is supplemented by a duty of due diligence placed on officers of the company.

19. Due diligence, defined in section 27(5), requires officers to take reasonable steps to understand the business risks and hazards, and ensure that adequate resources and information, compliance and verification processes, are in place. The legislative scheme places a positive duty on officers of a company and defines the extent of that duty through the concept of due diligence.

20. Another example exists in the narrower context of mining, where some states impose positive duties on directors. The Queensland Coal Mining Safety and Health Act 1999 provides that the 'executive officers of a corporation must ensure that the corporation complies with this Act'.[9]

21. As Professor Neil Gunningham has noted, 'Deterrence is particularly effective when applied to individual decision-makers. However, it is crucial that the appropriate decision-makers are targeted, and this implies a focus on senior corporate managers and directors, rather than mine managers and surveyors.'[10]

Conclusions

22. The HSE Act does not place on directors shared or individual responsibility for ensuring the safety of the employees. Section 56 is ineffective, at least with reference to larger companies, where directors have normally delegated to executive management the operational decisions that give rise to breaches of health and safety.

23. What is needed, as experience in the UK and Australia indicates, is a statutory duty requiring directors to play their part at the governance level in ensuring that the company has an effective health and safety management system. This could be achieved by the addition of a duty on directors in the 'other duties' section of part two of the HSE Act. A failure to meet that duty would constitute an offence.

24. These conclusions are based on the commission's assessment of a mining tragedy, while the proposed changes are of general application to all companies. Accordingly the commission does not formally recommend the changes be made but rather that the issues should be reviewed.

Guidance available

New Zealand guidance

25. Directors have access to a wealth of guidance about good governance practice, including information produced by the New Zealand Institute of Directors,[11] and free guides provided by firms offering risk management services.

Australia/New Zealand standards

26. Section 5 of the HSE Act describes the object of the legislation as promoting the prevention of harm to workers through, among other things, the systematic management of health and safety. Other provisions also emphasise a systematic approach, for example in relation to the identification of hazards.[12]

27. There are three relevant standards jointly issued by Standards Australia and Standards New Zealand: AS/NZS ISO 31000:2009 on risk management, AS/NZS 4804:2001 on guidelines for setting up health and safety management systems, and AS/NZS 4801:2001 on auditable specifications for health and safety management systems.[13]

28. The Australian/New Zealand standards provide a systematic approach to developing health and safety management systems. AS/NZS 4804:2001 is comprehensive and applicable to organisations of any size and type. It is particularly relevant to high-hazard industries. The topics include:

- how to set up a system;
- how to continually improve the system;
- the resources required;

- measuring performance, including the use of lead indicators;
- integration of the system with other management systems;
- employee involvement;
- internal and external audit of the system; and
- incident investigation and remedial action.

Auditing health and safety management systems

29. 'Audit' means a systematic examination against defined criteria to determine whether the activities and results conform to planned arrangements. AS/NZS 4801:2001 establishes an audit framework, principally for the use of independent auditors but the framework can also be used for internal audit or management reviews.

30. A board of directors wishing to ensure that its health and safety management system is systematically developed and reviewed could usefully start with ensuring that directors understand these standards and that its senior management is using the standards as a guide.

Some common governance principles

31. New Zealand guidance on governance describes important principles that company directors, especially those in high-hazard industries, should keep in mind when considering their health and safety risks.

32. Best practice recommended by the New Zealand Institute of Directors identifies the importance of 'holding to account'. This means that the board 'holds management strictly and continuously to account through informed, astute, effective and professional oversight'.[14]

International guidance

33. There is also international advice for boards of directors. A good example is the guide published jointly by the UK Health and Safety Executive and the UK Institute of Directors.[15] The guide makes the following important points:

    - The board should set the direction for effective health and safety management and make it an integral part of organisational culture and performance standards.
    - The board should be aware of the significant risks faced by the business, including health and safety risks.
    - The board should ensure that health and safety is properly resourced, risk assessments are carried out, specialist advice is received where necessary, and employees are involved.
    - Health and safety is a key business risk and failure to include it in business decisions can lead to catastrophe.
    - Health and safety must be part of business decisions at all levels, not treated as an 'add-on'.
    - Board members should be trained to assess health and safety risks and promote their understanding throughout the organisation.
    - Board members should ensure that they receive adequate information on the organisation's performance, including lead indicators (preventative or process safety information) as well as lag indicators (incidents and injury rates). The board should receive immediate reports of significant failures.
    - There should be periodic audits of the effectiveness of the management structures, risk controls and performance. The auditor should have unrestricted access to the internal and external auditors.
    - The impact on health and safety of changes, such as the introduction of new processes, should be assessed and reported to the board.
    - The board should receive regular reports on the health and safety performance of contractors.

34. The New Zealand health and safety regulator could assist directors by issuing an approved code of practice on how

good governance practices can be used to manage their organisation's health and safety risks. The UK guidance would be a suitable base for that code. The regulator should work with the New Zealand Institute of Directors to produce the code.

Recommendation 5:

The statutory responsibilities of directors for health and safety in the workplace should be reviewed to better reflect their governance responsibilities.

Recommendation 6:

The health and safety regulator should issue an approved code of practice to guide directors on how good governance practices can be used to manage health and safety risks.

Recommendation 7:

Directors should rigorously review and monitor their organisation's compliance with health and safety law and best practice.

ENDNOTES

[1] See, for example, Chapter 2, 'Accident analysis – some concepts', and also the United Kingdom Health and Safety Executive, Directors' Responsibilities for Health and Safety: The Findings of Two Peer Reviews of Published Research (Research Report 451), 2006, pp. 4–5, http://www.hse.gov.uk/research/rrpdf/rr451.pdf

[2] Health and Safety in Employment Act 1992, s 56(1). Directors can also be parties to a health and safety offence pursuant to the Crimes Act 1961, s 66.

[3] Lord Robens (Chairman), Committee on Safety and Health at Work, Safety and Health at Work: Report of the Committee 1970–72, 1972, HMSO, 1972, p. 15, para. 46.

[4] United Kingdom Health and Safety Executive, Directors' Responsibilities for Health and Safety, pp. 37–38, http://www.hse.gov.uk/research/rrpdf/rr451.pdf

[5] Ibid., pp. 26–27.

[6] Health and Safety at Work Act 1974 (UK), s 37(1).

[7] United Kingdom Health and Safety Executive, Revitalising Health and Safety: Strategy Statement, June 2000, p. 26, para. 68, http://www.hse.gov.uk/revitalising/strategy.pdf

[8] Company Directors (Health and Safety) Bill 2003; Health and Safety (Directors' Duties) Bill 2004–05; Health and Safety (Company Director Liability) Bill 2009–10. See also: Edward Beale, Brenda Brevitt, Sally Broadbridge, Louise Butcher and Timothy Edmonds, Health and Safety (Directors' Duties) Bill: Bill No 22 2004-05 (House of Commons Library Research Paper 05/18), 1 March 2005, http://www.parliament.uk/briefing-papers/RP05-18.pdf

[9] Coal Mining Safety and Health Act 1999 (Qld), s 262.

[10] Neil Gunningham, Mine Safety: Law Regulation Policy, 2007, Federation Press, p. 179.

[11] New Zealand Institute of Directors, Principles of Best Practice for New Zealand Directors: The Four Pillars of Effective Board Governance, 2010. https://www.iod.org.nz/Publications/TheFourPillarsofGovernanceBestPractice.aspx

[12] Health and Safety in Employment Act 1992, s 7.

[13] Standards Australia and Standards New Zealand, Risk Management – Principles and Guidelines (AS/NZS ISO 31000:2009), 20 November 2009; Standards Australia and Standards New Zealand, Occupational Health and Safety Management Systems – General Guidelines on Principles, Systems and Supporting Techniques, (AS/NZS 4804:2001), 15 November 2001; Standards Australia and Standards New Zealand, Occupational Health and Safety Management Systems – Specification with Guidance for Use (AS/NZS 4801:2001), 15 November 2001.

[14] New Zealand Institute of Directors, Principles of Best Practice, p. 3.

[15] Institute of Directors and United Kingdom Health and Safety Executive, Leading Health and Safety at Work: Leadership Actions for Directors and Board Members, October 2007, pp. 1–8, http://www.hse.gov.uk/pubns/indg417.pdf

CHAPTER 29

Improving management leadership

Introduction

1. The commission is recommending new mining regulations and more guidance from a single-purpose and expert regulator. This will provide more help to directors and managers but will also require more of them. To make the changes effective, the board of directors and its managers will need to lead better health and safety performance across their organisations. Chapter 28, 'Improving corporate governance', discussed the contribution required from directors at the governance level and should be read in conjunction with this chapter, which deals with the leadership role of managers. 'Managers' means the chief executive down to the managers responsible for specific functions.
2. This chapter also reviews the role of the statutory mine manager and recommends that the duties be defined. It recommends that the mine manager be given some statutory protection when decisions are made beyond that person's control.

Leading improvements in health and safety performance

Risk management

3. Health and safety should be a core objective of any organisation, not a thing apart or a matter left to the health and safety manager. All employees must take responsibility for health and safety, but especially the managers from whom subordinates take their cues. Managing health and safety risks follows the same principles that apply to managing any other risks faced by the company. Robust risk management systems are essential. The risk of non-compliance with health and safety requirements needs to be identified generally across the work site and in each specific area of operations. The risks should be discussed in both formal and informal forums. The role of the health and safety committee should be clear and supported. As Chapter 30, 'Worker participation', makes clear, involvement of employees is essential.

Actions speak louder than words

4. Managers should demonstrate by their actions that they take health and safety seriously. This is done not only at the formal level, such as developing comprehensive safety management plans and ensuring that progress is reported, but also through the managers' day-to-day behaviour. For example, if managers say that health and safety is important but do not ensure that comprehensive safety systems are operating and do not ensure that all incidents are properly investigated, an appropriate health and safety culture cannot be built.

Management information

5. Management information systems (MIS) are necessary if risks are to be managed. The MIS for health and safety should be based on the health and safety management system, which should identify the crucial information to be reported to confirm the mine is operating safely. The MIS brings that crucial information together and enables trends to be revealed. Performance measures, qualitative and quantitative, should be designed and departures from standards highlighted by the MIS.
6. With modern technology it has never been easier to design good MIS and make the information widely and easily accessible to others, including the workforce and, as required, the directors. Modern MIS allow the information to be

presented at different levels of detail appropriate to the recipient's position. Good MIS avoid excessive reliance on personal communications, important as they are.

Training and guidance

7. There are two straightforward steps managers might take to improve their personal leadership of health and safety. First, if they have not had training in this area, then they should make sure they get it. There are courses tailored for different levels of managers, including chief executives. Second, there are best practice guides available, which contain expert advice for managers on leading health and safety. Much of that advice is about how to demonstrate personal commitment. There is no approved code of practice yet in New Zealand but in the interim managers should consult the best practice guides.

8. The United Kingdom health and safety regulator has issued a useful best practice guide for leading health and safety in high-hazard industries.[1] This recommends that managers commit to detailed actions under four headings:

- achieving a positive health and safety culture in the organisation;
- leading by example;
- ensuring that a range of systems is in place to support first class management of health and safety; and
- ensuring worker participation.

Approved code of practice needed

9. The New Zealand health and safety regulator should issue guidance, similar to that issued by the United Kingdom, by way of an approved code of practice for managers. The code should be developed at the same time as the approved code of practice already recommended for directors (Recommendation 6).

Strengthening the statutory mine manager's role

The regulations

10. The Health and Safety in Employment (Mining Administration) Regulations 1996 require the employer to appoint someone to manage the mining operation and to personally supervise the health and safety aspects. Employees must comply with the manager's instructions on health and safety. For a mine the size of Pike River, the manager must hold a certificate of competence as a first class coal mine manager.[2] The mine manager has no detailed responsibilities,[3] which has caused confusion for employers and for the inspectorate.

Defining the role

11. The mine manager's responsibilities and functions need to be defined. New Zealand should have regard to the definitions in the Queensland legislation applicable to the site senior executive.[4] Under the Queensland law, the person in this role has comprehensive obligations, including:

- ensuring that health and safety risks are acceptable;
- developing and operating a single safety management system for everyone at the mine;
- maintaining a management structure that supports health and safety, including documenting the responsibilities and competencies of senior positions;
- ensuring adequate training of workers;
- providing for adequate planning, organising, leadership and control of the operation; and
- supervision of shift operations, monitoring the working environment, procedures, equipment and installations, and inspections of each workplace at the mine.

12. Problems occur when the statutory mine manager with these responsibilities does not have the power to discharge them. For example, the mine manager may wish to buy equipment considered essential for the safe working of the mine but cannot get permission from higher management or the board. In that situation the regulations should require the statutory mine manager to document the proposal and the employer should either accept this or provide a formal response setting out the reasons for not doing so. The concept is similar to that already contained in section 19B(4) of the Health and Safety in Employment Act 1992 regarding recommendations of a workplace health and safety committee. The mine manager should be required to alert the regulator by sending it a copy of the proposal and the formal response.

Recommendation 8:

Managers in underground coal mines should be appropriately trained in health and safety.

Recommendation 9:

The health and safety regulator should issue an approved code of practice to guide managers on health and safety risks, drawing on both their legal responsibilities and best practice. In the meantime, managers should consult the best practice guidance available.

Recommendation 10:

Current regulations imposing general health and safety duties on the statutory mine manager should be extended to include detailed responsibilities for overseeing critical features of the company's health and safety management systems.

- The new regulations should have regard to the Queensland legislation applying to the mine's senior site executive.
- The statutory mine manager should be protected by new procedures requiring disclosure to the regulator when the employer does not accept the manager's proposals for improving health and safety.

ENDNOTES

[1] United Kingdom Health and Safety Executive, Leadership for the Major Hazard Industries: Effective Health and Safety Management, 2004, http://www.hse.gov.uk/pubns/indg277.pdf

[2] Health and Safety in Employment (Mining Administration) Regulations 1996, regs 7, 11.

[3] Department of Labour, Pike River Mine Tragedy 19 November, 2010: Investigation Report, [2011], DOL3000130010/240, para. 5.8.3.

[4] Coal Mining Safety and Health Act 1999 (Qld), ss 42, 55.

CHAPTER 30

Worker participation

Introduction

1. This chapter explores the regulatory framework for worker participation and recommends some improvements. Although aimed at health and safety in underground coal mines, some of the recommendations have wider application.

2. Worker participation is essential to keeping workplaces healthy and safe. Workers have practical experience in the daily hazards that arise and employers need their contribution to manage such hazards. Worker participation is required by the International Labour Organisation (ILO)'s Occupational Safety and Health Convention 1981 (C155), which was ratified by New Zealand in 2007.

Regulatory framework

3. The Health and Safety in Employment Act 1992 (HSE Act) places a general duty on all employers to give employees reasonable opportunities to participate in improving health and safety.[1] That includes providing a safe working environment, safe facilities and plant and identifying and managing hazards. Employees can participate directly or indirectly, through health and safety representatives and joint employer/employee health and safety committees.

4. The contribution employees make depends on their knowledge and expertise, the information and training they are given, the effectiveness of the health and safety processes in their workplace and the degree of support they receive from the regulator. Employers are required to provide employees with a range of information such as the results of health and safety monitoring by the employer or the regulator, emergency procedures, identified hazards, potential hazards and the location of safety equipment.[2] Employers must take all practicable steps to ensure that their employees are competent to perform their work safely, or are supervised by someone with sufficient knowledge and expertise.[3]

5. The HSE Act requires employers with 30 or more employees to develop an employee participation system. Where there are fewer than 30 employees, an employee participation system is required only if an employee or a union representative requests it. The HSE Act requires only that the system have a review process.[4]

Health and safety representatives and committees

6. Two ways of involving workers in the management of health and safety are through elected health and safety representatives and joint health and safety committees. The role of representatives includes fostering positive health and safety management practices, identifying hazards and drawing them to the employer's attention, consulting health and safety inspectors and promoting the health and safety of employees.[5]

7. Health and safety representatives must have ready access to information about workplace health and safety, and they must be given paid leave for health and safety training.[6] Only trained representatives can issue hazard notices, which may recommend steps for dealing with the hazard, and they can choose to notify a health and safety inspector that they have issued a notice.[7]

8. Health and safety committees are committees of workers with the ability to make recommendations. The employer must either adopt the recommendations of a health and safety committee (or a health and safety representative) or explain in writing why the recommendations have not been adopted. There is no stipulated timeframe for responding.

Employee rights to refuse work

9. Employees can refuse to do work they believe is likely to cause them serious harm. They can continue to refuse if they are unable to resolve the matter with their employer and they have reasonable grounds for believing that the work is likely to continue to cause them serious harm. Reasonable grounds include advice from a health and safety representative that the work is likely to cause serious harm.[8] This right to refuse work on health and safety grounds must be exercised individually (including individually by each member of a group), but under the Employment Relations Act 2000 employees can also collectively decide to strike for health and safety reasons. The lawfulness of a strike, as opposed to an individual refusal to work, is subject to the Employment Relations Act 2000.

10. Employees must be aware that they have the right to refuse to work and understand what that means. To exercise their rights, employees need sufficient information and training about the hazards to which they may be exposed and the harm they could suffer.

Problems with the framework

11. The framework provided by the HSE Act for employee participation is generally sound. It gives employees the means to ensure their workplace is run in a healthy and safe manner and to protect themselves. However, the framework has limitations regarding contractors, the requirement to develop a system, the range of information readily available to employees and the powers of health and safety representatives.

Contractors

12. The HSE Act distinguishes between employers' duties to their employees and to contractors, including their supervision and training. Principals and people in control of a workplace are generally required to ensure that contractors, subcontractors and their employees are not harmed while lawfully at work,[9] but are not expressly required to ensure that they are competent to do the work safely or that they are supervised. This can be problematic when a business or person is engaged to do work in an unfamiliar environment. For example, a coal mine may contract experienced builders to erect structures underground who do not understand the mine's unique hazards. Employers should have a positive duty to take all practicable steps to ensure that contractors are competent to do work safely or are adequately supervised.

13. Nor does the requirement for an employee participation system cater adequately for modern workplaces where the workforce consists of employees, contractors and subcontractors. The government has addressed the absence of an express requirement for businesses to collaborate in the Health and Safety Amendment Bill (No. 2). The bill requires collaboration by all who have duties at the same place of work, except employees. Those people will be required to work together to meet their employee participation duties (and other duties). The bill was introduced to Parliament in August 2008 and needs to be progressed.

Requirement for employee participation system

14. While all employers must provide opportunities for employees to participate in ongoing health and safety processes, only those with 30 or more employees are required to have a system. As a result, small businesses may have no formal or documented systems that can be the subject of audits and that will ensure workers know how they can participate. All underground coal mines, regardless of their size, should have documented worker participation systems. In small workplaces, such systems could be quite simple.

Information readily available

15. Employees are not entitled, as a matter of course, to receive the full range of information about health and safety in their workplace. Unless they request it, employees do not have to be given information about hazards they will not be exposed to or will not create.[10] But that information may be useful for assessing how well the employer identifies and manages hazards.

16. Employees should not have to ask for information about workplace monitoring; they need it to understand the conditions of their workplace. But they may not want to alert others, including their employer, to their interest in the information. Section 11(2)(b) of the HSE Act should be framed as a positive duty to make such information available to all workers without request.

17. Employers are not required to provide workers with the results of their investigations into health and safety incidents. These should be automatically made available to workers without them having to ask. The information may have to be provided in a form that does not breach the employer's other obligations, such as protecting the privacy of employees involved in or disciplined as a result of the investigation.

Power of health and safety representatives to inspect

18. The HSE Act does not give health and safety representatives the right to gather health and safety information through workplace inspections. Such inspections would provide a fuller picture of workplace hazards and their management than is possible from merely examining documents and talking to workers. Representatives should be able to carry out inspections, including during their normal working hours.

Power of health and safety representatives to protect workers

19. Health and safety representatives may discover hazards that are a source of immediate harm, but they have no power to stop activities.[11] Representatives can inform workers of the hazard and the workers can choose whether to stop work. Workers may not, however, have sufficient training or information to make an informed choice. They may also worry that refusing to work will jeopardise their employment or contract.

20. Health and safety representatives can raise the hazard with the employer, but the employer may not agree that work should stop immediately. The representatives can refer the matter to the regulator but that may not ensure immediate action either.

21. Trained health and safety representatives should be able to stop all or part of operations when there is an immediate danger to workers. This would give them a similar power to that of Queensland's site safety and health representatives to stop work.

22. Because stopping a business's operations has such a serious impact, the decision should be made only by health and safety representatives who have received sufficient training in health and safety, and in the exercise of that power.

Union check inspectors – underground coal mines

Background

23. The New Zealand Council of Trade Unions (NZCTU), the Engineering, Printing and Manufacturing Union (EPMU) and the Public Service Association (PSA) argued for the introduction of union check inspectors, similar to those previously known as workmen's national inspectors.

