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Reference: Australian Participants in British Nuclear Tests (Treatment) (Consequential Amendments and Transitional Provisions) Bill 2006; Australian Participants in British Nuclear Tests (Treatment) Bill 2006

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SENATE STANDING COMMITTEE ON

FOREIGN AFFAIRS, DEFENCE AND TRADE

Monday, 6 November 2006

Members: Senator Johnston *(Chair)*, Senator Hutchins *(Deputy Chair)*, Senators Mark Bishop, Ferguson, Hogg, Payne and Trood

Participating members: Senators Adams, Allison, Bartlett, Bernardi, Boswell, Brandis, Bob Brown, Carol Brown, George Campbell, Carr, Chapman, Conroy, Crossin, Eggleston, Chris Evans, Faulkner, Ferris, Fielding, Fierravanti-Wells, Fifield, Forshaw, Heffernan, Hurley, Joyce, Kirk, Lightfoot, Ludwig, Lundy, Ian Macdonald, Marshall, McGauran, Mason, Milne, Nash, Nettle, Polley, Robert Ray, Scullion, Siewert, Sterle, Stott Despoja, Watson, Webber and Wortley

Senators in attendance: Senators Allison, Mark Bishop, Ferguson, Hutchins, Johnston, Trood and Payne

Terms of reference for the inquiry:

Australian Participants in British Nuclear Tests (Treatment) (Consequential Amendments and Transitional Provisions) Bill 2006; Australian Participants in British Nuclear Tests (Treatment) Bill 2006

WITNESSES

Committee met at 10.06 am

BATCHELOR, Major Alan Frank (Retired), Private capacity

LONERGAN, Dr John Patrick ('Jack'), Voluntary consultant, Regular Defence Force Welfare Association of Australia

MUNSLOW-DAVIES, Ms Ann Michelle, Honorary member, Australian Ex-Services Atomic Survivors Association

Evidence from Ms Munslow-Davies was taken via teleconference—

CHAIR (Senator Johnston)—I declare open this meeting of the Senate Standing Committee on Foreign Affairs, Defence and Trade. Today's public hearing is part of the committee's inquiry into the Australian Participants in British Nuclear Tests (Treatment) Bill 2006 and a related bill. The committee is due to report to the Senate on 7 November 2006. The committee's proceedings today will follow the program as circulated. These are public proceedings, although the committee may agree to a request to have evidence heard in camera or may determine that certain evidence should be heard in camera. I remind all witnesses that in giving evidence to the committee they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence to a committee. If a witness objects to answering a question, the witness should state the ground upon which the objection is taken and the committee will determine whether it will insist on an answer, having regard to the ground which is claimed. If the committee determines to insist on an answer, a witness may request that the answer be given in camera. Such a request may, of course, also be made at any other time. I welcome the witnesses. Do you have any comments to make about the capacity in which you appear?

Major Batchelor—I was second in command of the joint international engineer troop during Operation Antler. Their function was to provide engineering support to the Atomic Weapons Research Establishment scientists. I am here today representing those veterans.

Dr Lonergan—I am also representing the RDFWA and the RAAF Association.

Ms Munslow-Davies—I am appearing on behalf of the Australian Ex-Services Atomic Survivors Association. I was also the consultative forum representative to the Scientific Advisory Committee. In that capacity, I represent all of the consultative forum. I was also the representative of the dosimetry subcommittee, so again, representing the consultative forum in the scientific advice.

CHAIR—The committee has before it submissions Nos 1 and 1A from Dr Lonergan, submissions 2 and 2A from Major Batchelor and submission 28 from Ms Munslow-Davies. Do any of you wish to make any amendments to your submissions?

Dr Lonergan—No amendments from me.

CHAIR—I wouldn't have thought so.

Major Batchelor—And none from me.

CHAIR—I invite you to make an opening statement, Dr Lonergan, and then we will come to you, Major Batchelor, and to Ms Munslow-Davies thereafter.

Dr Lonergan—To justify restricting compensation for the test participants to health care, the minister has to extricate the government from its published agreement in principle to the Clarke recommendation for compensation under the VEA. These studies, which he claims show there was no link between cancers and ionising radiation, seemed to do the trick for him. So to defend the reports against criticism he keeps repeating that they are world class and have been peer reviewed by eminent overseas scientists. We will see about that in a minute.

To help the committee judge my competence to challenge the studies, I refer you to a statement of my background in sheet No. 1 that I now table. Could I take you to the table on page 17 of my submission. It has been circulated as a sheet. You should have a sheet which shows a lot of cancers in a table. I prepared this table from data in the report. When you look at it, you will see that the test participants were the civilian, RAN, RAAF or Army. When compared with the general population they have been hit with excess cancers spread over 19 types. Of 115 possible entries in the table, 95 of them show excess cancers. That is a horrible epidemic, affecting only the test participants and not their peers in the general community. Why is this the case? A clue comes from this quote from the Clarke report:

> The series of British atomic tests were a unique extraordinary event in Australia's history. Atomic devices were exploded in Australia with Australian forces potentially exposed to levels of radiation beyond what would today be considered safe levels. By any reasonable common sense measure, service in connection with the tests must be regarded as involving hazard beyond that of normal peacetime duties.

I assert that Clarke was right and that he remains right. He went on to recommend that such service be declared 'non-warlike hazardous' and that the participants be compensated under the VEA. As evidenced in the DVA submission to you, which you will consider later, and the minister's second reading speech and his press release immediately afterwards, he and the DVA are not highlighting the government's agreement in-principle at the time, but rather they are trying to bury it.

After careful study of the current reports—my submission summarised most of that—I have no qualms at all in asserting that the evidence produced in these reports leads to the conclusion that with high probability, many or perhaps most of the excess cancers you see in the table mentioned were caused by ionising radiation. In studies of this type any stated conclusion should be wrapped in some probability qualification. That is not adequately done in these studies. I examined the reports for their scientific rigour, doing an independent peer review in accord with strict processes well understood in the philosophy of science and practice in the defence science culture of my day. I will highlight some issues from my submission.

At the final meeting of the consultative forum on 27 April I presented the result of my own then very incomplete review of the *Dosimetry 2006* report that DVA had ready to send to the printer. It had been peer reviewed by the eminent overseas scientists. Following my criticisms, substantial additions were made to the text, mistakes in physics were corrected and illustrative radioactivity conversion too small by a factor of 925 was excised, and inadequate

explanations were rewritten. In reporting to DVA about changes made to the report, the scientists wrote that my comments were 'by far the most helpful we have had over the course of this project'. So much for peer review by the eminent overseas scientists. Now, for the record, I table my criticisms of 27 April.

My submission to this inquiry relates to work I did after 27 April. My objections to the published reports were sent to the Repatriation Commission on 30 July and then passed by Rear Admiral Harrington to DVA for attention. They have never been answered. I will speak briefly to my conclusions. It is a fact that many of the doses have been underestimated. The epidemiologists should not have taken them to be factual. They should have put a question mark over them till they had all the evidence that could be adduced from the studies before making a judgement about their status. They did not do that; they accepted the dosages. In that, they violated a fundamental principle of scientific methodology and thereby hardly subscribed to world-class practice.

With ionising radiation improperly ruled out, there were 456 excess cancers needing explanation. About three of these would be attributed to radiation with the low risk factor that the report allowed. The epidemiologists had to find some factors other than participation in the tests that distinguished the participants from the civilian peers with whom they were being compared and which could have pinpointed alternative causes of the cancers. Speculations, lack of credible evidence and flawed logic followed. I will say that again: speculation, lack of credible evidence and flawed logic followed. The outcome of their work is inescapable: either nothing caused these excess civilian cancers —and I myself would not be putting a very high probability on that—or it was very probable that ionising radiation did. This necessitated a relook at the dosage estimates, hence the absolute need mentioned earlier to leave a question mark over the dosages till the evidence was in. The case of the military participants is similar.

That is about all of a substantive nature that I need to say. You have a much more detailed account of all that in my submissions. But I would like to end with a few peripheral remarks. The dosimetry study was an extraordinarily difficult one, and those involved needed more help throughout by way of ongoing independent scientific criticism and also through operational guidance through someone like Major Alan Batchelor, on my right here. There would not be anyone in Australia who would know as much about the detail of all of this as he does. Concerning the cancer studies, I believe there were failures in leadership. Concerning the project as a whole, I consider DVA's management of it, particularly in its last phase, inept, to say the least. Lastly, I have read submissions on behalf of the Indigenous people who have got swept up in all of this. I think it would be to our everlasting disgrace if something were not done as a result of this inquiry to address their concerns. Thank you for hearing me.

CHAIR—Very good. Thank you, Doctor.

Major Batchelor—Do you all have a copy of this particular handout, with the orange—

CHAIR—We do.

Major Batchelor—That will help quite considerably as I go through. The Minister for Veterans' Affairs has based the nuclear veterans cancer treatment bill on the provision that the government accepts no responsibility for ionising radiation being the causative factor for

these cancers. This is despite massive evidence to the contrary and the existence of other significant health hazards resulting from the detonation of nuclear weapons.

The first paragraph of the Adelaide university main findings identifies a mortality study starting from the time of the nuclear tests, and a cancer study for cases of cancer, whether fatal or not, commencing in 1982. It is important to note that the main findings state that the study of both cases of cancer and cancer deaths commenced in 1982 and provides the basis for much that follows. When specifying radiogenic cancers as those most likely to result from ionising radiation, the Department of Veterans Affairs submission states:

The Study also found a statistically significant 19% increase in radiogenic cancers.

This is taken from table 10.1 in volume 2 and is shown on page 1 of the handout. Note that the table is headed 'Incident cancers'.

If we now go to page 2 of the handout, showing table 5.6, 'Mortality from cancer', the entry shown in orange highlight at the bottom of the table identifies a very significant excess of 43 per cent in deaths from radiogenic cancers overlooked by DVA in their submission. An impartial assessment would have quoted both figures with emphasis on the latter. Even more importantly, these statistics concerning radiogenic cancers have not been mentioned in the Adelaide university's main findings.

Three lines above 'radiogenic cancers', and highlighted in green, are 85 cancer deaths where the primary site has not been identified. These unknown primary site cancers represent six per cent of the expected cancer mortality findings. If they were all located within the eight primary site radiogenic cancers it would add 16 per cent to the existing 43 per cent of radiogenic cancer death excesses, making a total of 59 per cent. After all, it is the radiogenic cancers that are caused by ionising radiation and the worst case should have been stated as a possibility. Please take note of the 85 unknown primary site cancer deaths for the next evaluation.

If a person dies of cancer then his contraction of cancer should also be included in the cancer incidence numbers. This is the procedure used in the Korean veterans study and is described in my written submission No. 2A. If we go back to page 1 of the handout, the list of incident cancers contains no entry for any cancers of unknown primary site origin, emphasising the point that 85 cancer deaths have not been included in the cancer incidence numbers. The Repatriation Commission, who accepted and approved both studies, made no comment on these different standards.

Now, please go to page 3 of the handout, where we can examine the content of table 12.2. That shows a comparison of incidence and mortality for each primary site. Also omitted from the table is any mention of the 85 deaths resulting from cancers with an unknown primary site. This is a significant omission ranging from six per cent to 16 per cent and possibly more, depending upon the possible range of locations of the unknown primary sites. These 85 deaths should have been included in both sections of this table.

Reinforcing the argument that cancer deaths have not been included in the cancer incidence figures are the three number comparisons circled in green. In each of these cases the cancer mortality number on the right-hand side exceeds the linked cancer incidence figure on the left-hand side. Taking one of them, if there were 406 cases of cancer it is not logical to expect

429 deaths from the same cancer unless the cancer mortality figures are being sanitised from the cancer incidence figures. To correct this anomaly and standardise results with other health studies of veterans, the observed cancer death numbers should be included in the observed cancer incidence numbers. The result, when compared with an unchanged expected number of cancers, should reveal much higher percentages in the excess incidence levels. As the size of the cohort has not changed, the expected numbers must remain the same.

Probably the most critical evidence provided to, and ignored by, the minister was the documented level of exposure experienced in their working environment by 40 military engineers involved in the desealing of instrument bunkers one hour after the detonation of the weapon codenamed Taranaki. The dosage records for this group, the other members of the Antler Engineer Troop, members of the Buffalo Engineer Troop and the crew of HMAS *Koala* have not been published in the official records. These groups were all employed on very early re-entry and in high exposure situations. The most likely reason for the suppression of these records was the concealment of information concerning weapon performance, a stipulation that was enforced during the royal commission proceedings and has been a factor in defeating claims for compensation ever since.

Understanding the existence of this security embargo should have exposed the weakness of the generalised estimation of 0.01 millisieverts per hour used for the desealing teams, particularly in high exposure situations. This estimation should have been further questioned by the 290 millisieverts per hour measured at the same time as the desealing operation took place. There was and is an unexplained multiplication factor of 29,000 between these two dose rates, one measured and one estimated at the time of exposure. Comprehensive material on these missing dosages for early re-entrants was provided to Ministers Nelson and Billson on 6 July 2006, with copies to Secretaries Sullivan and Shergold as well as Mr Killesteyn. A copy is tabled.

The study did not investigate cancers caused by asbestos wool filters used in protective clothing respirators, shells of beryllium surrounding fissile material in nuclear weapons and deployed from the fireball as an aerosol, the use of highly enriched uranium, also exiting the fireball as an aerosol, that could be inhaled and retained in the lungs. Non-carcinogenic health effects resulting from exposure to ionising radiation that were not examined in the study include: defective immune systems resulting from internal alpha emitters located adjacent to blood-forming bone marrow, short- and long-term sterility, miscarriages, stillbirths, hereditary defects and toxic poison properties of all uranium isotopes.

The large and continuous doses resulting from internal alpha emitters, that had their effects concentrated within a sphere of tissue 30 microns in radius, was included in the study estimates as part of the whole body dose. This level of dilution must be interpreted as a significant underestimate of an intense and localised dose. Tabled is technical annex 1 one from the *Committee Examining Radiation Risks of Internal Emitters minority report* published in October 2004. The table provides doses to spheres of tissue, 30 microns in diameter by single particles of depleted uranium and single particles of plutonium that range up to thousands of sieverts per year. It is suggested that the health physicists appearing later are asked to verify the figures.

Because the dosimetry committee was not properly equipped to prepare work histories at the individual or workgroup level, employment designations were described in such sweeping categories as: general engineering support, all ships prior to the D + 4, transport in contaminated vehicles, logistical support for G1 and so on, with no proper description of who did what, where and when. There was some identification of specific tasks but the lack of involvement information remained a problem. It follows that dosage categorisations for individuals were based on obscure and uncertain employment groupings.

When depersonalised data was returned from the cancer and mortality registries it only provided for the identification of cancer and mortality statistics within the designations of RAN, Army, RAAF or civilian. These relationships meant nothing when trying to identify those statistics that applied to particular exposure situations, such as: whether a cancer resulted from work on a ship in the Monte Bello Lagoon or as an observer on a vessel that never approached closer than 100 kilometres, whether a cancer was related to flying through a fallout cloud or flying on security duties in the Indian Ocean and whether a cancer was linked to work on generators and batteries in the test area or to the village electrician.

Even more difficult would have been the separation of RAN and RAAF personnel serving in ships and aircrews from those serving in land based units. Because the cancer registries did not exist until 1982—30 years after Operation Hurricane—they would have missed the latency period of five to 20 years when the majority of leukaemia excesses would be expected to appear. No confidence could be placed in the methodology used in arriving at the original category allocations and this was further degraded by the critical deficiencies in depersonalised statistical data returned from the registries. Knowing which combination of locations, occupations and dose categories were related to the excess cancers was out of the question.

Now let us look at pages 4A and B of the handout. These are an extract from AWRE report T5/54 *Fission product sampling*, co-authored by an Australian Army officer who was also the principal scientific officer at the Long Range Weapons Establishment. Highlighted is documented evidence of even higher dose rates than those stated in my original submission:

a land-rover was driven toward the photographic tower 'C' at a distance of approximately one mile from ground zero (where) the activity was the order of 50 to 60 roentgens per hour (ie 500 to 600 mSv/hr).

On the next page, 4B:

The sample was flown immediately from Emu to Salisbury where the fused black spheres were found to be extremely active and to contain very large quantities of plutonium.

It would take 60,000 hours of continuous exposure at the study's estimated dose rate of 0.01 millisieverts to achieve this dose.

You can see that the AWRE scientists had no problem with people working in high dose rate situations, particularly where the workforce was all Australian except for the AWRE staff. This AWRE report was brought to the notice of the chairman of the dosimetry committee—who was also a member of the Scientific Advisory Committee—during a meeting in May 2005.

If you now look at page 5 of the handout where there is a column listing the Operation Totem tasks and exposures, you will find no mention of any of the fission product sampling

tasks. The complete AWRE report on fission product sampling is tabled. Also tabled are two further examples of AWRE reports for other teams that have been omitted from the Totem task and exposure table. These are AWRE report T10/54, detailing neutron flux measurements carried out by Professor Titterton and his team from the Australian National University, and AWRE report T112/54, co-authored by an Australian Air Force officer, concerning the effects of an atomic explosion on six Mustang aircraft. Note the number T112, which indicates that there were over 100 of these reports for Totem. Also tabled are the meeting notes of the May 2005 meeting detailing those and other omissions from the Operation Totem task and exposure table.

The nuclear veterans' treatment bill does nothing to concede the longstanding issues of recognition and compensation for the range of health effects persistently disregarded by their employer. An ingrained Veterans' Affairs attitude has required compensation claimants to prove that the subject of a compensation claim was present at a nuclear test and had been exposed to ionising radiation. The obvious holder of this information, the Department of Defence, would not supply this information to the applicant and no assistance was provided by compensation delegates. Locating this information within the mountain of incomplete information contained within the National Archives has proved impossible for a trained researcher, let alone a widow or a veteran dying of cancer and located in another state.

It is recommended that participation in the British nuclear tests be covered under the Veterans' Entitlements Act 1986 as a matter of priority and that the effects of the entire experience of participation in the tests be examined as promised by the Department of Veterans' Affairs on 5 June 2001. This should include the effects on children of nuclear veterans. It is also recommended that acceptance of the Adelaide university study be reconsidered, that the nominal roll be published and accepted as indisputable evidence of participation in the nuclear tests and that an inquiry be held into the effects of missing and difficult to obtain information on all previous compensation claims. In conclusion, table 7.16 from volume 1 of the Adelaide university study provides an example of the errors that have been overlooked by the world-class peer review claimed by the minister.

CHAIR—Ms Munslow-Davies, is there anything you would like to say by way of an opening statement?

Ms Munslow-Davies—Firstly, can I clarify that some of my submission has been removed?

CHAIR—I am advised that the email contained in your submission was reviewed. The consent of the author of the email was sought, but it was not given for the email to be included in these proceedings.

Ms Munslow-Davies—Am I allowed to speak to that?

CHAIR—You are allowed to speak to it but without using any names—I think that is the way we should go.

Ms Munslow-Davies—Thank you for that; I do not want to stand on toes.

CHAIR—I have just had a query from one of the members of the committee, because the person who is the author of the email has not given permission for it to be used.

Senator ALLISON—If someone wrote me a letter, I would be entitled in a hearing such as this to say, 'Joe Blow wrote me a letter and this was what was said in it.'

CHAIR—We wanted Joe Blow to know that there was a potential for his letter to be used in public hearings. When he wrote the letter, he did not know that, so we sought his permission and it was not given. We think it is fair to him or her not to use it.

Ms Munslow-Davies—Again, on that issue, doesn't the fact that it was widely circulated and I was a CC on it constitute a public document?

CHAIR—We have asked the author for his permission; he has said no and we feel obliged to abide by his decision.

Ms Munslow-Davies—I think it aims at the centre of what we are talking about, and that is why I included it. I will talk around it but I will not name the person. Will that help?

CHAIR—Yes, that is good; please continue.

Ms Munslow-Davies—I do not have anything prepared, because, by telephone, it is difficult. What I will say is that at the beginning of this study there was one purpose for it to be conducted. That was to determine whether there was an increase in the incidence of cancer and mortality. The reports as they are published clearly state that the cancer rate has increased by 23 per cent and the mortality rates for deaths from cancer by 18 per cent. The answer to the question as to whether there has been an increase is a simple yes. As to whether or not we can say that it is due to radiation or to anything else, all the documentation to the dosimetry subcommittee was on an assumption basis; we knew that we did not have the complete documentation. The intent of the report was never to state categorically—and this is where that email would have come in—that there was no link between radiation and the cancers that developed. That was not the intent. It should be used as an assumption and that is all.

If we take that into consideration and we have not evaluated any other causal factors, it is correct to discuss them but to have them appear in the main findings of a document stating that this would be the reason for the increase is nothing short of misleading and lacks scientific integrity. It is because of that reason that after seven years of full and complete cooperation with DVA and sitting on every committee that they had, I withdrew my support, and at the previous meeting the consultative forum had withdrawn their support of the document as it stood.

We were under the assumption, going into the final SAC meeting, that the main findings would be reviewed, as they were seen as prejudicial (a) to the study and (b) to the veterans. This did not occur, and the final meeting of the SAC lasted for less than an hour and a half, at which time it became extremely obvious that nothing would be changed, the report was already on its way to the printers and the decisions had already been made. That was the point where I withdrew full and total support, something that I did not take lightly.

