STANDING COMMITTEE ON ENVIRONMENT AND PUBLIC AFFAIRS

ALCOA ALUMINA REFINERY AT WAGERUP

TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
ON MONDAY, 8 JULY 2002

SESSION 5

Members

Hon Christine Sharp (Chairman)
Hon Kate Doust (Deputy Chairman)
Hon J.A. Scott
Hon Louise Pratt
Hon Frank Hough
Hon Robyn McSweeney
Hon Bruce Donaldson

[2.50 pm]

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The CHAIRMAN: Welcome, and thank you for coming in to give evidence. Have you all read and understood the document entitled "Information for Witnesses"?

The Witnesses: Yes.

The CHAIRMAN: Your evidence will be recorded by Hansard and a transcript will be provided to each of you for checking. In order to make sure that an accurate record is made, please use the microphones carefully. You are sharing microphones, so you will need to direct your remarks so that a good recording is obtained. If you intend to table or use any documents, could you please use the full title so that the committee knows what you are using. If you wish to give any confidential evidence to the committee, you may request to give evidence in private, and the committee will consider that request. The transcripts do not become matters for the public record until they have been finalised. Any premature disclosure of the information from your evidence would no longer be protected by parliamentary privilege. You are advised to not comment formally on that material until it has been corrected and released to the public.

Mr Jackson, will you make a statement to the committee this afternoon, on behalf of the Department of Health?

Mr Jackson: I will lead off, and we can take it from there.

The CHAIRMAN: Excellent, thank you.

Mr Jackson: We wish to talk about five main topics: a brief introduction to our early involvement in this issue; the establishment of the medical practitioners forum, its recommendations and actions; the response by government to the medical practitioners forum; cancer rates and incidence in the general community, including the area in the vicinity of the Wagerup refinery; and the recently published Healthwise study of Alcoa workers.

We will table an overview document. It is a paper outlining the involvement of the department in the investigation of health complaints from residents and workers. This document will set out a series of events, in which we have been involved. The highlights of this document include, first of all, a public meeting in February 1999, when we went to Wagerup and talked to the residents about the concerns. A second highlight is the setting up of a health study advisory working group, in which the department was involved, which led to the production of the "Report on Wagerup Health Survey", copies of which we have available for the committee. I assume the committee has seen that document.

The CHAIRMAN: We have.

Mr Jackson: A critical part of the recommendations of this report came back to us, recommending some further work. At this stage there was no consensus of opinion among workers or the community on what we were dealing with. The recommendation I refer to is contained in appendix D of the report, in a letter signed by Professor D'Arcy Holman. The letter recommends that a case-crossover study be undertaken.

There was a lot of pressure at that time for the department to undertake some further extensive research into the causal agents for the health concerns in the community. At this juncture - if the committee does not mind me going back over a bit of history - we went to speak to Professor Holman to determine whether or not this was worthwhile research. Appendix D is a letter from Professor Holman suggesting a case crossover study. The purpose of our meeting with Professor Holman was to determine how that would assist us to understand what was happening, and whether it would really be value for money.

At that point, we brought together a group composed of medical practitioners in the area, specialists to whom the workers were referred, and epidemiologist Dr Mike Phillips from Curtin University, who has much experience in occupational health, the Alcoa medical people, and a number of other officers.

[3.00 pm]

I can provide the details of the medical practitioners forum, which is chaired by Professor Darcy Holman. At our first meeting we compared notes, if you like, as people relayed their experiences in making appraisals of persons who had seen them. The views around the table were unanimous that this was a significant issue and they concluded that, although people had examined persons in a very objective manner, those people were not out to seek litigation, they were genuine and something was going on. This led to a second meeting of the medical practitioners forum at which we came up with a series of conclusions and recommendations, which I table for the committee. This document is entitled the "Wagerup medical practitioners forum Conclusions and Recommendations". It does not contain a lot of detail; nonetheless, the content is very important. Some conclusions are detailed in the second paragraph of the document. The forum recognised a sense of concern. Its members believed that people's concerns were genuine; that the concerns of the community and workers should be taken seriously; that lives were being affected and that there is considerable weight of medical opinion, borne out by the collective expertise and experience, but

that there was no specific chemical or causative chemical agent for which we could develop a solution or write some sort of regulation. The most important conclusion drawn was that there appeared to be an association between the health problems and the Alcoa refinery. That was an important step at that time.

We believe that the Wagerup refinery was subject to the geographical and meteorological conditions that allowed the inversion of the emissions, particularly in wintertime. We acknowledged the social issues and that that industry is doing its utmost. They were important decisions at that time. This led to a series of recommendations, which are recorded over the page: first that Professor Holman would brief the respective ministers, which he did in conjunction with us prior to the conclusion of last year. Professor Holman is interstate at present. It is regrettable that he could not be here today but it is desirable that the committee speak to him on another occasion.

The CHAIRMAN: Thank you.

Mr Jackson: The medical practitioners forum believed, secondly, that it was a wild goose chase and unrewarding to conduct research into identifying the actual causative agent of these health effects at present. However, we recognised that the symptoms being observed were consistent with what was termed multi-chemical sensitivity. I think the forum was careful not to label the clinical symptoms as MCS but considered that that was a good way to describe them. The third recommendation was that there needed to be an improved focus on the clinical management of the effect of the emissions on people. Until that time there was concern about whether those people had genuine clinical concerns or whether they had ulterior motives. The medical practitioners forum said it was most important to remove people as quickly as possible if symptoms were developed at the workplace; in other words to take them away from the refinery and place them at the minesite or whatever. This is borne out in the second statement. There must be a focus on removing affected people from exposure.

The forum supported a reduction of exposure by the planned buffer zone and we supported the work that was being done by the Department of Environmental Protection at that time in seeking to reduce the emissions. The medical practitioners forum saw the DEP's responsibility as ongoing in providing surveillance and monitoring. Lastly, it recommended that further opportunities be explored that will reduce exposure at the individual worker level. This is about removing employees from the workplace where they were being exposed.

The CHAIRMAN: This document does not have a date on it. Will you remind us of when the forum met?

Mr Jackson: We developed this document for public presentation to the Waroona Shire Council and to a public meeting in Waroona on 6 February this year. I think the actual recommendations were formulated towards the end of last year. The point I just made was important: first, that the medical practitioners forum address these issues of concern to the two ministers - we did not meet with Clive Brown, the Minister for State Development - and follow up that meeting with the local shire and the community. The event on 6 February was an important presentation. It was attended by 150 to 200 people. It was evident that there was considerable community concern, as you are well aware.

