

3M Transcript for the following interview: Ep 73 Exposure Standard Review

Process - Part 1

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Welcome to the 3M Science of Safety podcast presented by 3M Australia and New Zealand Personal Safety Division. This is a podcast that is curious about the signs and systems of all things work, health and safety, that keep workers safe and protect their health. I am Mark Reggers, an occupational hygienist, who likes to ask the questions Why, How, and Please Explain. Whether you are a safety professional, occupational hygienist, or someone with any level of WHS responsibility in the workplace, maybe you are a user of safety equipment or maybe you are a bit of a safety nerd who finds this stuff really interesting, then this is a podcast for you.

(R) Today, we're talking about the workplace exposure standard review process with Jackii Shepherd. Welcome Jackii.

(S) Thank you, Mark. Good to be here.

(R) Fantastic. Now, we have done many episodes where we talk about Safe Work Australia and the exposure standard review process that has been happening. So, I'm very happy to have you in here to talk about what that review process is, what's happening and what it's going to look like going forward. But before we get into that, can you please introduce yourself? Where are you from and what do you do?

(S) So, I am Jackii Shepherd. I am Director of Occupational Hygiene Policy at Safe Work Australia. I am a member of the Australasian College of Toxicology and Risk Assessment, also known as ACTRA, and the Australian Institute of Occupational Hygienists, the AIOH. My background is very varied and wide ranging and I have experience in medical lab science, regulatory toxicology, epidemiology and biostatistics and communicable disease.

(R) That's fairly broad but makes sense, what we're talking about, because all those elements come into evaluating workplace exposure standards. Now, you are from Safe Work Australia. Can you tell us a little bit who are Safe Work Australia because we've got many international listeners that may not know the role that Safe Work Australia plays down here?

(S) Yeah, of course. Safe Work Australia are the national policy body for work health and safety and workers' compensation. So, we are tasked with improving worker outcomes, maintaining the model work health and safety laws and providing guidance materials and education like the Codes of Practice. And Safe Work Australia is made up of its Members, and the members are tripartite, so we have Members from each state and territory and the Commonwealth, and we have union representatives and industry representatives. So, all together, we've got a really comprehensive membership to make sure that we consider every aspect of work health and safety and how we can implement that on the ground.

(R) Consultation at the highest level by the sounds of it. Probably not a quick process, but we need all those inputs in. So, we are talking about this workplace exposure standard review process. We probably should give a bit of an acronym warning. Now, we try to avoid them where possible, but apologies if any do slip through and we don't actually explain what they are. So, workplace exposure standards are usually commonly referred to here as a WES. So, what is a WES? Now, I know we've done an episode last year about what is a workplace exposure standard, but for those that haven't heard that episode, how would you describe what a workplace exposure standard is?

(S) So, under the model work health and safety laws, a workplace exposure standard is an airborne concentration of a chemical that a worker cannot be exposed above. So, you can't exceed a workplace exposure standard at the workplace.

(R) So, I think we explained it previously as the maximum upper level that is allowed. Now, we want to be as far underneath that as possible. But how do workplaces use that number broadly?

(S) The purpose of the workplace exposure standards in the model work health and safety laws is to protect workers from harm. What we're talking about when we talk about 'harm' is not just the horrible end points like disease, cancer, COPD...

(R) Chronic obstructive pulmonary disease, to make sure we catch that one, yes.

(S) The workplace exposure standards are also there to protect from the precursors to those diseases. So, we're talking about breathing problems. We're talking about dermatitis or eye irritation. So, the workplace exposure standards are used in a workplace to protect workers from those end points. They're also used by professionals, occupational hygienists being one of them, to help evaluate the risk to workers at the workplace, to measure the effectiveness of control measures that are used at the workplace, and they're also used to make decisions about whether or not to provide health monitoring to workers.

(R) So, they're used in a lot of different areas, but a pretty important number that's based on the most current evidence, which is what we're going to talk about; this process to get the number. Are there different types of workplace exposure standard numbers or types that workplaces may be looking at, or may find on your website?