The other issue that is probably relevant to bring up before parliament is the use of the Epidemiological Studies (Confidentiality) Act to gag me. I was placed in a position where I represented a committee that I could not discuss these reports with. That in itself is a breach of what that committee was meant to be about, but the tactics used were obviously

orchestrated at a higher level to achieve the result that has now been achieved. I am losing my voice—I need to take a drink; sorry.

CHAIR—Do you want to say anything else, or can we move on and take some questions from senators of you and other witnesses?

Ms Munslow-Davies—That is what I would prefer, because obviously my submission has been before you.

CHAIR—That is right.

Ms Munslow-Davies—There are areas within that that, under parliamentary privilege, I can now answer—

CHAIR—All right.

Ms Munslow-Davies—that I have not been able to discuss prior to now.

CHAIR—We will move to senators for questions, if that is all right with you.

Ms Munslow-Davies—Thank you.

CHAIR—Dr Lonergan, can you tell us your qualifications please.

Dr Lonergan—All of them?

Senator PAYNE—The relevant ones.

Dr Lonergan—I have a BSc with first-class honours in physics. I have a Master of Science degree for research work in nuclear physics. I have a BA in philosophy and logic, and I have a PhD dealing with the philosophical foundations of physics. They are my formal qualifications—there are a couple of others I could mention, but I do not think they are relevant.

CHAIR—Give us a bit of your background in terms of your working life. What have you been doing with yourself?

Dr Lonergan—I was in RAAF Radar as a mechanic during World War II. I went to the university when I came back. I did my honours degree at the University of Sydney and my masters degree there. Then I went to the department of supply to work on guided weapons. I went to the UK and worked at the Royal Aircraft Establishment with a German scientist who had worked with von Braun at Peenemunde. I worked there for 2½ years. I was working on the development of analog computers for solving the mathematical equations concerned with guided weapon behaviour, and that was coalesced into the statement 'simulating guided weapons'. I was responsible for the design and supervised the construction of a unique analog computer that was going to come back to Salisbury for use with the tests that were being done at Woomera. My German boss said to me: 'You're too ambitious. You can't make it work.' Well, it did. It worked and covered every missile that was designed and tested at Woomera. That was that lot.

After that, I got an unofficial invitation to apply for a job in a newly established laboratory in Sydney which was to do naval research. I became the principal scientist in that laboratory. We were developing a new type of sonar system, a transportable system aimed specifically at the detection of snorting Russian submarines, this being the period of the Cold War. This

required a lot of research work into acoustic propagation in the ocean. It required a lot of development work in designing a correlator—which, I might say, our friends up at Sydney university would have found very useful for their work on solar flares.

CHAIR—What specific relationship, if any, did you have with respect to these British nuclear tests?

Dr Lonergan—With respect to this lot?

CHAIR—Yes.

Dr Lonergan—The next bit I was going to mention will bear heavily on this. At the Navy lab, we got an invitation—or I got an invitation—from a man named David Hamer, who is well known in this parliament. He asked me if we—that is, the scientists; a small group of scientists—would be able to go along to a fleet exercise and, at the end of it, present a narrative on what actually happened. He said, 'In our wash-ups there is too much argument about what happened and we can never get on with learning lessons.'

So we did that—we went along and presented a narrative. We then wrote a report on what came out of the exercise. The report covered fleet strategy, platform tactics, weapon performance and sonar performance. We then got invited to do this at SEATO, the Southeast Asia Treaty Organisation. There you would have an American carrier with squadrons of helicopters and fixed-wing aircraft; a UK carrier, similarly; and the *Melbourne* from Australia. You would have about 20 or more escorts involved in this. There were ships from Pakistan and there were—I am not too sure who the other nations were at this distance—different navies. Reconstructing such an exercise is not at all dissimilar from what these dosages reconstruction people had to do. They had to reconstruct what people did; we had to reconstruct what ships were doing, what captains were doing and so on.

CHAIR—And that is what you were involved in doing?

Dr Lonergan—Yes, very much so. This became world famous. That was world-class research, by the way. That practice was adopted by the UK Navy and the US Navy, and it all came from my lab.

CHAIR—Thank you. We will go to Senator Allison.

Senator ALLISON—Ms Munslow-Davies, could I go to your submission and to the reference to what you describe as, 'a hidden archive of documents' for the tests. You say, 'We still do not have access to the remaining 2,991 documents or many of the documents that they refer to'—that is out of 3,000. Can you advise the committee whether you raised this as part of the work of the consultative committee that you were on and, if so, what response was given as to why these documents could not be provided?

Ms Munslow-Davies—Yes, it was raised. The documents that were released were, if you recall, released as a result of your requesting them in parliament. The response as to why they were not available was that Defence's view was that they were still in the nation's security interests and they were not released.

Senator ALLISON—You also referred in your remarks to the confidentiality act, which effectively imposed a gag on what you could say to those you represent. Can you give the

committee some examples of where this would have been difficult for you—where you thought this was particularly unfair or unreasonable?

Ms Munslow-Davies—Leading up to the final nine months of the study, when I had seen draft copies of the reports and nobody had seen anything linked even remotely to a report at that point, I was not able to discuss issues like areas of dosimetry with anybody else. I could not seek counsel from those people who had been there and knew what was going on and, in that respect, I was very much shouldering the veterans' responsibility on my own.

Senator ALLISON—I go to the part of your report that identifies a problem with the possible reason put forward for excess cancer rates as a result of smoking. You say that there is no evidence to support the statement that these servicemen smoked more than the general population and that Aborigines would not have smoked. Did that come up in your consultative meetings?

Ms Munslow-Davies—Yes, it was discussed at various points. I will put it in context. As part of the scientific advisory committee, I saw the epidemiology report on two occasions prior to the final report. Leading up to the final meeting of the scientific advisory committee, I had not seen any of the changes, amendments or the report, and I received the final draft of the report at the same time that everybody else did. As to what was said and what was included in the report, I was unaware until the last possible moment.

Senator ALLISON—What has not been said so far today is the commentary about the fact that those who took part in the tests were compared with the general population as opposed to other healthy soldiers—or, rather, the 'healthy soldier effect', which means that you use as a control group the other soldiers. Was this matter raised? Major Batchelor or Dr Lonergan might want to comment on this as well.

Ms Munslow-Davies—Yes, it was, but it was seen to be a difficult group to find a matching for, because of the numbers. Probably matching with military at that point would have been difficult because of, firstly, World War II and, secondly, Korean active service. To match them so that you had service history that was the same, with the only exception being nuclear service, was deemed to be impossible within Australia.

Major Batchelor—For some reason this study only looked at the healthy soldier effect for the first two years, whereas the soldier's life is healthy for all of his life in the service. To disregard that is to mask the results of the study. It should have been stated, and there should have been an effective percentage allowance made for the healthy soldier effect.

Ms Munslow-Davies—One of the issues that was raised was with the Navy, in that a lot of naval personnel would have been categorised as being in the Navy but were not fit to be at sea, and the same would have occurred with Army and Air Force personnel. Alan, you can probably help me with the category—that they are fit for all stations; they would have been the people who were sent to the nuclear tests.

Major Batchelor—You would get a mixture of medical class 1 down to medical class 4 or whatever it was. There was a mixture of them who did attend, but I think you will find that the people who were in exposed situations were medical class 1, mainly because they were fit to do the work. People with lower medical classifications would have been employed in rear-area functions like cooks, stewards, doling out the petrol and that sort of thing.

Dr Lonergan—There is no doubt at all that the results that are presented in the reports would be worse if you took away the healthy worker effect. There is no question about that; the results would be worse. You can get an idea of how much worse from a recently published report to do with national servicemen in Vietnam. In that report I think the figure was that the national servicemen who did not go to Vietnam were six per cent better off—they showed up better on the health scale—than the normal population. That is an indication of how much in front the people are that go into the services with respect to health.

When they compared the servicemen who went to Vietnam with the servicemen who stayed behind, I think the guys who went to Vietnam were eight per cent worse off. So they were really 14 per cent worse off than the general population. You have to be very careful in making too much of comparisons like this, because the general service they did in Vietnam—quite a few them would have been these guys anyway—was completely different, with all that defoliation and so on, but it gives you an indication of what is involved here. I realise it would have been very difficult for them to do this, but they have to admit that their results are just that much worse because it is not included. Things like that are not brought to notice, and that is not good enough.

Senator ALLISON—The report says that, in terms of our understanding of exposure, we have dosimetry records for about four per cent of those involved in the test. Is that accurate?

Ms Munslow-Davies—I am not quite sure what the percentage is, but I know the numbers are quite low. We would have dosimetry records for fewer than 1,000 anyway. Even at that level, we know that the people were issued with a long-term dosimetry badge but also with a sortie badge. So the records do not discriminate as to what type of badge—whether they recorded that dose over one day or 50 days. So, in that, they are not that useful either.

Major Batchelor—I have a copy of the Ministry of Defence records of the exposure records that came out of all of the operations. In there, you will not find any records of the Antler Engineer Troop, the Buffalo Engineer Troop or the HMAS *Koala* that sailed into the Montebello Lagoon on the day of the explosion. They have all been taken out. You can count them up and see how many there were. I think four per cent might be a bit low.

CHAIR—Do you want to table that document?

Major Batchelor—Only if you wish to see it.

CHAIR—Does it have any privacy implications—any names?

Major Batchelor—It came off the Archives internet site.

CHAIR—So it is a public document?

Major Batchelor—Yes.

Senator ALLISON—I have one more question, Chair, if I may. I do not see in the submission any reference to hospital records, but I know that there have been difficulties for those who have sought compensation in getting hold of hospital records. Was that a matter dealt with as part of the consultative committee's work that led up to this report, or was it excluded?

Ms Munslow-Davies—It was included. We fought for about four years to find out where the hospital records might be. The knowledge that the documents were missing was widespread. The Adelaide hospitals had lost their documents, hospitals at Watson had lost their documents, the hospital at Woomera had lost its records and the records at Maralinga hospital and at all the first-aid posts were gone as well. After a search of everywhere and anywhere that we could possibly think of and seeing that we still have not searched the National Archives from page 1 to the end of the pages that they hold, we certainly could not find any hospital records.

Major Batchelor—The Amberley hospital records are missing as well. I have been to the National Archives and I have written quite a few letters, and they cannot find any evidence of the records or of the destruction certificates. One letter from the UK says that the Army DGMS was responsible for the records.

Ms Munslow-Davies—While I have the chance, can I go back to the previous point on dosage records. For the record, did Alan state that he was a member of the engineering troop, that he was issued with a film badge and that we do have a record of that issue?

Major Batchelor—The record of my issue of a film badge is in there.

Senator MARK BISHOP—Dr Lonergan, the minister in his second reading speech in the House said, 'Despite the lack of association between cancer rates and exposure to radiation, the government has decided that it would be appropriate to provide health cover for nuclear test participants who have any form of cancer.' You in your submission dispute the claim that the studies showed no link between cancer incidence and ionising radiation. Can you tell us the grounds for your opposing view?

Dr Lonergan—Yes, I can. First of all, the minister's statement is misleading—I do not say deliberately so. What the study found, or purported to find, was no link between cancers and estimates of the dosages that people received—estimates. When you get that, you get estimates. As far as the epidemiology people were concerned, those estimates were the basic data they were going to work from. Because they are estimates, you have to regard them as hypothetical. Once you have something which is hypothetical, there is a proper way of dealing with your subsequent investigations in proper scientific method. There is a proper way to deal with it.

They did some statistical correlation tests which theoretically, I claim—and I am supported by some people who are well versed in statistics—could not have shown any result anyway. But they did those tests. They did not get any correlation in those tests, but they were doing those tests on these dosages, which we can show were very much underestimated. You should put a question mark over all that, and they should have done that. If you look at their report, you will find they did four fairly primitive tests to see whether the dosages might have been underestimated. They do not count for anything. They did four tests, but they do not mean anything, I can tell you.

Then, when they reckoned there was no correlation, they had to explain 456 excess cancers, and they did not explain them. There is no way in the world in which you would accept what they said about those excess cancers. When you find you do not have credible explanations, what you say—and this is proper scientific method—is: 'Well, we had a

hypothesis here at the start. We'd better go and have another look at that.' They did not do that. That is what they should have done. Had they done that, they would have checked out, as I have done and Alan has done, the basis for the dosages that were estimated, and you would not have accepted a lot of them. That is just a plain fact: you would not have accepted a lot of them. You only have one possible explanation for those cancers from these reports—only one—and it is ionising radiation.

Senator MARK BISHOP—I will come to that. I wanted your criticism.

Dr Lonergan—I dispute that anything they showed in these reports demonstrated that there was no link between cancers and ionising radiation. They could not have shown that, because they did not have the actual figures—firm, hard, factual figures—to do the correlation against.

Senator MARK BISHOP—Do you argue that they, in coming to their conclusions, improperly—in a scientific sense, not an ethical sense—relied on data that was demonstrably deficient?

Dr Lonergan—Yes, that is correct.

Senator MARK BISHOP—Thank you. You assert or you believe that ionising radiation was responsible for the bulk of the cancers experienced by the participants in the tests. Can you now give us an outline of the reasoning that enables you to come to that conclusion?

Dr Lonergan—When the epidemiologists tried to give reasons for these 486 cancers they failed miserably. You will find that in respect of a certain type of leukaemia—and I think there were 18 or 20 of those excess cancers—they just say in the reports, 'We have no explanation for them.' Now, everyone knows—even I know, and I will admit that I do not know anything about cancer or medical research—that ionising radiation causes leukaemia. They have no explanation for it. They have estimated dosages which they should have recognised so that they would say, 'God almighty, they must have been caused by the ionising radiation.' But, bear in mind, when I come to my conclusion I put in front it 'with high probability'; I am not prepared to say with certainty.

Senator MARK BISHOP—So the net of your argument is that even on their evidence there are 450-odd cases where they are unable to draw a link, in a scientific sense, between the incidence of exposure and the latter high incidence of the cancers; nonetheless, the government seems to have adopted a halfway house because, without establishing the causal link, they assert—and this bill is about—providing health-care cover for nuclear test participants who have any form of cancer. There does not seem to be any justification for doing so, apart from the terrible problem that these large numbers of people have these cancers, which science is unable to relate to the incidence of exposure.

Dr Lonergan—You raise a political point there that I do not think I should try to answer.

Senator MARK BISHOP—Yes, I do.

Ms Munslow-Davies—Can I—

Senator MARK BISHOP—No, I am asking this witness. I would like to hear Dr Lonergan respond and then the other witness might care to respond.

CHAIR—We will come to you in a moment, Ms Munslow-Davies.

Dr Lonergan—You would really wonder why they decided to compensate anyone, that is true. You would wonder that. But at the back of it all was the Clarke review.

Senator MARK BISHOP—Right.

Dr Lonergan—Although they have tried hard to get rid of it, it will not go away. I think, for example, the RSL representatives are saying that it is RSL policy to give these people the VEA and they believe the Clarke review was a fair, thorough and proper review. So that is it.

I will just go back to this ionising radiation business. If you consider the civilians, there was nothing that could be produced in reports which said those civilians were different from the parent population that they came from. There is only one thing different: those civilians participated in the tests.

Senator MARK BISHOP—That was the only variable.

Dr Lonergan—And it is a reasonable hypothesis—a very reasonable hypothesis—to say, 'Well, if we can't find any other explanation for all these cancers it must have been the tests.' I am not saying it must have been; I am saying there is a very high probability.

Senator MARK BISHOP—So what you are really saying here is that the appropriate political response would have been to have followed the guidance of the Clarke report on this issue—

Dr Lonergan—Of course it would.

Senator MARK BISHOP—and not have this particular political response which is in the bill and unrelated to the scientific causation.

Dr Lonergan—I believe that.

CHAIR—Ms Munslow-Davies, did you want to make a comment?

Ms Munslow-Davies—I would support the Clarke review, as Jack has just done. You discussed earlier the fact that the government should not have responded in any way with the results of the study. I just point out again that the purpose of the study was to demonstrate whether there was an increase in cancer and mortality. That was supported by the results of the study. So it achieved the aim that it set out to achieve. And the statement that should have been qualifying that was that we were unsure as to what the cause was. What we have not discussed today is that radiation could have been symbiotic in effect, in combination with other things. That effect was never analysed, looked at or even discussed.

Senator PAYNE—My question effectively flows in part from Senator Bishop's question. The difficulty that the committee has is that we are presented with a bill by the government and asked to examine that bill. It is not always within our capacity or purview to revisit the entire science behind the proposition—things like that. Some submissions have come to us which say: 'We don't think much of how they got there but we welcome the introduction of the bill. At least it's a start.' The RSL, for example, says:

It is longstanding policy that the participants in the British nuclear tests be afforded coverage under the VEA act 1986 and that this service be deemed as hazardous. This bill is a start in this direction. In order

to avoid any delays in the passage of the bill, the RSL will continue to lobby government and opposition for the necessary changes to the VEA to fully compensate for participants in these tests ...

Then they go on to outline one major problem. In your view is that the premise that the committee should begin with—that this is a start, this is an important step in the process, and the committee needs to examine that. What do the witnesses think of that proposition?

Dr Lonergan—I understand the point you made that we are widening the terms of reference, but there is a justification for doing that anyway—the government have discarded the Clarke review. That is a political matter which is very mixed up with what we are considering here. They have just wiped it. Agreement in principle has just been eliminated from it. You need to be aware of that. Also, you need to be made aware of the reason why they can do that. If these studies were shown to be pristine pure then they would have an excuse, in my view, and I would not be arguing the point today. But they do not show that at all. They are not pristine pure. So I think it is reasonable for these questions to be examined.

I would hope that this bill will go through. At least it gives them something. I have no confidence at all that anything will happen after today about what is not being picked up unless you people report to the government that you are not happy with the total compensation. If you do not say that, then we are all finished. And so are those test participants who ought to be getting, in my view, a disability pension and those widows whose husbands participated and died as a result of something caused in these tests. They do not get the war widows pension, as they ought to do. I am concerned about that. That is why I am fighting this case.

Major Batchelor—A promise was made very early in the piece that this study would cover all health aspects, including ionising radiation. That has gone by the board. That should have been in the original terms of reference. That has not happened. That was a statement made by DVA to a budget estimates committee, I believe, back in 2001. That is mentioned in my submission.

CHAIR—Is there anything that you have seen in this bill that would preclude any person from a future claim were that person to be a beneficiary of any services or provision under the bill?

Dr Lonergan—The bill does admit that claims can be made under the Military Compensation Act—an old version of it. The Clarke review examined the relevance of that act and its appropriateness and they firmly said: 'It's not enough. It does not cover the sort of compensation that these people ought to get.' In that respect the bill is deficient.

CHAIR—We have to remember this bill is not about compensation, it is about the provision of medical services for the participants. There is nothing that you can see that would preclude any form of compensation being mounted by a beneficiary of the medical services?

Dr Lonergan—I think that is correct.

Major Batchelor—At the end of my submission I put in three cases. You can take them from my submission or would you like me to read them out?

CHAIR—We have them in the submission. You are saying that they are cases of what?

Major Batchelor—Of people that would be dropped out of the coverage by the bill.

Senator ALLISON—The department has answered my question on notice about the number of compensation payments that were made. I am sure you will be able to get a copy of it today. I notice that there has been no compensation paid in 2006. Can you tell the committee what you understand to be the current situation?

CHAIR—Before we go down that path, that is not what this inquiry is about.

Senator ALLISON—I beg to differ. We are just talking now about this being the first step and that there are other possibilities for veterans such as going for compensation under the act that you mentioned.

CHAIR—What I am talking about is whether the bill adversely affects anybody's rights to compensation. I think the answer clearly is no. Whether or not compensation is adequate and whether it is appropriate takes us down a path that really we have not got time to deal with today.

Senator ALLISON—I understand that, but I am seeking to challenge your view that there is no impediment to going for compensation through that act. The reason for asking this question is that it is my understanding that the veterans have mostly given up on taking legal action for compensation. I am interested in Dr Lonergan's or Major Batchelor's response to that. I may be wrong, in which case they can correct me.

Major Batchelor—I think Ann wanted to answer that.

Ms Munslow-Davies—Yes, if I could. I am currently representing one of the widows in taking her case through to the AAT. Her husband contracted three separate primary tumours, two of which have been accepted by the AAT as having been caused by radiation. The final one was not because we could not prove where the primary cancer had commenced because he died too rapidly. So she was restricted in that because she did not order a post mortem at the time of his death. The second relevant point to that is that that case is still ongoing and we are still fighting that. It has now been running for seven years. Most widows cannot deal with that stress.

CHAIR—All right.

Major Batchelor—There was a case where the chap who had my job in the previous operation died of a series of cancers and his widow is trying to claim but she cannot get any evidence that he had a dose because it is not in there. He is one of the Buffalo Engineer Troop, none of whom appear in that book.

Ms Munslow-Davies—On your question as to whether we see any obstacles in claiming it, I think the nonliability clause is going to cause problems later on.

CHAIR—In this bill?

