STANDING COMMITTEE ON ENVIRONMENT AND PUBLIC AFFAIRS

ALCOA REFINERY AT WAGERUP

TRANSCRIPT OF EVIDENCE
TAKEN AT PERTH
ON MONDAY, 18 AUGUST 2003

Members

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

Committee met at 11.10 am

HOLMAN, PROFESSOR D'ARCY
Chair in Public Health, School of Population Health,
The University of Western Australia,
examined:

The CHAIRMAN: As you are aware, this is an official hearing. On behalf of the committee, I welcome you to the meeting. You will have signed a document entitled "Information for Witnesses". Have you read and understood that document?

Professor Holman: Yes.

The CHAIRMAN: As you know, these proceedings are being recorded by Hansard. You will be provided with a transcript of your evidence for checking. To assist in that process, when you refer to any documents during the hearing, clearly identify them so that Hansard has a record of it. Also, please be aware of the microphones and use them effectively.

Your transcript will become a matter for the public record. If, for some reason, you would like to say something in confidence to the committee this morning, you have the right to request that further evidence be taken in closed session. Any public or media in attendance will be excluded from the hearing if the committee grants that request. Until your transcript has been finalised, you should not make public the evidence you give this morning. The premature publication or disclosure of public evidence may not be protected by parliamentary privilege. Thank you for coming.

The committee has read and has before it quite a lot of the material from the Wagerup Medical Practitioners Forum and the Government's response. Before committee members ask you questions, would you like to make an opening statement? Would you like to draw the committee's attention to anything in particular?

Professor Holman: Thank you. I have decided not to make an opening statement. That reflects my priority to try to answer the committee's questions as best I can. It also reflects the fact that from the outset, I have remained impartial during my involvement with this matter. Therefore, as a player in the issues surrounding the Wagerup refinery, making an opening statement might detract from the fact that my role is impartial.

The CHAIRMAN: Committee members will ask you questions about some of the written evidence that it has received from you already. I will keep the committee process fairly informal. I will start with the absolute basics. I refer to the seven general recommendations of the Wagerup Medical Practitioners Forum. The Government issued a response to those recommendations late last year. Would you like to draw the committee's attention to anything in that material? Have the recommendations dated? To what extent do you believe the Government has satisfactorily delivered on those recommendations? Would you like me to go through the recommendations one by one?

Professor Holman: No, I have recently reminded myself of them. I will make three points in response to your question. Firstly, the way the Government has reacted to the recommendations of the Wagerup Medical Practitioners Forum indicates to me that the Government regards the issue with the highest priority. I have been very satisfied with the timeliness and the degree of the response that the recommendations have produced from the Government, Alcoa and the relevant government agencies. Secondly, although those recommendations were an integrated package, there was never any doubt in my mind that we were always dealing with two related problems: the

health of the workers at the refinery and also the health concerns of people living in the surrounding area. Of course, those two groups overlap to a degree. Some workers live in the surrounding area. Some of the recommendations were particularly targeting better management of the workers' health problems. I believe that Alcoa is to be commended for having made significant progress in this area. In particular, one of the recommendations is designed to emphasise the importance of the early identification of workers who appear to be starting to suffer some of the symptoms that have been seen, which progress to the point whereby some people would call it multiple chemical sensitivity syndrome.

The approach taken as a result of our recommendations and as a result of a visit by Professor Mark Cullen, is that when those symptoms begin to appear, Alcoa now takes a much more proactive response. It aims to find an alternative place for the affected worker to continue to be employed by Alcoa if possible. If necessary, Alcoa tries to assist the worker to find alternative employment elsewhere. The early intervention of identifying people who show the early signs of sensitivity and then removing them from the exposed environment is one of the most important recommendations for the workers. I am very happy with the way Alcoa has responded to that recommendation.

I mentioned Professor Mark Cullen earlier. His visit to Western Australia produced some very positive benefits. He is a world authority on multiple chemical sensitivity syndrome and is a consultant to Alcoa. I was very pleased with the way in which he advised the company that he worked for change its attitude and become much less defensive and more proactive when dealing with workers' problems.

The third and final point in response to your question relates to the other recommendations that focused on the area of the surrounding community and its health concerns. Overall, I have been very pleased with the way those recommendations have been received and acted on. Alcoa has put a very considerable sum of money - many millions of dollars - into improved control measures to further reduce emissions. Our report provided some of the impetus for that.

The implementation of the land area policy was not optimal. That has become one of the major causes of angst in the township of Yarloop. It was unfortunate that when Alcoa devised its land policy, which was to offer to buy people's houses, it put a significant boundary line through the town. Therefore, people on one side of the street were advantaged by Alcoa's policy and the people on the other side of the street were not. That caused further social difficulties and added to the social overlay that always exists in a community that is affected by this type of environmental controversy.

[11.15 am]

The CHAIRMAN: Do members want to ask any specific questions about the buffer zone?

Hon BRUCE DONALDSON: It seemed a bit of a shame in one sense that Alcoa was allowing people to lease back the land, especially for housing. I always feel that a buffer zone is something that maybe the company should make sure nobody is living on, and use that land - as a lot of mining companies do - as a pastoral station, where they run the livestock etc and have a manager looking after it. I felt it was defeating its purpose a little bit by allowing the residents still to be in that buffer zone. What is your opinion on a buffer zone?

Professor Holman: From a strict health point of view, the fewer people in the buffer zone, the better, but there is more to this problem than merely a consideration of the health concerns narrowly defined as physical health concerns. We are also talking about the social and community health of a group of people. So the trade-off of removing people entirely from the buffer zone is the problem of depopulating the town further and thereby reducing the profit margins for local businesses, sending them potentially to the wall and further depopulating the town, then gradually leading to the withdrawal of essential community services because the town no longer has the scale to warrant the same level of schooling and health facilities and so forth. So we have that whole complex

community side of things that I believe has to be rightly considered in the final setting of policy about all of these matters. From a health point of view I agree with you, but from the broader point of view I did not have a problem with them leasing back the properties.

