CHAPTER 5

REGULATIONS GOVERNING WORKPLACE EXPOSURE TO TOXIC DUST

> In the early days, protection usually consisted of a handkerchief across the nose and mouth just to stop the irritation and discomfort of the dust. There was never any suggestion that the dust might be injurious to health, in fact, we were often told that it (the dust) was OK. Later, when there was some murmuring about asbestos, we were given a paper nose mask for general dust and when working in areas where the dust was constantly thick, if we asked for one, we would be given a basic dust mask covering the nose and mouth with twin filters.[1]
> *(Dimet worker 1971-77)*

> They'd be gasping for air, covered with sand and metal particles and paint particles…coughing and wheezing…there was no actual face mask, gas mask type things on 'em at all.[2]
> *(Sandblaster NT 1970s)*

> A lot of the times we just used to have to wear a piece of rag around out mouths…occasionally we had to argue to get em [in relation to dusk masks].[3]
> (*Pink Batt Insulation 1970s*)

Occupational health and safety regulation in Australia

5.1 The Department of Employment and Workplace Relations (DEWR) provided the Committee with an overview of occupational health and safety (OHS) regulation in Australia. The Commonwealth has responsibility for regulating and enforcing workplace health and safety in Commonwealth government workplaces while the State and Territory Governments do so for all other workplaces. The national OHS regulatory framework comprises Commonwealth and State and Territory legislation and related instruments.[4]

5.2 The National Occupational Health and Safety Commission (NOHSC) (now the Australian Safety and Compensation Council) maintain sets of national OHS standards and related materials. The national standards are advisory only unless other laws give them a different character. These standards and related materials aim to improve the health and safety of work environments by providing a means of:

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1 *Submission* 17, p.1 (Mr RE Devlin).

2 *Submission* 25, p.5 (Mr R White et al).

3 *Submission* 25, p.6 (Mr R White et al).

4 *Submission* 11, p.2 (DEWR).

- facilitating improvement of the regulatory framework by promoting prevention solutions;
- enabling the consolidated national review of priority regulatory requirements; and
- focusing on the extent of national consistency in relevant areas, particularly where it is considered essential for employers and employees.

5.3 There are standards and related material supporting the regulatory framework in five identified priority areas. The five priority areas are to:

- reduce high incidence/severity risks;
- develop the capacity of business operators and workers to manage OHS effectively;
- prevent occupational disease more effectively;
- eliminate hazards at the design stage; and
- strengthen the capacity of government to influence OHS outcomes.[5]

Workplace Chemicals Framework

5.4 The National Hazardous Substances Regulatory Framework (HSRF) was developed by NOHSC as national standards and codes of practice that provide a 'risk-based, outcomes-focused framework for determining the workplace requirements for all substances hazardous to health'. At the centre of the HSRF is the *National Model Regulation for the Control of Workplace Hazardous Substances* (the national model regulations). The national model regulations apply to all workplaces in which hazardous substances are used or produced, and to all persons with potential exposure to hazardous substances in those workplaces.[6]

5.5 The national model regulations detail how hazardous substances should be controlled in the workplace to minimise the risk of adverse health effects. The two principal components of the national model regulations are:

- information provision; and
- assessment and control provisions.

The information provision includes hazard communication through labels and Material Safety Data Sheets (MSDS). Assessment and control provisions include identification, assessment and control of hazardous substances in the workplace and those hazards which arise out of the work activity.

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5 *Submission* 11, p.2 (DEWR).

6 *Submission* 11, p.2; see also Additional information, 10.11.05 (DEWR).

5.6 Manufacturers and importers are required to determine whether a substance is a hazardous substance under the *Approved Criteria for Classifying Hazardous Substances*. The Hazardous Substances Information System (HSIS) provides hazard information for substances classified according to the Approved Criteria.

5.7 DEWR stated that the HSRF risk-based approach is complemented with specified requirements to be applied to specific substances or groups of substances. These include prohibitions, national exposure standards and national codes of practice and guidance material.[7]

Prohibitions

5.8 When no other form of control of a hazardous substance is adequate, use of the substance is prohibited. Prohibition is used where the risks to the health of workers are significant and safer alternatives are available. The specific substances and uses that are prohibited are set out in national model regulations. Prohibitions are given effect by inclusion in each jurisdiction's regulations.

National exposure standards

5.9 National exposure standards have been declared as guidance to assist in ensuring that workers are adequately protected from exposures to hazardous substances. Exposure standards detail airborne concentrations which should neither impair the health of, nor cause undue discomfort to, nearly all workers.

5.10 The national model regulations require that no worker be exposed to hazardous substances at levels above the national exposure standards, as listed in the Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment and declared amendments.

5.11 Exposure standards do not represent a 'no-effect' level, and are best used to assess the quality of the working environment and indicate where control measures are required. The national exposure standards have been consolidated within HSIS.[8]

National Codes of Practice and Guidance Information

5.12 NOHSC national codes of practice and other guidance materials are developed to assist stakeholders in recognising the relevance of legal requirements to their operations and to support their application of risk management principles in their workplaces. For example, the *National Code of Practice for the Control of Workplace Hazardous Substances* provides a practical guide on how to comply with the national model regulations, such as applying the hierarchy of controls (elimination, substitution, isolation, administrative controls, safe work practices and personal protective equipment), risk assessments and hazard communication.

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7 *Submission* 11, p.3 (DEWR).

8 *Submission* 11, p.3 (DEWR).

5.13 The *National Code of Practice for the Labelling of Workplace Substances*, the *National Code of Practice for the Preparation of Material Safety Data Sheets* and the *National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition* provide practical guidance on the preparation and provision of critical hazard information to workers.[9]

State and Territory regulations

5.14 The national model regulations for the control of workplace hazardous substances have been implemented in all jurisdictions under various Acts and regulations. For example, the *Queensland Workplace Health and Safety Act 1995* and the *Victorian Occupational Health and Safety Act 2004*. DEWR noted that compliance strategies are a policy decision for each jurisdiction.[10]

Implementation of the regulatory regime

5.15 Witnesses noted that prevention of disease in the workplace is paramount as once damage is sustained from toxic dust it cannot be cured.[11] However, it was argued that problems with the timeliness of regulations, enforcement of regulations and the level of the present exposure standard for crystalline silica impact adversely on efforts to protect the health of workers.