24. Workmen's national inspectors, appointed by the union, were used in underground coal mines before the HSE Act. They inspected mines where union members worked and reported their findings to the mine manager. If the workmen's national inspector reported that the mine or part of it was dangerous to life, or that any dangerous practice existed, the mine manager had to forward a copy to the mines inspector. But the workmen's national inspector could not require that work stop or workers be withdrawn.[12]

25. The union check inspectors now advocated for are based primarily on the union-appointed industry safety and health representatives in Queensland. They can direct operations be suspended when they believe the risk from coal mining operations is unacceptable.[13]

26. The industry does not support union check inspectors, with Solid Energy New Zealand Ltd saying employee participation can be adequately assured without them. Both the Coal Association of New Zealand (CANZ) and Solid Energy were concerned that such inspectors could make safety issues 'a focal point for any unrelated industrial conflict'.[14] The commission was not provided with evidence to support that concern or to show it occurs in Queensland. CANZ and Solid Energy also suggested that union check inspectors could undermine engagement of all employees in health and safety.

Advantages of union check inspectors

27. A union check inspector would be an extra set of eyes and ears, and a further line of defence. Such inspectors may have made a difference at Pike River. Experience in Queensland shows that workers are more willing to report problems to their industry safety and health representatives than to the mines inspector, which means the representatives may be better informed. Union check inspectors would not be subject to the same employment concerns as workers (including health and safety representatives).

28. Union check inspectors could also play a valuable role in small underground coal mines where there are few workers and establishing sophisticated worker participation systems may be more difficult. It may not be appropriate for such mines to elect trained health and safety representatives, and union check inspectors could fill the gap.

29. The mines inspectorates in Queensland and New South Wales support the use of union check inspectors: 'We are comfortable with this. Don't see them as abusing their powers. If it has ever been an issue then the inspectorate deals with it.'[15]

30. Union check inspectors, appointed and paid by the union representing coal mine workers, should be introduced. They should have the power to enter and examine an underground coal mine. If they reasonably believe there is an immediate danger to the health and safety of a worker or workers, they should be able to stop operations. In all other cases where there may be danger, they should be required to refer their concerns to a mines inspector.

31. Their powers should apply only to health and safety matters. The regulator would investigate any allegations that union check inspectors were acting with any other motivation. If the allegations were justified, the appointed representative could be removed by the regulator.

32. Union check inspectors would need sufficient training and experience in underground coal mining and health and safety to ensure that they can properly and effectively exercise their powers. At the least, they would need a deputy's certificate of competence.

Practical measures to support worker participation

Employer support

33. The workplace environment needs to encourage workers to exercise their rights and perform their duties effectively. Employers should create a 'no-blame culture' that values health and safety and that supports workers who raise health and safety concerns. This requires leadership and commitment by management and the building of trust with workers, including health and safety representatives.

34. The development of high-trust relationships takes time. Senior management must be willing to listen to workers' concerns about health and safety and should respond to them promptly, even if only to explain why no action has been taken. The response should be given directly to the worker who reported the problem. All workers should be informed about the problem and the response.

35. The employer should support the health and safety committee by providing an employer representative who is senior enough to ensure that any concerns raised are dealt with quickly and appropriately.

36. Managers and supervisors need to demonstrate competence in workplace health and safety. A reasonable level of knowledge will help managers to judge the quality of the health and safety advice they receive and maintain constructive relationships with health and safety representatives. Performance appraisal and reward systems should recognise health and safety as a key results area.

37. The effectiveness of worker participation systems should be regularly reviewed and any problems addressed.

Union support

38. Trade union support may make it more likely that worker participation and representation will result in improved health and safety, but this may not be the case where there are difficult worker/employer relationships. A sample of mines at two Australian companies showed that below average safety performance was more common at the more heavily union-dominated workplaces where there were also adversarial relationships between workers and management and low levels of trust.[16]

39. The unions should support workers and health and safety representatives, regardless of union membership. In terms of training representatives, the NZCTU said it 'has accepted responsibility to act on behalf of all workers and not just union members. It does so because it regards workplace health and safety as a crucially important issue and because, although its resources are very limited, the union movement has the networks and the experience to reach out to all workplaces.'[17]

Regulator support

40. In early 2010, the Department of Labour (DOL) recognised the importance of the regulator actively supporting employee involvement in workplace health and safety and the role of health and safety representatives.[18] DOL inspectors should engage with workers and their representatives regularly and make their contact details available. They should routinely consult health and safety representatives during inspections and audits. When possible, a representative should accompany the inspector during a visit.

41. The regulator should issue an approved code of practice on worker participation, and should promote it – and worker participation more generally – through education and publicity. Workers need to understand their rights and obligations; health and safety representatives need to understand their role. The code should help employers to meet their obligations and improve worker participation.

42. Health and safety representatives need to be well trained. Training is provided mainly by the NZCTU, Business New Zealand and Impac Services, and funded by the Accident Compensation Corporation (ACC) and by DOL through the Employment Relations Education Contestable Fund. ACC's funding has dropped substantially in recent years. DOL has provided more money, but has not been able to meet the entire shortfall. The government should ensure sufficient funding is available to train health and safety representatives.

Recommendation 11:

Worker participation in health and safety in underground coal mines should be improved through legislative and administrative changes.

- Legislative changes should:
  - require operators of underground coal mines to have documented worker participation systems;
  - ensure all workers, including contractors, are competent to work safely, are supervised and are included in the mine's worker participation system;
  - empower trained worker health and safety representatives to perform inspections and stop activities where there is an immediate danger of serious harm;

  - require the results of monitoring and investigation of health and safety in the workplace to be automatically made available to workers; and
  - allow unions to appoint check inspectors with the same powers as the worker health and safety representatives.
- The regulator should
  - issue an approved code of practice on employee participation;
  - promote workers' rights and obligations through education and publicity; and
  - ensure that inspectors routinely consult workers and health and safety representatives as part of their audits or inspections.

ENDNOTES

[1] Health and Safety in Employment Act 1992, s 19B.
[2] Ibid., ss 11–12.
[3] Ibid., s 13.
[4] Ibid., s 19C.
[5] Ibid., sch 1A, pt 2. These are mandatory functions for health and safety representatives elected following a failure by an employer to develop a system when required. Health and safety representatives who are part of an agreed employee participation system have the functions as agreed between the employer, employee and if applicable, the union.
[6] Ibid., s 19E.
[7] Ibid., s 46A.
[8] Ibid., s 28A.
[9] Ibid., ss 15, 18.
[10] Ibid., s 11(2)(b).
[11] Before the HSE Act was passed, the Occupational Safety and Health Bill proposed giving health and safety representatives the power to stop dangerous work and giving employees the right to refuse to do dangerous work. Those provisions were not retained by the HSE Act. The right to refuse work was inserted into the HSE Act in 2003 to comply with ILO Convention C155.
[12] Coal Mines Act 1979, s 175.
[13] Coal Mining Safety and Health Act (Qld), s 167(1).
[14] Adam Holloway, transcript, p. 5480.
[15] Neil Gunningham and Darren Sinclair, ACARP Research Report Mine Safety Regulation: Towards a National Approach, March 2010, p. 18.
[16] Neil Gunningham, Mine Safety: Law Regulation Policy, 2007, Federation Press, p. 201.
[17] New Zealand Council of Trade Unions, Submissions on Phase 4 Issues, 16 March 2012, NZCTU0001/24.
[18] Department of Labour, Workplace Services Practice Note – Health and Safety – No: 2010/11: Engagement with Health and Safety Representatives, March 2010, DOL3000100005.

CHAPTER 31

Qualifications, training and competence

Introduction

1. This chapter reviews what is needed to improve the competency of the mining workforce and ensure that New Zealand's coal industry can attract and retain the skilled people it needs.

2. The Health and Safety in Employment (Mining Administration) Regulations 1996 needs reform to better define the roles, accountabilities and qualifications required. The new regulations should be aligned with those in Australia so that qualified and competent workers can move easily between the two countries.

3. At the same time the regulator needs to work closely with industry and relevant training organisations to ensure that the qualifications competency and training framework meets regulator and industry requirements. Chapter 26, 'An effective regulatory framework', recommends changes to the 1999 underground regulations, which will also lead to greater alignment with Australia and help to shape the new training curriculum.

Existing legal requirements

4. The legislation imposes a duty on employers to provide training and supervision.[1] In the mining sector these duties are buttressed by safety regulations prescribing certain mandatory competency standards (certificates of competence) for safety critical roles in mines.[2] In underground coal mines these roles include mine manager, mine deputy, mine underviewer, gas tester, mine surveyor and winding engine driver.

5. These regulatory requirements are based on a longstanding appreciation that the qualifications and competencies of the workforce are central to managing hazards. Indeed, a suitably trained workforce is one of the first lines of defence against a major accident.[3]

Key issues

Deficiencies and gaps in the regulations

6. The regulatory system should drive training programmes that produce a qualified and competent workforce which is aware of the major risks in underground coal mining and how to manage them.

7. Deficiencies and gaps in the regulations are holding back the development of the workforce. Although the regulations require employers to ensure that every employee holds a current certificate of competence for their position,[4] they do not state the safety critical duties of position holders in sufficient detail or create role specific accountabilities.[5] All of these are spelt out in Queensland regulations.[6]

8. The New Zealand regulations have failed to keep pace with comparable thinking overseas, most recently, the regulatory approach recommended by the Australian National Mine Safety Framework (the safety framework). The Council of Australian Governments' Standing Council on Energy and Resources is overseeing the implementation of this framework. It aims to achieve a nationally consistent occupational health and safety regime for the Australian mining industry.[7]

9. The safety framework calls for rules to specify the key positions necessary for the safe operation of a mine. People's functions and required competencies also need to be specified in legislation or regulation.[8] By contrast, the New Zealand regulations are narrow in scope and lack detail, which causes confusion.

10. DOL proposes that new regulations should introduce new statutory roles, including a site senior executive and a ventilation officer, and that a general review of the competency requirements should follow.[9] The commission has concluded that this much needed regulatory reform should focus on three objectives: increasing the scope of regulated roles to ensure alignment with Australia; clearly prescribing the roles, responsibilities and accountabilities of duty holders; and ensuring that all new and inexperienced workers are given appropriate training and supervision.

11. The scope of the new regulations should be generally aligned with Australian requirements. The regulations should define competencies up to and including management and supervisory levels. This will require regulation to move beyond the current statutory positions: a statutory ventilation officer is urgently needed. Mine manager and other key technical and supervisory roles should have clear accountabilities and penalties for non-compliance.

12. The new regulations should support these changes by setting out detailed requirements for new and inexperienced workers to be given basic training and supervision, in line with the general provisions in the Health and Safety in Employment Act 1992 (HSE Act) on training and supervision.[10] Operators should keep a training/supervision register for periodic inspection by the regulator.

Insufficient oversight from the regulator

13. Changes should be made to the relationship between the regulator and the recognised industry training organisation for the coal sector – the Extractive Industry Training Organisation (EXITO). There is not enough regulator oversight of the qualifications competency and training framework.

14. Presently, DOL does not oversee or provide input into the curriculum; nor does it take any active role in the accreditation of competencies for any of the critical safety roles defined in the regulations. This task has been left to EXITO and to providers teaching individual unit standards.[11] The relationship between DOL and EXITO is largely confined to the administration of a register of certificate holders.

15. In keeping with New Zealand's devolved system of industry training, the coal industry itself has largely determined workforce skill standards through the work of EXITO. In addition to setting the curriculum and assessment requirements for regulated safety roles in mines, EXITO has worked with employers to develop national qualifications for quarrying and mining industries both above and below ground.[12] Overall the mining sector's qualifications appear reasonably extensive and have a strong focus on health and safety.

16. Although there are undoubted benefits to the industry itself leading the development of skill standards, there should also be regulator oversight of workforce competency.

17. The current model, in which skill development and setting is carried out by the industry body largely in isolation from government, has not provided sufficient quality assurance. The regulator and the industry need to have utmost confidence in the qualifications competency and training framework.

A more rigorous curriculum and assessment process

18. The regulator should adopt a greater leadership role in the sector to produce a competent, well-trained workforce. This will require closer working relationships between the regulator, EXITO, training providers and employers.

19. No regulator can oversee the qualifications and training framework in isolation. The Australian experience is that regulators can have an important oversight role through improving working relationships with industry and training providers. Queensland's mine safety law and regulation provides for a tripartite advisory committee, which recognises, establishes and publishes the competencies that qualify a person to perform health and safety duties under mining law.[13] New Zealand needs to align itself with these practices.

20. Work should begin as soon as possible on reviewing the content of the curriculum. The scope of the review should be guided by the safety critical roles defined in the new regulations and by benchmarking New Zealand unit standards with Australian equivalents. As well as technical competency, the curriculum needs to ensure competency in key general management skills, including communication, planning and risk management. Foreign-

trained geologists, electrical engineers and other specialists should undertake New Zealand-specific training to acclimatise them to local conditions.

21. To confirm that training is effective, the regulator and EXITO should review and update final assessment processes for management and supervisory roles. These processes should align with Australian practices and include oral examinations to assess theoretical knowledge and its practical application. This is common practice in Australia's leading mining states.[14]

22. The assessment should be conducted once the required unit standards and practical experience have been gained. Independent oral examinations for the statutory manager, key technical roles and supervisors should be the norm. The regulator should monitor the implementation by employers and providers of basic industry training, including supervision of new and/or inexperienced workers.

Public funding for industry training

23. In the challenging environments typical of high-hazard industries health and safety training cannot be separated from other training needs. Existing skill standards and qualifications reflect this. The coal industry, in partnership with EXITO, has driven the development of standards that contain strong health and safety themes.[15] In high-hazard sectors, industry training with a strong health and safety emphasis is essential.

24. The government is presently reviewing its industry training policy.[16] The commission recommends that, for high-hazard sectors, funding is available for training with a strong health and safety emphasis.[17] This includes funding for short health and safety courses that are a regulatory requirement. Such courses contribute to the achievement of wider vocational qualifications. Taxpayer provided resources for industy training are substantial.[18]

Alignment with international standards

25. The labour market for skilled and experienced mine managers, specialists and workers is global. To maintain a qualified and competent mining workforce in New Zealand, skill standards and industry training need to be generally aligned with international standards and practice. Close alignment with Australian standards makes sense, owing to the dominance of the Australian mining sector and the free flow of capital, skilled mining personnel and technologies across the Tasman.

26. Ensuring ease of labour market movement across borders should not be at the expense of minimum standards. New Zealand officials should therefore work in partnership with Australian regulators and standard setters to ensure qualifications, skill standards and industry training are robust and comparable on both sides of the Tasman. This should help the New Zealand mining sector to compete with Australia for skilled labour and expertise.

27. Existing processes developed by EXITO to assess the competency of overseas workers recruited to New Zealand mines require strengthening. There should be no scope for any 'back door' entry into labour markets because of inconsistent regulatory and administrative requirements between the two countries.

28. As part of this strengthening work the regulator should collaborate with Australian counterparts to develop joint Australia-New Zealand accreditation processes. The goal would be a consistent approach to examining competency of candidates seeking appointment to safety critical management, technical and supervisory positions. A joint Australia-New Zealand board of examiners should certify competency in safety critical roles.

29. Whatever trans-Tasman model is adopted, it must provide greater assurance that workers from third world countries have equivalent competencies to those required in Australia and New Zealand.

Working with Australia

30. An important part of the cross-jurisdictional work in the Australian safety framework is 'competency support' for the industry. This work involves the development of a standard set of competencies for safety critical mining roles identified in state legislation, reaching agreement on how those competencies are demonstrated, and identifying a process that allows states to implement the agreed national standards in a manner consistent with their respective legislation.[19]

31. To capture the benefits of 'competency support' for industry, New Zealand officials need to develop a close working relationship with leading state mining regulators, including relevant advisory committees and boards of examiners, to achieve the following goals:

    - regulatory alignment with respect to competency requirements and qualifications, including supervision requirements for uncertified staff holding statutory roles;
    - benchmarking the consistency of New Zealand and Australian unit standards developed by respective industry training organisations;
    - developing a detailed New Zealand mining training standard comparable to Queensland's Recognised Standard 11: Training in Coal Mines 2010; and
    - working towards the development of joint accreditation processes including an Australia-New Zealand board of examiners.

Occupational health and safety consultants

32. Specialist consultants and firms have an important role to play in the New Zealand occupational health and safety system. The advice of health and safety professionals has been shown to contribute positively to corporate safety performance.[20]

33. In the United Kingdom recent reforms have resulted in the establishment of an occupational safety and health consultants' register, which enables consultants who have met certain standards to market themselves accordingly. Registered consultants must abide by a code of conduct, provide sensible and proportionate advice, hold professional indemnity insurance and be committed to continuing professional development.[21]

34. Similarly, the Australian Safety Institute operates a registered safety professional scheme that certifies members' professional competence.[22] The OHS Education Accreditation Board also verifies courses offered in Australia to ensure they are based on strong scientific and technical concepts and delivered by competent instructors. [23]

35. In 2006 the National Occupational Health and Safety Advisory Committee (NOHSAC) raised concerns about the capability of occupational health and safety consultants in New Zealand.[24] Similar concerns were raised by others during subsequent reviews. The government's National Action Agenda 2010–13 adopted a specific priority to strengthen the competency framework for health and safety professionals.[25]

36. There is no research showing the magnitude and scope of competency problems, but submissions to the commission by a leading health and safety consultancy highlighted the low level of formal qualifications required, while a leading academic in 'human factors' noted that anyone can claim 'experience' as the basis for calling themselves a health and safety professional.[26]

37. Raising the professional standards of health and safety consultants is important and should be part of the regulator's work programme. This work should be led by the regulator and involve the Accident Compensation Corporation (ACC), leading consultants, academics and relevant professional organisations and tertiary training providers.[27] Consideration should be given to the merits or otherwise of greater industry self-regulation and co-regulation with government. Requirements for continuing professional development should be defined.

Recommendation 12:

The regulator should supervise the granting of mining qualifications to mining managers and workers.

- The regulator should lead the work to strengthen standards so that they are comparable with those of Australia.
- The regulator should work with Australian counterparts towards developing a joint accreditation process with Australia and an Australia/New Zealand board of examiners.

- Additional statutory roles and qualifications are required in new regulations, including a statutory ventilation officer and an agreed level of industry training and supervision for all new or inexperienced workers.
- The regulator should work with the Accident Compensation Corporation and others on raising the standards of health and safety consultants.

ENDNOTES

[1] Health and Safety in Employment Act 1992, s 13.
[2] Health and Safety in Employment (Mining Administration) Regulations 1996.
[3] SafetyWise Solutions Pty Ltd, Incident Investigation Reference Guide, Issue 4, October 2010, section 7, p. 5.
[4] Health and Safety in Employment (Mining Administration) Regulations 1996, regs 8, 15.
[5] Department of Labour, Pike River Mine Tragedy 19 November, 2010: Investigation Report, [2011], DOL3000130010/240, paras 5.8.5–5.8.6.
[6] Coal Mining Safety and Health Regulation 2001 (Qld).
[7] Australian Department of Resources, Energy and Tourism, National Mine Safety Framework, 16 August 2012, http://www.ret.gov.au/resources/mining/framework/Pages/default.aspx
[8] National Mine Safety Framework Steering Group, National Mine Safety Framework: Implementation Report, 2008, CAC0170/19.
[9] Ibid., DOL4000010005/45–48, paras 178–92.
[10] Health and Safety in Employment Act 1992, s 13.
[11] Robin Hughes, transcript, pp. 248–50; Kevin Poynter, transcript, p. 2995.
[12] Extractive Industry Training Organisation, Adding Value to Industry Training with On-job Training and National Qualifications, pp. 7–12; Extractive Industry Training Organisation, Extractive Sector Industry Training Plan, 2009–2011, pp. 6–8. Both available at: http://exito.org.nz/industry-info/extractive; See also: http://www.industrytraining.co.nz/OurTraining/Industry+Courses/Surface+++Underground+Mining.html
[13] Coal Mining Safety and Health Act 1999 (Qld), s 76 (Functions of committee), s 80 (Appointment of members).
[14] For New South Wales see: http://www.resources.nsw.gov.au/safety/consultation/coal-competence-board/qualifications
[15] Extractive Industry Training Organisation, Adding Value to Industry Training, pp. 7–12; Extractive Industry Training Organisation, Training Plan, 2009–2011, pp. 6–8. Both available at: http://exito.org.nz/industry-info/extractive
[16] Ministry of Education, Review of Industry Training, 2012. http://www.minedu.govt.nz/NZEducation/EducationPolicies/TertiaryEducation/PolicyAndStrategy/ReviewIndustryTraining.aspx
[17] Tertiary Education Commission, Determination of Design and Funding Mechanism, 2012, paras 30–31. http://www.tec.govt.nz/Documents/Ministerial%20determinations/determination-ITF-ITO-MA-2012.pdf
[18] Actual expenditure for industry training in 2011–12 was $109 million, well below the appropriation of $129m: http://www.treasury.govt.nz/budget/2012/ise/v2/ise12-v2-pia-tered.pdf
[19] The minister of energy and resources is currently a full member of the Council of Australian Governments' Standing Council on Energy and Resources. The Standing Council is responsible for overseeing this work.
[20] A.P. Smith and E.J.K. Wadsworth, Safety Culture, Advice and Performance, Report Submitted to the IOSH Research Committee, 2009, p. 9, http://www.iosh.co.uk/books_and_resources/published_research.aspx#Research
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[23] Australian OHS Education Accreditation Board, About the Australian OHS Education Accreditation Board, 2012, http://www.ohseducationaccreditation.org.au/about.aspx
[24] Allen & Clarke Policy and Regulatory Specialists Ltd, Occupational Health and Safety in New Zealand (NOHSAC Technical Report 7), 2006, p. 65, http://ohsnetnz.org.nz/documents/NOH11098TechRep7Web.pdf
[25] Department of Labour, Review of Workplace Health and Safety Strategy for New Zealand to 2015: Summary of Written Submissions, 2009, p. 15; Department of Labour, National Action Agenda 2010–2013, March 2011, DOL0020010015/9.
[26] Impac Services Ltd, Submission by Impac Services Ltd to Phase 4 of the Pike River Royal Commission, 9 March 2012, IMP0001/8; Kathleen Callaghan, witness statement, 23 March 2012, FAM0058/7, para. 34.
[27] New Zealand's leading professional organisations include the New Zealand Institute of Safety Management and the New Zealand Safety Council. Impac Services Ltd and Massey University offer degree level qualifications.