The CHAIRMAN: Are there any other questions about the buffer zone issue?

Hon JIM SCOTT: From the legislators' perspective, do you think there is a need for greater scrutiny, from a governmental level, by the Department of Industry and Resources and the Department of Environmental Protection and so on, about where we place industries and a much stronger and earlier planning examination of this issue before we allow these things to be put in place? Do you think that that would be an appropriate way to stop a lot of these things from happening in the first place from a community health point of view - the workers' health - and they would also need to have a close examination of the way in which the layout of the plant and so forth is put in place? Is there a requirement for a much greater level of involvement at the planning stage?

Professor Holman: Thank you for that question, because it does provide the opportunity to indeed emphasise that very point. There is no doubt in my mind at all that this is a lesson to be learnt, not just from the difficulties that we have seen with the Wagerup refinery, but indeed a number of the other environmental controversies that have occurred in the metropolitan area. In the last couple of years I seem to have been involved in at least one other of these, namely, the Brookdale waste treatment facility, and in that instance I was asked to convene an independent scientific panel to review all of the sample results prior to the Government making a decision whether or not to reopen the school. That panel of experts unanimously wanted, in their very first recommendation, to cover your exact point, that, okay, we cannot find anything in the samples that says you should open the school, but goodness me, can we not learn a lesson from this type of problem about the siting of these treatment facilities and other, I suppose, potentially offending sources of environmental exposures. Time and time again we do see evidence that perhaps better placement should have been considered in the first place.

Hon KATE DOUST: If we are going to stick to buffer zones, I note that there is a mixed reaction from the two local shires about whether there should be a buffer zone or not. From your point of view, should there be a buffer zone, based on the feeling of the community?

Professor Holman: Yes. There is indeed a mixed reaction to the whole question of buffer zones and I believe it is because of the trade-off between these two tensions of the fewer physical health concerns versus the broader social community health concerns and depopulation of the area. That is why we get this mix of views going on. Relevant to that is the fact that my perception of it is that the community view on the buffer zone has changed over time. When the medical practitioners forum first considered the issue of the buffer zone, and this was early in 2002, there seemed to be a predominant concern from the community about loss of land values and that seemed to be actually adding to the distress and the mental health problems that were arising from the whole scenario. It is all very nice now looking back to think perhaps we did not think it through carefully enough, but at the time I have to be honest and say that we felt that by encouraging Alcoa to go ahead with its land policy, at least we would be assisting in the removal of a source of stress, mainly economic stress, to the local community. They would not feel trapped. People who wanted to leave could do so without feeling as if they had suffered a huge economic loss through reduced land values when they sold their homes. One even wondered at that time, because experience around the world indicates that concerns about land values can actually colour people's perceptions of the levels of health risks involved in these sorts of problems. A classic example of that is high-tension powerlines. If you have them underground, people do not perceive them as a health risk very much. If you have them on huge, big pylons, even though they may be physically further away from you, they are then perceived as a health risk, and particularly the issue of land values tends to come into the way people perceive the risk. Therefore, we did have grounds on which to believe that by

providing economic support, if you like, that we would reduce the levels of stress in the community and reduce, I suppose, the extent to which the controversy was receiving a dramatic flavour to it. In fact, I guess what we did not foresee was the extent to which the people who really wanted to leave took advantage of the opportunity to leave - and obviously for them the policy was a very good one - then you are left with people, particularly those who are now not in the buffer zone, who are feeling the economic impact of depopulation or potentially perceiving that to be a threat to their livelihood. I feel that the community view of the buffer zone has actually changed from, in my opinion, being mainly in favour of it, to being much more mixed. Part of that is because some of the people who are most in favour of it have actually taken advantage of it and left, and the ones that are left are now facing this depopulation - not only depopulation, but the change in the character of the town and that sense of loss of community connectiveness that comes from people changing.

Hon KATE DOUST: Does the very idea of people in that community having a buffer zone have any sort of psychological impact on how they perceive themselves in terms of their health? I only say that because it was put to us some time ago that whilst the company was dealing with the health issues for the workers, you could not really make the connection between those health issues and those who were suffering in the community. It was a psychosomatic-type of impact. I was wondering if having a perceived buffer zone made any difference to how people thought they were in terms of their health.
[11.30 am]

Professor Holman: I honestly do not feel that I could.

Hon KATE DOUST: I did not really buy the psychosomatic line.

Professor Holman: I would only be speculating in attempting to answer that question.

Hon KATE DOUST: I asked that question because you were talking about the reduction in stress levels and other things by having that zone and relieving the economic pressure. I wondered whether it took any other pressures off.

Professor Holman: I guess you have to distinguish between the concept that there is a buffer zone and what that means - that is, people might perceive that something might not be quite safe - versus the situation prior to when the buffer zone was brought in when the main concern was, of course, the reduction in land value. It was not so much that the buffer zone was there to reduce exposure, as it was to take away the stress that was caused by the reduction in land value.

The CHAIRMAN: I would just like to clarify one point. I was not at our last meeting. Can we keep going for another hour? Do we have that much of your time?

Professor Holman: Yes.

The CHAIRMAN: There are a lot of questions and material that we need to go through. Thank you.

Hon JIM SCOTT: My understanding of the buffer zones that now apply, and probably the previous informal ones as well, is that they are based not on emissions but on noise. What scientific validity is there for the buffer zones in terms of the emissions?

Professor Holman: You must understand that the Wagerup Medical Practitioners Forum went only so far as to recommend the general concept of a buffer zone. Alcoa decided the detail of how it was then put into effect. Alcoa's policy has resulted in one of the boundaries of the buffer zone being set at a particular noise level isomer.

Hon JIM SCOTT: Should they be looking at where the emissions are travelling? Noise is certainly important, but emissions would probably be more important.

Professor Holman: I certainly would have preferred that the boundary not go through the town. That is not what I would have recommended.