The next steps refer to what has happened since then. Those recommendations have been provided to government. I am not sure whether the Department of Environmental Protection has provided the committee with a follow-on position. The Departments of Health, Environmental Protection and Mineral and Petroleum Resources have formed a task force to respond to these recommendations. A ministerial council was also formed in March this year to formally respond to the medical practitioners forum. It is chaired by the Minister for the Environment and Heritage and includes the Ministers for Health, State Development, and Consumer and Employment Protection. The council has met twice and has prepared a formal response to the medical practitioners forum,

which I will table at this point. This document is entitled "Government Response to the Recommendations of the Wagerup Medical Practitioners' Forum". I believe it provides one of the most up-to-date responses to our position at this point. The document takes each of the recommendations from the MPF and provides an overview of the situation. I will not work through it in any detail. However, I will highlight some issues that are evident in the document.

The first recommendation in italics refers to the meeting with community workers and the ministers. As I said, that action has already been taken in the form of meetings with the Waroona Shire Council, local members of Parliament and the public. Recommendation 2 refers to the research into identifying causality and multi-chemical sensitivity. The committee will note that ministers have supported open dialogue and further work on that matter. Of particular relevance is the item detailed below. One of the suggestions that came from the public meeting was a desire for a strengthened community health presence. The schema proposes the establishment of a community health nurse to be attached to the Yarloop Hospital. The proposal seeks to provide a mechanism similar to that which we have established following the Bellevue fire, whereby a specially trained senior nurse practitioner has an understanding of the issues being dealt with and is able to undertake screening of individuals and, if necessary, refer them to either a general practitioner or a specialist. That would provide better epidemiological screening of what is happening in the community and further provide some appropriate clinical management of those people. I pause at this point to say that this is well advanced. This document is supported by all four ministers, and we have had discussions with the director responsible for health in the south west, and the position is being advertised.

The CHAIRMAN: Has there been a workshop on MCS as recommended?

Mr Jackson: Yes. Alcoa has had an observer capacity on the MPF, so we have worked as best we can with the resources available from Alcoa. We were able to bring out Professor Mark Cullen, who spent some time addressing the medical practitioners forum . A departmental presentation was held and an afternoon with the medical practitioners forum to work over the question of multi-chemical sensitivity. I am sure members will have seen Professor Cullen's report and the result of those discussions.

The CHAIRMAN: That was provided by Alcoa to us.

Mr Jackson: Good. The third recommendation is for improved focus on clinical management of affected people. We have talked about that, as I explained earlier. I do not think there is much there, but a recommendation from the ministerial council is that Alcoa continue to implement workplace practices that facilitate the early identification of exposures resulting in health impacts and that Alcoa continue, where possible, to remove workers with confirmed health impacts from the relevant problematic exposure and provide them with alternative employment.

[3.15 pm]

On that point, key people from the medical practitioners forum have visited the refinery - as I am sure the committee has - to understand the concerns of the workers, the location of the particular workshops, where particular individuals worked, how workers are notified there is to be some venting etc. There has been a purposeful, hands-on attempt to understand what is happening at the refinery.

I refer to the buffer zone. The committee will see a response from the ministers on the two areas. I should say that the medical practitioners forum - perhaps Dr Phillips might like to comment - has made general recommendations on the planned buffer zone. We have not been instrumental in setting up area A or area B. We have just made the comment that we believe it is best for people to be removed from the immediate vicinity. The committee will see a recommendation from the ministerial council in which it requests that Alcoa work in partnership with the local community to minimise any unintended social consequences arising from its land purchase strategy.

The next recommendation relates to the emissions, and I am sure that the Department of Environmental Protection has provided the committee with details on what action has been taken and the intended major changes that are to be undertaken at the plant. I assume the committee is aware of those.

In recommendation 6, the committee will note that the ministerial council has asked the medical practitioners forum to continue to be a watchdog. I think the approach taken by Professor Holman at the public meeting was that the medical practitioners forum should remain in that role.

The committee will note an initiative taken by ministers, which is yet to be announced, in which there is a desire to address issues of complexity such as this in the future. A recommendation from the ministerial council, currently under consideration by Minister Edwards, is to set up an environmental health foundation to look at issues such as multi-chemical sensitivity and dioxin exposure because there are a number of areas of concern in our community where there is interaction between industry and the community.

Lastly, under recommendation 7, the council supports further work by the medical practitioners forum on a range of issues that are set out.

That summarises the state of action at present with regard to the emissions and the concerns on multi-chemical sensitivity. The next step is the concern about cancer statistics in the area and the Healthwise study.

The CHAIRMAN: I note in the letter from Professor Holman, to which you drew the committee's attention, that he calls for a crossover study. Will you deal with that now or will you comment on whether that is happening?

Mr Jackson: When we went to Professor Holman to seek further clarification on this, his advice was that this could take us on a tangent that might take some time and would not be productive, so we have not carried out this study. We do not have any intention at this point in time of carrying out that study. The result of our discussions was that it would be better to bring people together through the medical practitioners forum and to endeavour to make some practical decisions on how we could address this issue relatively expeditiously.

The CHAIRMAN: Thank you. You were going to tell us now about the cancer rate concerns.

Mr Jackson: At this point, I would like to table a document that discusses the work of the Department of Health and the Cancer Registry, which we maintain, and the work that we have been doing in looking at cancer rates not only in the area surrounding Waroona but throughout the south west. To this end, I hand over to Dr Smith.

Dr Smith: We have handed around a document, which I can see you all have. The first page is titled "Cancer data for years 1996 to 2000." The Department of Health has a number of population health data collections and they reside in the area for which I am responsible, which is called the health information centre. One of those data collections is the Western Australian Cancer Registry. That has been up and running for 20 years or so, so there is detailed information on cancer in this State. Of course, the media have raised issues about the incidence of cancer in a number of areas south of Perth and in the south west. For that reason, the Department of Health has taken a special interest and done some studies to investigate cancer levels.

