COMMONWEALTH OF AUSTRALIA

Official Committee Hansard

SENATE

COMMUNITY AFFAIRS REFERENCES COMMITTEE

Reference: Workplace exposure to toxic dust

THURSDAY, 29 SEPTEMBER 2005

MELBOURNE

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SENATE

COMMUNITY AFFAIRS REFERENCES COMMITTEE

Thursday, 29 September 2005

Members: Senator Moore *(Chair)*, Senator Humphries *(Deputy Chair)*, Senators Adams, Allison, Carol Brown and Polley

Participating members: Senators Abetz, Barnett, Bartlett, Mark Bishop, Bob Brown, George Campbell, Carr, Chapman, Colbeck, Coonan, Crossin, Eggleston, Chris Evans, Faulkner, Ferguson, Ferris, Fielding, Forshaw, Hurley, Lightfoot, Ludwig, Lundy, Mason, McGauran, Milne, Murray, Nettle, O'Brien, Parry, Payne, Siewert, Watson, Webber and Wong

Senators in attendance: Senators Adams, Allison, Carol Brown, Humphries, Moore and Polley

Terms of reference for the inquiry:

To inquire into and report on:

- the health impacts of workplace exposure to toxic dust including exposure to silica in sandblasting and other occupations;
- the adequacy and timeliness of regulation governing workplace exposure, safety precautions and the effectiveness of techniques used to assess airborne dust concentrations and toxicity;
- the extent to which employers and employees are informed of the risk of workplace dust inhalation;
- the availability of accurate diagnoses and medical services for those affected and the financial and social burden of such conditions;
- the availability of accurate records on the nature and extent of illness, disability and death, diagnosis, morbidity and treatment;
- access to compensation, limitations in seeking legal redress and alternative models of financial support for affected individuals and their families; and
- the potential of emerging technologies, including nanoparticles, to result in workplace related harm.

WITNESSES

Committee met at 9.00 am

PHELPS, Mr Robert Errol, Executive Director, GeneEthics Network

CHAIR (Senator Moore)—The Senate Community Affairs References Committee is commencing its inquiry into workplace exposure to toxic dust. This is the first public hearing. I welcome Mr Bob Phelps from GeneEthics Network. Information on parliamentary privilege and the protection of witnesses and evidence has been provided to you. The committee prefers the evidence to be heard in public, but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. The committee has before it your submission and I believe you have provided a supplementary submission this morning, Mr Phelps.

Mr Phelps—Correct, and I will speak to the supplementary, thank you.

CHAIR—I now invite you to make an opening presentation, to be followed by questions from the committee.

Mr Phelps—The industrial age has been upon us for two or three centuries now and we still do not seem to have fully realised that all new technologies and their products have environmental, health, social, ethical, economic and a variety of other impacts, and it is our contention that our society should be seeking ways, as a technological society, to exercise precaution so that the impacts of these technologies not be visited on our environment or on our populations. The impacts may be remote in time or place and they are usually denied or downplayed by the owners and researchers of the technology. It is very often hard, of course, to trace their origins because in a technological society there are so many impacts at work, so seeking compensation and redress is often long after the fact and difficult to pin down.

Today I would like to emphasise the need for fearless, impartial, independent, precautionary and scientific assessment, regulation and licensing of all new technologies, with the public interest as the paramount objective. The regulators should be grounded in the assumption that new technology not be commercialised unless the proponents can supply substantial evidence—and by that I mean scientific, not science based evidence—of minimal harm, and that they accept full liability and responsibility for the impacts of their technology in advance. We see too many of our regulators favouring the applicants and, essentially, licensing pollution. In our view that has to stop.

We need strong mechanisms for the prompt and timely disclosure of all evidence. I think particularly of cigarettes and asbestos as cases where the promoters of these technologies and their products have known very early that there were substantial deleterious impacts on the environment and they sought by all means possible to deny the public that knowledge and to not meet their responsibilities. I do not know for sure, but I dare say the same may have been true of the silicosis which your committee is now inquiring into. But I do not make any claims about that. What we are primarily interested in is reference g., which is about nanotechnologies and nanoparticles currently being researched and commercialised without any significant amount of health, safety or environmental research whatever.

We admit that there may be some benefits of technology; they are evident all around us. However, they are generally short term, they are inequitably distributed in society and they

rarely redress those long-term impacts that we see being visited on people and the environment, so there is a delinking there of those benefits and risks, particularly in the regulatory system. We see the regulators of new technologies such as gene technology, for example, not empowered to look at whether there are any benefits which would balance for society the undoubted risks, hazards and costs, and I think that a regulatory system must have a look seriously at whether there are significant benefits over and above the commercial benefit of the applicants, which at the moment appears to be taken as sufficient justification for going ahead with new technologies.

In your reference you are primarily referring to the workplace. We want to define the workplace very broadly so that it does take into account any open environment where people are working, which can include the home and other places—people's workshops at home and so on, as well—because, of course, the impacts of these technologies can be quite ubiquitous. In the nanotechnologies, for example, the definition needs to be very broadly drawn and is justified, I think, because just in the last week or two there has been a conference in Europe about the use of nanotechnology and nanoparticles in the food supply. We also see nanoparticles being used very widely in cosmetics. Indeed, L'Oreal is the holder of the largest number of patents on nanoparticles in the world at the moment. We can see that the future is that there will be more nanoparticles in sunscreens, in face creams and in other pharmaceutical and cosmetic applications even though nobody is yet aware of whether nanoparticles will penetrate the skin and, if they do, where they end up in the human biology.

Indeed, in the worst-case scenario we would say that nanoparticles could behave like other persistent chemicals and may accumulate who knows where. We have seen that persistent pollutants can end up, for example, in the Antarctic, where they have never been used, and accumulate in biological systems there, the subject of much negotiation and so on by the United Nations at the moment.

We are not making a technical submission, so we endorse and support the submission being made by Friends of the Earth Australia. We think that their recommendations should be taken on board by your committee and we commend them to you.

As to the regulatory aspects, which is what we are primarily interested in, we do ask the Senate committee to recommend, as Friends of the Earth does, an immediate national moratorium on all research, development, commercial production and sale of synthetic nanotechnologies, nanoparticles, other nanomaterials, and products that contain them, and that moratorium should remain in force, at a minimum, until the new laws and the regulatory system that we propose are developed and fully implemented. If, once that system is in place, these activities resume, then it is our view that a substantial portion of all budgets, particularly public budgets, should be allocated to scientific research into the environmental health and safety, public health, and worker health and safety aspects of these technologies, and we are suggesting a minimum of 25 per cent of all budgets be allocated to genuine scientific research in those areas. At the moment, as far as we can discern, of the several hundred million dollars that have been spent in Australia, zero has been spent on such safety research, and that is really very unsatisfactory.

We also suggest that the committee recommend—and we have discussed this with the industry and got a reasonably positive response—that government policy be developed for Australia to take on the role of the protector of the public health and safety and the environment in its

development of nanotechnologies if, indeed, this proceeds. There are some 40 or more countries at the moment spending a lot of money on these new technologies. As we said, there appears to be no health and safety research of any significance, and we think that Australia could carve out a very significant niche for itself by being the developer of policies, legal systems, scientific checks and balances and methodologies, testing regimes and so on that would do a great service to the world in the development not only of nanotechnology but, potentially, other harmful technologies as well, so that we would—as perhaps Scandinavia has in the past—be seen as a country that takes our environmental and public health responsibilities extremely seriously and does something about finding a way to ameliorate the impacts of technologies in our technological society; that we exercise genuine precaution.

Our experience has been mostly with gene technology, its regulation through the Office of the Gene Technology Regulator, Food Standards Australia New Zealand, the APVMA and others, and we have been seriously, profoundly disappointed at the shortcomings of these regulatory systems. We have tried to reflect on that. There is currently a review of the Gene Technology Act 2000 going on and we have tried to bring some of the insights that we have had from trying to deal with these monsters into our assessment of how a good, robust, responsive and effective regulatory system might be shaped and might function. I will very quickly, therefore, go to page 2 and just go through some of the highlights.

We want the regulatory system to be proactive, to be out there ensuring that good scientific research is done so that when an application arrives there is actually something robust to reflect on and to evaluate the new technological innovation. We recommend a one stop shop and we are saying that it is time that Australia had an Office of New Technology Assessment and Regulation and that its first charter be to look at nanotechnology, but there would be others.

We do feel that ONTAR needs to be the responsibility of all governments and that it be set up under a COAG agreement, similar but different to the agreement developed for the regulation of gene technology which we are familiar with; that the health ministers form the new technologies ministerial council; that its functions be to register, assess, license and monitor all aspects of dealings with new technologies and that it be proactive in this.

It is our view that the US Office of Technology Assessment, which was very active through the eighties but was disbanded in 1995, would be a great model for the assessment function of this new regulatory authority. The papers developed by the Office of Technology Assessment are still available on the web. It is still highly regarded by many in the scientific community in the USA, and we think that it would give good guidance about how one could go about this. One of its unique features, of course, was that it was directly responsible to congress, that it was not answerable to any particular ministry, and it may be that we need a similar approach here.

Reflecting on the shortcomings of current regulatory systems, I go on to ask your committee to recommend to government that the new Office of New Technology Assessment and Regulation should assess both the benefits and the risks of technology so that some balance can be arrived at, rather than, as intimated before, simply accepting that if an applicant makes a submission or requests a licence then that is prima facie sufficient evidence that there would be benefits. It is not good enough. The organisation needs to take a public interest view so that the public interest can be in the balance as well.

The organisation needs to be scientific. The problem is, I think, that our systems at the moment claim to be science based but, when we actually look at what they do and what they assess, we find that much of the so-called scientific data and evidence that is submitted to regulators in support of applications for licensing is data that is generated for commercial, not scientific, purposes.

For example, in the case of gene technology we have small-scale animal experiments done in the early nineties for the registration of genetically engineered organisms in the USA now being used to justify applications in 2005 to our Office of Gene Technology Regulator, even though there has been 10 years of commercial and further scientific research done in the meantime, and these experiments—or trials, as they are called; not experiments—were generally on up to 10 animals for, generally, two weeks or a month. They were on things like chicken breast meat weight. This is not evidence of safety for human consumption. Similarly, with new technologies we need genuinely scientific research.

It needs to be independent. It needs to be peer reviewed. It needs to be replicated or at least replicable, because most of these trials could not be replicated. It needs to be strictly experimental in design, and we mean that it be double blind, as in a clinical trial: that there be random sampling, experimental and control groups, and that proper statistics be used. And it needs to be of sufficient scope, scale and duration that the data gives good, robust indications of safety not just in the short term but in the long term. We cannot extrapolate from a two-week mouse study to the consumption of products by human beings in the billions in the marketplace. It is not good enough any more that this is the basis for approving new technologies and their products.

We need to sweep away hiding behind commercial-in-confidence. Data, if it is in support of an application, must be in the public domain. Independent experts need access in order to critically evaluate the basis of applications for the commercialisation of new technologies, and at the moment that is quite impossible because of the intrusion of so-called commercial-in-confidence considerations and their very liberal application by our regulators.

There must be strict liability, again, from the outset. We believe that the owners and users of new technology must be fully liable and responsible for the behaviour and performance of their products, and this I think would exercise their minds rather than imagining that they can put off the fateful day if they know something bad about their technology and can then get away with simply paying the public off with some money. We take Vioxx as a recent example.

The precautionary principle needs to be thoroughly in all pieces of legislation on the environment and public health. It is now in international treaties, it is in many environmental pieces of legislation, and we need to be bringing it into public health, occupational health and safety and other legislation—and applying it rigorously; not in the rather weak and retrograde way that our regulators currently apply it. And we need genuine participation by all interested sections of our community. That is ultimately the democratic check and balance on the public's acceptance of new technology and whether or not its impacts are going to be minimised.

To summarise, there are impacts from all new technologies. It is time that we got serious about making sure that in another 30 years time there is not another round robin of nanotechnologies

and all the other strands of technology development—cell phones, IT et cetera—that are going to be visited on unaware users in our society.

CHAIR—Thank you, Mr Phelps. We will now go to questions.

Senator HUMPHRIES—Mr Phelps, can you indicate what your understanding is of the problems that might presently be emerging as being associated with nanotechnology? You mention in your submission that there are already 40 nations heavily involved in research and so forth, even in production to do with nanotechnology, and that many companies already have substantial investments. Presumably, at this stage there would be some emerging scientific evidence of particular issues that were not so much theoretical or potential but actual problems emerging with the use of nanotechnology. Can you point us to any of those problems?

Mr Phelps—I would like to leave that to my colleagues at Friends of the Earth, who are making a submission to you later in the day. My focus here—to augment their submission—has been primarily on what we think needs to be done about regulation. There is evidence, and they will present it. I cannot pretend to be very familiar with it. Our organisation works principally on genetic engineering technologies, about which I could tell you something.

Senator HUMPHRIES—Are there any countries in the world that adopt the precautionary approach—that is, a ban on any development or research until there is a regulatory framework in place? Are there any countries that actually have that regime in place at the moment?

Mr Phelps—Not to my knowledge. However, I believe 47 countries is the figure that I have seen on the web that are currently engaged in this research—many in Asia, Europe and, of course, North America.

Senator HUMPHRIES—You say that there should be a minimum of 25 per cent of the budget of nanotechnology researchers which is dedicated to experiments in relation to worker and public environmental health and safety. Do you have any estimate of the present percentage of expenditure on nanotechnology development that is being devoted to those areas?

Mr Phelps—I attended a conference 12 months ago here in Melbourne on the commercialisation of nanotechnologies and, in response to my question, the answer was zero in Europe, Britain and Australia. There is nothing mandated. There is some small research being done but, in our view, a substantial amount—and we have suggested a quarter, though it is really quite an arbitrary figure—should be expended on finding out in advance what the impacts are likely to be. The behaviour of each kind of nanoparticle, though it will be different from larger particles of the same substance, will vary, and so there is a substantial amount of research that needs to be done to understand where these things bioaccumulate, if they do, and how mobile they are in the environment.

Senator HUMPHRIES—My concern with the position that you put is that to assign 25 per cent of present expenditure levels, say, on this kind of precautionary research which, to be blunt about it, does not immediately have a commercial benefit to those people conducting this research, would substantially reduce the amount being expended in the area of research here. To impose that limit on Australian industry when others overseas have no such restriction would

presumably be a major impediment to research and development in nanotechnology in Australia, wouldn't it?

Mr Phelps—I do not agree. I think that we need a regulatory system which requires scientific evidence, and if you come with your application to the regulator and you have no scientific evidence of safety then the regulator, from our point of view, should say no, so that there clearly is a commercial benefit in being able to get your product licensed. That is the first thing and I think it is a threshold issue that you need that evidence. If you do not do it, where else are you going to get the good evidence that is needed? We cannot rely on somebody else always to find out what the problems are likely to be or, in 30 years time, to pick up the pieces and pay the price. That is not what society wants to do any more.

Secondly, our proposal that Australia carve out for itself a niche where it actually develops the methodologies, the scientific basis for, in the best of all possible worlds, finding that nanotechnology is actually safe by doing good experimentation, and having that product, that safety assurance, to sell to the world is also a commercial benefit. We are not suggesting that they do this for nothing.

Senator HUMPHRIES—If you are a multinational company that has the chance of doing this research here or overseas and you have this 25 per cent limit here, why would you do it here?

Mr Phelps—We have to make the burden on these companies likely to be so great by applying strict liability in the first place so that it is in their interests. Take the asbestos case. We have a company now that is continuing to trade but has a huge burden of responsibilities to the victims of asbestos, and that is happening worldwide, so it is in people's commercial interest not to harm workers and the public and the environment in my view, and that is the triple bottom line. That is the deal that corporations get for being allowed to continue producing new technologies which we know are going to have impacts. Those impacts must be minimised and the companies must take responsibility and they must do it, from now on, beforehand, not after the fact.

Senator POLLEY—Thank you very much for your submission. You recommend an extensive new regulatory regime for nanotechnologies. Have you put this to the government and, if so, what was their response?

Mr Phelps—We have not put it to the government. Your committee's hearings are the first opportunity we have had to formally put forward the view that there does need to be such an organisation, such a regulatory body. It is something that we will be picking up. We are making the proposal not only about nanotechnology but about the many other innovations that are occurring. To reiterate our view, a precautionary, proactive advance system needs to be developed. We have thought this for many years. The opportunities to put this forward have been few, although we did advance it, as I recollect it, in 1992 when we made a submission to a House committee on gene technology, so perhaps we have made it one time before.

Senator POLLEY—How would this body address the issues of occupational health and safety in the more traditional industries where workers are already being exposed to nanoparticles, such as in the welding industry? How is it going to address those health and safety

issues? What are the benefits that having another regulatory body is going to have on actually protecting people's health?

Mr Phelps—I think the hazards of new technologies are not necessarily essentially different from the kinds of hazards that we have seen arising from industrial activities in the past, though in some respects they may be new. In the ordinary course of business, I think that better evidence about how we manage industries generally to protect people's health and safety would arise out of a regulatory regime that took a more omnibus view and a more genuinely scientific view about health criteria and standards. Standards, quality assurance systems, scientific benchmarks need to be set a priori by our regulators. They should no longer be accepting ad hoc evidence from applicants about the activities or the products that they are regulating as evidence of safety. That is our core point, and this would also extend to include direct worker health and safety issues.

A lot is already known. It needs to be codified and enforced. That is where we are at the moment. We have our regulators at the moment basing their decisions not on scientific evidence but on so-called science based data, and they are not proactive in enforcing the law. They are set up really, I would say, to license pollution and license impacts, and that approach I think is archaic and needs to be completely revolutionised.

Senator ADAMS—Mr Phelps, thank you again for your submission. Being a canola grower in my other life, I note here that you have made some comments about the Office of the Gene Technology Regulator and the way they obtain their evidence and what they do with it. You are saying here that they are using:

> ... a so-called case-by-case, science-based approach which is used to legitimise ad hoc, unscientific data production, evidence gathering and assessment processes, often based on unfounded assumptions rather than facts. For instance, the regulators assume that canola will not outcross to weedy relatives, despite the compelling evidence which shows it can and does occur.

Can you expand a little on the evidence that has actually been obtained there?

Mr Phelps—Yes, I can. The most recent piece of evidence in relation to the outcrossing of canola comes from England, from their farm-scale field trials which were conducted over three years and concluded in 2004, and a recent new analysis shows that canola or, as they call it in England, rape, will outcross to wild radish and charlock. In giving unrestricted commercial approval for the release of genetically engineered varieties of canola in Australia, the regulator concluded that there was a negligible risk and that it was of no consequence. It is now clear from the British evidence that, although it is at low rates, the outcrossing is of significance and it would amount to systematically conferring herbicide tolerance on weeds which are already costing our nation somewhere between $3.5 billion and $5 billion a year to manage, depending on which figure you take.

We do not need more weeds. We particularly do not need weeds that are resistant to broad-spectrum herbicides like Roundup or the Bayer product Liberty, and the British evidence suggests that this would happen. There is plenty of other evidence about outcrossings as well, particularly from North America, which I could make available to you if you wish.

Senator ADAMS—Yes, I would like it. Thank you very much. You are quite critical about occupational health and safety concerns. Could you describe some of the occupational health and safety concerns of both already developed technologies and those under development. I am looking for more practical sorts of things.

Mr Phelps—Your current reference is about sandblasting and silicosis. Anyone who remembers from their youth seeing sandblasting operations going on can remember the amount of dust created in those and can now, I think, fully appreciate and imagine the consequences for the people who inhaled that dust. We have a worldwide epidemic of asbestosis, mesothelioma, from the use of asbestos in all sorts of domestic and commercial situations and the handling of that material—the mining of that material too.

Nanoparticles, which is reference g. of your inquiry, are largely unresearched at this point. Our regulators are assuming that nano sized particles of minerals and chemicals that are already approved by them are going to behave in the same way as the approved substances. It is now becoming clear that those assumptions are incorrect and yet there is no mechanism for ensuring that the nano sized particles of those substances are re-evaluated, that new scientific data be generated and available for assessment when there are applications for its use. The use of nanoparticles in cosmetics, for example, logically ought to be regulated by the Therapeutic Goods Administration but, as it is cosmetics, is not regulated by anybody.

I think you as a committee are confronted with a situation where, on the one hand, you are trying to deal with the long-ago impacts which are now showing up as chronic impacts on human health, but I put it to you all that you have an opportunity here, too, to look to the future and hopefully to recommend measures to government which will ameliorate the prospect of another generation of people being impacted by inhaled particles, and if you could get an Office of New Technology Assessment and Regulation actually accepted and in place you have the potential, I think, to minimise the impacts of electromagnetic radiation and all sorts of other industrial and domestic uses of technology and its products for the future as well.

That is a hopeful scenario. I know that it is difficult. It is a big request of government to think about doing something more than three years in the future and to say, 'Thirty years from now we have a chance to save the health and lives and to improve the quality of life of large cohorts of our community,' but I think that is what you should be doing if you are ready to not only try to mend the mess and the terrible impacts of past technologies but to also do something great for the future.

Senator ADAMS—But companies are not exposing their people to these things. Sandblasting is still going on, but the safety precautions certainly are being adhered to, and it is the same with renovations and asbestos and the amount of effort that is put in to ensure that no-one can suffer what has happened in the past. There are some terrific things going on in that area.

Mr Phelps—All I can say to you is that, as far as I can see, it is not happening in relation to nanoparticles—your reference g.—and we hope that you will be able to recommend mechanisms to ensure that we get behaviour as good as the companies are exhibiting now in relation to asbestos and sandblasting in advance of the impacts on human health and the environment. We need a precautionary, proactive, beforehand mechanism, not something that simply tries to give

people some money and ease their wounds and their distress and their loss of quality of life in 30 years or 50 years time.

We can do better as a society, and I am really putting it to your committee that you have an opportunity to recommend to government some mechanisms that would try to achieve those things in advance: more money for health and safety and environmental research, and a proactive approach to putting in place the safety mechanisms beforehand, not afterwards.

I come back to my first-told assumption: we must assume that all technologies, whatever they are, in their creation or their use are going to have impacts, and the challenge is to see what those impacts are, whether or not they are acceptable, the scale of them, and whether they affect just the users or the whole society. We see with the persistent organic pollutants, for example, as mentioned, that the whole world is polluted—that we and every living system and every living organism on this planet are adversely and negatively affected by the past use of those things and their ubiquitous distribution in the environment of the whole planet.

Senator CAROL BROWN—You mention in your submission that Australian governments have spent hundreds of millions of dollars on nanotechnology research. Do you have a precise figure on this or a state by state breakdown?

Mr Phelps—I do not, and I have found it difficult to get exact figures. But again, harking back to the commercialisation conference here in Melbourne that I went to, the figures being talked about were in the hundreds of millions of dollars and the figure for health and safety and environmental research was zero. The participants said that the federal government had not invested heavily in nanotechnology and this the states and territories regretted, but they were also eager that the federal government play a role—unfortunately, a role in ensuring research and development support and in commercialisation—and evinced indifference, or no interest I would say, to our view in the conference that health and safety, particularly occupational health and safety, should be a serious issue to be looked at as well.

Senator CAROL BROWN—Are you aware of any international research that has occurred in the health and safety sphere of nanotechnology?

Mr Phelps—I am aware, but I cannot give you chapter and verse. There are sites around. The ETC group site, for example, has a substantial amount of links and information about nanotechnology. There is some research being done, agreed, but it is small, unsystematic and underfunded. We believe that this kind of research should become the central core of the process of researching, developing and commercialising all technologies in the future. Society cannot continue to marginalise research and development on these core issues and then expect taxpayers or bankrupt companies, when these things hit the wall and large numbers of people are harmed, to go around picking up the pieces. It does not make any rational sense because it is possible, if we do the right kind of scientific research, to actually understand what the likely impacts are.

What troubles the companies and government, I am sure, is that if that evidence comes out and the technology gets the thumbs down, they may not be able to go ahead with their pet technology. From society's point of view, I would say that there are a multitude of failed technologies. There are failed technologies all over the place every day; things that are

commercialised and just fall flat and nobody wants to buy them. That is the thing. The decisions at the moment are all commercial.

Technologies prosper if they are successful commercial products. We say they should not be allowed to prosper only on commercial grounds. They also have to prosper because they contribute something useful to society, because they are genuinely safe and the benefits outweigh the risks, costs and hazards. At the moment, we have no measures for these things. There is no process for getting a grip in advance on whether a technology is going to be acceptable.

Senator CAROL BROWN—You are advocating a one stop shop regulatory system. Under this model, could there be limited procedural separation between registration and monitoring and do you think that is really desirable?

Mr Phelps—Sorry, I do not quite discern the question.

Senator CAROL BROWN—You are recommending that they register at this one stop shop model and that it is also monitored from that same place. Do you think that that is a really desirable position?

Mr Phelps—No, I do not. Our experience with the Office of the Gene Technology Regulator is that the monitoring has not been delinked from their very sympathetic views to the technology, so perhaps not. If it were possible to make the monitoring independent, that would be great. We have seen the role of state governments—say, in the case of gene technology—where section 21 of the act in fact empowers state governments to have moratoria, and that has been a very good check and balance.

We would be recommending in our ONTAR model on the new technologies that the states and territories would have reserve powers so that they could commission more monitoring, perhaps more scientific data and impose moratoria, as they have in the case of genetically engineered canola. Even though the federal regulator gave unrestricted licences, we fully support those moratoria. We think the states have done the right thing and certainly having integrated into any system of omnibus regulation checks and balances of that kind would be very positive.