Ms Munslow-Davies—Yes.

CHAIR—Why do you say that?

Ms Munslow-Davies—Because—and I know a lot of the veterans have expressed this—if they accept the treatment are they then accepting that the government is not liable.

CHAIR—We will put that to the department and the record will show the department's answer to that very clearly later this afternoon, so stay tuned because we will not miss the opportunity to put that to them. All right?

Ms Munslow-Davies—The other point goes back to the premise, and to the email that has been removed. Would you please ask the question of the pertinent people as to whether they are prepared to support that statement on the public record.

CHAIR—All right. We will ask the question and it will be on the public record, I can assure you. I thank Dr Lonergan, Major Batchelor and you, Ms Munslow-Davies, for your participation. We have run out of time and we do need to move to the next witnesses.

[11.22 am]

JOHNSTONE, Mr Daryl Richard (Rick), National President, Australian Nuclear Veterans Association

BROWN, Mr Raymond, National President, Injured Service Persons Association

ADAMS, Commodore Harold John Parker (Retired), National President, Regular Defence Force Welfare Association

GRIFFITHS, Mr Richard David, National Secretary, Regular Defence Force Welfare Association

MELLOR, Brigadier Kerry, National Vice-President, Advocacy and Compensation, Regular Defence Force Welfare Association

CHAIR—Welcome. You have before you a copy of my opening statement. Do you have any questions about it?

Mr Griffiths—No, Senator.

CHAIR—Do you have any comment to make on the capacity in which you appear?

Brig. Mellor—I am the National Vice-President of the Regular Defence Force Welfare Association, with particular responsibility for counselling and advocacy.

CHAIR—The committee has before it submissions from each of your organisations, numbered 320, 26 and 29. Do any of you wish to make amendments to those submissions? No? I would not have thought so. I would now ask you to make some brief opening remarks. We have a lot of witnesses here, and this is a subject we could talk not just all day but probably all month about.

Cdre Adams—Our submission to this inquiry drew heavily on Dr Lonergan's detailed analysis of the science involved in this complex matter and stressed the importance of the Australian parliament doing the right thing in respect of this group of Australian servicemen—it could be as many as 18,000 originally—who were tasked with undertaking a wide range of unique operations in support of nuclear bomb tests undertaken in continental Australia and offshore. These were uncharted waters, and to an extent remain uncharted waters, and it is clear that there was no appreciation at the time of the near-, medium- or long-term medical outcomes that could result from taking part in these operations.

The government's response to that part of the Clarke review of veterans' entitlements which dealt with the atomic tests was to accept it in principle. The government's action since then has been to refuse many of the Clarke review's recommendations with regard to this matter. No explanation or even an announcement of a change in government policy has been provided. It is apparent from Dr Lonergan's submission that the science behind the DVA studies in this matter is at best cloudy and certainly contestable, just as many of the dosimeter figures recorded in the nuclear tests themselves may be below the true dosages experienced. That being the case, it behoves the government, as part of Australia's historical policy towards veterans, to give their case for compensation the benefit of any doubt—that is, full coverage under the Veterans' Entitlements Act.

The package of bills being investigated by this committee addresses just the medical treatment of affected veterans, and our association supports the bills in this regard. However, this package does not provide for compensation. Either that gross inadequacy should be corrected before these bills are passed by the parliament or the government should enter into a firm commitment to introduce a second package of legislation as a condition of passing the current legislation. To follow on from that statement, my national secretary has a small statement with regard to the mechanics of it.

Mr Griffiths—It seems to me that two amendments are required to change this bill, if the government agrees with that. One would be to amend the title from '(Treatment)' to read '(Treatment and Compensation)'. The second would be to insert a clause stating either that all service personnel who took part in the nuclear tests are entitled to treatment and compensation under the Veterans' Entitlements Act—that is, for warlike or unusual service—or that veterans of the nuclear tests who are found to be suffering from malignant neoplasia, or cancers, are entitled to compensation under the VEA. I think that Brigadier Mellor will have something further to say about the need for legislation at all.

CHAIR—Mr Mellor, do you have anything to say?

Brig. Mellor—I just want to remark that it is already open to the minister under the Veterans' Entitlements Act to determine that a certain class of people who rendered service can be classified as veterans. So it is very hard to understand why it is necessary to have special legislation to grant entitlement to these people under the Veterans' Entitlements Act when they could easily be determined to be veterans for the purposes of the act by the minister by administrative action.

The second mysterious point is that those people entitled under the Veterans' Entitlements Act already have, as a matter of Department of Veterans' Affairs policy, automatic right to treatment for neoplasia whether or not that was shown to be due to service. It seems to me that if the nuclear veterans were determined to be veterans under the act, the practical result of that would be that anyone who could not establish a right to compensation under the act by virtue of the merits of their claim would still be entitled to treatment, which is the effect that this bill is intended to produce.

CHAIR—Mr Johnstone, do you have an opening statement.

Mr Johnstone—I do, yes. I would like to add a little to the previous submission. I would like to add that exploding atomic bombs on the Australian mainland in the 1950s was probably one of Australia's worst disasters. Nevertheless, it was a historical moment in Australian history, especially for those in the armed forces who were blooded in the field with nuclear weapons and other associated tests for the first and, hopefully, the last time. We are told by Minister Billson that never before in history have Australian servicemen and women received benefits under the Veterans' Entitlements Act if they had not had overseas service as, for the purpose of the act, they are not seen as veterans. It is a known fact that nuclear weapons test participants faced far greater hazards than many who went overseas. I suggest that we make history again and make nuclear test participants the very first who have not had overseas service to receive full entitlement under the Veterans' Entitlements Act for hazardous service far beyond that which is normally experienced in normal peacetime service.

CHAIR—Mr Brown, would you like to make an opening statement?

Mr Brown—Yes, thank you, Mr Chair. The ISPA is an organisation that believes that those who have served in the Defence Force under whatever government at the time have been required to do specific tasks without any other avenue of saying no. We are here in a role supportive of the nuclear veterans to say that we believe that their service, the service that they were required to do at that time, should be fully compensated and treatable. For that, we have provided a submission to say that we support the nuclear veterans and that the government must show its duty of care and provide all that is required, treatment- and compensation-wise.

CHAIR—Very good. Senators: questions?

Senator ALLISON—Mr Griffiths, can I start with your suggestion for amendments and ask what you understand to be the implications of amendments to include compensation within brackets in the bill and then to insert that all those who were participants in the tests would be entitled to treatment and compensation. What do you understand to be the implications of that?

Mr Griffiths—It would be that they would be treated as veterans and could use all the processes available to them under the VEA. It would, as is pointed out here, be unusual, in that this is service in Australia. But it would allow widows, for example, of people who have died having suffered from these cancers and suchlike to claim compensation, which this bill does not address at all, because of course it is only for treatment. It would also mean that these people can get the full range of the benefits that somebody who is put into danger would be normally entitled to. If I could ask Kerry Mellor to speak, perhaps he can take this further. He is our advocacy man.

Brig. Mellor—I think our general intention in suggesting the amendment was that eligibility is the issue rather than entitlement. Entitlement would be established by the normal means by which entitlement to benefits for any veterans are established—that is, by the processing of a claim and then the assessment of the merits of the claim. So I think that what we are really getting at here by the word 'entitlement' is establishing eligibility.

Senator ALLISON—So how would that be different from the current situation, because we do have the Safety, Rehabilitation and Compensation Act, which allows for compensation to be sought? I am just not clear as to what your suggested amendment would mean with regard to the current compensation opportunities. Would it change the onus of proof, for instance, of exposure?

Brig. Mellor—I think we want to link it firmly and by process to the Veterans' Entitlements Act. The problem with the Safety, Rehabilitation and Compensation Act and its predecessor, the Commonwealth Employees' Compensation Act, is that, first of all, the whole method of processing the claim is quite different. It establishes no rules, as the Veterans' Entitlements Act does under part II and part IV, for the reverse burden of proof, either to the 'beyond reasonable doubt' or the 'reasonable satisfaction' standard. But the more important thing, it seems to me, is that those compensation acts do not provide for support for the widows. Medical treatment is no good to someone who is already dead. So it is the widows that we are concerned about, the interests of whom the Veterans' Entitlements Act protects far

better than any other compensation act. If the only road is amendment to this legislation then we would propose that that amendment be linked firmly to the processes and principles which underlie the Veterans' Entitlements Act itself.

Senator ALLISON—You said two things about the bill. One is that it is not necessary because the minister can determine what he is doing within this bill. Can I ask you to expand on that point. What would the minister need to do at present in order to put in place this free health Medicare gold card, or whatever it is, if not through legislation?

Brig. Mellor—Make a determination.

Cdre Adams—For instance, the Rwanda veterans have just been granted the status of warlike service. Therefore, they are covered under the full panoply of compensation and medical treatment. The minister could do the same for the veterans of the nuclear tests because, when you analyse it, they were training for nuclear warfare, which is the most horrific form of warfare we could ever be involved in. This was as close as you got to it because people flew through the cloud. I have just had advice from England that a friend of mine drove his destroyer twice through the fallout of the Christmas Island tests. His ship was refused entry—it was an RN ship—to Australia because they obviously felt his ship was too hot. You are dealing, where there is testing, with the ultimate end warfare. Whether it was on Australia or offshore or wherever, I believe that the minister has the right to grant these people veteran status under that. That would clear up the issue straightaway and it would give effect to the government's response to the Clarke review. They said they agreed in principle to the recommendations of the Clarke review. I believe that is where we have to get back to.

Senator ALLISON—I understand the point, and your desire for that to be the step. Clearly the government is not keen on doing that but, leaving aside the inclusion of these veterans in the VEA, is there still, through declaration or through some other means, in your view—and we will ask this of the department—the ability without this bill to do what the government says it wants to do?

Brig. Mellor—I believe that to be the case. The Veterans' Entitlements Act and its predecessor, the Repatriation Act, going right back to the post World War I era, have been heavily directed towards and historically based on overseas service. I can see the minister's reluctance to somehow dilute the overwhelming emphasis which is placed in the Veterans' Entitlements Act on that. But we have now got the Military Rehabilitation and Compensation Act, which incorporates a lot of the principles which were embodied in the Veterans' Entitlements Act but which does not recognise service as being necessarily overseas or in Australia but related, rather, to the quality of that service, the type of service rendered. Strictly speaking—and I must emphasise that I am no lawyer, no interpreter of acts—it seems to me that the use of the term in the act 'class of people who rendered service' makes it perfectly conformable to the act for the minister to declare this class of people as veterans under the act.

Senator ALLISON—Thank you for clarifying that.

Senator TROOD—I am intrigued with this proposition that you are putting to us, and I want to understand the extent of it. I understood you to be saying in your opening remarks that the bill was really not necessary, that there is a capacity for the minister, as you have just

said in answer to Senator Allison, to make declarations which would at least cover the servicemen. But would that cover the civilians involved in these tests?

Brig. Mellor—It could, in that the Veterans' Entitlements Act does make provision for civilians to be classified as veterans—philanthropic workers and people who worked with the Australian Defence Force as entertainers, as attached people and so on. So there is no automatic exclusion of civilians, but I have to say that I have not focused on that class of people itself very closely. But I would not see any fundamental reason why they could not be included as a class of people to be regarded as veterans.

CHAIR—What about Indigenous people?

Brig. Mellor—I would simply hesitate to give any answer in relation to them because I have no knowledge or expertise in the field at all.

Senator ALLISON—Chair, they are not covered by the bill.

Senator TROOD—Commodore Adams, you speculated about the number of people involved. I think you said 18,000—is that right?

Cdre Adams—I understand that of the order of 18,000 people were involved in different aspects—

Senator TROOD—But that figure that you are suggesting includes both military and civilian people involved—is that right?

Cdre Adams—I think it does. It would do, yes. Some were pretty much on the periphery but still in some supporting role, and one never knows quite to what extent they may have been exposed.

Senator TROOD—If we allow that you may be right that there is an opportunity for declaration here, do you have a hypothesis as to why the bill has been brought down?

Brig. Mellor—I am no political insider. My only speculation would be the department's and the minister's reluctance to dilute the underlying spirit of the Veterans' Entitlements Act, which has been in existence for many years. I have heard in the past that other people in Australia have undergone tests—for example, for malaria treatment—and other chemical and biological warfare experiments having taken place. I do not have detailed knowledge of the circumstances but it could be that, if this class of people involved in the atomic tests were to be determined to be veterans under the act, the department might be apprehensive about opening it up to all sorts of other people who have not yet been considered. Maybe they do not want to do that.

Senator TROOD—We will not pursue any further those speculations.

Mr Johnstone—May I comment on that?

Senator TROOD—Yes.

Mr Johnstone—Three or four years ago I visited here with Bruce Scott and Tim Fischer, when he was Deputy Prime Minister. We put the same proposition to them as we have put in our submission, and at that time Tim Fischer said it would be easy. Bruce Scott made the comment that it might cause other difficulties and he was told by Tim Fischer—and I am not

sure I know what it meant—that it would be easy to do and then fence it. So I guess that means something politically—somehow they could lock it in that no-one else could do it.

Senator TROOD—Mr Johnstone, may I ask you a question in relation to your submission. In the second last paragraph you say:

Most of the civilians whose names appear on the nominal roll had left the test site before any tests were carried out and were put on the nominal roll purely to water down any tests or studies that would follow.

Mr Johnstone—Yes, that is correct.

Senator TROOD—I suppose the question is: what is the basis for that remark?

Mr Johnstone—Reality. The basis for the remark is that most of the civilians employed at Maralinga were employed on the superstructure, roads, quarries and various other things that were operated by Bell Bros or Kwinana construction. Hardie's asbestos had people up there. Most of those people were immigrants and they had all left the area long before the first test was detonated.

Senator TROOD—Your proposition is that they obviously should not be included.

Mr Johnstone—Absolutely.

Senator TROOD—How many people would be involved in that group?

Mr Johnstone—Thousands. They had rotating shifts where they had people coming and going from Greece, from Italy—

Senator TROOD—I presume you are putting to us that thousands would seriously distort the consequences of the study.

Mr Johnstone—I am saying that including people who obviously had no exposure at all at any time in the studies would dilute the findings.

Senator TROOD—And not just dilute the findings but seriously distort them.

Mr Johnstone—Yes.

Senator FERGUSON—Are these thousands that you are talking about included in the 18,000 people that the other gentlemen are talking about?

Mr Johnstone—The number we have that was given to the consultative forum was 8,000 servicemen involved over the period of 1952 to 1967 and about 8,000 civilians. The total number was about 16,000.

Senator FERGUSON—And you are saying that many of these civilians should not be included?

Mr Johnstone—No. I am saying that some civilians who were fully employed by the Commonwealth were there at the time of testing and that some were there after, during the clean-up periods. But the great majority of the civilian workers had long gone.

Senator FERGUSON—Are the records accurate enough that they could disaggregate the ones who you say would not be eligible from those who would be eligible?

Mr Johnstone—Yes. I would say that they could do that quite easily. All of those companies have payrolls and we have a lot of names off those payrolls already. A lot of the names in the nominal roll came from company payrolls.

Senator FERGUSON—Would that be totally accurate? I am wondering whether some records may have been lost, misplaced or never kept.

Mr Johnstone—I think civilians have better records than some of the servicepeople involved because they were on payrolls and on lists and so on, but the great majority of them should not have been on the nominal roll. The nominal roll has been changed many times anyhow, so the ones that we were given are no longer accurate. The other thing about the nominal roll is that the fact that your name is on the nominal roll does not qualify you to claim for any compensation, so the government does not trust its own nominal roll anyhow. If I make a claim under military compensation and say: 'I was at Maralinga. There's my name; it's on the nominal roll,' it does not work. We have had people do it.

CHAIR—There are no further questions. On behalf of the committee, thank you for coming along. We do appreciate it.

Mr Johnstone—I would like to say one more thing before we go. From the submissions that I have read from all of the major and a lot of the smaller ex-service associations, I am pleased that I now see that we have the whole of the ex-service community behind us, and I feel sure I can say that now.

CHAIR—I think that is right.

[11.49 am]

GESCHKE, Mr Charles Norman, Private capacity

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

Mr Geschke—I was the captain of an aircraft that flew through cloud. Since the atomic trials I have been active in a number of areas in helping people who allege they have suffered from it. At this stage I do not know of any suffering that I have had personally, so I feel I can be a little impartial. I have made a submission and, in hearing the submissions to date, mine covers some of the same area. If you do not want me to continue with it, I—

CHAIR—We will deal with that in a moment. You have seen a copy of today's opening statement. Do you have any questions regarding that document?

Mr Geschke—No.

CHAIR—We have your submission No. 11. Do you want to make any amendments or additions to your submission?

Mr Geschke—No.

CHAIR—I invite you to make a brief opening statement, if you so require; if not, we will go straight to questions.

Mr Geschke—I would like to make a brief statement. My submission covers four areas. The first is the philosophy rights or expectations of servicemen, and I want to dwell on that a little. The second is some inadequacies in the study. These have been mentioned by others, but I propose to cut it down, except for one major comment. The third is the failures on Totem 1. The fourth is my conclusions and feelings about the matter.

Servicemen join up for many reasons, but central to this is that they expect to know that they may be used for offensive and defensive operations in war which involve some hazards, the possibility of death or lifetime suffering from various illnesses, not only for them but also for their families. But they do not join up to be used in hazardous, non-warlike activities without adequate protective equipment and measures. I believe servicemen have a right to expect that they are not used as guinea pigs or forced into activities by senior officers or government when they have not carried out adequate research to show they are protected. If you send a fireman in to fight a fire without adequate clothing, what would the coroner say; yet we seem to accept that. That is a philosophy.

I know there was no proper check with the British atomic tests. Dangers of radiation have been known since the days of Madam Curie. Wilson, who was a consultant to the RAF, quite clearly said that this was a hazardous operation. I will come back to that in a minute. I do not think Australians have the same ethos as the British and Europeans who, like the guardie, feel that the greatest glory in life is to give their life for their king or country. I do not think we are of the same mind, nor do I think that Australians, like the British and some others, use war as a form of postnatal birth control. I say that because that is what seems to be the pattern, as though once a man enlists he gives up everything. I think a serviceman's life should be

safeguarded just as well as any other person's. By enlisting, he is not signing an agreement that he may be used irresponsibly and have his health put in jeopardy. That is my point on the ethos, because I think that was completely overlooked in the way the servicemen were used in the atomic trials.

In the study, I agree that the figures of 18 per cent and 23 per cent are misleading. The healthy-man syndrome often used to last for only two years. When a serviceman comes in he has a very active life, he is subject to medical examinations every 12 months and to full medical treatment, and I think there is enough evidence that, because of the strict controls over his enlistment and because of the way he is treated, his health should be superior to the health of those in the average community and therefore the figures rather underwrite that.

I want to make a point about the time in cloud. The report shows two aircraft—one I flew and one Trevor Fairburn flew—as only having a few hours subject to radiation. But the crews flew through the cloud, flew back to Townsville and flew in the aircraft the next day and two days later before they were decontaminated. So it was not an exposure of 2½ hours. I calculate my exposure to be in the order of 18 hours. When a deduction was made that they were involved for only so long and therefore that was the amount of radiation they were exposed to, it was really not reflective of their exposure; it could have been worse.

The next point I want to deal with is the actual operation itself. I think I can speak first-hand on this. I was a captain. I attended a briefing. The procedures were largely related to how we fly through the cloud, what we do to track the cloud and what reports we make. The crew were not briefed on anything else, on any safety measures. There was no safety clothing issued. We were breathing an oxygen and air mixture, which meant that the crews were ingesting radioactive air. We also ate flying rations, which was a taboo from the British and earlier operations, but no-one mentioned that. After flying through the cloud and landing at Townsville—I am talking about Totem 1 and the Richmond contingent—there was no showering, there was no decontamination of the aircraft, there was no decontamination of our clothing. We were debriefed and then we flew straight on the next day.

They were oversights, but they were major oversights and could have allowed some people to have succumbed to cancer who may not have done so otherwise. Compare this with the RAF, particularly *Canberra*. It was a brand new aircraft that had a high polish on it to reduce contamination. It was completely sealed, so the crew inside the *Canberra* had no contact with any of the radiation. They breathed cylinder oxygen the whole time. Wilson, who flew that *Canberra*, was very critical of the use of Lincolns because he thought they were dust buckets. They were also unpressurised. He was very critical of the Australian crews, and reported to DGMS. I comment on that that he felt the Australians were treating the matter rather less seriously than they should have and that there was inadequate decontamination and other preventative procedures. The point I am trying to make is that there was a failure of proper research as to what was required, proper supply of equipment that was necessary and a failure to brief the crews who were taking part in the operation that is at fault. This was not the fault of the crews.

My summation is that I believe there was adequate evidence that people who actively participated in the nuclear trials and were exposed to radiation have suffered a far higher incidence of cancer and mortality from cancer than others. I am not interested really in what

dosimetry says—all I know is that if a bloke is dead, he is dead; if he is injured, he is injured; if he has got the cancer, he has got it. The only thing I can see to separate the group who participated from the others is the fact that they were subject to radiation of some sort. I could add that my second pilot, Bernie Reynolds, died of cancer of the thyroid, and a wireless operator in the crew died of cancer of the oesophagus. I do not know the cause of cancer in the third one.