Hon KATE DOUST: What other options do they have in terms of where that boundary is placed? Were those issues canvassed, or was a line drawn and that was it?

Professor Holman: It was set on the basis of noise levels, and that put the boundary through the town. I would have much preferred the whole town to be incorporated into what was not so much a buffer zone - I prefer to use the term "land policy" - but an economic policy to enable people who wanted to leave to do so without suffering any adverse financial impact through reduced land values. I would have preferred that policy to cover the entire township of Yarloop. If that had happened, we would probably not have seen some of the difficulties that have subsequently been seen.

The CHAIRMAN: Taking up your earlier point on better planning, could one therefore surmise that you would be in favour of the Government taking the lead on the issue of land-use policy, buffers and so on rather than it being driven by the company?

Professor Holman: Very much so. You have to be aware of the false economy of taking the least cost option when it actually involves siting things close to populated areas.

The CHAIRMAN: Yes. I will move to some other things that have changed as a result of the work of the Wagerup Medical Practitioners Forum. For example, you recommended an improved focus on clinical management of affected people. From that, the Government set up a community nurse at Yarloop. We have not received any information on how that process has worked. Are you kept informed about the work of the community nurse? Is there any report that we should be aware of?

Professor Holman: The community nurse has produced an initial report covering the first few months of her experience in Yarloop. That report was provided to the last meeting of the Wagerup Medical Practitioners Forum and included statistics on the number of attendances at the clinic recorded by the nurse.

The CHAIRMAN: And the type of symptoms they were expressing?

Professor Holman: Yes.

The CHAIRMAN: I presume we would be able to obtain a copy of that initial report.

Professor Holman: It is a Department of Health report. We recommended that the report be made public, but we accepted that, because it is quite detailed, it needs to be shortened and made more user-friendly. The problem with that of course is that people then think it is a cover-up of some sort. If you read the report, you will see what I am talking about.

The CHAIRMAN: That is a very topical matter in the structured process for the Bellevue fire and the release of information.

Professor Holman: I would be all for both the original report and the user-friendly report being made publicly available. That is probably the way to get around some of the issues about technical reports being summarised and to avoid the accusation that it is a cover-up. The thing to do would be for both reports to be made available.

Hon BRUCE DONALDSON: Without going into too much detail, does the nurse's report demonstrate a reduction in the number of complainants coming forward?

Hon KATE DOUST: Or a variation in the types of symptoms?

Professor Holman: Yes. Well, no historical comparison is available to determine whether there has been a reduction. What we can say is that the nurse certainly had attendances at the clinic. I cannot remember the exact figure, but it was in the order of 50 attendances in those first few months. Many of the symptoms were eye and throat irritation, which we had previously heard about.

Hon BRUCE DONALDSON: Were they new or existing complainants?

Professor Holman: I asked that very question at the forum because I was very keen for the nurse to make that distinction. Both groups were represented; there were people who had had symptoms in the past and there were also people who had moved into the town and were experiencing symptoms.

The CHAIRMAN: I am sure the committee will endeavour to get that report so that we can see the data for ourselves. Another recommendation was for an ongoing commitment to surveillance and monitoring. From that, the Government has proposed the establishment of an environmental health foundation. We have received recent information that there has been no government commitment to funding of that notion. Do you think that is an appropriate response? Is that the best way to provide a commitment to ongoing, high-level advice and research on this sort of matter? Do you think it is necessary for such an institution to be formed, given that there are already people like yourself and other health professionals throughout our tertiary institutions? Do you think that is a good way of doing it, or is it an unnecessary expense?

Professor Holman: When the environmental health foundation concept was first raised with me I was asked whether that was something to which I might be interested in submitting a tender. I declined to do so. I made it clear right from the outset that I had no intention whatsoever of becoming personally involved in the environmental health foundation. I made that decision because I feel that my independence has been useful in all of this. I do it entirely on a voluntary basis and I would prefer that my involvement continued to be entirely voluntary and unpaid, including making sure that I do not get any advantage in terms of research grants, for example. Having said that, the general concept of promoting further development of the academic sector in this area of environmental health is warranted. In particular, Western Australia is weak in the area of environmental toxicology. It is very hard to find fully qualified, experienced and independent toxicologists. Some toxicologists provide consulting services to industry. I would prefer senior academic toxicologists to be advising the Government from a more independent position on some of these areas. A modest amount of additional funding support for the academic sector, particularly to promote environmental toxicology in a multidisciplinary framework, would probably put us in a stronger position in the future. I do not think it will help Wagerup that much. The whole scenario at Wagerup has moved well beyond the science of the situation. We are dealing with a combination of scientific and medical issues and significant social problems.

The CHAIRMAN: I want to change the subject. Does anyone have anything to raise about the environmental health foundation proposal before we move on? Therefore, we will move on to the complex issue of multiple chemical sensitivity syndrome. You also recommended that the Department of Health hold a workshop. Has that taken place?

Professor Holman: Yes. I believe that recommendation was satisfied. It was not satisfied in the way that we had foreseen, but the spirit of it was satisfied. Alcoa brought over Professor Mark Cullen, who conducted a number of workshops. He also did his own small review of the situation. He spoke to me in private. I was very pleased with his visit. I believe the workshop took place, but it was taking advantage of Professor Cullen's visit.

The CHAIRMAN: Overall, could you give the committee your view of whether that syndrome is now more widely recognised amongst health professionals? For example, 10 years ago there were clearly a lot of suggested psychosomatic aspects to multiple chemical sensitivity. From the bits I have read, that attitude now seems to be slightly less prevalent. Is there a stronger recognition of that syndrome? Are we at the point of understanding the physiology or aetiology of the syndrome and are we able to describe it as a disability in a scientific way? Where has that issue got to?