Senator CAROL BROWN—Thank you.

Senator ALLISON—I have a general question, Mr Phelps, about the realistic likelihood that what you are calling for is going to happen and also a question about whether, in some ways, we need to allow nanotechnology to develop in order to know what it is that we need to be afraid of, if you understand. If you look at the Friends of the Earth's submission to this committee on the subject, there are a lot of unknowns about the characteristics of nanotechnology, nanoparticles, and a lot of unknowns about what it might do to humans and others in the environment.

In a way, we are not going to get to answer those questions, surely, until the industry itself has reached some maturity. Wouldn't it be better to simply put in place some protective measures to do what we do know can be done to protect people, rather than call for a moratorium, which is not likely to get up anyway?

Mr Phelps—No, I do not agree with you at all. I think that is business as usual. That is what we have always done in the past and we simply accept those knowledge vacuums. In the face of ignorance, technologies are commercialised and then a large uncontrolled and unproductive experiment is visited on society. That is what we have done with these other technologies in the past that we know impact human health and the environment.

What we are saying is that we ought to change. We need a sea change in our whole thinking about how we approach the research and development of technologies. Integrated into their development must be precaution and must be a very substantial amount of good, genuinely scientific data and information. When I say that, I am talking about experimentation, like clinical trials. We do it for pharmaceuticals. There is no logical reason, given their known impacts, why we should not do it for other technologies as well, where there are double-blind experiments, where there are animal and then human clinical trials even, to establish that something is pretty likely to be safe before we put it out there.

There are snafus like Vioxx and thalidomide, even with the toughest and most stringent regime that we can get. We cannot continue to go along with other technologies like the nanoparticles and simply accept that we do not know what the long-term health implications or impacts are likely to be, where we can have animal experiments, as mentioned, for a couple of weeks—feeding studies. We do not do any intergenerational animal trialling at all. We find regulators, when confronted with negative evidence like enlarged livers in the case of a particular variety of genetically engineered corn, simply say, 'Well, the experiment didn't quite go as it should have,' and yet they are willing to license that without saying, 'The experiment didn't work; go back and do the experiment again.' This is inexplicable and it is unforgivable that our current regulators are—

Senator ALLISON—You are talking about gene technology now.

Mr Phelps—In that case, I am, yes. But other regulators are also essentially saying, 'We don't know enough, but we'll allow this product to be commercialised anyway on the basis that government and/or industry has invested a large amount of money in it and needs to get their investment back.' I do not think that society should continue to run like that. We need a much tougher paradigm. We need something like drug research and development and the steps of clinical trialling to commercialisation—an orderly process to be applied, perhaps more quickly but certainly as stringently, to other technologies as well. We need a change of philosophical view about these things. Really the cruncher is that the beneficiaries very rarely suffer the consequences. It is other sections of society that suffer and it just exacerbates the inequalities in an already, in many ways, not very just society. I think we should do it, if we can. Don't say it's too hard, please!

CHAIR—Thank you, Mr Phelps. Is there anything you want to say before you conclude your evidence?

Mr Phelps—Thank you very much for your attention and for the questions, and please do it!

CHAIR—Thank you very much.

Mr Phelps—Thank you.

[9.55 am]

KERR, Mr Ronald Fredrick, Honorary Chief Executive Officer, Construction Material Processors Association Inc.

NATOLI, Mr Basil Anthony, Member of Management Committee, Construction Material Processors Association Inc.

WILLIAMS, Mr Donald Allan, Consultant, Construction Material Processors Association Inc.

CHAIR—Welcome. Do you have any comments to make on the capacity in which you appear?

Mr Williams—I am advising Mr Kerr's organisation.

CHAIR—Thank you. Information on parliamentary privilege and the protection of witnesses and evidence has been provided to you. You have seen that?

Mr Kerr—Yes.

CHAIR—The committee prefers evidence to be heard in public, but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. The committee has before it your submission, which we have numbered, cleverly, No. 4. I now invite you to make an opening presentation and then there will be questions from members of the committee.

Mr Kerr—Before I start, I would like to identify that when I left school I moved into the quarrying industry. I worked as a driller. I moved through to management. I moved into ownership of our own business, and I now take that role on, as well as supporting other private owners of businesses in achieving an outcome.

I stand here today as an owner and on behalf of the Construction Material Processors Association, representing small and medium earth resource businesses and some recycling operations throughout the state—in our eyes, an essential service. Our members are continually striving to improve their businesses, be it through protecting and better educating their employees, to investing in best practice fixed and mobile capital.

When looking at the exposure to toxic dust and, more practically, silica, we were aware that earth resources is only one industry of many affected by this issue. We also note that, although our members' businesses have potentially high exposures to silica dust, historically our members are not aware of any silica related deaths. Over the last 20 years, as an industry we have proactively moved our workers and our workplaces away from a dusty work environment. This is as a result of numerous regulatory obligations, employee and employer expectations and needs, community concerns, commercial imperatives and the increased knowledge of the industry and its regulators.

One avenue the CMPA has pursued in assisting members in moving forward has been in acting as an educational liaison and advocate in supporting education and training within the industry. This has consisted of participating in the review of the Extractive Industry Training Package as a member of the steering committee, working in partnership with its members, its regulator, public and private training providers and others in developing a vocational training culture and bringing about dignity within the work force with respect to skill identification and developing the knowledge components of units within the same training package in partnership with regulator, employee and suppliers.

This proactive approach has been, at one end of the spectrum, the inclusion of a unit 'Supervise dust and noise control' in certificate IV and, at the other, the organisation and coordination of training providers for training of over 620 people in certificate II in 'Work safely', which is one of the specific units in certificate II, which brings attention to types of dust exposures, one of the many issues. This training has occurred with the assistance of the Workplace English Language and Literacy funding and has consistently found language and literacy issues of around 30 per cent. We deeply appreciate the support from the federal government in this area.

In the CMPA's original submission to NOHSC concerns were expressed that the revised TWA was set without a national approach to data collection. This concern was identified during the CMPA's development of its costing model in its submission as to the lack of available information regarding national resource types and tonnages. It would seem obvious that before standards are set we need to be able to identify resource type, exposure level and the health effects in a collaborative national database.

Ideally, the CMPA would like to see the following actions. Accuracy of silica filter measurements: the accuracy and limit of detection of the test method is a significant fraction of the proposed limits. The industry needs to know how to handle the result variations. Taxation support: that there is support given to the industry in establishing the effective life of assets which assist in safety and environmental best practice outcomes and that this is identified within the taxation ruling TR2000/18. Industry education: that the collection, publication and distribution of information and training material on the issue is managed more effectively by the federal government through partnership with industry and their state providers or regulators. Identification of toxic dusts: that the earth resource industry, incorporating recycling operators, has a nationally recognised procedure for assessing the required practices to be undertaken when identifying resources that may have toxic dust. Regular monitoring: that the regulators more closely monitor those sites which are identified as having toxic dust to further ensure that the health and wellbeing of those on site is being managed to best practice. This does not mean we are seeking more regulation.

Training regulators: that a concerted effort is made by those government agencies with skills to offer to train the regulators from the top down who are involved in managing sites identified as having toxic dust exposure and that those trained regulators are available, participate and pass on this knowledge to those they regulate. National registers: that there is a means by which sites identified with toxic dust risks and reported medical incidents are maintained in a national database and that this database is used as a referral base for future toxic dust reviews.

On a personal note, as an owner and representative of other owners in the industry, I firstly look at the cost-benefit of any activity being undertaken. Any selected path must improve the health of the employees and add value to the business. Secondly, any compliance requirement must be attainable and meaningful. At this point in time I do not believe that the revised standard will offer cost-benefit to our businesses. I thank you for the chance to address you and extend an invitation to the members here: if you wish to see any sites around Victoria, we can arrange that any time.

CHAIR—Thank you, Mr Kerr. Mr Natoli or Mr Williams, do you wish to add anything at this stage?

Mr Natoli—My background is that I am a geologist. I have been working both in the industry and as a consultant to the industry for just on 35 years now. Quartz, or crystalline silica, is a material that is present in probably the majority of quarry sites and construction material sites around Australia and it is something we have to deal with on a regular basis. The extent varies from state to state. I think in South Australia—Adelaide in particular—the majority of the quarries are probably dealing in quartzite, which is a very high quartz content material. Darwin also has a number of quartzite quarries which are supplying the majority of construction materials to Darwin.

You are dealing with material that is very abundant. It is also a very durable mineral component, which is why we find it as our primary beach sand material around Australia. On the west coast it is also used in concrete; it is a component of construction sands in the production of concrete. Our industry is involved in processing and producing materials which become used widely throughout society and, as a result of this, we are responsible for the placement of these materials and we would like to see them being used responsibly.

The other aspect that we need to come to terms with to some degree is the vast number of kilometres of unsealed roads around Australia which are either surfaced with these materials, or with just the natural soil material which also has quartz as a component. That is something which will have an impact in terms of people that are living close to these roads and in terms of the suppliers of the materials that go onto these roads. That is an aspect of the crystalline silica that needs to be taken into account in these deliberations. That is my view.

CHAIR—Thank you, Mr Natoli. Mr Williams, do you want to add anything at this stage?

Mr Williams—My background is X-ray crystallography, but a long analysis background as well, and I have gradually moved back to analysing the samples myself. Some of those samples have been silica filters, so I am quite aware of the techniques used and have actually developed one myself.

I detect in the industry, after a very brief time, that they are concerned with understanding the actual results that people give them. All analytical techniques are prone to error; there is always some error component. Usually there is a standard deviation, or plus or minus. A standard deviation represents more closely the real situation because that is a probability of that result being correct. It may be, for instance, 0.04 with a standard deviation of 0.02, meaning there is a certain probability of it being 0.06 or 0.01 or zero. The further away you are, the greater the probability that it is not going to occur at that level. I think the industry does not really

understand how to interpret results properly. Where you have a level of 0.1 milligrams per cubic metre—

CHAIR—Mr Williams, you are particularly talking about the construction materials and processing industry in your evidence, or are you saying industry-wide? I want to clear that up at this stage.

Mr Williams—It is a general problem of any filter technique, yes.

CHAIR—And when you say 'the industry' it is the wider industry?

Mr Williams—Wider, yes. The point I am trying to make is that those people in the industry need to understand what the real measure means. In the standards there is a little bit of neglect of that area. An example would make it clearer.

They get a measure of, say, 0.04 for total mineral content in a sample and then they get a measure of 0.04 for silica content. If the standard deviation happens to be 0.02, there is a strong probability that there is almost no silica in that, but they will get a 100 per cent answer by just looking at the result. I think that needs to be clarified somehow and I am not quite sure how to do it—it is quite a complex question, actually—in any documentation.

CHAIR—Thank you.

Senator HUMPHRIES—Which types of businesses are covered by your association? They obviously include people who quarry materials. What other sorts of businesses would be covered by your organisation?

Mr Kerr—You have regional, outer metropolitan and metropolitan businesses, so you would have gravel deposits; you might have hard rock in hornsfels through to basalts; you might have sand deposits.

Senator HUMPHRIES—This is the extraction of these materials, is it?

Mr Kerr—Yes. You have masonry operators who extract out of areas like Harcourt through to people down to Horsham that might be moving granite sands out of deposits. Down in the valley you might have people that have basalts and basalt deposits. It is a very wide spectrum of people. If you are looking at where these materials go, you are probably looking at some words that we would use. You would say 'base'. Anything that is under a carpark, road or airport is base material. It is normally crushed rocks, dusts or products like that. A filter medium would be from the sands and also a range of crushed materials that might be used in the dam filter zone—in the inside of a wall—through to a septic system.

You could look at erosion around water deposits, drinking water, watercourses and rivers. You could look at shelter, where you have clays for roofing through to glass for windows. You could look at casements, where the crushed products have been put around gas and electrical systems in the ground. You could look at wearing courses, which are the aggregates that are used for spray sealing on all national roads. You could look at matrix-type materials, particularly aggregates and sands used in concretes, asphalts and other types of materials which are added

and blended. You could look at landscaping and general gardening, from private dwellings to public infrastructure.

Senator HUMPHRIES—Are you saying that the companies who both extract those materials from the ground and process them to use in those sorts of examples that you are talking about are all members of your association or could be members of your association?

Mr Kerr—The people we represent are the people that process the parts that people would actually use and/or where it is used. We look after those that own businesses that process the materials.

Senator HUMPHRIES—You would not be involved in businesses that manufacture products from those extractions, for example?

Mr Kerr—In the matrix area in concrete, you have people that own concrete plants or may own asphalt plants. It is a small step. You have some type of vertical integration but you are not really into glass manufacturing/ownership.

Senator HUMPHRIES—Fair enough! The last point you made in your oral submission, Mr Kerr, was something about, 'The revised standard will not offer a cost benefit to our members.' Can you expand on that point. I did not quite understand it.

Mr Kerr—As an owner of a business and representing people and listening to their concerns, having a piece of paper that goes from 0.2 down to 0.1 has no value. What has value is when people are improving their standards across the board. On visual inspection by a regulator, by standards set by industry, that they are improving across the board, you will see an improvement in the outcome that you are trying to achieve. Coming down to 0.1 was significantly difficult to come to grips with when we had data going back many years and were investing large amounts of money in trying to contain, suppress and collect. To get under 0.1 is one thing, but the ideal is to aim at 50 per cent under 0.1 as a decision-making process.

As an example, we had a site that had a reasonable collection of dust on an operator. It was not at exposure level at all but it was a choice thing to invest money into capital to remove that operator from that area and put in technology and automation to lower that risk. We were able to identify that on the previous standard. Lowering the standard has not given us any more impetus to do anything, because we now have data that is saying our samples are too low.

The discrepancies are there, but we have the last set of results where we are now saying we have 100 per cent in the respirable silica of the sample; but the sample is at 0.04 and historically never before have we had anything above, say, 30 per cent on a silica sample. We are now getting to a point where we are so low that we are getting confused with what we have to do with the data. We paid $2,000 for that test. We will now have to get that test done again and we will have to get it checked again, so that is $4,000. We are at a point now where we are saying, 'Yes, it is a bit difficult.'

Senator HUMPHRIES—There is a proposal from some of the submissions to us that that standard be lowered further to 0.05 milligrams per cubic metre. I assume that the problem would be worse from your point of view. What would that mean? Would you have to get more

expensive tests to be able to establish what the level of dust in the atmosphere was? How would you deal with that lower standard?

Mr Kerr—I cannot answer on what would happen to the testing—whether we have the most recent and best practice testing method they used. Don would have to comment on that. In our submission to NOHSC originally, we were privileged to be given some information by a provider who nominated that there was a reasonable number of people who were being monitored who could have been above the previous level and, 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?'

Senator HUMPHRIES—Thank you.

Senator CAROL BROWN—In your written submission and your introductory remarks this morning you talked about education and training. What sort of uptake have you had for the training packages and in what locations have these initiatives been run?

Mr Kerr—This has been a very difficult challenge for the association. Our role as an advocate came about because we could not get support from the state. Except for the funding from the federal system, all obligations are upon us to try to create this environment. We have difficulty in the competency based training system by itself, and we have had to pour money into developing the knowledge component to underpin the providers who take on board the competency based assessment process. That one unit alone—the 'Work safely' unit—has had a profound effect upon the work forces.

I was at a particular state minister's office with an owner of a business and the minister asked the question, 'What effect has the 'Work safely' unit had upon your work force?' The answer was, 'An absolute profound effect upon the attitude of the work force.' So we recognise that training is one method whereby industry may be able to participate and stay in the game. If it does not take on board and educate its work force, it is not going to be able to manage all its obligations. This is a perfect case in point, where the best managers are having difficulty in understanding how to use this type of information. Does that answer your question?

Senator CAROL BROWN—I was interested in the numbers that have taken up the training and completed it compared to the numbers that work in the industry.

Mr Kerr—Of those we have under our umbrella, I think there are probably 1,700 employees. I think 620 have already finished the 'Work safely' unit. It is not as simple as uptake and completion. We have to have a knowledge resource to assist in competency based training. That is not there. We have to develop that, because that has been missing. We have to then create the environment where an employee wishes to move forward and improve themselves, and that is a very slow process.

We do not want to be in a position where we tick and flick and issue people with a certificate III inside five minutes. We are quite happy to see this as a five-year process. When you say

'uptake', I would say that anybody who has taken up 'Work safely' as the first unit inside the three and a half to four years we have been doing it—that is a pretty profound uptake on the starting numbers. Of those that have applied, I think nearly 97 per cent have finished the unit. It is carried out over two days, plus external homework that they have to bring back. In this situation, the provider is Box Hill TAFE. It is a pretty good uptake.

Senator CAROL BROWN—Thank you.

Senator ALLISON—I have a couple of points for clarification. Is Workplace Australia the regulator you referred to in your opening remarks?

Mr Kerr—In our situation, there is a memorandum of understanding between the DPI and Worksafe. DPI is our regulator. Over the last two years they have become very proactive in regard to silica, as it has become an issue. I am not criticising what is happening there but, as a provider of services to members, we are getting a number of calls for help along the lines of 'Where do I go? What do I do? What do I need to look for?' We are spending a lot of time directing people to providers—and maybe that is our role—but we are doing this voluntarily, so I think the regulator should have some partnership in this as well.

Senator ALLISON—You imply a criticism about the regulator by saying that they need more training and that you look for greater levels of monitoring by the regulator. Is that correct? Does that mean they are not doing it at the present time?

Mr Kerr—In the monitoring area, because there is no national database, there may not be a state database. That tells us that there is no consistent and across-the-board approach on this issue. With respect to the knowledge and skill that the regulator should have, there is no doubt that the questions we are having to answer, such as, 'Where do I go to get a petrological analysis?' from somebody out the back of Horsham or wherever, should be able to be taken up by regulators in those areas.

Senator ALLISON—But they are not able to at present. Is that what you are saying?

Mr Kerr—We tend to be doing the work, so I would say that is obvious. On the other side, something like this—which is, 'Working safely with earth resources prevention in inhalation of dust containing crystalline silica'—is a sheet that we made up about four to six months ago. We sent draft copies of that to WorkCover, DPI, NOHSC, industry participants and even legal parties. Most came back. One did not come back and it was not the regulator; the regulator came back. That importance of participation and the bringing down of the knowledge into the field—I am questioning why every individual should have to make this up themselves.

Senator ALLISON—Does your industry not use occupational hygienists? They are our next witnesses and they have suggested that part of the problem in this country is that it tends to be the bigger industries that use them. Small industries, like your Horsham operation, do not and that is a risk.

Mr Kerr—For small businesses generating $4,000 or $5,000 a month profit and spending $2,000 or $3,000 just on a sample of testing, and then having the additional obligation of

thousands and thousands of dollars per item, something like this might cost $1,500. It is what is called logics.

CHAIR—Mr Kerr, would you like to table that document? You have held it up a couple of times.

Mr Kerr—That is no problem.

CHAIR—Is the committee happy to receive the document?

Senator ALLISON—Yes.

CHAIR—Thank you, Mr Kerr. Just leave that with Christine before you go.

Senator ALLISON—It strikes me that there are lots of legal risks associated with you producing material and a whole range of things that you do. Are you attracted to the New South Wales dust control board approach, which is a no-fault system of compensation for people? Do you think Victoria ought to have the same system?

Mr Kerr—I cannot pass comment on that. I do not have any knowledge of that. I specialise in stuff on Victoria. I am not an interstate person.

Senator ALLISON—Let me ask it another way. How significant is the risk of compensation claims against your members? You said you sent that document off to your legals. Did they ever give you advice that this is not wise or that you would be at risk in future years of compensation claims?

Mr Kerr—We have not had any evidence of concern in this area. What we are trying to do is help people through the labyrinths of trials that are presently upon them. In taking on board a general approach of approaching all persons, we felt that was a more reasonable way to ensure we got the best result. You can go to an individual hygienist and say, 'Can you please do this for me?' He has a limited world: his world. By putting it into a broader spectrum we are hoping, in good faith, that we come out with a more general and useable piece of information. We tend to run that approach even with the collection of training resource material. We would put it to regulator, to provider, to supplier, to employee, and then build that knowledge from all of those parties' input, not a specific person or worry about a specific point of litigation.

Senator ALLISON—Thank you.

Senator ADAMS—How is your industry coping with skills shortages?

CHAIR—I am sure that is linked in there somewhere, Senator.

Senator ADAMS—Yes.

CHAIR—That is another page, Mr Kerr.

Mr Kerr—Okay. I did not see that page. There are a couple of problems here. If a business wishes to live, it must bring in new employees regularly. It must put in place a process whereby it is bringing young people in, and it may bring people in from other sectors that are moving out from an office job and want to move into another environment. It must offer a methodology whereby that person can gain the skills. Probably the way in which we are looking at it now is with a mentor and then an external trainer and internal support. It is creating pressures on the payments made to employees, in that we are having to adjust upwards to retain those skills within our work force. Other sectors which are probably busy at this time, like mining and constructions, are drawing upon our work force.

Most owners struggle with the obligation of putting a new person on because of the obligations they pick up. It is a fear that many have and it is not just about the issue of whether the person is going to be able to do the job or whether the owner will have enough work or can find enough money at Christmas time to pay for that person; it is all of this obligation that is being continually added on top of an employer to look after an employee to the point where, even if a person has a problem at home, the employer has to know about it before the employee starts work in the morning. If the employer does not know about it and the employee has an accident, the employer can be held responsible because it did not ask about problems.

Senator ADAMS—Just to carry on from that, are there short cuts because of skill shortages? Do you have cowboys in your industry who are not playing the game and are really blaming skill shortages for the fact that they just can't cope?

Mr Kerr—There are always going to be some people who may speed on the road, so there will probably always be some people who take short cuts. For those people we represent and those industries that I have contact with, being the public companies that are in our sector as well, most of the employees are long-term employees. Once they get into our industry they are there for life. It is probably a privilege, in most of their eyes. It is very secure. I do not see any evidence of people being placed into roles beyond their means but sometimes it probably does happen. It is a very dangerous thing to do as an owner or a manager because the obligations that are placed upon you then are going to make life very miserable if something goes wrong.

CHAIR—That is related to some of Senator Allison's earlier questions, Mr Kerr. That is the end of the questioning. Do any of you gentlemen wish to make a final comment?

Mr Natoli—I would like to say one thing. I was speaking to a former state manager of a quarrying company in South Australia who said they did have a silicosis fund in South Australia for quite a number of years. That fund was eventually closed down because there were so few claims made upon it. I think it was in the early eighties they closed the fund down. It is an issue that we do deal with these high quartz or high silica materials.

The evidence about the incidence of injury or long-term health effects being caused by this exposure is fairly sporadic. It probably needs a more consistent and broader approach to bring that data together and review it to see at what level the critical exposure limits could be justified. The limits we are looking at now are very low; the reduction to 0.1 is certainly very low. As Don said, we are getting into the realms of both the sampling and the testing accuracy. We are getting maybe a bit too idealistic in terms of what we can achieve.

CHAIR—Mr Williams, are you wanting to have a final comment?

Mr Williams—I agree that the limits of testing are being approached pretty closely at the moment.

CHAIR—That is the point you made earlier about the levels.

Mr Williams—Yes.

CHAIR—Thank you. We may take up your offer, Mr Kerr, in terms of visits if we can fit that into our timetable. It would be good to see the practical side of the industry you discuss. Hansard will probably want to check some of the terms you used but can I just clarify DPI? When you say 'DPI', which department is that?

Mr Kerr—Department of Primary Industries.

CHAIR—That is the Victoria Department of Primary Industries.

Mr Kerr—Yes.

CHAIR—Thank you very much. We will now have a short break.

Proceedings suspended from 10.35 am to 10.45 am

JENNINGS, Mr Anthony Martin, Chair, Senate Inquiry Working Group, Australian Institute of Occupational Hygienists Inc.

CHAIR—I welcome Mr Anthony Jennings from the Australian Institute of Occupational Hygienists. Do you have any comments to make on the capacity in which you appear?

Mr Jennings—My name is Anthony Martin Jennings but I prefer to be called Martin. I am here on behalf of the Australian Institute of Occupational Hygienists and I chaired a working party to prepare a response to this committee.

CHAIR—We noticed there was a special working party and we do appreciate that. Information on parliamentary privilege and the protection of witnesses and evidence has been provided to you, I trust.

Mr Jennings—Yes.

CHAIR—The committee prefers evidence to be held in public but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. We have before us your submission and I now invite you to make an opening statement. Then we will turn to questions from the committee.

Mr Jennings—Thank you. I have been an occupational hygienist for 25 years. I trained in the United Kingdom and have worked in defence and the chemical industry with ICI Australia, and in the regulatory sector with WorkSafe, Western Australia. For the last five years or so I have been working for myself as a consultant. Occupational hygiene is the science of the recognition, assessment and control of hazards in the workplace that can affect people's health. As well as dusts we are interested in things like noise, radiation and asbestos. These sorts of hazards have long-term impacts on people's health.

The AIOH is the professional body which represents hygienists. There are about 450 members. We do have a number of overseas members as well, but they are predominantly in Australia. Many are consultants like me. Others are employed in government, in the private sector or in academic institutions. We have different levels of membership, from full to fellow, provisional and associate, representing people's varying levels of expertise or experience. Our interest, the prevention of occupational illness through dust related diseases, is very much something that our members are involved in. We were very keen to put in a submission to the inquiry.