Timeliness

5.16 Evidence was received concerning the implementation of standards for certain toxic dusts in the workplace, particularly crystalline silica. It was noted that the review of the exposure standard for crystalline silica took nearly 10 years. Prior to the promulgation of NOHSC standard, general direction or advice given to industry was based on National Health and Medical Research Council (NHMRC) recommendations which had no legislative standing 'though it must be argued that industry often attempted to comply with the recommendations made'.[12]

5.17 A further matter of concern was that while many jurisdictions have had long-standing regulation of crystalline silica dust exposure in mining, the regulation of exposure in the non-mining industry for example sandblasting, has only been achieved recently in some States and Territories. Many witnesses noted that regulations for the prohibition of sandblasting using materials containing more than one per cent crystalline silica did not come into force in Victoria until January 2002.

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9 *Submission* 11, pp.4-5 (DEWR).

10 *Committee Hansard* 10.11.05, p.11 (DEWR).

11 *Committee Hansard* 29.9.05, p.24 (AIOH).

12 *Submission* 26, p.15 (WHS).

5.18 WHS, in commenting on the review of the national exposure standard for crystalline silica, pointed to a number of matters which it considered had undermined the development of effective exposure standards:

> …the Australian government disbanded the resources necessary to coordinate the research, indicates that this process is perhaps fatally flawed. There is no longer any federal agency with the capacity to act in the national interest in such fundamental areas as occupational health research and data collection and analysis, all of which are critical to the establishment of occupational health exposure standards.[13]

> The ability to investigate compliance with existing exposure standards and to develop new standards and methods of measurement for toxic materials has been diminished due to the loss of a national body of expertise and the focus on legislative compliance. Increasingly burdensome administration and consultation have exacted a time penalty on the rate at which new initiatives could be developed and delivered.[14]

5.19 DEWR acknowledged that in the past there had been inconsistency in adoption of standards for example, the silica standard was in place in the mining industry before it was introduced in general OHS legislation.[15] DEWR also commented on the lack of national approach:

> One of the rationales for developing Worksafe Australia and the National Occupational Health and Safety Commission in the first place was to bring some consistency and timeliness to a lot of these issues so that they would be addressed in a timely and consistent manner across Australia. Certainly since the commencement of NOHSC we now have workplace chemicals legislation throughout Australia fairly consistently, whereas before, in some jurisdictions, there was very little, except perhaps in the mining industry. I think we have come quite a long way in the last 10 years or so.[16]

5.20 The introduction of national model regulations for the control of workplace hazardous substances had 'led to a relatively consistent framework across Australia for the regulation of workplace chemicals, including those that may lead to occupational disease'.[17] DEWR concluded:

> The elements are consistent with current good practice from around the world, and include classifying chemicals on the basis of their health hazards and establishing national exposure standards.[18]

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13 *Submission* 26, p.10 (WHS).

14 *Submission* 26, p.14 (WHS).

15 *Committee Hansard* 10.11.05, p.6 (DEWR).

16 *Committee Hansard* 10.11.05, pp.6-7 (DEWR).

17 *Committee Hansard* 10.11.05, p.1 (DEWR).

18 *Committee Hansard* 10.11.05, p.1 (DEWR).

In addition, DEWR indicated that where the silica standard and the asbestos standard have been reviewed, 'those have been picked up across the country within a matter of months of each other'.[19]

5.21 However, DEWR also noted the concerns raised in evidence about the rate and consistency of adoption of changes into regulation and enforcement, and therefore compliance of national standards and codes of practice and commented:

> The office [Office of the Australian Safety and Compensation Council] is currently looking at ways to improve the timing and consistency of adoption of declared standards and codes by the jurisdictions, and agreed time frames for the uniform implementation of new and revised standards and codes across all Australian jurisdictions will be developed during the consultative process. A recent example of this was the coordinated implementation of a national prohibition of the import and use of asbestos under NOHSC.[20]

5.22 DEWR also stated that a review of the Workplace Chemicals Framework is being undertaken.[21] A preliminary draft of the new workplace chemicals standard has been released to key stakeholders for review and consultation. Some of the features of this draft standard include: the standard brings together and simplifies the current separate requirements for hazardous substances and dangerous goods; risks arising from the handling of chemicals in the workplace will be controlled in an holistic way rather than under systems that separately deal with health and physical hazards; the standard is performance based, identifying outcomes to be achieved, such as exposure standards, and ensuring its applicability across the widest possible range of occupational circumstances. The standard is based on the features of the Globally Harmonised System for Classification and Labelling of Chemicals. Once the final draft is developed, the Australian Safety and Compensation Council (ASCC) will be asked to endorse and release the draft for public comment in 2006.

5.23 The review of this framework also includes a review of the national exposure standards and health surveillance guidance, including biological exposure indices. This work will consider the process for setting exposure standards, what exposure standards it should represent, how exposure standards should be regulated, and international developments.[22]

5.24 The Minerals Council of Australia (MCA) commented that there was a need not only for a uniform approach across Australia but also internationally. MCA informed the Committee that it had initiated, through the International Council of Mining and Metals, a workshop in London that had brought together regulators from

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19 *Committee Hansard* 10.11.05, p.6 (DEWR).

20 *Committee Hansard* 10.11.05, p.2 (DEWR).

21 *Committee Hansard* 10.11.05, p.2 (DEWR).