Professor Holman: In answer to the question of whether the syndrome is more widely accepted, I believe that it is. I am a case in point. I would have been quite sceptical about multiple chemical sensitivity syndrome over a decade ago. I am now much less sceptical. The answer is yes; there is wider acceptance of the syndrome, but it is still controversial. I have come across highly qualified

medical scientists who do not believe that it exists. In answer to the question of whether we understand its aetiology, at this point there are only theories. One of the very interesting theories that has started to appear in the literature is that it is mediated through an olfactory mechanism; that is, it is mediated through one's sense of smell and the effect that smelling certain chemicals has on various parts of the brain. That is being pursued, but it is only a theory. There is not a lot of data to support it at present.

[11.45 am]

The CHAIRMAN: Presumably, quite a lot of worldwide research will be done to discover the physical pathways in the body that express those symptoms.

Professor Holman: Yes. The number of papers is starting to gradually increase.

The CHAIRMAN: I do not think that multiple chemical sensitivity is described as a disease. Is it more of a disability? Is that a fair assumption to make? Is it an important assumption?

Professor Holman: Officially, something becomes a disease from a purely definitional perspective when it is classified by the World Health Organisation in the international classification of diseases. HIV infection was not in that classification even though we all believed it was a disease. At this time it is not in the classification and internationally it is not considered to be a disease; there are only opinions as to whether it is a disease.

The CHAIRMAN: In Western Australia, for example, are people who suffer from multiple chemical sensitivity symptoms entitled to compensation under the Workers' Compensation and Rehabilitation Act?

Professor Holman: I do not know the answer to that. I do not have enough expertise in the administration of that Act to know the answer.

The CHAIRMAN: Do you know whether the same sufferers are entitled to Medicare payments?

Professor Holman: I believe they would be entitled to Medicare payments. They have symptoms that require investigation and examination and, therefore, are be covered by Medicare.

Hon ROBYN McSWEENEY: Is chronic fatigue syndrome more widely accepted than multiple chemical sensitivity, even though it has the same set of symptoms?

Professor Holman: Yes, but I can only give a general judgment on that. The concept of what some people call post-viral syndrome, or chronic fatigue syndrome, has also become more widely accepted as a real entity. I do not know off the top of my head whether it is in the international classification of diseases yet.

Hon ROBYN McSWEENEY: From what I understand it is because it involves a set of symptoms. It is not one symptom, as you know, but a set of symptoms.

Hon BRUCE DONALDSON: Multiple chemical sensitivity has been a big question for all of us. For example, a number of people, traditionally women, are highly allergic to the use of perfume. I am not allergic to most things but when I was a farmer I was allergic to the superphosphate that contained a mixed formula of copper, zinc and molybdenum. Superphosphate was used to build up the different trace elements in the soil. That mixture and its fumes affected me greatly even when I was handling it in bulk. I was almost ill most nights. I could not eat and, yet, at other times, I was fine. I do not know whether it was the copper, the zinc or the molybdenum but I was highly allergic to it.

Is part of the problem that some people react to some of the chemicals and others do not? This has been the separation between the two. There are real life instances of people being exposed to different things and reacting differently.

Professor Holman: Part of the enigma with this multiple chemical sensitivity syndrome is that it has been studied in more detail and does not seem to be an allergy. Allergies are mediated through

the body's immune system. For example, a woman might put on a perfume and develop a skin rash. The first time that perfume is put on some of its molecules are absorbed into the body where they challenge the body's immune system. The body's immune memory remembers that chemical structure and develops a capacity to produce antibodies to that particular chemical structure. The next time that perfume is put on, the body is ready to react quickly to the exposure and immediately produces antibodies that react with the chemical locally and produce inflammation. The same sort of concept underlies at least part of the asthma problem where people are allergic to house mite dust or other allergic triggers of asthma attacks. Multiple chemical sensitivity syndrome does not seem to have an allergic aspect to it. People do not demonstrate some of the biochemical or blood changes that are often seen in people with severe allergic problems. The same sorts of people are not atopic individuals; they do not tend to be allergic to things or have contact dermatitis or rhinitis from the pollens in early spring. MCS seems to be different, which is what has really driven the theory about the olfactory mechanism rather than the allergic mechanism. All this is somewhat speculative but that seems to be the direction that scientific research is now taking. The favourite theory is it is not an allergy but something to do with the way we smell certain chemicals that has a direct effect on the brain.

The CHAIRMAN: Does scientific research at this stage also indicate that although exquisite sensitivity occurs at very low levels of exposure, there is, generally speaking, at least moderately toxic exposure initially as the trigger or the onset of MCS?

Professor Holman: There seems to be a pattern to the natural history of this syndrome. Someone is put in a situation where they are exposed to, usually, some volatile organic type of substances. They appear to develop a sensitivity and when they undergo multiple exposure, it gets worse. It then takes less and less of the initial exposure to produce the same set of symptoms. A generalisation of that sensitivity to other like types of substances occurs to the point where, unfortunately, some people become allergic to the twenty-first century. It is a most dreadful and tragic situation but, fortunately, that happens to only a small proportion of people.

The CHAIRMAN: Do you think those people who have been affected - there are certainly some individuals in the case of Wagerup - are receiving adequate institutional support or are they not getting compensation and so on because of the controversial nature of the syndrome?

Professor Holman: Things are moving in the right direction and the situation has improved for these people. After debating the issue for some years, in the past year or so Alcoa has settled a number of claims from workers who appear to have significant multiple chemical sensitivity-like problems. Overall, because of a greater recognition of the problem, there is a more sympathetic view towards people and a willingness to assist them than that which existed previously. It must be remembered that when the Wagerup Medical Practitioners Forum first met and made some initial recommendations, it was the first time any expert group in Western Australia had said, "We believe that there is a health problem here." Prior to that the position had generally been that perhaps people had a problem or perhaps they did not. No one was really prepared to say, "Look, we don't fully understand this but we believe you and we believe that there is a health problem here."

Hon KATE DOUST: One of the recommendations was about ongoing commitment to surveillance and monitoring review involving the medical forum. I know there is a community nurse in place there. What other methods of surveillance and review will be put in place and what is the lifespan for the operation of this medical forum?