Emergency Management

+ Improving the emergency response
+ Improving emergency equipment and facilities

CHAPTER 32

Improving the emergency response

Introduction

1. Despite the commendable efforts of those involved, the emergency response at Pike River experienced substantial problems, many of which can be traced back to inadequate planning and the lack of testing of emergency management plans. Adequate planning ensures an efficient response to emergencies. Regular exercises allow emergency plans and facilities to be tested, along with the understanding of workers and responders. This, in turn, provides opportunities to learn and improve systems. A full range of exercises, from desktop simulations to national responses, should be undertaken.

Emergency response management – legal requirements

2. The Health and Safety in Employment Act 1992 (HSE Act) requires employers to develop procedures for emergencies that may arise at work. They must also provide employees with ready access to information about what to do during an emergency.[1] There are no express requirements for workplaces to test their emergency procedures or for emergency procedures to be audited.

3. The Health and Safety (Mining – Underground) Regulations 1999 do not specify what should be included in an underground mine's emergency procedures. The MinEx Health and Safety Council (MinEx) *Guidelines for Emergency Preparedness in Mines and Quarries* do provide significant detail regarding the development of an emergency preparedness plan and what it should include. The *Code of Practice on Underground Mines and Tunnels*, issued by MinEx, also contains guidance on emergency response, including documenting, testing and reviewing the fire control and emergency response system.

4. The Fire Service Act 1975 requires owners of 'relevant buildings' to have evacuation schemes that enable safe and quick evacuation from a fire.[2] The Fire Safety and Evacuation of Buildings Regulations 2006 set out what should be included in such a scheme, including a requirement for six-monthly (at least) trial evacuations.[3]

5. The requirement for an evacuation scheme applies to relevant buildings above ground at an underground mine operation, but nothing similar is specified for the more hazardous, underground parts of the operation.

Serious failings at Pike River

6. There were failings in Pike's emergency preparedness. The existence of industry guidelines plainly did not make up for the lack of detailed legislative and regulatory requirements. Although Pike River had an emergency response management plan (ERMP), it did not adequately contemplate a catastrophic event underground and it had not been reviewed or sufficiently tested. Underground, there were minimal emergency exercises and no practices that simulated emergency conditions. That was in contrast to the regular trial evacuations of surface buildings. Pike intended to improve this when it reached steady state production.

The Australian approach

7. Queensland and New South Wales take a more prescriptive approach to emergency preparedness in coal mines. Consequently, their legislation and regulations impose much more detailed requirements on underground coal mine operators.[4] Several of those requirements are included in the industry guidelines issued by MinEx.

8. In Queensland, a coal mine's site senior executive is required to develop and implement a safety and health management system, which must be in place before the mine can operate. That system must provide for managing emergencies at the mine. The emergency management system must include, among other details, provision for 'carrying out emergency exercises, including testing the effectiveness of the emergency management procedures and the readiness and fitness of equipment for use in an emergency' and 'auditing and reviewing the emergency exercises'.[5]

9. Queensland has also issued *Recognised Standard 08: Conduct of Mine Emergency Exercises*, which has the same status as an approved code of practice. It replaced an earlier standard, which had been implemented following the inquiry into the Moura No. 2 explosion. The inquiry recommended that '[e]mergency procedures should be exercised at each mine on a systematic basis, the minimum requirement being on an annual basis for each mine.'[6]

10. Queensland's *Recognised Standard 08* was developed and reviewed by the mining inspectorate, mining industry and unions. It sets out a hierarchy of exercise types:

    - Level 1 – state level exercise. One mine is selected each year for an unannounced practical exercise testing the emergency response system and the response of external services.
    - Level 2 – major mine site exercise. A whole of mine exercise undertaken by all mines at least once per year to test the emergency response system, including effective communication with external services.
    - Level 3 – minor mine site exercise. A practical exercise undertaken by each crew at the mine at least once per year to ensure all workers are familiar with the mine emergency response or evacuation plan.
    - Level 4 – supporting exercises. A desktop/semi-practical exercise undertaken periodically to test ability, and provide theoretical training, in emergency response.

    The standard sets out the required frequency, objectives and scope of each exercise, and who should be involved. It requires the Level 1 to 3 exercises to be audited and sets out the criteria. Results of Level 1 exercises are disseminated to the industry.

11. In the foreword to the standard, Chief Inspector Gavin Taylor writes: 'Exercises in withdrawal and first response are a vital part of the safety framework of any coal mine and lead to the opportunity for learning, the sharing of information and opportunity for continuous improvement. Learning from the mistakes of these exercises will encourage all persons employed in the industry to be better prepared should we ever be challenged in real life.'[7]

12. The commission endorses that statement. Lessons learnt from the emergency response to the Pike River tragedy would have been better learnt from planned exercises. If there had been exercises as required under Queensland's framework, Pike's emergency facilities and the implementation of its ERMP should have been improved. The problems integrating the company's plan with the system used by the police and emergency services would have become apparent. The lack of a second means of egress in an emergency would have been highlighted.

Conclusions

13. The current regulatory approach to emergency planning for underground coal mines in New Zealand is unsatisfactory. An approach similar to Queensland's should be introduced, with a mandatory requirement for an ERMP to be in place before operations can begin. The plan should address all potential emergencies, including catastrophic events, should be part of the company's safety management system and should be approved by the company's board and senior management. The plan should include a comprehensive self-rescue plan, including the emergency facilities and training needed, and should be based on best practice specific to the mine's physical features. The plan should be auditable and tested regularly through the use of emergency exercises. When activated, the plan should be capable of seamless integration with emergency agencies.

14. There is value in New Zealand mining industry personnel, including mines rescue services and the mining inspectorate, attending Level 1 emergency exercises in Queensland to gain experience in effective multi-agency responses to major emergencies. Representatives from Solid Energy New Zealand Ltd and the New Zealand Mines Rescue Service (MRS) have attended such exercises in the past. It would also be sensible to invite Queensland and New South Wales mining industry personnel to attend multi-agency response exercises in New Zealand.

Police self-review

15. The police reviewed their performance in the search, rescue and recovery operation.[8] The purpose was to critically examine the operation, reinforce what was done well, highlight areas for improvement and record actions and techniques for further plans and training. The police found 15 things that went well, including identifying and safely managing risks, effectively developing and actioning most parallel planning and successfully implementing welfare support plans. The review does not appear to have identified a number of problems that were highlighted during the commission's hearings, including the transfer of key decisions away from experts at the mine site, the lack of early planning on survivability and the slow risk assessment process.

Multi-agency responses

16. Emergencies at underground coal mines involve considerations and dangers that are not seen above ground. The lack of formal arrangements and training with other agencies for dealing with a large-scale emergency at an underground coal mine impacted badly on the emergency operation at Pike River.

2009 review

17. The New Zealand Search and Rescue Council's 2009 review of search and rescue training in New Zealand observed:

> *A consistent but simple theme emerged from the review and consequently pervades this report. It is widely, perhaps universally, acknowledged across the [search and rescue] sector that the prime area of deficiency, and therefore the target for improvement, is the inter-relation of parties while engaged in [search and rescue] activity. While there are direct training implications for improving [search and rescue operation] outcomes there are, first, some fundamental requirements for organisations to better communicate, share their expertise and resources, plan and train together and commit to working together with goodwill.*[9]

18. The truth of those comments is demonstrated by the difficulties experienced during the emergency response at Pike River. Had there been planning and training with the agencies involved, the multi-agency response would have been better co-ordinated and organised. A better decision-making structure would have been in place. People would have understood each other's roles better and the many experts gathered at the mine could have been used more effectively.

Cave Creek

19. The Commission of Inquiry into the Cave Creek tragedy in 1995 recorded the need for co-ordination between rescue organisations on the West Coast.[10] It recommended that 'the government initiate and implement appropriate steps to institute a combined regional disaster and trauma plan for the West Coast' and that 'such a process should invite and involve wide participation from every relevant rescue and trauma care organisation or party'. The plan was to provide for, among other elements, '[u]nambiguous overall leadership, including the prior resolution of all likely conflicts, and the co-ordination of services' and an 'overall programme of continuous education and training aimed at maintaining a co-ordinated overall response'.[11]

20. The lessons of Cave Creek were not heeded as far as underground coal mining was concerned. The 2005 *West Coast Civil Defence and Emergency Management Group Plan* did provide for mine emergencies and anticipated that police

would be the lead agency, supported by Urban Search and Rescue (USAR), local rescue teams, the New Zealand Fire Service (NZFS) and the MRS. However, the 2010 edition of the plan does not contain a similar provision nor does it specifically address the MRS.

Co-ordinated incident management system (CIMS)

21. Pike River showed the need to make a plan for responding to large-scale emergencies at underground coal mines involving multiple fatalities, and for it to be tested. Part of that plan will involve defining the incident management structure, which should use the CIMS framework. CIMS is used by all the main emergency agencies in New Zealand and it is based on sound principles.[12] It is also similar in its principles to Queensland's mine emergency management system (MEMS), except that CIMS is generic rather than being targeted to a particular industry. Their basic structures are the same (see Figures 32.1 and 32.2 below), with the main difference being the use in MEMS of mining terminology.

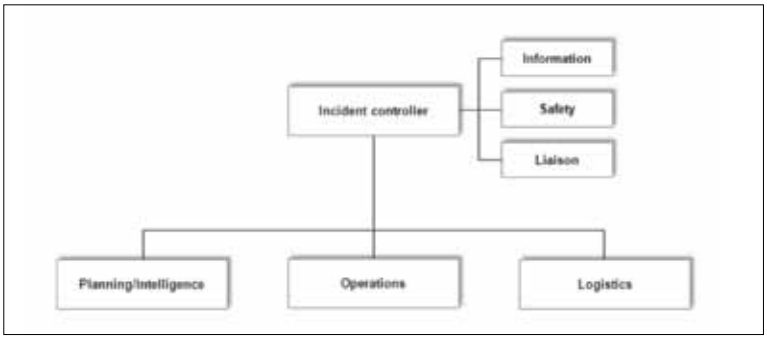

Figure 32.1: Co-ordinated incident management system[13]

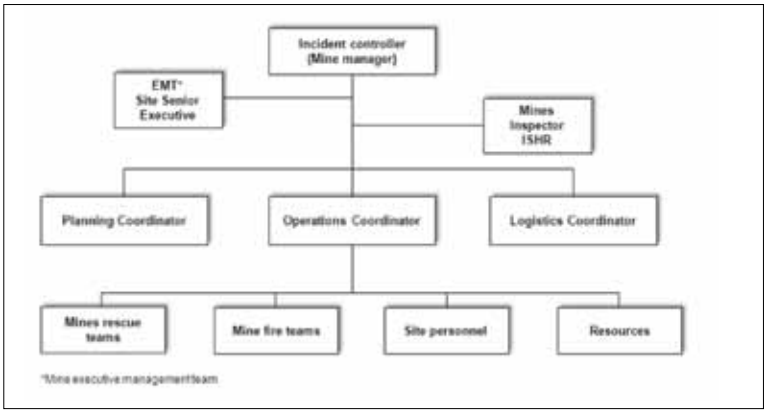

Figure 32.2: Queensland mine emergency management system[14]

22. A large-scale incident at an underground coal mine will require an emergency response that involves not just the mine and the MRS, but also other agencies and organisations. CIMS outlines a framework for co-ordinating such responses and ensuring all agencies are working toward the same goal. The key to the CIMS framework is that it sets out a common structure and principles that will be recognised and understood by all the responding agencies. That should allow for much greater inter-agency co-ordination and communication.

23. CIMS needs to be updated in light of the lessons learnt from the Pike River tragedy. It needs to reflect the potential for both private enterprise and individuals to be involved in an emergency response. The police and emergency services are currently reviewing CIMS. That review should include the mining industry and the MRS as participants. A meeting convened by the MRS in December 2011 was attended by the Department of Labour (DOL), the police, the NZFS, the MRS and mining industry representatives. The attendees are committed to meeting again after this report is released.

Lead agency

24. The CIMS manual defines the lead agency as the 'organisation with the legislative or agreed authority for control of an incident'.[15] The NZFS manual describes the lead agency as having jurisdiction over an incident and as the agency

that contributes the incident controller.[16] There is no legislation or agreement giving any particular entity authority over large-scale underground coal mine emergencies. Given that absence, it could be expected that the police have authority as part of their general emergency management function.

25. On 19 November 2010, Pike assumed initial responsibility for control of the incident. Soon after their arrival, the police took control, with no dispute from Pike. Some participants, including Solid Energy, were surprised to see the police in charge. Having witnessed the emergency response at Pike River, Solid Energy say they would control the response to an emergency at one of their mines but would work closely with the police and other organisations.[17] The difference between Solid Energy's expectations and those of the police and the NZFS emphasise the need for planning and, in the absence of legislative authority, the conclusion of a memorandum of understanding between all parties.

26. The NZFS had already realised there was scope for disagreement over the lead agency. Their manual notes that jurisdiction may not be easily determined at complex incidents. It recommends moving immediately to a co-operative approach, assuming multi-agency jurisdiction with multi-agency support. That is said to be 'the most complete application of the CIMS philosophy'.[18] The NZFS manual correctly identifies the problem, but the recommended solution is not sufficiently clear.

27. The underlying problem is the definition of lead agency and its relationship with the incident management team (IMT). There is scope for conflict between the two roles. That was demonstrated at Pike River. In taking control as lead agency, the police understood they were to appoint the incident controller, establish the IMT and be responsible and accountable for the response (including in a fiscal sense). A principal plank of their submissions was that, if they were fiscally responsible, the police had to maintain control of the emergency response. That is an understandable view.

28. But it is not consistent with the principles of CIMS, which focuses on co-ordination. The IMT co-ordinates the management of an incident. In a multi-agency response, the IMT will usually include personnel from more than one organisation, who 'take off their uniform[s]' and act collectively.[19] Each agency retains its own vertical command structure, but operates within the overall strategic direction of the IMT. Those propositions, taken from the NZFS manual, recognise that strategic control of the response lies with the IMT and the incident controller, not the lead agency.

29. Given the lack of advance planning and the likelihood that the response operation would be lengthy, it was appropriate for the police to assume the role of lead agency. The problems began when the police decided to fill all the roles in the IMT with their own members, including that of the incident controller. That meant the key decision-makers lacked necessary technical expertise. The CIMS manual does not require the incident controller or IMT members to be appointed from the lead agency. It provides that the incident controller role may be reassigned to another person if necessary.

30. The issues exposed during the Pike River emergency response should be urgently reviewed. CIMS may require change, but the critical need is for the organisations involved to agree in advance how CIMS is to be implemented in a large-scale mine emergency.

Incident management team (IMT)

31. The IMT is at the heart of CIMS. It is led by the incident controller and includes three functional members, each heading one of the planning/intelligence, operations and logistics groups. Depending on the size and complexity of the incident, the incident controller may also be supported by an information officer, a safety officer or a liaison officer.[20]

32. In a multi-agency response to a large-scale emergency at an underground coal mine, a good IMT should be:

    - expert and trained – it should include people who have expertise and training in managing and co-ordinating emergency responses using CIMS and people who have underground coal mining expertise;

- capable of marshalling and using all available expertise;
- capable of responding to changing circumstances;
- flexible – decisions should be made as and when needed, and should be reviewable; and
- limited in size to a manageable number of members through the use of subcommittees headed by the three functional members.

Incident controller

33. The membership of the IMT, including the incident controller, should be reviewed and changed if necessary as circumstances develop.

34. The incident controller leads the IMT and is responsible for approving co-ordinated incident action plans formulated by the IMT. The incident controller needs to be skilled in incident management and have experience and training in CIMS. He or she must have the authority and mana to lead the response and approve the co-ordinated incident action plans. The incident controller should be physically present at the incident control point with the rest of the IMT. For major incidents there need to be alternates appointed to the position so that fatigue is avoided.

35. In general, incident controllers may not need expertise in the particular environment where the emergency has occurred. In the case of underground coal mines, which are a unique environment, with their own set of risks, the incident controller needs to understand underground coal mines and mining. The incident controller requires a sufficient level of mining knowledge to assess the risks involved, the merits of taking a particular action and to anticipate how a situation might develop.

36. It is useful to compare the structures in Queensland and New South Wales. In Queensland, the incident controller is the mine manager, and in New South Wales, the mine operator or delegate is responsible for managing and controlling the emergency, with oversight from the mines inspectorate. In both states the police are involved, but they do not take control. Simulated emergency exercises are run annually in both New South Wales and Queensland to train and test multi-agency responses using the structures each has developed.

37. The police and the NZFS considered that a member of an agency expert in emergency response should be the incident controller.[21] That agency would likely be the police. DOL supported the incident controller being a member of the police.

38. Having reflected on the response at Pike River, the police say their incident controller would make all decisions, including the critical decisions related to sealing and re-entry of the mine. Here, the incident controller would be supported to make those critical decisions with trigger action response plans (TARPs).[22] In the case of a decision to seal, confirmation from the coroner that life is extinct would act as the TARP. In other words, a police incident controller could not approve the sealing of the mine until such confirmation is received from the coroner.[23] The commission does not agree that such confirmation from the coroner is necessary. It adds nothing substantive to the determination that would already have been made by the experts onsite. Indeed, the coroner's confirmation would necessarily be based on their assessment.

39. Solid Energy, the MRS and the families of the men say the incident controller should be someone with mining expertise.[24] That is consistent with the approach of Queensland and New South Wales. The commission agrees. To that end, it would be beneficial to maintain a list of approved people with mining expertise. The incident controller for any emergency on a similar scale to Pike River would be drawn from that list and would likely be whoever could respond first to the emergency. Should the incident controller need to be replaced, the chief inspector of mines should have the power to appoint someone else from the list.

40. Police employees are prohibited from acting under the direction, command or control of a person who is not authorised by law to direct, command or control the actions of the police.[25] This does not prevent an incident controller being someone other than a member of the police: the police retain their own internal command structure and agree to act in accordance with the incident action plan they helped to draft.

Planning/intelligence

41. Planning of activities must include risk assessment. Risk assessments for responding to underground coal mining emergencies should be done by people with mining expertise. All risk assessments should be urgently reviewed onsite at the incident control point by people with mining expertise who understand the activities being described and the risks involved. Reviews of risk assessments should not go through several layers of bureaucracy, as occurred at Pike River.

42. The planning/intelligence group should therefore comprise people from the affected mine and other experts. A database of such experts could be developed in advance, so that they can be called upon without delay. The planning/intelligence group should also include members expert in emergency response, such as the police. Planning meetings would generally involve the group's personnel and a representative from each of the operations and logistics teams.[26]

43. Before being approved, incident action plans developed by the planning/intelligence group will be discussed by the incident controller with the three group managers (planning/intelligence, operations and logistics). The manager of the planning/intelligence group should have mining expertise.

Operations

44. The operations group should comprise people from the mine and the MRS. There will likely also be personnel from other non-mining agencies, such as the police. The operations manager should have mining expertise.

45. In a rescue attempt, the only personnel to enter the mine will be members of the MRS. That means the MRS retains its power of veto over any decision to re-enter the mine if it considers it unsafe to do so. That point is not reached until the incident controller has approved the re-entry attempt.