One of the things that has worried me in this study is a constant referral to privacy legislation as being a reason why they cannot ascertain who was aircrew and who was ground staff. This to my mind is absolute rubbish. If the government arrange for a study to be done, these hurdles should not be in the way of getting proper answers to it.

Again, I say in summation, servicemen were not enlisted to do this type of work. I am not being political in this, but the government failed through its agents to provide proper protection. As a result, servicemen lost their lives. The effect was not only on them but on their families, as breadwinners, as fathers to children and all the other things that come with a composite family. There should be some recognition of that. The bill does it, as I see it, in giving diagnosis and treatment. I get that irrespective of whether I was a veteran of nuclear trials or not. The difference is that the widows and the children do not get the benefits. Although it said that the minister may do it—I have heard this conversation—the fact is that I do not know of one successful claim that has been accepted for compensation for the atomic trials in Australia.

There seems to be an army of lawyers and others on the government side constantly trying to defend the acts and saying, 'We should not give compensation, you have not proved your case and you have not done this.' What have you got to do to prove your case? How can you do it? How can you say, if you have a cancer, that it came from here or it came from there? But looking at the numbers, with the significant increase, it is surely, in my view, a case of accepting that for those who participated, those who have suffered from cancer, on the basis of statistics, the probability is that it was during those trials that those cancers occurred. Had the government provided protective clothing, had they done other things, many more would have been alive today. That is the basis of what I am trying to say. I hope I have not taken up too much time.

CHAIR—No, that is very good.

Senator ALLISON—On that subject of the privacy legislation not allowing the study to—

Mr Geschke—There are two different cases. One is 71 cases where crews had a form of melanoma and they say, 'Unfortunately we cannot determine whether this is aircrew or ground staff because of privacy legislation.' There was a suggestion that with melanoma it could occur more with aircrew who would be exposed to cosmic radiation because of height or something. In the other case, in another part of the report, it refers again to this failure saying, 'We could not get these figures.' I can give you the references if you would like them. On page 85 of the second report it says:

Due to privacy laws (or their current interpretation), individual matching of cancer cases was not possible, so it is not known how many of these personnel were aircrew.

There is a significant difference between working on the ground on aircraft and flying through and ingesting it. I would have thought that was a pretty important part of the study, to determine and perhaps get a better idea whether certain cancers come from ingestion and whether aircrew got them when flying. That is the point. The other one was dealing with the melanomas, and that was in the early part of the report when it simply said that of a study of 71 melanomas they could not tell.

Another incident is where, again, they exclude over 1,946 people. That is 17.7 per cent of the participants. But after listening to the fact that the nominal roll covered people who were not there I think the study has a bit of difficulty trying to find out who was there. But certainly, in relation to servicemen, to say that we could not ascertain their birthdays when you almost have to give your birth date every time you go for a meal in the services, so it is a thing that they have always—there seem to be little things like that that worried me. I know the study has done a lot of technical work but I wonder how much trouble they really went to in some areas and when they met these hurdles whether they should not have had some way of getting around them. I think this privacy matter is getting out of hand everywhere, but this is a classic case of it.

Senator ALLISON—Do you have any knowledge yourself about the approximate number of aircrew who went through the mushroom cloud?

Mr Geschke—No, I do not. They went through them for the whole series of tests. My involvement was with Totem 1 and we had 6 Squadrons based at Woomera and 2 Squadron based at Richmond. The Woomera people went through the cloud first and then the Richmond people picked it up later on as it was moving, checked it and followed it through up to Townsville. The difficulty with that is that the normal crew for a Lincoln is five but in our particular aircraft we had another three or four people who were radiation specialists and they were using special equipment in the aircraft, and this applied in a number of other aircraft as well.

Senator ALLISON—Did they have protective gear on?

Mr Geschke—No, we did not, we just flew in an ordinary flying suit.

Senator ALLISON—And neither did the radiation specialists?

Mr Geschke—They were just people recruited; when I say 'recruited', the wing navigation officer was one of them and they received training in operating this particular equipment and just flew as an auxiliary crew for that particular purpose.

Senator ALLISON—So they might not have had experience or knowledge about the effect of radiation on a person?

Mr Geschke—No, we were all briefed together and they went down not as a normal flying crew but as a crew operating special equipment which had been installed in the aircraft for that purpose.

Senator ALLISON—I understand. Okay. And you said the Lincolns that you flew in were not pressurised and were 'rust buckets'—was that it?

Mr Geschke—No, dust buckets.

Senator ALLISON—What is a 'dust bucket'?

Mr Geschke—Wilson made this comment and I think Thomas did too, in their reports to the royal commission, meaning that there were so many spots within the aircraft where the radiation could reside in the dust and other things, because the Lincoln was a non-pressurised aircraft, and of course air and everything would enter it and go out of it.

Senator ALLISON—Indeed.

Mr Geschke—That was the term.

Senator ALLISON—So what did crews think about the British having the latest sealed, oxygen-supplying equipment on board—but not the Australians?

Mr Geschke—Post operation, there was a lot of criticism that here we were flying like this and yet some British counterparts always had protective clothing on. Wilson and his crew, who were fully protected in a sealed aircraft, had the protective clothing. They got out and they put protective clothing on before any decontamination was done—things like that. It was Wilson who went to the RAAF Director-General of Medical Services and made a comment. He said, 'This state of affairs shows the need for a good deal more care being taken during flights and the provision of better facilities for dosimetry and decontamination,' because our crews did not have dosimeters or badges at all. So, in fact, we went into this in a half-cocked way, I think to our loss.

Senator ALLISON—Not even badges on. That is amazing.

Mr Geschke—No, nothing—no recording at all. Some may have, but certainly—I can only speak for the crews of 6 Squadron at Richmond on Totem 1. I was not involved in the other. But I assume that similar things would have happened at other times.

Senator ALLISON—Were you represented by Ms Munslow-Davies on the consultative committee?

Mr Geschke—No.

Senator ALLISON—You were not part of that.

Senator FERGUSON—Mr Geschke, thank you very much for your personal observations, because I think they are quite important to us as well. But you are also well aware that hindsight is a wonderful thing, and there is a danger sometimes that we put modern-day knowledge and modern-day values on historical events. So the question I really want to ask you is along the same lines as Senator Allison's: when you were actually flying through these clouds, or when the decision was made that you were going to do that, were you apprehensive at all that you did not have the right equipment?

Mr Geschke—Yes, we were. But at the briefing we were assured that safety was not a matter; the radiation levels would be too low. Again with hindsight we now know that there is no minimum cut-off point with radiation levels; they are a cumulative thing that can happen. And I agree with you that hindsight is a wonderful thing. You could make a fortune on the exchange or back tomorrow's winner if you had it! But there was sufficient evidence to show that radiation was a problem. I mentioned Madame Curie's death. That was an early one. The

American trials had been carried out in the years earlier, and there was a lot of evidence to show that that existed.

What I think happened—and this is my own belief—is that we were invited, that Australia was a suitable place and that the RAAF had the capacity to do a lot of this. We had the servicemen to trial it, and some of the Army people were there just in their normal clothing. They had their backs to the flash and turned around. And I found out later in one of the reports that this was just to look at what the effect of normal clothing would be during tests—but that is hearsay; I am not entirely familiar with that. But I think that there were adequate grounds for having better protection for people that were on the thing.

But, whether it was hindsight or not, the fact was that servicemen and civilians were put into this operation, and the chances were that a lot of them suffered cancers they would not have suffered had they not been on the operation or had they had protective clothing. I am not trying to find fault with government or fault with anyone else; I am saying that that is the result of it. Irrespective of whether it is hindsight or not, we are at the situation where quite a number have died, quite a number are still suffering, and what have we done about it? The only thing that I can see we have done is fought for 50 years to stop them getting any benefit at all. If we wait another 20 years, probably none will be alive, so we will have got out of it cheap. But that is not a moral way of looking at these things. The moral way is to say: 'Okay, we have been tardy. We haven't done these things. We've got this bill that goes this far, but more has got to be done and the longer we leave it the worse the injustice will be to those people who had no choice but were forced into this operation without adequate protection.'

CHAIR—I only have one question, and that is: when you flew for the 18 hours both in and after the cloud, was there any measurement taken of the roentgen levels inside your aircraft?

Mr Geschke—I do not believe there were. Why I said that 18 hours is that I in fact had to take an aircraft up to Townsville which had clean canisters in it. Unfortunately, the cloud had been misplotted by 200 kilometres and we flew into that cloud unintentionally with the new canisters. Having got in it and found the cloud, we had to track it for quite some time to get the speed it was moving and what direction so the other aircraft could find it.

CHAIR—Was it visible, or did you just detect it?

Mr Geschke—No, it is not visible. There are instruments and things which indicated the radioactivity, and that is how you detect it. You were to find it and then go back halfway and keep tracking it along. That was the first flight. Then, the following day, I took another aircraft which had been through the cloud—that was 21—back to Richmond, and then the following day I took my aircraft, which by this time had come back, up to Amberley. So it was a combination of the three flights with aircraft which had been through the cloud that led to the 18 hours. To my knowledge there were some readings done, but I am unaware of when. I just saw this in a later report where they had made an assessment of what was there, but I was unaware in the flight of it being done and I was unaware when we landed at Townsville that any check had been made of it.

CHAIR—We have no further questions. Thank you very much for your time in coming along today. We do appreciate it. On behalf of all of the committee, thank you very much.

Proceedings suspended from 12.12 pm to 3.35 pm

HODGES, Mr John, National Veterans' Affairs Adviser, Returned and Services League of Australia

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

Mr Hodges—I am the RSL's National Veterans' Affairs Adviser. I am appointed by the RSL National Executive and serve at its pleasure. My background is 21 years of naval service and, in my paid role with the RSL, I am the New South Wales pensions and advocacy supervisor at Anzac House in Sydney. I am also a training information program, or TIP, trainer.

CHAIR—You have seen a copy of today's opening statement. Do you have any questions regarding that document?

Mr Hodges—No.

CHAIR—The committee has before it the RSL's submission, No. 27. Do you wish to make any amendments or additions to that submission?

Mr Hodges—No.

CHAIR—I invite you to make a brief opening statement, following which senators will ask you questions.

Mr Hodges—The RSL welcomes the opportunity to appear before this committee and thanks the committee for its invitation. As stated in our submission, the RSL welcomes this bill and urges its speedy passage. It also notes the bipartisan support, with reservations, that the bill has received in the other place and urges the Senate to show similar support when the vote is called. However, as Senator Payne has already mentioned, we do have some issues, as stated in our submission, with the bill itself and the government's position on the status of the nuclear test participants. With regard to the bill, the nuclear test participants should also include the maintenance personnel in the RAN, the Army and the RAAF who decontaminated ships, equipment and aircraft other than at the specified locations mentioned in the bill. This issue has been raised by other ex-service organisations and we urge this committee to recommend this amendment to the Senate.

With regard to test participants in particular, yet again at the RSL national congress in September this year the motion that the service that the participants undertook during these tests be regarded as hazardous service under the Veterans' Entitlements Act was passed and again formed part of the RSL's budget submission to government. After listening to the questions and answers to the committee this morning, particularly on the issue of hazardous service, may I offer the following. Section 120 of the VEA deals with the standard of proof and states:

In this section:

hazardous service means service in the Defence Force, before the MRCA commencement date, that is of a kind determined in writing by the Minister administering section 1 of the *Defence Act 1903* to be hazardous service for the purposes of this section.

Once service has been deemed hazardous and a member of the service has been allotted to that area then that member comes under the VEA for that period of service. This means simply that compensation is payable for any disease or injury during that service that can be related to that service. For these participants this would mean that, as they came under the VEA at the time of the tests, any cancers, post-traumatic stress disorder, depression or anxiety disorder that they have been diagnosed with will be treated at departmental expense without admitting liability for compensation. This is available to all members whose service falls under the VEA and this is what this bill does in relation to cancers for the participants.

As a follow-on, if a claim for compensation is made and accepted then a disability pension is payable. Then the big one: if a veteran then dies of a war or defence caused injury or disease then the widow is entitled to a war widows pension. By the simple act of a determination, the Minister for Veterans' Affairs can deem this service to be hazardous. But, of course, he needs facts to be able to make that decision. I draw the senators' attention to the Clarke recommendation and government response. The Clarke recommendation was:

Participation by Australian defence force personnel in the British atomic tests be declared non-warlike hazardous and the legislation be amended to ensure that this declaration can have effect in extending VEA coverage.

The government response was: 'Accepted in principle'. The government said:

The Government also had decided to respond positively to the needs of those affected by the British Atomic Test programme when the outcomes are available of the Australian Participants in the British Nuclear Test Programme—Cancer Incidence and Mortality Study.

So far, so good. Without trying to put words into the mouth of the Minister for Veterans' Affairs, in the second reading speech in the other place he said:

The idea of non-warlike hazardous service had never been granted for service within Australia. That still is the case today. It is in fact the precursor to the non-warlike service classification that is exercised today.

The minister also made a submission to the Clarke review on behalf of one of his constituents, who wanted health care. That is fine: he wanted health care, but what about the other benefits? So the minister said, 'Okay, we've done very well. I've got what the veterans want: they want health care.' But he has missed the point: it is not only the health care but also the compensation. Really, there was not a lot more he could say, due to the findings of the University of Adelaide study in which there was not a link, supposedly, between the tests and the cancer. However, the RSL supports the submission of Mr Lonergan and Mr Batchelor that the findings are flawed. Hence, the minister is acting on incorrect advice.

The RSL urges speedy passage of this bill, with its proposed amendments, through the Senate. As I have a captive audience, I urge members of all political persuasions on this committee to encourage the minister to declare this service as hazardous. We must do this for our veterans. We the Australian people, through the parliament, put them in harm's way. We must support them in their time of need.

CHAIR—Thank you very much, Mr Hodges.

Senator PAYNE—The Department of Veterans' Affairs gave the committee a response to the RSL's specific concerns, which I think was received by us only this morning, so it is

entirely probable that you have not seen it, but we can probably give you a copy. The department's response says that they think the concerns of the RSL about coverage—that is, recognition as participants—are addressed by section 5(2) of the legislation as it is currently drafted and that maintenance personnel, those who worked on returning ships and who maintained equipment and so on are in fact included in the current drafting of section 5(2). So I would like to ask you, if it is possible—and I do not expect you to read the whole response immediately—to have a look at that and let the committee know what the RSL thinks of that response. Let's not do it right now; we will go on to other questions. I wanted to give Mr Hodges the opportunity to know about that response, Chair.

CHAIR—Thank you.

Senator ALLISON—Mr Hodges, do you have a view as to how this study might have been handled with regard to the so-called 'healthy soldier' factor? You realise that the study compared results with the general population.

Mr Hodges—Yes.

Senator ALLISON—The argument which I think was put in the government's submission is that it would have been difficult to amass the numbers required. Do you have a comment to make about that?

Mr Hodges—No. I and the RSL have no medical or scientific background knowledge to be able to answer that question. We relied on the submissions of Mr Batchelor and Co., who brought that out into the open.

Senator ALLISON—You do know what I mean by the 'healthy soldier' factor?

Mr Hodges—Yes.

Senator ALLISON—You mentioned the issue of widows as being something which is not in this bill and which you are suggesting ought to be, in terms of pensions and so on.

Mr Hodges—Yes.

Senator ALLISON—Does the RSL in fact represent widows in this respect?

Mr Hodges—Yes, the RSL represents veterans and their dependents.

Senator ALLISON—Are you able to give the committee a kind of case study of what might have happened to some of these widows of the tests?

Mr Hodges—Absolutely. With any sort of disease or injury that befalls a veteran—whether they be a member exposed to these tests or someone suffering from some injury or disease contracted during any war, peacekeeping operation or even defence service—the way that the Veterans' Entitlements Act was drafted by your predecessors, and heartily endorsed by the majority of the ex-service organisations, if a veteran is so ill that he dies of his war caused injuries or diseases then there must have been someone looking after him or her during that period of time.

Senator ALLISON—I would imagine that they are all 'hers' in the case of veterans.

Mr Hodges—That may be the case. Hence the advent of the war widows pension. That is not a lot of money but it gives the peace of mind of having the magic gold health card—that is

what seems to drive most people. The interesting thing is that, within that group of war widows, anecdotal evidence suggests that there are probably not a lot of veterans who are on, say, a 50 per cent disability or a 60 per cent disability who die from a war caused injury or disease; it is predominantly the veterans on the extreme disabled adjustment, who are in such a bad way that they get 150 per cent of the disability pension so therefore they are on the extreme disabled adjustment.

For the last years of their life, they are basically at home. One of the criteria for getting extreme disabled adjustment is lack of mobility, lack of being able to do things and all that type of stuff. So the primary care is the wife. So the war widows pension is basically a grateful government saying: 'Thank you very much, Spouse, for looking after this veteran for us. You saved us money by not having to put him or her in a nursing home, palliative care and all that type of stuff. Thank you, and here is the war widows pension.' The granting of a war widows pension is automatic if a veteran is on extreme disabled adjustment. It is not automatic if they die of an injury or disease and they are not on an EDA. If they have an accepted disability already and they die of that disease then yes, it is automatic; but if that disability is not accepted at the time of death then it has to go through the system of getting accepted.

Senator ALLISON—Would it be fair to say, and I am going back to memory on these matters, that the RSL is not an organisation that goes out willy-nilly inviting everybody to have equal standing with those who have served overseas. Would that be a fair comment to make?

Mr Hodges—I am not quite sure that I understood your question.

Senator ALLISON—From my memory of it, the RSL is not saying to the government, 'Look, everybody involved in any kind of slightly dangerous work should be given the same level of support as those who serve overseas'?

Mr Hodges—No, for as long as I have been involved the RSL has treated active service—what is called in the act 'qualifying service'—as the linchpin for the act. That is why we have never accepted the diluting of the gold card. The gold card for a veteran comes in a couple of ways: you get one with a 100 per cent disability pension, you get one after 70 years of age if you have had active service, you get one with the TPI or you can get one with the EDA.

Senator ALLISON—So this kind of service you do regard as hazardous, and that is why you are taking this position?

Mr Hodges—Yes, very much so. There was one thing mentioned this morning which I would like to talk about—that is, the Safety, Rehabilitation and Compensation Act. Yes, the participants in the nuclear tests can claim under that act, but it actually goes back to the Commonwealth Employees Compensation Act 1930. There is a little trick in that act in that, if you want to claim for compensation, you really should have claimed within six months of knowing that you had that injury or disease whilst you were still in service.

If you then claim under that act and the initial paperwork comes back from the department saying, 'Why didn't you claim for it when you were in?', the normal way we answer that question is that in those days people did not know they were covered by a compensation act. Even I did not know, and I joined the Navy in 1968. I did not realise until about 1980 that

such a compensation act existed—and I was an officer. So there would be no chance of the sailors and soldiers knowing, and the benefit of the doubt is normally given.

The other thing about that is that there may be compensation. The Safety, Rehabilitation and Compensation Act sort of picks up the tab for the medical treatment and, if there is more than 10 per cent total impairment, they may be entitled to a lump sum, but under compensation there is no disability pension, there is no white card—there is a scrappy piece of paper they have to take to the doctor to say that the Department of Veterans' Affairs is actually going to pay for this, and they go, 'Yeah, right!'—and, of course, there is no benefit for the widow under SRCA.

Senator ALLISON—I mentioned, after an answer to a question I put on notice, a little earlier that there were no compensation payments made in 2006 since we are already at the end of that. Are you aware of any changes in either the way in which compensation is applied for or the way they are being rejected?

Mr Hodges—No.

Senator TROOD—I would be interested in your response to Senator Payne's point about these additional people. Reading that provision, it would seem they are covered, but we will certainly wait for your considered views on that. I want to ask you, in relation to that group of people, whether or not you had any idea about the numbers of people that might be involved in those three categories you have mentioned in your submission.

Mr Hodges—No, I do not, and I daresay, knowing what I know about Navy operations, it would be difficult. The ships would come back into harbour, they would tie up at a base and at some stage later they would go into a dockyard. Is the half-life gone yet? I doubt it.

Senator TROOD—I am not sure whether you were here when the Regular Defence Force Welfare Association was giving evidence this morning. Mr Mellor put the proposition to us that he was not convinced that this act was necessary. The minister already had the power to make a declaration in relation to the act. I wonder whether you have a view on that particular proposition.

Mr Hodges—Did you just come in? I did actually mention that—

Senator TROOD—I beg your pardon—I was a bit late.

Mr Hodges—But, yes, I do agree.

Senator TROOD—If you have already answered that question, I will look at it on the record.

Senator HUTCHINS—Do you have any comments in relation to the cut-off dates given in the definition of 'nuclear test participant' in the bills? No doubt you have read some of the submissions.

Mr Hodges—No, we do not. No comment at all.

CHAIR—It is fair to say that the RSL is of the view that the legislation is okay as far as it goes to provide the services, but the main issue that you take—like many of the witnesses we have heard today—is that the background to this is one that is still unresolved and requires a

lot more attention on a policy-political level. Is that a fair assessment of where you are coming from?