22 *Committee Hansard* 10.11.05, pp.2-3 (DEWR).

around the world, as well as the mining industry, to investigate the way occupational exposure limits are currently set and reviewed and how these can be harmonised in a global way. MCA noted that:

> We will be looking at trying to establish common definitions across the country, ensuring that the approach is underpinned by scientific evidence and the best available science. We are looking for consistent application of risk assessment. We wish the approach to recognise that any science based value should be achievable technically and also in terms of socioeconomic impact. There is not much point establishing a standard if no one can deliver on it because it is far too difficult or it has such an impact on the community that they suffer in some way as well. We are also looking for an approach that is open and transparent to all stakeholders.[23]

Enforcement

5.25 Changes to regulations have increased protection for workers. However, the effectiveness of the regulatory regime, particularly its enforcement, was debated in evidence. WHS commented that although the use of sand in abrasive blasting was limited in Queensland in early regulations, 'there continued to be cases of both open and clandestine use of different kinds of sands containing quartz or free silica but diminishing in frequency up to the present'. WHS went on to state that it believed that:

> …the move towards the Code of Practice under the umbrella of the Hazardous Substances Regulation has reduced the extent to which beach or river sand is employed in dry abrasive blasting and the respirable crystalline silica exposures of its workers.[24]

5.26 Other witnesses argued that the regulatory regime is not effective. For example, Mr Nickolas Karakasch stated:

> As far as enforcement, there was an Australian standard for monitoring of dust. I have never ever seen that in any of the sandblasting or abrasive blasting companies that I have visited in the last 40 years, although I do believe it does occur in some government facilities. It is certainly not in the private sector, yet we have a standard for it. We have health and safety acts Australia-wide and we have individual ones in individual states, and the primary focus is duty of care. Where is the duty of care? Nobody enforces it.[25]

5.27 The Australian Council of Trade Unions (ACTU) stated that its members reported very little enforcement from the regulators while Mr Lindsay Fraser of the Construction, Forestry, Mining and Energy Union (CFMEU) pointed to a worksite that he had observed on his way to the hearing:

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23 *Committee Hansard* 10.11.05, p.16 (MCA).

24 *Submission* 26, pp.17, 22 (WHS).

25 *Committee Hansard* 29.9.05, p.41 (Mr N Karakasch).

> …at the corner of William Henry Street and Wattle Street, I passed a massive excavation going on in one of the old wool stores. You cannot see across it. The dust is absolutely everywhere. As a matter of fact, I rang our New South Wales branch OH&S officer to get him to get WorkCover to go down there and do something about it. There is no monitoring by law in any state of Australia on construction sites. There are no records kept. Nobody knows who has been affected and who has not.[26]

5.28 The CFMEU commented that on big building sites in Sydney, which are unionised and have an occupational health and safety committee, significant contamination from dust is the exception. However, smaller sites are a major concern and while the CFMEU attempts to stop dangerous practices, 'we cannot be everywhere all day every day'.[27] The situation is also exacerbated by policies adopted by WorkCover authorities:

> Nearly every WorkCover authority in Australia now has adopted the policy of no proactive work by their inspectors. Inspectors are told specifically that they are not to go around to building sites at random and have a look; they are only to respond to requests from employers or employees or members of the public.[28]

5.29 The Construction Materials Processors Association (CMPA) pointed to a lack of trained regulators and suggested that a concerted effort by government agencies was required to ensure that adequately trained regulators are available to manage sites identified as having toxic dust exposure. This would also mean that the regulators are able to pass on their knowledge to those that they regulate.[29] The Australian Institute of Occupational Hygienists (AIOH) also supported the need for adequate numbers of regulators and noted that while OHS inspectorates assisted industry in understanding how to control exposures, 'due to downsizing and restructuring, such assistance is now severely limited or non-existent'.[30] In addition, departments are not resourced to go out to the workplaces and assess dust levels.[31]

5.30 AIOH also noted that while there are adequate standards in place, the enforcement of regulation of toxic dust in the workplace is weak and mainly confined to the issuing of improvement notices. In part, this is due to the difficulty in prosecuting employers under existing rules of evidence required under workplace health and safety legislation and noted that 'this situation will not change until

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26 *Committee Hansard* 30.9.05, p.23 (CFMEU).

27 *Committee Hansard* 30.9.05, p.26 (CFMEU).

28 *Committee Hansard* 30.9.05, p.28 (CFMEU).

29 *Committee Hansard* 29.9.05, p.13 (CMPA).

30 *Submission* 20, p.20 (AIOH).

31 *Committee Hansard* 29.9.05, p.24 (AIOH).

legislation can be amended to allow for prosecution of dust disease created by exposure to toxic dusts in the workplace'.[32]

5.31 AIOH also commented that a further hindrance to prosecution is the employment of fewer occupational hygienists by regulatory bodies. Occupational hygienists undertake work to recognise, assess and control hazards in the workplace that can affect people's health. Without adequate numbers of hygienists, it is difficult to monitor and regulate industry.[33]

5.32 AIOH recommended that in order to both conduct prosecutions and to prevent exposure to toxic dusts in the workplace, OHS authorities must recruit more occupational hygienists. In addition, occupational hygienists provide a valuable source of information for employers and information on the nature of the workplace environment to assist in the accurate diagnosis of a worker's condition.[34] AIOH recommended that any information in government publications relevant to control of toxic dusts should refer employers to the use of competent practitioners, that is certified occupational hygienists.[35]

5.33 The Australian Medical Association (AMA) concurred with the view that unless employers know that regulators will take action, workers will still be exposed to unsafe practices:

> Only when the industries believe they will be held to account will they take the necessary action to ensure their workers comply with legislation/regulation and safety standards…The sooner such legislation/regulation is implemented the sooner adequate precautions will be implemented. All evidence at the moment would suggest that workers continue to be exposed to particulate matter in an unacceptable fashion.[36]

5.34 The Australian Lawyers Alliance (ALA) commented that some problems with enforcing regulations arise from employment of private occupational health and safety officers:

> The problem most often encountered by Lawyers Alliance members in the context of the enforcement of regulations (insofar as they exist) is that officers practicing in corporate Industrial Hygiene and Health (and sometimes those in private practice in such disciplines), often identify too readily with their employer, and fail to take sufficiently stringent or timely action to enforce compliance with such regulations. This results in the exposure of many workers to toxic hazards and greater quantities thereof.[37]

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32 *Submission* 20, p.19 (AIOH).