Cancer, of course, is a leading cause of death in this State and around the country. There are more than 3 000 cancer-related deaths a year and about 7 000 cases of cancer are identified each year. When a pathologist identifies a case of cancer he or she is required to notify the Cancer Registry. We also link that information to the Registrar General's death data, so we know when a case of cancer occurs and we are able to follow up that case - we find a death or we find that that person has got better. We also link the cancer information to our hospital data, so we know when people have been admitted to hospital with the diagnosis of cancer. Normally we produce our cancer rates at what we call the health service level. It is at that level that our hospitals are managed and the

planning and monitoring of health is done. Health services are generally provided to a collection of local government areas. We do not usually analyse data at that lower level. However, because of the particular interest that some of you would be aware of in Rockingham, Kwinana and also around Wagerup, we did a special study earlier this year looking at local government areas from Kwinana to Bunbury. As the populations in those areas are relatively small, particularly in the country shires, we looked at the cancer rates by putting together five years of data. This allowed us to get a reasonable number of cases, so we can be relatively confident in the findings of this data. Having gone through each of these local government areas, we found that generally the rates of cancer were similar to those for the whole of the population in Western Australia. In the shires that are particularly relevant to this inquiry, which are Harvey, Murray and Waroona, we did not find that the cancer incident rates were higher than state rates. That is quite an important finding. When we look at rates, we look at the number of new cases because when there is a cancer death it is often in older people, who may move to retirement homes or perhaps if they are country people they may have moved closer to the sea to a more pleasant environment. There can be a lag between when the cancer case was diagnosed and a subsequent death, so incidence is the indicator that we particularly look at. We looked at overall rates in Harvey, Murray and Waroona for males and females - we also have to make that distinction. We did not find that the overall cancer rates increased. We also found that the cancers that occurred in these groups were common cancers that occurred throughout Western Australia. For men that is prostate cancer; for women it is breast cancer; and for both men and women it is lung cancer, colo-rectal cancer and melanoma. The patterns of cancer in these local government areas were generally similar to those patterns that we found in other parts of Western Australia.

We looked at Rockingham and Kwinana. In Kwinana males we found a small increase in cancer rates, and that difference was statistically significant. Sometimes you can find increases, but they occur by chance alone, so statisticians do particular tests to find out if that difference is significant or not. In Kwinana males, we found an increase in the overall cancer rate. Kwinana females had no overall increase in rate. Rockingham males had no statistically significant increase in rates, but Rockingham females had higher rates. We are currently looking into those figures. Of course, these cases were increases in the common cancers, and we know that in Kwinana there is a higher than average rate of smoking so it is difficult to attribute this. I should say that this cancer data does not attribute cause; we are unable to identify cause from the WA Cancer Registry. If you want to find out what causes a particular cancer you need to look at associations, work history, smoking, diet and those sorts of things. The WA Cancer Registry does not have that detailed data.

The CHAIRMAN: Is there any intention to increase the amount of data so that the results increase their meaningfulness; for example, supplementary information on lifestyle etc?

Dr Smith: At this stage, a health surveillance program is just starting within this State that allows us to look at rates of smoking, diet, exercise and those sorts of things. At this stage, we have only preliminary data for that.

Hon BRUCE DONALDSON: You mentioned the association between where people reside and cancer rates. It is interesting that in Mandurah and probably Rockingham the figures could be skewed - whichever way - because people retire to those areas. Mandurah has been known as a retirement village for many years. A lot of the people who have moved there from country areas have been smokers.

Dr Smith: That is right. However, we do age standardise the data, so we attempt to adjust for the age profile in those different local government areas. That standardisation is not always perfect, although it is pretty good.

[3.30 pm]

Hon FRANK HOUGH: Surveys have not been conducted in areas other than where the two refineries are situated. It is incredible that something cannot be isolated in the air or on the ground

which might show why people are bleeding at the nose and have headaches. I can understand the cancer aspect, but I cannot understand why the cause of the sicknesses cannot be isolated. The same symptoms might apply to people in Meekatharra, but they might not be speaking out about it.

Mr Jackson: We are moving back to the question of clinical symptoms of multiple chemical sensitivity as opposed to cancer. The member will have heard evidence that there has been extensive monitoring in the immediate vicinity of the plant. I assume that the member has seen the plant and that he understands the nature of the emissions there. Perhaps Dr Di Marco can make some comments on some of the chemical compounds that have been identified in the emissions. We have not been able to identify any one or a series of emissions that are directly responsible for the clinical symptoms. However, the conclusion is that there is an association. Certainly prior to this, there was a question mark about whether those people were genuine or not. One could say that our conclusion is that something is going on that is leading to the symptoms in the workers and in the community. Our calculations from our evidence would be that perhaps in the order of 50 people in total are experiencing those symptoms. We have not been able to pin it down.

Dr Di Marco: The emissions from the Wagerup refinery and other refineries are not by any means unique to that area. They have a lot in common with other emissions from cars, for example. We talk about VOCs or polycyclic aromatic hydrocarbons. They are produced by fires when people cook meat. The VOCs are volatile organic compounds that consist of benzene, toluene, xylene and ethylbenzene, for example, which are part of exhaust emissions produced by other industries. We cannot identify any uniqueness in Wagerup that would set it aside from any other source of contaminants that may be leading to this sort of illness in the community. There is no question that the community is suffering, as you rightly say, but it is difficult to identify what is causing that.

Hon Jim Scott mentioned earlier that people are sensitised by a particular exposure at some time in their life and they then react to lower and lower levels as time goes on. The model of multiple chemical sensitivity does not fit in any way the classical toxicological model of chemical action. Therefore, from a toxicological perspective, it is very difficult to prove one way or another what is or is not causing it. Individuals tend to react to a number of disparate types of chemicals, maybe an inorganic molecule or a complex organic molecule, which may trigger a response in an individual. From a chemical and toxicological perspective, there seems to be no relationship between the two molecules. That only complicates the issue because we cannot identify any common trend in chemical or toxicological actions. There is no question that these people are being affected. Whether we call it multiple chemical sensitivity or give it another name, it does not really matter. The position the medical forum has taken is that we need to deal with the illness in the community and make sure that individuals are comfortable and managed properly, without getting bogged down in the debate of whether it is multiple chemical sensitivity or something else. The question becomes very difficult.