(S) Yep, so we've got three different types of workplace exposure standard parameters, which is what we call them. So, we've got the eight-hour time-weighted average, the TWA. We've got the 15-minute short-term exposure limit,

also called a STEL and we've got a peak limitation. And we've got these three types of exposure standards because each chemical has a different effect on the body. Some of them, you will have effects that are every single day, you get an accumulative effect, and you might end up with a chronic disease like cancer. Other ones, you can have acute effects like poisoning. You can get metal fume fever. You could have neurotoxic effects. Other ones, you can have short term effects, like irritation but after it happens every single day, it might end up in a chronic disease like cancer. So, each of these exposure standards is there to represent the best way to protect a worker, or the best combination of exposure standards to protect a worker from the effects that are specific to a chemical.

(R) Do notations fall underneath this workplace exposure standard, when you get skin notations on some chemicals? Is that used in this process as well?

(S) They certainly do. So, each exposure standard will have an appropriate notation with it. We've got four types of notations that sit with exposure standards and they are for cancer, sensitisation which is like an allergic reaction to either your skin or your respiratory system.

(R) We did an episode on isocyanates which can be a respiratory sensitiser. So, we know what we're talking about there, absolutely.

(S) Absolutely, yes. Whether or not a chemical can be absorbed through the skin is the really important notation to have, and then the last one we've got is the concentration of a chemical that can present danger to life or health of the worker. So, the cancer and the sensitisation notations are really important because in every population, and workers included, we've got what's known as natural biological variation. So, you're always going to have some workers who might be more sensitive to the effects of these chemicals, particularly for sensitisation. So, we've also got workers who might have previous exposure and these notations help give more information to the duty holder, to the business, to be able to better protect those workers.

(R) We previously spoke with Peter Aspinall and he highlighted the fact that the workplace exposure standard is generally for a healthy cohort. So, generally, if you're working, you'd be broadly classed as healthy versus maybe you're unwell and in a hospital or aged care or something like that. So, that's that point you're trying to make there, I think, that that exposure standard is going to be slightly different, but it's not a line in the sand to healthy, unhealthy, safe, unsafe if you're just underneath it or just over it.

(S) Absolutely. It's not a line in the sand to show what is safe and unsafe. The workplace exposure standards are within the work health and safety framework, and in that framework, it's about looking at your specific workplace and your specific workers and the tasks that you do, and to be able to apply the hierarchy of controls appropriate for your workplace. So, the workplace exposure standards sit within that, and you really need to look at your workplace individually and apply that.

(R) Irrespective of what that number is, you need to do something about it, which I think what you're trying to say is that framework. We've got a number, but if you don't do anything about it, it doesn't matter what that number is. So, hopefully that's probably something people should hopefully get out of these couple of episodes we're doing together that you've still got to do something about it, irrespective of whatever that number ends up being for that chemical.

(S) Absolutely. So, we also need to keep in mind that duty holders have a responsibility. They've got a duty of care to their workers and then part of that is keeping up to date with what's happening. It's updating safety data sheets, making sure your chemical registers are up to date, and it's also about understanding what the workplace exposure standards are, where they sit and if they're going to be updated.

(R) Which just highlights the whole process that Safe Work Australia has been going through, reviewing workplace exposure standards because research is

happening and as we come more information available, we know things change. So, before we get into the review process that you have been working on the last couple of years, how did we get our workplace exposure standards? Where do they start for us in Australia and how were they set?

(S) So, the Workplace Exposure Standard for Airborne Contaminants was previously the National Exposure Standards were adopted in 1995 from a list of the American Conference of Governmental Industrial Hygienist, the ACGIH, from 1991. So, even in 1995, we had some older standards that were adopted into the legislation. And then, in 2008, when Safe Work Australia came into being, these National Exposure Standards were adopted in the model work health and safety laws. And it was at that point we've looked at them and gone, "We need to have a look at a project to review these."

(R) Were any of these reviewed during that time, from 1995 to 2008? Did things change in that time, or it was pretty much set the whole time?