33 *Committee Hansard* 29.9.05, p.28 (AIOH).

34 *Submission* 20, p.21 (AIOH).

35 *Submission* 20, Additional information 18.11.05 (AIOH).

36 *Submission* 33, p.2 (AMA).

37 *Submission* 27, p.3 (ALA).

5.35 Both the ACTU and CFMEU called for more rigorous enforcement of exposure standards across the jurisdictions and improved monitoring of workplaces where workers are exposed to silica and other toxic dusts.[38] The CFMEU stated:

> Even though we do not agree with the 0.1 [exposure standard for crystalline silica], it has to be enforced. It is not enforced now in the building and construction industry. Nobody goes around and monitors. It is only if our members contact us and we complain that we get WorkCover down to the site and WorkCover will try to do something about it. The reality of life on small building sites is that workers are scared to complain. They worry that, if they complain, they are going to be put off. We will not go into all of the side story there with the industrial relations. You have this situation where people are going to be exposed. There is no monitoring regime and there are no records kept of it. Doctors are unsure of it. We believe that you must have the regulators enforcing it.[39]

5.36 AIOH and Construction Materials Processors Association (CMPA) also supported the need for regulators to more closely monitor those sites which are identified as having toxic dust to ensure that the health and wellbeing of those on site is being managed to best practice. Further monitoring was seen as being preferable to more regulation.[40]

5.37 While concerns were raised by some witnesses about enforcement of exposure standards and monitoring, both Cement Concrete and Aggregates Australia (CCAA) and Coal Services provided information on their monitoring regimes in their industries. CCAA noted that records of activities during that day are kept so that employees' dust levels are monitored. This monitoring was carried out by occupational hygienists following the Australian standard for the calibration of equipment.[41] CCAA concluded that the best outcomes would be achieved through appropriate management of the risk by both employers and employees:

> The Robens principle that is built in to each state occupational health and safety act rests on the principles of self-regulation, where it is recognised that the best control can only be achieved by workers and employers working together to identify risks and manage those risks out of existence to provide better health outcomes. We support that principle continuing in legislation.[42]

5.38 Coal Services indicated that it independently monitors the exposure to coal dust and silica dust in coalmines:

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38 *Committee Hansard* 29.9.05, p.87 (ACTU); *Submissions* 13, pp.3, 4 (CFMEU) 28, p.6 (ACTU).

39 *Committee Hansard* 30.9.05, p.24 (CFMEU).

40 *Committee Hansard* 29.9.05, p.31 (AIOH); p.13 (CMPA).

41 *Committee Hansard* 30.9.05, p.16 (CCAA).

42 *Committee Hansard* 30.9.05, p.2 (CCAA).

> It is regulated that an underground coalmine has to have samples undertaken twice per year for each working face – and by that I mean that in an underground coalmine there could be four, five or six different faces being worked concurrently, and you have to take samples of the dust exposure at each of those sites at six-monthly intervals.[43]

5.39 Coal Services also commented that it is committed to continual improvement and has recently commissioned a trial of a ground breaking real-time system of airborne dust sampling, the tapered element oscillating microbalance (TEOM), currently under development and testing in the USA. An interim report on the TEOM was provided to industry in July 2005, and a more comprehensive report will be made within the coming year.[44]

5.40 DEWR noted that national standards and codes of practice are only legally enforceable if they are adopted into State and Territory regulations or codes of practice under their principal OHS Acts. Regulatory powers relating to compliance or enforcement of the OHS Acts and Regulations rests with the various jurisdictional OHS authorities. The ASCC has no regulatory powers relating to compliance or enforcement of the provisions in these documents.[45]

Notification of risks

5.41 Evidence was received during the inquiry which clearly indicated that in the past in some industries little effort was made to ensure that workers understood the risks of toxic dust exposure and could thus implement appropriate OHS strategies. Mr Richard White provided graphic examples of the conditions under which he worked in the Northern Territory in the 1970s:

> They would float barges in on the tide, and they would be on 44-gallon drums. They would take off the inspection plate underneath and we would go in there. They would often blast and then I would go in and clean it all out, which was just shovelling it out. We were not given any masks of any kind. I would be shovelling out the sand to the inspection hole and you could not see from one end of the barge to the other.[46]

5.42 Changes to occupational safety and health legislation since the 1970s in all jurisdictions now impose an obligation upon employers to provide information to employees to enable them to perform their work in such a manner so as not to expose them to hazards. The Hazardous Substances Regulations specify requirements for the provision of information by manufacturers and importers (in the form of labelling and Material Safety Data Sheets (MSDS)) and requirements for employers to provide accessible information, instruction and training to employees on health risks and use

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43 *Committee Hansard* 30.9.05, p.51 (Coal Services).

44 *Submission* 21, p.8 (Coal Services).

45 *Committee Hansard* 10.11.05, p.2 (DEWR).

46 *Committee Hansard* 10.11.05 pp.40-41 (Mr R White).

of control measures. The regulatory framework also requires employers to undertake risk assessments and to control the risk in accordance with the outcome of a proper risk assessment.