Logistics

46. Everyone involved in the Pike River emergency agreed that the police performed the logistics function very well. The commission agrees. The police contribution was invaluable in ensuring the necessary logistical support. The police are the best agency to continue leading the logistics function.

Support roles

47. As mentioned in paragraph 32, the incident controller may need to appoint additional support people to deal with information, safety and liaison. The information officer handles media inquiries and releases information to the media. The liaison officer liaises with other agencies and other people with an interest, including the families of victims. These appointments allow the incident controller to focus on leading the emergency response.

48. The incident controller can also appoint a safety officer, who monitors safety and develops measures for ensuring the safety of the personnel involved in the response. In an underground mine emergency, the mines inspector could perform the safety role. In addition to the mines inspectorate, Queensland's MEMS includes the industry safety and health representative appointed by the union.

Communication with families

49. As discussed in Chapter 17, 'The families of the men', the commission received much evidence from the families about communications with them during the search and rescue, including the length of time taken to be notified their men were missing. The quality and timeliness of communications has the ability to either help or hinder families trying to cope with the potential loss of their loved ones. Poor communication is likely to cause further distress.

Identification and notification of those missing

50. Formal notification to next of kin cannot be done until the identity of those missing has been confirmed. It is crucial that the mining company keeps accurate records of the whereabouts of its workers to enable personnel on the surface to quickly and reliably confirm who is still in the mine during an emergency.

51. Formal notification to all next of kin should follow very soon after that confirmation is made. Details of emergency contacts for all workers at the mine should be kept and regularly updated. The company should proactively check emergency contact details with its workers, rather than expecting the workers to update details when they change.

52. There should also be more than one emergency contact provided for each worker. Assistant Commissioner Gary Knowles explained, by way of example, that the New Zealand Police have a rigorous next of kin process for their employees. Several contacts are listed, for example Assistant Commissioner Knowles has provided his life partner, parents, and another person that can contact those people.[27]

53. Including more than one contact provides an alternative in case the preferred first contact cannot be reached. It would also assist in other situations where a particular contact is no longer current, for example, a partner was listed but the relationship has come to an end. Workers should be able to include whoever they feel is important enough in their life to be their emergency contact and who will be able to disseminate the information to others affected. The list should indicate who is the preferred first contact.

54. The ERMP should identify who will be responsible for formally notifying next of kin. Following minor incidents in a workplace it is normal for an employer to contact next of kin, but in a major emergency where workers are dead or missing that responsibility might more appropriately lie with the police. The police are accustomed to speaking with next of kin following serious injury or death as part of their normal duties. They are therefore better equipped to deliver the news in a compassionate and appropriate manner.

Ongoing communication

55. While notification is made only to listed next of kin, ongoing communication of progress and developments should be provided to a much wider range of people. The Cave Creek commission of inquiry recommended the police appoint a victims' families liaison officer 'charged with the responsibility of making as much appropriate information as possible available to those whom the officer concludes are genuine enquirers with an interest greater than that of the public generally' and that those genuine enquirers be 'kept up to date with the victim's progress, recognising the need to allay natural fear and anxiety as much as possible'.[28]

56. Recognising that the police made great efforts in establishing victims' families liaison processes and that liaison officers were assigned to the families at Pike, the commission repeats the Cave Creek recommendations that information be made available to those who are genuine enquirers. The process to establish who is or is not a genuine enquirer needs to be relatively swift, and easy for those affected, to ensure information can be shared as soon as possible.

57. The company's ERMP should address communication with family members, including the process for providing information to them and the appointment of family liaison officers. Information provided to the family members needs to be objective and based in evidence. At all times they should be presented with the known facts, no matter how difficult that may be. This requires careful presentation of the information.

Recovery operations

58. In Chapter 17, 'The families of the men', the commission noted that recovery of the remains was complex and eventually became the subject of a deed between the government and the new owners of the mine, Solid Energy.[29] The families sought recommendations from the commission regarding who should be responsible for recovery of remains.

59. Under section 19 of the Coroners Act 2006, the coroner has the exclusive right to custody of any body, from the time a death is reported to the coroner until such time as the coroner authorises release of the body to family members. It follows that while a body is unrecovered, the coroner retains the exclusive right to custody. However, that does not make the coroner responsible for effecting recovery of the body. Section 18 of the act assumes that ordinarily the police will undertake recovery and to that end, the police have a right to custody of the body, but neither they nor anyone else is made responsible by the act for undertaking recovery.

60. At Pike River, the police led the recovery operation until 9 March 2011 when control of the mine was passed to the receivers subject to an understanding that, if re-entry became feasible, the police would assume responsibility for 'recovery efforts and preservation of evidence'.[30] This accorded with the practice in New South Wales and Queensland, where mining companies lead mine stabilisation and recovery operations in association with mines rescue service, police and others. Following the sale of the mine, Solid Energy became responsible for recovery but on the terms defined in the deed.

61. The real source of the families' frustration was the delay and lack of progress, not confusion over who was responsible for body recovery. Police leadership, followed by a hand-over to the receivers, was well known. The commission considers it can make only some limited observations in this context:

- Families are very vulnerable after an underground mine disaster, particularly while remains are unrecovered;
- Body recovery may in some cases present insurmountable difficulties on account of technical, safety and fiscal considerations;
- It is of paramount importance that the families are kept informed, but the information supplied must be accurate and measured; and
- The involvement of the government resulted in a carefully defined arrangement for body recovery.

Mines rescue in New Zealand

Functions and powers

62. Mines rescue is a specialised area of search and rescue, carried out in New Zealand by the MRS. The MRS was originally established in 1930, following the recommendations of the inquiry into the Dobson mine explosion, to provide an emergency service to the coal mining industry. Since 1993, it has operated as a charitable trust, the New Zealand Mines Rescue Trust (MRS Trust).

63. The Mines Rescue Trust Act 1992 does not confer any functions, powers or immunities on the MRS or the MRS Trust. Despite that, the MRS maintains an emergency response capability and offers training services to the extractives industry. It maintains three brigades (Huntly, Rapahoe and Stockton) manned by voluntary personnel who ordinarily work at coal mines.

64. Under the act the MRS Trust collects levies from coal mine owners, who in return receive core services from the MRS, including immediate response to emergencies and services for non-urgent incidents or events. The MRS also provides services to non-levy paying organisations on a charge-out basis.

The Australian approach to mines rescue

65. Mines rescue agencies in Queensland and New South Wales perform similar functions to the MRS, but the legislative approach is different. Under the New South Wales Coal Industry Act 2001, registered companies are approved to carry out the functions specified in the legislation.[31] Coal Services Pty Ltd (CSPL) is an approved company.

66. Mines Rescue Pty Ltd, a wholly owned subsidiary of CSPL, provides mines rescue services in New South Wales. Its primary function is to respond to underground incidents but it also has a 'pivotal role' in training, including mines rescue training, response and emergency procedures, confined space training, contractor induction and annual refresher courses.[32]

67. As an approved company, CSPL can appoint inspectors who have broad powers of entry to search premises and to take photographs and records. Inspectors can require people to answer questions and produce records. It is an offence to refuse to answer questions, give false or misleading answers, fail or refuse to produce documents, or otherwise obstruct the inspector.[33]

68. The Coal Industry Act 2001 also established the New South Wales Mines Rescue Brigade, which provides a mines rescue service for underground coal mines, under the control and direction of the approved company. The company is required to determine, for each underground coal mine, the number of people who must be available for mines rescue; the number and kinds of breathing apparatus and other rescue equipment the mine must provide; and the space and facilities the mine must make available to store that equipment. Mine owners are required to allow brigade members to attend official training and emergencies.[34]

69. Queensland's legislative approach differs from that in New South Wales but the purpose is the same. The Coal Mining Safety and Health Act 1999 provides for the accreditation of corporations to provide mines rescue services. The functions of an accredited corporation include helping a coal mine operator to provide mines rescue capability and providing underground mines rescue training programmes.[35] Those services are provided in Queensland by Queensland Mines Rescue Service Ltd (QMRS), a registered non-profit company.

70. Coal mine operators must provide a mines rescue capability for the mine and the mine cannot be operated if it does not do so. Mines rescue capability is defined in the Coal Mining Safety and Health Act 1999 and relates to the provision of suitable numbers of trained people and maintained equipment for the mine. Coal mine operators are also required to have a mines rescue agreement with QMRS for their coal mine. Mines rescue agreements for underground coal mines provide for QMRS to help the coal mine operator.[36] The contents of a mines rescue agreement are specified by the Coal Mining Safety and Health Regulation 2001 (Qld).

71. Accredited corporations must have an operational inertisation capability.[37] QMRS maintains the jet inertisation unit and a team to operate it. They were mobilised to inertise the Pike River mine.

72. The inquiry into the explosion at Moura No. 2 in Queensland identified ways to improve the effectiveness of mines rescue. These included formally recognising the training role of the mines rescue service and adequately resourcing it to fulfil that role; including it in risk evaluation exercises at mines; requiring mines to provide the service with up-to-date mine plans; requiring mines to supply, on request, plans showing the location and status of surface boreholes; and conducting periodic reviews of mine disaster control arrangements.[38]

Insufficient legislative base

73. The functions and powers of the MRS should be properly provided for and defined in legislation. This should include a requirement to provide the MRS with mine plans and ERMPs, to help the MRS plan its responses and ensure a mine is adequately prepared for an emergency.

74. Other emergency response agencies, such as the NZFS, have a limitation of liability for any damage caused by actions done in good faith during rescue operations.[39] Such a limitation should also be provided to the MRS.

Funding of the MRS

75. The Mines Rescue Trust Act 1992 sets levies at 40c per tonne of coal for underground coal mines and 20c or 10c per tonne of coal for open cast coal mines, depending on whether they have previously been operated as underground coal mines.[40] Those rates were set in 1992 and have never been amended. There is no provision for the rates to be adjusted for inflation.

76. There is a shortfall for the MRS between the levies received and the level of funding required. The MRS has been bridging the gap by providing chargeable services to non-levy paying coal mines.[41] However, their response to the Pike River emergency was costly and required an amount disproportionate to the levies paid by Pike. Pike had paid little because its coal production was minimal. The adequacy and fairness of the current funding model should be considered as part of a review of the Mines Rescue Trust Act.

Relationship with other agencies

77. Between 2000 and 2010, the MRS responded to approximately 84 emergency callouts, including the Pike River explosion. The incidents ranged from spontaneous combustion and emergencies involving loss of life in

underground coal mines, to assisting the NZFS with large fuel spills and responding to the derailment of a coal train in the Kaimai tunnel. Not all of these incidents required an emergency response from other agencies.[42]

78. On 8 March 2006, both the MRS and the police responded to an emergency at the Black Reef mine, near Greymouth, involving an inrush of water and the death of one worker. The MRS was the lead agency, supported by the police. Both the MRS and the police had concerns about the management of this incident. The MRS was concerned that the police did not understand the underground environment and the dangers involved. Following a debriefing with the MRS, Greymouth police staff visited the mines rescue station and Spring Creek Mine to familiarise themselves with a coal mine and the role of the MRS. An emergency callout plan was developed.

79. The Black Reef emergency and the response of the MRS and the police to the goaf fall at the Roa mine later that year resulted in an improved relationship between the two, which the police say has continued.[43] However, that applied only to the police on the West Coast. There was no formal relationship between the MRS and the police, or any other search and rescue agency, at a national level.[44] Police at national headquarters had little understanding of the role of the MRS, even though the police were making the critical decisions during the search, rescue and recovery operation at Pike River.[45]

80. DOL inspector Michael Firmin gave evidence that he visits the MRS at least once a year, but there was no formal relationship between DOL and the MRS. DOL had made no arrangements with the MRS as to how the two would interact in an emergency. Kevin Poynter had brought up the need to develop a management process but nothing had been done before the explosion at Pike River.

81. In its submissions, the MRS stated '[a] more beneficial relationship between the Australian and New Zealand mines rescue teams may also be achieved by [the MRS] developing strategic alliances with rescue services in Australia.'[46] The commission agrees.

Recommendation 13:

Emergency management in underground coal mines needs urgent attention.

- Operators of underground coal mines should be required by legislation to have a current and comprehensive emergency management plan that is audited and tested regularly.
- The emergency management plan should be developed in consultation with the workers and the Mines Rescue Service.
- The emergency management plan should specify the facilities available within the mine, such as emergency equipment, refuges and changeover stations, and emergency exits.
- The emergency management plan should contain a strategy for notifying next of kin and ensuring that genuine enquirers receive appropriate information.
- The mining operator must keep and regularly update a comprehensive list of emergency contact details for all workers.
- The emergency management plan needs to be compatible with CIMS, the co-ordinated incident management system used by New Zealand's emergency services and the police.
- The regulator should include the emergency management plan in its audit programme.

Recommendation 14:

The implementation of the co-ordinated incident management system (CIMS) in underground coal mine emergencies should be reviewed urgently.

- The implementation of CIMS should be reviewed to ensure that emergencies in underground coal mines are well managed.
- The review team should include the mining industry, police, emergency services, the Mines Rescue Service and the regulator.
- The CIMS framework should be rigorously tested by regular practical exercises at underground coal mines.
- The incident controller at an underground coal mine emergency must have mining expertise and, together with the incident management team, must be responsible for co-ordinating the emergency effort and approving key decisions. This does not prevent a government agency such as the police from being the lead agency or from maintaining its command structure.

Recommendation 15:

The activities of the New Zealand Mines Rescue Service need to be supported by legislation.

- The Mines Rescue Trust Act 1992 should reflect the functions performed by the Mines Rescue Service.
- The adequacy and fairness of the current levies imposed on mines to fund the service need to be reviewed.

ENDNOTES

[1] Health and Safety in Employment Act 1992, ss 6(e), 12(1).
[2] Fire Service Act 1975, s 21B.
[3] Fire Safety and Evacuation of Buildings Regulations 2006, sch 3, cls 2, 5.
[4] See Coal Mining Safety and Health Regulation 2001 (Qld), cls 35, 149; Coal Mine Health and Safety Act 2002 (NSW), s 47; and Coal Mine Health and Safety Regulation 2006 (NSW), cl 45.
[5] Coal Mining Safety and Health Regulation 2001 (Qld), cl 35.
[6] Queensland Warden's Court, Wardens Inquiry: Report on an Accident at Moura No 2 Underground Mine on Sunday, 7 August 1994, 1996, CAC0152/64.
[7] Queensland Government, Recognised Standard 08: Conduct of Mine Emergency Exercises, 25 June 2009, EXH0028/4.
[8] New Zealand Police, National Criminal Investigations Group, Operation Pike Debrief Report/Minutes and Key Recommendations, 21 March 2012, SOE.020.00002.
[9] T. Preston, Improving Search and Rescue Outcomes through Interagency Collaboration and Training: A Review of SAR Training in New Zealand, March 2009, p. 3.
[10] Commission of Inquiry into the Collapse of a Viewing Platform at Cave Creek near Punakaiki on the West Coast, [Report], 1995, Department of Internal Affairs, CAC0086/62.
[11] Ibid., CAC0086/63.
[12] In addition to the evidence of the police and New Zealand Fire Service, the commission received submissions on the CIMS framework, including criticism of the emergency response at Pike River from Alan Thompson. Mr Thompson has worked in large incident management teams in Australia and the United States, and has been part of responses operating under the CIMS framework in New Zealand.
[13] New Zealand Fire Service Commission, The New Zealand Coordinated Incident Management System (CIMS), 1998, NZFS0001/18.
[14] Adapted from Kenneth Singer, witness statement, 25 August 2011, SIM0002/11.
[15] New Zealand Fire Service Commission, The New Zealand Coordinated Incident Management System (CIMS), 1998, NZFS0001/34.
[16] New Zealand Fire Service Commission, 'Integration with CIMS', in New Zealand Fire Service (NZFS) Incident Management – Command and Control Technical Manual, May 2011, NZFS0003/7–9.
[17] Barry Bragg, witness statement, 23 August 2011, SOL384003/28, paras 86–87.
[18] New Zealand Fire Service Commission, 'Integration with CIMS', in New Zealand Fire Service (NZFS) Incident Management – Command and Control Technical Manual, May 2011, NZFS0003/10.
[19] Ibid., NZFS0003/8, para. 2.2.12.
[20] In some circumstances, CIMS contemplates the use of a response co-ordinator sitting above the incident controller. The role of the response co-ordinator is addressed in Chapter 16, 'Search, rescue and recovery', paras 25–26 and is not discussed further here.
[21] Simon Moore, transcript, pp. 5344–45; Michael Hall, witness statement, 27 March 2012, NZFS0021/9, 12 paras 24–26, 36.
[22] TARPs are predetermined plans describing actions to be taken in response to defined events.
[23] New Zealand Police, Supplementary Submissions on Behalf of the New Zealand Police: Search, Rescue and Recovery (Topics 13-20), 20 April 2012, POLICE.SUBS.00063/2–5, paras 1.1–3.4. The chief coroner advised the commission that there is no statutory authority to issue life extinct certificates. In practice, medical practitioners provide life extinct certificates to the coroner to confirm a death where a coronial inquiry is indicated. The issue of the certificate at Pike appears to be the only occasion on which a coroner has issued a life extinct certificate. See Letter, A. Neil MacLean to James Wilding, 28 June 2012, CAC0162.
[24] Submissions of Garth Gallaway for the MRS, transcript, p. 5354; Submissions of Craig Stevens for Solid Energy New Zealand Ltd, transcript, p. 5470; Submissions of Richard Raymond for the families of the men, transcript, p. 5561.
[25] Policing Act 2008, s 30.
[26] Letter, Alan Thompson to Royal Commission on the Pike River Coal Mine Tragedy, 21 September 2011, THO0006/2.
[27] Gary Knowles, transcript, pp. 2112–13.
[28] Commission of Inquiry into the Collapse of a Viewing Platform at Cave Creek near Punakaiki on the West Coast, [Report], CAC0086/56.

[29] Deed Relating to Body Recovery at the Pike River Coal Mine, 17 July 2012, SOL0503445.001.
[30] New Zealand Police, Pike River Coal to Implement Mine Stabilisation Plan, 9 March 2011, SOE.003.00104/1.
[31] Coal Industry Act 2001 (NSW), s 9.
[32] Coal Services Pty Ltd, Institutional Report and Evidence of Coal Services Pty Limited (CSPL) (In relation to Phase 2), 6 July 2011, CSP0001/4 paras 6.2-6.3.
[33] Coal Industry Act 2001 (NSW), ss 25–27, 32.
[34] Ibid., ss 33–34, 36, 43.
[35] Coal Mining Safety and Health Act 1999 (Qld), ss 227, 232.
[36] Ibid., ss 221–23, 225–26.
[37] Coal Mining Safety and Health Regulation 2001 (Qld), cl 175.
[38] Queensland Warden's Court, Wardens Inquiry: Report on an Accident at Moura No 2, CAC0152/76.
[39] Fire Service Act 1975, s 43.
[40] Mines Rescue Trust Act 1992, s 7.
[41] New Zealand Mines Rescue Trust, Brief of Evidence of New Zealand Mines Rescue Trust for Evidence Relating to Phase 4 of the Pike River Royal Commission, 5 March 2012, MRS0300/13.
[42] New Zealand Mines Rescue Trust, NZ Mines Rescue Callout History 2000–2010, 31 December 2010, MRS0004.
[43] Allyson Ealam, witness statement, 1 July 2011, POLICE.BRF.16/6.
[44] New Zealand Search and Rescue, New Zealand Search and Rescue Structure, 2009, http://www.searchandrescuecouncil.org.nz/nzsar-structure
[45] Michael Firmin, transcript, pp. 610–16.
[46] New Zealand Mines Rescue Trust, Brief, MRS0300/19.

CHAPTER 33

Improving emergency equipment and facilities

Introduction

1. As part of a good emergency management system, a mine should have equipment and facilities available that, in an emergency, can assist both the workers underground and those responding to the event. The first priority in an underground coal mine emergency is for workers to self-escape, that is, escape by their own efforts. Few workers in underground coal mines have been saved by external mines rescue teams following fires or explosions. Rescue teams should not enter a mine without evidence that the atmosphere is safe.

The miners

2. Provision for workers underground to self-escape should include:

    - early warning systems;
    - breathing devices such as self-rescuers and compressed air breathing apparatus (CABA);
    - changeover stations, fresh air bases or refuges;
    - a usable second means of egress;
    - navigation aids such as smoke lines and signage;
    - vehicular or mechanical means of exit; and
    - a communication and personnel location system.

3. What was provided at Pike has been considered earlier in the report. This chapter considers whether the regulatory framework, including other codes and guidance, contains sufficient requirements for self-escape facilities. Queensland's requirement for an emergency management system includes a specification that it provides for self-escape from the mine in an emergency. New South Wales also sets out, in regulations, the minimum contents of the emergency management system. These types of requirements are absent from the New Zealand regulatory framework, which has only a few specific provisions relating to emergency facilities.