Looking at our submission, we make the point that has been well documented throughout history—it is not just a whimsical piece there on historical considerations. It really is there to make the point that silica related disease has been known for hundreds of years in miners and people like stonemasons; people who are working with silica. The Americans, through the American Conference of Governmental Industrial Hygienists, the ACGIH, were the first to introduce an exposure standard which at that time was calculated in millions of particles per cubic foot—mppcf. This was then converted later on to a gravimetric measurement, which was milligrams per cubic metre, and that gravimetric measurement is the standard we use nowadays.

I do not see that I need to go into the health impacts of silicosis. That is probably more appropriate coming from someone who is medically qualified. We are more interested in the work environment. I would like to talk a little bit about some more recent research that has come to light, particularly from the UK. The Health and Safety Executive, the HSE, has been very interested in the effects of silica. In 2003 the UK HSE published a report on the variable toxicity of silica. At the obvious level, nobody gets silicosis from being on a beach where you are surrounded by silica, which is essentially sand. But people who are working in mines or sandblasting can develop silicosis, and very quickly. You can get acute silicosis in a matter of weeks.

There is this aspect of toxicity, and toxicity varies from the form of crystalline silica. Things like cristobalite and quartz are the more toxic forms and these are more reactive than some other forms. The second is the presence of other minerals in conjunction with the quartz. We know that for some reason the presence of aluminium and iron seems to reduce the cytotoxic effects of silica. As a consequence you do not see coalminers developing lung cancer. They will develop other dust related diseases, such as pneumoconiosis, but somehow these minerals that are present in the coal seem to have a protective impact. You do not see coalminers developing lung cancer; other miners, yes, but there is something protective about coal. They think it is aluminium or iron.

The particle number, the size and the surface area seem to be critical. If there is an increase in surface area of the particle, if the particle is smaller, the surface area relative to the total mass increases and that seems to have an impact on the toxicity. By far the most critical feature seems to be the difference between freshly fractured and aged surfaces on the silica particle. For example, if we have silica that has been smashed as part of the work process, as in sandblasting, the particle is covered with silanol radicals. These are very reactive particles and these seem to make the silica particularly toxic. This toxicity can be very quickly reduced by aging, and aging can be increased by wetting or exposure to the atmosphere.

In a mine site, the fellows who are actually blasting or drilling will be exposed to freshly fractured silica, whereas the drivers who are driving up the road and creating clouds of dust with their vehicles are exposed to aged silica. You would not expect that second group to develop silicosis to the same extent that the first group would. That impact of freshly fractured surfaces seems to be quite important. That is something that has come out in only the last 10 years or so.

The UK HSE has suggested that perhaps we should be focusing on tasks where workers are exposed to freshly fractured particles. This would be people involved in drilling, cutting, blasting, sanding, milling, grinding, polishing or fettling—these sorts of occupations where these freshly fractured particles are being generated. That is one thing that has been suggested but they have also admitted that it would be very difficult to implement different standards for different tasks or having two sets of workers in one enterprise being controlled by two standards.

In Australia we recently introduced a standard of 0.1 milligrams per cubic metre, following a review by some workers at the University of Western Australia, de Klerk and Musk, in about 2002 or 2003. They recommended that the standard be reduced to 0.1 from 0.2 to primarily control the onset of cancer. They estimated that the risk of developing cancer was quite acceptable at an exposure level of 0.1.

The HSE in the UK has come up with some similar figures. They have looked at silicosis, as opposed to cancer, and they have claimed that at a level of 0.1 milligrams per cubic metre there is a 2.5 per cent likelihood of developing silicosis. At a level of 0.3 this becomes 20 per cent, so 0.1 seems to be a very sharp cut-off. After that it really takes off quite exponentially. At a level of 0.04 milligrams per cubic metre the likelihood drops to 0.5 per cent as opposed to 2.5 at 0.1, and at half again—0.02—we are looking at a likelihood of 0.25 per cent.

As for the Americans, perhaps I can refer you to page 14 of my AIOH submission. At the bottom paragraph there I have said the ACGIH have reduced their exposure standard by a factor of two from 0.1, which is the standard we are using, down to 0.05. They claim that fibrosis is undetected by chest X-ray at these sorts of levels in a number of workers, or workers may not themselves recognise that they have silicosis. The figures we have seen to date are based on people presenting themselves to doctors. They know they are pretty crook when they are coughing and their breathing is restricted. They are getting pretty gross symptoms and these are the figures that we are counting.

This study, particularly the one by Hnizdo in 1993, shows that a large percentage have been shown to have a moderate or greater degree of silicosis at autopsy that were not detected radiologically. 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 mineworkers data. That is one thing but we are currently not sure if 0.1 milligram per cubic metre is an adequate standard.

Moving on to the second item, the adequacy of regulation, we feel that the current occupational health and safety legislation in the WA mines safety legislation is adequate. There are provisions there for the control of hazards affecting people's health. However, the departments are not resourced to go out to the workplaces and assess dust levels, so this is not happening. The second point is it is very difficult to prosecute an employer for an event that may have happened 20 years ago and in very many cases cannot be specifically tied to a workplace exposure. The current legislative approach may not be appropriate for these sorts of diseases. Perhaps there should be more emphasis on prevention in the workplace. Once this disease has happened, it cannot be cured.

Once people are seriously ill, all that they can have is palliative care. The emphasis needs to be very much on prevention, and therefore the regulatory approach should be controlling dust in the workplace rather than looking back at previous exposures and trying to prosecute employers.

In relation to the third question relating to the extent to which employers and employees are informed of the risk of workplace dust inhalation, we are aware of material such as that published by WorkCover, *How to prevent silicosis.* In WA, my state, WorkSafe has a very good web site that is available to the public. Manufacturers produce information on labels and material safety data sheets as a minimum standard. From my own background in the chemical industry, I know that a lot of chemical producers now have their own product stewardship schemes which go beyond this minimum standard.

I will give you an example of one which very much impressed me in America some years ago. ICI Americas have a product stewardship scheme for a very toxic product. If you come to me

wanting to buy this product, firstly the product steward will visit your premises, he will inspect them and determine whether you have the appropriate set-up to be able to handle the product. He will then give you a report and tell you, 'You must do this, that and the other,' before he will sell this product to you.

When the product arrives, the product steward arrives with it and he will then train your workers appropriately. He will organise any air monitoring, health surveillance or biological monitoring. He will supervise your workplace set-up to make sure that your ventilation is adequate and that you can handle the product and dispose of it appropriately. This is a sort of cradle to grave approach, where ICI Americas supervise every step of that life cycle of the product.

We also have a concern that there is an amount of emotion tied up in these sorts of issues. Asbestos is a particularly good example. Silica has been held out to be the new asbestos. We do not quite agree with that. Silica has always been known to be a hazard. We also feel that there is a lot of emotion tied up with asbestos. People say one fibre is enough to kill you. We know that is not the case, but it sounds good.

There are also parties out there who have a commercial interest in creating a bit of misinformation on hazards. We have given a particular example of third party material safety data sheet providers. These are companies that will provide material safety data sheets independently of manufacturers or suppliers. It is sold on the basis that, 'You cannot believe everything you read on a supplier's material safety data sheet. Read ours, it is independent.' However, we found that often the hazards are overstated. I have given an example of a domestic soap powder which is claimed to cause pneumoconiosis, asthma, cancer, nasal ulceration and perforation of the nasal septum.

CHAIR—Does it say what you have to do with it to get those conditions, Mr Jennings?

Mr Jennings—I think you would have to snort it, actually.

CHAIR—That is what I was just thinking myself, but I do not know. Can you refer us to the particular data sheet that you mention in your submission? In relation to this particular soap powder that is alleged to have these qualities, can you refer the committee to where that is stated so we can see the context?

Mr Jennings—Yes. I can provide you with a copy, if you like, at a later date.

CHAIR—That would be very useful, thank you.

Mr Jennings—It is provided by a Perth based company called Risk Management Technologies.

CHAIR—We would like to see that.

Mr Jennings—That is the issue about communication. We were able to make some comment on the other four dot points but perhaps not as effectively. We assist, for example, in helping physicians arrive at diagnoses, in that we can provide information on workers' work

environments—the extent of the dustiness or the nature of the dust. I have given the example of the Health Watch study in the petroleum industry, where physicians, hygienists and epidemiologists are looking at issues such as leukemia in benzene-exposed workers.

We did not feel we could comment on questions 5 and 6. On emerging technologies, such as nanoparticles, we feel that, by definition, this is a great unknown. The material we have seen from the US and the UK indicates that they are in a similar position. They do not really understand too much about the problem at the moment, but we feel that it is here and we have to live with it. The onus really has to be on the researchers, the developers, the manufacturers and the suppliers to make sure that they have some sort of product stewardship scheme of their own to provide information to users to make sure that their products are able to be used safely and that there is no damage to the community or the environment from any releases, for example. That is everything I would like to say by way of introduction, thank you very much.

CHAIR—Thank you, Mr Jennings.

Senator HUMPHRIES—You obviously are familiar with what is going on in a number of sectors in Australia where there are still practices which have the potential to generate silica exposure. You refer, for example, to the study produced in 2001 based on a blitz of Queensland abrasive blasting operations. Going to that study for a moment, can we assume that the 2001 study was done in the same year as the blitz or was the blitz done earlier than that?

Mr Jennings—It was probably done in the preceding 12 months.

Senator HUMPHRIES—So it is more or less contemporary?

Mr Jennings—It is, yes.

Senator HUMPHRIES—It showed that about four per cent of the operations that were audited were using dry sand, and I assume that dry sand poses a quite serious hazard.

Mr Jennings—That is right.

Senator HUMPHRIES—Do you have any impression about whether that result was atypical or whether you might find that result replicated in other parts of Australia?

Mr Jennings—I have to say that I was surprised reading that. I would have thought that most industries now were using substitutes such as garnet. If that is indicative of industry, and there are still people out there using sand, that is a concern.

Senator HUMPHRIES—But you would not be surprised if there were others out there using unsafe products in that way?

Mr Jennings—I think in this day and age I would be somewhat surprised, yes.

Senator HUMPHRIES—You comment on the difficulty in prosecuting people who use unsafe practices in that way and you point out that the very long latency period makes it very hard to bring prosecutions. I suppose there are two issues for our inquiry. One is to establish

whether or not the existing standards are sufficient to properly protect workers now and into the future and the other is what mechanisms we ought to put in place, if any, to deal with the health problems of those who have been affected by bad practices in the past. On the first of those issues, I think you said that you had problems with the 0.1 milligram per cubic metre standard that is now in place.

Mr Jennings—Yes.

Senator HUMPHRIES—Would you support the submission of some people to this inquiry that we should lower that to 0.05?

Mr Jennings—Yes, I would. That is based on the prevention of silicosis. In Australia we reduced the standard to 0.1 to prevent lung cancer. 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.

Senator HUMPHRIES—Previous witnesses to our inquiry suggested that, at that level, effectively monitoring many workplaces—what standard of atmospheric dust, or silica dust, there is—is so difficult that it becomes prohibitively expensive for many businesses to work out whether they are in breach of the standard or not. What would you say to those sorts of businesses?

Mr Jennings—The National Occupational Health and Safety Commission has produced guidelines on assessment of hazardous substances. I think they quote the example of a petrol filling station. One petrol filling station is much the same as any other, so you could do one generic risk assessment of an operation like that and then apply that across the board to all filling stations. I think you could do that for sandblasting, for example. I came in halfway through, so I am not quite sure what industry the previous witnesses were from, but it may be possible to do generic risk assessments and then make them available to the entire industry.

Senator HUMPHRIES—But that would not help eliminate the cowboys in the industry, would it, who are using dry sand, for example, if they were assured that they were okay because the average person is using appropriate particulates in their blasting operations, but you have some who are using dry sand or inappropriate materials? How are you going to stop them from exceeding that level if you have lowered it to 0.05?

Mr Jennings—To be honest, I am not sure. I know, for example, that asbestos has been controlled over the last 20 years, by initially prohibiting the use of blue asbestos. That stopped being used after about 1980. By 1985 there was a prohibition on all asbestos in, say, structural products like HardiFlex. Then at the end of 2003 there was a complete prohibition placed on all asbestos. With one or two exemptions—for example, defence, where a 20-year old battleship may be fitted with some asbestos gaskets—there should now be no asbestos products anywhere in Australia. There is no import; there is no manufacture. It may be possible to do that with certain products. Asbestos is perhaps easy to regulate. I am not sure that you could do that with silica, but one way is just stopping the supply.

Senator HUMPHRIES—On that second question of what to do about people who have been affected in the past by unsafe practices, you pointed out the difficulty of prosecuting, which is a

very well-taken point. What do you think of the idea of establishing an industry funded scheme that would provide for medical treatment and assessment of those people who worked in an industry, who now have a lung related problem but who may not be in a position, for the reasons you have mentioned, to sue civilly a former employer?

Mr Jennings—I am not really sure I could comment on that.

Senator HUMPHRIES—How many occupational hygienists are there in Australia at the moment?

Mr Jennings—There are about 450 members of the AIOH and a few others who also practise but choose not to be members. To be a recognised practising occupational hygienist you now have to be certified, a COH. Certificates are issued through the AIOH.

Senator HUMPHRIES—Thank you.

Senator POLLEY—I think your summary was that we need to prevent rather than react to diseases of the past. In terms of government agencies employing hygienists, those numbers are declining. What educational institutions provide the training and should the government be looking at scholarships to attract more people into the industry?

Mr Jennings—That is a good point. At the moment, the only university I am aware of that teaches occupational hygiene is Deakin University in Geelong. They offer a graduate diploma, which can be upgraded to a masters degree. A number of universities will include a module in occupational hygiene as part of an occupational health and safety course, for example. Many hygienists—perhaps more of my vintage—went to the old Commonwealth Institute of Health in Sydney, which then became part of the national commission, and did a 10-week course. That gave them some basic grounding.

The AIOH also offers a course. We offer a week-long course and we train technicians, people who are trained adequately to be able to go out and take measurements but can only take it so far, without perhaps doing the interpretation and the more academic aspects of the work.

Senator POLLEY—You also commented that, although there is legislation in place, those who actually monitor and regulate the industry are under-resourced. Can you give an example of where that has been a problem or how we can resolve that?

Mr Jennings—Yes. In one previous occupation I was the manager for occupational hygiene with the West Australian Department of Occupational Health, Safety and Welfare. At that time in my branch there were 12 hygienists and noise officers and part of their role in the early to mid-nineties was to go out and assist industry. We would provide information; we would do some monitoring; we would consult. But then the attitude changed, in that we needed to become more of a regulator. That was helping to implement the early occupational health and safety regulations. After that initial five-year period, it was felt that that stage had been adequately done and it was then necessary to let industry itself do the running. If it wanted a hygienist, it could find a consultant. It was more appropriate for government to either provide information or to regulate. I think they now have two or three hygienists in WA and two noise officers.

There has not been a prosecution that I am aware of involving dust exposures. We have tried to take other prosecutions—for example, passive smoking at a casino—and it has been very difficult to establish, primarily because there just are not the resources. In that case we were taking on the tobacco industry, who are very well resourced.

Senator POLLEY—There has been an issue that I think has contributed, in terms of my concerns with occupational health and safety. A large, very secure industry in Tasmania did an audit of their employees and found that there were people that had been working there for between 15 and 25 years that had very low literacy skills, and they are dealing with hazardous material. Have you found this to be a problem in your research?

Mr Jennings—Yes. That is adequately addressed in the larger industries such as the larger mining companies that I worked in in WA. In some of the smaller industries—the small to medium enterprises, less than 50 employees, often less than 10—that is a real issue. They do not have adequate information provided to any of their employees, let alone those with literacy or English as second language difficulties.

Senator POLLEY—It goes to the problem, too, of under-resourcing.

Senator ALLISON—You do not make any recommendations in your submission, Mr Jennings, apart from perhaps the suggestion that the regulator be better resourced to do monitoring. Is that the case? Are you happy with the status quo apart from that issue?

Mr Jennings—That is a good point. I think we should have perhaps made some black-and-white recommendations. One would be that we would welcome some examination of the current standard of 0.1 milligrams per cubic metre. We feel that there are issues surrounding legislation and that there should be more emphasis perhaps on prevention and how this can be regulated. There are issues of provision of information—or misinformation. We feel that there is a strong need to keep a watching brief on emerging technologies as well.

Senator ALLISON—You do not support a moratorium on nanotechnology, for instance? You think a watching brief is appropriate?

Mr Jennings—I think so. We recognise that nanotechnology is here now and we cannot halt progress, but we can progress safely.

Senator ALLISON—We might have halted progress on asbestos had we known about the implications.

Mr Jennings—That is very true, but someone made a very good point to me: that at the time that these people were being exposed at places like Wittenoom, no laws were actually broken. It is just that the legislation at the time was not adequate.

Senator ALLISON—Indeed. The witnesses we have a little later suggest that the statute of limitations needs to be changed to take account of the very long latency period for dust diseases. Do you agree with that? Would that have assisted with efforts you might have made—if you have made them—on behalf of groups to take civil action against employers that failed to put protections in place?

Mr Jennings—It may assist in the future. For example, there are now requirements for companies to keep records of people's exposure in the workplace and these records have to be kept for a minimum of 30 years. If the business ceases to exist for any reason, the records then have to be passed on to the state regulator, such as the Commissioner for WorkSafe Western Australia. Records are now starting to be kept and, in that sort of situation where you can extend the statute of limitations for 30 years or more, we would then have records that would be useful in that sort of situation.

Senator ALLISON—You would support changes to the law in that respect?

Mr Jennings—Yes.

Senator ALLISON—An issue which is raised in one of the submissions has to do with asbestos in paint, which is an issue where paint is being removed. Is this an area that you have paid much attention to in your work? Do we know which paint contains asbestos and what happens when it is removed, sanded, or whatever one does with old paint?

Mr Jennings—I cannot say I am overly familiar with paint. I have seen it in other matrices, such as flooring vinyl, and I know WorkSafe in Western Australia actually prosecuted a company that was removing asbestos floor tiles by grinding them down—sanding them down. That was quite a significant prosecution because it resulted in a change to the act relating to collection of samples. That was done about 10 years ago.

Senator ALLISON—A number of witnesses and submissions talk about differences state to state. For instance, New South Wales has a dust control board which operates on a no-fault basis and provides compensation. Is that the way to go for every state? Should we have a national approach like that, in your view? Other submissions talk about Victoria taking up standards some four years after it was known that silicosis was a problem. Are we moving towards a better, nationally consistent approach, and should we? Perhaps you can comment.

Mr Jennings—We do need a national approach, for sure, and the National Occupational Health and Safety Commission has played a valuable role in that regard up till now. I am not sure what is going to happen in the future. But as regards a Dust Diseases Board, I am not sure. I do not think I can comment on that. I do not have a suitable background to be able to comment on that.

Senator ADAMS—You did state in your submission that you wanted more emphasis on prevention. Can you give us a few very practical statements on the main issues for prevention.

Mr Jennings—Yes. I think we are all aware of people being exposed to dust. I can walk out onto a construction site anywhere in the city here and probably see some construction worker cutting a brick with a brick saw and being swathed in clouds of dust, yet the chances are that nothing will be done. He may not be using any water to control the dust or he may not be wearing a respirator, and it is probably the case that he would not be visited by a WorkCover inspector, so nothing will happen. How you can prevent that sort of situation arising—and it happens all the time every day—I do not know. There are workplaces where people are exposed to dust, and probably freshly fractured silica as well, which is the real concern. I do not know if that answers your question.

Senator ADAMS—No, it does not really.

Mr Jennings—It doesn't?

Senator ADAMS—No. You were saying that you wanted more emphasis on prevention, so I thought that you probably had a suite of ways to do that in the workplace or things that the workplace can put in place as a standard.

Mr Jennings—I think most employers would welcome information. My experience at WorkSafe was that they would like information and advice. The employees wanted more prosecution and regulation. I think between the two—the carrot and the stick—you might be able to encourage employers to monitor the dust levels in their workplace and to ensure they have adequate controls, but it does need to be enforced as well. Inspectors do need to visit more workplaces to take dust samples, to look at the sorts of controls they have in place and to check that they are abiding by the rules. I do not think that is happening at the moment.

Senator CAROL BROWN—I hope I do not put words in your mouth here. I am quoting from an article from the *Canberra Times* in which you are quoted as saying, about nanoparticles, 'We've no means of measuring exposure and we're not even sure we've got the adequate controls to limit the exposure' and that the conventional methods do not work.

Mr Jennings—Yes. I feel we have a 21st century technology there but we are still thinking in 20th century terms about how we collect dust samples, how we measure them and how we use things like respirators and ventilation or enclosures to contain the dust. These nanoparticles are so fine that we cannot use existing monitoring methods to assess how much exposure a worker is receiving. If we do tell workers to wear a respirator, we have no real means of telling if the respirator can protect them, because if these particles are so fine they will just go straight through any filter or around the side of the face seal. We do not know if ventilation is going to capture dusts containing nanoparticles. We really are in the dark at the moment about the hazards and the means of controlling the hazards, if there are any, from nanotechnology.

Senator CAROL BROWN—You have been asked questions about employment of hygienists in the government and in your submission you have said that the employment of occupational hygienists in government employment has deteriorated over the last decade. What do you believe is the reason that this has occurred and what effect has it had on the industry?

Mr Jennings—I think in a couple of legislations there has been a change in emphasis. I am best qualified to speak about WorkSafe WA. The change there probably occurred around 1996 when we swung away from having a general inspectorate which was supported by specialists such as nurses, doctors, hygienists and ergonomists, to an industry focused approach, so instead of having this general inspectorate we now had teams which would focus on the manufacturing sector or agriculture or transport and everyone in that team had to focus on every aspect of manufacturing or transport or agriculture. There was not deemed to be the same need for specialists. We all had to become more industry focused. That was one reason.

Another reason is—and, I think, quite rightly so—the jurisdictions focus on trauma related workplace fatalities: electrocutions, falls from heights. Dust related diseases do not attract the same level of attention that perhaps those fatalities do.

CHAIR—Mr Jennings, it was acknowledged earlier that you had not provided specific recommendations. We would welcome the working group that your group has put together to come up with some recommendations and submit those to the committee. There has been considerable work done by your organisation and it would be a shame if we did not get some clear indications from your group about what you would like to see happen, so please submit that to the secretariat.

Mr Jennings—We would be happy to.

CHAIR—Following on from Senator Adams's question, in your submission on page 11 you talk about the role of hygienists, the kinds of things they do, and their giving advice about the implementation of various control procedures. Is there a list or something that you can point to to follow up on Senator Adams's questions about specific things that can be put in place in various industries to protect workers? I know that your organisation has those things. I just think that your answer did not follow through sufficiently to point that out.

Mr Jennings—I am sorry, you referred to page 11?

CHAIR—Page 11 of your submission, particularly under 'Silicosis'. Your submission ranges across a few different types of dust, but under 'Silicosis' it talks about hygienists being involved in assisting, and the other kinds of things that hygienists do such as setting exposure standards, ongoing monitoring and the implementation of various control procedures. I do not want to put words in Senator Adams's mouth, but I think she was seeking specific things in the workplace that can be done to actually protect workers, and I do not think that there was effective communication in terms of getting back to us, because I know that your group has been involved in providing information across a range of industries about things that can be put in place to make it safer.

Mr Jennings—Yes.

CHAIR—And your answer did not address that effectively.

Mr Jennings—If we were to then, say, look at publishing material, look at different occupations, the exposures, the likely levels of exposure and the sorts of controls—

CHAIR—Yes, and things that can be done. We know that already we have training courses, we have equipment that people use, we have all those kinds of things, which I know your organisation and your various practitioners have been involved in, but you did not get that across effectively in your answer and I think, to be fair, you should be able to have the opportunity to let us know. Point to data sheets, web sites and things where your organisation members have done that work. Would that be fair, Senator Adams?

Senator ADAMS—Yes, it would. I am looking more or less for guidelines, because I am involved with the mining resource sector and have a son working in that area and I know what they are doing. I really wanted expansion on that, in case there was something extra that I did not know about that we might be able to bring forward.

CHAIR—I think, rather than ranging through more evidence, you could just give that to the secretary. That would be very useful.

Mr Jennings—Yes.

CHAIR—Mr Jennings, is there anything you would like to add before your evidence is concluded?

Mr Jennings—No, I do not think so.

CHAIR—Thank you. We are always keen to get more information, so if this has stimulated you to give us some more, please do so.

Mr Jennings—We will certainly provide you with a set of recommendations.

CHAIR—Thank you very much.

[11.35 am]

KARAKASCH, Mr Nickolas, Private capacity

CHAIR—Good morning Mr Karakasch.

Mr Karakasch—Good morning.

CHAIR—Information on parliamentary privilege and the protection of witnesses and evidence has been provided to you. The committee prefers evidence to be heard in public, but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. We have your submission before us. I now invite you to make an opening statement and then we will go to questions from the committee members.

Mr Karakasch—I have been involved in the sandblasting and protective coating industry for 40 years. My submission was prompted for numerous reasons. I have been in touch with a Mr Richard White in Canberra, who developed silicosis. He lost his case, and I think the reason was that he smoked sometime in his earlier life. The other major reason that prompted my submission was that both my father and my brother passed away. It was a very long drawn-out procedure to get compensation. My father sued Hardies twice on the same basis and won both times. My brother sued but James Hardie challenged the award and they lost on appeal. It took over 12 months and he had passed away by the time any compensation came through.

They were the main reasons for me putting this submission in. Having had all of that experience, I thought that out of a duty of care I should pass on those experiences to the committee.

CHAIR—Thank you. Is there anything you would like to say generally about your submission before we move to questions?