5.43 The Victorian Workcover Authority also noted that in situations where the Hazardous Substance Regulations do not apply, other legislation imposes obligations on employers. In Victoria, the *Victorian Occupational Health and Safety Act 2004* requires employers to 'provide such information, instruction, training or supervision…as is necessary to enable those persons to perform work in a way that is safe and without risks to health'.[47]

5.44 The Committee was provided with extensive evidence of the programs offered by government agencies, unions and industry groups to assist in informing workers of health risks. For example, WorkSafe Western Australia produces a range of publications in relation to various types of dust (abrasive blasting, concrete and masonry cutting and drilling, wood dust, flour and fibreglass). WorkSafe informed the Committee that it has also planned an information campaign relating to the new exposure standards in which workplaces will be informed of their duty to comply with the new standard.[48] AIOH also noted that WorkSafe has a very good web site that is available to the public.[49]

5.45 Industry groups provide workers with information on ways to minimise exposure to Respirable Crystalline Silica (RCS) and other dusts. Coal Services commented that it provides information to employees through:

- provision of results of personal dust sampling to each mine;
- provision of advice regarding methods to better control personal exposure to toxic dusts through Coals Services staff, and through the meetings of the Standing Dust Committee;
- publication of educational material on coal dust and silica;
- one-on-one counselling of employees during health surveillance assessments and dust sampling, provided by Coal Services Health's staff; and
- tool-box talks to work teams.[50]

5.46 CCAA also stated that its member companies had moved from basic controls and awareness to a comprehensive management systems approach focusing on prevention of exposure through engineering controls, improved work practices, changing work technologies, and backed by improved Personal Protective Equipment

47 *Submission* 35, p.2 (Victorian Workcover Authority).

48 *Submission* 12, p.2 (WorkSafe WA); see also *Submission* 26, p.24 (WHS) for information available from the Queensland Government.

49 *Committee Hansard* 29.9.05, p.24 (AIOH).

50 *Submission* 21, p.8 (Coal Services).

(PPE) systems when exposures cannot be controlled entirely by engineering or administrative means. In addition, the industry has developed Material Safety Data Sheets (MSDS), product warnings and labels consistent with the National Code on Labelling and product information sheets which have been widely available to the users of its products.[51]

5.47 CCAA also noted that the concept of product stewardship has also been embraced by many companies in the industry, resulting in:

- MSDSs for RCS prepared and broadly distributed throughout the quarry and pre-mixed concrete industry. These were distributed to all customers and related suppliers and were included in all trade account approvals; and
- product warning labels on pre-mixed concrete and quarry materials delivery documentation.

CCAA concluded that 'with the movement towards quality management systems approaches in the early to mid nineties, hazards such as silica dust were increasingly managed in a more systematic manner'.[52]

5.48 AIOH also commented that more responsible manufacturers view the provision of information on labels and MSDSs as a minimum standard. Some companies have implemented voluntary product stewardship schemes, in which they exercise a cradle-to-grave responsibility for their products at every stage in their life cycle. AIOH saw this as a very effective means of improving workplace safety and recommended that product stewardship be promoted as an appropriate model for disseminating information.[53]

5.49 Unions are continually working to improve awareness of the dangers of toxic dust. Unions provide members with information and support awareness programs. One such program was introduced in the 1990s in Victoria. The AWU and building unions worked with employer and industry associations to build awareness of the health risks associated with unprotected exposure to RCS. The program involved the development of a number of training and awareness resources that were used throughout industry and included videos, brochures and training in work practices designed to reduce RCS dust generation, and ensure the correct use and maintenance of PPE.[54]

5.50 With the resources now available, particularly online and from government information centres, the ACTU commented 'no employer can claim that the information is not available'. However, some problems were observed in ensuring that

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51 *Submission* 14, p.3 (CCAA).

52 *Submission* 14, p.3 (CCAA); see also *Submission* 14, pp.4-5 (CCAA) for detailed information on controls and management systems.

53 *Submission* 20, p.20 (AIOH).

54 *Submission* 14, p.3 (CCAA).

the information was received by all workers.[55] AIOH for example, commented that anecdotal evidence indicated that information is not filtering down into many small to medium enterprises.[56] Evidence from the CFMEU pointed to continued problems in the building industry particularly on small sites.

5.51 WHS reported that a blitz program in 2000 to assess abrasive blasting media, respiratory protection and hearing protection in a range of industries in Queensland found:

> Knowledge about the actual performance of respiratory protection is universally lacking, and most workplaces have not assessed the quality of breathing air. Training in the use of the respiratory protection had been given to only 64% of users, and respiratory fit testing was recorded by only 27% of users. The industry has not yet been involved in either air monitoring or health surveillance to any extent.[57]

5.52 The ACTU supported the development of a national community education campaign to alert the public and workers to the adverse health effects of exposure to toxic dust:

> …we recommend that a national community education campaign be developed by NOHSC, now the ASCC…with public health and OH&S authorities to alert the public and workers to the adverse health effects of exposure to the toxic dust. I think that is fairly self-explanatory. We have put in there that maybe the government could set up an information help line. The unions do that anyway, but on a national level the federal government perhaps could look at that, or perhaps it could be done through the ASCC as well, which is a tripartite body. Maybe there could even be a web site or something along those lines, as well; there needs to be much more information out there to protect workers who are exposed to this. Also, business needs to be educated, I think. Business needs to be better informed about the dangers.[58]

5.53 An education and training campaign was supported by the CMPA as training has a 'profound' effect on the skills of the workforce. It also recognised that training is one method whereby industry may be able to participate and stay in the 'game'. CMPA concluded that if industry 'does not take on board and educate its work force, it is not going to be able to manage all its obligations'.[59]

5.54 DEWR responded to comments on the need for an education campaign by stating that the responsibility for such programs rest with the States and Territories as

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55 *Submission* 28, p.7 (ACTU).

56 *Submission* 20, p.20 (AIOH).

57 *Submission* 26, p.22 (WHS).

58 *Committee Hansard* 29.9.05, p.87 (ACTU); see also *Committee Hansard* 30.9.05, p.24 (CFMEU).

59 *Committee Hansard* 29.9.05, p.17 (CMPA).

they are the regulators and compliance agencies for dealing with the industry specific sectors in their jurisdictions and are able to tailor those particular campaigns for the sectors relevant to their jurisdictions. DEWR noted that it has a role in broad community education and it funds the ACTU and Australian Chamber of Commerce and Industry (ACCI) to provide education on OHS issues.[60]

5.55 A further problem identified by Professor Trevor Williams was that the reduction in the incidence of classic silicosis, coupled with a lack of focus on other potential health risks of exposure to fine dust such as silica, may have led to a degree of complacency by both employers and employees.[61]

Exposure standard for crystalline silica

5.56 As noted above, part of the Australian regulatory framework are national exposure standards which have been declared as guidance to assist in ensuring that workers are adequately protected from exposure to hazardous substances. In evidence there was much debate about the current national exposure standard for crystalline silica.