Professor Holman: I will clarify that the forum is not directly responsible, for example, for monitoring. In that case the Department of Health appropriately takes on that responsibility. Indeed, it was the Department of Health that took the initiative to employ and make available the community nurse; she is an employee of the Department of Health. The nurse has provided one important avenue for ongoing surveillance by collecting statistics and providing a qualitative view of what is going on from just being there. You have asked me what more could be done. I am in

favour - this view came out of the last meeting of the Wagerup Medical Practitioners Forum - of conducting a once-off health audit of the entire Yarloop community. I do not believe it would be particularly expensive. Once we provide a baseline of the full extent of the symptomatology and apparent health effects in the town from everyone who is resident there, we will not be coloured by the reports about the people who come forward with a complaint. I would like to know how many people living in Yarloop are completely symptom-free and do not experience any health problems whatsoever. I would like to have that baseline information so that we can, for example, repeat that survey in five year's time and see whether things have changed. The same survey could also be used to get a baseline on people's perceptions of the social situation, how they feel about their sense of community and if they believe the town is viable. All those sorts of things will allow us to measure the amount of social pathology. I would like to have that information available so that in five year's time we can see whether any overall progress has been made.

Hon KATE DOUST: Do you also think that a baseline needs to be set up for the workers at Alcoa and Wagerup so that both lots of information have been taken from the same period?

Professor Holman: I need to think about that to give a carefully considered answer. I am less concerned about the workers now than I was before. The problem with the workers was mainly due to the lack of proactive attention to identify people who showed early signs and to get them out of there -

Hon KATE DOUST: Why do you think that occurred? Why was there not that level of proactivity?

Professor Holman: You would have to ask Alcoa that. However, the good news is that the approach has changed. I have seen it change in the time that I have been involved in this for the past couple of years.

[12 noon]

Hon JIM SCOTT: I will make some statements and get you to comment on them. Some things have been brought to my attention by people involved in not only the Alcoa case but also other situations related to chemical issues. They say that not very many doctors in Western Australia recognise conditions in people who have been affected by chemicals, and even fewer doctors know how to treat them. In fact, even hospitals are dangerous places for people with MCS. It is a place where they get incredibly ill. On top of that, some test results refer to micrograms and cubic metres, and others refer to other measures. I have seen all the documentation of the data. Everyone uses different terminology and measurements. That includes people in the medical field, who use moles per litre. There is great concern about mistakes as everybody uses different terminology rather than a standard measurement.

The CHAIRMAN: That is two questions already, so stop there.

Hon JIM SCOTT: They were statements. The first was about training; that is, whether doctors have proper training to recognise and treat MCS. The second was about the need for standard terminology.

Professor Holman: The first question was whether our medical work force is sufficiently trained to recognise and treat multiple chemical sensitivity syndrome. We are to a degree talking about the belief systems of the medical profession. MCS is not a particularly difficult entity to at least have suspicions about. I do not think that a person who believes it exists will find it that difficult to diagnose. I think we are ultimately up against the issue that was discussed in an earlier question; that is, whether this is an entity that is recognised and accepted by the medical establishment. We are still at the point at which MCS is on the road to becoming more recognised. The majority of doctors still do not have a strong view that it exists. I find it difficult to say whether that is a matter for education. We do not understand the syndrome very well. We cannot clearly define what causes it and exactly where it exists at the margin. I am trying to imagine what a pamphlet that we

could send out to doctors would look like or what a medical school lecture on multiple chemical sensitivity syndrome would contain. The best answer I can give you is that at this time it may be premature to give this a major focus. Rather, we should ensure that within the system there are at least some doctors who are able to assist these patients.

Hon JIM SCOTT: What about treatment?

Professor Holman: There does not seem to be a treatment.

The CHAIRMAN: How prevalent do you believe MCS is? Are there any papers that suggest there is worldwide prevalence or that it is prevalent only in Western Australia?

Professor Holman: There may be, but I am not aware of any paper or study in which a person has, for example, taken a random sample of people in the community to try to work out what proportion of the general population sampled has what we might call multiple chemical sensitivity syndrome. I have never seen a piece of work like that. I do not believe we know the answer.

Hon JIM SCOTT: What about the measurements that were used?

Professor Holman: Are you able to give me a specific example?

Hon JIM SCOTT: I have been sent data by people who have had tests analysed by medical laboratories and so on. The test results are expressed in moles per litre. People measuring the level of pollutants in the environment use the expression micrograms per cubic metre. Different levels of scientists use different measurements for the same test. People who are measuring something for environmental reasons use more than one measure and, to confuse matters, there are different public health and working levels. There are different measurements. However, human health is human health, and someone will be impacted by the same amount, no matter how it is expressed. I recall accidents in which people who have been prescribed certain medicines have been given way too much because the measurements were not expressed in the usual terminology. I am concerned that if we use different terminology, mistakes will be made in an analysis of someone's health.

Professor Holman: I think some of the variation in terms is necessary. For example, someone measuring a pollutant in the general atmosphere would typically think about it in terms such as grams per cubic metre. The measurement of the same chemical in the bloodstream is a very different context. In that case, the expression millimoles per litre or something like that might be used. The difference reflects the huge difference in the concentrations in the two different areas and the way we conceptualise air versus the bloodstream.

Having said that, I suspect you are right when you say there is a problem with variation in the use of different terminology. Of even greater concern to me - although it is very closely related to your point - is the difference in sampling techniques. I am more concerned about differences in sampling techniques than I am about differences in the way the results are expressed. I understand it could be confusing if results were expressed in different ways, and I certainly take your point that that could lead to misunderstandings. However, sometimes people do not know that one laboratory has done the measurements using a particular technique and that another laboratory has used a different technique. Sometimes that information is not even available. That can lead to important differences in results. I have seen an example in which a particular laboratory measured a range of substances in air samples. One of the substances required a different technique than the one employed to be measured properly. However, because the substance was part of a battery and not the principal focus of the analysis - which, from memory, was heavy metals such as nickel and lead - the technique was used in a catch-all way for most of the chemicals. The one chemical that should have been measured in a different way was tested along with the batch, so to speak. We were initially not told that that result should be ignored. It should not even have been reported because it was not measured using the correct technique. That alerted me to the problems that can occur when different measurement techniques are used incorrectly, and even correctly.