Mr Hodges—Yes, that is a fair assessment.

CHAIR—So today is all about the legislation, and you are taking the opportunity to say, 'That's okay as far as it goes, but the real issue has not been addressed.'

Mr Hodges—Yes.

CHAIR—Senators, any further questions?

Mr Hodges—If I may answer Senator Payne's question: yes, I am reading that again, but it is interesting in that three other ex-service organisations also brought that up. Reading it in the way DVA has responded makes clear sense, but reading it in the bill, in the cold hard light of day, it does not. Senators: plain English, please.

Senator PAYNE—We do our best to encourage that. We will of course cross-check that with DVA, but if on reflection there is anything you think the committee would find helpful, in terms of the RSL's perspective on that, it would be good to hear about it from you.

CHAIR—Absolutely. So just drop us a note or whatever. We would be pleased to hear your further advice if you think there is anything you need to tell us about. On behalf of the committee, I thank you for appearing today and I thank the RSL.

Mr Hodges—Thank you.

[4.03 pm]

CROUCH, Dr Philip Charles, Private capacity

ROBOTHAM, Mr Francis Patrick Joseph, Private capacity

WILLIAMS, Dr Geoffrey Allan, Private capacity

Evidence from Mr Robotham and Dr Williams was taken via teleconference—

CHAIR—Welcome. These are public proceedings. Although the committee may agree to a request to have evidence heard in camera or may determine that certain evidence should be heard in camera, I remind all witnesses that in giving evidence to the committee they are protected by parliamentary privilege. It is unlawful for anyone to threaten or disadvantage a witness on account of evidence given to a committee and such action may be treated by the Senate as a contempt. It is also a contempt to give false or misleading evidence to a committee. If a witness objects to answering a question, the witness should state the ground upon which the objection is taken and the committee will determine whether it will insist upon an answer, having regard to the ground which is claimed. If the committee determines to insist upon an answer, a witness may request that the answer be given in camera. Such a request may of course be made at any other time. Any claim that it would be contrary to the public interest to answer a question must be made by a minister and should be accompanied by a statement setting out the basis of that claim.

That is the opening statement from us—a very simple, straightforward, pro forma statement. Having said that, it is customary to ask witnesses to make an opening statement, which is a short statement of five to 10 minutes by the witness setting out the broad perspective that they have as a background to the submission that they have lodged. Dr Crouch, do you have an opening statement?

Dr Crouch—Yes. Thank you for giving us the opportunity to speak to you about our submission today. I will introduce my colleagues. Mr Robotham has had a long career in radiation protection, including a number of years as the radiation safety officer at the University of Melbourne. Some years ago he also wrote a book about the British tests at Maralinga. Geoff Williams is a senior research scientist at ARPANSA. He was heavily involved in Maralinga and particularly in the clean-up of the range in the late nineties. I was the senior scientist with the radiation protection branch in South Australia for over 20 years. I have had some involvement with, visits to and monitoring at Maralinga range. We were all members of the dosimetry panel who had the task of estimating the radiation doses to the participants in the British nuclear tests.

But that is not really the subject of our submission. Our submission is concerned with what we see as an anomaly in the government's decision to grant medical treatment to participants, in that the Commonwealth Police were excluded from that benefit. The Commonwealth Police's name has changed a number of times during the last 50 years. I will use 'Commonwealth Police' throughout, for clarity. This exclusion of some of the Commonwealth Police seems to have come about as an entirely unintended consequence of the setting up of the study into the participants' health. It is essential in any such study that the study group be

clearly and precisely defined and, for this purpose, they took a cut-off date of 1965—two years after the last trial at Maralinga. This was a very reasonable date for the purposes of the health survey but has been carried over into the present act so that the benefits are only available to people who served at the test sites prior to that 1965 date.

The Commonwealth Police were stationed at Maralinga throughout the test period and for many years afterwards—in fact, until 2001, I understand. For most of that period—that is, after 1965—they were relying on the assurance from the British government that the site had been cleaned up and was safe. In the 1980s, it was discovered that this was very far from the case and that there were large areas which were heavily contaminated, particularly with plutonium. But the Commonwealth Police were required to patrol through these heavily contaminated areas on a regular basis. They also carried out other activities which would lead to significant radiation exposure. For instance, at one stage they were observed digging out rabbit warrens in one of the more heavily contaminated areas.

We believe, based on our analysis of doses, that these Commonwealth Police would have been amongst the most heavily exposed groups involved in the tests and certainly would have got a larger radiation dose in general than the large majority of those who were actually at the tests. However, by applying this cut-off date originally intended just for the health study, this relatively small group has been excluded from the benefits that are offered to the other participants. We believe that this is a quite unintended consequence of the bill but we think it is anomalous and seems unjust. We would like the committee to recommend that the legislation be amended to allow the Commonwealth Police who were serving after this period to have the same benefits as other participants in the trials.

CHAIR—Mr Robotham and Dr Williams, do you have any opening statements that you want to make or are you adopting Dr Crouch's position?

Mr Robotham—I adopt Dr Crouch's position. We did have input together into the submission that came to you. I support Dr Crouch totally.

Dr Williams—The same, thank you.

CHAIR—You say that there is plutonium on the surface. How do you know that and in what amounts?

Dr Crouch—There was plutonium. It had been known, I guess, since the end of the trials that there was some plutonium there. There was some remedial action carried out in the 1960s, which was not very successful, and then in the 1990s there was further remedial action to collect up all the contaminated soil from that central area and bury it.

CHAIR—What is the quality of the documented evidence supporting the contention that whilst these Commonwealth Police officers were patrolling the area there was plutonium in the vicinity or region or at where they were patrolling?

Dr Crouch—There is very strong evidence of the monitoring which was taken in association with the clean-up from about the mid-1980s to the mid-1990s. Geoff Williams may be able to make a further comment on that.

CHAIR—Dr Williams, can you assist us at all as to the quality and standard of evidence in support of plutonium being at or where these patrolling officers patrolled?

Dr Williams—At the time the British left the site, it was known that there was plutonium there. The British indicated that to Australia; this is all well documented through the process of Senator McClelland's Royal Commission into British Nuclear Tests in Australia. What was not known was the form in which the plutonium was concentrated in the areas where the Commonwealth Police were patrolling at that time. That was discovered by officers from the Australian Radiation Laboratory, including me, in May of 1984. The discovery of that plutonium was one of the main factors that really led to the royal commission. Following from the royal commission, there was a recommendation that the range be cleaned up so that the traditional owners—the Aborigines—could go back and inhabit those areas. There was a huge study undertaken to determine the extent of the plutonium contamination. That involved an aerial survey conducted by an American company, EG&G, and was flown by British helicopters over the whole of the range. That data provided incontrovertible proof that the areas that the Federal Police had been patrolling—based on an assurance from the British government that the area had been rendered safe—was, indeed, far from being safe. That really formed the basis for the clean-up which, as Dr Crouch has indicated, was completed in August of 2001.

CHAIR—Just for my benefit, and I am not sure about the other senators, I understand that being close to—within any meters—of plutonium is very hazardous to health. Could you just enlighten me as to how dangerous this particular compound is?

Dr Williams—It is quite the opposite of what you have just said. In fact, it is quite safe to walk over the site and to be in very close proximity to it. On the day we discovered the concentrations of plutonium, some of us actually held it in our hand. That was quite an interesting experience because the urban myth is that it is one of the most dangerous substances known to mankind. The problem with plutonium is not being in close proximity to it but getting it inside the human body. The risk is in breathing it in. As Dr Crouch indicated, on one occurrence we observed the Commonwealth Police filling in rabbit warrens. That was an incredibly dusty operation and the risk to them was unknown at that time. It was on that trip that we discovered the plutonium, but this event was prior to that discovery. We were there for two weeks and it was in the middle of that two-week period that we discovered the nature of the problem, but prior to that we actually observed the Commonwealth police filling in rabbit warrens. It was a very dusty operation and, of course, the risk is from breathing it in. That is where the health hazard with plutonium arises.

Mr Robotham—Perhaps I could amplify that response. The plutonium at Maralinga did not originate from the nuclear weapons tests as such; there was a series of minor trials to check on the safety of the nuclear devices, in which various things happened. For instance, one device was dropped out of an aeroplane and another was put into a massive petrol fire to see how it would behave under certain circumstances. In one test quite a large quantity of plutonium was set on fire. It produced a plume that I think the Australian Radiation Lab were able to trace for about 20 kilometres from the point of the fire. There is one other important point about plutonium: initially, it is very difficult to detect, especially in a field situation, but, as it slowly goes into radioactive decay, it decays into another radionuclide which is easier to monitor for. So you might not be able to see it very easily after about five years, unless you know specifically where it is and look for it, but after about 15 years, when some americium

has grown in, it is a little easier to detect. That is the backstory to the plutonium contamination.

CHAIR—So these police officers would have had to have been in circumstances where it was dusty, plutonium was in the near vicinity and there was a high probability of them inhaling or ingesting some particle of this plutonium. That is the issue, is it?

Mr Robotham—That is correct.

Senator MARK BISHOP—Dr Crouch, to finish off the chair's line of questioning: regarding this business about the Federal Police possibly only being eligible post 1965, are you saying that they were on the site and exposed in some form to the plutonium and the residue between 1963 and 1965 and, as a consequence of that exposure or later exposure, have instances of cancer emerging now? Is that the problem?

Dr Crouch—I do not think that is quite right. If they were patrolling through there at any stage, they would have inhaled some plutonium and would have had an increased rate of cancer. I think that is straightforward. But we are particularly talking about the period from 1965 onwards. If a Commonwealth policeman went there, for the first time, after 1965, he still would have been exposed to the plutonium but he would not be covered by this act.

Senator MARK BISHOP—So your complaint is about Commonwealth policeman who may have attended the site after 1965 and until—

Dr Crouch—At least until about 1998, when they were given instructions and warnings that that area was contaminated. I am not very sure what happened after that. They were exposed to radiation until at least that stage but they are excluded from the benefits of this legislation.

Senator MARK BISHOP—Is your complaint that Commonwealth police are completely excluded from the bill, or is it just those who were there after '65?

Dr Crouch—Everyone is included up till '65, I think, and everyone is excluded after '65.

Senator MARK BISHOP—Thank you.

Senator ALLISON—Dr Crouch, the study says that no link could be found between ionising radiation and cancer in the test participants. Is that the same as saying there is no link? If not, how do you draw the distinction between the two?

Dr Crouch—The link, if there was one, was too small to be observed.

Dr Williams—We are not saying there is no link. There is epidemiological evidence that there is a link, but in this particular study it was carried out in two parts. With the group you are talking to now, we did our best to find out what information there was about radiation exposures and put them into various categories. An entirely separate group—we did not know what they were doing—were looking at the epidemiology. It was that group, led by Dr Gun, who said that there was no apparent link in this exercise. Nobody is going to say that there is no link full-stop, and that is not what is being said.

Senator ALLISON—By way of clarification, the dosage was not calculated for each individual veteran, was it?

Dr Crouch—No. The doses were calculated on work groups, which might have been a ship's company, an army unit or other groups of that nature. There is simply not enough information to know where individual people were or how long they spent doing particular jobs in particular locations over a period of many years.

Senator ALLISON—That is what puzzled me about this morning's evidence, which was that the Privacy Act precluded information from being made available about individuals, or perhaps it was groups, identified with particular doses.

Dr Crouch—I think that would be a reference to getting individuals' records from cancer registries, death registries and the like. That certainly is a very serious problem for epidemiological studies generally.

Senator ELLISON—No, sorry, this was in relation to the doses.

Dr Crouch—No, I do not think privacy was a problem for us.

Senator ALLISON—So was it possible for you to at least estimate the dosage that would have been present for those aircrews who were flying through the mushroom clouds?

Dr Crouch—For those aircrew who were monitored, yes, we did have records of their doses. Not all of them were monitored, though.

Senator ALLISON—You did not have all of the doses for all of the crew?

Dr Crouch—Generally it was one, or it might have been more, per crew, but it varied. Certainly not every person who went looking for an atomic cloud had a monitor.

Senator ALLISON—We heard this morning that none of them had any protection either. They were flying in aircraft that were not pressurised and they were even eating rations that were up there.

Dr Crouch—Yes. There were various exercises—some were flying right through the middle of the mushroom cloud very soon after the explosion, which obviously resulted in high exposures. A lot of the others were tracking the cloud, sometimes for days afterwards, by which time the cloud had dispersed quite a good deal, so the doses there were considerably lower.

CHAIR—Dr Williams, did you have a comment to make?

Mr Robotham—I was going to expand again on Dr Crouch's answer in that we as a team were given a very specific protocol to work to. The protocol asked us to look at groups of potential exposures and put them into a range of categories—A to E, where E was the highest—and that is what we did. For us, the question of privacy never actually came up, only in the sense that we were never, ever told people's name specifically. Some of us came across them by chance. Obviously, when we looked at the various flight wings and squadrons involved, we knew the name of some of the air crew. The very worst exposure was actually a British crew who flew in a Canberra, which had been fastened up and sealed, right through the heart of the mushroom cloud within an hour of the explosion. But we were working to and through a particular set of guidelines which had been established by the consultative forum and then handed on to the scientific advisory committee.

Senator ALLISON—So if one of those aircrew was in one of the Lincolns—or one of the Australian planes that went through mushroom clouds—they would be able to identify their approximate or estimated dose rate by virtue of the role they played within aircrews? Would they know whether they were an A or an E?

Mr Robotham —I am not sure. I think they would because I remember in our report we actually referred to what the particular wings were. But there is one other point I want to make. That is, not only did we go on what the external radiation doses were, as Dr Crouch explained a little while ago—there is the problem of inhaling radioactive materials, which is a particular problem with plutonium because of its half-life and radiotoxicity when inhaled or ingested—but also with respect to all the participants, wherever we could we tried to look at what the internal doses were. This was a new development. We ploughed fresh ground, if that is the right way to put it, in getting assessments of total external doses—which we can get a good idea of from the film based results or radiation doses and the length of time spent in the field—and we also had to try to estimate what sorts of levels of dust would be generated by differing activities in the contaminated areas.

Senator ALLISON—For these aircrew—if I can just stick with the aircrew for a moment—you would have taken into account the rations that were consumed during their flights?

Dr Williams—No. We would have taken on board the question of whether they inhaled any radioactive material. I will leave that to Dr Crouch.

Dr Crouch—Ingestion in that sort of circumstance would be a very minor pathway. You breathe in an awful lot more than you swallow.

Senator ALLISON—I am sure, but we were told this morning that the British did not take rations on board, even though their aircraft were sealed. Anyway, I will move on. It is a small point, I am sure.

Dr Crouch—I am sure that would be a very minor pathway compared, firstly, with the external gamma, then the dust inhaled and then the ingestion.

Senator ALLISON—You say that the police being excluded was an unintended or, at least, an anomalous outcome, from your point of view. What about Indigenous people? Was the fact that they were not included anomalous as well?

Dr Crouch—Our instructions were that Indigenous people were not included in the study and we did not assess doses for them. But we are aware that Indigenous people were found in the test area, and I have no doubt that some went through and were not found. How long they stayed there, what sort of doses they got while they were there, would depend on exactly where they went and how long they spent there.

Senator ALLISON—Did you study the police?

Dr Crouch—Only up until 1965.

Senator ALLISON—Were you instructed not to study them beyond that?

Dr Crouch—We were only concerned with doses received up until that cut-off date.

Senator ALLISON—I am trying to understand why it is you would see police after nineteen—whenever it was—as being anomalous but Indigenous people not, just because you were instructed not to include them. Anyway, I will move on.

Dr Crouch—I do not think that is our decision.

Senator FERGUSON—I think one of the problems was that Indigenous people in that area were mostly nomadic, were they not?

Dr Crouch—Yes.

Senator ALLISON—They did have a local area.

Senator FERGUSON—I can tell you they were.

Senator ALLISON—The study concludes that it was low levels of radiation and therefore you could not establish a link between the higher rates of cancers and radiation. Is that correct?

Dr Crouch—There are two almost separate wings to our conclusion that radiation was not a significant factor in the excess cancer rate that was found—because clearly there was an excess cancer rate found, of approximately 20 per cent higher than expected. The first and most important is that when we split the participants into groups in high, medium and low exposures, for want of a better word, there was no difference in the cancer rate between the high and the low. And it did not matter how—

Senator ALLISON—Assuming your exposure doses are accurate, of course.

Dr Crouch—Of course; but we are very confident that there was a large group of participants who got extremely small doses who really had only peripheral contact with the actual test areas and the radiation areas of the tests. So we are quite confident that they would have got a very low dose. And if you take all the others—the ones who we think got doses of whatever magnitude—there is no increased difference in the cancer rate between those exposed and unexposed groups. And, as I say, it does not matter how you sort them out—into high, medium and low; how finely you sort them out or how broadly you sort them out—there is no difference between the cancer rate of the exposed and the unexposed. So that is very strong evidence, I believe, that radiation is not involved.

The second wing comes from the magnitude of the doses. If you apply the standard radiation risk factors, which are derived principally from the atomic bombs in Hiroshima and Nagasaki, and you apply those to the doses which we estimated, you get of the order of one or two excess cancers; that would be the result. No doubt some would argue firstly that the risk factors are wrong and in fact are too low, and that we got the doses wrong.

Senator ALLISON—Can I suggest there is another factor, too, which might or might not be the case? I am no epidemiologist, so I do not know these things, but is it not also a factor that mortality up to 1982 was not taken into account? Is it just possible that those that had very high exposure, according to your dosage records, might also have died a lot earlier and not been in the study?

Dr Crouch—Could I come back to that in just a moment, Senator? Just to conclude, even if we were underestimating doses by a factor of 10 and also the risk factors estimated from

Hiroshima and Nagasaki are out by a factor of 10, that still only gives you not enough cases to really explain the difference—the excess 20 per cent that we got. So those are the two very strong pieces of evidence, I believe, that radiation is not associated with the increased cancer that we got.

If I can come back now to that question you asked just then, I think it is a misunderstanding to say that the group's mortality was not studied before 1982. Mortality, including cancer mortality, was studied right back from when the people were first at the test. In fact there was a two-year lag period, but from two years after their exposure, up until 2001, all of the deaths were included. The 1982 date comes about because cancer registries were not established until about then. There have always been births, deaths and marriages registries, so deaths can always be sorted out. But cancer incidence cannot be studied much before about 1982.

Senator ALLISON—I understand. What is the safe level of radiation?

Dr Crouch—What do you mean by 'safe', Senator?

Senator ALLISON—You have suggested that the levels of radiation that veterans were exposed to were too low to have explained their cancers. What level is safe? That is my question: what level of exposure does not lead to cancer?

Mr Robotham —It is the same as driving a car: what is the safe level of speed at which to drive a car? It is zero miles per hour.

Senator ALLISON—So no level of radiation is safe in terms of cancer?

Dr Crouch—No. I disagree strongly with that statement. The ICRP position is that every radiation exposure, no matter how small, may carry some risk of adverse health outcomes. But that is not the same thing as 'safe'. You do not equate 'safe' with 'absolutely no risk whatsoever'. So what is safe to a firefighter entering a burning building is an entirely different matter from what is safe for you and me.

Senator ALLISON—I should not have said 'safe'. I meant in relation to cancer, but I will move on. The report talks about the fact that, for the most part, veterans were exposed to only 2.4 millisieverts—

Dr Crouch—The average was 2.8 millisieverts.

Senator ALLISON—and that that was only slightly above natural levels. Isn't it the case that that 2.8 millisieverts has to be added to the natural levels?

Dr Crouch—Yes.

Senator ALLISON—Why was it expressed in that way? It sounds as though it is no different from the natural levels.

Dr Crouch—Over the 50 years since the tests, the veterans on average would have got about two millisieverts a year, so they would have got about 100 millisieverts. If they went to the tests, they got 102.8 millisieverts.

Senator ALLISON—Except if they were there for longer periods than—

Dr Crouch—On average, the dose they got was 2.8.

Senator ALLISON—I am sorry, but I do not understand. Why isn't it doubled for the period they were there?

Dr Crouch—Certainly for the period that they were there it was, on average. Some got very significantly greater than that. But we are looking at the burden of radiation exposure, if you want to put it that way, of those people whose health status is being determined now. Of the total dose that they have received over their lifetime, the exposure at the tests was only a small fraction of that, on average.

Senator ALLISON—So you average out the exposure over a person's lifetime? Is that what you are saying?

Dr Crouch—No. You take the cumulative exposure over the person's lifetime.

Senator ALLISON—How extraordinary.

Senator FERGUSON—Dr Crouch, I am trying to understand what you are saying. If these people got 2.8 millisieverts while they were there and in fact they are getting two millisieverts over a 50-year period, it goes from 100 millisieverts cumulative to 102.8 cumulative; is that right?

Senator ALLISON—If they were there for one year.

Senator FERGUSON—If they were there for one year, but not many were there for one year.

Senator ALLISON—What an extraordinary way of looking at it.

Dr Crouch—I am sorry, but I am not too sure where the one year comes from.

Senator FERGUSON—They were there for a set period of time, weren't they, and it was not a long period?