5.57 There has been a recommended exposure standard for quartz, cristobalite and tridymite since 1983-84 when the NHMRC set the standard at 0.2 mg/m^3 for quartz and 0.1 mg/m^3 for cristobalite and tridymite. The standard was reconsidered by the Exposure Standards Expert Working Group (ESEWG) in 1988. ESEWG recommended a reduction of the exposure standards to 0.1 mg/m^3 respirable fraction for quartz, silica (fused) and tripoli (as quartz). For cristobalite and tridymite, it was proposed that the exposure standard be set at 0.05 mg/m^3.

5.58 Following the release of the draft exposure standard for public comment, the ESEWG believed that a more thorough examination of the issue was warranted. An expert working group and reference group were established. A draft technical report was produced in 1996.[62]

5.59 Between 1988 and 1996, no formal national exposure standard for crystalline silica existed in Australia, although some mining and OHS authorities issued their own standard. Following release of the draft technical report in 1996, NOHSC reinstated the original 1983-84 NHMRC exposure standard.[63]

5.60 A review of the reinstated exposure standard was referred to the Hazardous Substances Sub Committee of NOHSC which agreed in 1998 to recommend an independent review of the crystalline silica exposure standard. In 2002 as part of the

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60 *Committee Hansard* 10.11.05, pp.12-13 (DEWR).

61 *Submission* 7, p.2 (Professor T Williams).

62 NOHSC, *Draft Technical Report on Crystalline Silica,* 1996, AGPS, Canberra.

63 NOHSC, *Regulation Impact Statement on the Proposed Amendments to the National Exposure Standards for Crystalline Silica*, October 2004, p.25.

review, the University of Western Australia published an independent review which recommended changes to the existing standards. This formed the main scientific documentation that supports the amendments to the national exposure standard.

5.61 Representations from interested parties to identify issues of concern and those requiring attention, were invited between August 2003 and November 2003. NOHSC established the tripartite Crystalline Silica Review Group to review representations received and relevant scientific literature published since the University of Western Australia review was finalised. NOHSC also organised industry workshops in conjunction with the ACCI to identify cost implications of the exposure standards recommended by NOHSC.

5.62 In October 2004, NOHSC published its *Regulation Impact statement on the Proposed Amendments to the National Exposure Standards for Crystalline Silica* which recommended a revised national exposure standard for quartz, cristobalite and tridymite of 0.1 mg/m^3. These came into effect in January 2005. NOHSC stated that the University of Western Australia report and peer reviews, reviews of more recent, comprehensive studies and experience in Western Australia 'indicate there would be significant improvements in health effects at occupational exposure standards of 0.1 mg/m^3 for all three forms of crystalline silica'. Further that:

> This approach is consistent with the agreed NOHSC objective to reduce adverse health outcomes associated with exposure to chemicals. Updating the exposure standard will enable industry and workers to align with international practice in terms of exposure control, and the related flow of benefits to the worker and the community. Government OHS objectives are supported by this action. As well as direct benefits, indirect benefits include establishment of standards against which future monitoring can take place.
>
> The amended NES [national exposure standard] will assist in bringing Australia into line with international exposure standards, including those set by Australia's major chemical trading partners, such as the USA and Europe.[64]

5.63 The national exposure standards for quartz, cristobalite and tridymite are each to be measured in accordance with the methodology in Australian Standard AS 2985-2004 Workplace Atmospheres – Method for sampling and gravimetric determination of respirable dust sets. AS 2985-2004 provides a method to assess personal exposure to respirable dust by sampling in a worker's breathing zone and is consistent with international measurement methodologies. DEWR noted that silica standards have been consistently adopted across jurisdictions.[65]

5.64 There was both support for the national exposure standard and evidence from others arguing that the exposure standard should be reduced further. The ACTU informed the Committee that it recommended a prohibition on the use of crystalline

64 NOHSC Regulatory Impact Statement, p.67.

65 *Submission* 11, p.4 (DEWR).

silica in any abrasive or other processes which could give rise to silica dust; that the jurisdictions adopt a 0.05 mg/m^3 exposure standard for all forms of crystalline silica; and that an action level of half the national exposure standard, that is 0.025 mg/m^3 be implemented.[66] The ACTU, as well as the CFMEU, noted that the American Conference of Governmental Industrial Hygienists (ACGIH) has recommended a standard of 0.05 mg/m^3, 'and it is also a precedent that has been set in some European countries...Ultimately, there is no safe exposure level to any form of carcinogen, so what we will be pushing for is the lowest possible exposure levels for workers in those industries that are exposed to that'.[67]

5.65 The Australian Manufacturing Workers Union (AMWU) and CFMEU also commented that opposition to lowering the standard had arisen from the mining industry.[68] The CFMEU stated that in the mining industry there are control measures, however in the construction industry or the brick, tile and pottery manufacturing industry 'there are nowhere near those control measures. Therefore they should be lowered to 0.05, as the rest of the world is, and it should be monitored to ensure that that is the level that we work at.'[69]

5.66 WHS also pointed to the varying Threshold Limit Values (TLVs) for respirable crystalline silica in other countries. In the USA, the Occupational Safety & Health Administration (OSHA) TLV is 0.1 mg/m^3. WHS commented that 'this TLV is based on outdated toxicological data from the 1960s'. The limit recommended by the ACGIH (0.05 mg/m^3) is equal to the recommended exposure limit imposed by the National Institute of Health (NIOSH) in 1974. In the UK, the maximum exposure limit is 0.3 mg/m^3. In the Netherlands it is 0.075 mg/m^3. WHA also noted that researchers have asserted that the OSHA standard of 0.1 mg/m^3 is not low enough to prevent silicosis and that the NIOSH standard of 0.05 mg/m^3 is not low enough to protect against silica-induced lung cancer. Other researchers (Verma et al) believe that some jurisdictions are locked into outdated standards because the process of changing them is too convoluted and difficult. The OSHA standard is one example. In addition, the current standards are based on the assumption that silica-induced lung cancer is only a risk to those with silicosis, and therefore preventing silicosis will prevent silica-induced lung cancer. This assumption is still being debated.[70]

5.67 Mr Anthony Jennings noted that the exposure standard recommended by the University of Western Australia was 'primarily to control the onset of cancer'. The Health and Safety Executive (HSE) in the UK have claimed that at a level of 0.1 mg/m^3 there is a 2.5 per cent likelihood of developing silicosis. At a level of

66 *Submission* 28, p.5 (ACTU).