Mr Karakasch—No, not particularly.

Senator HUMPHRIES—Can I clarify, first of all, Mr Karakasch something at the beginning of your submission. You point out that the United Kingdom was one of the first countries to ban sandblasting. You say:

The United Kingdom prohibited sandblasting in 1949 in Australia.

I assume that is a misprint of some sort.

Mr Karakasch—It is, yes.

Senator HUMPHRIES—It was not until 2002 that—

Mr Karakasch—After '1949' there should have been a full stop and then a new sentence beginning, 'In Australia'.

Senator HUMPHRIES—I see. The first jurisdiction, presumably, to do so in Australia was New South Wales.

Mr Karakasch—Yes.

Senator HUMPHRIES—Then Victoria followed suit in 2002, with all the others in between, presumably.

Mr Karakasch—That is right, yes.

Senator HUMPHRIES—When you say sandblasting was prohibited, I understand sandblasting is still possible but unprotected sandblasting is what is now prohibited.

Mr Karakasch—No.

Senator HUMPHRIES—You have to have extensive protective gear before you can engage in sandblasting. Is that right?

Mr Karakasch—No. In Victoria it is prohibited.

Senator HUMPHRIES—Altogether?

Mr Karakasch—Yes. In the submission there is a copy of a government notice banning silica from abrasive blasting, and it nominates that river sand, beach sand and any other white sands must not be used for abrasive blasting from 1 January 2002.

Senator HUMPHRIES—Is that the only state in Australia that you are aware of where it is totally banned?

Mr Karakasch—Yes. I understand it is totally banned in the rest of Australia as well, but I have not been able to check that. It is assumed.

Senator HUMPHRIES—We heard evidence earlier today that there was an audit done in about 2000 or 2001 in Queensland, where there are quite a few companies using particulates of various sorts to blast materials for the purposes of various manufacturing or construction processes. When you say sandblasting is banned, do you mean blasting using sand or silicate?

Mr Karakasch—That is right.

Senator HUMPHRIES—Other materials, like aggregates, could still be used for blasting purposes?

Mr Karakasch—Yes. There is a whole range of them. The most popular is garnet.

Senator HUMPHRIES—You used to work for Dimet—

Mr Karakasch—Yes, indeed.

Senator HUMPHRIES—which was the company that employed Mr White at one stage.

Mr Karakasch—Yes.

Senator HUMPHRIES—He was employed, I understand, in the earlier 1970s in the Northern Territory. You point out in your submission that in those days—you say between 1964 and the 1980s—sandblasting was open aired and that no control measures or exclusion zones were in place to restrict the movement of dust. Were people in Dimet—people who were in positions of control in Dimet—in your opinion aware of what was happening in places like Britain, where sandblasting had been banned for 20 years, or of international concerns about the unprotected exposure to dust in the course of sandblasting? Do you know if the business was aware of those problems?

Mr Karakasch—In a word, yes.

Senator HUMPHRIES—Why do you think that they did not act on those to offer at least rudimentary protection for its workers?

Mr Karakasch—That would be difficult to answer, but I know and remember that during that period the unions were very strong and powerful and this was one way of not getting into any difficulties with the unions. It was one of those issues that was quietly left and not spoken about.

Senator HUMPHRIES—Dimet operated other businesses elsewhere in Australia.

Mr Karakasch—Yes. They had facilities right around Australia in every single state. They had facilities in South-East Asia as well, but not abrasive blasting or protective coating; just coating manufacturing facilities.

Senator HUMPHRIES—Were the sandblasting operations of much the same character all over Australia?

Mr Karakasch—Virtually the same. The industry is virtually the same worldwide. There is very little difference.

Senator HUMPHRIES—When did you finish with Dimet?

Mr Karakasch—1986, I think, from memory. I have been an independent since.

Senator HUMPHRIES—Was Dimet still using unprotected sandblasting practices until that time?

Mr Karakasch—The operation in Victoria had closed down but the operations in Western Australia, South Australia and Queensland were still functioning. I have not been there for quite some time, but I would imagine that nothing has changed since the sixties.

Senator HUMPHRIES—Do you think that, while you were in the industry, sandblasting businesses generally were aware of what was happening in the international sense—of the concerns about sandblasting?

Mr Karakasch—Yes.

Senator HUMPHRIES—Do you think there was an element of wanting to reduce costs in the businesses by not taking up these protective practices—breathing apparatus and things like that?

Mr Karakasch—No, breathing apparatus was used but it was never compulsory. Management never insisted on people using it but it was there. Again, it was this problem with unions. They did not want to get involved in any strikes and have any union problems, so again it was quietly left.

Senator HUMPHRIES—Are you aware of other people, like Richard White, who have lung diseases who have worked in that industry?

Mr Karakasch—Yes.

Senator HUMPHRIES—Are there many such people that you are aware of?

Mr Karakasch—I only know of two at the moment. I think all the others have passed on.

Senator HUMPHRIES—I see.

Senator CAROL BROWN—I would like to pick up on a point that you made twice in questioning from Senator Humphries, and that is about why there was not a push to change practices once the situation in the UK was known in Australia. You alluded to unions being involved or suggested that maybe they were responsible for that. Can you explain?

Mr Karakasch—No. If I gave that impression, that is not quite right. Unions were not responsible for that. It was just that the unions were so powerful in those days that management did everything it could to not get into any difficulties or any disputes with the unions.

Senator CAROL BROWN—I am not sure how the fact that practices and safety measures were not put in place could be drawn from the unions being powerful. Are you saying that the company only acted on what the unions asked them to do?

Mr Karakasch—No, not always. What I am saying is that the senior management of the company went out of its way not to antagonise the union movement, and the work practices remained 'as is' from the day I started to the day I left.

Senator ALLISON—Were the unions not aware of the problem of sandblasting and risks to health?

Mr Karakasch—I think everybody was aware of it.

Senator ALLISON—Why did they not call for practices to protect workers?

Mr Karakasch—I do not know. I cannot answer that.

Senator ALLISON—Do you know that they didn't have these conversations?

Mr Karakasch—No, I do not.

CHAIR—Mr Karakasch, we will take your statement, which has now been made a number of times, up with the unions, because it was a clear statement from your point of view—only your point of view at this stage—that one of the reasons that things were not changed was concern about the union reaction to potential change.

Mr Karakasch—That is right.

CHAIR—Is that a fair enough statement?

Mr Karakasch—Yes, it is.

CHAIR—We will take that up with the unions as they come to give evidence. Senator Brown?

Senator CAROL BROWN—I did not have any further questions, thank you.

Senator ALLISON—Are you familiar with the dust control board in New South Wales and its approach of awarding compensation to those affected by toxic dust?

Mr Karakasch—No, I am not.

Senator ALLISON—You have given the committee quite a lot of information about materials that are in paint.

Mr Karakasch—Yes.

Senator ALLISON—You also asked the committee to verify and scrutinise the old and existing formulations for carcinogenic and toxic substances used. If we were to do so through the CSIRO, which I presume still keeps the records of the original Government Paint Committee—

Mr Karakasch—It was originally called the Government Paint Committee. It was part of the Department of Administrative Services originally and has now been transferred to the CSIRO.

Senator ALLISON—What would you suggest that the committee do with that information? If we were able to source what you say is in paint, what then should be the next step?

Mr Karakasch—I personally think that somebody should scrutinise all of those old formulas and at least note what toxic or questionable chemicals were used within the paint industry. In that way, companies can be held to account. If toxic chemicals were used, those companies should be held accountable.

Senator ALLISON—I am trying to understanding what 'be held accountable' means, because if they were ticked off by the Government Paint Committee it sounds like the obligation was taken away from them and picked up by the government, effectively.

Mr Karakasch—I guess you could look at it that way, yes.

Senator ALLISON—Is there an issue with those paints now being removed, either through sanding or through other processes?

Mr Karakasch—Yes, there is. The vast majority of those industrial paints ultimately get removed because they come to the end of their life, and the general way to remove them is by sandblasting. When you sandblast them, you sandblast off asbestos and large quantities of silica, because silica was a bulking agent used in virtually all paint manufactured. Some of the paints had 10 or 15 per cent silica in them. Other paints had 31 or 32 per cent lead.

Senator ALLISON—Are these exclusively industrial paints?

Mr Karakasch—Yes. I had very little to do with domestic paints.

Senator ALLISON—Are you aware of any regulations concerning their removal at the present time? Are there any alerts out for—

Mr Karakasch—No, none at all.

Senator ALLISON—So that is something that the committee ought to explore?

Mr Karakasch—Yes. If old existing paints have to be removed from steel structures, I think it needs to be determined what sort of paint it was and what the ingredients were in that paint.

Senator ALLISON—And then a warning given to those who are removing paint for whatever reason.

Mr Karakasch—This is where the Australian Government Paint Committee can come in. They can scrutinise all of those formulas. They have them all.

Senator ALLISON—Does this committee still exist as part of CSIRO?

Mr Karakasch—Yes, it does.

Senator ALLISON—It still ticks off, or otherwise, paints as they come through?

Mr Karakasch—It does, yes.

Senator ALLISON—Interesting.

Mr Karakasch—It was set up in 1965, I think. The reason it was set up was to scrutinise and quality determine paints used for government contracts. What paint suppliers had to do was

supply wet samples for field testing. They had to supply the formulas as well, so that those formulas could be looked at at some later date, just in case paint manufacturers were changing those formulas for economic gain.

Senator ALLISON—This was a performance measure, rather than a workplace—

Mr Karakasch—It was a performance criteria.

Senator ALLISON—Thank you. Our next witnesses cover the legal field and I wonder if it is worthwhile you just expanding a little bit on the legal action that you and other members of your family might have taken with regard to sandblasting and Dimet. We have had, in other submissions, evidence that even short exposures to smoking or smoking activities have pretty much wiped out any opportunity to demonstrate that the illness was caused by workplace exposure. Is that what happened in your family?

Mr Karakasch—No. Mesothelioma is a very specific disease. It is not like silicosis, which is a lung disease and can be confused with smoking. Mesothelioma cannot be confused with any other aspect of one's health. It is very specific. With silica, this is where I think the law is discriminatory. You get somebody like Richard White, who obviously has it, and because he smoked he lost his case. Well, smoking certainly does not give you silica. I think that whilst the individual has to take responsibility for his own health and the way he contributes to it, industry has to take a responsibility as well, particularly where it can be demonstrated that a particular individual was exposed to toxic chemicals, regardless of whether he was a smoker. It is a contributing factor. We have it in all other forms of law.

Senator ALLISON—Would you support extension of the statutes of limitation, given the long latency period of the disease?

Mr Karakasch—I would indeed; very much so.

Senator ALLISON—Are there any other recommendations you would like to make to the committee with regard to the legal aspects of actions?

Mr Karakasch—No.

Senator ALLISON—Thanks very much.

Senator ADAMS—Just on preventative measures, I come from WA and I know that sandblasting is still carried out there. I was in New South Wales at the Defence Force dry docks the other day and they were sandblasting. I do not know what they were using but I was watching from a long way away. They all had protective gear on and everything else. What are some really good practical preventative measures that could be applied?

Mr Karakasch—Do not use sand!

Senator ADAMS—Okay.

Mr Karakasch—All the other materials that are allowed do not cause any health problems at all. Sand is the one that you need to make sure is removed.

Senator ADAMS—All right. Thank you.

CHAIR—We should maybe rename it, Mr Karakasch.

Mr Karakasch—Abrasive blasting.

CHAIR—I think so.

Senator POLLEY—Thank you very much for your submission and for your summary today. You have not given us any recommendations and obviously you have a wealth of experience at a personal level. Could you summarise what needs to happen to help prevent loss of life and people suffering unnecessarily.

Mr Karakasch—Legislation needs to be brought in, it needs to be acted on and it needs to be enforced. We do not enforce it.

Senator POLLEY—It comes back down to resourcing. You can have legislation but unless you resource it adequately to make sure it is monitored—because, as you alluded to earlier, if you have protective material, clothing and apparatuses there, if it is not being enforced that the workers use it, then there is not only a responsibility on the employer but also the employee as well.

Mr Karakasch—Yes. 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.

Senator POLLEY—Thank you very much.

Senator HUMPHRIES—I have a couple of follow-up questions. I am trying to work out what the attraction of sand is for people involved in abrasive blasting. Is it generally cheaper than other materials?

Mr Karakasch—That is it; it is very cheap.

Senator HUMPHRIES—A cheap and nasty alternative.

Mr Karakasch—Yes.

Senator HUMPHRIES—Senator Polley asked about what you recommend. You suggested legislation. Would you suggest that national legislation is a good idea, as opposed to state based regulatory regimes?

Mr Karakasch—National would be better. Then you do not have this political football going between states and the federal government. If you have a national body and everybody subscribes to that, there is no argument. You take out the political argument that may occur.

Senator HUMPHRIES—In terms of dealing with the situation of people who have been injured by practices in the past, do you see value in having a scheme to compensate people for their medical expenses associated with getting diagnoses and treatment when they have been exposed to sandblasting in the past?

Mr Karakasch—Yes, very much so. At the moment it is a very long drawn-out process. The legal profession probably rub their hands and make a lot of money out of it, but if you can take that aspect out of it—there will always be the legal profession involved but I think that is a good idea—that would short-circuit all of these long delays, grief and heartache imposed on individuals and families associated with this sort of litigation.

Senator HUMPHRIES—We are about to hear from the legal profession, so we will see how much they rub their hands when they get to the table. Thank you, Mr Karakasch.

CHAIR—Is there any final comment you would like to make, Mr Karakasch?

Mr Karakasch—No thank you.

CHAIR—Thank you very much. You may like to check with Hansard to see whether they have all the comments and terms you have used in your submission. The committee will now take a short break.

Proceedings suspended from 11.56 am to 12.05 pm

GORDON, Mr John Raymond Christopher, Member, Australian Lawyers Alliance

CHAIR—Welcome. Information on parliamentary privilege and the protection of witnesses and evidence has been provided to you.

Mr Gordon—Yes, thank you.

CHAIR—And you know that the committee prefers evidence to be heard in public, but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. We do have your submission, which we have called No. 27, and it is on the web site. I now invite you to make an opening statement and then we will go to questions from the committee.

Mr Gordon—Thank you, Senator. A brief survey of Lawyers Alliance members has revealed a significant number of cases of diseases that have occurred as a consequence of exposure to toxic dust other than asbestos, principally silica, seeking damages. Circumstances in which such exposures have arisen include: as a result of dry sandblasting; removal of thermal insulation containing crystalline silica; removal of high temperature insulation block; removing refractory brickwork from furnaces and boilers; use of talc containing free crystalline silica—for example, in the rubber industry; in the construction of cast iron brake blocks for railway locomotives; in the mining industry; use of silica flour dust in paint production; in the construction of tunnels by drilling in rock containing high levels of silica; and the laying of pipes in sandstone environments.

This experience has highlighted significant difficulties in seeking to access compensation and obtaining compensation at appropriate levels. The key features of industrial lung diseases that create these problems are their insidious nature, their long asymptomatic latency, their onset with mild symptomatology, their progressive nature and that they are incurable. We outline some of these problems in our written submission.

Principally, we point to the problems of employer ignorance and conduct; failures of the medical profession to diagnose industrial lung disease and to alert injured workers of their ability to access compensation; problems in accessing and securing appropriate compensation, including problems with statutory schemes that were not founded upon addressing latent and progressive diseases; statutes of limitations; common law thresholds; loss of entitlements after death; and the availability of claims for exemplary damages. We make in our written submission a number of recommendations for overcoming these problems.

I would like to correct one aspect of our written submission. On page 6 we have indicated at the bottom of the second paragraph under the heading ‘Survival of claims’ that claims in South Australia and Western Australia are preserved only for asbestos claims. In fact, in South Australia all dust diseases claims are preserved for the benefit of the estate of the dust diseases victim, and the only state where such a survival legislation has been enacted which restricts it only to asbestos claims is Western Australia.

Senator HUMPHRIES—Thank you for the submission, Mr Gordon. You make a number of recommendations about the way in which the law should change and I will ask you some questions about those in a moment, but if we were to adopt these recommendations how would you suggest we limit them, if at all? You make these recommendations in respect of injuries arising from exposure to toxic dust, but is there any substantive difference in what you recommend and injuries suffered by workers by virtue of exposure, say, to chemicals or bacteriological agents or viruses or anything else in the workplace? Is there a logical line between dust and these other kinds of hazards?

Mr Gordon—There probably is, and whether or not it should be drawn is another question, but the legislation that I have just referred to, for example, which has been enacted in a number of jurisdictions to preserve claims for damages to the estates of individuals who die as a consequence of dust diseases, does define the diseases for which the benefit of those damages should inure. In South Australia, for example, it is the Survival of Causes of Action Act and in Victoria it is the Administration and Probate Act.

The basis, as I understand it, for the enactment of those pieces of legislation was the circumstance that was being encountered frequently where people with diseases of long latency then received a diagnosis, the disease was progressive and then, as a result of the progressive and terminal nature of the illness, the victims were dying before they could complete claims for compensation. As a consequence of those particular features of these illnesses, legislatures in a number of states have responded to preserve those claims, and it is those features, I think, that also make exposures to toxic dust generally cases that do require special attention.

The line has been drawn in those pieces of legislation setting out the diseases to which the circumstance applies and, in general, they meet those criteria—long latency, progressive onset, and terminal effect or possible terminal effect—and therefore they are defined, because of those consequences, to be those to which special consideration applies, and I think that is probably a fair definition for the sorts of exposures and illnesses that we have sought to address in our submission.

I think similar arguments can be made in respect of any occupational illness caused by exposure to, as you say, Senator, chemicals and other workplace hazards, but I think the specific problems that arise as a result of toxic dust, of the sort that have been addressed, are the latency, the progressive nature and the terminal result.

Senator HUMPHRIES—Looking at some of the recommendations you make about changes to the law, you recommend a nationwide system of personal liability of directors. Are there precedents for that level of individual liability for directors? If there are, what are those areas?

Mr Gordon—There are now a number of pieces of legislation, as I understand it, in the occupational health area where personal liability can inure to directors. There have been, obviously, debates in various places about whether there should be crimes of industrial manslaughter, and that is an emotional debate which I think is probably not particularly what we are thinking of here. We are thinking more of instances of negligence where people have suffered toxic injuries as a result of ignorance, particularly in circumstances where an assessment is made that the disease is one of long latency and therefore something that can be put off, or not a specific hazard like putting a guard on a machine. In those instances, the thing

that seems to be most effective—and there are some jurisdictions in America, certainly, where this has occurred—is to focus the attention of the people with ultimate responsibility on ensuring that workplace hazards of all sorts are properly addressed, and that is by personal liability or responsibility.

Whether that is by some form of penalty or some form of direct personal liability—which I think has something to recommend it, particularly for diseases of long latency where companies are often hard to find or their insurers are no longer responsible or no longer in existence in some instances—there should be a level of personal responsibility to focus attention. As I say, civil or criminal, I think the effect is the same, and we think that that is a very useful approach to adopt in these cases where the effects of significant exposures are serious but delayed and therefore often deemed not worthy of immediate attention.

Senator HUMPHRIES—I am aware that those sorts of strict liability or extended liability arrangements usually apply in situations where there are serious whole-of-population types of health risks, such as operating a nuclear power station or something of that sort. I am concerned about the precedent that would be set by identifying this particular area of industrial law as the area where you start to impose this fairly high level of liability on individual directors, particularly given those long latency periods and a relatively unclear body of evidence about just what level of exposure is dangerous to workers and things like that at early periods when these sorts of liabilities would have arisen.

Mr Gordon—I think one need only look at the lessons that the asbestos story has taught us, instead of applying longstanding principles of industrial health and safety known about since early in the 20th century, where workplace hazards are assumed to exist unless measured and found to be safe, where lists of hazards are promulgated routinely by legislatures and industrial safety literature and the problem is ignored because it does not have the immediate effect that other hazards might have, such as putting guards on machines and so on. Those lessons have taught us that that amalgamation of problems, the lack of concern about the hazards created by dust and the lack of immediate effect have meant that safety assumes a low priority in respect to those matters.

How do you elevate the issue to be of significant concern? You can impose higher penalties on corporations, but that becomes another cost to business, often. The answer is to focus the attention of those whose responsibility it should be on the fact that there might be hazards, identification of hazards, and then protection in respect of them, and it seems to me that the best way of doing that is by personal liability. As I say, whether that takes the form of personal liability for damages—that is, in addition to the liability of the corporation—or whether it is a criminal penalty for breach of those safety hazards, it seems to me that that is the best way, if not the only way, of addressing that problem.

Senator HUMPHRIES—Given those difficulties with a person who proposes to sue in the present state of the law in most jurisdictions, do you think that there is value in some kind of compensation scheme being established which would give affected workers—that is, people who work in an industry where there was a traditional high-level exposure to silica dust, for example, and who now perhaps suffer from lung diseases—access to some kind of fund to meet, say, their medical costs, costs of treatment, costs of diagnosis and things of that kind?

Mr Gordon—Yes, I do—I think as a backstop to removing some of the barriers to allowing or permitting adequate compensation, be it under statutory schemes or at common law, because clearly the liability or potential liability of such a scheme is indeterminate, given the widespread nature of the problem.

As I mentioned at the outset, a brief survey of some of our members produced a raft of different circumstances, and the potential circumstances are open-ended. Clearly, there is going to be a question of the liability of that scheme and it seems to me the first priority is to try and address the problem of ensuring that proper compensation is made available and the onus is put on those who have created the problem. That means removing some of the barriers that exist to accessing statutory and common law compensation for people in these circumstances.

Facilitating potential extensions to common law liability, such as personal responsibility or liability up a corporate ladder—where a particular company might have gone out of existence but you transfer the liability up the line—would ensure that most cases would have access to proper compensation or damages for serious injuries. While there is certainly merit in a backstop scheme, it seems to me that some attempt should be made to limit the potential liability of that by ensuring that the ability to obtain compensation from the wrongdoer is maximised.

Senator POLLEY—The Australian Institute of Occupational Hygienists made the comment in their evidence that the data does not appear to support the contention that silica is the new asbestos. Would you like to comment on the degree of exposure to silica in the workplace? What is your view?

Mr Gordon—We made some comments in our submission about the role of industrial hygienists in corporations and in private practice. There was often some concern about the distance between the employer and the employed hygienist, for example. The history of asbestos does not give cause for confidence that those charged with industrial health and safety in industry, or advising industry, have been particularly adept at securing the proper identification of hazards and remedies for it. That is, in part, why we have the asbestos epidemic that we have in Australia at the moment.

In terms of silica being the new asbestos, the hazards of silica were well detailed before asbestos was known about and should have been engineered out of existence long ago. In our submission we refer to WE George in 1947 talking about the fact that no miner should get silicosis any more. Yet there are still cases of silicosis emerging from the goldfields in Kalgoorlie.

I was surprised, when we surveyed our members, by the number of potential exposures there were. I think it is a hazard and a problem that has largely gone unrecognised because of problems with identification, diagnosis, confusion with other lung conditions—including smoking related conditions and so on—and I do not think we know the extent of the hazard. Whether it rivals asbestos, particularly now with the identification of silica as a carcinogen, I do not know. It causes me and the alliance real concern that we have not properly addressed it. It has not been an issue that has been in the forefront of public consciousness and, in those circumstances, there is a recipe, it seems to us, for a major future ongoing problem, the extent of which I think is indeterminate at the moment but of real concern.

Senator POLLEY—Can you put a figure on the number of workers that have been disadvantaged because of the statute of limitations?

Mr Gordon—No, because once the problem is there and it seems incurable you do not hear any more about it. But experience—my own experience and the experience of our members—teaches us that it is a problem and that there are enough people who are caught, particularly because of the conflation of three problems. The first is diagnosis either being delayed or the worker not being informed of the cause of the condition and not relating it back to a workplace exposure, so that for a long period of time a worker remains in ignorance until the condition worsens and they might then access some proper advice about it.

The second is that there is a threshold in most common law damages schemes—10 per cent in many, a bit higher in some others; 20 per cent in WA, I think—so that people who have been diagnosed seek to access compensation but are at the early stages of a progressive illness which will worsen but not permit them to commence proceedings because they cannot cross the threshold.

The third is the impact of the now very short periods of time within which people have to commence proceedings under the limitation statutes, which broadly speaking are three years and 12 years in most jurisdictions—three years from the date of discoverability and 12 years, a long-stop, from the date the cause of action accrues, which is often already well and truly past in cases of toxic dust diseases like silicosis. The long-stop provision often occurs first and therefore prevents the claims proceeding.

The conflation of those three factors means that many people receive the advice, 'You can access the statutory compensation benefits, such as they are, and there are step-downs and you will suffer hardship as a result of getting into that system—modest lump sum benefits in accordance with the extent of your present disability—but your rights at common law do not accrue, in some instances, until well after you have been diagnosed and therefore are out of time under the statutes of limitation.' It is impossible to put a number on because a lot of people just take the advice and go and we never hear any more about them, but the number is not small. I could not guess as to what it might actually be.

Senator ALLISON—Can I ask about your recommendation on exemplary damages. Which, if any, jurisdiction in Australia has not removed this provision?

Mr Gordon—I think most have.

Senator ALLISON—This was done quite recently, wasn't it—

Mr Gordon—Yes.

Senator ALLISON—when indemnity was becoming very expensive?