Hon FRANK HOUGH: Could it be that the media have created this? Could it be happening in Perth as a result of fumes from motorcars but that people have not been made aware of it because there has been no media play on it? Could it be that people in Perth are going home sick, assuming that they have flu or whatever, are not aware of it and, as there has been no media play, accept their symptoms as the norm? Because the media have fairly strongly pushed the association with two particular sites, perhaps people there are more aware of it. Some days I wake up and imagine aches and pains. I wonder if it is happening elsewhere in places such as Bunbury but that people are not aware of it at this stage because there has been no publicity that there is a sickness around.

Mr Jackson: This was a fundamental question that we asked at our first meeting. As the medical practitioners and specialists peeled off, we could see that it was not just the normal event but something very real was happening. The clinical symptoms of the people were consistent and were out of the ordinary. Once people were identified, there seemed to be a downward spiral. Unless they were rescued, they got progressively worse. The difficulty for us was that there was no blood

test or something that we could pin down to say that something in the blood test showed that we had isolated the cause. As confirmed with Professor Cullen, these people were reacting to a wide variety of chemicals as distinct from a bee sting or gluten. It was not one particular chemical, but a whole lot of chemicals that triggered it. It was quite different from sick-building syndrome, when people recover when they leave the building. The biochemistry was quite different.

Mr Phillips: Perhaps I might make two points. One is that many of these people are not trivially ill; they are sick. There was absolute consensus in the forum that we were dealing with a specific syndrome that was not simply a feeling of unwell. These were sick people. I know that you have received evidence from practitioners. I am sure that they will have confirmed the fact that this is a specific cluster of irritational and sensitivity diseases that in an individual instance may well happen elsewhere. There are many other causes of these conditions. However, the cluster is quite marked.

If I may refer to your earlier question, which was why can we not find the cause, I think it is a function of complexity. One of the reasons that the forum recommended that chasing a cause was unlikely to be terribly fruitful is that we are not unique. The Centers for Disease Control and Prevention in Atlanta, for example, in about 1999 convened a conference to look at clusters. It has since been termed the cluster-buster conference. In America they must be called things like that. The conclusion from the conference was that environmentally induced disease clusters happen, that they are very difficult to resolve and that the cause is very difficult to identify. A poll was conducted at the conference. The result was that in something like less than 10 per cent of environmentally induced clusters of disease, was it possible to identify a specific cause. The consensus is that it is a function of complexity. These are much more complex than laboratory experiments, for example, in which people throw very high concentrations of chemicals at rats and they can see a clear cause and effect. These are much more complex than many standard occupational studies in which there is a specific contaminant in a workplace and people can associate it with an outcome, mesothelioma and blue asbestos being a classic example. This is much more complex.

Hon FRANK HOUGH: I do not want to indulge in a conspiracy theory, but what made me think about this was that a couple of weeks ago in New South Wales, people had a problem with wells. During the heavy rains in Esperance where a large number of farms were under crop, for no reason in a large area it was not raining. The clouds came over and dissipated. I wonder whether there might be something magnetic in the earth. When you cannot find a particular toxin in gases, could there be something in the ground? In these two areas, one area has a problem with wells and the other has a problem with no rain, and there is no rhyme or reason for it.

Mr Phillips: I think you are expressing the same thing. We are talking about complexity. From a scientific point of view, it would be marvellous if Yarloop and Wagerup had a huge population, because then perhaps we would be able to tie down the cause of not 50 cases but maybe 5 000 cases. There are complex problems, and small populations are a very bad scientific mix and are really frustrating.

Hon ROBYN McSWEENEY: When people are talking about chemical sensitivity, it sounds like chronic fatigue syndrome. Did all the participants agree that multiple chemical sensitivity did exist?

Mr Phillips: We have avoided the term multiple chemical sensitivity. If I may address your first point, chronic fatigue syndrome probably belongs to the same family of syndromes, but the forum has not tried to label a specific condition. There may be different manifestations in different people that, according to the International Classification of Diseases, would be given a different diagnosis. They certainly have a fairly consistent picture of irritation, and for some people it is merely irritation and it does not progress any further.

Hon ROBYN McSWEENEY: I was looking at the submissions people have made. Some are very much for the idea of multiple chemical sensitivity and some are very much against it.

Mr Jackson: It is true to say that the recommendations of the medical practitioners forum were unanimous, including the representatives from Alcoa. Certainly, when we discussed this issue with Professor Mark Cullen, he likened these symptoms closer to the chronic fatigue syndrome-type scenario than the normal allergic response. I think it has been challenging for Alcoa. One of the frustrating things for us is that there are only three or four plants like this in the world. I think that three of them are in Western Australia. We therefore could not draw upon a lot of overseas experience.

[3.45 pm]

To answer your question, it has been extremely difficult to determine if there is a causative link; and, if so, what the substances are. There has been a lot of speculation about chemical cocktails and those sorts of things. Our efforts have been in trying to solve the problem.

Dr Di Marco: It is important to stress that the medical practitioners forum did not label the condition in Wagerup as multiple chemical sensitivity, although that did come up in the discussions. The medical practitioners forum recognised that there was a problem there that needed to be dealt with, and it proceeded in its best way to make recommendations to deal with it. Multiple chemical sensitivity is known by about a dozen other names, such as environmental disease. I think some people have even referred to it as chronic fatigue syndrome. There are all sorts of other names around the world. It gets very confusing. There is no clear definition to characterise the syndrome. It therefore becomes very difficult if you start using labels like that, because it means different things to different people. It can be emotive and very disruptive, and you get sidetracked on debating the semantics rather than dealing with the problem of the illness in the community.

Hon ROBYN McSWEENEY: I can see you are being very careful.

Hon BRUCE DONALDSON: I return to the review of cancer data for 1996-2000. Like everybody else, we witnessed some very sensational headlines in some of the media in November and early December. I guess it almost caused an evacuation from our south west. I do not know what data you made available to the wider community prior to the release of this report on 8 March 2002, but six or eight months ago did you have any data along the lines that you have now produced?

Dr Smith: No, not earlier. This actually required a special study. As I said earlier, the Department of Health routinely produces its data at a health service level. However, the health service comprises a number of local government areas. Therefore, we had to do some special work on the data so that we could attribute cases to the local government areas, and that required a special study. As soon as we had done that work, we had a press release, and we also provided it to *The West Australian*.

Hon BRUCE DONALDSON: At some stage will the Department of Health study some of the long-term employees who have been with Alcoa for 20-odd years to see whether their incidence of illness - if they have any illnesses - is any greater than that in the wider community? That would be very important, because they would have been exposed over a long period of time, if it was exposure that caused some of these illnesses.