67 *Committee Hansard* 29.09.05 (ACTU); see also *Committee Hansard* 30.9.05, p.23 (CFMEU).

68 *Submission* 15, Additional information p.2 (AMWU); *Committee Hansard* 30.9.05, p.27 (CFMEU).

69 *Committee Hansard* 30.9.05, p.27 (CFMEU).

70 *Submission* 26, p.4 (WHS).

0.3 mg/m^3 this becomes 20 per cent. Mr Jennings concluded 'so 0.1 seems to be a very sharp cut-off. After that it really takes off quite exponentially'. However, in the USA the ACGIH has reduced its exposure standard to 0.05 mg/m^3:

> What they are saying is a vast majority of cases may be undiagnosed in workers who are working at 0.1 milligrams per cubic metre but they are showing signs or symptoms that are detectable at autopsy. This is based on South African work, I believe, where miners are routinely autopsied. This was South African mine workers data. That is one thing but we are currently not sure if 0.1 milligram per cubic metre is an adequate standard.[71]

5.68 Mr Jennings went on to state that he supported a reduction in the exposure standard as NOHSC had reduced the standard to prevent lung cancer when 'in fact, silicosis precedes lung cancer, so I think at a level of 0.1 you are still going to see some cases of silicosis. You might not actually see the cancers but you will still see silicosis'.[72] The Committee notes that although Mr Jennings appeared on behalf of the AIOH, the AIOH has indicated its support for maintaining of the 0.1 mg/m^3 exposure standard based on:

- the very low incidence of silico-pneumoconiosis in Australia; and
- issues involved in accurately quantifying exposures at concentrations below 0.1 mg/m^3.[73]

5.69 CMPA also noted that the reduction to 0.1 mg/m^3 was low with businesses aiming to engineer their work environments so as to reduce dust and concurred that a further reduction of the exposure standard may be difficult to achieve:

> …of the people monitored to get under 0.05, I think that for over half of the sample it would be difficult to bring about that sort of outcome. Most of the people being monitored in these environments are wearing PPE anyway, but the reality is that I aim to engineer it out and most other owners of businesses aim to engineer it out, too. We have to get to a point where we can ask, 'Can we actually engineer it out?'[74]

5.70 CCAA also expressed its belief that the current exposure standard has been revised in line with all of the evidence that was put before NOHSC at the time and 'we believe that the appropriate outcome was reached'. CCAA commented that the process recognised the input of employers, employees and government. It concluded that:

> We believe that a further reduction to 0.1 milligrams, which occurred by the end of 2004, will effectively eliminate any risk in the industry provided those standards are adhered to. We do not believe that any further reduction

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71 *Committee Hansard* 29.9.05 p.24 (Mr Jennings).

72 *Committee Hansard* 29.9.05, p.27 (Mr Jennings).

73 *Submission* 20, Additional information, p.1 (AIOH).

74 *Committee Hansard* 29.9.05, p.17 (CMPA); see also p.20 (CMPA).

> in occupational exposure standards will provide any further benefit from a health perspective and we are particularly concerned that it would substantially increase cost both to industry directly, certainly, but also through government in the areas of compliance and the like.[75]

5.71 The Minerals Council of Australia also commented that it supported the adoption of the exposure standards 'based on scientific evidence'.[76]

5.72 Coal Services expressed the view that exposure standards should not be used as 'a pass:fail dividing line, but rather as a driver for workplace management of hazards and the imposition of various levels of controls…Compliance with an exposure standard can be considered as an outcome of a system of work that is in control.' There is a need to support the competing demands of practicability and acceptable risk within exposure standards:

> Practicability ensures that any exposure standard can reasonably be met. The level of acceptable risk is that level that the community finds acceptable for the amenity that the exposure to the risk provides. This approach is taken to guard against unnecessary health effects from industry hazards through inappropriately lax health and safety requirements or unworkably stringent regulation – both of which inevitably fail.[77]

5.73 Coal Services concluded that there was no need for a further amendment of the exposure standard:

> So I do not think it is a matter of reducing threshold levels downwards. I think the way to effectively manage this area is to have a number of subsidiary systems in place that regularly monitor and ensure that workers are not being exposed to unrealistically high levels of dust; and, where that is the case, appropriate action should be taken to make sure that employers rectify the problem and reduce the dust levels.[78]

5.74 DEWR stated that the national exposure standards for both crystalline silica and asbestos are 'now consistent with the majority of developed countries'.[79] It noted that there had been a number of reviews before the new exposure standard was implemented however the issue of measurement technique for silicosis 'was only resolved when the new Australian standard was issued early in 2004, which enabled us to make a meaningful recommendation on the exposure standard and how it should it measured'. DEWR agreed that the level in the USA at the moment set by ACGIH is 0.05 mg/m^3 but pointed out that this uses 'yet another sampling methodology, which is

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75 *Committee Hansard* 30.9.05, p.2 (CCAA).

76 *Committee Hansard* 10.11.05, p.15 (MCA).

77 *Submission* 21, p.6 (Coal Services).

78 *Committee Hansard* 30.9.05, p.52 (Coal Services).