Mr Gordon—That was the pretext, and the response was for all jurisdictions to make changes that restricted rights of damages. New South Wales and Queensland abolished it in all personal injury claims. I think in Victoria it may be limited to public liability claims. The Northern Territory abolished it, as did Western Australia, I think, and in the other states it apparently had

not been addressed as of early this year. The response was to the insurance indemnity crisis, so-called, and it was never a factor in that crisis because in most instances insurance policies exclude claims for exemplary damages anyway, so it did not impact on the price of insurance at all.

Senator ALLISON—That was my next question. I do not know what the word 'contumelious' means. What, in the case of protection against silicosis, say, would 'egregious and contumelious' mean?

Mr Gordon—I recently had a case where a worker started work in the 1980s and was exposed to silica flour in mixing paint. That, I would have thought, given the level of awareness that should have existed in the 1980s to that problem—to silicosis as a result of exposure to crystalline silica or free silica—would have been regarded as contumelious disregard for the rights of the worker. That exposure continued into the 1990s, and I am not sure that there are not exposures of a similar nature occurring today.

In any event, in circumstances where the conduct is outrageous or offends what would generally be regarded as proper protection of the health and safety of people in workplaces, the potential for exemplary damages does exist. It has two purposes. One is to deter others from similar conduct and the second is to express the court's or the jury's feelings of outrage.

Senator ALLISON—Yes, I understand that. I am trying to work out what this means. Could a lay description be 'irresponsible disregard'? Does it mean wilful? Does it have to mean that there was a wilful refusal to look at protections, for instance?

Mr Gordon—In most circumstances, it did, but after the case of Rabenalt—which we set out there, which was a Wittenoom asbestos claim—it was held to be applicable to cases of reckless disregard, so that it did not have to be a deliberate misconduct.

Senator ALLISON—Yes, that is my question.

Mr Gordon—Reckless disregard was sufficient to give rise to a claim for those sorts of damages. Given that it is not an insurance problem, given that it would fall on the person or corporation that created the problem and given its dual purpose of highlighting problems so that others can see what sort of behaviour is regarded as unacceptable, and expressing the punishment of the court for the conduct, it seems to me to have a very significant role in occupational health and safety for those reasons. Its abolition makes no sense because you are, in effect, saying the worst sorts of conduct suffer no greater consequence than—

Senator ALLISON—As a result of that, I take it you would be opposed to the New South Wales approach, which I think Senator Humphries talked about—the levy system where there is a no-fault arrangement and workers are compensated, albeit at a minimal kind of compensation. We are not talking exemplary damages here, but you do not favour that approach?

Mr Gordon—Absolutely not. As a fall-back, if all the other potential areas of compensation were exhausted without being able to be accessed and a worker was then left only with an ability to access medical costs because of the problems in accessing compensation, then I think it has merit.

But there is no doubt that the best means of addressing compensation is the combination of statutory scheme and common law entitlements, which have been significantly restricted in recent years but, nonetheless, still serve a useful purpose. If you remove some of the barriers that we have identified in our submission—limitation and so on—then most people will be able to access those benefits. Reinstate exemplary damages and you have a scheme that has both compensation benefits and a real social utility in highlighting a problem. That is, it seems to me and the alliance, the very best way to achieve all of those objectives.

Senator ALLISON—I understand that. What about the liability of governments in all of this? In Victoria there was at least a four-year gap between knowledge about silicosis and the banning or the protections in place for sandblasting. Do you think that it is likely that an action would be successful against the state government in those circumstances? Should it be? If so, what would need to change to allow that to happen?

Mr Gordon—Again looking back at the asbestos context, there are routinely actions against state and Commonwealth governments. If negligence exists, then the states are in the same position as any other employer or creator of a hazard.

Senator ALLISON—Is it prima facie a liability because the government did not act fast enough? Is that enough?

Mr Gordon—Failure to regulate is a more difficult area than employers' liability. I am not sure there would be a significant potential liability in state governments or the Commonwealth government for failure to regulate; failure to enforce regulations, certainly. The stevedoring industry is a clear case of where the regime to enforce regulations did exist but it was not properly enforced. That is a potential but I do not think there would be any significant risk of liability as a result of a delay in actually responding to an identified hazard.

Senator ALLISON—Are there any precedents to your call for a long-stop arrangement to cover latency periods? Are there any other examples where that arrangement has been legislated?

Mr Gordon—There are a variety of limitation periods in existence in the states under various schemes. Some of them depend upon identification or discoverability of the injury without a long-stop provision. The asbestos provisions in Western Australia are an example of that. The person has three years from discoverability and I do not think there is a long stop applicable for asbestos claims. If that model were applied to dust diseases claims, it would work very well.

Senator ALLISON—It would be three years and then 30 years?

Mr Gordon—Even 30 years potentially excludes some people but it probably captures most. The question is, is there a requirement for a long-stop provision at all in this area of the law? You have latency of a significant period of time, especially as it relates to carcinogenic consequences of exposures. For these sorts of cases, why not—we would say rhetorically—just have a period of three years from discoverability? Why have a long stop at all? It would artificially impose a barrier and a requirement for applications to extend time and so on in circumstances where latency is the very heart of the condition.

Senator ALLISON—You would say just extend the statute of limitations to what, 50 years?

Mr Gordon—No, three years from discoverability. Once you are diagnosed with the illness, and therefore that is the first occasion you know about it, and you are aware that it arose as a result of the exposure many years prior, then you have three years. That is not a long time but at least that gives you a period of time in which to access your rights once you are aware of the condition.

Senator ALLISON—But would it be enough time for you to know what the prognosis was? You would not necessarily know within three years how long you are going to last or what your level of impairment might be for the next 30 years, would you?

Mr Gordon—No, but once you have commenced your action your rights are preserved. You can take then, within various case management restrictions, a period of time for your condition to stabilise and for experts to assess what the likely consequences of it are. It is just the commencement of the action that is caught under the limitation period and, therefore, imposes a problem. It used to be six years in most jurisdictions and that worked quite well. That has all changed now and it is mostly three years from discoverability. That seems to be a balance to enable people to access advice and commence proceedings within three years of knowing that they have such a condition and that it is related to their work or as a result of someone's negligence, or whatever the problem might have been.

Senator ALLISON—Do you have any advice as to how, legislatively, you might overcome the problem which has confronted a number of people who have taken cases to court? That is, 'Well, you smoked for six months when you were 16 and it was obviously related to that, not silicosis.' If you take a case to the tobacco companies, they will tell you it was silicosis, not tobacco. How can you shore up the likelihood of a success prosecution?

Mr Gordon—The law on liability is that if the negligence of the wrongdoer was a cause of the injury, then the wrongdoer must compensate for the injury unless the wrongdoer can demonstrate that the injury is a divisible injury and what the contribution from other factors was. There is a presumption, if you present with a disease such as asbestos or silicosis or asbestos related lung cancer or silica related lung cancer, that if you can identify negligence as a cause of it—even if it be only part of the cause—you are entitled to full compensation unless the injury can be divided into the contributions by the various component parts. That is of assistance in those circumstances.

Inevitably, in relation to dust diseases, if there is smoking difficulty will arise in determining what the contributions of the parts are. Often that problem, we identify in our submission, leads to a failure to identify the dust disease at all but, rather, have its ascription to tobacco smoking or other problems than to relate it back to the exposure. If you are aware of your condition and what caused it, you are entitled to be compensated for it unless there is a very clear demarcation as to what other factors have contributed to it. In circumstances where the choice between the two contributors would be negligent exposure and tobacco, you do have the option of pursuing both wrongdoers, although there has been a significant lack of success in relation to tobacco companies in Australia.

Senator ADAMS—Your first recommendation is that there be greater emphasis on workplace diseases in medical courses and postgraduate continuing medical education so there is timely recognition of workers suffering such diseases, so that the cause can be addressed and workers can seek redress in a timely manner. Have you, as an organisation, approached the respective medical schools and the General Practice Education and Training committee on this?

Mr Gordon—I do not think so. Often in legal practice people come to us and say, 'I've had this condition. I had difficulties with my breathing for X number of years but no-one ever told me that it was because of the work I did in such a situation 30 years ago,' or, 'They told me it was all smoking related,' or things like that. Talking to respiratory physicians, many of them even at that level of expertise say that often the identification of these sorts of diseases is very difficult. So at the level of the general practitioner, where most people go as a first stop, there is a level of ignorance about industrial lung disease which is profound. Quite often that then factors into problems such as limitation periods because they are just not told that they have a particular condition or that it is related to an earlier occupational exposure. It really has, from our perspective as an organisation, only been as a result of this committee sitting that we have sought to make a point about that. In practice it has certainly been a problem that we represent, and we would strongly recommend it.

Senator ADAMS—I come from Western Australia and we have 92,000 people either actively involved or have been involved in the resource sector. For me, looking at that from our medical schools' point of view, it is a very important recommendation to go with because so much of our sector is involved in that sort of area.

Mr Gordon—Exactly. I am also originally from WA. I had a significant involvement with particularly people who had silicosis from the goldfields. There were people who were suffering significant debilitating respiratory illness that was unidentified or, if identified, not related back to workplace exposure. Some GPs say, 'We have one lecture in industrial lung disease in our entire six years and no postgraduate training in it.' It seems to be obviously a problem that needs redressing.

Senator ADAMS—Thank you.

Senator CAROL BROWN—You spoke about personal liability of directors and you also talked about why that sort of system is needed. I am not sure whether you answered what precedents. Are you aware of any precedents?

Mr Gordon—I am sure we can assemble them and provide them if that would help.

Senator CAROL BROWN—Yes, because what I was interested in, if there are precedents of that kind, is whether the evidence demonstrates, as a result of this, whether there have been improved conditions, better environmental outcomes and that sort of situation. I would be interested if you could provide that sort of information.

Mr Gordon—We will certainly have a look. I know there are such incidences of personal liability. We will see if we can assemble them and provide them. The difficulty, obviously, is you cannot prove the negative. Once such a system is in place, what effect is it having on the

population? I am not sure that that sort of work has been done but we will certainly see what there is and provide it.

Senator CAROL BROWN—Thank you.

Senator POLLEY—Are you aware of any concerns being raised in relation to the Commonwealth government's responsibility through the Defence Force and the use of sandblasting? Are there any precedents there for action that has been taken or should have been taken?

Mr Gordon—I am not. Obviously the use of sandblasting particularly, one would assume, in the naval service is a significant potential problem. I cannot see why there would not be instances of it but I am not aware of any. Again, probably because of the longstanding nature of the Commonwealth statutory scheme, you would not necessarily hear of them as you might hear about common law damages claims that tend to attract a bit more attention. I am not aware, but I am sure there would have been some.

Senator POLLEY—That is my understanding; that particularly in the seventies and eighties it was very difficult and there was neglect, to say the least, but very hard to prove for those people who were not compensated.

Mr Gordon—We know the level of the lack of protection and the levels of exposure to which people in the naval dockyards, both at Williamstown here and in Sydney, were exposed with respect to asbestos. If the lack of concern translated to other workplace hazards, then undoubtedly it is a significant problem.

Senator POLLEY—Thank you.

CHAIR—Mr Gordon, for the record can you tell us who the Australian Lawyers Alliance are?

Mr Gordon—Australian Lawyers Alliance, formerly the Australian Plaintiff Lawyers Association, is a group whose membership comprises lawyers who principally act in personal injuries damages claims for injured people. As a result of the change to Lawyers Alliance, those objectives have expanded and we now represent a wider group of lawyers concerned with other issues. Our principal focus has been, and still continues to be, acting for and seeking to provide a mouthpiece for injured people who do not generally have the ability to speak for themselves.

CHAIR—Your members are lawyers, and they are across all states and territories?

Mr Gordon—Yes, every state and territory. There are about 1,500 lawyers.

CHAIR—It is good to have that on the record when you have made such a comprehensive submission. Do you have any further comments you would like to make?

Mr Gordon—No. I think that covers everything.

CHAIR—Thank you very much for being with us. On that basis we stand adjourned until we reconvene with Friends of the Earth.

Proceedings suspended from 12.54 pm to 1.50 pm

[1.50 pm]

MILLER, Ms Georgia Nicolette, Co-spokesperson, Friends of the Earth Nanotechnology Project

SENJEN, Dr Rye, Co-spokesperson, Friends of the Earth Nanotechnology Project

CHAIR—Welcome, Ms Georgia Miller and Dr Rye Senjen from Friends of the Earth. Information on parliamentary privilege and the protection of witnesses and evidence has been provided to you. The committee prefers evidence to be heard in public, but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. The committee has your submission and the supplementary one that you have brought us in today. I now invite you to make an opening statement and then we will get into questions.

Dr Senjen—Thank you for the opportunity to speak with you this afternoon. We have already been introduced. We will be speaking particularly to reference g. of the terms of reference relating to the potential of emerging technologies to resolve workplace related harm, with particular reference to nanotechnology.

Let me quickly define 'nanotechnology' for you. Nanotechnology is about the manipulation of matter at the atomic or molecular level. It is not so much a question of a particular application but, rather, a question of scale—the nanoscale. It is about engineered structures and materials at a scale of 100 nanometres or less. What is a nanometre? A nanometre is one billionth of a metre. Just to give you a comparison, a human hair is about 80,000 nanometres wide and red blood cells are about 7,000 nanometres wide, so 100 nanometres is very small indeed.

Why are people interested? Why manipulate matter at that scale? The reason you manipulate matter at that scale is because the properties of the material change sometimes in almost miraculous ways. Something that was opaque becomes see-through; something that was very weak becomes super strong; something that did not conduct electricity conducts electricity; something can suddenly start to emit light. It is almost like changing lead into gold—the old dream. Finally, we are manufacturing gold.

Nano sized particles can be produced incidentally—and have been produced incidentally—as a by-product of forest fires, high-temperature industrial processes such as combustion engines et cetera. But we are really concentrating here on manufactured synthetic nanoparticles, and these are used in a wide variety of products that are now available on the market. You can buy sunscreens with nanoparticles, colour-fast fabrics, cosmetics, self-cleaning windows, long-lasting paints, furniture varnishes.

We are here because we feel there is considerable evidence of probable harm in relation to nanomaterials in the workplace and elsewhere. This harm occurs because of three size-dependent characteristics. When you manipulate matter at the nanoscale, it usually has three effects on the material: (a) it becomes more reactive; (b) it becomes more mobile; and (c) it becomes more toxic. That all has to do with the increased surface area, especially, and other issues to do with the nanoscale.

The effect of these three characteristics is that nanomaterials have an unprecedented access to the body through inhalation, ingestion and dermal contact, so all the ways that material can have access into our bodies, and also to the bloodstream by other dermal contact. Once in the body, nanomaterials have unprecedented access to vital organs and tissues, including the heart and liver, bone marrow and reproductive organs. They even have access to the brain along the olfactory nerve and across the blood-brain barrier. Unlike larger particles, because nanomaterials are very small particles, they gain access to individual cells. The toxicological impact on organs and individual cells is still poorly understood, but some preliminary research has come out in the last couple of years, the results of which we believe are very concerning.

Irrespective of their chemical composition, inhaled nanoparticles are potent inducers of inflammatory lung injury. Nanoparticles used in sunscreens catalyse DNA damage and result in carcinogenic effects in human skin cells. Nanoparticles cause severe brain damage to fish and alter gene expressions in their livers and kill water fleas. Nanoparticles are toxic to human liver cells and to human colon cells. This is all a sort of one-page summary of actual experimental research results.

One very serious issue with nanoparticles is the potential long lead time until the onset of serious harm. What does that remind us of? What springs immediately to mind? I will not ask you what it could possibly be, because I already see people nodding. It is, of course, asbestos. In fact, Swiss Re, the world's second largest reinsurer has explicitly stated that nanoparticles may well be the next asbestos, and the human and financial costs of a further delayed government response to protect workers' health and safety will be significant. In Australia, I only have to say the words 'James Hardie' and no doubt you know everything else.

I will also remind you of the costs on a global scale. For instance, in the UK it is estimated that an average of 3,000 people a year die of asbestos related diseases. In the US, it is 10,000. In fact, the European Environment Agency considers that all told 400,000 people will die in the European Union in relation to asbestos. This is a very sad story, because between 1899 and 1906 there were plenty of early warning signals in the United Kingdom and France and, if they had been heeded, many deaths—probably a million or more—could have been avoided, not even considering the financial cost.

Asbestos liability is by far the largest issue facing the global insurance industry. Swiss Re has estimated that the three waves of asbestos claims have cost US reinsurers $135 billion and that the fourth wave will cost an additional $200 billion to $275 billion. That is a hell of a lot of money, and that is not even taking into account the costs on the health system and the loss of skilled workers.

We are not just talking here about one asbestos, I have to tell you. The sad news is that each and every new nanomaterial has the potential to become a new asbestos. We are not just talking one asbestos; we could be talking five, 10, 100, 1,000, 10,000. No-one knows, because serious harm to health will only manifest over the long terms and it is an omnipresent risk. As I mentioned earlier, nanomaterials are already in the environment. There is already paint containing nanomaterials; there are sunscreens; there will be clothing; there will be food. Mars, for instance, is talking about using nano wrappers around their Mars Bars. You will be ingesting nanomaterials without even knowing it.

While we can draw some general conclusions about toxicity and particle size—how the two are related—the specific toxicity of each and every individual nanomaterial must be independently assessed, because its interaction with the body will be influenced by the actual particle size, by its shape, by its surface properties and by its chemical composition.

This inquiry is about workplace related harm. We have estimated the number of workers potentially exposed in Australia. There are no actual figures available, and we urge you very strongly to initiate a survey into the matter, but they are significant numbers. We estimate there are currently approximately 700 people—lab workers and researchers—that are regularly exposed to synthetic nanoparticles. I think that is a reasonable number, considering there are 50 companies involved in research and over 200 ARC grants to do with nanoparticles.

There are potentially about 30,000 Australian workers exposed to fine powders which may contain synthetic nanomaterials. These are workers that are handling dyes, cosmetics, sunscreens and fabrics. We believe these are conservative estimates, because the products are already on the market. As I mentioned, they include paints, varnishes, fabrics, fuel catalysts, glass and other building materials. How many painters use Dulux paints in Australia? I do not know. There must be quite a few. All these painters are using paints that contain nanomaterial. It is clear to us that exposure to nanomaterials is already a big issue in Australian workplaces, and something needs to be done about it.

Ms Miller—In response to growing concerns about the risks of nanotechnology, last year the UK Royal Society and the Royal Academy of Engineering released a detailed report into its hazards. I am not sure if you are familiar with the Royal Society. It is the world's oldest scientific institution and a really well-respected body, so its findings should be taken very seriously. They made the following significant recommendations: that factories and research laboratories treat manufactured nanoparticles as if they were hazardous; that all relevant regulatory bodies evaluate existing regulations to determine whether or not they are, in fact, appropriate to protect humans and the environment from the hazards posed by nanoparticles; and also ensure that regulatory bodies and advisory committees include future applications of nanotechnology in their horizon scanning programs in order to identify the need for regulation at an early time.

Swiss Re, the world's second-largest reinsurer, has reiterated these calls for regulation to protect workers, the public and the environment from the risks of nanotechnology, to urgently catch up with the advances made by industry. Swiss Re has recommended that conservative regulation that puts health and safety first must be adopted urgently, irrespective of uncertainties in scientific circles, in order to prevent a repeat of the asbestos experience where many hundreds of thousands of workers' health has been damaged. Swiss Re emphasised that there is a really clear economic impetus to pursuing a precautionary approach to the regulation of nanotechnology. It warned that delayed action and inadequate regulation of workplace risk will result in a repeat of the asbestos experience. It is particularly concerned about liability for the insurance sector.

These warnings from really well-respected leaders in their field have not resulted in action yet by the world's health regulators. Although industry is still talking about early action to protect workplace safety standards, we have to acknowledge this is misplaced. There are hundreds of products already on the market that contain nanomaterials and we know that there are many

thousands of workers exposed in Australia alone. In the US the National Science Foundation estimates that up to two million workers are currently exposed to nanoparticles in some way as a result of their work activities.

This lack of regulatory activity is in no small part related to the huge gaps in knowledge that still exist around nanotechnology and that confound our ability to adequately assess risk and to bring in regulations that will guarantee workplace safety. Groups such as the Australian Institute of Occupational Hygienists in their submission to this inquiry recognise that quite explicitly. The UK Health and Safety Executive last year, when it conducted a very detailed occupational hygiene review of nanoparticles in the workplace, came to the same conclusion. It is the same with the US government's National Institute for Occupational Safety and Health. I will quote from John Howard, who is the head of the US NIOSH:

> Very little is known currently about how dangerous nanomaterials are, or how we should protect workers in nanotech-related industries. But, research over the past few years has shown that nanometre-diameter particles are more toxic than larger particles on a mass basis. This fact, plus the combination of particle size, unique structures, and unique physical and chemical properties, suggests that a great deal of care needs to be taken to ensure adequate worker protection when manufacturing and using nanomaterials.
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> However, the behaviour of nanoparticles is so far from our current understanding that we cannot easily apply existing paradigms to protecting workers.

Basically we are in a situation where preliminary toxicological evidence has pointed to serious risk but we do not understand that risk very well. We certainly do not have the basics in place to enable us to undertake risk assessment and regulation development that will protect workers in the workplace. In fact, we do not even have internationally agreed nomenclature, which is quite significant. If you cannot describe nanoparticles, how can you measure them? How can you do the safety assessments and how can you set the workplace exposure standards? Yet we have many thousands of workers, as I mentioned, in Australia who may be exposed to nanoparticles, who are working in a wholly unregulated environment.

As my colleague said, we are estimating that, based on crude extrapolation of the UK figures, we could have 30,000 people who are exposed to nanoparticles in terms of handling the materials in the course of their work. This figure does not take into account the builders who are using building materials that contain nanomaterials, people who are using paints and furniture varnishes, even people who are selling the clothes that have nanoparticles embedded in them.

It is Friends of the Earth's very firm view that in order to prevent a repeat of the asbestos experience, we need to bring in a moratorium on the research, development and commercial production of manufactured nanomaterials until such time as we can achieve the following: undertake an industry survey in Australia; identify who are the workers exposed, how many, which sectors; establish a framework which will achieve adequate protection of the health and safety of workers and the public and the environment from the risks of nanoparticles. Of course, in order to do that, we need to be part of international discussions to establish nomenclature and standards—ways to measure the risk of nanoparticles—and we need to bring in safety testing of products.

We need to legislate to require a full safety assessment of nanomaterial ingredients before they are permitted for use in products used by workers and the public. It is worth noting this was a key recommendation from the Royal Society's report last year. We also need to require the methodologies and results of this safety testing to be published in the public domain, rather than being commercial-in-confidence. Again this was a key recommendation of the Royal Society's report last year. Finally, we need to legislate to require mandatory and transparent labelling of products that do contain nanomaterials, so that consumers know, when they are buying a product, whether or not it does contain nanomaterials. Again this was a key recommendation of the Royal Society.

It is worth mentioning that we have provided to Christine McDonald an electronic copy of all the references that are cited in the summary that you have with you, just to make it easier for you to cross-check. The scientific studies that we are referring to and the different government reports are all included on that, so you will have electronic copies of those references.

Finally, we think that there should be a recall of untested products. It is not good enough that we have sunscreens on the market that contain products that a study five years ago pointed to as causing carcinogenic effects. There is no safety testing and no labelling. It is really an unconscionable risk that we are putting to our workers and the public. Our position is that we should not have products that contain nanomaterials being sold publicly until we have gone through the safety testing and we have a labelling regime.

Given the significant transformative potential of nanotechnology, it is really important that we involve the community in a wider debate about nanotechnology's social, ethical and socioeconomic implications. We must establish mechanisms that do provide an ability for the product to be involved in decision making about the introduction of this new technology. It is hard for us now to imagine just how large the transformative potential of this technology will be. I think you can see from the breadth of sectors that this technology is being used in that it will change the way that we use products. It will also act at the interface of information technology, biotechnology, robotics to achieve change in ways that we even now are struggling to comprehend.

In summary, nanotechnology presents new and very serious risks that are currently affecting workers and the public and, as industrial expansion continues, will impact further upon the environment. There is early evidence of serious harm and there are warnings from the world's most eminent scientific body in relation to nano risks. We also have warnings from the world's second-largest reinsurer that, in order to prevent a repeat of the asbestos experience, we need conservative regulation that puts safety first now and that catches up to the industry expansion. In order to prevent a situation, US insurers and reinsurers have already spent $US135 billion. They estimate the next wave of costs will cost them up to an additional $US275 billion. That is just in the US and that is not including health care and it is not including loss of workers from the workplace.

We recognise that there are tens of thousands of workers who are exposed in Australia alone and that we urgently need a regulatory framework that is going to protect them from workplace risk. However, given the huge gaps in knowledge that we have that confound our ability to introduce regulation that will achieve that now, Friends of the Earth supports a moratorium until such time as we have an agreed nomenclature that will permit us to not only describe

nanoparticles and nanotechnologies but allow us to conduct adequate safety testing to then set the standards that are going to guarantee protection for workers, the public and the environment; and that we institute mechanisms to involve the community in broader decision making about the introduction of nanotechnology and the impact that it will have on our community. Thank you.

CHAIR—Thank you.

Senator HUMPHRIES—I have one issue to raise. Obviously nanoparticles are so small as to be, in many ways, similar in properties to a gas or some sort of dust which is so fine that it can travel very long distances.

Ms Miller—Yes.

Senator HUMPHRIES—Because they are manufactured, presumably they have the potential to pick up toxins or other things on their surfaces which you would not necessarily find in other naturally occurring substances or gases, for example.

Ms Miller—Yes.