The CHAIRMAN: Following from that, can you comment on the community monitoring process that took place at Wagerup? There was some concern from the community that it had been inadequately trained. A sample was found to be contaminated, but in fact it must have been that the canister itself was contaminated.

Professor Holman: My expertise is not sufficiently detailed in regard to issues like contamination of canisters and so forth to be able to comment on whether that is a mistake that should not have happened or might have happened. I do not know. I have observed that the area of sampling seems to be problematic. I do not see evidence of high-level expertise about sampling methods being readily available from the academic sector. Again, I come back to the point that I think an environmental foundation could be helpful in promoting more academic expertise about issues like sampling and hopefully in promoting best practice and the acceptance of a singular approach to best practice in the way samples are collected.

Hon BRUCE DONALDSON: I would like to return to the baseline study on health issues, relating also to the work force. You mentioned toxicology. Did you indicate that Western Australia was deficient in the use of toxicology?

Professor Holman: We do not have enough toxicologists, particularly those who work from an independent platform.

Hon BRUCE DONALDSON: Okay. How important would blood tests be if a baseline study were conducted?

Professor Holman: I do not believe that blood tests are particularly important in the Wagerup situation. It is the prevalence of the symptomatology that I would really like to know about.

Hon BRUCE DONALDSON: What about those working closely on the plant?

Professor Holman: There would be much greater rationale for blood tests of the work force. However, blood tests are particularly important when talking about heavy metal problems, and Wagerup is not primarily an issue about heavy metals.

Hon BRUCE DONALDSON: I asked that question because many companies have a policy of random drug testing on site. People working under fly in, fly out arrangements are out on the next plane if they test positive, and people in other workplaces are simply out the gate. Using good political terminology, I cannot recall whether we have been told that random drug testing is conducted at Wagerup. However, it seems to me that although it may not be the answer to the problem, it would certainly assist if even on a volunteer basis the work force was blood-tested as part of the baseline study. I know that it is not the answer, but could it be of assistance at some stage, especially as the workers are refining very contaminated bauxite?

Professor Holman: If one were to want to do that, I would recommend an initial trial to see what comes out of it. The focus will inevitably be on heavy metals. I know that the occasional worker at the refinery has been found to have in his blood a high level of one or more heavy metals. That will happen in most environments. A certain worker will happen to be the person who deals with a certain substance. It is helpful to know that information because it means that that person's personal work environment needs to be looked at very carefully. I do not believe that blood testing for heavy metals will solve the problem of multiple chemical sensitivity syndrome in the workers; nor will it solve the general prevalent symptomatology, which is of the nature of irritation to the eyes, the mouth and sometimes the skin, headaches, general malaise and fatigue. I do not think we will come to grips with those types of symptoms through blood tests.
[12.15 pm]

Hon KATE DOUST: I have read a couple of the questions in your letter to the Environmental Protection Authority in which you talk about exposure to benzene and other carcinogens. Leading on from Hon Bruce Donaldson's line of questioning about the issue of blood testing, how do doctors know whether a person has been exposed to a cocktail of chemicals? What symptoms are

usually present? How is it monitored? Is it possible for a blood test to determine whether a person's exposure to chemicals has built up over time, or is another method of testing used to determine a person's exposure to chemicals?

Professor Holman: You are asking me a detailed toxicological question. My expertise goes only so far on this matter. As a general point, at the level that I understand it, the different classes of chemicals must be examined individually. People must be particularly cognisant of the way in which the human body handles the different classes of chemicals. Heavy metals are an entity on their own because the body accumulates them in our hair, nails, and bones. We store them away and a balance occurs between the amount of heavy metals we have stored away and what amount enters the blood stream. When talking about highly volatile substances like benzene, for example, to the best of my knowledge - I am not a toxicologist - those chemicals are not stored for a lengthy time. Therefore, the approach for measuring them must be different.

Hon KATE DOUST: If there is to be a base line, how can these issues be monitored five or 10 years down the track? People keep raising these issues with us. There has been a degree of denial about the impact those chemicals have had on the people who work at the refinery and those who live in the surrounding community. There must be a connection if people are presenting with health problems. How can that exposure be connected?

Professor Holman: I do not believe we will measure the connection. This was a fundamental, philosophical issue that was debated the first time the medical practitioners forum met. It debated whether to conduct more research to find out what was going on or accept what was before it with regard to the problems about which people complain. The forum debated whether to make an action plan and do something about it, accepting that there are a lot of gaps in our knowledge. I doubt whether any research will clearly identify exactly which chemical or combination of chemicals from the Wagerup refinery is responsible for certain problems.

Hon JIM SCOTT: Another issue for regulators is the multiple chemical synergies. Regulations deal with individual chemicals rather than synergies between chemicals. Obviously, a lot of work must be done to understand all those synergies. You have already talked about the way in which some people can be affected by certain chemicals and other people appear not to be. They are complex issues. Must we revisit our regulations and include references to multiple chemicals rather than just individual chemicals, if we have adequate information about the effects of certain synergies?

Professor Holman: Yes. Even though our knowledge of chemical synergies is very limited, relative to what one suspects is the complexity of the area, we could at least make an allowance for the possibility of synergies in some ways. For example, in theory, at least two different types of synergies can occur. The first type is a very simple additive synergy. Acetaldehyde and formaldehyde belong to the same family of chemicals but are very different. Although their molecules are different, they are closely related. Some of the effects of those chemicals on the human body are somewhat similar because the molecules have similarities. If a standard of exposure were set for acetaldehyde, a person could be exposed to 60 per cent of the minimum threshold level, which is well below the level at which health problems would occur. A separate threshold limit could be set for formaldehyde and the same person could be exposed to that chemical at 60 per cent of the threshold value. If the picture were not put together and the total exposure to that class of chemicals were not considered - as distinct from the separate exposure to each of the different chemicals - an incorrect view of what was going on could be formed from the point of view of chemicals acting somewhat in the same way if they are structurally similar. That is the first type of synergy that concerns me. At least in that area, it should be possible to make sensible rules about groups of chemicals so that each one is not considered in isolation. We should think about the general range of effects those chemicals produce on the body, because they are often structurally similar.