Dr Crouch—Yes. Some were there over a number of tests over a number of years; others were in and out quite quickly. But, on average, they received 2.8 millisieverts.

Senator FERGUSON—That is the equivalent of one year.

Dr Crouch—That is a small dose compared with the background radiation dose that we are all exposed to.

Senator ALLISON—We have received a lot of criticisms from various people about the study, including the advisory council that withdrew towards the end of the process. We have heard criticisms of your study group in that you did not respond to people's queries, that there was a lack of openness. How do you respond to some of those criticisms? Presumably you have had a look at the submissions we have received.

Dr Crouch—We did respond to questions. We gave extensive written answers to a large number of questions, and in many cases the questions kept coming back in the same format. That is beside the point, I guess, but we did respond to questions.

Senator ALLISON—And what about the advisory council's comments that were ignored just before the report was published, the reasons for their withdrawal from the process?

Dr Crouch—Are you referring to a submission that included an email from me?

Senator ALLISON—No. Several of the submissions talked of this—and in fact this morning there was talk that the advice of the advisory committee was not taken on board by the study group.

Dr Crouch—There did appear to be some rush towards the end to get it finalised so it could be presented to parliament. I can understand that some of the veterans' group may have felt that their opinions may not have got full consideration, but—

Senator ALLISON—Why was Ms Munslow-Davies's request to put in a dissenting report rejected? Was that your decision or was that a decision of the minister?

Dr Crouch—Sorry, my decision to do what?

Senator ALLISON—We heard this morning from Ms Munslow-Davies that her request to be able to put in a dissenting report was rejected. My question to you was: was that decision yours or was that a decision of the minister?

Dr Crouch—As far as I am concerned, that is the first I have heard of that. I did read it in the submission.

Mr Robotham—I can answer that, Senator Allison. I was at the advisory committee meeting when the virtual final draft of the report was submitted for their consideration. At that meeting Ms Munslow-Davies said she disagreed with certain interpretations. The chairman of the advisory committee, Professor Bruce Armstrong, said it was her right to put in a dissenting report if she so wished. I should also add that one of the severest critics that we had was actually invited to attend at least two if not three meetings of the dosimetry panel. So, far from ignoring or not replying to submissions, as Dr Crouch said we did reply to submissions—we replied to them extensively until we found that the same particular issue was being repeated time and again, and we invited the person to take part in our deliberations.

Senator ALLISON—What was that issue? What was the sticking point?

Mr Robotham—I think he believed that we had not necessarily reviewed all the available data, and some of the data he felt we had misinterpreted. I was responsible for a lot of the research and the person involved and Ms Munslow-Davies—who has been named—turned over their extensive files and I went through them very thoroughly. But we are entitled to our interpretation as health physicists with experience in this area.

Dr Crouch—There was always confusion about what our report was. The report we were asked to do was a dose report and not another royal commission outlining all the failings of the British and whatever. We were concentrating on what the doses were that the people received. A number of veterans wanted a much more extensive group document, including details of the construction of the various weapons and what sorts of failures there had been in communication between various groups—that sort of thing. This was not our role.

Senator ALLISON—Was it your role to draw a conclusion, given, as I understand it, that you had four per cent? That was probably a fairly high estimation. You had records that gave you effectively four per cent of the total in terms of dose records.

Dr Crouch—Yes, it is always good to have more data. But remember, again, that 80 per cent of that group we believe got virtually no radiation exposure at all. So of the exposed group, we had quite a reasonable fraction.

Senator ALLISON—So we could have conducted the tests in the middle of Melbourne and nobody would have been affected—is that what you are saying?

Dr Crouch—I beg your pardon?

Senator ALLISON—We could have conducted the tests in the middle of Melbourne and people would not have been affected. Is that what you are suggesting?

Dr Crouch—Not at all.

Mr Robotham—Not at all.

Dr Crouch—Maralinga village is 40 kilometres from the test area. The people involved in those backs-to-the-blast pictures that you see are at distances typically of 10 to 15 kilometres from the bombs. The radiation dose they got from the flash of the weapons is flat zero from that sort of distance from that sort of weapon. It is not a popular decision—they see this enormous flash, they see this great mushroom rocketing over their heads, but they are 15 kilometres away.

Senator ALLISON—And quite safe, in your view?

Dr Crouch—Their radiation doses from that were negligible—very negligible.

Mr Robotham—By today's standards, the bombs exploded at Monte Bello and Maralinga were very small. By inverse square law calculations to the amount of radiation released, as Dr Crouch said, at 15 kilometres, it is practically nothing.

Dr Crouch—The exposure almost entirely came when they went back into the actual test areas—the areas which had been contaminated by fallout and similar—and not from the initial flash. Only a fraction of the—

Senator ALLISON—That was not my question. I did not ask you about the flash.

Senator FERGUSON—Where is Emu Fields?

Dr Crouch—It is about 200 kilometres north of Maralinga.

Senator FERGUSON—Was that used prior to Maralinga?

Dr Crouch—Yes.

Senator FERGUSON—I was just looking at some of the dates. That was only used for roughly a month or two and then Maralinga was used after that. How many Commonwealth police in total would be involved?

Dr Crouch—Over the whole period?

Senator FERGUSON—Yes. Do you have any idea?

Dr Crouch—My guess is in the hundreds.

Dr Williams—It is somewhere between 100 and 200. There are lists and they could be provided, but they obviously were not part of this study. I would like to come back to Senator Allison's point about the federal police from 1963 to 1965 and post 1965 and the Aboriginals. When you asked that question, the point that occurred to me was that the Commonwealth Police were included in the study because they were actually there during the period pre 1965. So we had a group of Commonwealth Police who were part of the study. Then we have a

group of Commonwealth Police who were never there prior to 1965 but who were doing exactly the same things as were being done pre 1965 from 1965 onwards. Remember, they were given free rein on the range. They were given no advice from Australia as to what the hazards were, because Australia did not know. So without having done a proper scientific assessment, my guesstimate is that any Aborigines who passed through that area at that time could have potentially received similar doses to the Commonwealth Police on the basis that through any dust-raising activities, such as filling in rabbit holes, hunting for bush tucker or whatever, and by simply living in the area—a very dusty area—you were going to be exposed to the risks of inhaling plutonium. So, while Aborigines were never part of the DVA study and therefore we never had a cohort of Aboriginals to assess doses for, yes, Senator Allison is absolutely right that any who were in the area were potentially at risk. Of course, the purpose of the Commonwealth Police was to keep everybody out of the area, and that included any Aborigines. But you could not say that no Aborigines ever crossed the area, because obviously, with two Commonwealth Police patrolling an area of that size, you would imagine that, inadvertently, Aboriginals would have been through the area and they would have received doses which were, in my estimate, of a similar order to those that we have estimated for the Commonwealth Police.

Senator FERGUSON—I wanted to go back to one point you made that I think I have interpreted right. We heard from former Group Captain Geschke this morning about flying through the mushroom clouds in his Lincoln compared with the British, who were flying the Canberra, which was sealed, pressurised et cetera. But did I hear you say that one of the crews with the highest levels of exposure was a British crew in a Canberra bomber? I think someone said that.

Mr Robotham—Yes, that is correct in terms of external dose, because they flew through the cloud when it was much more intense. It had not been dispersed as widely as the cloud had when the Lincoln flew through it. They were still exposed to a dosage of radiation, but the Canberra crew—I do not have the British figures in front of me—did get a high dose.

Senator FERGUSON—That is even though they had more protective clothing, were breathing oxygen from bottles and all that sort of thing.

Dr Williams—They would not have got an inhalation dose—that is correct—but they were flying through higher levels of external radiation from the stem of the cloud as it started to disperse than the Australian crews in the unpressurised aircraft for whom we made allowances for potential inhalation doses as well. Obviously, given my absence, you will not believe it but we did not care about the British. We looked specifically at the Australian participants—and I think the key word there is 'participant'. The Commonwealth Police were drafted there to do a job and, unfortunately, rightly or wrongly, Aboriginal groups did not come within our ambit.

Senator FERGUSON—I understand that. The new legislation talks about people involved as nuclear test participants and gives the whole range of people who were involved: members of the Defence Force, employees of the Commonwealth et cetera. So it is your view that the only people under this study who really are missing out are the Commonwealth Police.

Dr Crouch—Anyone who was there after 1965 was missing out but, as far as we are aware, the only people are Commonwealth Police. I do not know if we know of any other groups. I would presume that there were individuals who—

Dr Williams—Just the ARL scientists, Phil.

Dr Crouch—And South Australian Health Commission scientists too, Geoffrey.

Senator MARK BISHOP—I want to return to your evidence. Correct me if I have got the wrong handle on what you were saying. Were you saying that the exposure of various participants in a series of tests over their lifetime, if you aggregate the amount of radiation they have been exposed to, is absolutely minimal? Also, did you say that there is not a causal relationship between that level of exposure at or around the tests and later incidences of cancer? If the answer to the second question is yes, what reasons do you then give for the 20 per cent higher rate of cancers in the population that attended in or around the tests as compared to those who did not?

Dr Crouch—That is a good question. I think the answer is: 'don't know'. The epidemiology report puts forward some plausible contenders for at least part of that additional 20 per cent, but to what extent they fill in the gap and to what extent some other unknown factor is responsible, I do not know. I believe it is worth noting, though—and I am a physicist, not an epidemiologist—that the report on the Korean veterans finds rather similar results, of about, from memory, a 20 per cent increase in the cancer rate.

Senator MARK BISHOP— So the net of your evidence is that, from the population who attended the site of testing and the population who did not, there is a rate 20 per cent higher—both in this study and the Korean studies from some years ago—but no-one has been able to develop an accepted causal reason for that 20 per cent higher incidence of cancers. Is that correct?

Dr Crouch—I think that is fair, yes.

Senator ALLISON—Can I follow that up? How does this sit with the UK study which shows that both mortality and morbidity, I think, from cancers was twice as high in our study as the UK study?

Dr Crouch—I am sure that the British study does not show that. Are you talking about the submission by Ms Roff?

Senator ALLISON—Yes.

Dr Crouch—I do not know what to say. Ms Roff has made comments on our study and, as far as I am concerned, has made two blunders which would give her a very poor mark in epidemiology 101. The first one was that, in comparing our results to other studies, she took the cancer mortality—which is fatal cancers, obviously—and the cancer incidence, which is fatal cancers and non-fatal cancers, and added them together. By doing that, she scored fatal cancers twice. That was the first thing.

Senator ALLISON—In the submission, she says:

... 22.9% of the UK veterans had died by January 1, 1999 ... 50% of the Australian veterans were dead at December 31, 2001 ...

Now, it is a two-year difference, but she says quite clearly that it is a doubling of the UK rate. Do you disagree with those figures?

Dr Crouch—The second thing is the age difference and, as another example, she compared the—

Senator ALLISON—Are those figures accurate or not?

Dr Crouch—The question must be asked: what are the different ages of the two groups?

Senator ALLISON—No. You suggested that she had added two figures together and that that was inappropriate.

Dr Crouch—That is what she did in a letter which she sent to—

Senator ALLISON—Let us focus on those figures.

Dr Crouch—I do not know those figures.

Senator ALLISON—Is it the case that 50 per cent of Australian veterans were dead by 31 December 2001?

Dr Crouch—It may be, but what are the ages of the two groups? If I might come back to my second point, which illustrates it rather better I think, in comparing the atomic veterans with the Vietnam veterans she says that there is a very much higher cancer rate amongst the atomic veterans.

Senator ALLISON—Can we stick with the British and the Australian—

CHAIR—You have asked him a question. He is explaining. This is not simple yes and no stuff. You have to do evaluations.

Dr Crouch—Thank you. It is not simple; it is epidemiology and I am a physicist, but this is my understanding of it. In the comparison between the nuclear veterans and the Vietnam veterans, she claims that there is a very much higher cancer rate amongst the atomic veterans. But the atomic veterans are roughly 15 years older. They are now in their 70s, while the Vietnam veterans are in their 60s. So it is not in the slightest bit surprising that these different groups have different cancer rates.

Senator ALLISON—So you are saying that the Australian veterans were older than the British veterans?

Dr Crouch—I do not know.

Senator ALLISON—You made the assertion that there was a difference in the age categories. How can you say that?

Dr Crouch—Unless you correct for age, it is impossible to make those sorts of comparisons. She is using the raw, uncorrected results. I am just saying that you cannot compare them under those circumstances.

Senator ALLISON—It is a bit different from what you said earlier, in that there were differences in age groups between the Britons and the Australians. It is hard to imagine that to be the case—and why would you expect it to be the case?

CHAIR—Aren't you saying that the British tests corrected for age, and her figures do not?

Dr Crouch—I believe so. I believe those figures that you are quoting are raw numbers of dead.

Senator ALLISON—What other kind of number of deaths is there?

CHAIR—One corrected for age.

Senator ALLISON—Were the members of the Australian cohort unusually old? What was the average age of the Australian cohort?

Dr Crouch—There does not need to be very much of a difference in age.

Senator ALLISON—Can you answer my question? What was the average age of the Australian veterans?

Dr Crouch—From memory, 60 per cent of the Australian veterans were born before 1930. It is in the report, but I am afraid I cannot remember it off the top of my head.

Senator ALLISON—So they were about 22, given the first test was in 1952.

Dr Crouch—Sixty per cent were older than 22. The data regarding the age structure is in the report.

Senator ALLISON—I am just interested in why your reaction to those two figures is as it is.

Dr Crouch—My answer again is that you cannot compare raw death rates unless you correct for any potential differences in the age groups.

Senator ALLISON—And I am asking you whether you would expect there to be a big difference between the British and the Australian veterans?

Dr Crouch—I do not know.

Senator ALLISON—What about the elevated frequencies of some of the other cancers—for example, cancers of the oral cavity are four times higher in the Australian cohort compared to the UK one. Can you explain why that would be the case?

Dr Crouch—Are these corrected figures?

Senator ALLISON—For age?

Dr Crouch—Yes.

Senator ALLISON—I presume they are consistent. Four times the rate would seem to be unusual.

Dr Crouch—It does make a big difference; that is the point I am trying to make. The other thing I would say is that for some individual cancers where you have quite small numbers then there can be statistical reasons why you would expect one group to have three and the other group to have another number.

Senator ALLISON—It is one thing to adjust what age groups, and it is hard to see how there would be a big difference but I accept that there may be, but did you not consider that there may also be a difference in the kind of tasks that were assigned to British and Australian workers? It is suggested here that some of the Australians performed many of the dirtiest jobs on the site. There is plenty of evidence to show that there was very little by way of protection.

You have the example of the Canberra and the Lincoln aircraft; one was sealed and one was not. Some participants had protective gear on, some ate and some did not, and so on. There is consistent data that suggests that the Australian workers were less protected than the British. Would that be a fair assumption?

Dr Crouch—No, I do not believe so. When you say that the Australians were sent to do the dirtiest jobs, maybe that was so; but then the British scientists, I am sure, would have been the ones to get in and get their experiments because they did not want any clodhopping Australians interfering with their work.

Senator ALLISON—That is not borne out by the evidence.

Dr Crouch—These speculations go both ways.

Senator ALLISON—Is it not the case that the British scientists were the ones decked out in all the protective gear and that they stood alongside Australian workers who were in shorts, boots and short-sleeved shirts?

Mr Robotham—That is only anecdotal. We have seen no written evidence to that effect whatsoever; but we have seen evidence that there were health physics procedures, there were health physics caravans—one called the Queen Mary—and all the people who went into the contaminated areas were given, where necessary, a respirator, a self-reading dosimeter and film badges. Going back to the aircraft, the actual tasks undertaken by the Australians on the Lincoln were very different to those of the British in the Canberra. That in no way excuses the slapdash method adopted by the British in not giving any indication to the air crew of the Lincolns. It was not until the United States Air Force personnel pointed out that they had been flying through a cloud that the aircraft were monitored. So there were very different exposure circumstances. There is anecdotal evidence. We have to go on what we saw as written evidence. We have diagrams of where the decontamination areas were, what was set up on Trimouille Island for the Mosaic tests and so on. I know there are those who were there who say that they got no protection. I have read a lot of the evidence that was provided to the royal commission. There is equally considerable evidence to show that there were protection procedures in place.

Senator ALLISON—Where you able to take that into account when you calculated dose? What assumptions did you make about protective gear? Because it was available, did you assume that it was used?

Dr Williams—No.

Dr Crouch—We assume that it was not used. So we took the most conservative estimate that they were exposed to whatever dust was there.

Senator ALLISON—So you assumed that they were in shorts and short-sleeved shirts?

Dr Williams—Yes, we did.

Dr Crouch—Wearing shorts and short-sleeved shirts makes absolutely no difference to radiation dose. But, yes, we assumed that they had no respiratory protection in particular. That is a particular thing. A pair of shorts does not stop a gamma ray, or should I say that a pair of long trousers does not stop a gamma ray.

Senator TROOD—If we were to accept your proposition that the Commonwealth Police who subsequently came onto the site should be included, how should we define that group of people? Should it just be those who can demonstrate that they were on the site? I was impressed by the evidence offered earlier that one is not affected just from being there; it is inhaling or ingesting the plutonium that puts one at risk. So, if there were Commonwealth Police on the site who were unlikely to have inhaled or ingested, perhaps they would not be at risk. If you cannot easily determine which category people are in, what are we to do?

Dr Crouch—My understanding is that relatively small groups of two or three people at a time were there and they shared around the job of doing patrols in various areas. So any or all of them could, and probably did, make patrols through the contaminated areas. Geoff, do you have any other comments?

Dr Williams—That is correct. It is the actual patrolling—the driving—on dusty roads and potentially changing flat tyres and that sort of thing. For all the Commonwealth Police who were rostered onto patrol duty during the years from 1965 through until the police withdrawal, in my opinion it is a simple issue of natural justice that they too should be included along with all the other Maralinga veterans.

Senator TROOD—I see the point you are making about that. Are you putting it to us that, being on the site, they are all likely to have been at risk in some way or other by virtue of the activities they were undertaking?

Dr Crouch—Yes.

Dr Williams—We do not have the fine details of what patrols they carried out and when. The worst aspect of all of this is from 1965 until essentially the mid-eighties, when the nature of that hazard was rediscovered by Australia and steps were taken to advise the Commonwealth Police on what to do and not to. Once they took those procedures on board, I believe from the mid-eighties through until 2001, they were really at very little risk. But it was because of the cavalier attitude that we have already been discussing that the British had when they left the site to Australia, and it was in no way safe for the Commonwealth police who were doing what they were doing out there. For that period, they were potentially at risk. For that reason we believe the small group of them who can be identified, simply by going to the records of the Federal Police rosters for the period—and I believe there are individuals who have those records—should be included along with all the other veterans.

Senator FERGUSON—If we are talking about between 100 and 200 Commonwealth police, the likely number affected and requiring medical assistance could be as low as 30 or 40, couldn't it?

Dr Crouch—Yes. In the general population you would expect something in the order of 30 per cent to get cancer, so it would be 30 per cent of a couple of hundred—50 or thereabouts.

Senator FERGUSON—I am not reassured by those figures! But we are only talking about a small number of people, are we?

Dr Crouch—As far as we know.

Senator ALLISON—Table 12.2 was drawn to our attention this morning—in particular, the observed incidence of cancer, compared with observed cancer mortality. In at least three

instances—that is, types of cancer—mortality exceeded the observed incidence. Can you explain that?

Dr Crouch—Because the incidence was only counted after 1982 whereas mortality included the whole period, from their service at Maralinga. So, in that case, I would presume that there were cases of fatal cancer prior to 1982.

Mr Robotham—Can I suggest, Senator Allison, that to get the definitive answers to these questions of yours you need to speak to a epidemiologist not a physicist.

Senator ALLISON—It is out of your study. I am just drawing attention to what is in it, which has been drawn to our attention.

Mr Robotham—No. Ours is the dosimetry study not the epidemiology study.

Senator ALLISON—Okay.

Dr Crouch—I am sure that is the answer. People have criticised the study because it only did the incidence after 1982, for reasons I have explained. And that is the reason you got more in the mortality study in some cases than in the incidence study, particularly I would think for cancers that have a very high mortality, and there were very few non-fatal cancers.

Senator ALLISON—Wouldn't it have been useful, then, to have had two columns that showed the observed up until that point so that a direct comparison could be made, rather than lumping them together?

Dr Crouch—I think that data is there if you have a look for it. The fundamental thing, as a nonepidemiologist, is the good agreement overall between the mortality study and the incidence study. Both of them showed an increase of about 20 per cent.

CHAIR—Dr Crouch, Dr Williams and Mr Robotham, on behalf of all the committee members, thank you very much for your attendance and the evidence you have given us this afternoon.

Dr Crouch—Thank you.

Dr Williams—Thank you.

Mr Robotham—Thank you, Chair and Senators.

[5.13 pm]

ARMSTRONG, Professor Bruce Konrad, Chair, Scientific Advisory Committee

JOHNSON, Mr Mark David, National Manager, Compensation Policy, Department of Veterans' Affairs

SULLIVAN, Mr Mark Anthony, Secretary, Department of Veterans' Affairs

CHAIR—Welcome. You have before you a copy of the opening statement. Is there anything in that opening statement that you want to raise or that you have questions about?