Early warning systems

4. Early warning systems should be capable of detecting the first signs of fire or explosion and alerting workers so that they can evacuate through smoke-free escapeways. Underground coal mines need a means of continuously monitoring carbon monoxide and methane levels. Should these gases be detected at levels indicating a risk of fire or explosion, workers should be evacuated. In terms of the risk posed by methane, workers would need to be evacuated well before the concentration of methane reached its explosive range. Waiting until methane levels reach that range (5 to 15% of air) is too late. Gas monitoring systems should be designed to detect trend changes in concentration of gases and to alert workers to those changes. Trigger action response plans (TARPS), which describe actions that must be taken in response to defined events, should be the basis of this system and workers need to understand what to do at particular action points. Workers evacuating during an emergency must be able to monitor the atmosphere as they leave the mine.

5. There is insufficient provision for gas monitoring in underground coal mines in New Zealand. At the very least, there needs to be better guidance about where monitors should be located. The Queensland and New South Wales regulations are much more prescriptive about gas monitoring systems and the location of monitors. The New

Zealand regulations currently only require continuous monitoring at a face when a person is present, whereas the Queensland and New South Wales regulations ensure monitoring at or near a place where coal is being extracted even in the absence of workers. New Zealand should adopt an approach similar to that of Queensland and New South Wales. Underground coal mine atmospheres should be monitored continuously.

Breathing devices

6. If an emergency in an underground coal mine causes the ventilation system to stop functioning or the atmosphere becomes filled with toxic gases following a fire or explosion, all survivors underground need ready access to equipment that will provide oxygen and restrict their exposure to a toxic atmosphere.

7. New Zealand does have requirements relating to the provision and maintenance of, and training in the use of, suitable self-rescue units, but again Queensland's regulations are much more thorough and also include provisions for other breathing apparatus. Queensland expressly prohibits anyone entering an underground mine without a self-rescuer, without having been trained in its use, without having examined the self-rescuer and if not physically capable of using the self-rescuer.[1]

Figure 33.1: Example of a self-contained self-rescuer

8. There should be a mandatory requirement for underground coal mines in New Zealand to include both CABA and self-rescuers in their self-escape equipment. It is best practice to include CABA. They allow for more flexible escape strategies than self-rescuers, including the ability to assist injured personnel and to fight minor fires. Self-rescuers would remain the 'at-hand' breathing device, worn on the belt at all times and immediately available. They can be used during an emergency to enable escape to a safe place, where CABA is stored. Once there, workers would be able to remove their self-rescuers and strap on CABA units. Strategically located compressed air exchange stations should be available to recharge CABA.

Figure 33.2: Man wearing compressed air breathing apparatus (CABA)

Figure 33.3: Recharge station for compressed air breathing apparatus

9. There is a need for better guidance regarding the use and provision of self-rescuers, particularly in terms of training, though it would not necessarily have to be in the form of regulations. New South Wales provides detailed guidance on self-rescuers in Applied Guidelines (MDG 1020), which have the same status as approved codes of practice. Training needs to be conducted under simulated emergency conditions.

Changeover stations, fresh air bases and refuges

10. Changeover stations, fresh air bases (FABs) and refuges are places within a mine where survivors can more safely change from one self-rescuer to another, or to another type of breathing unit. Having a specific location to change

breathing devices minimises the exposure of survivors to a toxic or oxygen-deficient atmosphere where one breath can be fatal. The effectiveness of any of these facilities in an emergency will depend on the standard to which the facility is built and maintained.

Figure 33.4: Strata Worldwide coal refuge chamber

11. The use of refuge chambers in underground coal mines as part of an overall escape strategy was considered by one of the task forces established after the inquiry into the Moura No. 2 explosion. The task force's report noted that workers changing over their self-rescuers 'should be able to do so in a safe manner'.[2] It set out a preference for refuge chambers or changeover stations to 'be supplied with a respirable atmosphere and means of communication to the surface so that people can plan their escape and change from one self-rescuer to another in safety'. The task force believed the escape system 'should be mainly designed so that miners have a safe place to assemble'. Although it is best to focus on providing assistance to escape, the task force said it must be recognised that there may be injured workers who cannot escape but may be able to reach a place of safety.[3]

12. Queensland subsequently introduced a requirement for underground coal mines to include, in their safety and health management system, provision for self-escape from the mine or a part of it to a place of safety.[4] The system must be developed through a risk assessment, which must consider, among other things, the number and location of changeover stations and refuges.[5] Refuge chambers are not routinely installed in Queensland underground coal mines partly because coal mine fires can burn indefinitely in the presence of very low levels of oxygen, which could prevent rescuers from entering the mine. Refuge chambers are, however, commonly available in metalliferous mines in Australia.

13. The United Kingdom requires the owner of every mine to provide, where necessary, safe havens or facilities for the exchange and recharge of self-rescuers.[6] New South Wales has also included detailed guidance on changeover stations and refuges in MDG 1020. Canada, South Africa, Japan and the United States have also regulated the installation of refuge chambers.[7]

14. In contrast, there is no express legal requirement for underground mines in New Zealand to have a changeover station, an FAB or a refuge. There is also no guidance recommending the use of any of these facilities or the minimum standards to which they should be built and maintained.

15. The variability in any mine's design and state of development means prescriptive requirements governing the provision of changeover stations or refuges are inappropriate. However, there should be a requirement for a mine to consider the need to provide changeover stations or refuges. There should be guidance about when changeover stations or refuges are required, the standards to which they should be built and maintained, and what each should contain. This would assist mine operators to know the minimum standards such facilities should meet in order to be truly considered a changeover station or refuge, and provide a basis for an inspector to assess the adequacy of the facility.

Second means of egress

16. The requirement for a usable second means of egress is a fundamental aspect of underground mining worldwide. Legislation enshrining this requirement in overseas countries followed mining disasters in the United States and United Kingdom, where miners died after their only means of escape became impassable. The need to have at least two outlets separate from each other is also recognised in the Health and Safety in Employment (Mining – Underground) Regulations 1999.

17. Providing truly suitable and sufficient means of egress, and particularly more than one egress, is so important that a mine should know exactly its obligation and the inspectorate should have no qualms about enforcing that requirement. The suitability and sufficiency of a means of egress should be considered against the workers' ability to exit during any possible emergency, as well as during normal conditions. Evacuation through the second means of egress should be tested regularly. At least one of the egresses needs to allow exit by vehicles or other mechanical means.

18. The development of a second means of egress should be a priority for every mine. It should be constructed as soon as the development of the mine permits and should be in place before panel production begins.

Navigation aids

19. In an emergency, there may be reduced visibility in the mine and those underground may be disoriented and under extreme stress. A mine should provide aids that will enable workers underground to reach changeover stations or refuges and leave the mine quickly and easily. These can include smoke lines, walking canes and the use of fluorescent signage and markers. Such aids must be strong enough to survive an emergency.

20. There are no express legal requirements for an underground mine in New Zealand to have smoke lines or life lines, or any other emergency navigational aids. There is at least some, though not entirely sufficient, guidance in the MinEx Health and Safety Council (MinEx)'s *Industry Code of Practice on Underground Mines and Tunnels*. It says that the emergency management system should provide, where practicable, for paths of egress to be marked 'so that persons who are not familiar with a route can safely travel it in conditions of poor visibility'. [8]

21. Queensland requires underground coal mines to consider selecting and marking escape routes;[9] New South Wales requires an underground coal mine's emergency management system to include 'the marking of paths of egress so that people can safely travel on them in conditions of poor visibility'.[10]

22. In the United Kingdom, the Health and Safety Executive (UK HSE) has issued guidance that escape routes out of the mine should be clearly marked and points to the use of emergency way-finder beacons for use in low visibility.[11] The UK HSE has also issued guidance that safe havens should be easy to locate and special 'sensory' measures should be taken to identify them when visibility is limited.[12] It gives, as examples, fluorescent way-finding roadway markers and directional life lines.

23. New Zealand's lack of legal requirements or guidance on navigational aids issued or approved by the regulator is not consistent with best practice. Underground coal mine operators should be required to mark the paths to self-escape facilities and equipment, including exits and changeover stations or refuges. The markers must be easily seen in low visibility conditions.

Vehicular means of exit

24. During an emergency, it is critical that workers are able to make their way out of the mine as quickly as possible. The most efficient way to do so is in personnel transport vehicles, provided they are available and can be started. The use of motorised transport was a 'significant factor' in the survivors of the first explosion at Moura No. 2 managing to escape from the mine.[13] Vehicles also allow for quick evacuation of injured workers.

25. There are no express legal requirements for underground mines in New Zealand to have vehicles available for use in an emergency evacuation, except that at least one outlet must have a 'mechanical means of entry and exit'.[14] The MinEx *Industry Code of Practice for Underground Mines and Tunnels* does state that a fire and general emergency

system, where practicable, should provide for '[s]ufficient types and numbers of transport or alternate escape means, in combination with escape equipment, to allow the safe evacuation of persons.'[15]

26. In New South Wales, a coal mine's emergency management system is required to have provisions for the treatment and transport of sick or injured people and, in respect of the underground parts of the mine, sufficient transport or alternative means of escape to allow safe evacuation.[16] MDG 1020 sets out detailed guidance regarding transport: '[p]rovision of high speed vehicular escape or equivalent must always be a primary object of any emergency escape system.'[17] MDG 1020 also advises that systems relying on long walks through difficult conditions should be remedied.

27. It is best practice for underground coal mines to have personnel transport vehicles available to evacuate a mine during an emergency. In general, all mines should be expected to have vehicles available, although they may not be needed in small mines where leaving on foot is easier and quicker.

28. The Moura No. 2 inquiry recommended the formation of a group to examine and report on various emergency escape facilities, including the role of motorised transport.[18] Following extensive research and trials in Queensland, a standard flameproof diesel personnel carrier has been modified so that it can operate in compromised visibility, and in an atmosphere deficient in oxygen and rich in methane. The vehicle's special features include proximity sensors, a navigation system for operating in zero visibility and a medical breathing system. Queensland's Safety in Mines Testing and Research Station (SIMTARS) and the National Institute of Occupational Health and Safety (NIOSH) in the United States are collaborating to refine the self-rescue features so that such features can be built into all personnel transport vehicles at a mine. As soon as self-rescue capable personnel transport vehicles are commercially available, mines should be required to provide enough to rapidly remove workers from an underground mine in the event of a fire or explosion.

Communication and personnel location system

29. The provision of adequate communication devices, capable of surviving emergency events such as explosions, ensures that workers underground can raise the alarm with the surface and with other workers, and can advise surface personnel of the status of workers underground and their planned escape route. A communication system allows those on the surface to guide workers underground towards the best way out of the mine. This is especially important if a particular route could lead workers into danger. Communication and personnel location devices are also beneficial when workers cannot get out of the mine on their own. In such situations, surface rescue teams can be directed straight to the survivors without having to undertake a time-consuming search of the mine.

30. In New Zealand there are no express legal requirements for the provision of communications systems in underground mines, either during an emergency or in normal operating conditions. There is guidance in the MinEx code for suitable means of communication to be provided and maintained in specified areas.[19]

31. Queensland, by way of contrast, does have express legal requirements for the provision of a telephonic communication system in underground coal mines, including that it have an adequate back-up power supply. It also specifies where the communication devices must be located in the mine.[20] Queensland's Recognised Standard 08: Conduct of mine emergency exercises includes the requirement for mines to have an effective means of communication with surface control, and specifies their locations. The United Kingdom also requires mines to establish and maintain 'communication systems to enable assistance escape and rescue operations to be launched'.[21]

32. The technology for communications and personnel location devices is improving. Most Queensland underground coal mines have installed certified PED systems developed by Mine Site Technologies. They provide wireless through-the-earth communication and can be used both as an emergency and as a day-to-day system.[22] Three of Queensland's underground coal mines use the Northern Light Technologies wireless messenger system, which provides for two-way communication between workers underground and the surface and includes a built-in personnel tracking system.

Figure 33.5: Northern Light Technologies two-way messenger system[23]

33. Alternative communications systems include leaky feeders. Leaky feeders are not wireless and so require cables to be hung from the roof throughout the mine. Underground workers are provided with intrinsically safe walkie-talkies, which allow for two-way communication.

34. All underground mines should have an adequate communications system that allows effective contact between miners underground and the surface during an emergency. New Zealand should keep abreast of the development of effective personnel location systems. As reliable and suitable systems become available, mine operators should also be required to install these.

Conclusions

35. There is inadequate coverage of self-rescue facilities in the mining health and safety regulations. Only four aspects are addressed and even those are not entirely satisfactory.[24] Many self-rescue requirements are not covered by regulations or other guidance material.

36. A fresh start is required. New regulations requiring underground coal mines to develop a health and safety management system should include a requirement that the system contain a comprehensive emergency response management plan. That plan should cover the facilities and training required to support self-rescue.

The emergency responders

37. While providing self-escape facilities should be the priority, an underground coal mine should also be able to assist the rescue operation. That includes being able to measure the atmospheric and physical conditions underground and, once it is established that there are no survivors, to promptly seal the mine and prevent further explosions.

Understanding the atmospheric conditions

38. No mines rescue team will enter an underground coal mine without adequate knowledge of the atmospheric conditions so that they can accurately predict when and for how long they can safely go underground. Although there are legal requirements in New Zealand relating to gas monitoring in underground mines during normal operating conditions, there are no express requirements for mines to have facilities or equipment that will help to establish atmospheric conditions during an emergency. There are also no relevant guidelines.

39. An underground coal mine's emergency management system should consider how the atmospheric conditions of the mine will be monitored and understood after an emergency such as a fire or explosion. This means installing a tube bundle system as well as the real-time monitoring system. Following the Moura No. 2 explosion, the use of tube bundle systems became the norm in Queensland and now all underground coal mines in the state have both systems.

40. A tube bundle system can be more useful than real-time monitoring devices after an explosion or fire, as the analysis components on the surface remain intact and can continue analysing the mine atmosphere. This is because if the

tube bundle equipment in the mine is damaged, tubes can be connected to the surface infrastructure and lowered down boreholes into the mine. Gas drawn from the mine through the tube bundle system can also be subjected to further analysis and interpretation, using gas chromatography.

41. A gas chromatograph from the Mines Rescue Service (MRS) rescue station in Rapahoe and the two chromatographs brought over by SIMTARS were used to analyse gas samples obtained from the mine during the search and rescue operation. Having more than one chromatograph available provided a degree of comfort in the accuracy of results. It would also have been convenient to have had a mobile laboratory available to assist with analysis of results on site. The inquiry into the explosion at the Kianga No. 1 mine in Central Queensland in 1975 recommended: 'All mines have available at short notice the means of analysing the air samples obtained while dealing with an out-break of fire below ground. This end may be accomplished by either mobile laboratories or laboratories established in each mining locality.'[25] The regulator and the MRS should consider obtaining and maintaining a mobile gas laboratory that could be available at short notice.

Understanding the physical conditions

42. It is also important during a search and rescue operation to understand the physical condition of the strata in the mine. Fires and explosions can weaken bolts put in place to hold up the roof, leading to roof falls in the mine. Much time and effort was expended at Pike obtaining robot cameras to examine the mine's drift, only for these to experience difficulties. Equipment suitable for use in assessing the physical environment underground should be identified and trialled before another mine emergency occurs.

Inertisation and sealing facilities

43. Following a fire or explosion, it may become necessary to seal the whole mine. Early inertisation can prevent further explosions and loss of the whole mine. It can also make any recovery operations easier and more likely.

44. There are no express legal requirements for underground mines to provide facilities that will ensure efficient and safe inertisation and sealing in an emergency. The MinEx *Industry Code of Practice on Underground Mines and Tunnels* does recommend that a mine's fire control and general emergency system cover rapid and effective sealing of the mine or a section of the mine if the fire or other emergency conditions cannot be controlled by other means.[26]

45. Queensland requires the underground coal mine site senior executive to ensure that each entrance from the surface to the underground mine is capable of being rapidly sealed. At least one of the entrances must have an airlock and the mine, when sealed, must have facilities that allow safe use of inertisation equipment.[27] The inquiry into the Moura No. 2 explosion highlighted the need to be able to inertise a mine following an explosion. Its recommendations led the Queensland Mines Rescue Service to obtain an inertising system and train a team to use it.

Figure 33.6: Inertisation connection facilities

46. New South Wales also requires coal operations to include, in the emergency management system, provision for 'the rapid and effective sealing of the mine (while at the same time allowing for re-entry to the mine).'[28]

47. New Zealand's underground coal mines should be required to make sufficient provision for emergency mine sealing and inertisation. This includes constructing airlocks and docking stations.

Recommendation 16:

To support effective emergency management, operators of underground coal mines should be required to have modern equipment and facilities.

- Operators should be required to have equipment and facilities to support self-rescue by workers during an emergency.
- Operators should be required to include, in their emergency management plans, provisions for continued monitoring of underground atmospheric conditions during an emergency.
- Operators should be required to install facilities that will support emergency mine sealing and inertisation.

ENDNOTES

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[3] Ibid., p. 736.
[4] Coal Mining Safety and Health Regulation 2001 (Qld), cl 168(1).
[5] Ibid., cl 168(2)(d).
[6] Escape and Rescue from Mines Regulations 1995 (UK), reg 10(1)(b).
[7] Industry & Investment NSW, Mines Rescue Working Group and Mine Safety Operations Division, Guideline: MDG 1020 Guidelines for Underground Emergency Escape Systems and the Provision of Self Rescuers, MDG 1022 Guidelines for Determining Withdrawal Conditions from Underground Coal Mines, Guidelines for In-seam Response Using CABA for Events When Life is at Risk, October 2010, p. 27, http://www.resources.nsw.gov.au/__data/assets/pdf_file/0005/419522/MDG-1020.pdf
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[10] Coal Mine Health and Safety Regulation 2006 (NSW), reg 45(b)(vii).
[11] United Kingdom Health and Safety Executive, Guidance and Information on Escape from Mines, 2001, p. 13. http://www.hse.gov.uk/pubns/priced/escape-mines.pdf
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[13] Queensland Warden's Court, Wardens Inquiry: Report on an Accident at Moura No 2 Underground Mine on Sunday, 7 August 1994, 1996, CAC0152/67.
[14] Health and Safety in Employment (Mining – Underground) Regulations 1999, reg 23(2)(d).
[15] MinEx Health and Safety Council, Industry Code of Practice, MINEX0005/39.
[16] Coal Mine Health and Safety Regulation 2006 (NSW), regs 45(a)(ii), 45(b)(viii).
[17] Industry & Investment NSW, Mines Rescue Working Group and Mine Safety Operations Division, Guideline, p. 25.
[18] Queensland Warden's Court, Wardens Inquiry: Report on an Accident at Moura No 2, CAC0152/67.
[19] MinEx Health and Safety Council, Industry Code of Practice, MINEX0005/12–13.
[20] Coal Mining Safety and Health Regulation 2001 (Qld), reg 176.
[21] Escape and Rescue from Mines Regulations 1995 (UK), reg 8(1).
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[24] Health and Safety in Employment (Mining – Underground) Regulations 1999, regs 15, 22–24.
[25] Queensland Warden's Court, Warden's Inquiry: Report on an Accident at Kianga No. 1. Underground Mine on Saturday, 20th September, 1975, p. 18, http://mines.industry.qld.gov.au/assets/inspectorate/kianga.pdf
[26] MinEx Health and Safety Council, Industry Code of Practice, MINEX0005/39.
[27] Coal Mining Safety and Health Regulation 2001 (Qld), reg 156.
[28] Coal Mine Health and Safety Regulation 2006 (NSW), reg 45(b)(x).

Appendices

APPENDIX 1

Conduct of the inquiry

Establishment of the commission

On 29 November 2010, Prime Minister John Key announced the decision to establish a Royal Commission on the Pike River Coal Mine Tragedy. Its function was to investigate the tragedy and provide a report to the governor-general.

Cabinet approved the terms of reference and appointments to the commission on 13 December 2010 (CAB Min (10) 45/11). Justice Graham Panckhurst was appointed the commission's chair with David Henry and Stewart Bell appointed as commissioners.

The commission was given broad terms of reference (see Volume 1) that required it to examine and report on the causes of the explosions, and the consequent loss of life, as well as the adequacy of the regulatory regime, its administration including the mines inspectorate and the search, rescue and recovery operation.

Biographies of the commissioners are available in Appendix 3.

The establishment of the commission coincided with parallel inquiries undertaken by the coroner, the Department of Labour and the police.

By the end of December 2010, two barristers, James Wilding and Simon Mount, were appointed as counsel to assist the commission. A third, Kerryn Beaton, was appointed in May 2011.