The other type of synergy, which is much more complex, is when chemicals interact with each other. We have only a limited understanding of this. What happens when people are exposed to benzene in the presence of formaldehyde, for example? Does that chemically alter the way in which benzene is metabolised in the body or vice versa? We do not understand that area very well. However, there is at least some prospect for making sensible allowances for chemical cocktails. Currently, no allowance is made in the way the various regulatory limits are set. It is as though every chemical is considered in isolation. At the very least, a pragmatic approach should be taken.

The CHAIRMAN: I appreciate that you have done this work on a voluntary basis. You informed this inquiry of the letters you sent to the Department of Health and the Environmental Protection Authority, raising six different matters. Did you receive a formal response? Would it be possible for you to provide the committee with that correspondence in reply to your letter that you have already supplied?

Professor Holman: Yes, I will do that.

The CHAIRMAN: In *The West Australian* on 14 May this year, another letter from the forum was quoted. Is it correct that you sent a letter to the Minister for Health commenting on whether it would be appropriate to increase the level of production at Wagerup? Is there such correspondence? Is it possible for the committee to have a copy of that also?

Professor Holman: I was approached and asked whether I would be willing to chair a public meeting in Yarloop. I had already done that twice before. Three government ministers were to attend the meeting to address the community. At around that time there was some coverage in the newspaper about Alcoa possibly seeking to expand the facilities at the Wagerup refinery and increase production. The way it was quoted in the Press - we all know that that must be taken the way one reads it and not necessarily as factual - it was suggested that at least some members of the Cabinet were interested in the possibility of Alcoa expanding. Therefore, because I had formed the view that it would be premature to increase production at the refinery, I felt most reluctant to be part of a public meeting at which, potentially, the issue of an expansion of the refinery might be raised. It was on that basis that I wrote to the Minister for Health expressing my concerns about it. In particular, I expressed my concern at being involved in a public meeting if one of the objects of the meeting was to make an announcement about the expansion of the refinery. That did not transpire.

The CHAIRMAN: I understand that you chaired that meeting.

Professor Holman: Yes, I did

The CHAIRMAN: Were your concerns put to rest?

Professor Holman: My letter was leaked. The convenor of one of the community groups in Wagerup contacted me and put it to me that I was potentially going to be used and that my name as an independent person would be used in connection with an announcement to increase production at the refinery. I wanted to make it absolutely clear that I had no intention whatsoever of being part of any process of that nature. I sent a copy of the letter to the minister to the person in Yarloop. Subsequently, the letter was leaked to the media. That is what happened. I do not know whether the person from Yarloop leaked the letter to the media. Subsequently, it became clear to me that there was not going to be an announcement about the refinery expanding its production. In fact, it was noticeable that very soon after my letter became public, there seemed to be statements in the media to the effect that Alcoa had no intention of expanding. On that basis, I was happy to chair the meeting.

The CHAIRMAN: What is your position now about a potential expansion of production at Wagerup?

Professor Holman: I am not in favour of it. I have formed the view that a period of stability is needed. There is a huge social wound in the community of Yarloop. That wound will take some time to heal, regardless of the levels of emission exposure. There must be a period of stability to

enable the community to find its feet in this new environment that has been created by the buffer zone, for example; things need time to settle down. It would be most inhumane to subject those people to the difficulties of a further expansion of the refinery.

The CHAIRMAN: To use a medical analogy, perhaps some healing is needed. Several of your questions to the EPA - I look forward to reading its response to them - concern the topography and atmospheric conditions at Wagerup. You quoted Barry Carbon's report and also raised concerns about whether the Ausplan model that is used to understand the air shed areas is the best way of understanding it and so on. I am sure the committee is interested to hear your views on the nature of the site and whether there are some particularly meteorological or topographical issues that complicate the behaviour of emissions at Wagerup.

[12.30 pm]

Professor Holman: I am aware from those who have more expertise than I in the area of the climate and topography that it is not a good site from the point of view of its position just below the scarp. The weather conditions produce kind of an inversion at some times of the year when the emissions from the smokestacks basically just come straight down and tend to rest there without being moved along. I am aware, from what I have heard from people who have more expertise than I in this area, that it is not an area where someone who knew a lot about topographical issues would recommend the placement of a refinery.

The CHAIRMAN: Could I ask who those persons might be so that they can provide further advice to this inquiry?

Professor Holman: Peter Skidmore from the Environmental Protection Authority. I have also read it in some of the documents, and I cannot off the top of my head remember the authors of the documents. I could refer you to Mr Carbon's report, because I seem to remember he specifically comments about some of these issues in his report.

The CHAIRMAN: Yes, he does.

Professor Holman: Those are the sorts of documents I am referring to.

The CHAIRMAN: Are there any more final questions?

Hon JIM SCOTT: One issue appears over and over again and it links in to when you were talking about MCS possibly being something that comes through the olfactory area of the body. One of my concerns is that we started off, we have stopped and we have gone back to hearing not about emissions but odours, and I am personally concerned that when the word "odours" is used all the time the wrong picture may be portrayed. There are lots of emissions around that do not have particular odours but still make people ill. I am one of those people who have been receiving regular updates of what people are feeling down at Yarloop and what the particular conditions are like and so on, and sometimes there are conditions in which the odour is not very bad but people may feel pretty ill. Do you think there is any scientific validity in constantly using the word "odours" in these reports rather than "emissions"?