Senator HUMPHRIES—Given their great mobility and if a small amount was released into the atmosphere—presumably anyone anywhere in the world could inhale it—do we know that this has a greater potential or do we have any evidence to suggest a greater potential to be harmful in this form than any of the other things which are present in the atmosphere? If a person was manufacturing cyanide or something of that kind, presumably a small amount of that gas could escape into the atmosphere. Is there any evidence of that being more or less harmful than nanoparticles?

Ms Miller—I do not know specifically in relation to cyanide, but certainly a lot of our understanding of the body's response to ultrafine particles has informed early discussion of likely impacts of nanoparticles. 'Ultrafine particles' is the sort of terminology people usually use to talk about vehicle emissions and the heavy metals that are associated with that sort of pollution. There is a well-established relationship between the presence of ultrafine particles in the air and morbidity. We do not have a very good understanding of what sorts of exposure levels cause what sort of harm, which I think is the sort of information that you were asking in terms of, 'If we have a small release of something like arsenic, how does that compare with a larger release of something that may be more or less harmful?'

Dr Senjen—The other important point that you need to come to understand is, while we talk about nanoparticles as if it were sugar or a particular thing, what we are actually meaning is the group of materials that we call nanoparticles. Each and every nanomaterial is different from the next one, so there is a nanomaterial that is zinc oxide, titanium dioxide, various carbon formations, and the list goes on and on. There will be literally tens of thousands of different nanomaterials. Each and every one of them is going to be different from the next one because each and every one will be manufactured in a slightly different way. It will have a different shape, different surface properties, different surface areas.

While we have a general indication that they have particular characteristics in common, some of them will be just fine and others will not be nice at all. That is why we are calling for this moratorium, to really get in place an understanding of how to measure them, what to call them, how to regulate them, how to label them. At the moment we are in a situation where, for instance, you look at zinc dioxide and five different measuring instruments come up with five different sizes. One will say it is 10 nanometres, the next one will say it is 100 nanometres. Which one is it? And the size will have a very important effect.

We can hardly figure out their shape because, again, each different instrument will come up with a slightly different shape. There is no agreement on what these things look like, what size they are, what we should call them, what effect they have. Technology is just rushing ahead in this wild gold rush, and it is a gold rush because, as I said earlier, it is like turning lead into gold. You can make things out of basically useless materials that are suddenly super strong. Suddenly a little company that was worth nothing will be worth several billions of dollars. People are very keen to rush into it, but there is no regulation. There is no labelling. There is no idea what these things are called, what size they are, what effect they have on people. It is just like a Wild West situation. As with asbestos, there are early warning signs, and we really cannot wait 100 years and half a million dead people later to find out that we should have done something in the year 2005.

Senator HUMPHRIES—Is it overly cautious in the case of somebody who invents a nanoparticle, say, of titanium dioxide with certain applications? To know this is not a harmful substance or material would require a great deal of investment in research, analysis and things like that. If you put a moratorium on research until you have established whether it is safe to use in any way, aren't you effectively delaying the development of that technology very significantly? Perhaps that is warranted but perhaps it is also a major loss to the world of the advances that are possible through this technology.

Dr Senjen—How many people would you like to die?

Senator HUMPHRIES—But every new technology has the potential to kill people, let us face it. The question is not whether it might kill us. The question is whether there are benefits as well in developing that technology.

Ms Miller—And certainly the promised benefits are huge, which is why there is a mad gold rush going on, but I think it is extremely telling when you look at the body of scientific literature into the potential commercial applications of nanotechnology. It is massive. There have been hundreds of billions of dollars invested and there are some really promising results. The amount of money that has been invested into looking at its potential health and safety implications, its toxicological impacts and its environmental implications is extremely small. There is a dearth of peer reviewed toxicological literature looking at this stuff, and yet, of the stuff that has been published, the overwhelming majority of the studies have rung serious alarm bells. There are very few studies that have been undertaken into the impact of nanotechnologies that have not pointed to serious problems.

Take buckyballs, which everyone assumed would be perfectly safe. People are wanting to use them for cosmetics. They are causing severe brain damage in fish and changing their gene expression. It is killing water fleas, which are traditionally used as a biological indicator in

aquatic systems. Take the sunscreen that is currently on the market. The EU and the US have decided not to require new safety testing of titanium dioxide or zinc oxide at the nanoscale based on the known safety of those substances at a macroscale. That same sunscreen has been shown to cause DNA damage and to have a carcinogenic impact in human skin cells in in-vitro studies, and in human colon cells as well.

I think we have a situation where, yes, there may be many benefits but there are clearly equally significant risks, I would suggest, that are very poorly understood. Unless we take action to prioritise exploration of that risk, we are not going to see any change in the balance between the thousands—I think it is about 12,000—of journal citations each year into nanos' potential commercial applications and the—I kid you not—less than 20 toxicological studies, peer reviewed studies, that are looking at the health, safety or environment implications. It is really quite incomprehensible. All of these studies are pointing to really serious risks, and they are being carried out by highly reputable scientists.

Dr Senjen—Asbestos was once held as 'the' new building material. It was going to be just fantastic. It was used everywhere. Half a million dead people later, and a total of probably $500 billion in the US alone, was it worth it? What was the risk-benefit here?

Senator HUMPHRIES—The cost is surely not in just banning asbestos; it is banning any product until you have proven its safety. There would be many new materials, products, chemical combinations and so forth coming into potential use every day of the year.

Dr Senjen—Exactly, and they should all be safety tested, each one of them.

Senator HUMPHRIES—Is that realistic, though?

Dr Senjen—Yes. Why not be realistic for once? Why not be, for once, realistic and put human beings first? What is wrong with that?

Ms Miller—We are not supporting a total ban. We are supporting a moratorium until we achieve some very clear tasks. To reiterate: until we have a nomenclature, a way of describing it; until we have a way of measuring risk, a way of assessing risk; until we have done some of those safety assessments so that we have a better understanding of the toxicological interaction between nanoparticles in the body; and until we have a regulatory framework for assessing risk and protecting health and safety.

It may be that at some point we determine—hopefully, regulators in conjunction with experts and the community—that everybody is happy with a safety regime that relies on X number of safety assessments rather than testing individual substances. But that is a pipedream from where we are at now. We have no way of getting there unless we take quite serious action, which is why we support a moratorium. We have to acknowledge that, even though the world's leading safety regulators have been talking about the need for regulation for the last couple of years, we still do not have any. We do not even have best practice guidelines, and at the moment we have paltry investment in doing the work that we need to do to take us to a level of understanding where we can have a regulatory framework that does protect worker health and safety and that of the public.

What we are saying is that at this time we do not need to decide that we are going to ban this stuff forever. What we need to do is put the brakes on and start doing the work that is going to take us to a position where we can do the really basic tasks of identifying the nomenclature, of doing the safety assessments, of bringing in the regulatory framework. Until that time, we feel that it is really reckless and irresponsible to continue to allow this stuff to be made commercially available and to expose so many workers to it, particularly given the severity of the dangers that have been highlighted by the preliminary toxicological studies.

It is worth noting that it is not just Friends of the Earth's position that we need to do that stuff and we need to do it urgently. We have given you references from the different studies. I am sure you guys are very busy and have enough reading in your lives, but it is worth noting Swiss Re's concerns in particular. Their concerns are largely financial.

Senator CAROL BROWN—You recommend that regulations be introduced to safeguard workers who are exposed to nanoparticles. Which organisation in your view is in the best position to undertake the necessary research to ensure that effective regulations are established?

Ms Miller—I think at the moment we do not have a body that is capable of doing this. Our position is that we are going to need a regulator who can oversee the introduction of nanotechnology as a whole. Obviously there are different issues there for workplace exposure, consumer exposure and environmental exposure, but in terms of working out how we are going to deal with nanotechnology as a whole we feel that we are going to do that most efficiently by taking a unified approach. I am not sure how the existing bodies are going to handle that, but I would suggest we need to take a slightly new approach to the way that we do that.

We think that as a first step in terms of the worker issue we should have a survey, probably conducted by the health ministerial council, that actually does look at nanotechnology in Australia—looks at the sectors, looks at the workers—and perhaps that then interacts with a new regulatory body. We note that the GeneEthics Network has suggested an office for the assessment of new technologies and we support that recommendation. We think that at the moment we have a situation where industry is very far ahead of government and miles away from the understanding of the general community about these new technologies and how to manage their risks, so a new office is probably a good idea.

Senator ALLISON—This might seem a silly question, but to what extent are nanoparticles simply other particles that have been broken down to a smaller size, and to what extent do they occur naturally?

Dr Senjen—Unfortunately you came late. We discussed it earlier.

Senator ALLISON—I apologise for that.

Dr Senjen—That is all right. I am happy to explain it again, because I think the whole issue of nanotechnology is very complex. I have been involved for only a little while, maybe a year or so, and it is quite difficult to understand because technologists do not really like to explain these things in great detail.

Nanoparticles do occur incidentally. For instance, forest fires give off nanoparticles; combustion processes as well. But what we are particularly interested in is engineered nanoparticles. Engineered nanoparticles are particles that are manipulated through a variety of so-called top-down or bottom-up processes to change the particle size. I remember reading about one way of using gas combustion that was almost discovered by accident because somebody was trying to get even-sized particles, something went wrong with the machinery and, hey-presto, they had these funny-looking particles and, when they tested them some more, they had some amazing properties.

It is really when you develop processes that enable you to work at the atomic or molecular level on chemical structures to change their size and the way they interact that you can talk about nanoparticles. Somebody comes along and does something to change the size, and the effect of changing the size is threefold: (1) it increases the surface area, and that usually means it increases the reactivity because there is just more area to react; (2) it increases toxicity; (3) it increases mobility. While, for instance, naturally-occurring nanoparticles tend to agglomerate, tend to stick together, and then they become quite safe, engineered nanoparticles actually have the opposite effect. That is why they are engineered that way; usually they want them to be highly mobile. That increases, again, their toxicity. Does that make it a little bit clearer?

Senator ALLISON—It does.

Ms Miller—In supplementary response to that, the answer to the question, 'What is different? Is this not just a further miniaturisation of other particles that were out there?' is, as my colleague has just explained, that once you get down below 100 nanometres or so you find a situation where the laws of classical physics stop applying to those particles and quantum physics kicks in, and that is where your essential properties change. Things like optical properties, strength, electromagnetic properties all change and, as Rye has explained, that results in new applications for old substances. The essential difference between a nanoparticle and another particle is just that once you get to that tiny stage your properties change and, as Rye has explained, there is enhanced reactivity, mobility and toxicity.

Senator ALLISON—Do they come in liquid and solid form, are they powder-like or all of the above?

Dr Senjen—Probably all of the above. For instance, a popular chemical to make nanomaterials is carbon—everywhere. They have managed to assemble carbon into sheets, into tubes—some of them are cylinder; some of them are just one cylinder; some are several cylinders—into what I call buckyballs, which are structures that are hexagons upon hexagons. They look a little bit like soccer balls. They come in dot form; they look like dots. The reason they are called dots, I think, is because they have special light-emitting properties: they blink. Carbon alone comes in a variety of shapes and sizes. They look like powder, but on a molecular level they are much smaller than their bulky cousins.

Senator ADAMS—In your submission you draw extensively on the 2004 report of the UK Royal Society and the Royal Academy of Engineering.

Ms Miller—Yes.

Senator ADAMS—Do you know if any of the Australian governments have addressed the recommendations of the report and, if so, could you give us some details? Has anyone done anything?

Ms Miller—Not to our knowledge, no.

Dr Senjen—At the beginning of the year the Prime Minister's science and engineering committee, or something to that effect, had an inquiry or a get-together. GeneEthics, for instance, made a submission to that committee. The report that came out of it really said nothing. It said how wonderful nanotechnology was going to be and, 'We must put lots of money into it,' and, 'Yes, there might be some vague concerns with regulations, but we're not going to do anything about it.'

Ms Miller—They did not quite do that. They flagged that we are going to need to regulate at some point, but they made no concrete commitment to actually doing anything about getting us there. It is interesting to note that in that report they did acknowledge there would be a need to regulate at some point. They did not quite say what we need to regulate, how we might do it or why, but just acknowledged that there was a need to address community concern.

If you look at the 2002 report that came out from the Commonwealth—I think it was the Department of Education and Training at that point—which was, 'Nanotechnology opportunities for Australia,' or something like that, they asked the question in their 40-page report, 'Are there any new regulatory requirements associated with nanotechnology?' They answered with one paragraph that began with an unqualified no. We are making some progress and, in part, that is informed by reports like the one that came out of the Royal Society. But to our knowledge there have certainly been no publicly communicated steps to start taking us to a regulatory framework in Australia.

Senator ADAMS—I notice in your report here you talk about the multinational companies that are involved in Australian nanotechnology. Surely, somewhere along the line the results of their scientific evidence would be coming back to someone. Where is that going?

Ms Miller—No. There is no requirement for companies to conduct safety testing on new nanomaterials that they use in any products, be they fuel catalysts or cosmetics, and certainly the results of any safety testing that companies voluntarily undertake for their own information remains their own information. There is no requirement to place that on the public record.

Senator ADAMS—What about the Australian Research Council funding for some of their scientific projects? Where is that going? Where are the results of that going? They must have to report.

Dr Senjen—But they do not do safety testing. Why would they? If there is no requirement to do safety testing, people will not do it. Safety testing requires effort and, if you have $20,000 to spend, why would you spend $5,000 on safety testing when you could spend it all on torturing rats?

Ms Miller—The overwhelming direction of Australian research funds is going into products that have commercial potential. As I am sure you are all aware, there is increasing pressure on

our universities and public research institutions to enter into collaborative arrangements with the private sector. The research that we have heard of for Australian projects so far has been directed at products that are going to have a financial return; not safety testing; not environmental impacts. I do not really understand how ARC grants operate, but there are publicly available reports that come out about research that is undertaken by these different bodies, but it is mainly about new products that are on the market—new transparent zinc, smart fabrics down the line that can store electricity and that kind of thing—rather than being about the more mundane non-profitable potential impacts on health and safety and the environment.

Senator ADAMS—Would you put in a recommendation that the safety of the nanoscale ingredients has to be tested and must be labelled?

Ms Miller—Yes, and the results and the methodologies of that safety testing, we believe, should be publicly available.

Senator ADAMS—Thank you.

Senator POLLEY—Who should be paying for this safety testing and how long would you expect a moratorium to be in place?

Ms Miller—Certainly, there should be some government contribution to safety testing and research for public interest science, as well as for commercial applications. Our understanding is that at the moment there is roughly $100 million a year spent on nano research in Australia between public and private sector institutions. Nano is an issue where there has been a majority of government investment in research and development. That is starting to shift to the private sector, which is having a slightly greater input.

We think there is a role here for government support for research to look at health and safety impacts and environment impacts. Having said that, if companies have products that they want to put on the market, they should pay for the safety testing to take place. We are not saying that government should shoulder the whole cost burden of this exercise. If companies like Dulux or Revlon have products that are suspected of being carcinogenic, it makes sense for them to pay for the safety testing.

In relation to how long till a moratorium, the sorts of studies that are being done at the moment in the US—in terms of the potential for nanoparticles in sunscreens, for example, to cause cancer and that kind of thing—I think have a time frame of about three years. I would imagine that if, as part of your establishment of a regulatory framework, you wanted to conduct some of those preliminary studies to do the basic research, it is going to be a period of a few years before you are going to get returns.

CHAIR—Thank you. Are there any final comments?

Ms Miller—We appreciate the chance to talk with you. We know this is something which is only just starting to creep onto the public radar, but nano is going to be a huge issue in coming years. As we said, there are hundreds of products out there right now worldwide, but in terms of release onto the market in the next few years, this is the thin end of the wedge. We believe that

now is the time to take action on this, and it is only going to get harder down the track. There is a lot at stake, so we would encourage you to consider it very seriously.

CHAIR—Thank you very much.

[2.45 pm]

GAIN, Dr Kevin Robert, Australian and New Zealand Society of Respiratory Science

JOHNS, Professor David Peter, Tasmanian Board Member, Australian and New Zealand Society of Respiratory Science

CHAIR—Welcome to Dr Gain and Professor Johns from the Australian and New Zealand Society of Respiratory Science. Do you have any comments to make on the capacity in which you appear?

Dr Gain—Yes. I am here on behalf of the Australian and New Zealand respiratory scientists. I am the chief pulmonary physiologist at Royal Perth Hospital.

Prof. Johns—I am the Tasmanian Board Member of the Australian and New Zealand Society of Respiratory Science. I work at the University of Tasmania as an associate professor, and I have a conjoint position with the Royal Hobart Hospital.

CHAIR—Thank you. Information on parliamentary privilege and the protection of witnesses in evidence has been provided to you. The committee prefers evidence, as you know, to be heard in public, but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. The committee has your submission, which we have cleverly called No. 9, and I now invite you to make an opening presentation. Then we will have questions from the committee.

Dr Gain—I have taken the liberty of putting together a sort of bullet point list that covers the key points.

CHAIR—Well done!

Dr Gain—You might like to doodle or scribble comments as we go.

CHAIR—We accept that one as well.

Dr Gain—Just a quick background. While I am talking, if people would like to interrupt, please feel free to do so. We are here to answer questions and hopefully to provoke you to think. Please feel free because some of it will be fairly technical.

Our society has been in existence now for about 22 years. David was a formative member. I have been a member since about 1985. Our role is primarily running the respiratory physiology labs in the tertiary hospitals, teaching hospitals. We also have members in 70 labs throughout Australia and New Zealand. We do a large proportion of the training of people doing spirometry and do a large proportion of the teaching of doctors, registrars and so on in this field. Recently we have been involved as a society and David in particular as an author of a document on spirometry for the Department of Health and Ageing. We won the tender to provide that

document, going out and advising the primary sector particularly in how to do spirometry. Teaching is a very large item on our radar.

My personal philosophy—and David's I am sure is the same—is interest in raising the bar. It is not enough, monitoring or anything else, to simply do the tests. We have to ensure that not only are we doing them but we are doing them properly and we are raising the standards. That is the perspective we are coming from.

In terms of occupational exposures, it is very important that there is an individual responsibility but the culture is such that it does need changing. Support needs to be provided by regulation so that the people whose testing has been done actually own the data. If they change jobs or anything else, that data goes with them. It is a serial history. With the increasing mobility in the work force, that is very important.

Essentially lung function testing requires large effort on the individual being tested. They have to be cooperative; they have to want to do it. Particularly in an occupational area you will get people who will deliberately try to get bad results, for obvious reasons. People doing the testing need to be highly trained. They need to be scientists. They need to be able to critique what they are doing, understand what they are doing and know when things are not going the way they should be. There have been a lot of studies done internationally, in America particularly. In terms of training, six months into a study the quality is halved. It needs repeated auditing and repeated monitoring and mentoring. It is very important, even for people who know what they are doing, to keep the standards up.

An important issue is electronic medical records with serial data on individuals. The best data we can get is when you are fit and healthy; then we can pick up a change. We can compare you as predicted, based on a normal study population. You can lose 20 per cent of your function before anybody will start to take notice. We can show that you have lost 10 per cent where you would be expected to have lost three or four per cent; we know there is something going on. We can intervene before clinical symptoms become a problem.

Again, monitoring should be part and parcel of everybody going into an environment where there is a risk of exposure. There is no point waiting until exposure has occurred and deleterious changes have occurred. It is too late. We have to monitor everybody and get measurements on people when they are fit and healthy, not just when they are starting to get sick. The starting point is very critical. Education, of course, is a huge part of it.

Our aim is really to assist you guys, perhaps if you are formulating regulations, in ensuring that we do have appropriate quality safeguards built into the testing requirements; that perhaps there be specifications for the reports that are issued, so that we get consistency. There is no point testing somebody in WA, getting a set of data and a report which is inconsistent with what might be done in Queensland. At the present point in time that can happen. Really it is a case of the quality of the testing so the training is appropriate, the appropriate things are put into a report—for instance, when was the equipment last calibrated or validated?

I have done a lot of occupational monitoring in New Zealand. The first question when I get bum data is, 'When did you last calibrate your instrument?' 'I have no idea.' If somebody was up in court and I was the lawyer, the first question I would ask is, 'When did you last check your

machines?' It is the little things like this. They are little details but they actually form a very important part of the package. It is the responsibility of the employer and the employee. It is not one side or the other. It has to be a partnership if this sort of thing is going to work.

CHAIR—Professor Johns, do you want to make an opening statement?

Prof. Johns—I of course agree with everything.

CHAIR—That is very fortunate!

Prof. Johns—Yes. It is not as complicated as nanotechnology is what we are basically saying. I have made some notes here just to summarise exactly what Kevin said, so there is no doubt in your minds. Obviously exposure to dust and toxic fumes can affect the capacity of the lung to function, so lung disease is a big problem. The Australian and New Zealand Society of Respiratory Science is the peak body that measures lung function across Australia and in New Zealand. We have the experts in the field that know about quality measurements, maintenance of equipment et cetera.

The most common lung function test is spirometry and it is performed not only in lung function laboratories but by occupational health workers and people in the sports arena, looking at athletes. It is done by practice nurses. In other words, lots of people do spirometry outside of a lung function laboratory. It is well known that the quality of the measurements outside of a lung function laboratory in a hospital is really quite poor. What we are saying is that our society, being the peak body in this area, should really play a role in education or have their opinion sought in respect to spirometry.

Spirometry is the basic measurement, there are lots of others that you can do as well, but unless you have quality spirometry the results are meaningless. It is better not to do any lung function monitoring, if it is of poor quality, than it is to do it. I could repeat that 10 times because I want to get the point across: it is so important. It is important for two principal reasons. If a patient or a worker had his lung function test done today, the results of those lung function tests will be compared with what would be predicted for that person's height, age, gender and be interpreted on that basis. That is the first thing. You have to have quality data, otherwise it is meaningless to compare that to reference equations.

Secondly, Kevin emphasised perhaps the most important thing: when you do test that worker today, hopefully pre-employment with good lung function, you can then use that as your baseline into the future—in other words, is there a decline? One of the most important things about lung diseases which cause difficulty blowing out, which we are talking about here, is the rapid rate of decline in that lung function. Unless you know the quality at every time point is right, you will get false information and it will be of no value.

Really we are saying the ANZSRS, the Australian and New Zealand Society of Respiratory Science, is the peak body in Australia and New Zealand. We are there, we want to be of assistance, but it is very important that, whatever comes out, the monitoring be of high quality. Otherwise it is not worth doing it.

Senator HUMPHRIES—Can I be blunt with you and indicate some disappointment with your submission to us today. You have placed great emphasis on the technical aspects of measuring lung capacity and problems associated with assessment of the state of people's health; basically the health of their lungs. With respect, the issue that this committee is concerned about is really more central than that. It is, what exactly is the state of people's health? Have we got a problem in this country to do with exposure to certain sorts of substances which have led to a deterioration in people's health?

Your members have been operating the machines that have measured that issue, presumably, to some degree but you do not make a comment to us about that central issue in your submission. Can you, for example, comment on terms of reference a. in this inquiry, which is the extent of health impacts from workplace exposure to toxic dust?

Dr Gain—The first point in answer to that would be that we are not clinicians. For us to comment on diseases resulting from exposure, I think, is outside of our brief. Our concern is that clinical decisions are based on the measurements made. The literature is full of reports where the quality of the work done in occupational areas and others—particularly in a company where they have an occ health nurse and a spirometer and a doctor—is frequently not good. I have done a lot of monitoring or auditing in New Zealand. Probably 25 per cent of the measurements or the spirograms I have been asked to look at were not acceptable.

I am not prepared to comment on the size of the problem in terms of the disease load but I am concerned that the right decisions are made to deal with that. That is an important and integral part of any regulations that you may bring down concerning handling of dusts in the workplace. My focus is on monitoring and getting a measure of the size of the problem, if you like.

Senator HUMPHRIES—But you cannot tell us about the size of the problem, can you?

Dr Gain—I think it is outside our brief to do so because we are scientists; we are not clinicians.

Senator HUMPHRIES—Sure.

Prof. Johns—Also I would not like that to reflect poorly on our submission because really that is outside of the aims of our society. It is not that we have excluded it. If you look at all the studies in this area, you will find that most of the studies have been done overseas. There has been very little research funding available in Australia to do these studies. Certainly if a study was done, the Thoracic Society of Australia and New Zealand—and I do not know whether it made a submission—would be the body to do it, and the occupational health and safety people. They are the two that would get together to do a study, probably, but they would be using instrumentation and physiological techniques that we are talking about. That is certainly where I think that negativity should be directed. Make lots of research money available and perhaps those answers would be available.

Senator HUMPHRIES—I am sorry, I do not mean to be critical of the work that you do. You do certain work. Our committee's work is, again, of a different order of magnitude.

Prof. Johns—Yes, sure.

Senator HUMPHRIES—With respect, we might make a recommendation about people having to calibrate machines when they are doing tests, but it is very marginal to the work we are doing here in terms of those bigger questions of what is the size of the problem. But I take your point.

CHAIR—Taking up that point, the third dot point of the key roles of the society is:

- facilitating dialogue with other professional societies

Would that not come into the sharing of expertise and the consideration of the current situation in our community?

Dr Gain—Certainly over the last three years we have developed very close interactions with the Thoracic Society, which is the clinical body.

CHAIR—How about occupational medicine? Do you work with them?

Prof. Johns—We have not had a strong association with them. We have not been exclusive and neither have they. We are a relatively young society, but growing very rapidly, and, yes, we would like to. We have not at this point, which goes back to Senator Humphries' point.