Mr Jackson: That links to the Healthwise study that is being conducted by Alcoa, and perhaps we can address that. You also mentioned the concern in the community. We are very mindful of the media releases. We have presented this information to a number of shires, particularly Waroona and Kwinana, and to the industry. There are concerns about multiple chemical sensitivity in the community and in the work force. Secondly, you have seen the profound impact that has on the community overall, and at the public meeting we saw not only the medical concerns but also the concerns about the erosion of the whole community. Further, we have had the sensational media publicity about cancer rates, which was largely unsubstantiated. As you can see, that is not supported by our data. As Merran said, there is a lower statistical incidence of cancer in Waroona

and Harvey. We are happy to talk to you about the Healthwise study that is being conducted by Alcoa. We convened a meeting last week with what I would say is the core of the people in the medical practitioners forum who have an understanding of cancer. Some of the people in the medical practitioners forum are medical practitioners in the community, and others are specialists to whom patients are referred, but there is a core of people such as Professor Holman, Mike Phillips, Tim Threlfall and Dr Merran Smith who are looking at cancer both in this study and in the Healthwise study. We can give you that information now if you would like us to.

The CHAIRMAN: That was the third part of the presentation you wished to make, so please do that.

Dr Smith: We will hand out a copy of the Healthwise report and a short briefing note. Before we get to that, I want to reinforce what Michael said about the communities, particularly in Rockingham-Kwinana, where there has been a lot of comment in the local media, probably more than there has been in Wagerup. We have spoken to some of the officers from the Rockingham shire, and also to some of the local media. We have also gone separately to Kwinana. I think those meetings have been very productive, because they have allowed us to tell them what the facts are. The other important thing, as I mentioned earlier, is that the common cancers are lung cancer, melanoma and colon and rectal cancer, so we have said to the councils that whatever may be the causes of these things, they are preventable, and they should continue the health messages not to smoke and to remember to put on sunscreen and a hat.

The Healthwise study raised the issue of the workers, and that is exactly right. Alcoa has commissioned some quite detailed work with Monash University and the University of Western Australia. The "Healthwise Cancer and Mortality Study Interim Report" dated April 2002, which is the one that we have circulated, looked at more than 11 000 Alcoa workers in Western Australia and Victoria, mostly men. I think a bit over 85 per cent of the subjects were male. It also looked at a fairly diverse workplace, such as people in the mines, at the Pt Henry smelter and in the refineries in Western Australia, plus office staff. It was a heterogeneous group. They were also people of working age. As we know, cancer is often a disease of older age groups. Nevertheless, it found a number of cases of cancer. The study reports lower than expected death rates from circulatory disease, respiratory disease and injury in the work force. It found an increase in the incidence of melanoma.

Hon J.A. SCOTT: Is that age group correct, because the general population would have retired people?

Dr Smith: Yes. It was people who had been at Alcoa between 1983 and 1996, so it followed up people who had been there and left, and it included people who were still there. If we take the Victorian and Western Australian cases combined, there was a significant increase in melanoma and lung cancer. In Western Australia there was an increase in melanoma and mesothelioma, although the number of cases of mesothelioma was quite small - I think five cases. Within WA alone, the increase in the rate of lung cancer was not statistically significant, but the number of cases was relatively small - less than 30 cases over that 13-year period. The researchers have said that more work needs to be done; and the Health Department would endorse that, particularly in the case of people with mesothelioma to understand what sort of exposure they had, where they had worked over the years and where they were working within Alcoa. There certainly is potential for exposure to asbestos-related products in the workplace, but they are a relatively small number of cases. The WA Department of Health would be very happy to work with Alcoa to investigate those cases further, and we will contact Alcoa and offer that service to it. In summary, we think this is a relatively robust study. The researchers have foreshadowed additional work, and we would support that. We will look at cancer rates up to 1996, and of course some additional years of data are now available, which includes the cases identified in those further years, so that will increase the number of cases in the study. Of course the more cases we have, as Mike Phillips said, the easier it is to

show differences. If we have a small number of cases it is hard to determine whether those differences are statistically significant.

Mr Jackson: I think it is a fair comment that apart from mesothelioma, which is characteristic of asbestos exposure, the other cancers were not out of the ordinary. Western Australia and Queensland have a high incidence of melanoma, and despite whether these people were wearing sun protection or whatever, that is not out of the ordinary. I also understand from the analysis conducted by Dr Smith and Dr Threlfall that the incidence of lung cancer is not out of the ordinary. We believe this is a good initiative by Alcoa, and it is a very robust study.

The CHAIRMAN: Can you take us through table 8 on page 22 and explain to the layperson what the different abbreviations mean so that we can understand the results? Obviously the left-hand column is self-explanatory.

Dr Smith: "Obs" and "Exp" in the first two columns stand for observed and expected. They estimated an expected number of cases, and observed is what they actually found. "SIR" stands for standardised incidence ratio and "CI" stands for confidence interval. Those are statistical techniques to determine whether the differences are statistically significant.

Hon J.A. SCOTT: My first question is about the cancer-by-postcode study, if you like, that has been done. One of the things that concerns me about that sort of study is that a lot of people, particularly people in industrial situations, move quite a long distance to take up their jobs and do not show up in the postcode from which they came. Has there been any study on an industry-by-industry basis? I have seen studies in the United States that show that bus drivers have very high rates of bowel cancer due to the large amounts of benzene and so on to which they are exposed. Is there any intention to conduct studies, or have any studies been conducted, on an industry-by-industry basis?
[4.00 pm]

Dr Smith: Obviously there are some industries and Alcoa is one of them. However, we do not record occupations in the register.

Dr Threlfall: Occupation proves to be extremely misleading. It was a one-off summary of a very varied history. The best known recent occupational cohort study would be the Health Watch study, which was conducted into petroleum industry workers, including those at the Kwinana refinery. The ongoing results of that study can now be found on the web site of the Australian Institute of Petroleum. It looked particularly at leukaemia, lymphoma and central nervous system tumours, which, from anecdotal reports, were found to be elevated or the ones to look for. I am not aware that it ever found anything significant in Western Australian workers.

Hon J.A. SCOTT: There are no government studies and so on that are entirely independent? Are they all industry based?