Professor Holman: Alcoa takes the approach that their aim is to reduce odour, and that has consistently come through in the various presentations that they have made to the Wagerup Medical Practitioners Forum. They monitor odour complaints quite closely and, when they look at the various engineering improvements that they have made to the refinery at different times, they talk about the success of those improvements in terms of whether or not there is a reduction in the number of odour complaints. Alcoa tends to put this emphasis on odour. I am aware, as you have intimated, that it is not the situation that odour and symptoms are always linked one to the other. There are times when some people experience symptoms in the total absence of being able to smell anything unusual and vice versa. I think it is very likely that we are dealing with more than one health effect when we are talking about Wagerup. What causes multiple chemical sensitivity syndrome in the occasional person - unfortunately it seems to go down that track - is not necessarily

the same thing that causes someone else to have watery eyes. I do not think we should get trapped into thinking there is just one kind of aetiological pathway here. It is quite likely that we are dealing with a complex bag of different effects of different substances, some of which smell and some do not.

The CHAIRMAN: Going back to when the forum began, you pointed out at that stage that there was no acknowledgment that people were becoming seriously ill. Do you feel that the commissioning of the liquor burner, given the experience in Kwinana, was poorly handled by Alcoa and that perhaps the company was inadequate in its pollution control measures at that stage?

Professor Holman: I do not have enough information to give an answer to that, and the reason I do not have enough information is that I have never gone back in history and reviewed exactly what happened at the time when the liquor burner was first commissioned. I really do not have enough information on which to form a view as to whether or not the initial commissioning of the liquor burner was done competently or not. I have never looked into it.

The CHAIRMAN: I just note that one of your questions to the EPA, question 5, is specifically about that.

Professor Holman: If I could explain. I know the questions seem as though they are mine and they became my questions, but what happened was that members of the community came to me with a large pile of documents that they said represented things that they had been concerned about and had not been able to get answers to. I believed that if I then facilitated a process of obtaining answers to their questions it would at least relieve, at the very least, the anxiety of not being taken seriously and having doubts about answers to questions. The letters I wrote were on behalf of members of the community, really, and the responses I received I gave back to members of the community. It does not quite reflect the history of it to say that they were my questions and therefore it represented a particular line of inquiry that I was sort of initiating and committing myself to and intellectually engaging in. In many of those instances it was just passing on someone else's questions, and the liquor burner is one case in point.

The CHAIRMAN: Are there any last questions?

Hon JIM SCOTT: A previous inquiry was conducted into Wagerup a while back and what came of that was that there was a lack of, I suppose, cooperation and integration between the various departments that were dealing with these types of issues. The workers came under the mines department, the community was under public health and there are different work safety people on a minesite. The departments of environment, health and mines seemed to not be working in a coordinated way to deal with these issues. Do you think measures have now been put in place to deal with that, because obviously between the two inquiries there has not been a lot of improvement?

Professor Holman: From my perspective it has improved in relation to responding to controversial issues. It is very noticeable, for example, that the relevant ministers tend now to act together in a council format. The meetings that I attend are always attended by the top people from the relevant government departments. I have not seen a single example in the time I have been involved of anything that I regarded as a lack of adequate cooperation between departments. I just have not seen it. I believe we now need to improve further in this regard for the future in the siting of new facilities and the commissioning of new major industrial programs. I fear that that is where there will be the potential for one department to go off and pursue a particular new initiative without, at a very early time, seeking the involvement of, say, the Department of Health.

Hon JIM SCOTT: You are saying we need a more integrated process. Would that include the making of regulations in terms of worker health, community health and all that sort of thing?

Professor Holman: I think we need a full health impact assessment of all major, new industrial developments. We have an environmental impact assessment, and I think there also needs to be a

health impact assessment; it would be very positive to have a process that produces both an environmental and health impact assessment right at the beginning of these proposals and that would help make sure that the Department of Health was involved.

Hon JIM SCOTT: Do you think there should actually be a process that the departments go through?

Professor Holman: Yes, a well-defined process - that is the way we do it in Western Australia when it comes to a major, new industrial development that could potentially have environmental and health implications. I think there needs to be a fully integrated, major interdepartmental government process, and it needs to occur at that stage and not be left until problems develop and then we start working together to solve the problems.

Hon JIM SCOTT: Would you see this as being used in planning as well as in the setting up of industrial areas, for instance?

Professor Holman: Absolutely.

The CHAIRMAN: Would it be useful if such a process were applied at Pinjarra for a proposed expansion there?

Professor Holman: Yes.

Hon KATE DOUST: You talked about that social wound in Yarloop community and Hon Christine Sharp touched on the healing process. What sort of support do you think needs to be provided to the people in the town so that they can move on and deal with these issues? Where would you expect the support to come from and in what form?

Professor Holman: I think putting the community nurse down there has been one important aspect of that, because the nature of that type of professional is that they not only monitor health issues but also they provide a degree of informal support to people. That has been important. I am also aware that there have been moves, supported by Alcoa and I think the Government - I am not completely certain about where all the funding is coming from - to provide for a community development trust so that there are some resources available to improve facilities and the amenities available to the town. I think that is a very positive type of thing; it is about rebuilding our community and saying that we are here to stay and this place is going somewhere. What more could one do beyond that? I do not really know. I think perhaps that if we did the community survey that I have been advocating, one of the things that might come out of that is just a more objective assessment of whether we need to provide a social worker in the town or something like that. At this point I would be reluctant to jump to that conclusion without a bit more hard evidence of the level of unmet need.

Hon KATE DOUST: Is the community trust that you talked about separate from the new chair of community development - launched about a week ago - that has been set up through Curtin University and funded by Alcoa?

Professor Holman: I do not know where the funding for the chair at Curtin has come from.

Hon KATE DOUST: It is purely from Alcoa, and maybe some federal government funding.

Professor Holman: Okay. I am not aware of the connection, if there is a connection, or the nature of such a connection.

The CHAIRMAN: I am sure I speak on behalf of us all when I say that we have found your answers really interesting. We are very appreciative of your time and insight into this issue. Thank you very much.

Committee adjourned at 12.45 pm