79 *Committee Hansard* 10.11.05, p.1 (DEWR).

roughly equivalent to 0.07 milligrams per cubic metre using the Australian methodology. We have 0.1; they have roughly 0.07 on an equivalence basis.'[80]

5.75 In relation to the arguments for an exposure standard of 0.05 mg/m^3, DEWR commented that based on the evidence that was before the expert group it was felt that it was difficult at that stage to validate going to a 0.05 mg/m^3 exposure standard. The group considered the public comment, the recommendation from the expert researchers and the peer review of that and international research.[81]

Exposure standard for beryllium

5.76 At the present time the exposure standard for beryllium set by NOHSC is 0.002 mg/m^3 or 2.0 ug/m^3. Mr John Edwards noted that in 1999 the ACGIH had issued a Notice of Intended Change for the beryllium exposure standard to 0.2 ug/m^3. On 3 February 2006, the ACGIH voted to adopt their Notice of Intended Changes for Beryllium proposing that it include a TLV-TWA of 0.00005 mg/m^3 (inhalable), a TLV-STEL of 0.0002 mg/m^3 plus skin notations and an A1 carcinogenicity classification in their 2006 draft document.

5.77 Mr Edwards concluded that 'the current worker Beryllium Exposure Standard used by OHSA, NOHSC and OASCC are totally inappropriate and outdated'. Mr Edwards called for an urgent review of Beryllium national exposure standard.[82]

5.78 National Industrial Chemical Notification and Assessment Scheme (NICNAS) is reviewing data on beryllium and beryllium compounds. The review is being conducted by the Office of the Australian Safety and Compensation Commission (OASCC). This will form the basis of the occupational exposure standard for beryllium and beryllium compounds. The review of the exposure standard requires examination of health effects derived from both animal and human data, and exposure data on beryllium and beryllium compounds. NICNAS will also consider international beryllium reviews.

5.79 NICNAS has also published in the *Chemical Gazette* of 7 March 2006 a Voluntary Call for Information notice seeking use and exposure information from individuals, industry associations and government organisations who may have information on beryllium and beryllium compounds.[83]

Conclusions

5.80 All occupational lung disease is preventable by eliminating exposure through safe work practices, regular monitoring to ensure that dust exposure is minimised,

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80 *Committee Hansard* 10.11.05, p.10 (DEWR).

81 *Committee Hansard* 10.11.05, p.11 (DEWR).

82 *Submission* 45, p.3 (Mr J Edwards).

83 *Submission* 45, Additional information 21.3.06 (Mr J Edwards).

understanding the dangers of exposure and training of workers. In the past workers were exposed to unacceptable levels of dust because the regulatory regime did not adequately address these issues. The control of hazardous substances in workplaces, particularly crystalline silica, was not uniform across or within jurisdictions. The National Hazardous Substances Regulatory Framework has now been instituted to address these problems. The national model regulations have been adopted by all jurisdictions and a relatively consistent regulatory framework for the regulation of workplace chemicals now exists. Unions and industry have also played a significant role in reducing hazards through improved training of workers, improved management systems and the development and use of engineering controls and safety equipment.

5.81 While the regulatory regime has lead to significant reduction in health hazards, evidence was received that indicated that further improvements can be made. One problem highlighted in evidence is the timely introduction of changes to the declared standards and codes by all jurisdictions. The Committee considers that it is imperative that once the need to amend the regulatory regime is identified, the changes are implemented expeditiously. The Committee considers a responsive regulatory system will be imperative as workers are exposed to new hazards through emerging technologies such as nanotechnology. The Committee welcomes DEWR's commitment to seeking ways to improve implementation processes.

5.82 Of major concern in evidence was the poor enforcement of regulations in some jurisdictions and industries. It was noted that the hazards of toxic dust exposure are now well known and systems to control hazards and to monitor workers' exposure are readily available. However, it appears that not all workers enjoy the same level of protection. It was argued that this is due, in part, to the lack of enforcement of regulations by State and Territory agencies. In some instances, it appears that there is a lack of regulators. It also appears that inspections are only carried out if a complaint has been made rather than on a routine basis. It was argued that regulators are unwilling or unable to issue to the employer more than an improvement notice.

5.83 Regulators also appear to be hampered by the lack of trained specialists such as occupational hygienists. Occupational hygienists are able to assist in prosecutions through the recognition and assessment of workplace hazards. At the same time occupational hygienists are a valuable source of information for employers working to limit hazards.

5.84 It also appears that while there is much information available on risks of toxic dust exposure not all workers are able to access this information. The ACTU supported development of a national education campaign to alert the public and workers to the adverse health effects of toxic dust.

5.85 The Committee agrees that hazardous substances regulations must be enforced in all workplaces and information should be readily accessible to ensure that employers and employees know how to minimise hazards. The health of workers should not depend on whether they are employed by a large company operating in a

well organised industry with a well resourced industry association committed to worker safety. All workers should enjoy the same degree of protection and safety.

Recommendation 6

5.86 That the Australian Safety and Compensation Council undertake a national campaign to raise awareness of the hazards associated with toxic dust.

Recommendation 7

5.87 That the Minister for Employment and Workplace Relations raise with the Workplace Relations Ministers' Council the need to ensure enforcement of hazardous substance regulations and the need to enact nationally consistent standards in a more timely manner.

Recommendation 8

5.88 That the Australian Safety and Compensation Council, in conjunction with the Heads of Workplace Safety Authorities, consider mechanisms to increase the number of occupational hygienists being trained and employed by regulators.

5.89 In relation to evidence received on the crystalline silica exposure standard, the Committee notes the long time lag, some 10 years, for the review to be carried out and for the new exposure standard finalised. The Committee, while noting DEWR's comments in relation to issues with measurement technique, considers that this was an unacceptably long period for a review of a significant workplace hazard. The Committee anticipates that any further reviews will not take such a length of time to finalise.

5.90 The Committee is not in a position to comment on the arguments put forward that the standard should be lowered to 0.05 mg/m^3. However, the Committee notes the comments from Coal Services that the standard should be 'a driver for workplace management of hazards' and that an approach which guards against lax health and safety requirements but does not impose unworkably stringent regulation is desirable but the latter not always avoidable.