Mr Sullivan—Chair, I would like to point out that both Mr Johnson and I are servants of the Department of Veterans' Affairs but Professor Armstrong is not. Professor Armstrong is the director of research at the Sydney Cancer Centre, and he is here today as the Chair of the Consultative Forum.

CHAIR—Let us move to that, then. Professor Armstrong?

Prof. Armstrong—I am the director of research at the Sydney Cancer Centre. I was the chair of the scientific advisory committee on the studies of the nuclear test participants.

CHAIR—The committee has before it the department's submission, which is No. 30, and the answers provided to written questions on notice. Do you wish to make any amendments to the submissions or the written answers?

Mr Sullivan—No, thank you.

CHAIR—I remind you that the Senate has resolved that an officer of a department of the Commonwealth or of a state shall not be asked their opinions of matters of policy and shall be given a reasonable opportunity to refer questions asked of the officer to superior officers or to a minister. This resolution prohibits only questions asking for opinions on matters of policy and does not preclude questions asking for explanations of policy or factual questions about when and how policies were adopted. I invite Mr Sullivan—or any of you—to make an opening statement, after which we will go to questions.

Mr Sullivan—I do not require an opening statement.

Senator ALLISON—Professor Armstrong, can we ask you epidemiological questions?

Prof. Armstrong—You may.

Senator ALLISON—Excellent! The question is about smoking. This is identified in the report as a possible explanation for the increased rates of cancer. What work was done to look at this question? Were rates of smoking higher than in other veterans groups, amongst other soldiers? Were they higher than the general population? Were they higher than the British participants? Do you have any information on that?

Prof. Armstrong—No information was collected, and certainly it was not made available to the scientific advisory committee, in respect of either smoking habits of people who may have been participants in the tests at the time or the comparable population figures.

Senator ALLISON—It has been suggested to us that mortality from causes such as cardiovascular disease and in fact other external causes was significantly lower than expected in this group. Do you agree with that statement?

Prof. Armstrong—That is correct, yes.

Senator ALLISON—So wouldn't that rule out smoking as being a factor?

Prof. Armstrong—No, it would not rule it out. Smoking does increase risk of cardiovascular disease, and the relative level of increase for someone who smokes moderately to heavily is about a twofold increase in risk. Of course, cardiovascular disease is multifactorial, so it involves a whole bunch of risk factors as well—so smoking is simply one of a cocktail of risk factors—whereas if you take something like lung cancer then the average smoker will have about a tenfold increase in the risk of lung cancer. So you may have factors in the distribution of risk factors in the population that may suppress the cardiovascular disease rates and yet you will still see an impact of smoking in respect of an elevation in lung cancer risk. So while I agree with you that it would have been far more consistent if one had seen elevated levels of cardiovascular disease as well as lung cancer, I do not think it rules out the possibility of the smoking explanation for the high rates of lung cancer, for example.

Senator ALLISON—In fact, if you look at cancer incidence, lung cancer is 1.28 times the average, and that is quite low compared with many other rates.

Prof. Armstrong—Certainly one can only suggest that some of those rates were elevated by smoking. It is not a sufficient explanation, in my view, for the pattern that is observed there. But it is a possible partial explanation.

Senator ALLISON—Do you have any evidence that it is actually a partial explanation? Something is surely there to give you—

Prof. Armstrong—Only the pattern that one observes here in the distributions of increased risk. So, for example, we see appreciably increased risk of oral cavity cancer and oesophageal cancer, both of which are influenced by smoking, whereas we see rather smaller increases in the risk of stomach cancer and colorectal cancer, which are if at all affected by smoking then affected only to a very small degree. Similarly, we see a high risk of nasal cavity cancer, which would be influenced by smoking, at 1.5. We see an elevated risk of pancreas cancer somewhere there—that is only 1.16, so that is not completely consistent. Bladder cancer, which is also influenced by smoking, is only 0.97. So there is certainly not a consistent pattern, but one does see significant increases in risk of some of the smoking related cancers.

Senator ALLISON—In fact melanoma and leukaemia and indeed thyroid are all higher than oesophagus, lung and so on.

Prof. Armstrong—And some of those have alternative possible explanations. For example, melanoma has the possibility of a greater amount of outdoor exposure. In the case of leukaemia and thyroid, these obviously point in the direction of ionising radiation as being one of the better established causal factors for both of those cancers.

Senator ALLISON—Why was smoking identified at all as being a particular factor?

Prof. Armstrong—That was a view put by the investigators. We as a scientific advisory committee did not think that they were wrong; it is simply suggested as a possible explanation for some of the observed increases in risk.

Senator ALLISON—One of the submissions suggests that perhaps the study should have looked at a synergistic carcinogenic effect of smoking and radiation exposure and the fact that that was not examined is a shortfall, if you like, in the studies.

Prof. Armstrong—No, I would not say it was a shortfall. As you know, there were attempts made to estimate individuals' exposure to radiation and then individual exposure was related to risk of cancer. There was, in fact, essentially no consistent evidence that as exposure to ionising radiation increased there was a visible increase in risk of cancer. Under those circumstances you are not going to see evidence of synergy if you attempt to, if you like, look at the joint exposures of the two. So, while it could have been done, it would not have produced any evidence of that synergy.

Senator ALLISON—But we heard from the previous witness that there were assumptions made about lower doses, medium doses and higher doses and an expectation that you would see a gradation of cancer incidence and mortality that would directly link to those exposures. Do you agree with that?

Prof. Armstrong—It would be a normal expectation to see a graded increase in risk with a graded increase in exposure. That is not uniformly the case and, indeed, with radiation at very high levels you may in fact see a reduction in risk because of a cell-killing effect from the ionising radiation. But we are talking of rather low exposures here, so this would not be at the level where you would expect to see things falling off again.

Senator ALLISON—As an epidemiologist, what is your view about having data which is so limited to be only available for four per cent of veterans in external photon irradiation?

Prof. Armstrong—I am not aware of the data you are referring to. Can you point me to the specific material in the report?

Senator ALLISON—A submission we have says:

A companion dosimetry study was methodologically more problematic and uncertain, with exposure data, limited to external photon irradiation, available for only 4% of veterans.

I think that was confirmed by the previous witness.

Prof. Armstrong—I think what is being referred to there is the information based on the radiation exposure badges. Yes, there were very few measurements available. That is not the only evidence on which these exposure estimates were made, as you would be aware from the report. A very substantial attempt was made in the dosimetry study to estimate individual exposures based on all the information that we have available about the nature of the tests performed, the distribution of radiation that you would expect both in time and place as a result of that, the nature of that radiation and then the location of groups of men. This is not down to the individual; it is based on the group—where they were and what they were doing at different times in relation to the time at which the detonation occurred. On that basis, my view is that one has a reasonable reconstruction of what the doses probably were. But you are quite right: in terms of actual measurements there are very few.

Senator ALLISON—The same submission identifies as a deficiency in the study the cancer window of 1982 to 2001 and says it:

> ... would have missed cancers occurring up to 30 years after the first nuclear test in Australia (1952). This is particularly relevant for leukaemia, which has a much shorter latency (approximately 5-15 years) compared with solid tumours which tend to have a longer latency ... Excess leukaemia rates could have been missed by the observation period selected (necessitated by incomplete cancer data during earlier times).

Would you comment on that?

Prof. Armstrong—That is entirely correct. But let me say that there was no way that cancer incidence could have been estimated for the prior period because there are no Australian data on cancer incidence prior to 1982. There are some selected data. One might, for example, have used New South Wales data going back to 1972. But that is the earliest data that we have on cancer incidence, and the decision was made to use the Australian data going back to 1982. There are of course the mortality data and, in the days before we had cancer registries, most epidemiology was done using mortality data. You can learn an enormous amount from that, particularly in the case of leukaemia. The leukaemias that people might have had from 1952 to 1972 would have been largely fatal and therefore would have appeared in the death statistics. So, if there was a major increase in leukaemia, it should have been clearly visible in the death statistics.

Senator ALLISON—I know you have to stop somewhere with these studies and a study that goes for seven years cannot be up to date, but would you expect that cancers and deaths occurring in the last five years—that is, after the cut-off period of 2001—would have continued the trend that was seen in the previous period?

Prof. Armstrong—Yes, I think so.

Senator ALLISON—Another point made by the submission is that the study excludes about 6,000 individuals, more than one-third of the estimated 1,700 individuals directly exposed, including Aboriginal people and some pastoralists. Do you see that as a problem with the study? What is your view about whether Indigenous people, and pastoralists, for that matter, should have been included?

Prof. Armstrong—Without going back and looking through all the information that we previously had access to, I cannot see how it is possible that 6,000 people could have been excluded. But it is true that pastoralists and Aboriginal people were not included, and that is principally because we had absolutely no way of getting anything like a census of who they were, where they were and what they were doing. Also, the number would have been so small that it would not have been possible to estimate any sense of risk posed to these individuals as a result of exposure. So, while one could have made the effort to do it, it would not have been usefully informative, in my view.

Senator ALLISON—Mr Sullivan may be able to answer this question, but I understood that some sort of census—that is probably the wrong word—a population count of Indigenous people and pastoralists in the area would have been done before the tests in order to establish where they were likely to be so that the police could monitor and move people out of the area and so on.

Prof. Armstrong—If I could just amplify what I said. By 'census', I actually meant an identified list. For us to have done something, or for the investigators to have done something, they would have had to have had the identity of all these individuals so that they could then ascertain whether they had died, then get a copy of their death certificate and find out whether they appeared in a cancer registry. A simple census of how many people and where they were would not have been sufficient. It would have had to have been an identified list.

Mr Sullivan—When the construction of the normal roll took place there were investigations as to whether we could include Indigenous people and pastoralists and it was concluded that we could not. As the professor said, in respect of the Indigenous population, it was just proved to be impossible to determine who was in the area, who was travelling through the area at any one time and to collect any meaningful data about them.

Senator ALLISON—So a small number; do you have any idea how small?

Mr Sullivan—No.

Senator ALLISON—I asked the previous witness about comparisons between this study and the UK study, which showed—

Mr Sullivan—I think we have to be careful. They are calling it the UK study. I think you are talking about the Sue Rabbitt Roff studies, are you?

Senator ALLISON—It is certainly in Sue Rabbitt Roff's submission.

Mr Sullivan—Sue Rabbitt Roff is an administrative staff member of the Centre for Medical Education, Dundee University. She is a project officer, not an academic, and has no scientific qualifications. She produced two reports—one on mortality in September 1997 and one on morbidity in April 1998—of veterans of the UK nuclear weapons tests. In response to her reports, an interdepartmental committee was established with Defence to consider possible government responses to it. Currently, Dr C Sharp of the UK National Radiological Protection Board forwarded to the department in October 1997 a critique of the mortality report. He concluded that the report 'has a range of serious scientific shortcomings, is disingenuous in purporting to be serious science and, finally, the report suffers from the use of unacceptable scientific methodologies and would not be accepted for publication in any reputable science journal'.

The interdepartmental committee decided to engage Professor John Kaldor of the University of New South Wales to comprehensively review the two reports written by Ms Roff. In his report dated 19 April 1999 he states:

The Rabbitt Roff studies as reported are so flawed that they tempt the accusation of scientific fraud. In the end, however, it appears that they are simply ill-informed and carried out by investigators with very limited experience in determining the relationship between exposure and disease.

So we take little or no notice and do not seriously even enter into comparisons between a very good science based study of Australian veterans with what is, by a nonscientist, a very flawed and critiqued report by a very committed person in the UK.

Senator ALLISON—To follow that up by reading from her submission, since you have done a character assassination on her—

Mr Sullivan—No, I do not do character assassinations. The government of this country took these reports very seriously at the time. They got a lot of publicity, they were on national television and, independently, we received reports from Britain, so the interdepartmental report commissioned a very eminent person in the field to review them. All I have done is read, quote by quote, what they did. So please do not say I have done any character assassination on Ms Rabbitt Roff.

Senator ALLISON—Well, your intention was certainly to discredit her.

Mr Sullivan—No. In asking me to compare a UK study to an Australian study, it looked like a government study to a government study. It is not. It is a private individual's—who is not a scientist—study versus what is a very comprehensive study of Australian veterans which has been peer reviewed—

Senator ALLISON—Chair, is it possible for us to ask for a copy of the document that Mr Sullivan is quoting from?

CHAIR—Which document is that? The quotation of the report?

Mr Sullivan—I am happy to provide you with the basis of the quotations that I have given.

Senator ALLISON—For the record, what Ms Roff says about herself is:

I make these methodological comments not as an epidemiologist but as a social scientist who has had peer-reviewed comments on radio-epidemiological research published in *The Lancet, British Medical Journal, and Pediatrics* as well as my paper demonstrating the under-ascertainment of cases in the UK nuclear veterans studies in *Occupational and Environmental Medicine*. My papers on the UK nuclear weapons tests were published in *Medicine, Conflict and Survival*—this journal is data-based in MEDLINE which only lists peer-reviewed journals.

I guess there are two sides of the story, Mr Sullivan.

CHAIR—Do you want to respond to that, Mr Sullivan?

Mr Sullivan—No, I stand by the fact that the department has not considered her reviews as serious science.

Senator ALLISON—Can I ask you about some straightforward data? She indicates:

... 22.9% of the UK veterans had died by January 1, 1999 (Table 4.2), 50% of the Australian veterans were dead at December 31, 2001 ...

I know they are two different dates, but there is a very big difference.

Mr Sullivan—I cannot comment on the basis of her reports; I cannot comment on the difference. I am not going to be drawn into providing credence to a report which I said we do not regard as credible. So I cannot comment on whether her data is even correct, let alone her observation of the Australian data.

CHAIR—Can you just tell us a little more about why you say her report is not credible? Is it about her qualification? Is it about the way she did the work? Is it about the way she has annotated the basis supporting her work?

Mr Sullivan—It is. As I say, I do not believe in non-scientific bureaucrats deciding that a report is credible or not.

Senator ALLISON—Mr Sullivan, calling her a non-scientific bureaucrat—

Mr Sullivan—No, I am talking about myself. I said it was not for me as a nonscientist bureaucrat to determine the credibility of a scientific report. We had the credibility—a credible scientific source in the UK expressed concerns as to the credibility of these reports. So as a government we decided to enlist the assistance of a very credible scientist in Australia to review the reports.

CHAIR—Whose name was?

Mr Sullivan—Professor John Kaldor of the University of New South Wales. It was on the basis of his report, which I have said I will be happy to provide material of—

CHAIR—I think we would appreciate that.

Mr Sullivan—that we did not conclude that we had to respond as a government—this is in 1999—to her views. I think Dr Armstrong may want to say something.

Prof. Armstrong—I think I can cast a little light on this question, which you also asked Dr Crouch. It is quite impossible that those figures—the 22 per cent and the 50 per cent—are compatible. The reason I say that is this: if we compare the mortality, which we have in the report, between the Australian veterans and a comparably aged Australian general population of men, we have a 10 per cent higher rate of death in the veterans than in the comparable Australian population, whereas what you have quoted from Ms Roff is more than a doubling in mortality. This can only be explained in the kind of way that Dr Crouch offered as a possible explanation—that is, that we are dealing with two populations of a different age distribution, because the general mortality rate in Australia is not double that in the United Kingdom.

CHAIR—Thank goodness for that.

Senator ALLISON—That leads us into the question of the healthy soldier effect that you would have heard—I do not think you here this morning. Many submissions have said that it is not reasonable to compare the veterans who were at Maralinga with the general population, because soldiers, even construction workers probably, who have poorer health would be ruled out of being there in the first instance. We also had an explanation this morning about the difficulty of finding a cohort or control group that was as big as this. Did it not occur to you as being wise to at least add a percentage or some kind of rider on the results to indicate that it was likely that there was a healthy soldier effect here and that this may have made a difference and make some assumptions about what that might have been in percentage terms? Some I think said this morning around 10 per cent would not be unreasonable. Do you agree with that?

Prof. Armstrong—It is very hard to make such corrections with any validity and so to do so would be to apply a factor which is essentially arbitrary. Therefore, no, I would not personally do that.

Senator ALLISON—But with four per cent of dosage records, we are talking here about a lot of arbitrary assumptions being made, including the one about smoking, including—

Prof. Armstrong—What I am saying is that people are offering suggestions and I am neither justifying nor attacking those suggestions. I am simply saying that I do not think that it

would have been appropriate to have applied an arbitrary correction with respect to a so-called healthy soldier effect. I will give you a couple of reasons for that. It would be my view that the most likely reason why we see those substantially lower mortality rates from cardiovascular disease is the so-called healthy soldier effect. So it is clearly evident in the data. We know that it is inclined to have less effect on cancer rates than it is on things like cardiovascular disease.

Senator ALLISON—How do we know that?

Prof. Armstrong—From research on the subject of what we usually refer to as the healthy worker effect in the broader context—this particular effect. So, while I think the cardiovascular disease results do suggest that there is a healthy soldier effect operating, it would not be proper to, say, take the suppression in risk that we see in cardiovascular disease and say, 'Therefore the cancer risk must be similarly suppressed and multiplied up by such a factor.' It is not at all so evident in cancer as it is in cardiovascular disease.

Senator ALLISON—Are there any other signals?

Mr Sullivan—There is a very good chapter in the review explaining the healthy worker effect, various approaches that have been taken in other studies to the healthy worker effect and the conclusions of this review that they would not make an adjustment or seek a separate cohort to do comparisons with. That is in appendix 4 of the report. It is from about page 159 to about page 170. It was not as if the healthy worker effect was ignored. It was determined that the best way to treat it was not to make arbitrary adjustments for it. That goes to a lot of what Professor Armstrong has just talked about in respect of whether it is an impact on mortality versus incidence.

Senator ALLISON—But the decision was made not to include it.

Mr Sullivan—Yes, but I am just referring you to that chapter of the report which goes into some detail as to the decision taken and the impact of it.

Senator ALLISON—I wish to raise something which is in a number of submissions. It is the description of the radiation exposure as being 2.8 millisieverts. That is expressed as only slightly higher than the 'background exposure received by every Australian every year'—which is I think the quote from the report. We had an explanation from Dr Crouch earlier. Do you agree that sounds like a fairly misleading statement? It is as if the participants were receiving only slightly more than the background natural radiation rather than more than twice as much even if it is given over a particular period.

Mr Sullivan—I do not know whether it is a slightly misleading statement or not. It is not something for me to say. I could get someone to comment upon it if you wanted us to do so.

Prof. Armstrong—I am happy to comment, to say that this was certainly discussed by both the scientific advisory committee and the consultative forum. My personal view is that it is quite clear from that statement that you have got, for someone who was involved in the tests, whatever they get from the normal background plus another amount which is equivalent to another increment, the size of the normal background; that is, they would have, as a result of that and during the time in question, accumulated on average about double what the average person would get.

Senator ALLISON—But it is not expressed that way.

Prof. Armstrong—It is not expressed that way but I think it is clear.

Mr Sullivan—The other comparator is this. The statement of principles which were developed by the Repatriation Medical Authority in respect of radiogenic cancers has levels which they regard as necessary for a linkage to be caused. When you compare them with these levels, you can see it is another way of seeing the significance. For instance, for breast, bladder and colon cancer it is 50 millisieverts. For leukaemia it is 10. For non-melanotic skin cancer it is 50, for stomach it is 50 and for thyroid it is 50. That is the level of radiation required under the statement of principles developed by the Repatriation Medical Authority for the determination of radiation based cancers.

Senator ALLISON—Yet we had some evidence from Major Batchelor, I think it might have been, with some extracts from the AWRE report which showed that there were veterans who were exposed to 500 to 600 millisieverts an hour. There were other examples of higher than that. So there were veterans who were exposed to very high levels of radiation.

Mr Sullivan—You are telling me about Major Batchelor's evidence. I would need to look at that and compare it with—

Senator ALLISON—It is an extract from a report which was done some years ago, by the look of the typing.

Mr Sullivan—You have had the benefit of being here for the evidence today. I would need to review what he said, and if you wanted me to give you an answer I would then give you an answer. I cannot confirm, from a third study and from the evidence of another participant, here right now whether or not I concur with that statement.

Senator ALLISON—Mr Sullivan, maybe the secretariat can give you the tables and extracts from this document that I have here, which you may or may not recognise. Then you might be able to comment on them.

Mr Sullivan—Yes.

Senator ALLISON—There have been a number of suggestions that there should be ongoing epidemiological longitudinal studies of veterans. Do you see that as likely? Is this the end of studies of veterans, or is there further the work to be done?

Mr Sullivan—If this bill is enacted and we have in place a health scheme for participants which covers all cancer treatments and screenings, we will develop through the use of our own health data statistics an understanding of the level of cancer treatment et cetera being delivered to participants. That would probably be the mechanism whereby we would detect whether anything was occurring which would seem to run outside the scope of what would be suggested out of this study. So, in terms of containing this group of participants in a DVA cohort, we will be able to monitor just what levels of cancer we are seeing. So, in one respect, this outcome provides somewhat of a longitudinal study into the future of the health outcomes of participants, particularly as they relate to cancers.