Dr Threlfall: No. The WA Cancer Registry is in the business of supporting research of many kinds, usually at universities, although in this case the Healthwise study was commissioned by Alcoa to be run by both Monash University and the University of Western Australia. The material is there, but the resourcing is not there to conduct these independent studies. For a start, our government alliance would render their independence somewhat open to question. From some points of view it is better if we support independent studies elsewhere.

Hon J.A. SCOTT: You point out in the review of cancer data in your submission that there were accompanying tables, but there are no accompanying tables. Can those tables be provided?

Mr Jackson: Yes; we are happy to provide those tables. They are quite detailed.

Hon J.A. SCOTT: In the examination of possible causes that have occurred at the refinery, one of the findings is that when there is an inversion, things are much worse, which is natural when people are exposed to greater amounts of a pollutant or a combination of pollutants that might be causing

the problem. Is it possible that there might also be some other interaction? Usually at this time of the year there is a lot of moisture around and something could occur in an exchange with the moisture rather than just an inversion. For instance, extra oxygen or hydrogen molecules or whatever is coming out of the stack might be picked up, because it would be very dry and hot as well, so some combination might occur at that point.

Dr Di Marco: You are suggesting that when there is an inversion, the emissions or the chemical components of the emissions may undergo some chemical reaction in the air because of the moisture to produce some additional chemicals. I am not sure that I can answer that. Either an organic or an inorganic chemist would need to do that analysis. However, if that were the case, any monitoring that is done under those conditions would pick up any additional chemical that may be produced because it would look at the whole suite of chemicals in the airshed. As I understand it, the difficulty has been the timing for the monitoring so that it coincides with the appropriate weather conditions or the right time of the night or morning when it happens to be worse. Perhaps from that point of view, we would not have known. However, any monitoring done under those conditions would pick up any additional species of chemicals that may be a problem. For argument's sake, let us say that benzene was being converted to substance X, which may be more toxic or may cause different effects. Substance X would show on the spectrum. Earlier we talked about peaks and the output of the analytical machine. There would be an extra peak indicating that there was an additional substance and tests would be undertaken to identify that. If there were some additional substances, we would know about them under certain circumstances. The information I have seen and what I have been told about the emissions in the area does not suggest that to us.

Hon J.A. SCOTT: I looked at the conclusions and the recommendations of the Wagerup medical practitioners forum. However, I did not see any examination of the current regulatory system and how it stacks up. Clearly, our regulations differ significantly from those in other places because our regulations deal with individual chemicals rather than with combinations of chemicals, so the levels we set are not based on any synergistic or compounding effects. Some of our levels are much higher than are those overseas. For example, we allow twice the level of sulfur dioxide that the World Health Organisation does. The benzene levels allowed here are much higher than are allowed in the US. Some of the standards used in the US are 30 times higher than those used here. Do you think it might be time to review the regulatory system to determine whether there are some ways to improve things? I am talking not just about Alcoa; I am talking generally about industries that may be causing illness through emissions.

Mr Jackson: Professor Holman has taken the general view that the production levels of emissions should not be raised until such time as these issues are addressed. The benefit for Alcoa is that it can continue to operate while these issues are being rectified. The Department of Health and the medical practitioners forum have looked rigorously at the work Alcoa has been doing to reduce its emissions generally, and have been rigorously and critically appraising those steps. Peter will answer your specific question about maximum permitted levels of certain substances. However, it is my recollection that we have not looked at individual chemical compounds and whether those standards, some of which are national standards, should be dropped.

Hon J.A. SCOTT: It is not just that. I note that WorkSafe regulations cover the average person who would be affected by an average dose. However, everyone has different tolerance levels. It is sort of accepted that if only 10 per cent of people are affected, and because most people are not affected, it is okay for that 10 per cent to be affected. Those issues are a concern. From my observations since I have been a member of this committee, a whole raft of chemical compounds have never been tested for a range of health effects, so we would not have a clue what they would do. Those sorts of matters also need looking at.

Mr Phillips: The medical practitioners forum has not looked at the issue from the point of view of environmental regulation or, for that matter, occupational health and safety regulation. A few

people on the forum are familiar with the area. However, the emphasis has been on the medical problem, specifically the problem in the areas around Wagerup and Yarloop. The forum has not addressed the regulation of environmental or occupational contaminants in Western Australia and may not necessarily be the most appropriate body to do so.

Mr Jackson: However, we have not finished yet. You have raised an interesting question. Our prime responsibility has been for the community, as distinct from the occupational environment, and I understand you will speak to people from the Department of Mineral and Petroleum Resources later in the week. That is their prerogative. Peter will comment about the national levels because he has had quite a lot to do with the setting of national air quality levels.

Dr Di Marco: First, Professor Holman has written to a number of government departments requesting specific information about Wagerup. That has come from information that was received from individuals in the community who have raised specific problems with him. The medical forum set up a subgroup to screen the information and identify areas on which we could get additional information. One of the questions he asked of the Department of Health was what the department's position is on the interaction between chemicals and mixtures and whether we regulate on a single chemical basis and so on. The Department of Health will reply to Professor Holman. In a sense, other than being directly involved in commenting on the regulatory system, that debate has been initiated by the medical forum and may even lead further, depending on the information that comes back.

Secondly, you referred to WorkSafe standards. They are occupational health standards and relate to the workplace. You are right; sometimes - not all the time - they are set with a degree of tolerance for a particular level of illness in the work group. The standards for public health are much stricter than they are for WorkSafe. In fact, some people bandy around the magic number of 42. For those who remember *The Hitchhiker's Guide to the Galaxy*, 42 is the answer to the meaning of the universe. Sometimes 42 is the magic number that is used to translate an occupational health exposure limit to a public health exposure limit when one is not set for public health purposes. The reason for using the number 42 is a correction for hours of exposure; that is, eight hours versus 24 hours, and five days a week versus seven days a week. That gives 4.2 and then there is a factor of 10 to account for the fact that the normal population is more heterogeneous than the working population, which consists mainly of male adults in most of these situations. That is the rough approximation to try to come up with a public health exposure limit when one is not available.

When you spoke about air quality, you mentioned sulfur dioxide. The ambient levels of sulfur dioxide that were set through the national environmental protection measure, which was brought down by the National Environment Protection Council some time ago, have five priority pollutants.