Senator POLLEY—In your submission you support pre-employment screening. In my own personal experience, in some industries in my state that would have been an advantage for the workers because, for instance, when you talk about measuring the toxic levels and the instruments that are used, if a company has to install fans, it is one thing to put those fans in but it is another to actually have them cleaned regularly. In what sorts of industries and occupations would you like to see this pre-employment screening done?

Prof. Johns—That is a difficult question. In a very broad range. Any workplace where there is a dusty environment should have pre-screening. It is a very simple test to do, and we are concentrating here on only one of many tests that can be done. It is the one that is clearly available throughout Australia. I would say that anyone chronically exposed to toxic dusts—or dusts—should be pre-screened. That would include many things: silica, Western red cedar et cetera.

Dr Gain—My experience has been with aluminium—I did a lot of the testing for the Tiwai smelter in New Zealand and that was certainly a big issue—and the induction of asthma and things like that. I have done a lot with painters, car spray painters and people like that, plus the cyanates. It really does go right across the board. The sad thing is that you can erode half your lung function before you, personally, notice—and it is too late then. Thoracic or clinical medicine in the respiratory area can arrest disease progression, usually. It cannot reverse it. It is a one-way trip. That is really why we feel so strongly about the quality of the testing, in particular in the occupational area—getting in early, finding out what that baseline is, and seeing that you are changing normally instead of abnormally.

Senator POLLEY—It would be a fairly simple thing to incorporate. With a lot of employers now, you have to go through a health examination. It is something that should be there, as you said.

Dr Gain—It should be part and parcel.

Senator POLLEY—It is really going to protect the employer as well as the employee.

Dr Gain—Exactly.

Senator POLLEY—And, as you said, it is too late once you have lost some percentage of your capacity.

Dr Gain—That is right.

Senator POLLEY—I would not have thought that that would be a difficult or large task.

Prof. Johns—We would agree with that. It is just the quality and the training requirements for making sure that is of value.

Dr Gain—There is also the cultural thing of the employer versus the employee, which tends to be the situation now, which is why I said earlier that one of the things I think we need to change in society is to have more of an interaction, essentially, in both parties' interests and that the data should be transportable.

Prof. Johns—To go back to your point, Senator Moore, if this is done across the board then it will inform the employer and the employee about risks and inquiries and so forth. This is where the data which would be very useful would come from—from doing it across the board in any of these environments.

Senator POLLEY—It is about prevention, too, isn't it?

Prof. Johns—Yes, sure.

Senator ALLISON—It is a difficult area, I imagine, testing lung capacity and also testing exposure. Are you suggesting that both should be done, so you start with the lung capacity and regularly test that, but you also have records of exposure?

Prof. Johns—You would have to have that, obviously. You would need to know what the exposure was in the final analysis. But in terms of lung function, whether it is staying normal, deteriorating, declining, we are just talking there about lung function testing.

Senator ALLISON—Sorry, I said 'capacity' I think, didn't I?

Prof. Johns—That is fine. It is the same thing.

Senator ALLISON—Is it the same thing?

Prof. Johns—Yes, sure. But obviously you would need to document lots of things.

Senator ALLISON—How realistic is this? We had some witnesses a little earlier today representing the small-scale concrete recycling and high-risk areas where perhaps having to go down this path would make their business unviable. They called for cost-benefit analyses at an early stage so that they do not actually proceed with some of these.

Prof. Johns—I think it is manageable. It is logistically not difficult. I do not mean to sound flippant about it, but across Australia there is a huge push by the government for all GPs to include this basic test of spirometry so that, just like they measure blood pressure, they measure lung function. If they are treating people with lung disease, they should measure their lung function.

Senator ALLISON—So that someone can go off to their GP and get this done every three months, or whatever other period of time.

Prof. Johns—Yes, under those circumstances.

Senator ALLISON—But isn't workplace exposure more complicated than that? In terms of the concentrations, doesn't it depend what area of the workshop you work in?

Prof. Johns—Sure.

Senator ALLISON—Do we have all that data, the measurements of the size of particles, which you in your submission say is important?

Dr Gain—It is risk management. You have to weigh up the risks of exposure, and there is a lot of literature out there that will tell you about the particle sizes and all this sort of thing. At the Tiwai smelter, the boys in the pot room were the primary concern because of what they were exposed to there, the gases from the electrodes et cetera. For the guys working in the warehouse it is less of an issue and they perhaps get an annual check, whereas the boys in the pot room will be checked every three months. The exposures are important, because the first thing is to show a deterioration but the second thing is to find the cause of that deterioration, and that is where exposure records and things come into play. So it is risk management. Our thesis would be that when a program is set up—these people are at risk; these people need monitoring—it is done properly. That is probably our primary concern.

Senator ALLISON—In an ideal world, when the worker leaves a job and goes on to another one, they take a package of information with them about that exposure and their testing.

Dr Gain—I believe so.

Senator ALLISON—It is all properly calibrated and set out.

Dr Gain—Yes.

Senator ALLISON—Then they present that to their next employer, who is expected to make a judgment about what?

Dr Gain—Then if there is subsequent risk or a subsequent change in rate of decline, it is black-and-white: 'It started at the point I started this job.'

Prof. Johns—They would also have monitoring at the point when they go to the new job, so the person that is doing the measurements would also see that data. It does not have to be a GP; it could be an occupational health and safety person within that factory. Whoever is doing the spirometry would have access to that data and, if they serially plot it, it would become fairly obvious if there is an accelerated rate of decline. But if they just move around from job to job without having that historical record then you do not know where you are.

Senator ALLISON—This would be useful to those people who have had silicosis, for instance, who think they have got a good case and go to court and it gets tossed out because they smoked for three weeks when they were 16.

Prof. Johns—I do not know whether that would actually happen now. In fact, we are about to publish a paper. It is a study in Melbourne of people with COPD, chronic obstructive pulmonary disease, which a lot of people end up with—bronchitis and emphysema. The study shows that two-thirds of the subjects that we tested had a smoking related COPD, but one-third did not, and I think it is generally accepted, certainly in England with the coalminers' pneumoconiosis and so forth, that you can get COPD as a result of exposure to dust even in the absence of pneumoconiosis. In other words, it does not have to be only smoking related. If you smoked for a few years when you were 16, I do not know whether that would cut any ice now. It is a complicating factor, of course, though.

Senator ALLISON—I do not know whether anyone else on the committee has had a spirometer test. What does it entail? We are not talking here about a biopsy, are we, of the lung?

Prof. Johns—No.

Senator ALLISON—How does it work?

Prof. Johns—It is a test that takes between 10 minutes and 20 minutes. It depends on whether or not you are going to have it done after medication, but basically it entails a huge breath in, lips around a mouthpiece, blow with all your might until your eyes pop, you are absolutely empty, then come off the mouthpiece. You do that a number of times to get consistent high-quality spirometry. If there is any evidence of an abnormality that is slowing your rate of expiration then you are normally administered an asthma drug—Ventolin, which is salbutamol—and it is repeated a number of minutes later to see if there is any reversibility that is a feature of asthma. The test without that medication would probably take about 10 minutes.

Senator ALLISON—Is there anything preventive one can do, apart from masks and removing yourself from exposure? For instance, can you do deep breathing? Some people presumably are more susceptible to damage than others because of their physiological make-up. Would it be wise for some exercises to be done by people who would be in at-risk situations?

Prof. Johns—The answer to that is no. If you look at a group of athletes compared with fairly sedentary people you may find that, height for height, the athlete is able to blow out a little bit more air, but that is probably related to the fact that, when you breathe in, your chest is deformed

to a new shape, you have lots of air in your lungs and if you have better muscles because you are an athlete, you could pull your chest to a greater volume. It does not mean to say your lungs are better. You may have better perfusion—blood supply to the lung—because of your fitness, but, basically, fitness does not affect spirometry to any great extent, other than that you may just blow out a little bit more because you have been able to pull more air into your lung before you went on the mouthpiece. I think that that is probably good evidence that it is not going to affect you if you do breathing exercises, other than the fitness effect on muscles that that may induce. Would you agree with that?

Dr Gain—I would agree with that. There are exercises which can help with rehabilitation once you have the disease. But, no, it is a one-way street, sadly.

Senator ADAMS—Earlier on today we heard a submission that was stating that the medical school and postgraduate training is not adequate and a lot of the people coming through there do not understand about these airborne and dust related things. The second question is, how closely are you working with the divisions of general practice?

Dr Gain—Personally, I am working very closely, and David, as he said, is a conjoint member. I do a lot of teaching through the Asthma Foundation at the community level. I teach occupational health nurses, prison nurses, people like this, and the prime focus is on raising the level of awareness. I am not going to comment about their clinical expertise, but certainly when it comes to doing spirometry, in an awful lot of practices it is, 'Here's the manual, go and do spirometry.' There is no training whatsoever. As soon as I challenge them about quality assurance they say, 'Oh, we haven't got time for that.' This is the culture. You go to your GP and it is like shelling peas out of a pod—bang, bang, bang. It is a problem.

Senator ADAMS—To come back to the practical side, you are going off to get a job and you have a pre-employment form to be filled in and you take it to your GP. You are saying that you want that basic technology—everything—to be absolutely spot-on, but what if the GP is not aware or is not able to do it correctly?

Dr Gain—We are working very hard on this. One of the things that we have instituted recently is an accreditation process for spirometry training courses. There are some good courses run at the Alfred. I am establishing one in Perth. Again, we are a young society, and it is really only in the last three to five years that we have gained the recognition to be able to start to make these things happen and we are working very hard in this direction. Certainly within five years the expectation should be that everybody doing spirometry would have attended an accredited course and would be certified to do it. This is the direction we are coming from, and I think this is going to be the only way that you are going to address a lot of those issues.

Senator ADAMS—With WA, of course, being so predominantly reliant upon the resource sector, have you had any contact with the Chamber of Minerals and Energy in this regard?

Dr Gain—Personally, no.

Senator ADAMS—I think it would be worth talking to them, mainly because all the bodies that belong to them have their occ health and safety standards there; they all have their people. That might be a really good way to get through.

Dr Gain—I have had contact with some of the occ health people through the Asthma Foundation courses I run. There is also a little bit of a cultural gap between the medical profession and allied health sometimes. For us to have been invited to talk to you has been hugely encouraging. Having done the health and ageing document, these are all little steps. We are gaining recognition such that we can actually start to take the initiative. Prior to these changes, we were on the back foot. We were the boys in the lab and we kept our mouths shut.

I agree with you entirely, and we are pushing from this end, but I think there is possibly a place in any regulations to push from the other side as well. This is a stated expectation. We can provide the tools to achieve it. Hopefully, we can advise you perhaps on how to couch that expectation, and I would hope that we can have dialogue in the future, but I think it needs approaches from both sides.

Prof. Johns—We talk to GPs all the time. I interact with divisions of general practice all the time. I cease to be amazed that the spirometry is so poor, but I am also encouraged by the professionalism of these groups and their willingness to try to change. One of the most important developments, I think, apart from the certification of courses for spirometry, is that we now have almost completed the development of a nationally based GP spirometry training course. The National Asthma Council and the Australian and New Zealand Society of Respiratory Science have come together. We are just about to apply for the course to be endorsed, and it will be available to GPs and their practice nurses at no cost to the GPs.

One of the impediments at the moment is that GPs often have to pay to do an accredited course. Some of those courses are $700, and the majority are not going to pay that. So we are going to have multiple points around Australia, targeted at GP conferences and so forth, where they can easily attend to understand how to do quality spirometry, how to interpret it et cetera. That would mean that many thousands of GPs—at least hundreds and hundreds a year—can be trained or at least be brought up to the quality that we would like to see. That is very important when it comes to monitoring, as mentioned by Senator Allison. To be able to monitor across Australia with the same quality is going to be the bees knees, and that is what we should aim for. It is achievable.

CHAIR—I find it hard to believe that you are in the backroom saying nothing, Dr Gain.

Dr Gain—I am very retiring!

CHAIR—Do either of you have any final comments? One of the issues has been the need for the test to be accurate. If it is not accurate, it is not worth doing.

Prof. Johns—It is a simple message, basically.

Dr Gain—Please, if we can do anything to help you, I think you realise how passionate we are about this—

CHAIR—Is it fair to say that the success so far has been driven by the asthma group rather than the occupational health and safety area?

Dr Gain—Respiratory medicine rather than occupational, yes.

Prof. Johns—You have to remember that most of ANZSRS members work in hospitals, and we encounter clinical patients with all sorts of diseases. Asthma and COPD have been the main ones. We see people who have been exposed, of course, but if you looked at the demographics of the patients you would see that a relatively small number would actually be related to occupational health. That does not mean to say we do not do anything about it, but we do know about the monitoring of it. We have a very broad spectrum of lung diseases that would probably come before that.

CHAIR—Thank you very much.

Prof. Johns—Thank you for the opportunity.

Proceedings suspended from 3.20 pm to 3.35 pm

VALLANCE, Ms Deborah, National Health and Safety Coordinator, Australian Manufacturing Workers Union

CHAIR—I welcome Ms Deborah Vallance from the Australian Manufacturing Workers Union. You have received information on parliamentary privilege and the protection of witnesses. The committee prefers, as you know, evidence to be heard in public, but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. The committee has your submission, which we have as submission 15A, and a supplementary submission that you provided to us. Would you like to make an opening presentation, and then we will go into questions.

Ms Vallance—Overall, I would like to speak broadly to the terms of reference, given that a number of the issues that we raised in each of our submissions are on two totally different aspects of the inquiry. Some of those terms of reference cover a whole range of issues, indicating some of the possibilities for solutions to what we see as problems with how both current and well-known workplace hazards and their health effects are dealt with and also our view that nanotechnology is definitely a new and emerging issue.

With regard to our understanding as a community about toxic dust exposure in the workplace, we actually really only know how that is from our national mesothelioma register. That is our only national piece of information, outside of the national cancer register, that actually looks at health effects specifically related to workplace toxins. This means that we do not really have, as a nation, a very good idea about what happens in terms of real workplace exposures in terms of dusts.

With regard to chemicals, we have systems in place under the relevant jurisdictions about hazardous substances, which provide at least some sort of legal framework for addressing chemical substances in the workplace. We also have what is called NICNAS—the notification scheme—that is run out of the Department of Health and Ageing, which looks at new chemicals that are introduced into the Australian workplace and market. They have to be vetted through the NICNAS process.

So we have significant processes regarding chemical hazards—mind you, we still have huge problems with chemical hazards, because 40,000 to 50,000 are in use which were never assessed using those programs—but we do not have that same sort of approach to workplace dusts. In New South Wales we have the Dust Diseases Board. In other states we have various processes through workers compensation mechanisms. A process of notification has just been introduced within Queensland WorkCover so that when people are exposed to asbestos they can notify a government department so that that is then recorded. We see that as an innovative and sensible approach, about trying to get some grasp of what is actually happening.

As a nation, that is what we have been trying to do in terms of asbestos, but we do not have any other processes for things like silica exposures or any of the other respiratory irritants that we have in our workplaces. Respiratory physicians in Tasmania, New South Wales and Victoria run a project called SWORD, which is a notification system when they think that there is

occupational related respiratory ill health. That is something that is done by a group of professionals, but there is nothing on a national level that addresses those sorts of issues.

We believe that there is a lack of a national approach to the new and emerging issue of nanotechnology and also issues relating to asbestos related diseases. There are some part programs that function in various parts of the nation that it may well be useful to investigate so that we can get a significant understanding about what is happening in workplaces in regards to exposures to toxic dusts.

In relation to silica, AMWU members are predominantly only exposed in our foundries and on sites in the construction industry, where others are generating dust. Silica is yet another example of a toxic dust that we have known a lot about but which we have done very little about in terms of how we regulate it. It has taken us 12 years to lower the silica exposure standard, despite a considerable amount of medical and epidemiological evidence, and that decrease in exposure level only happened last year, after many inquiries and special working groups through the National Occupational Health and Safety Commission process.

We have a dreadful history with asbestos—the highest level of mesothelioma in the world outside of Finland. In relation to silica and technologies like welding, the International Agency for Research on Cancer recognised welding as a carcinogen back in 1991, but we do not have any notification process on what is happening in terms of respiratory illness related to those sorts of processes, which may be related to toxic dusts—the metal dusts or particulates—or may be related to nanoparticles in welding fumes.

From those things right through to nanotechnology, we do not know. We do not have a system for assessing. We do not have a system for collecting. With regard to nanotechnology, we are very much in the dark about who and what and where we are exposing people. We need to adopt some sort of sensible approach—which in environmental and health and safety talk is the precautionary principle—at least with new and emerging technologies like nanotechnology, given that the early evidence is that nanoparticles have the ability to get into the human body and that those particles, once in the body, can actually cross the blood-brain barrier, which of course is why they are so wonderful in terms of looking at carriage for pharmaceuticals, so it is one of its benefits but could well be one of its downsides. Since we know so much about it, we suggest that as a matter of priority organisations like the old National Occupational Health and Safety Commission and NICNAS get together with the Commonwealth Environmental Protection Agency to look at what we are doing about surveillance for those new technologies.

That is a broad statement about where we see there are downfalls and potentials to fix the problem in terms of a nation looking at our surveillance and our understanding of respiratory related diseases, predominantly related to toxic dust exposure, because we have a very patchy history. I am happy to answer questions about any issues in particular that are in the submission.

CHAIR—Thank you, Ms Vallance.

Senator HUMPHRIES—I appreciate that the AMWU does not cover all of the industries where the use of sandblasting might occur, but it has been hard for the committee so far to get a snapshot overview of Australian industry to work out where the trouble spots are. Within the

areas that your membership covers, what would you say were the sectors where sandblasting remains an ongoing problem as opposed to an historical problem?

Ms Vallance—CFMEU will be able to help you tomorrow. For us, it is in the foundries. When they make moulds, a lot of sands are used, so there is the potential there for exposures. In underground mining, there is the potential for exposures. We have members in mining, but they are not the bulk of the people who work there. For us, it is really the incidental stuff in the construction industry, where there is sandblasting or smashing up concrete and things like that. Our people are sort of bystanders and not actively involved in it, but are beside what happens. Those are the three main areas for us.

Senator HUMPHRIES—When you say potential for harm, there are certainly a range of industries where there is the potential for harm, but some industry sectors have made submissions to us about how they have taken steps to minimise that harm. Are there any particular sectors where you would say there are efforts being made to minimise harm, where there are perhaps widespread bad practices at work that would cause you concern?

Ms Vallance—Good foundries make efforts but foundries, because industrially they are economically under a fair bit of pressure, are notoriously dirty places. There are sectors of the foundry industry that do not do well, because they do not do very basic things like good exhaust ventilation. I gather that in most of the mining industry it is not bad, but because our members are not directly involved I do not have the information. I know that years ago the Western Australian mining industry was saying that things were all right. However, we had concerns about some of the data that was coming out.

Senator HUMPHRIES—We will ask the CFMEU tomorrow. You support the creation of a national reporting regime for workplace exposure to toxic dust.

Ms Vallance—Yes.

Senator HUMPHRIES—Would you suggest that inherent in that is the idea that the Commonwealth should assume certain regulation of that field or would you see it as a matter of national cooperation to establish that national reporting regime?

Ms Vallance—A cancer register, for instance, is a process whereby you have state cancer registers that then feed into the national process. The national cancer register is kept by the Australian Institute of Health and Welfare. That may well be a model to use, just because of the way our state systems have worked. Most of the regulation is state related regulation. Therefore, that is the model that would be best to use. Having said that, there is also the possibility of the Commonwealth accessing and using data in a different way than they currently do in terms of health surveillance in relation to the occupational setting.

What happens at the occupational level is that a meso register is kept with the Australian welfare mob. It used to be with NOHSC but it has moved over. But that is the only thing we do. There is nothing that looks at pneumoconioses—in particular, silicosis and asbestosis. There is nothing that looks at lung cancers. There is a role for cooperation at a peak level to further massage data and research data than we already have. There is also a role nationally for things like the SWORD project to be made a national project.

That obviously would need to be talked about with organisations like the respiratory physicians college—those sorts of surveillance mechanisms of collecting the information and then being able to use that research and information to look at prevention. We do not do any of that work as a nation.

The third thing is the national role in terms of nanotechnologies. The NICNAS is a model where new chemicals come in and they have to go through an assessment process before the manufacturer or importer can use them. Nanotechnology seems to be a good example of a new technology where we do not know where it is being used, but under the NICNAS process there is what is called the priority existing chemical process. At the moment we, as a trade union, are commenting on formaldehyde. Formaldehyde has been in our working communities for 100 years. An investigation has been done into where it is used, how it is used, what the exposures are et cetera. That sort of structure could be used for looking at the new and emerging technologies. That is a role at the national level, outside of the states.

Senator HUMPHRIES—You adopt the submission of the Friends of the Earth. They have suggested there should be a ban on research and development with respect to nanotechnology until such time as there is some sort of regulatory regime in place. Another viewpoint would be that it is a bit hard to regulate an area until more is known about the potential of the substance you are dealing with. We need to let the industry grow more before we can effectively regulate it. Do you still take the view that we should be slapping a brake on research and development until that regime is installed, or would you accept that that is a little bit harsh?

Ms Vallance—I hate to say it, but there is a third way. The call for a moratorium is reasonable, given that we do not know. The option of waiting until it all gets big so that we can then have a look at it is potentially letting something happen that we do not need to let happen. You need to do a whole lot of scoping stuff, working out where it is, and then moving towards a proper investigation and seeing what needs to be done, which may include a moratorium and a ban. We would see that there are a few steps before you go directly into that.

Senator HUMPHRIES—Thank you for that.

Senator POLLEY—You have spoken about some bodies that already look at regulating the industry. Can you elaborate on what you see the federal government's approach should be, and how they can play their role in regulating? Can you give us any indications of the sorts of areas? You have just spoken about moratoriums and things we could do before the horse bolts. Can you elaborate on how you see the federal government's role in this? Are there enough monitoring bodies now?

Ms Vallance—There probably are enough monitoring bodies; it is whether they do anything that is really the problem, and also their coordination. There is the Commonwealth EPA people; there is the National Pollution Inventory; there is NICNAS; there is the old National Occupational Health and Safety Commission. The only new and emerging groups in terms of nanotechnology and the fact that they are consumer technology are, I suppose, health services or consumer affairs. All those other bodies already exist. You could modify the terms of reference for other bodies so that together they could work out a strategy to take a whole-of-government approach. If there is a willingness to work through some of the myriad of issues that are covered, there are possibilities there. There have been suggestions about setting up another organisation. I

would be loath to do that. There needs to be a scoping exercise to see how much could actually be picked up with minor modifications so that you use the current expertise in particular organisations and do not need to re-create—I am sorry, that is a waffly answer.

Senator POLLEY—Commonsense and sharing of information, and using those organisations in the structure that is already there would be good. Thank you for that.

Senator ALLISON—The suggestion was made earlier this afternoon that workers should have spirometry testing before going into positions where there may be exposure to dust particles and that there be a continuous measurement of lung capacity in order to detect, at an early stage, any decline which might be associated with the workplace, and also that workers would have ownership of those records, together with records of exposure. What is your response to that proposal?

Ms Vallance—Currently there is the ability, under certain occupational health and safety regulations, for—when I talk about surveillance, I mean workplace surveillance and human being surveillance, so I suggest that is what we are grossly lacking in Australia. Under certain regulations health surveillance is meant to occur. That health surveillance is patchy and has its difficulties, in that it is only related to a couple of particular issues, like asbestos and if the silica levels are up at a particular rate. There are areas which are already meant to have health surveillance done and it does not occur. I wholeheartedly support improved surveillance but the caveats on that are the issues about privacy, feedback to employers and how that is done.

Also, I have to say that there is a real reluctance in the health and safety area, and that is a justified reluctance: too much effort on health surveillance often means that people lose the focus about control at source and stopping the problem before it affects the human beings. Our asbestos disaster is not because we did not know it was there; it is because we refused to act. The problem that may well be showing up in certain sectors in terms of silicosis is not because we did not know the problem was there. We have known about silicosis—I cannot remember the first time I read about it in medical textbooks—for over 50 years. The concern is that if you put a lot of effort into surveillance but then do nothing about it, what is the point? You are just picking up a lot of 'had it' lungs.

Senator ALLISON—The construction industry is one which has, probably more than any other, been able to exercise muscle with regard to occupational health and safety issues. Is this an area that the union has underdone in that respect?

Ms Vallance—I am not sure what you mean in terms of what the union has done.

Senator ALLISON—It is often the case that union action is taken with regard to occupational health and safety on construction sites in particular. Maybe it varies.

Ms Vallance—It happens across industry. Construction sites are one of those places because they have a huge death rate.

Senator ALLISON—Indeed. I am not taking issue with you on that. The evidence that has come to the committee is not so much the big work sites where there is a high level of occ health and safety interest and activity, but the smaller sites where there is often little knowledge on the

part of both employers and employees. How interested is your union in this whole area? Do you attempt to influence the workplace to improve protections? How active are you in this whole field, perhaps in those areas that are not so highly regulated because they are not big sites?

Ms Vallance—We would love to have an increased role in small work sites but often we are not allowed to. We can only do stuff where we have union members. We do not have the ability to do anything where we do not have members. That is an obvious constraint.

Senator ALLISON—You are not suggesting that the only places where there is inadequate protection is where there is no union presence, are you?

Ms Vallance—No. However, I would refer you to research that shows, in terms of health and safety and improved performance, there are five key features: management commitment; a good regulator which then goes about enforcement; consultation and participation of work force backed up and supported by collective organisation and trade unions. They are the five features of good workplace safety. We are one of them, so yes, I am suggesting that.