The commission's executive director (Anne Carter) began work on 1 January 2011 (until 17 May when a new executive director – Vanessa Johnson – took over the role). The commission was initially Christchurch-based and moved into offices there in January 2011. The Canterbury earthquake on 22 February 2011 forced relocation to Wellington in early March, which delayed the commission's work.

Participation, process and procedure

The commission established processes and procedures tailored for the needs of the inquiry. Its terms of reference, and the parallel criminal investigations, posed special challenges.

Participation

An expression of interest process was used to identify intending participants. During January 2011 advertisements seeking expressions of interest were placed in New Zealand and Australian newspapers.

By the nominated date, 18 February 2011, over 60 expressions of interest had been received.

The expressions of interest were categorised into groups, and applicants given 'standing' – the ability to participate in the inquiry – at three different levels:

1. **Parties** – those who had a substantial and direct interest in the subject matter of the inquiry.
2. **Interested persons** – entities or people who satisfied the commission that they had an interest in the inquiry over and above that of the general public.
3. **Witnesses/submitters** – people who did not fall into the above categories but were likely to have evidence or information relevant to an aspect of the terms of reference.

Expressions of interest continued to be received throughout the life of the commission. By the end of the inquiry, 110 participants, some of them organisations representing multiple individuals, had been accorded standing.

The list of participants is available in Appendix 4.

Process

On 5 April 2011 the commission conducted a preliminary hearing in the Greymouth District Court to outline its intended approach to the inquiry and to allow for input from participants. Before the hearing the commission issued a minute that described its intention to divide the inquiry into four phases and included a provisional list of the issues the commission intended to focus on.

After the preliminary hearing the provisional list of issues was revised. The final list of issues is in Appendix 6.

The four phases as finally constituted were:

Phase One – Context covered mining law and practice, the interaction of mining law and other law, the New Zealand mining inspectorate, and the geography, conception, approval, design and development of the Pike River mine.

Phase Two – Search and rescue covered all aspects of the search, rescue and recovery operation, including the immediate cause of death of the 29 men, with a focus on what should be changed for the future.

Phase Three – What happened at Pike River? focused on the cause of the explosions, the company's operational, management and governance practices, and the regulatory oversight provided by the mining inspectorate at Pike River.

Phase Four – Policy aspects involved submissions relating to the whole inquiry:

- comparison of mining law and practice and environmental considerations in New Zealand and overseas;
- consideration of the future shape of the New Zealand mining inspectorate; and
- a comparison of overseas models.

Preliminary hearing 5 April 2011

On, 4 April 2011, the eve of the hearing, the commission met representatives of the families of the 29 men. This gave the commissioners and other members of the commission an opportunity to mix with and meet family members before the first hearing.

During the hearing, the commission outlined the procedures it planned to follow and received feedback from participants. It then finalised its processes and drafted rules of procedure designed to facilitate the conduct of the inquiry.

Evidence

Participants were invited to file evidence and relevant documents in tranches, reflecting the four phases of the inquiry. This written evidence was the primary source of information used to respond to the terms of reference. It was, however, supplemented in a number of ways.

The commission's analysts evaluated the written evidence and, where required, it was supplemented by additional evidence provided on request, or sometimes in response to compulsion notices or written questions by the commission. In addition approximately 90 interviews were conducted by the commission's investigator or counsel assisting, including several in Australia with experts, consultants and others who had knowledge relevant to the inquiry.

The commission used two Australian experts to help analyse and interpret information on such issues as gas analysis, mine rescue plans, best practice health and safety systems and some others.

The commission also met with Australian experts to discuss the explosion, and with and representatives of government agencies in relation to policy.

The written evidence received by the commission was assessed to determine who should be called to give oral evidence at the public hearings. Witnesses were selected according to criteria that included the significance of the evidence, whether it conflicted with other evidence and whether it might adversely affect the interests of anyone.

The written evidence was made available electronically to participants,[1] as were the commission's practice notes, minutes and hearing plans. Participants could access, through a secure website, the 'core' documents identified by the commission as crucial to participation in the hearings. They could also request access to documents or all evidence by way of an electronic 'briefcase' of documents from the commission's Summation evidence management system.

Communications

From the outset, the commission felt it essential that its process and progress were open to the scrutiny of the media and the public. Transparency was promoted in various ways.

The commission's public website http://www.pikeriver.royalcommission.govt.nz was its key channel to New Zealanders and people overseas and a regular e-newsletter also provided updates to the public. The public hearings were a further focal point; there was media access throughout the hearings, which were live streamed over the internet.

Family liaison and assistance for employees and contractors

The commission ensured that the families of the 29 men were informed about the progress of the inquiry. Counsel representing the families facilitated this, often following liaison with their counterparts, counsel assisting the commission.

The Focus Trust, a Greymouth organisation that provided services and support to the Pike River families, was another key liaison point for feedback from and communication with the families.

As with other participants, families received official communications from the commission and had access to information and evidence on the secure website. They also had access to the commission's public website, and many chose to receive the commission's e-newsletter.

Two lawyers, Kathryn Dalziel and Lisa Hansen, were appointed to provide information and advice to assist employees and contractors at Pike River to participate in the commission if they wished to do so.

Procedure

The commission's procedural requirements were notified by the electronic distribution of minutes, practice notes and hearing plans to all participants. These were also publicly available.

A minute contained information relating to procedure, hearings, evidence and many applications of participants.

A practice note set out the commission's rules of practice and requirements in relation to filing evidence, the conduct of the public hearings and obtaining access to the secure website, among other matters.

A hearing plan provided advice of the witnesses to be called at the public hearings and related details.

On 16 August 2011 the commission held a conference with counsel to discuss Phase Three due to issues arising from the concurrent Department of Labour and police investigations.

In total, 15 minutes and four practice notes were issued. These were made available on the commission's public website.

[1] Allowance was made for a small amount of suppressed or confidential evidence.

[2] Ibid.

Hearings

Figure A.1: The commission in session at Greymouth District Court

All the oral hearings were held in Greymouth, the community most directly affected by the tragedy. It was also the most convenient location as numerous witnesses were West Coast residents, as were many of the family members who regularly attended the hearings.

Hearings provided an opportunity to clarify or shed new light on evidence gathered. They also provided a forum for evidence to be aired in the public domain – sometimes for the first time since the tragedy occurred.

The commission sat for 51 hearing days, including the preliminary and final submissions hearings, over a period of 12 months.

Venue

The Greymouth District Court provided a convenient and appropriate hearing venue. With an average of 40 family members and members of the public attending each day, the need to refer to documents, video and image files, and the requirement to accommodate the commission, counsel for participants and the media, the court building had the necessary space, technology and parking.

The commission thanks the Ministry of Justice and the Greymouth District Court staff, particularly Cassandra Jones, who was registrar during the hearings, for their role in facilitating the hearings and supporting the commission.

Arrangements

Information technology – desktop monitors, on-screen projection and specialised document management software – used in the hearing room allowed counsel, the commissioners and the witnesses to view and call up evidence from documents filed with the commission.

Daily transcripts prepared by the Ministry of Justice's National Transcription Service were available from the commission's website by 6:00pm on the day of each hearing. More than 5700 pages of transcript were generated during the hearings. The speed and quality of this service were invaluable.

Hearings were live streamed over the internet by TVNZ and TV3 News. A media centre and access to a pool media feed from the hearing was provided within the courthouse to media representatives. Media who attended the hearings were, on application, also provided with copies of the witness statements and access to key documents.

The commission acknowledges the commitment from media organisations to coverage of its work. It also appreciates the contribution of TVNZ and TV3 in providing a pool media feed and live streaming from the hearings, and that of the New Zealand Press Association and The Press for providing pool media photography.

Witnesses

Fifty-one people appeared as witnesses at hearings in Greymouth, including a number of experts, family members and Pike workers who travelled from overseas to appear. Options for video-conferencing were available but not used.

All witnesses had a prepared witness statement. They took an oath or affirmation before giving evidence. Some read their evidence in full; others were led through it. Witnesses were questioned by counsel assisting and, with leave, by counsel representing other participants. The commissioners also asked questions.

Ten suppression and management orders were made by the commission during the public hearings. Eight remained in place at the end of the inquiry.

Under the Commissions of Inquiry Act 1908 witnesses had the right to decline to answer questions to avoid self-incrimination. The commission scheduled witnesses and ordered the phases in an endeavour to limit the need for claims of privilege. Some witnesses exercised their right to not answer certain questions.

Twenty-six compulsion orders were issued under provisions of the act.

DATE COMPULSION ORDER ISSUED	WHO	PURPOSE
20 April 2011	Pike River Coal Ltd, Dipak Agarwalla, John Dow, Arun Jagatramka, Sanjay Loyalka, Stuart Nattrass, Raymond Meyer, Antony Radford, Surendra Sinha, Peter Whittall, Gordon Ward, Douglas White, Michael Lerch, Graeme Duncan, Denis Wood, James Ogden	To obtain information and copies of documents
12 May 2011	Douglas White	Appear as witness
2 June 2011	John Dow	Appear as witness
9 June 2011	Neville Rockhouse	Appear as witness
15 July 2011	Department of Labour	To obtain information gathered by the department in pursuance of its statutory powers
4 August 2011	Stephen Ellis	Appear as witness
27 October 2011	Stuart Nattrass	Appear as witness
10 November 2011	Antony Radford	Appear as witness
6 December 2011	Petrus (Pieter) van Rooyen	Appear as witness
15 December 2011	Graeme Duncan	Appear as witness
13 February 2012	Robb Ridl	Appear as witness

Figure A.2: Compulsion orders issued

Phase One – Context

Hearing dates: Monday 11 July to Friday 22 July 2011

Phase One examined the New Zealand regulatory environment, the mining inspectorate and the geography, conception, approval, design and development of the mine.

Five chronologies summarising information from some of the more than 30,000 documents received in evidence during this phase were prepared by the commission and distributed in advance to participants and the media and made available to the public on the commission's website.

These chronologies covered the following topics:

1. New Zealand Mining and Coal Production Profile
2. Pike River Coal Ltd: Permits, Access Arrangement and Resource Consents
3. Pike River Coal Ltd: Financial/Company
4. Pike River Coal Ltd: Board, Management and Workforce
5. Pike River Coal Ltd: Mine Development.

Twelve witnesses gave evidence over 10 sitting days.

The following witnesses were called:

- Dr Donald Elder, Chief Executive Officer, Solid Energy New Zealand Ltd
- Dr Jane Newman, Geologist, Newman Energy Research Ltd
- Robin Hughes, former Chief Inspector of Coal Mines
- Henry (Harry) Bell, former Chief Inspector of Coal Mines
- Alan Sherwood, Senior Geologist, Ministry of Economic Development
- Robert Robson, Manager Petroleum and Minerals Policy, Ministry of Economic Development
- Colin Dall, Consents and Compliance Manager, West Coast Regional Council
- Craig Jones, Community Relations Officer (Concessions), Department of Conservation
- Mark Smith, Director, West Circle Ltd, contracted to Department of Conservation
- James Murphy, Workplace Health and Safety Policy Manager, Department of Labour
- Michael Firmin, Health and Safety Inspector, Department of Labour
- Peter Whittall, Chief Executive Officer, Pike River Coal Ltd (in receivership).

Phase Two – Search and Rescue

Hearing dates: Monday 5 September to Friday 23 September 2011

Phase Two examined the search, rescue and recovery operation at Pike River. Twenty-seven witnesses gave evidence over 15 sitting days.

The witnesses called were:

- Nigel Hughes, Detective Senior Sergeant, New Zealand Police
- Mattheus Strydom, former Electrician, Pike River Coal Ltd
- Daniel Rockhouse, former miner, Pike River Coal Ltd

- Douglas White, former General Manager, Pike River Coal Ltd
- Neville Rockhouse, former Safety and Training Manager, Pike River Coal Ltd
- Glenville Stiles, trainer contracted to New Zealand Mines Rescue Service
- John Taylor, Project Investigations Manager, Solid Energy New Zealand Ltd
- Adrian Couchman, former Safety Training Co-ordinator, Pike River Coal Ltd
- Daniel Duggan, former Control Room Officer, Pike River Coal Ltd
- Grant Nicholls, Assistant Commissioner, New Zealand Police
- Gary Knowles, Superintendent, New Zealand Police
- Darren Brady, Manager, Safety in Mines Testing and Research Station (SIMTARS), Queensland
- Timothy Whyte, Industry Safety and Health Representative, Construction, Forestry, Mining and Engineering Union, Australia
- Seamus Devlin, State Manager, New South Wales Mines Rescue, Australia
- James Stuart-Black, National Manager, Special Operations, New Zealand Fire Service
- Stephen Ellis, Statutory Mine Manager, Pike River Coal Ltd
- Susan (Lesley) Haines, Deputy Chief Executive, Labour Group, Department of Labour
- Trevor Watts, General Manager, New Zealand Mines Rescue Service
- Lauryn Marden, family
- Tara Kennedy, family
- Sonya Rockhouse, family
- Carol Rose, family
- Martin Palmer, family
- Richard Valli, family
- Bernard Monk, family
- Craig Smith, General Manager, Underground Mines, Solid Energy New Zealand Ltd
- Peter Whittall, Chief Executive Officer, Pike River Coal Ltd (in receivership).

Phase Three – What happened at Pike River?

Hearing dates: Monday 14 November to Thursday 24 November 2011,

Monday 5 December to Friday 9 December 2011, Wednesday 8 February to Friday 17 February 2012

Eighteen witnesses gave evidence over 22 sitting days.

The November 2011 hearing examined the performance of the mines inspectorate and hydro mining at the mine. All Phase Three hearings examined systemic issues.

The witnesses called were:

- Michael Firmin, Health and Safety Inspector, Department of Labour
- Kevin Poynter, former Health and Safety Inspector, Department of Labour
- Alan Cooper, Practice Leader, Health and Safety Practice Development, Department of Labour
- Dr Kathleen Callaghan, Director, Human Factors Group, Faculty of Medicine, University of Auckland

- David Stewart, Mining Consultant, Minserv International Ltd
- Craig Smith, General Manager, Underground Mines, Solid Energy New Zealand Ltd
- Masaoki Nishioka, Consultant, Seiko Mining and Construction Ltd
- George Mason, former Hydro-Mining Co-ordinator, Pike River Coal Ltd
- Stephen Wylie, Deputy, Pike River Coal Ltd (in receivership).

On 10 November 2011 the Department of Labour laid charges under the Health and Safety in Employment Act 1992 against Pike River Coal Ltd (in receivership),VLI Drilling Pty Ltd (Valley Longwall) and Peter Whittall. The commission considered it inappropriate to require Mr Whittall to provide further evidence while he awaited determination of the charges.

The December 2011 hearing examined Pike River Coal Ltd's health and safety systems and safety culture.

The witnesses called were:

- Adrian Couchman, former Safety Training Co-ordinator, Pike River Coal Ltd
- Albert (Alan) Houlden, former leading hand, McConnell Dowell Constructors Ltd
- John Dow, former Chair, Pike River Coal Ltd
- Neville Rockhouse, former Safety and Training Manager, Pike River Coal Ltd.

The February 2012 hearing examined the immediate causes of the first explosion on 19 November 2010.

The witnesses called were:

- Brett Murray, General Manager, National Services and Support, Department of Labour
- David Reece, Australian mining consultant and expert adviser to the Department of Labour
- Anthony Reczek, Australian electrical engineering consultant and expert adviser to the Department of Labour
- Douglas White, former General Manager, Pike River Coal Ltd
- Petrus (Pieter) van Rooyen, former Manager, Technical Services, Pike River Coal Ltd.

Phase Four – Policy aspects and submissions

Phase Four covered submissions on all phases and policy issues, in particular mining-related issues, and search and rescue practice, which, in light of the Pike River tragedy, require a changed approach.

The commission posed a series of questions (see Appendix 7) on which it sought the input and views of participants.

The final submissions hearing held in April 2012 allowed participants to express their views on policy matters in a public forum.

The commission also consulted government agencies in New Zealand as it developed its policy perspectives and recommendations.

Final submissions

Hearing dates: Monday 2 April 2012 to Wednesday 4 April 2012

The commission received final written submissions from participants on all factual questions, and in relation to policy

aspects and recommendations. Those who wished to speak to their written submission did so at a final public hearing in Greymouth.

Sixteen participants spoke in support of their written submission through counsel or a spokesperson:

- Certain directors, officers and managers of Pike River Coal Ltd (in receivership)
- Coal Association of New Zealand (supported by Straterra Inc)
- Department of Conservation
- Department of Labour
- The families of the Pike River deceased
- McConnell Dowell Constructors Ltd
- MinEx Health and Safety Council New Zealand
- Ministry for the Environment
- Ministry of Economic Development
- New Zealand Amalgamated Engineering, Printing and Manufacturing Union.
- New Zealand Council of Trade Unions
- New Zealand Mines Rescue Service
- New Zealand Police
- Neville Rockhouse, former Safety and Training Manager, Pike River Coal Ltd
- Solid Energy New Zealand Ltd
- Douglas White, former General Manager, Pike River Coal Ltd.

A judicial review

On 18 July 2012 certain former directors and officers of Pike applied to the High Court at Wellington (CIV-2012-485-1441) to judicially review decisions of the commission not to reconvene the public hearings to hear evidence from new witnesses and not to permit access to the final report before it was given to the governor-general. Prior access was sought to protect fair trial rights in relation to a pending prosecution. The applicants also sought an interim order to prevent delivery of the report before the judicial review applications were determined.

The applicationn was dismissed.

The final report

The terms of reference required the commission to report by 31 March 2012. An extension to 28 September 2012 was sought and granted on 7 February 2012 (CAB Min (12) 3/1). A further extension to 30 November 2012 was sought and granted on 27 August 2012 (CAB Min (12) 30/7)

The initial extension was required largely to enable additional evidence to be received and taken into account from the parallel inquiries conducted by the Department of Labour and the New Zealand Police. This, including an investigation report by the Department of Labour, became available to the commission in late 2011, after charges were laid and the further evidence was publicly examined, particularly at the hearing in February 2012. The further extension was to accommodate the judicial review application and consequential resourcing implications.

The commission records its appreciation to both the Department of Labour and New Zealand Police for their co-operation in making available evidence obtained in their investigations.

APPENDIX 2

The commission's operations and structure

Role of the public sector

The commission operated independently of government but relied on government agencies for support. Funding of the commission was through the Department of Internal Affairs. The department provided information technology and administrative support in Wellington, including moving the office from Christchurch, and Greymouth. The Ministry of Justice made the Greymouth District Court available for the hearings, and worked closely with the commission secretariat on arrangements for each hearing session. The National Transcription Service provided daily transcripts of proceedings. Other government agencies supported the commission by seconding people.

Structure

The core commission team needed legal, analytical, information management, communications and administrative support to ensure an efficient inquiry process. A team of 14 people employed either on secondment or on contract, full time and part time, supported the three commissioners in their work.

The secretariat

An executive director led a secretariat consisting of two administrative support staff, three policy analysts, a legal analyst, an information officer, an investigator, a communications adviser and a legal secretary.

The executive director worked with the Department of Internal Affairs and the commissioners to establish operational aspects of the commission and to ensure its administration met public sector requirements.

The executive director's key responsibilities included employing and managing staff, managing the budget and financial accountabilities, managing risk, managing relations with stakeholders and other interested parties, and family liaison.

The executive director role was filled by a Department of Internal Affairs senior manager for five months during the set-up phase, including relocation to Wellington. A permanent replacement executive director was appointed on secondment from Inland Revenue from May 2011 until the completion of the commission's work, including its disestablishment in November 2012.

Analysts were charged with reviewing, analysing and evaluating the tens of thousands of documents submitted to the inquiry. Their key responsibilities were analysing and summarising evidence, liaising with counsel assisting and co-ordinating and engaging experts as required to supplement, analyse or interpret the information the commission had to consider.

An information officer was employed to manage the evidence database, ensure security of the documents held by the commission, make them available electronically, and manage the transfer of all the commission's records to Archives New Zealand at the end of the inquiry under the provisions of the Public Records Act 2005.

A former senior police officer was employed as an investigator. He examined evidence, briefs and transcripts and identified missing information, interviewed witnesses, helped to prepare some witness statements, supported counsel assisting with hearings preparation, and was available to any participant without legal counsel or intending witnesses who needed help providing information to the commission.

Karyn Basher – Senior Legal Analyst
Anne Carter – Executive Director
Sue Duffy – Executive Administrator
Julie Hooper – Secretarial support
Anna Hughes – Communications Advisor
Katherine Ivory – Senior Analyst
Vanessa Johnson – Executive Director
Lynley Jones – Information Officer
Ruth Locker – Executive Administrator
Jim McNicholas – Senior Analyst
Meirwen Pride – Information Officer
Ellen Spear – Legal Secretary
Neville Stokes – Investigator
Emily Su'a-Dunn – Executive Administrator
David Williment – Senior Advisor
Sandi Wilson – Legal Secretary

Figure A.3: Secretariat over the life of the commission

Counsel assisting

Three barristers were appointed as counsel assisting the commission. Their task was to represent the public interest and facilitate the commission's work. Their role included making opening statements at hearings, providing advice and liaising with participants and other counsel, facilitating the provision of evidence, resolving procedural issues and examining witnesses at hearings. They were assisted by the legal analyst who also worked with the commission's analyst team during the policy phase.