[4.15 pm]

We are guided by that and we had an input into the national approach. In general, we do not have any ambient air guidelines in Australia. They are in the process of being developed through the National Environment Protection Council, the Department of Health and the Department of Environmental Protection. We aim to develop ambient air quality guidelines so that we can provide advice to the community regarding the safe level of chemicals. When we do not have an Australian guideline of some sort we defer to the World Health organisation initially, and to other organisations if WHO does not have guidelines. The main point from that is that public health exposures in terms of ambient air quality would be much lower than they are for occupational health exposure by the magic number of 42, if not more.

Hon LOUISE PRATT: There has been a reluctance to use the term multiple chemical sensitivity and the panel has explained the reasons for that. I am interested to know how we deal with issues of recognition for people who have symptoms. How are they able to seek compensation, pursue superannuation claims or receive Centrelink benefits when they do not have access to terminology that enables them to prove their condition?

Mr Jackson: We acknowledge that. We do not have the answer to that question. Multiple chemical sensitivity is not a recognised condition within listed diseases. We acknowledge those concerns. To this point, whatever we call it, it fits into the "basket" of what is experienced. At the public forum we heard of many more people in the community who were experiencing symptoms of concern. That is relevant to a point raised by Hon Jim Scott, who alluded to individual tolerances. Professor Cullen gave us a table indicating that when there were toxicity levels there were dangers to health. It indicated individual sensitivities. There has been recognition that people have different sensitivities to these chemicals at lower levels. The Department of Health is encouraging the development of health impact assessments for this type of initiative when industry is planning to undertake particular work. That applies in instances such as Bellevue, Brookdale, Cockburn Cement and others. Rather than just have an environmental impact assessment, there needs to be an impact on public health before adverse events occur. At the moment, we are trying to clean up after the event rather than anticipate and do our work beforehand.

Mr Phillips: The point raised is a valid one but it is something of a double-edged sword because as soon as you attach strict diagnostic criteria to a condition, you run the risk that many people suffering from the condition may not fit all the criteria. One of the dangers in adopting a term that is not precisely defined and in adopting strict diagnostic criteria, especially when we are dealing with very cloudy cause and effect, is that problems can be caused for individuals who are ill. As soon as a person becomes involved in the medico-legal arena, strict definitions start to matter enormously. In order to avoid some of those perplexities - because they were not the emphasis of the forum - it was part of the reason we were reluctant -

Hon LOUISE PRATT: Is it possible to look at someone's functionality and the impact on their health through the broad range of symptoms without naming a condition? How can we provide recognition without naming a condition?

Mr Phillips: There is a portfolio of symptoms that may not necessarily always go together. When a reasonable number of them do coincide, it would be indicative enough to create suspicion. It is partly the role of the nurse-practitioner to pick that up. Incidentally, this is not rocket science because the forum spoke to members of the community who had described these things in passing. The "Yarloop Pause" is a term created in the community for people who lose track of their thoughts in the middle of a sentence. It happens to all of us on occasion. Memory loss, lapses in concentration and short-term memory problems are classic symptoms of these sorts of conditions. It is much easier to be able to say that a person looks as if he may have one of the "irritational" sensitivity conditions if it is approached in that very broad manner. The critical thing mentioned earlier is that these conditions have to be addressed early. If people wait to receive full diagnostic results, a person may well go so far into the natural history of a disease as to be irrecoverable.

The CHAIRMAN: I am not sure that anyone answered Hon Louise Pratt's question. If words cannot be used for the condition, how can we obtain recognition to support sufferers? What words do you use to describe the condition?

Dr Di Marco: I cannot describe it. I do not have the words to describe it. However, patients describe the symptoms such as headaches, memory loss and the general feeling of malaise and feeling unwell as well as depression, stress and anxiety.

The CHAIRMAN: That is an answer. You provide a description of a cluster of symptoms and say that a person is suffering from the cluster of symptoms.

Dr Di Marco: That is right.

Mr Phillips: It is worth noting that multiple chemical sensitivity is not, as far as I know, recognised by the Workers' Compensation and Rehabilitation Commission in Western Australia as a compensable disease. Labelling it in that manner does not help the workers and it would certainly not help the community because people are not eligible anyway.

The CHAIRMAN: Would it not therefore be necessary to start providing compensation for symptoms rather than labels? We are obviously dealing with a conundrum when we all agree that something is happening, yet we cannot agree on what to call it due to the difficulty of a strict definition.

Mr Jackson: In the medical practitioners forum it was stated that when medical practitioners assess people who walk into their rooms they seek to fit people into certain categories. It was described that these symptoms fit into the multiple chemical sensitivity "basket". They referred to the symptoms of extreme lethargy and headaches that fit into the basket of the definition. The term is associated with a number of symptoms. However, that does not help the person who is seeking compensation. We have not addressed that. We have not ensured that people can obtain compensation or have it addressed through Medicare. We have endeavoured to see whether this is real and whether the symptoms are real, but there was no recognition of it whatsoever.

Dr Di Marco: A moment of levity: we should not call it a basket case!

Mr Jackson: I acknowledge that point.

The CHAIRMAN: We are going over time.

Hon J.A. SCOTT: A group of people suffering from multiple chemical sensitivity assembled recently on the steps of Parliament. They pointed out that hospitals were bad places for them to go because there were so many odours and so on. They could not go there for treatment and had to stay away from them.

Mr Jackson: Even for us to convene the public meeting we had to find a place suitable for such people to attend. We could not use a place anywhere near a swimming pool. We were quite selective in finding a location that people felt confident in attending if they were suffering from the symptoms. The member's comment is very real.

The CHAIRMAN: I have a question for Dr Smith regarding her cancer study. Is it being used in conjunction with local government boundaries? Would there not be difficulty in obtaining significant results because the number of people who live close to the refinery is quite small - only a few hundred people - and they represent only a small proportion of the shires in question, such as the Shire of Harvey, which extends to Bunbury? Using such large boundaries, is it likely to get meaningful results?