The AWU has a long history of doing stuff about occupational health and safety. In terms of silicosis, because it is not a big area of ours when we do stuff in foundries, we have consistently had difficulties there. In terms of emerging technologies like nanotechnology, we do potentially have coverage for a lot of laboratory workers. We do not have a huge membership in that area, partly because we have some pretty aggressive employers who do not wish to have unionised white collar sectors of the work force. We have had some very significant and difficult processes of trying to represent workers who work for significant laboratory places.

We have also had some experience in parts of research and development in particular, say the pharmaceutical industry. One of the problems with the work forces in those research and development areas is that often people who do that work get real excited about the work that they do because it is frontiers. They get excited by their science, which is fantastic. There has been a tendency in the past to think that your PhD will protect you. That is one of the difficulties with the new technologies in terms of a general consciousness about health and safety amongst that group of people doing that work. Those scientific areas have improved their game but they are hard to influence because they know everything. They know much more than you do, so it is quite difficult.

Senator ALLISON—With those people who know much more than you do, are you able to get material out to them—fact sheets, leaflets, posters? Is it possible to provide the committee with a selection?

Ms Vallance—The stuff we have done for our lab workers?

Senator ALLISON—Yes.

Ms Vallance—Sure, but we have not done it on nanotechnology. We are just getting our heads around that.

Senator ALLISON—I am a bit more interested in the other areas of toxic dust.

Ms Vallance—Yes, sure.

Senator ALLISON—That would be good, thank you.

Ms Vallance—No problems.

Senator ADAMS—Just on your submission, I was very pleased to see your asbestos safety certificate suggestion. As I am from Western Australia, I can assure you that real estate has gone through the roof, so lots of people are now doing renovations rather than building new homes. Some of these are the 1920s type homes and the people have no idea what is going on. You have said here that you think these asbestos safety certificates could be issued as a normal part of the applications before the councils. Have you done some work with councils on that as to whether they would play ball with you or not?

Ms Vallance—This has predominantly come out of the excellent work done by our New South Wales branch. I am willing to give the committee more information about that, because we have done work with significant numbers of councils in New South Wales, but we also got into trouble. Some of the councils got into trouble with the ACCC. I am not sure of the details but I know there were some concerns raised. Can I be put on notice and I will forward you some more precise information about the work that we have done with councils in New South Wales.

Senator ADAMS—I think that is a very practical suggestion anyway.

Senator CAROL BROWN—What is the AMWU's attitude to the current legal arrangements in the states for dealing with claims arising from exposure to toxic dust? What changes, if any, do you believe are needed? Can you give me some examples of hardship or difficulty under the current arrangements? Are the statutes of limitation an issue for your union?

Ms Vallance—Senator, you have asked a big question. Some of that I will take on notice as well. You would be aware that there are eight workers compensation jurisdictions in Australia. We have members in seven of them. We do not cover the seafarers. There are different problems in different states and in different jurisdictions and the problems are predominantly related to toxic dusts. There are specific problems with compensation in terms of mesothelioma and asbestos related disease, but then there are groupings, which are much fewer, of other dust related diseases.

The predominant difficulty we have with those claims is the definition of what is eligible under workers compensation schemes, where the definition will be a significant and contributing factor related to people's work. For instance, there are issues around how much someone's work contributed versus how much someone's cigarette consumption contributed et cetera. We have dealt with that and sorted that out much better in the asbestos area, just because we have killed so many people. We do not know how that all works out in terms of other toxic dusts. That is very difficult to work out.

There are problems about eligibility. There are then problems about causation and we do not know who has been exposed and all of those things I referred to in my initial comments. Then there are the peculiarities in each of the jurisdictions about some of the problems. If I remember correctly, Tasmania has more of a problem with the time frame issue than other jurisdictions do.

It is worse in Tassie, for instance, than it is here in Victoria. Can I get back to you on those issues, because it is a huge question and one that I am not quite prepared for.

Senator ADAMS—Thank you. Earlier the Australian Lawyers Alliance recommended a nationwide system of personal liability of directors in breach of common law for workplace hazards. What is the AMWU's opinion of this suggestion?

Ms Vallance—We would support that.

Senator ADAMS—There was some evidence given this morning, I think it was, about sandblasting and why health and safety measures were not changed at work sites in Australia when sandblasting was outlawed in Britain. It was the view of the person giving the evidence that that was because the unions were too powerful. Would you like to comment on that?

Ms Vallance—No. I do not know what that means. I am sorry, I do not understand. What, that sandblasting was not outlawed because unions were too powerful?

Senator ADAMS—Yes, that is right. That was the evidence.

Ms Vallance—I have no idea what they are suggesting because, looking at the Australian trade union history regarding occupational health and safety, particularly in heavy industry, we have done pretty well at asking for improved regulation. For instance, in regard to the silica exposure standard, I have grey hair and I can remember when, through the ACTU, we first started lobbying 14 years ago about a decrease in the standard. We had opposition from the mining industry and from a number of the jurisdictions against a decrease in the exposure standard.

Senator ADAMS—So you would refute that?

Ms Vallance—Yes.

Senator ADAMS—Thank you.

CHAIR—We will be asking that same question of each of the unions that come before the committee, as that statement is now on record. Ms Vallance, you have committed to give a couple of supplementary answers to the committee. If any other evidence comes forward, feel free to contact us.

Ms Vallance—Has someone recorded Senator Brown's question, because I did not get it all written down. Could it be forwarded to me?

CHAIR—You will be getting a copy of the *Hansard* in any event.

Ms Vallance—Thank you very much.

CHAIR—Is there anything else you would like to add, Ms Vallance?

Ms Vallance—No. Thank you for the pleasure.

CHAIR—Thank you very much.

[4.15 pm]

MULLINS, Mr Stephen Denis, Occupational Health and Safety Officer, Australian Council of Trade Unions

CHAIR—Welcome, Mr Mullins. We should tell you that the two senators who have had to go had other commitments, and they wish to pass on their apologies and to assure you that there was no intent to avoid your evidence by leaving early.

Mr Mullins—I accept their apologies.

CHAIR—It is always disconcerting to see numbers change when you come in. Information on parliamentary privilege and the protection of witnesses has been provided to you. The committee prefers evidence to be heard in public, but evidence may also be taken in camera if you consider such evidence to be of a confidential nature. The committee has the ACTU submission, No. 28. Would you like to make a statement and then we will go into questions from those of us remaining.

Mr Mullins—I will go through some of the recommendations on the first page. The ACTU recommends that the jurisdictions adopt a 0.05 milligram per metre squared exposure standard for all forms of crystalline silica, with a national level of 0.025. The current standard is 0.1. The American Conference of Governmental Industrial Hygienists recommend 0.05, and it is also a precedent that has been set in some European countries, so that is what the ACTU's position is. 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.

The second point is that the ACTU recommends more rigorous enforcement of exposure standards across the jurisdictions. Our members in the industries are telling us that really there is very little enforcement out there from the regulators and I think that if there is a commitment to at least the exposure level of 0.1—the regulators have endorsed that through the ASCC and the Heads of Workplace Safety Authorities—they should back that up by improved monitoring of workplaces where workers are exposed to silica and those toxic dusts. We would like the regulators to get out there and do a little more work in that area. Perhaps the monitoring devices need to be improved as well.

The third point is that we recommend that a national community education campaign be developed by NOHSC, now the ASCC—the Australian Safety and Compensation Council—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.

The fourth point is that the ACTU recommends that the government adequately fund research into improving medical tests for dust diseases, particularly silica and asbestos related diseases, with a focus on early detection. At the moment I think that we struggle. We do not have research into early detection, nor do we have enough research dollars going towards looking for cures. They are very difficult and long-term projects, but the longer we leave it the greater the number of workers who will die, so money needs to be pushed into those areas, especially if you consider the long latency period of toxic dust diseases. Get in there as early as possible—now. Now is when we need this money. There are several projects floating around that are researching into these toxic dust diseases. They could be further supported. I know there is some support for them, but there could be further support for them.

The ACTU recommends a government initiative to screen all former workers from the sandblasting industry for dust diseases at no cost to the workers. I think, again, it is fairly self-explanatory. There are former workers from the sandblasting industry who have had to go about finding the names of their colleagues from those industries to let them know about their own cases where they have contracted a disease in the industry. I think that the government and business need to take the lead on this and provide those workers with, if not peace of mind, at least detection of the disease if it has affected them. We are talking about thousands of workers here. I would suggest that it needs to be a government initiative and it needs to be done now.

CHAIR—What kind of screening?

Mr Mullins—There are three forms of screening. There is the chest X-ray. Let me refer to my notes.

CHAIR—Yes. The recommendation just says 'screening'. It is a very significant recommendation. In terms of putting that forward, what kind of screening are you recommending?

Mr Mullins—For the workers exposed to toxic dust from sandblasting, which no longer apparently exists—

CHAIR—We believe.

Mr Mullins—We believe. Exactly. The likelihood of a chest X-ray to show up the disease is good. The latency period is long enough that, if it has developed, it probably will have by now and the chest X-ray I suppose is the best way to uncover it. There are other methods. There is the work history from workers exposed in that area, and also the lung function tests apparently.

Senator ADAMS—The spirometer.

Mr Mullins—That is the one, yes.

CHAIR—Senator Adams has a medical background, so she is very useful. When you make that recommendation, your preference is the chest X-ray?

Mr Mullins—I would suggest that would be the best option, yes. Moving on to the next point, the ACTU recommends improving the data collection across the jurisdictions on toxic dust

diseases. That includes establishing a national medical registry of dust diseases cases. There are already existing dust diseases collection instrumentalities, one of which is SABRE, which is to do with workplace exposure to toxic dusts. That is a voluntary scheme at the moment and notification to that body is voluntary. I think it perhaps could be compulsory. At the moment we are basing our data on workers compensation figures, which are inadequate. We need to look at improving the data collection; compulsory reporting by the states, the jurisdictions, to this scheme; and perhaps expanding it to the hospitals and GPs and other groups that deal on a daily basis with people who have contracted airborne diseases. Until that happens we do not get the right figures and therefore we do not know how big this problem is and we cannot work out a good strategy, so that is essential.

CHAIR—I am sorry to do this to you, Mr Mullins, but it is easier to deal with issues as they come up. I do not think we have had SABRE mentioned before.

Mr Mullins—It is Surveillance of Australian Workplace Based Respiratory Events.

CHAIR—And who does that?

Mr Mullins—I would have to take that on notice.

CHAIR—Can you please do that?

Mr Mullins—Yes.

CHAIR—We heard about something called SWORD and there is a similarity. Can you take that on notice, please, and let us know exactly who does it and where it is done. The evidence we heard from Ms Vallance was that the SWORD process was in only a couple of jurisdictions, so we would like to get clarity about SABRE, which you indicate is a useful mechanism, on where it works, how it does it and how it compares with SWORD. Would that be fair enough?

Mr Mullins—Yes.

CHAIR—Thank you.

Mr Mullins—I add that it is not necessarily the only option. There may be a requirement to establish, such as exists in New South Wales, a dust diseases board but a national one; so that is just another option.

The next point is that the ACTU is concerned that workers exposed to toxic dust such as silica are losing their workers compensation claims despite medical reports that show causal links between toxic exposure and their illnesses. It is a sad state of affairs when someone needs to undergo surgery and the surgeon says that there is evidence to show that they are dying because they were exposed to silica but, because they were a smoker, they are not able to get a compensation claim. Looking at the way that toxic dusts are compensated, it needs to be that if a worker was at a workplace that potentially exposed them to toxic dust and there is medical evidence to show that the disease is a result of that exposure, then adequate compensation needs to be granted to those workers.

We cannot have cases where people are dying because of their exposure to a workplace disease but are not being compensated because of some other factor, or because they were misdiagnosed, which has happened. People with mesothelioma were misdiagnosed as having lung cancer and so there was no link to their workplace exposure. That should not happen with silica. It should not happen with any of these toxic dusts that we are talking about now. There needs to be an improvement. Because of the long latency period with toxic dust exposure—and sometimes there is the statute of limitations in terms of their claims—improvements need to be made so that workers who were exposed and are dying now or have a disease should be adequately compensated.

We are recommending that the Australian government hold a national conference on nanotechnology before the end of 2005. I know that is a big call, but there is a level of urgency about this. I will run through my thoughts about what the national forum or conference might look like. It would invite regulators, hygienists, scientists, lawyers, researchers, unions, business, medicos, community groups, and bring them all together. There are four or five points that I think we need to get out of a forum like that. We need to look at regulating the exposure levels of workers to nanoparticles. We need to look at how to label products that contain nanoparticles. We need to look at monitoring the workplaces that expose workers to nanotechnology and nanoparticles. We need to look at screening workers. These are all things that the regulators could pick up.

It needs to be done, because at the moment workers are out there and they are being exposed. We have estimates that something like 700 workers are being exposed to nanoparticles in lab environments and perhaps tens of thousands of workers in manufacturing industries. Who can say how many consumers are currently being exposed to nanoparticles through sunscreens and window cleaners and those sorts of things? There is a stack of work that needs to be done and it needs to be done fairly urgently.

In relation to regulating for consumer protection, we have SPF levels on sunscreens but do we need to look at what those sunscreens contain and how it will impact on the consumer once they apply it to their skin? We just do not know, and that is a serious thing. These products are out there at the moment. They are currently being used potentially by millions of Australians. We use a lot of sunscreen. We need to know what impact these products are having on consumers and we also need to look at who is producing these things and how prevalent they are. There is no regulation about what products are being produced using nanotechnology. We do not know. It is a minefield. If—a worse case scenario—nanotech and nanoparticles cause serious harm to people, we are sitting on a bit of a time bomb. Let's face it! We do not know enough.

I think a forum like this will bring the key stakeholders together to really talk through this issue and get some action plans out of it. The first thing is regulation. The second thing is asking which companies are using nanotechnology at the moment. I have read that most of the Fortune 500 companies are using nanotechnology in some way. They are multinationals. It is big business out there. I have heard estimates that in 10 years time it will be a trillion dollar US business. Companies are charging down this path. There is lots of money to be made but at what expense? We need to look at regulations—checking who is importing this technology and who is producing this technology in Australia.

The forum could look at bringing together international researchers and scientists as well, sharing information and looking at what further research needs to be done. Clearly, on medical grounds—what exposure is doing to people's bodies—there is a stack of information sharing that could be done in a forum like that. Lastly, perhaps we could look at how regulators and other bodies could improve their data collection of cases of nanoparticle exposure. We need to look at which working groups, which industries and which consumers are potentially exposed to this. Again, we do not know enough about that.

I think at the end of a forum like that we would need to get an agreement about what are the next steps to take, because at the moment we are floating around in the air a little bit. There is no focus on what to do. It is certainly ground-breaking stuff. It is new technology, and we cannot rely necessarily just on international research or international developments because they are kind of where we are at—in some cases, a little bit further down the track. Until we take the lead on this, I think that we are going to be allowing that time bomb to just tick away, so we need to step up and take some responsibility. That is my statement.

CHAIR—Thank you.

Senator ADAMS—This is from Senator Humphries. He is very good; he did not let you down. Would you support the creation of an industry funded compensation fund to assist workers and former workers affected by toxic dust to pay for (1) diagnosis, (2) therapeutic treatment, and (3) income support when lung disease leads to incapacity to work?

Mr Mullins—I would support that. I think that those measures, along with other measures, would be a good idea.

Senator ADAMS—It would be funded by industry, whereas in your submission you had it more or less as a statutory scheme.

Mr Mullins—I would not take that off the table at all.

Senator ALLISON—In terms of such a scheme—and Senator Humphries has been asking this of a couple of people—how would you define 'industry' in the sense of an industry based fund? From your perspective, with the experience of a couple of different jurisdictions, how would you define 'industry' if such a fund was being proposed?

Mr Mullins—We have the Fortune 500 companies and the industries that are dealing with the technology. If they are going to make a trillion dollar business out of this technology, then perhaps they need to put some money into that sort of scheme. 'Industry', in my mind, is business.

Senator ALLISON—That would be for nanotechnology, but I think Senator Humphries' question was originally referring to the toxic—

Mr Mullins—For toxic dust?

Senator ALLISON—Yes. That is why I am trying to get my head around what would be 'industry' in that concept.

Mr Mullins—My concern would be that it would not be adequately funded. It should not be an alternative to accessing common law rights or statutory schemes either. It is not an alternative to that but it is perhaps something that could be looked at.

Senator ADAMS—This relates to g. 'The potential of emerging technologies, including nanoparticles, to result in workplace related harm.' I notice that further down you state:

> There are concerns that nanoparticles may also cause lung fibrosis—

which we have already discussed—

> and possibly Alzheimer's.

Do you have any data on the Alzheimer's? I am interested in aged care, so I wondered what you had there.

Mr Mullins—I will have to take that on notice.

Senator ADAMS—If you find it, would you be able to forward it to us.

Mr Mullins—Sure.

Senator ADAMS—Thank you.

Senator ALLISON—I would like to follow up on statutory schemes. Are you familiar with the New South Wales dust board?

Mr Mullins—Yes, reasonably familiar.

Senator ALLISON—Do you know whether the New South Wales arrangement affects in any way the capacity of workers to claim compensation from their employers?

Mr Mullins—Can I take that on notice, please?

Senator ALLISON—Yes, because you suggest in your submission that it should not, but I wonder whether it does in New South Wales. Is there any other state that has a similar arrangement as New South Wales?

Mr Mullins—Not a dust diseases board, no.

Senator ALLISON—What happens in other states?

Mr Mullins—They access compensation through their WorkCover schemes.

Senator ALLISON—So it is the same system; it just comes under a different heading.

Mr Mullins—It is not the same system—each system is different in its own way—but that is how workers are accessing their statutory claims.

Senator ALLISON—Presumably, you agree with the submission we had from the lawyers earlier today to the effect that statutes of limitation should be removed or, if there are long-stop arrangements, that—

Mr Mullins—Yes, I do agree with that.

Senator ALLISON—In your experience, how many cases have been brought to the courts by workers? Let us leave aside asbestosis and just deal with silicosis and other non-asbestos toxic dust cases.

Mr Mullins—I could not tell you off the top of my head, I am sorry.

Senator ALLISON—Do you have any idea? Is it tens or thousands?

Mr Mullins—The Dust Diseases Board has 200 cases per year, and that is fairly steady. Those are workers compensation cases and they are all silica related dust diseases, so you can extrapolate from that the numbers that we are talking about.

Senator ALLISON—One of our submissions suggests that silicosis and other lung disorders are misdiagnosed by GPs roughly 50 per cent of the time. Is that your experience as well?

Mr Mullins—Again, I could not give you a definitive answer on that, but I know that there is misdiagnosis going on, so I would not be surprised.

Senator ALLISON—I thought that even chest X-rays could be misleading in some circumstances.

Mr Mullins—They certainly could be, yes.

Senator ALLISON—But you say that they are the most reliable in early—

Mr Mullins—Non-invasive. Yes, that would be the most reliable, other than surgery, to check.

Senator ALLISON—Or biopsies.

Mr Mullins—Yes.

Senator ALLISON—I will ask you the question I asked the previous witness about the idea of workers, coming onto a site where toxic dust may be an issue, having lung capacity tests which would be regularly updated, so that early signs would be picked up rather than waiting for symptoms which may, by the time they emerge, be too late to do anything about and the concept of those records being able to be moved around with workers, such that they might present them to subsequent employers—it sounds a bit more dodgy to me—that they would have ownership of their own records, in other words, both of their lung capacity and any deterioration in it and exposure over time.

Mr Mullins—Would I support that idea?

Senator ALLISON—Would you support that idea?

Mr Mullins—I would. I think that that is a good idea. I think that regular screening in industries where workers are exposed to toxic dust is a great idea. As well as a lung capacity test, given that there is some risk of radiation in terms of X-rays and the like, perhaps a chest X-ray of workers in those industries every two years is not a bad idea either.

I now have the statistics in relation to the filing of dust diseases cases in the tribunal for the 2004 calendar year.

Senator ALLISON—Tell us more about that.

Mr Mullins—Total claims filed, 485. I can give you a breakdown of those, if you like.

Senator ALLISON—It might be of interest to the committee, but you could perhaps leave that with us. You say that this whole question of testing people who might be exposed is a good idea. There is nothing that obliges employers to do it now, is there?

Mr Mullins—Other than an argument that could be mounted to say it is part of their duty of care, but that would be a difficult case to make. It is a good idea that employers who are serious about improving health and safety in their workplace and protecting their workers should definitely consider that.

Senator ALLISON—Does the union take this up with employers?

Mr Mullins—Yes, we do. I think you will hear some more tomorrow from the CFMEU about those options. Employers are well aware that this is something that they should consider.

Senator ALLISON—Okay. Thank you.

Senator CAROL BROWN—The ACTU recommends more rigorous enforcement of exposure standards across the jurisdictions. Are you able to tell the committee your view of the current regime?

Mr Mullins—Of exposure standards?

Senator CAROL BROWN—Yes.

Mr Mullins—For silica and toxic dusts?

Senator CAROL BROWN—Yes.

Mr Mullins—The exposure standard at the moment is 0.1 for silica. We endorse that exposure level but that is not best practice as far as we are concerned. There are improvements that need to be made on that, so we will still continue to push for a lower exposure level.

Senator CAROL BROWN—The question I asked the previous witness was about sandblasting. A witness this morning stated that he believed that after the known health effects of sandblasting were highlighted in Britain and it was subsequently banned, the health and safety measures were not changed here because the unions were too powerful. Do you wish to comment on that?

Mr Mullins—I do not quite understand how that can be the case. I do not agree with that. Unions are always striving for improvements in occupational health and safety. We are not in the business of putting our workers at risk. That is a strange statement to make, so I would say absolutely not. For example, in the case of the ban on asbestos in Australia, behind that is the Australian union movement. There was a thriving industry in it but the reason why it is banned is because of the Australian union movement.

Senator CAROL BROWN—There was not any further elaboration on that statement from that witness.

CHAIR—The inference that I took from that witness was that work practices were not amended because of a desire from the employer not to offend the powerful unions. I draw your attention to the *Hansard* because I think you need to see what was said. My interpretation was that the knowledge about the impact of silica was known in the UK. Significant industries in Australia were continuing to use this process and they were unprepared to change work practices because the unions would object to that. I believe the inference was to have more safety procedures in place. I would appreciate if you would have a look at the *Hansard* and see whether you would like to give us some feedback on that.

Mr Mullins—Sure. I will make a commitment to do that.

Senator ADAMS—I felt that one was about job losses. Perhaps if they had to change their work practices people were going to lose their jobs. It was a while ago.

Senator ALLISON—I have another interpretation, Chair, if you are interested.

CHAIR—It was a very interesting statement.

Senator ALLISON—To be fair, it was probably more to do with a whole lot of issues they were dealing with the unions over, and this would have been yet another one to raise that might have added to the complications.

Mr Mullins—Right.

Senator ALLISON—We all heard him.

Mr Mullins—My position is fairly clear. The union movement is there to protect and help workers. It is not about putting them at risk.

CHAIR—Mr Mullins, I have a couple of points to follow up from previous evidence. One was statements this morning by one of the professionals from the industry group that, for small industry and small operators, the cost of doing the tests to establish the limits was very

expensive. A figure we had quoted was about $2,000 for a test and it could get very expensive for a small operator to keep on doing that.

The other one, from a professional adviser to that same group, was that because of the variations in the tests and the amount of data that is around, there is confusion. In testing for one per cent as opposed to two per cent there is a degree of error, and there is not that much difference. The concern was that if we changed the standard yet again to a lower one, you would be testing a lot for not too much change. I think it was the view of that particular group that it was better to get everybody working towards something achievable than making the standard so tough that people would not be able to get there—and the cost on industry of reaching that new level.

Senator ADAMS—Yes, that was right.

CHAIR—I would like to hear your view of that particular argument. That witness was responding to a specific question from one senator about the proposal to further change the standard, which is a key aspect of your submission.

Mr Mullins—Ultimately the employer does have the duty to ensure that it is a healthy and safe workplace. If the exposure level is still too high then, whether it is a cost to business or not, they still need to consider that. If the standard was lowered it would be done through a tripartite process anyway, so business would be sitting at the table and either agreeing or not agreeing to lower that standard. They will have an input into that anyway.

I believe the idea behind the 0.1 was that all types of silica be at that level, rather than having separate different ones, so that the testing is easier. It is more cost effective for business. I am assuming that that is part of the reason. Our aim would be to lower that to a standardised level again but halve it. Therefore the testing would be again standardised so that you are not having different measurements for different silica types.

CHAIR—Have you heard of variations; that the tests are not accurate? I forget the actual figure but the professional person in that area was stating that there was a degree of variance in the testing results.

Senator HUMPHRIES—In margins.

CHAIR—In margins, that is right. Is that a complaint that you hear from industry?

Mr Mullins—The testing instruments are good enough to do the test that is required of them. I do not think that really is an issue.

CHAIR—And the cost?

Mr Mullins—Like I said, if it is $2,000 then that is a cost that the employer is already bearing and would need to do that anyway.

CHAIR—Okay. Any further questions? Do you have any final comments, Mr Mullins?

Mr Mullins—No. Thanks for your time.

CHAIR—When you do have a look at the *Hansard*, if there is anything you do want to follow up, please let us know. If you could let Christine know those answers you took on notice, that would be good. Thank you very much.

Committee adjourned at 4.50 pm