(S) Well, during that time, we did have a project in there which was a fast-tracked process with a working group and about 80 standards were revised based on some information from the United Kingdom Health and Safety Executive and some recommendations from the National Industrial Chemicals Notification and Assessment Scheme, NICNAS. So, about 80 were looked at in the early '00s and they were updated, but between then, we've only had an ad hoc approach, so only a couple have really been looked at. And the ones that have been looked at have been really resource intensive, a broad scope of literature that we had to have a look at, and they've been really hard to get from start to finish.

(R) So, 2008, Safe Work Australia came into existence. That's what triggered this review process? Is that what you're saying, because we've come together, "What's the situation? Oh gee, it's been a while since I've looked at this," and that's essentially what it was in quite simplistic terms there?

(S) Yes, in 2008, we really started to have a look at what the exposure standards were, what they meant, what underpinned those actual values and how we could update them. So, that was a really big project and they needed to look at and understand where the information was coming from, how far we'd gone from 1991 to 2008, because science is always evolving, technology's always evolving. Our understanding of chemicals and their impacts is always evolving. So, there were also lots of discussions surrounding how the workplace exposure standards sat within the work health and safety framework. Should they be health based? Should they be practical? Should they be mandatory? Should they be advisory? And so, a few years and many meetings, many working groups, many public consultations, lots of discussion papers and now we're looking at doing a bulk review of 727 chemicals that are our workplace exposure standards.

(R) That's certainly a lot of work that has happened and going to happen. So, what is this process that you've been through so far? So, we're in early 2020 here. Let's look backwards a bit. What has this process been like and how has it got to get to the point that we are today?

(S) So, in 2018, Safe Work Australia published the methodology to do this. So, we needed to have a look at how we were going to do 727 chemicals in a set time period. We wanted to have a look at what trusted sources were out there because we're not the only ones setting exposure standards. There are lots of great international bodies that do this work.

(R) And I'd imagine you probably just didn't want to go to another country and just go, "Let's just adopt all their numbers," without actually having some process to look at the individual chemicals and what that actually means.

(S) Absolutely, and each body have specific policy approaches that aren't necessarily what we want in Australia. So, for example, there's the German group DFG ... don't ask me to pronounce their full name. They don't set exposure standards for chemicals that could be carcinogens. So, their policy is to evaluate

the information, to work out what the critical effect is. But if there's any carcinogenicity in that hazard profile, they won't set a value.

(R) How does a workplace approach that then to say, "It's a carcinogen. It's nasty. You need to do everything to control it." Just more of a broad approach like that?

(S) Yeah, so it's a broad approach; as low as practicable.

(R) ALARP, as we like to talk about here.

(S) That's the one.

(R) As low as reasonably practicable, yes.

(S) We wanted to have a look at everything that was there. And what we ended up doing was this methodology to identify what those trusted sources are and setting up criteria for what they are. The other part of it then is also knowing that we've moved from 1991 to 2020; what do Australian workplaces look like? Again, workplaces are moving, chemicals are changing, the way we do things is everchanging, so what does a contemporary Australian workplace use look like? So, we needed to have a look at what chemicals were being used and what weren't.

(R) I mean, 'nanomaterials' probably isn't a word that was commonly getting thrown around in the early 1990s, but now it's very commonplace to talk about nanomaterials and the properties and benefits they bring. But what's the risk that brings along with it? So, it's a very valid point. What's happening today?

(S) Yep, so the methodology looks at all of those things, and we've been able to identify trusted sources. We've been able to identify chemicals that belong on the list that aren't there now and some chemicals that really, we don't use in Australia anymore. And we've also been able to do a step-by-step process to look at all the data that's there and come up with a recommendation for a health-based value.

(R) So, that started in 2018, that you said?

(S) So, the methodology was published in 2018 and we started the evaluations in 2019.

(R) And then, I guess leading up to 2018, there would've been a couple of years' worth of work to work this whole process out, because you just don't come up with a methodology overnight being this detailed, and the importance of it.

