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.

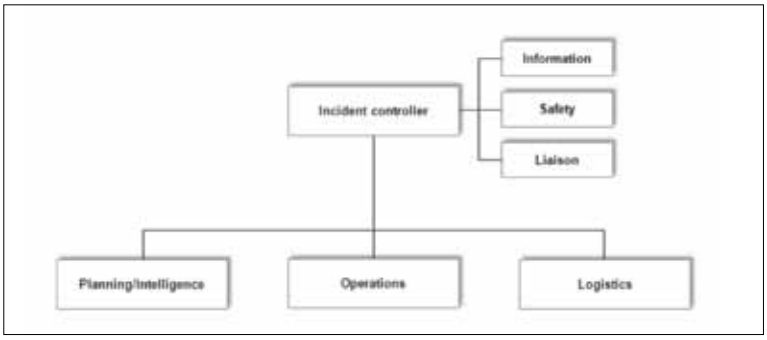

Figure 32.1: Co-ordinated incident management system[13]

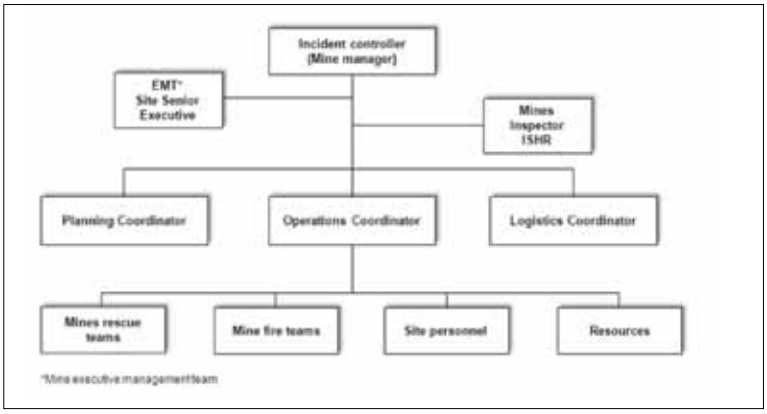

Figure 32.2: Queensland mine emergency management system[14]

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.