Recruitment

The Department of Internal Affairs provided people to support the setting up of the commission, including an executive director and communications support. Inland Revenue, the Department of Internal Affairs, the Department of Corrections and the Crown Law Office provided four people on secondment. Others were contracted to the commission.

Operating principles

The commission's structure, its operating model and its way of working had to contribute to its independence, integrity and credibility. Its aim was to be fair, open, thorough, but also expeditious, professional and accessible. Wherever possible, the commission tried to use efficient, appropriate and economic processes.

Risk and financial management

The commission established a number of tailored frameworks, policies and processes that adhered to sound risk and financial management practices and reflected the size of the team and the short life of the commission.

The risk management framework

The commission's short-term nature brought with it an abundance of risks and issues. The commission adopted a risk management framework based on the AS/NZS ISO 31000:2009 standard, ensuring the identification of likely risks, their potential impact and the associated mitigations. Risk and issues registers were developed, reviewed and updated for the preparation and running of the public hearings, information technology and the more general conduct of the inquiry. The executive director facilitated the risk management process involving all commission personnel. Risks were reviewed with commissioners on an agreed timeframe based on the severity of the risk.

Related interests and conflict of interest framework

The commission's framework followed that of the Australian 2009 Victorian Bushfires Royal Commission.
The existence of a related interest was not grounds for an automatic exclusion from the commission.
The appropriate mitigation and management strategy depended on the nature of the related interest disclosed.

Financial management

Separate funding was approved by the government. It was difficult to estimate the funds needed until the commission had had time to consider its terms of reference and its processes. Cabinet approved initial appropriations[3] of $0.456 million for the commissioners' fees and $1.169 million for costs associated with the commission for the 2010/11 financial year only, and authorised ministers to approve additional funding to cover the rest of the commission.

Further appropriations of $7.298 million for the commission were approved to cover the entire cost of the commission. This covered the costs for the commission itself as well as the costs of subsequent Cabinet decisions to fund legal representation for the families of the deceased miners, and legal assistance to the employees of, and contractors to, the Pike River Coal Mine, for which total provision of $2.541 million was allowed.

In March 2012, Cabinet agreed to the commission's request for an extension of its reporting date with an associated increase in funding of $1.577 million, bringing the total approved cost to $10.500 million including the cost of legal representation for the families of the deceased miners, and legal assistance to the employees of, and contractors to, the Pike River Coal Mine.

The commission managed expenditure directly related to it, but funding for counsel for the families was managed by the Department of Internal Affairs and the Crown Law Office.

Information management and technology and access to information

The commission ensured the flow and management of information and evidence between participants and the commission was efficient, user-friendly and cost-effective.

Information technology

The commission needed a system that could cope with large amounts of data and numbers of documents, allowed simultaneous users and desktop access across two locations, allowed data and documents to be shared with external users, was secure and allowed information to be identified as confidential, could be used with courtroom presentation software, and was cost-effective.

Figure A4: Secure website home page

[3] The Treasury, 'Explaining Key Concepts: Appropriations', In Putting It Together: An Explanatory Guide to New Zealand's State Sector Financial Management System, 2011, http://www.treasury.govt.nz/publications/guidance/publicfinance/pit2011/07.htm#_tocAppropriations
Appropriations are legal authorities granted by Parliament to the Crown or an office of Parliament to use public resources. Most appropriations are set out in appropriation acts presented as part of the government's budget package. They satisfy a requirement in the Constitution Act 1986 that the Crown cannot spend public money except by or under an act of Parliament.
Appropriations are limited to a maximum level of spending, to a particular period, and to uses set by the scope statement (see Chapter Four). Appropriations are required for all expenses and capital expenditure.

Relying on the existing network infrastructure supported by the Department of Internal Affairs, the commission bought an off-the-shelf evidence management system, AD Summation iBlaze. A secure website using existing departmental technology was used to share information and documents with participants.

This meant the commission could store over 2000 core documents in a safe environment that was easily maintained, accessible and secure. Participants received password-protected access, which allowed them to see evidence received and examined by the commission and looked at during public hearings.

The commission worked with the Department of Internal Affairs and Archives New Zealand on the archiving of its records. The department's information technology network and expertise included ongoing maintenance and desktop support services.

Access to information and evidence

By the end of the inquiry, the commission's evidential database contained over 67,500 documents, including graphs, maps, photographs, plans, spreadsheets and multimedia files. Decisions were needed about what would be accessible, and by whom.

Participants had to feel confident that the commission would use information received for the purposes of its inquiries. All those who accessed documents from the commission, other than publicly available information, were subject to an implied undertaking of confidentiality.

Three principles governed any release of information:

1. Information was provided to the commission for the purposes of its inquiries.
2. The commission would be open with its information wherever possible.
3. Release of any information, public or restricted, should not interfere with the commission's ability to inquire.

Accommodation

The commission and staff worked from offices in Wellington and from the Greymouth District Court when hearings were in session.

APPENDIX 3

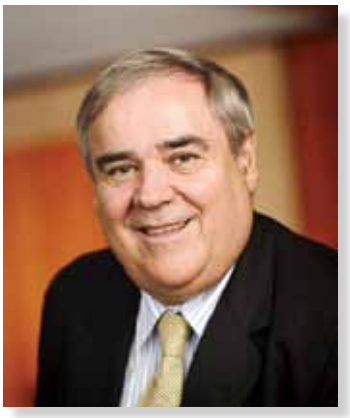
Commissioners' biographies

Hon. Justice Graham Panckhurst (Chair)

Hon. Justice Graham Panckhurst is a senior High Court judge based in Christchurch since his appointment in 1996. His judicial experience extends to all aspects of the High Court's work and has included presiding over a number of high-profile trials.

He has a wealth of legal experience, having been the Crown Solicitor for Canterbury and the West Coast from 1985 to 1992, before practising as a barrister and becoming a Queen's Counsel in 1994. Justice Panckhurst is also a West Coaster by birth, and has both acted in and presided over cases heard in Greymouth over many years.

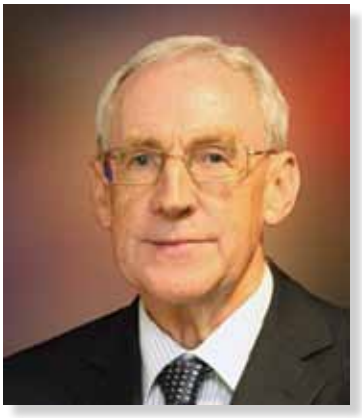
Stewart Bell PSM



Stewart Bell, from Australia, is Commissioner for Mine Safety and Health for Queensland and Deputy Director-General of the Safety and Health Division of the Queensland Department of Natural Resources and Mines, which includes the Coal and Metalliferous Mines, Explosives and Petroleum and Gas Inspectorates and the Safety in Mines Testing and Research Station (SIMTARS). He is also responsible for the regulation of the mining, explosives and petroleum and gas industries and the strategic research agenda for SIMTARS.

Mr Bell has over 25 years' experience in all aspects of mine safety, and has published widely on health and safety in mines. He also has international work experience in several countries, including India, China, New Zealand and Australia.

David Henry CNZM



David Henry has held a number of public sector positions, including Chief Executive/Commissioner of Inland Revenue and Chief Executive/Commissioner of the Electoral Commission. He has also run his own management consultancy business advising public and private sector clients in New Zealand and overseas. Mr Henry was appointed a Companion of the New Zealand Order of Merit in 1999.

APPENDIX 4

List of participants

PARTIES	INTERESTED PERSONS	WITNESSES/SUBMITTERS
Department of Conservation[4]	Gary Campbell	Accident Compensation Corporation
Department of Labour	Coal Association of New Zealand	Air New Zealand Ltd
Families of the deceased	Coal Services Pty Ltd	Stanley Alder
Ministry for the Environment	Buller District Council	Australasian Tunnelling Society
Ministry of Economic Development	Grey District Council	Lindsay Arthur
New Zealand Amalgamated Engineering, Printing and Manufacturing Union Inc.	McConnell Dowell Constructors Ltd	Hon. Max Bradford
New Zealand Police	Mines Rescue Trust	Harry Bradshaw
Pike River Coal Ltd (in receivership)	MinEx Health and Safety Council	Simon Breeze
	National Rural Fire Authority	Buller Conservation Group
	New Zealand Coal & Carbon Ltd	Paul Caffyn
	New Zealand Council of Trade Unions	Dr Kathleen Callaghan
	New Zealand Fire Service Commission	Aaron Campbell
	New Zealand Fire Service	Dr Murry Cave
	New Zealand Defence Force	Professor Dave Cliff
	New Zealand Oil & Gas Ltd	Centre for Occupational Health and Safety Research
	New Zealand Public Service Association	Construction, Forestry, Mining and Energy Union
	Pike River Contractors and Suppliers Group	Kevin Curtis
	Current or former employees/ officers/contractors of Pike River Coal Ltd	Paul Douglas
	Rockwell Automation (NZ) Ltd	Alan Eastergaard
	Royal Forest and Bird Protection Society of New Zealand Inc.	Bill Evans
	Solid Energy New Zealand Ltd	Peter Ewen
	Straterra Inc	Peter Fairhall
	Tai Poutini Polytechnic	Dave Feickert
	URS New Zealand Ltd	Focus Trust West Coast (Kathryn Leafe)
	Valley Longwall International Pty Ltd	Harry Gair

[4] Including the minister of conservation and director-general of conservation.

PARTIES	INTERESTED PERSONS	WITNESSES/SUBMITTERS
	West Coast Regional Council	William Gardner
	West Coast Rural Fire Authority	Charles Gawith (Newmont Waihi Gold)
		Stuart Gorrie
		Dr Robin Griffiths
		Glen Grindlay (Newmont Waihi Gold)
		Kevin Hague MP
		Hawcroft Consulting International Pty Ltd
		Glen Heldberg
		Robin Hughes
		Impac Services Ltd
		Institution of Professional Engineers New Zealand
		Brian Jackson
		Mark Levene
		Andrew Loader
		Major (Rtd) W.H. McGunnigle
		John Menzies
		John Mildren
		Minserv International Ltd
		Gerard Morris
		New Zealand Society for Risk Management
		Newman Energy Research Ltd
		Te Kotahitanga Ngarimu
		Erik Nielsen
		NZX Ltd
		Mick O'Donoghue
		Oceana Gold (New Zealand) Ltd
		Kenneth Palmer
		PCS Investments Nominees Ltd
		Ronald Pearson
		David Penney
		Jeremy Penrice
		D.G. Peterson
		Queensland Mines Rescue Service
		Dr Stuart Rabone
		Harry Rayner
		William Rennie
		Dr Leonard Richardson
		Brian Robinson
		Alan Ross

PARTIES	INTERESTED PERSONS	WITNESSES/SUBMITTERS
		John Rowland
		Yves Sabatier
		Safety in Mines Testing and Research Station (SIMTARS)
		Robert Tait (Friends of the Earth New Zealand)
		Benson Taylor
		William Taylor
		Robert Terry
		Alan Thompson
		David Titheridge
		Basil Walker
		Robert Wiltshire

APPENDIX 5

Counsel representing

NAME OF PARTICIPANT	COUNSEL
Dipak Agarwalla, Surendra Sinha, Arun Jagatramka and Sanjay Loyalka	Michael Morrison
Gary Campbell	Philip Hall, Kerry Cook
Coal Services Pty Ltd (Mines Rescue Division)	Brian Latimour
Matthew Coll Alexander Colligan Rem Markland Russell Smith	Gregory King
CYB Construction Ltd (formerly Chris Yeats Builders Ltd)	Brian Nathan
Department of Conservation Department of Labour Ministry for the Environment Ministry of Economic Development	Kristy McDonald QC, Cameron Mander, Aedeen Boadita-Cormican, Anthea Williams, Tim Smith
Families of the deceased	Nicholas Davidson QC, Richard Raymond, Jessica Mills, Colin Smith
McConnell Dowell Constructors Ltd	Grant Nicholson, Sarah-Lee Stead, Sophie Gilmour
Minserv International Ltd	Jonathan Forsey
Gerard Morris	David Butler
Terence Moynihan	Gregory King
New Zealand Amalgamated Engineering, Printing and Manufacturing Union Inc.	Nigel Hampton QC, Rowan Anderson, Andrew Little
New Zealand Coal & Carbon Ltd	Sam Hetherington, Edward Bayley
New Zealand Council of Trade Unions	Peter Cranney
New Zealand Defence Force	Major Steve Taylor
New Zealand Fire Service Commission	Karen Clark QC, Robert Buchanan
New Zealand Mines Rescue Service	Jonathan Forsey, Garth Gallaway, Emily Whiteside
New Zealand Oil & Gas Ltd	Tim Stephens, Nina Blomfield
New Zealand Police	Simon Moore SC, Katherine Anderson, Kirsten Lummis
Certain directors, officers and managers of Pike River Coal Ltd (in receivership)	Stacey Shortall, Anna Rawlings, Rachael Schmidt-McCleave, Paul Radich, Andy Glenie, Duncan MacKenzie, Alison Gordon, Iva Rosic, Luke Barrington
Pike River Coal Ltd (in receivership)	Mike Colson, Fiona Tregonning
Pike River Contractors and Suppliers Group	Gregory King
Queensland Mines Rescue Service	Matthew Mallett
Antony Radford	Stephen Hunter, Angela Goodwin
Dr Leonard Richardson	Desmond Wood
Neville Rockhouse	James Rapley, Ian Kearney

Rockwell Automation (NZ) Ltd	John Billington QC, Peter Woods, Lisa Taylor
Solid Energy New Zealand Ltd	Craig Stevens, Adam Holloway
Tai Poutini Polytechnic	Garth Gallaway, Emily Whiteside
URS New Zealand Ltd	Adrian Olney, Desley Horton
Valley Longwall International Pty Ltd (VLI)	Pheroze Jagose, Richard May
Petrus (Pieter) van Rooyen	Paul Mabey QC
Gordon Ward	Justin Smith
Douglas White	John Haigh QC, David Jones QC, Bridget Smith, Billy Boyd

APPENDIX 6

List of issues (as at 28 April 2011)

Background

1. This is the list of issues for the Royal Commission on the Pike River Coal Mine Tragedy. The aim of the list is to identify the main issues which the commission presently considers it will need to evaluate in order to address its Terms of Reference.
2. The list is provided for the assistance of parties, interested persons and potential witnesses and submitters. An inquiry is not a court case. The commission is not able to determine legal rights and liabilities. Its responsibility is to inquire into and report upon the tragedy, and make recommendations for the future. There are no pleadings by which issues are identified. The Terms of Reference broadly define the subject matter of the inquiry, but the commission must determine the issues which need to be assessed and answered to enable it to provide its final report.
3. The commission will review the list from time to time. A revised list (or lists) may be issued during the course of the inquiry. Accordingly, the list is not intended as a constraint upon the evidence or submissions which persons may wish to provide to the commission.
4. The commission intends to conduct the inquiry in four phases and the list of issues reflects this division. Generally, the issues are listed by reference to one term of reference. However, some issues may be relevant to more than one term of reference. Issues are not repeated on this account. The manner, and order, in which issues are listed does not reflect their relative importance or the weight they may be given. The drafting of the issues is intended to be neutral, so as to simply identify the relevant area of interest. They should be read in a broad, and non-limiting, manner.

Interpretation of the List

The following terms have the meaning indicated unless otherwise stated:

'the incident date' means 19 November 2010;

'mining' means underground coal mining and related operations;

'the mine' means the Pike River Mine, both the underground and the above ground elements;

'the company' means Pike River Coal Limited;

'DoL' means the Department of Labour;

'ToR' means Term of Reference;

'H&S' means health and safety;

'the selected countries' means those countries selected as comparators for the purposes of ToR(h); and

'mining law requirements' means the legal requirements identified in ToR(e).

Phase One – Context

The contextual phase comprising the New Zealand regulatory environment; the interaction of mining law and other law in New Zealand; the resourcing and implementation of mining law in New Zealand (ToR(e),(f) and (g)). The geography, conception, approval, design and development of the mine.

The regulatory requirements and recognised practices in New Zealand (ToR(e))

1.1 The background history of the New Zealand mining industry.

1.2 The history of mine explosions which have caused multiple fatalities in New Zealand and the details of any recommendations from inquiries into those events.

1.3 The legal requirements and recognised practices which governed mining in New Zealand pre-1992.

1.4 The policy considerations which prompted the enactment of the Health & Safety in Employment Act 1992 and the subsequent mining regulations in 1996 and 1999.

1.5 The legal requirements which governed mining as at the incident date.

1.6 The recognised practices (including codes of practice, guidelines, advisories, notices, and instructions issued by regulatory authorities and other organisations) which applied as at the incident date.

How New Zealand mining requirements and practices interact with conservation, environmental and other legal requirements (ToR(f))

1.7 The identification and description of any conservation, environmental and other legal requirements which:

(a) apply to the Pike River Coal Mine or the land on which it is situated; and

(b) interact with the mining law requirements and recognised practices identified in ToR(e).

1.8 The manner and extent to which those conservation, environmental and other legal requirements interact with the mining law requirements and recognised practices identified in ToR(e).

Resourcing for, and the administration and implementation of, mining law and practices in New Zealand (ToR(g))

1.9 The identification of the New Zealand regulatory agencies responsible for the administration and implementation of the laws and recognised practices that apply to mining and to mining land.

1.10 The nature and extent of the resources provided to these regulatory agencies.

1.11 The organisational structures of these regulatory agencies; including the lines of responsibility and accountability, delegations and the job descriptions and performance agreements of relevant personnel.

1.12 The operational methods of these regulatory agencies; including how they administer laws and practices, their strategies, priority setting, outcomes, outputs, performance measures, resource allocations, work programmes, risk management, internal audit and self review, internal reporting and external reporting systems.

The conception, approval and development of the mine

1.13 The conception of the development of the mine including any external reports obtained by the company.

1.14 The geography and geology of the area where the mine is situated.

1.15 The consent and approval process, including the terms and conditions sought by or imposed by external agencies.

1.16 The chronology of interactions between the external agencies and the company concerning the mine development.

1.17 The history of the design, development and construction of the mine and associated systems, including bore hole placement, drilling and the information yielded.

1.18 The state of development and layout of the mine as at the incident date, including all plans of the mine prepared to that time.

Phase Two – Search and rescue

The cause of the loss of life. The search, rescue and recovery operations. (ToR(b) and (d))

The cause of the loss of life

2.1 The likely injuries suffered by the men.

2.2 The cause(s) of the deaths of the men.

2.3 The likely timing of their deaths.

The search, rescue and recovery operations

2.4 The chronology of events and actions from the time of the first explosion to the present time.

2.5 The opportunity (if any) for the men to have taken steps towards self-rescue, including:

(a) the company's rescue plan in the event of an explosion;

(b) the equipment and resources available to the men; and

(c) the training provided to them.

2.6 The content of any emergency response plans of the company, and of other organisations which were in place at the incident date.

2.7 The extent to which such response plans:

(a) were tested and remedial action taken;

(b) were able to be deployed when the tragedy occurred; and

(c) proved adequate in the course of the occurrence.

2.8 The extent of the information available to the company and the external entities involved in the search, rescue and recovery operation in the period following the first explosion; including information as to the atmosphere, the location of the men and their work activities in the mine before and around the time of the first explosion.

2.9 The respective roles played by the company and external entities in the search, rescue and recovery operations.

2.10 The reasons for the division of roles, including any relevant legislative provisions.

2.11 The liaison and decision making processes which were adopted in the course of the operations, including the expert advice received by the company and external entities.

2.12 The decisions reached and whether these were made in a clear and timely manner.

2.13 The human and physical resources available for the purposes of the search, rescue and recovery operations.

2.14 The qualifications, experience and training of the organisations and individuals involved in the search, rescue and recovery operations.

2.15 The measures taken in an endeavour to stabilise the atmosphere within the mine.

2.16 The extent, if any, to which the search, rescue and recovery operations were impacted by the:

(a) geography of the mine and its environment;

(b) design of the mine;

(c) systems in the mine; and

(d) information and equipment provided by the company.

2.17 The measures taken in an endeavour to regain full or partial access to the underground reaches of the mine.

2.18 The comparison between this search, rescue and recovery operation and:

(a) previous similar operations in New Zealand;

(b) previous similar operations in other countries; and

(c) international best practice.

2.19 The nature of the search, rescue and recovery processes employed in other similar hazardous environments.

2.20 The communications with the families of the men during the search, rescue and recovery operations.

Phase Three – What happened at Pike River?