(S) It took a while. It took us a good 12 to 18 months, in house, to be able to develop it up. The first draft of it was nine A3 sheets of paper, following a flowchart, to try and capture all the possible combinations that you could see with these chemicals. What we ended up doing was compressing it all down and testing it really hard and then we sent it out for peer review. So, each section of the methodology, we sent to both domestic and international experts to peer review it to make sure it was technically accurate and fit for purpose.

(R) So, we know you've already mentioned consultation is very important to Safe Work Australia. So, how did you engage the community, the public, through this particular process?

(S) We did a really great public feedback period. So, each of the draft evaluation reports was put up on our Engage platform and they were made open to the public to comment on. So, all of the information that we gathered, all of the evaluation that we undertook, the recommendations for the values we put out there for public comment and we asked, "Have we hit the mark? Have we used the information? Have we interpreted it correctly?" and also, noting a lot of these values are going to be lower, can we still measure it, because we need to make sure that we can measure, we can analyse, we can show compliance. So, that was a really big part of public consultation as well, was to gather that information.

(R) So, you get all this information back. We're talking 700 plus chemicals, so you're going to get a lot of comments back and a lot of information. So, now what do you do with that information? What is the process?

(S) So, that's where our Safe Work Australia Members come in. So, they look at the draft evaluation reports and recommendations, and all the public comment, to be able to see where these values sit in the framework. And so, they take into consideration the health-based limit, whether or not it can be measured, and whether or not compliance can be shown. So, moving forward, Safe Work Australia Members get to look at all of the feedback, all of the recommendations to be able to make a new workplace exposure standard for the airborne contaminants document. They will make recommendations to our Work Health and Safety ministers who when they sign it off, we will get a brand-new updated document. And we're also going to rename it. So, we're now going to be calling it the Workplace Exposure Limits for Hazardous Chemicals.

(R) Well, we're going to have another acronym, WEL.

(S) Yep.

(R) Fantastic, well hygienists, another acronym to try and remember there. Now, I've got a lot more questions I want to ask about the review process, but for the sake of time, we might wrap it up here and get you to come back and have another chat with us. But just trying to sum up what we've spoken about today, what are a couple of those key takeaway points you want to leave with our listeners from what we've spoken about?

(S) So, I've got two things that I'd really like our listeners to have a think about. With this process, the workplace exposure standards, which will be our workplace exposure limits, are there to protect workers. So, I think this is a really great opportunity for workplaces to have a good look at what they do and how they do it. Every workplace is different and the best way to protect your workers is up to you. So, use the exposure standards for what they are, but also have a really good look at your workplace, what control measures you're using, and maybe this is a great opportunity for you to adjust those. My second thing is get involved with what we're doing. We do a lot of public consultation and we're always open to people

contacting us and if you have only just realised that there's a draft evaluation report available, get in contact with us, because we still want to hear from you.

(R) So, that feedback, consultation process doesn't stop. Maybe the official period's open, but you're going to take it all on board, which is great. So, for those that want a little bit more information to find online, where would be the best place to go to find out about this process?

(S) We've got lots of information on our website, with swa.gov.au, and it's particularly underneath the Hazardous Chemicals Safety Topic tab, and each of the work health and safety regulators have also got lots of information about important key dates and what they're doing with the exposure standards in that state and territory.

(R) Fantastic, and we'll actually make those links available on our blog posts, for those that do want to go find it. But thank you so much for coming in today, Jackii and look forward to chatting with you in the next episode.

(S) Thank you.

(R) Well, thanks for listening everyone. You can get in contact with the show by sending an email to scienceofsafetyanz@mmm.com if you have any questions, topic suggestions or guests you think would be great to get in the studio. 3M are also here to help, if you need assistance regarding PPE in the workplace. You can also visit our website, 3m.com.au/sospodcast for further resources on the workplace exposure standard review process, as well as the transcript of the conversation that Jackii and I have just had. Be sure to subscribe, rate, review and share through Apple Podcasts, Spotify, Google Podcasts or wherever you get this podcast from. And as the old Chinese proverb said, "Pearls don't lie on the sea shore. If you want one, you must dive for it." Thanks for listening and have a safe day.