Senator ALLISON—It is just that the UK is apparently conducting a third epidemiological study of their veterans. One of the reasons, it says in a submission, is that

previous studies have been shown to have under-ascertained multiple myeloma by about 30 per cent.

Mr Sullivan—I was not aware the British were going to do a third study.

Senator ALLISON—It is in one of the submissions.

Mr Sullivan—I spoke to them last week and they were not, but maybe it happened this week.

Senator ALLISON—Apparently, New Zealand has just made healthcare entitlements available not just to veterans but also to their families. Can you explain to the committee why it was that—

Mr Sullivan—I cannot explain New Zealand policy to the committee.

Senator ALLISON—Let me finish. Can you explain why it was that it was decided to confine entitlements to the veterans themselves and not include their families, their widows and their offspring?

Mr Sullivan—This goes beyond veterans, of course. Unlike most of the work of Veterans' Affairs, this goes beyond veterans to participants, including civilian participants. So it goes beyond veterans to the group who are actually participating. This was the study that would determine a particular issue of great concern to those who participated, and that was whether or not radiation based cancers were on the increase among this group. The study has, I think, addressed that largely and it has responded. But I do not think there is a basis in any of the work we have done so far to suggest an intergenerational concern—let alone a concern for a partner—for anyone involved with a participant.

Senator HURLEY—The situation here is that the participants in the nuclear tests only received the white card whereas if they had received full support under VEA coverage their widows and families would be included.

Mr Sullivan—Not necessarily. That is a very common misconception. If, for instance, participants were given coverage under the VEA, all it would give them is an easier onus of proof in respect of compensation. But that compensation would still be determined under the statements of principles and it would involve being able to show causal relationships at the levels of radiation, which I have sought before. A non-radiation-based cancer in a nuclear test participant would have no certainty whatever. In fact, it would be unlikely to be covered by the VEA. The VEA, if it were to cover illness to the point where a person had a gold card, would not cover the partner of the veteran, nor would it necessarily cover the dependent children of the veteran. You cannot jump from having VEA coverage to saying that an application under the VEA, with its onus of proof, would result in gold card coverage—and many nuclear test participants are covered by the VEA because of their service elsewhere. That would not at all address what you have just suggested. It would not give coverage to the spouse or the children. Gold card coverage for a surviving spouse depends on the cause of death, the time of death and whether it was a war related or service related death.

Senator HURLEY—Given that, how was the conclusion reached that the participants would get the white card only?

Mr Sullivan—The conclusion was reached on the basis of the report, which showed a lack of conclusive evidence that there was an increase in cancers related to radiation. However, in a number of health studies in the Veterans Affairs area there has been a reporting of an increased level of cancers generally in the cohort. In addressing that finding, and without determining the cause of that increase in cancers, the government decided, on a nonliability in a compensation sense basis, to accept the treatment and screening of all cancers amongst the group.

CHAIR—Who qualified in the specific criteria.

Mr Sullivan—And that is quite common, in that many veterans—Vietnam veterans in particular, for instance—have health coverage for cancers regardless of whether there is a link to compensation. So, if you are a Vietnam veteran and you have cancer, you shall be treated by DVA and you will be granted a white card to treat it. So there is a precedent in terms of understanding the elevated levels amongst service persons. This one came out quite similarly to other health studies, which showed a higher level of cancer amongst Navy personnel than other service personnel and higher levels of cancer amongst service persons than the general population. The government's consistent approach has been to accept health coverage of those cancers.

Senator HURLEY—So the conclusion by the government of the day was based on precedents, not necessarily expert advice.

Mr Sullivan—The expert advice was that there was a increased level of cancers not linked to radiation. There were hypotheses regarding possible causes, including the sun, tobacco and asbestos. However, it was not determined that they were the causes. I can confirm that, in most compensation cases involving cancers in veterans of this era, the hypothesis put by the veterans is that it is smoking related and caused, and we accept that it is smoking related and caused. I think that leads to a view that smoking has had an influence in this. Certainly the sun has, and certainly asbestos is seen as an explanation of some of the increased levels of lung related cancers in Navy personnel. It was based on the scientific evidence that there was an increased level of cancers generally in this cohort. In answer to the question, 'Was it related to radiation?', no, but a government response said, 'We will accept responsibility for the health care of these individuals in relation to their cancers.'

Senator ALLISON—Ann Munslow-Davies said to the committee that she had wanted to put a dissenting report in. Can you confirm whether this was not possible, whether it was too late or whether the rush in getting the report out precluded a dissenting report, or did you say, 'No, this is not possible'?

Mr Sullivan—I think in the transmittal from the scientific advisory committee to the minister, it was made clear that a member of the committee declined signing the report.

Senator ALLISON—So you do not know anything about a request for her to be able to put a dissenting report in?

Mr Sullivan—I am not aware of a request to provide a dissenting report. She certainly made it clear to me and everyone else that she would not sign the report. She certainly said that more time may help.

Senator ALLISON—So why was more time not given?

Mr Sullivan—The time was up. We wanted to get the report and we asked the scientific advisory committee to conclude their report.

Senator ALLISON—What you mean by 'the time was up'? Was some deadline set?

Mr Sullivan—The deadline had passed. The reporting time frames agreed to had passed. We wanted the report signed by those who wanted to sign. One person declined to sign. We made it very clear that that person had declined to sign. It was her decision not to sign the report.

Senator ALLISON—The secrecy with which she was bound she complained about in her submission and in her verbal evidence. Why was there a prohibition on her being able to confer with those that she represented when it came to decisions about what was going to be in or out of the report?

Mr Sullivan—I will give you a general answer and I will follow up with specifics if necessary. Clearly this is a report to government and for government, and when members are approached to be participants in the scientific advisory committee they do agree to the fact that they will not disclose the findings of the report.

Senator ALLISON—But that is not what she complained about.

Mr Sullivan—Again, you are asking me to comment on something. I was not here. I will have a look at what she complained about.

Senator ALLISON—It is in the submission.

Mr Sullivan—If you can assure me that that is what she said today, I will look at her submission—otherwise I will wait for the *Hansard* and look at the *Hansard*. I will provide you the general advice that we provide to members of the scientific advisory committee as to their responsibilities in respect of nondisclosure. I do not think we bind people to more than nondisclosure. I do not know whether Professor Armstrong can add anything.

Prof. Armstrong—I have to be frank and say that I cannot remember what we committed ourselves to. In terms of the capacity for the report to be discussed by the people who Anne Munslow-Davies represented, which was the consultative forum, the final draft report was taken to the consultative forum and discussed by the consultative forum. The issues that, as I understand it, Anne was concerned about in the late stages were substantially related to issues of presentation in the report—particularly, for example, in the section that is called 'main findings'. There was a fairly extensive set of paragraphs towards the end of that in which it said that it could have been smoking that lead to this risk, asbestos that led to that risk and sun exposure to that other risk. She was very strongly of the view that this was not appropriate for a 'main findings' section because it was interpretation and not findings. Let me say that they were some people who would have been willing to go along with that position, but in the event that was not what was finally decided. Certainly in terms of the operations of the scientific advisory committee Anne had full capacity to contribute and there was extensive discussion of the issues in the broader consultative forum.

Senator ALLISON—I may be wrong but I got the impression, both from the submission and from her presentation, that this was an ongoing problem.

Prof. Armstrong—She did not, as I recall, discuss that with me, but it may well have been the way that she felt.

Senator ALLISON—If you could look at that and advise us.

Prof. Armstrong—It may well be how she felt.

Senator ALLISON—The other matter raised was the secrecy with respect to documents—the 2,990 or so documents that are in the archives but are still subject to the secrets act and might have enlightened the process somewhat, had they been made available. What is the reason for those documents, 50 years on and more, still being secret?

Mr Sullivan—I assume it is a Defence matter. I will again follow it through and set out whether there are documents which remain classified or not. If there are, the explanation will be quite simple. I will give it to you.

Senator ALLISON—Alright. There was a comment made earlier this morning that all of the hospital records, right around the country, related to the tests had disappeared, it seems, and there were at least a couple cited where there was no record of disposal of them as is required. Do you know anything about that?

Mr Sullivan—I will examine this morning's *Hansard* again and get back to you on allegations of health records being missing.

Senator TROOD—I think you were here and you heard the evidence of the previous witnesses in relation to the Commonwealth Police who returned to the site after the tests. I am just wondering whether you have a response to the proposition to put to us that they should be covered by the legislation.

Mr Sullivan—The very strict answer, of course, is that they are outside of the terms of the study and therefore outside the terms of the government's response to the study, which covered the period of the two years after the conclusion of the tests. So they are, if you like, a new issue. I think I heard—and I think it is right—that police officers who were involved at the time of the studies and through to the two years are incorporated in the study and are on the nominal roll, but I think the proposition being put regarding them and their activities through to reasonably recent times is a new issue, which I think is something we would take out of this hearing and put to our minister as to whether or not there should be a response to that. I do not know whether there are others who also feel they were outside of the time frame of the study but also have a case. But I think that, in terms of this, they are clearly outside of scope.

Senator TROOD—You are right, Mr Sullivan; they are indeed outside the scope of the study and it does indeed appear to open a new issue, so I would be grateful if you would take that back to the department, since we have received a submission specifically on that question.

Mr Sullivan—I understand that. We can do that.

Senator TROOD—Thank you very much.

CHAIR—Just before we move off that, the other point that should be made is that the very learned gentlemen who were advocating the new issue, if we want to call it that, nominated

somewhere between 100 and 200 participants and said that they did not think there would be any other people who would fit into a similar sort of situation or category and then said that 20 per cent on that was a relatively workable number. That is all very well, but that is what we are dealing with. It is not as if we are going to expand the beneficial group by any great number, given what is already there.

Mr Sullivan—I also make the point that, being Commonwealth Police officers, they are all covered by the Safety, Rehabilitation and Compensation Act and, for any illness which can be linked for their duties as police officers in patrolling that ground after the testing, they have avenues into a compensation system which for a long time was the equivalent of the military compensation system.

Senator ALLISON—Do they have any records of their exposure?

CHAIR—This is not a compensation question; this is simply about the benefit of the medical services. But also collection of the data is much easier, I would have thought, under this one umbrella, under this piece of legislation, so that when we put this legislation through, if there is an obvious class of such a small dimension on the outside of it, it seems logical that we would try to include them if we could because it would complete the picture. But that is just something for you to consider, I think.

Senator ALLISON—My question was about the evidence they would have to support such a claim. Did they wear dosimeters as they walked around?

Mr Sullivan—Until I saw the submission I was not aware of this concern about this group. I do not know what protective measures—

Mr Johnson—If you are talking about compensation under the Safety, Rehabilitation and Compensation Act, ionising radiation is, I suppose, an occupational disease under section 7(2) of that act and if you have a disease that can be attributed to ionising radiation and there is evidence that you were exposed to ionising radiation—

Senator ALLISON—But that is my point—the evidence to being exposed to it.

Mr Johnson—Well, if they were in the location, in the area, then I would have thought—

Senator ALLISON—That is enough evidence?

Mr Johnson—I would have thought that under the SRCA it probably would be enough evidence—if they had a diagnosed condition that could be linked to ionising radiation.

Senator ALLISON—In response to a question of mine on notice you gave a list of those compensation payments. I think there are only nine individuals altogether—

Mr Johnson—Under the SRCA, yes.

Senator ALLISON—Can you advise the committee of the total number of claims that were made? It is nine out of how many? Is nine a very small proportion of those who applied for compensation?

Mr Johnson—That is very difficult to determine from the database on two grounds. One is that it has only been computerised for a bit over a decade and a lot of these claims would have predated that.

Senator ALLISON—How many claims were made in the last decade?

Mr Johnson—I do not know that off the top of my head.

Senator ALLISON—Perhaps you could advise the committee about that?

Mr Johnson—Okay. The other point I would make is that quite often claims are put in and the contention is ionising radiation, but the condition gets up. Skin cancer is a good example, where people have put it in and the contention has been ionising radiation but in fact it has been their general service and exposure to the sun. There are other types of conditions, too. Whereas the nine are for where the contention of ionising radiation was actually the reason for the claim being successful.

Senator ALLISON—I do not think any of those on the list are from—there is one carcinoma, but the death is said to be due to radiation: 'death due to radiation', 'myeloid', 'dysplasia syndrome', 'multiple myeloma', 'myeloma dysplasia', 'cancer', 'death due to leukaemia' and so on. They all seem to be fairly much related to radiation.

Mr Johnson—What I am saying is that the nine is where the contention of ionising radiation was accepted as opposed to—

Senator ALLISON—I understand.

Mr Johnson—the claim being accepted but for something other than ionising radiation factors.

Senator ALLISON—Doesn't that suggest that in order to be successful in your claim you need to be able to demonstrate that not only do you have a cancer which is likely to have been caused by radioactivity but you have to substantiate your exposure?

Mr Johnson—That you were exposed, yes.

Senator ALLISON—I come back to the question about policemen walking around the site. Would they have that kind of evidence?

Mr Johnson—If they have evidence of where they were walking around and patrolling, then I think there is probably a reasonable chance, I would have thought. But, without seeing a claim, it is very difficult.

Mr Sullivan—We will certainly take the issue to the minister.

CHAIR—Can I come back to Senator Trood, who originally raised this very good point. I think he wants to continue with it.

Senator TROOD—I am conscious of Mr Sullivan's undertaking to the committee. As far as I am concerned, if he were to read the evidence of the preceding witnesses and then take that into consideration in the department, I would be happy with that. I do have another issue I want to raise and that is a question about the formation of the nominal roll, about which there has been some criticism. I am not sure whether you saw that one of the submissions—the submission by the Australian Nuclear Veterans Association—was quite critical of the formation of the roll. Perhaps you can explain to us how the roll was formed.

Mr Sullivan—It was derived from the nominal roll of Australian participants in the British atomic tests in Australia. The nominal roll was compiled by the Department of Veterans'

Affairs, using records of the previous study, conducted by Donovan in 1983, into atomic tests, Department of Defence records, personnel records of private firms that worked on the test site, the report of the royal commission and records of the issue of the Maralinga security cards. People on the site were generally issued a security card, and we accessed those records. In addition, we asked for and received from nuclear veterans groups documents from which people were added if it was found that they were eligible, and we checked their eligibility by using service records or other official documentation.

When we initiated the nominal roll, public notices were put in the newspapers, asking people whether they wished to opt out of having their name published and/or inviting people who might want to be on the roll. When we published the nominal roll, a public notice invited test participants to check that they had not been excluded, and at that time we received many calls from people making sure they were on the roll. At that time we did get a small number of individuals who advised us that their names had been omitted. We checked those against service records and other documents, and in some cases their presence was confirmed and their names were added. That is how we did it. It was not perfect but it was probably as good as we could do.

Senator TROOD—You obviously undertook extensive inquiries to identify people who may have been involved. I understand the necessity of having a base of people to work from for the purposes of the two studies we are talking about. What do you say to the assertion made by the Australian Nuclear Veterans Association that there were people included on the nominal roll who had left the test site prior to the actual tests taking place—they were largely civilians, I gather—and that the inclusion of those people in the epidemiological study, for example, would distort the findings of the study because there was no possible way in which they could have been exposed? I am referring to submission No. 3, from the Australian Nuclear Veterans Association, and its penultimate paragraph.

Mr Sullivan—Dr Armstrong may be able to shed some light on that.

Prof. Armstrong—Let me say, firstly, that in a sense an absolute requirement for inclusion in the study was that there was a possibility that the person could have been exposed. So, if there was no evidence that they were on the site either during or after at least one detonation, they would not have been included in the study. I cannot speak to the accuracy of the information that determined that because I was not that intimately involved with it, but that was a very clear understanding of the method: a person would not be included in the study unless they had been present at the time of a detonation or afterwards, during a period in which they could have been exposed to radiation.

Senator HURLEY—Can I just clarify that: are the names on the nominal roll public information?

Mr Sullivan—The nominal roll was published. There is a difference between the nominal roll and the study roll, and this explains what Dr Armstrong was saying—that is, to move someone from the nominal roll to the study roll we did a further check that they had not left the site and that they were involved at the time of one of the tests. This did exclude some people, and it excluded some others who, at that checking level, probably should not have

been on the roll in the first place. They may not even have been in Maralinga. But the nominal roll is a public document.

Mr Johnson—So people could opt of their name being on the public nominal roll. It was from the nominal roll that the study roll was refined.

Senator TROOD—I understand that point, but Dr Armstrong is putting the proposition to us that there was a further process of filtering by which every effort was made to determine those people who were likely to have been affected even though they may have been on the nominal roll.

Mr Sullivan—Present when the actual tests were undertaken, not absent when the tests were undertaken.

Senator TROOD—So the Nuclear Veterans Association may perhaps have misunderstood the methodology or there may be a misunderstanding of the nature of the foundation for this assertion? I know that you have been asked to speculate on the motivations of a large number of people this afternoon and I am trying to avoid your being in that situation yet again.

Mr Sullivan—I concur that there could be a misunderstanding of the difference between the nominal roll and the study roll.

Senator TROOD—I assume you would deny the proposition in the Nuclear Veterans Association submission that:

Most of the civilians whose names appear on the nominal roll had left the test site before any tests were carried out and were put on the nominal roll—

and this is the critical part of the submission—

purely to water down any tests or studies that would follow.

Is that right?

Mr Sullivan—My answer is that, in movement from the nominal roll to the study roll, further checks were conducted to ensure that you were present at at least one of the tests.

Senator HURLEY—Is the study roll public information as well?

Mr Sullivan—No.

Senator HURLEY—Why is that so?

Mr Johnson—I think there are protocols for these sorts of studies to maintain the confidentiality of the people that were involved. I can check that, but my recollection is that the study roll was not public.

Mr Sullivan—It is entirely possible, I would think, that there are ethical considerations in relation to research studies.

Senator HURLEY—But people were asked if they wanted their names kept off the nominal roll.

Mr Johnson—That is true, but the nominal roll did not serve any purpose other than being a starting base for the study roll at that time.

Senator HURLEY—But what problem is there with just the names on the study roll?

Mr Sullivan—We will get you an answer but it is an ethical question. We did not tell people that we were going to publish that they had been subjected to a health test.

Senator TROOD—Under whose auspices was the study carried out?

Mr Sullivan—The Department of Veterans' Affairs.

Senator TROOD—Do you have a set of ethical protocols for the conduct of research?

Mr Sullivan—We have an ethics committee and we have an ethical protocol around all of our health studies.

Senator TROOD—Is it conceivable that there are certain injunctions in that protocol about the publication of the names of people involved in the study?

Mr Sullivan—It is conceivable but I would prefer to answer in concrete terms. I will get back to you.

Senator HURLEY—Given the projected costs for the decision to give participants access to the white card, what would have been the net additional cost to provide ex-ADF members with coverage under the VEA?

Mr Sullivan—That is very difficult to calculate. I do not know.

Senator HURLEY—Were some costings done?

Mr Sullivan—That is asking me to go into the policy advice that went to government, but I do not believe I cost alternative policy proposals now.

Senator HURLEY—My understanding is that the Clarke review was provided with costing information at the time of its report.

Mr Sullivan—I will have a look at what we provided to the Clarke committee and take your question on notice.

Senator HURLEY—Thank you. I understand that the committee was provided with evidence today from expert witnesses who were part of the consultative forum which questions the assumptions, finding and methodology of the health study and that the minister has used that as justification for not extending VEA coverage. We have also heard that these concerns were raised with the department or the minister and have not been answered. Can you explain why this is the case? Can you also explain what the processes are for complaints to be received and analysed?

Mr Sullivan—I think this group knows the complaints process very well. They use it heavily. They can write to anyone they wish to, and they tend to write to everyone. One person did not sign off the scientific advisory committee meeting process—no-one else. They engaged in the study, they were thanked and the government provided its response. If they now want to start questioning the process, their complaints can come to me. I think that is probably the best first avenue of complaint.

Senator HURLEY—I think part of that complaint was that questions were not being answered—questions that had gone directly to the minister.

Mr Sullivan—I do not know why a contained health study looking at producing a report for government would be complaining that the minister is not answering their questions. They

are providing a report to ministers, to government. It is not an interaction between a committee and a government minister; it is a process within this group. So I do not understand why they said they could not do their work without an answer from the minister—and which minister? There have been several ministers over the period of this study.

Senator HURLEY—Post the report, will the department address those concerns?

Mr Sullivan—If there are legitimate concerns, of course we will address them. But several of the protagonists in this have been complaining to everyone and we have been, without failure, responding to them. Major Alan Batchelor has written 54 letters to the minister and officials at DVA since 1998, and all have been responded to. The email which I think he suggested was not responded to had not been registered with the department. So, now that it has been brought to our attention, we will be responding to that, so it will be 55 out of 55. We respond to each one of them. Now, if you do not get the answer you are after, that does not mean it is not a response to a complaint. And, for the next 55—and there will be another 55—we will continue to treat them seriously and respond to them appropriately.

CHAIR—We have to go to this quorum in the Senate, and I do not think we have time for any more questions. We are already 25 minutes over. Senators, if you have any further questions, put them on notice. Thank you, Mr Sullivan, and your two officers here today, Professor Armstrong and Mr Johnson.

Committee adjourned at 6.23 pm