The cause of the explosions. The company's operational and management practices. Regulatory oversight. (Terms of Reference (a) (c) and (g)).

The immediate cause of the explosions

3.1 The hazards, flammable gas and coal dust present in the mine immediately prior to and at the time of the incident.

3.2 The locations of the men within the mine and their activities at the time of the incident.

3.3 The likely ignition source.

3.4 The cause of the subsequent explosions.

The company's management and operational practices

Management

3.5 The company's general management structure and systems in relation to decision-making (including responsibilities, accountabilities and delegations).

3.6 The company's management systems for:

(a) identifying and managing risk; and

(b) ensuring compliance with mining law requirements and recognised practices.

Mine systems

3.7 The systems in place at the mine at the incident date for:

(a) achieving adequate ventilation;

(b) testing air quality and temperature;

(c) effecting methane drainage of the coal seam;

(d) preventing the ignition of combustible matter;

(e) preventing the occurrence of spontaneous combustion;

(f) controlling and testing for the presence of flammable gas;

(g) monitoring the safety of equipment and electrical systems; and

(h) maintaining communications between the men underground and those on the surface.

3.8 The systems in the mine and whether these:

(a) met legal requirements;

(b) complied with recognised practices; and

(c) were subject to periodic review.

3.9 The location, design and construction of the mine and whether these factors:

(a) affected the level of operational risk; and

(b) if so, the steps taken to manage that risk.

H&S Systems

3.10 The methods adopted by the company:

(a) to implement, monitor and review H&S practices in the mine;

(b) to test the understanding, preparedness and ability of persons engaged at the mine to implement H&S systems and plans; and

(c) to amend such practices, systems and plans as required.

3.11 The training, qualifications, experience and performance of the managers and certificated employees appointed by the company pursuant to the Health and Safety in Employment (Mining Administration) Regulations 1996.

3.12 The methods adopted by the company:

(a) to ensure the reporting and recording of H&S events and concerns; and

(b) to take action in relation to and record the response to such events and concerns.

3.13 The level of compliance achieved by the company, employees, contractors and others in relation to H&S requirements and recognised practices.

3.14 The company's record in relation to responding to any notice or direction received from a regulatory agency.

Employees/contractors

3.15 The methods adopted by the company to ensure that employees and contractors:

(a) were involved in the design, operation and review of the H&S systems and plans;

(b) were provided with training in relation to H&S in the mine;

(c) were competent in meeting H&S requirements; and

(d) communicated H&S events or concerns to an appropriate officer.

3.16 The steps taken by the company to:

(a) engender an appropriate organisational culture in relation to the reporting of H&S events and concerns; and

(b) respond to such reports.

3.17 The experiences in relation to H&S of persons who worked or were engaged at the mine.

H&S impediments

3.18 The effect (if any) upon the company's development, implementation and review of H&S initiatives arising from:

(a) difficulties associated with the location and design of the mine;

(b) financial problems;

(c) production delays; and

(d) other external factors.

3.19 The effect (if any) upon the achievement of H&S outcomes at the mine arising from:

(a) issues relating to the recruitment of experienced personnel;

(b) the terms and conditions of the employment of the men and the terms of engagement of contractors;

(c) the work practices in the mine of the employees and contractors; and

(d) incentives or disincentives (if any) to which employees and contractors were subject.

External oversight of H&S at the mine

3.20 The methods employed by the regulatory agencies to facilitate and enforce compliance by the company with legal requirements and recognised practices:

(a) in the pre-production period; and

(b) during production.

3.21 The content of instructions, and any other materials, provided by regulatory agencies to the company for its guidance in achieving regulatory compliance.

3.22 The content of any complaints made to the regulatory agencies concerning H&S issues at the mine.

3.23 The content of communications (formal and informal, including warnings, notices and directions) between the regulatory agencies and the company concerning H&S issues at the mine.

3.24 The response of the company to such communications or complaints.

3.25 The mechanisms (if any) including any memoranda of understanding, which existed between the regulatory agencies to ensure:

(a) that relevant information pertaining to the mine was exchanged and shared; and

(b) that any issues in relation to H&S at the mine were the subject of appropriate action.

3.26 The interactions and communications between the regulatory agencies and the company, and between the agencies, on and after the date of the incident.

3.27 The content of any performance reviews or external audits of regulatory agencies as a result of the tragedy.

3.28 The content and trend of H&S statistics in New Zealand since 1992, both in general and in relation to mining.

Phase Four – Policy aspects

The comparison between New Zealand and the selected countries in relation to:

(a) mining regulatory requirements and recognised practices;

(b) their interaction with conservation, environmental and other legal requirements; and

(c) the resourcing for, and the administration and implementation of mining law and practice (ToR(h))

(Note: The New Zealand position was considered in Phase One – issues 1.1. to 1.12. The issues which follow are framed to identify the situation in the selected countries so that the comparative evaluation with NZ required under ToR(h) may be undertaken.)

The regulatory requirements and recognised practices that govern mining in the selected countries; and the comparison to New Zealand.

International

4.1 The selection of other countries to be used as comparators – 'the selected countries'.

4.2 The identification and description of the mining law requirements and recognised practices in the selected countries that govern:

(a) underground coal mining and related operations; and

(b) H&S in underground coal mining and related operations.

4.3 The historical background to the requirements and practices, and the policies underlying them.

4.4 The effect of any changes in the regulatory environments.

4.5 The proposals (if any) for change in the future direction of the regulatory requirements and recognised practices.

Comparison

4.6 The comparative evaluation of mining law requirements in New Zealand and in the selected countries.

How mining requirements and practices interact with conservation, environmental and other legal requirements in the selected countries; and the comparison to New Zealand.

International

4.7 The identification of any conservation, environmental and other legal requirements which apply to mining or to land on which underground coal mining occurs in the selected countries.

4.8 The manner and the extent to which those conservation, environmental and other legal requirements interact with the mining law requirements and recognised practices (as identified in issue 4.2) in the selected countries.

Comparison

4.9 The comparative evaluation of the extent of interaction (if any) in New Zealand and in the selected countries.

Resourcing for, and the administration and implementation of, mining law and practice in the selected countries; and the comparison to New Zealand.

International

4.10 The identification of the regulatory agencies responsible for the administration and implementation of the laws and recognised practices that apply to mining and to mining land in the selected countries.

4.11 The nature and extent of the resources provided to the agencies in the selected countries.

4.12 The organisational structures of the agencies in the selected countries, including the lines of responsibility and accountability, delegations and the job descriptions and performance agreements of relevant personnel.

4.13 The operational methods of the agencies in the selected countries, including how those agencies administer laws and practices, their strategies, priority setting, outcomes, outputs, performance measures, resource allocations, work programmes, risk management, internal audit and self review, internal reporting and external reporting systems.

Comparison

4.14 The comparative evaluation of the resourcing provided, and administration and implementation practices, in New Zealand and in the selected countries.

APPENDIX 7

Policy phase questions

Mining regulation and recognised practices

Comparators

1. The commission is minded to use the Western Australia, New South Wales and Queensland regulatory structures (including the National Mine Safety Framework established by a steering group on behalf of the Standing Council on Energy and Resources) to provide a comparison for the regulation of the New Zealand underground coal mining industry ('mining industry'). Nonetheless, are there other countries or states which should also be used as comparators?
2. What are the significant features or principles of these overseas regulatory structures that worthy of consideration?
3. Are there particular features of the New Zealand mining environment and industry that need to be taken into account in making a comparative evaluation against overseas regimes?

The nature and form of regulatory arrangements

4. Aside from the Health and Safety in Employment Act 1992 (HSEA), what additional regulatory arrangements are needed in relation to the mining industry?
5. With reference to the form of the mining industry regulatory arrangements,
    (a) At what level, and when, is prescriptive regulation appropriate?
    (b) What type of regulatory arrangements (regulations, approved codes of practice, codes of practice and industry standards) are most appropriate?
    (c) Should a 'safety case' requirement or components thereof be included as an aspect of the mining industry regulatory arrangements?
    (d) If so, what form of requirement is appropriate and should the safety case be subject to review, or approval, by the regulator or an independent third party?
6. Do the employee participation provisions in Part 2A of the HSEA require improvement and, if so, in what respects?

The establishment of regulatory arrangements

7. Who should have primary responsibility for establishing and updating the mining industry regulatory arrangements for:
    (a) occupational H&S; and
    (b) prospecting, exploration and mining permits?
8. Accepting the need for tripartite involvement, which bodies or individuals should participate in the drafting and review of the mining industry regulatory arrangements, and how can this best be achieved?
9. Generally, would there be advantages in greater co-operation, co-ordination and sharing of expertise with Australia and its states in relation to the regulation of the mining industry? If so, how might a closer relationship be achieved? Would there be any disadvantages?

The interaction between mining regulation and recognised practices and other (including conservation and environmental) legal requirements.

1. How do overseas jurisdictions manage the interface between mining and other legal requirements (including conservation and environmental) with reference to:
    (a) the permitting of prospecting, exploration and mining activity; and
    (b) occupational safety and health?
2. Should applicants for prospecting, exploration and mining permits be assessed as to their capacity (financial, managerial and technical) to develop the mine proposal and to do so in a safe manner?
3. If so, how should this assessment be carried out, by whom and should there be a sharing of information between regulators?

The resourcing and administration of the regulators of mining law and practice

1. Are there overseas jurisdictions, other than those used for the mining regulation and recognised practices comparison, which should be used in the comparative assessment of the New Zealand regulator? What are the significant features of these overseas regulatory agencies?
2. Is the concept of a High Hazards Unit announced in August 2011 to provide H&S regulatory services to the extractives, geothermal and petroleum sectors supported? Are there views concerning:
    (a) the funding of the unit;
    (b) the organisational structure (copy annexed); and
    (c) any other aspects of this development?
3. What are the required features of a modern and effective regulator of the New Zealand mining industry including its:
    (a) position or situation (unit in a department, standalone etc);
    (b) organisational structure, personnel, technical expertise and training;
    (c) financial resourcing and the source of such funding;
    (d) key relationships with the industry, unions, employees, contractors, industry associations and overseas agencies;
    (e) operational role (balance between advice, compliance and enforcement) and operational methods;
    (f) policy role and responsibilities; and
    (g) involvement in search, rescue and recovery operations?

Instances of methane recorded in "CH610 Aux Fan Shaft methane" graphs, Deputy Statutory Reports and Deputies Production Reports
(30 September to 19 November 2010)

CAC0145/7

Date	"CH610 Aux Fan Shaft methane" graph readings (CAC0112 & CAC0112B)	Deputy Statutory Report (CAC0115 & CAC0115A)				Deputies Production Report Comments (CAC0116 & CAC0116A)
		Actions taken regarding deviations from face checklist	Flammable Gas in general body of air	Action taken for detection of flammable gas above allowable limits	Specific safety issues	
19/11/2010	No peaks over 1.25%		Day: 3.5 % in area 1 West 2R C hdg DAO.001.02943		Day:layering outby of Roadheader keep venturis on to disperse CH_4 DAO.001.02944	Day - B (B hdg): Gas trip. High CH_4 - gas bag in lower drainage hole Gas trip [approx 10am -11am] Gas trip - High CH_4 - hard to move Elect to recal - waiting for gas to arrive Recal ABM - power up machine & complete mega bolts [approx 11am -12.15 pm]Cutting - continuous CH_4 Trips move blower to floor CH_4 seems to be coming from floor. Megabolting. DAO.001.02568
18/11/2010	No peaks over 1.25%					Back - C (C HDG): Tripped on CH_4 Had to wait for elect to come to fix it DAO.001.02565
		N/S: >1.0% in area B west DAO.001.02938			N/S: CH_4 layering in roadway (RH) DAO.001.02940	
17/11/2010	~5.25pm: over 1.25% CAC0112B/21				Day: Bad layering out by of Roadheader +5% in roof cavities put up 2 venturis to disperse gas, leaking from top stand pipes DAO.001.02930/2	Day - B (Rh A heading): [approx 10:15] cutter head continuously tripping on CH4 [approx 1:30] gas problems from in seam boreholes DAO.001.02558
						A - C (not stated): High CH_4 in cavities in road Install lime brattice high CH_4 in cavities DAO.001.02559
16/11/2010	No peaks over 1.25%		A/S: 5+ % in area B west DAO.001.02926			
15/11/2010	~10.25am: over 1.25% ~11.25pm: over 1.25% CAC0112B/19					
14/11/2010	No peaks over 1.25%		Day: +5 % in area A hdg + B hdg DAO.001.02914			
13/11/2010	No peaks over 1.25%		D/S: >1.25 % in area North 1 west DAO.001.02911	D/S: ventilation very poor, u/manager and I at 12.30pm removed half the brattice from temp regulator at 3 C/T and rendered all gasses harmless (P1B1 monitor panel & North & West) DAO.001.02911		

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		Actions taken regarding deviations from face checklist	Flammable Gas in general body of air	Action taken for detection of flammable gas above allowable limits	Specific safety issues	
12/11/2010	~00.30am: over 2.5% ~1.15pm: over 2.5% ~9.50pm: over 1.25% CAC0112B/16	D/S: Headings in north gassing out due to poor ventilation, repaired stoppings & regulated a bit less air through monitor panel had 30 m^3/s now 22m^3/s DAO.001.02907/2		D/S: C hdg W1 found gased out - no roaded heading until fans are set up and running again DAO.001.02907/2		
					Back: A heading north B heading north no roaded. Gassed out. These headings were taking too much air when the Aux fans were turned off could not flit ABM or CM because of CH_4 levels were too high so I took down the brattice leads and let the places gas out. CO reading taken in bleeder road A=21m^2 V=1.4m/s, CO ppm 0 DAO.001.02910	
11/11/2010	No peaks over 1.25%		Day: 1.5+% in area A north DAO.001.02900	Day: Had fan trip Couldn't power up fan Rob Duncan fixd problem at DCB with the aid of mx4 gas detector degassed heading following pike river SOP use CM fan to degass as A heading holded trhough. Blanket end open by gurgler to give full suction. Kept air flow going. DAO.001.02900		Day - A (West AHD6): [approx 1:00] fan trip degas [approx 2:45] fan trip degas DAO.001.02546
					Back: Valley Longwall free venting high levels of CH_4 through their gas drainage manifold on arrival this valve should have been turned off before those guys left their rig. Layering out by of roadheader venturi to disperse. DAO.001.02903	Back - B (A Hdg): Arrive face - Elec to purge ABM CH_4 high - working to improve ventilation. Blower fan sending .8% CH_4 from 6 cut thru Shut blower off CH_4 down Enclosure purged & machine ready to cut DAO.001.02548 B/S /B (A hdg): cutting - high gas tripping head no water - pipe busted, recalibrate CH4 sensor, set airmover up back bye DAO.001.02549
			N/S: 2.0% in area VLD Stub DAO.001.02905			

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CAC0145/9

Date	"CH610 Aux Fan Shaft methane" graph readings (CAC0112 & CAC0112B)	Deputy Statutory Report (CAC0115 & CAC0115A)				Deputies Production Report Comments (CAC0116 & CAC0116A)
		Actions taken regarding deviations from face checklist	Flammable Gas in general body of air	Action taken for detection of flammable gas above allowable limits	Specific safety issues	
10/11/2010	No peaks over 1.25%		Afternoon: +2% CH_4 Ahdg 1west 2R DAO.001.02896 Back: +5% in area A heading DAO.001.02897	Afternoon: Main fan stoppage power and auxilliary fan trip. Withdrew men to through ventilation started degassing heading when main fan came on. Degassed then auxiliary fan triped again. Reset. Degassed gas in general bady [illegible] 1.1%CH4. DAO.001.02896 Back: Main fan tripped causing all power to fans to trip. Degassing using degassing chamber on fan. DAO.001.02897	Afternoon: General body of air in last through road varies between 0.8% and 1.1% CH_4. Gas from drill stub3 (Valley Longwall) and A heading is passed onto ABM. Leakage on gas drainage line in AHdg1West2R adding to gas problems in heading. MInimized gas leakage around standpipe with rags and wooden wedges. DAO.001.02896 Back: 2 boreholes in face in roader header place top hole making gas put 7 gas bags in in hole gas flow dropped slightly DAO.001.02897	B/S - B (A Hdg):[approx 6:15] power out, degasing cutting gas issues keeps tripping head installing gas bags recalibrate gas sensors DAO.001.02543
			N/S:1.5 % in area A heading north DAO.001.02899			Night - C (A Hdg):To much CH_4 at ABM Elect tested CH_4 on ABM sensor CH_4 is about .8 DAO.001.02545
9/11/2010	No peaks over 1.25%		Day: 1.3% in area Aheading DAO.001.02888			
					Afternoon: Inspection at monitor 0.2% CH_4 DAO.001.02889	Back - B (A hdg): Ready to cut CH4 high/trip - unable to clear Move blower close to face Unable to clear CH4 [approx 6.30] - main fan off - power off - men to fresh air [approx 7] fans running Hdg degassed Enter Hdg CH4 still too high to start up Waiting to recalibrate ABM Gas guard fault High CH4 [approx 8:00 to EOS] DAO.001.02537
			N/S: 1.5% in area A-B xc North DAO.001.02891	N/S: turned air movers on to clear gas DAO.001.02891		
8/11/2010	No peaks over 1.25%	Day: Sparky had to recalibrate sensors DAO.001.02877	Day: 3.2 % in area A heading DAO.001.02877	Day: gas holes leaking got it down to 0.7 - 1 % after working on stone pipes (A Heading) DAO.001.02877		
			afternoon: 3.0% in area A hdg 1 west2right DAO.001.02884	afternoon: Continue to block gas drainage lines dilute gas to pick up [illegible] to degass face . Install typhoon fan DAO.001.02884	Back: ABM gassed out at SOS due to borehole interesection (North/South) DAO.001.02883	Back - B (1Hdg 1 West): Assess gas drainage holes - reseal holes Shut off forcing fan - CH_4 lower => power up ABM raise head CH_4 workable. Electrician to recal gas guard - gear outside [approx 5.45 - 8.15] continuous CH_4 trips ABM pass CH_4 drainholes CH_4 - head and general body is now ok DAO.001.02528

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		Actions taken regarding deviations from face checklist	Flammable Gas in general body of air	Action taken for detection of flammable gas above allowable limits	Specific safety issues	
7/11/2010	No peaks over 1.25%					
6/11/2010	No peaks over 1.25%		D/S: 1.9% in area ABM DAO.001.02872	D/S: Stub has been left at present. Ventilation changes & blocking of exposed bore holes needed. 0.2% CH_4 in roadway behind ABM DAO.001.02872		
5/11/2010	No peaks over 1.25%		D/S: 5% in area A heading face (ABM) DAO.001.02867	D/S: Intersected boreholes, ran bull hoses to gas drainage line set up typhoon fan and venture fan and plugged holes for next shift. DAO.001.02867		Day - C (A): NO PRODUCTION - ran out bull Hoses for gas drainage to gas line. Night shift had hit gas hole at face. Put up vent tubes behind ABM. Stone dusted face. High CH_4. Supplied ABM up. Deputy and Chris stayed with ABM Getting the gas down from borehole. The rest of us went to roadheader. Chris put up and air fan at face DAO.001.02520
				Backshift: high gas levels as gas holes exposed (A heading west ABM Panel 2) DAO.001.02869	Backshift: We are in a heading with gas holes exposed from nightshift we are on backshift why was RH place being run instead of ABM place to get gas under control (Day Shift). Why didn't we cut A Heading Road way instead of DS2 so valley longwall could have used this as a drill stub and then we wouldn't have to cut through these gas hole put me and my men at risk working in [illegible] to keep gas clear to cut and expose hole more (A heading west ABM Panel 2) DAO.001.02869	
4/11/2010	~1.30pm: 2.5% CAC0112B/8		Night: 1.5% in area A heading stub DAO.001.02863			Night - B (not noted): gas trip DAO.001.02516 Night/B (Rh001): cutter head tripping out on CH4, extended vent cans DAO.001.02518
3/11/2010	No peaks over 1.25%					not noted (A6+B6): [between approx 1.30 - 3.15] 3 gas trips recorded DAO.001.02504 *[this record is undated but there is a note reading 3 Nov dayshift?]*
2/11/2010	No peaks over 1.25%					A - A (A/hdg):4:30 gas guard trip on R/H continue to pump face out DAO.001.02501

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CAC0145/11

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		Actions taken regarding deviations from face checklist	Flammable Gas in general body of air	Action taken for detection of flammable gas above allowable limits	Specific safety issues	
1/11/2010	No peaks over 1.25%		Night: 1.3% in area drill stub 3; +5% in area A1B1XC DAO.001.02846	Night: regular inspection using ITX gas detector, poor ventilation in DS3 all air going to ABM. A1B1 gassed out loaders blocking air coal stowage [checking or choking?] air cannot circulate. DAO.001.02846		