Dr Smith: It is difficult and I have taken five years of data. It is difficult to work within local government boundaries, especially as there is only a small population within the immediate vicinity of the refinery. On the other hand, if something that major were going on we feel reasonably confident of picking it up. At this stage, we have not seen anything to cause us alarm. In relation to the tables we handed out, we conducted the study by cancer type. The types of cancer are listed in the left-hand corner. As you can see, there are a lot of them.
[4.30 pm]

Those at the top are the most common; the others are fairly rare. We talked before about the column headings in the Healthwise report. These columns have the heading "Observed", which is the number of cases we saw, and "SRR", which means standardised rate ratio. This is the ratio of the observations in this local government area compared to the state figure. If it was just the same as the state figure, the number would be one, if it were less, it would be zero point something, and if more, it would be one point something. It could even be two or three if it were really high. There is then a column headed "Note". If there is a downward arrow, it means that that rate is significantly less than the state rate, while an arrow pointing up means a rate significantly higher. That information is given to lead the committee through this table. Of the columns in the table, that headed "Incidence" is probably the most important; "Hospitalisation" is probably less important, because that has to do with whether or not a patient is admitted. "Deaths" is also important, but there is the issue of people moving around and the lead time between an exposure and any result.

The other thing to be aware of is that sometimes significant differences are shown but the numbers are very small. Hospitalisations in Bunbury, for instance, show a significant reduction, but there was only one case involved, so that must be discounted. When there are large numbers - say 10 or more over the five-year period - it must be looked at. The other caution in the case of incidence that we did not speak about was that screening programs tend to reveal cases that would not otherwise be apparent. The mammography screening program, affectionately known as the "boob bus", has had a lot of promotion, and many women have had their breasts examined. The incidence of breast cancer may actually go up, but it is because the new cases have been found. That was certainly the case with prostate cancer in the mid 1990s, when there was much active searching, so the rate went up.

The CHAIRMAN: I have two more questions. The first is for Mr Jackson. Is there a problem with the overlap, or lack of overlap, between the Department of Health, the Department of Environmental Protection, and the Department of Mineral and Petroleum Resources, which used to be called the Department of Minerals and Energy? Do you think the departments collaborate effectively to get to the bottom of this kind of overlapping issue?

Mr Jackson: In the early stages, there were some loose arrangements. As we have worked through the medical practitioners forum, we have had the Department of Mineral and Petroleum Resources, the Department of Environmental Protection and the Department of Health working together. We have effectively ensured that that close working relationship between the departments has been developed. The committee may also be wondering about the difference between the Department of Health and the medical practitioners forum. This is the department engaging a broader group to tackle this very difficult problem, because we realised it was different. In the later period, we have been working very closely with the Department of Environmental Protection, and you will see that in the Government's response to the medical practitioners forum recommendation. We have been working closely with the Department of Environmental Protection on emissions and visits to Alcoa, and trying to solve this problem together.

Dr Di Marco: You have asked a very important question. At government level, we do work very well with other departments, but there is some confusion and concern in the mind of the community about where to get information or satisfaction on complaints. For example, if people feel sick, regardless of whether they are workers or part of the general community, they feel that they should address their concerns to the Department of Health. In fact, if they are workers, they should be addressing their concerns to the Department of Mineral and Petroleum Resources, or WorkSafe if they are not in the mining industry, while members of the broader community should contact the Department of Health. That causes some concern, but unfortunately that is the way we have been structured over the years. This caused much concern and confusion, in the response to the Bellevue toxic waste plant fire, about whose responsibility it was to do what, when, and to whom. This important issue really needs to be addressed at some stage, to streamline the processes. The ministerial council, as you heard earlier in Mr Jackson's evidence, is setting up an environmental health foundation, which will go a long way towards addressing these environmental concerns, and making sure that the appropriate departments are brought on board to do the work required.

The CHAIRMAN: Thank you; the committee notes your comments. By the way, the government response document does not have a date. What date should be put to that?

Dr Di Marco: That is this month, or late last month.

Mr Jackson: It would be dated in June. It was presented at the most recent meeting of the council, which was in late June.

Dr Di Marco: That was 24 June.

The CHAIRMAN: This question may best be answered by Dr Di Marco. I think it has already been asked, but the answer was lost amongst multiple questions. When dealing with multiple

chemicals, and the cocktail effect, is the department considering introducing different thresholds for cases of multiple chemical reactions? Is this considered nationally or locally?

Dr Di Marco: We are looking at the issue of chemical interaction nationally, in relation to contaminated sites. It would naturally flow from that to other media, such as the water and air. We have not made much progress in that area, though other countries also have not, except for the United States, where the Environmental Protection Agency has come up with some generic guidelines on dealing with complex mixtures. We do already take into account the interaction between chemicals in cases where we know those interactions exist, whether they be chemical reactions or interactions at the biological level. That information is well established for things like pharmaceutical products. One particular drug may affect the way the body handles another drug, and therefore the recommendation is not to mix the drugs. People should not drink alcohol while taking antibiotics, for example, because it increases diuresis, and therefore the residence time in the body is decreased. Where such an interaction is known, that is already taken into account in setting standards or doing risk assessments. Unfortunately, when it goes beyond two or three chemicals, testing interactions become extremely difficult. The permutations that would have to be taken into account when dealing with six chemicals would be multiplied. The only way this can be approached is on a theoretical basis, in attempting to predict those interaction, or there could be a defined "bag" of chemicals. Inside this room for example, we now have a defined bag of chemicals, but it is changing every second. Every time we breathe, the concentration of the chemicals in this room changes. Predicting those concentrations is very difficult. The point I am trying to make is that it is extremely difficult to establish standards, other than by taking a science policy approach, which establishes a precautionary approach, whether it is right or wrong, and reduces exposure by so much if multiple chemicals are present in a particular situation. It is the only way it can be done, but the decision is very difficult to make.

The CHAIRMAN: That decision would have to be taken with a lot of exposures, say to carcinogens, when no-one knows what the safe level is.

Dr Di Marco: The safe exposures can be estimated, but it is not possible to test whether or not it is right. That is the difficulty. Safe exposures can be estimated from the available information. When there are small numbers of subjects, it becomes very difficult to know whether or not the decision is correct.

The CHAIRMAN: Is that the sort of science policy suggested by the United States guidelines?

Dr Di Marco: Yes; that is right.

The CHAIRMAN: In a sense, it is an informed guess.

Dr Di Marco: That is right, and it has tremendous ramifications for everyone in the community. It is a decision that needs to be made by the community, not the Department of Health or the Department of Environmental Protection. Everybody should participate in the decision to proceed in a given direction, because there are very serious ramifications. A health impact assessment would take those views into consideration in the decision making.

The CHAIRMAN: I think we have finished. Thank you very much for answering so many questions and providing so much information to the committee. We will take your advice about speaking to Professor Holman, but you have already given the committee plenty to digest. Thank you.

Committee adjourned at 4.40 pm