

**RESUMED**

**[11.59 am]**

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COMMISSIONER: We return to the subject of nuclear regulatory regimes and I welcome Mr John Carlson.

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MR JACOBI: John Carlson AM was the Director-General of the Australian Safeguards and Non-Proliferation Office, ASNO, from 1989 until 2010. From 2001 until 2006 he was the chair of the IAEA standing advisory group on safeguards implementation. He was a member of the advisory board of the International Commission on Nuclear Non-proliferation and Disarmament, and from 2009 until 2012 was the founding chair of the Asia-Pacific Safeguards Network. Mr Carlson is currently a fellow of the Institution of Nuclear Materials Management and a recipient of the institute's distinguished services award.

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He is also currently counsel to the Washington based Nuclear Threat Initiative. In 2012 John Carlson was appointed as a member of the order of Australia. Mr Carlson has contributed to books and published a number of articles and peer review journals in popular media. His publications relate to topics such as nuclear non-proliferation, disarmament, verification and security issues.

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Mr Carlson is a member of the Expert Advisory Committee to the South Australian Nuclear Fuel Cycle Royal Commission.

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COMMISSIONER: Mr Carlson, thanks very much for joining us. Were South Australia to consider activities within the nuclear fuel cycle beyond which we currently participate, what's your view of the current regulatory division between the Commonwealth and the states, how might that work and

we'll get to - so that we understand what the current regulations are, and we'll get to what might be in the future a bit more.

5 MR CARLSON: I think the current problem is not much so much the division between Commonwealth and state but rather an absence of legislation in major areas. The Commonwealth has a key role as being responsible for international obligations, obligations under treaties, and there are a number of treaties that apply in the nuclear field which require certain things to be done at the national level. Some of these obligations are reflected in Commonwealth legislation  
10 and some are not.

The primary piece of legislation that has nationwide application is the Safeguards Act, the Nuclear Non-Proliferation Safeguards Act 1987, which  
15 regulates safeguards and nuclear security issues regardless of who does those and that gives effect to the nuclear non-proliferation treaty, Australia's safeguards agreement with the International Atomic Energy Agency, our various bilateral agreements with nuclear suppliers, the Convention of Physical Protection of Nuclear Material and a number of other agreements.

20 On the nuclear safety side, however, we have a Commonwealth regulator, Commonwealth level regulator, ARPANSA, but the ARPANS Act basically only applies to Commonwealth activities, so at the moment there is no Commonwealth level legislation that would apply nuclear safety requirements to nuclear activities that were being undertaken by non-Commonwealth  
25 entities. But Australia is party to the Convention on Nuclear Safety which requires that there should be a national regulator and that nuclear activities should not be carried out in Australia without a proper licensing process in which nuclear safety matters can be probably considered and provided for.

30 So there is a gap at the moment in terms of national legislation on nuclear safety and it's not a gap that could be filled by state legislation because it involves international obligations that are expected to be met at the national level. So I think if South Australia proposed to support nuclear activities, a first step would be to put in place a national regulatory framework that covered  
35 all the necessary aspects that need to be covered in nuclear safety is the obvious area that's not covered at the moment.

The other issue that would have to be addressed is that the ARPANS Act actually has a prohibition in it which says that ARPANSA cannot licence a  
40 range of nuclear activities. Parallel to this, the other piece of legislation that does apply at the Commonwealth level is the Environment Protection and Biodiversity Conservation Act which requires an environmental assessment of nuclear projects, but at the same time says nuclear projects are prohibited, cannot be approved under the legislation.  
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5 So I think in order to have any kind of a nuclear project in South Australia, it would be necessary both to extend the nuclear safety legislation coverage, but at the same time obviously to tackle these prohibitions, and the reason for the prohibitions was not so much to put in place an outright prohibition, the thinking at the time was to give the Commonwealth parliament the opportunity to consider any nuclear proposals.

10 So rather than having a situation where the CEO of ARPANSA could simply sign off on a nuclear proposal, the sentiment at the time when the legislation was written was that to have nuclear projects proceed was a matter of great interest to the Commonwealth parliament, and the Commonwealth parliament should have the opportunity to consider whether or not such activities should proceed and the conditions under which they could proceed. So it's really the prohibition I'd see as being more a kind of marker in the legislation rather than  
15 any prohibition that was intended to last forever.

20 So I think the key thing that any nuclear proponent would be looking for would be stability and certainty, that any nuclear project, whatever kind, would be of very long duration and that any proponent would need to be satisfied that they had full bipartisan support that wasn't likely to be changed during the duration of a project. So this means that there has to be both legislation in place and support from both major sides of politics, and I guess having to both extend the ARPANS Act and remove the prohibitions would be a way of demonstrating, in fact, that there is bipartisan support at the Commonwealth level and  
25 presumably also at the state level, since it would be the state that would be sponsoring a proposal.

30 MR JACOBI: Can I just come back and perhaps we could pick up on a few aspects of that. If you could come back to the current state of the law at a Commonwealth level, I am just interested to understand, particularly with respect to the ARPANS Act, which I understand you had some involvement in the drafting of.

35 MR CARLSON: No, I must correct you there. I was responsible for the review of the old Atomic Energy Act which was replaced by the ANSTO Act and the Safeguards Act and then the ARPANS Act came afterwards.

40 MR JACOBI: I am interested to understand the backdrop between the idea that that particular act only permits for approvals with respect to Commonwealth facilities, in fact, only regulates Commonwealth facilities and their contractors. I am just interested to understand the extent to which, or the thinking behind the idea that there's no provision for private sector approvals under that legislation.

45 MR CARLSON: At the time when the ARPANS legislation was developed

we had a government which did not support private sector nuclear activities, so I think that point was emphasised by not actually catering for it by legislation. In terms of having effective control over whether projects could proceed or not, the Safeguards Act would have given that, because any nuclear activity would  
5 require a permit under the Safeguards Act and obviously the government policy at that time would have been that such a permit would not have been forthcoming. So it was basically an exclusion of private sector activities.

MR JACOBI: Also with respect to the classes of current regulators, we're well  
10 aware of ASNO and ARPANSA, but with respect to EPBC that introduces a new form of regulator, as I understand it, in some sort of negative fashion.

MR CARLSON: Yes. I think something - an issue that really needs to be  
15 looked at when the legal regime is developed further is the respective roles of the nuclear regulator, ARPANSA, versus the environment department, because I think it's anomalous that there could be two classes of approval, two types of approval for precisely the same thing. Under the EPBC Act there's a need for the environmental impact of a nuclear proposal to be assessed, but that's  
20 precisely the same thing that the nuclear regulator, ARPANSA, would be considering, and to have a duplicative process and the potential of different outcomes is clearly undesirable and there have been problems in other countries where the environment department and the nuclear regulator have  
varied in their assessments and effectively have been able to block projects and  
my own view is that there should really be only one entity that is responsible  
25 for approving a nuclear project and looking at environmental and public health aspects.

MR JACOBI: I was hoping you might actually unpack what the overlap might  
30 be in the sense that you have said that ARPANSA would essentially be looking at the same thing. Why is it that ARPANSA would need to look at that issue of what I understand is the focus of the EPBC scheme which is making an assessment of environmental impact?

MR CARLSON: Because the review of a project on nuclear safety grounds is  
35 intended to take into account potential consequences to the human and natural environment. It's exactly the same issue.

MR JACOBI: Perhaps we can come back. You referred to - when the  
40 Commissioner started thinking about this idea of the extent to which in a federation there is a division of responsibilities between the state and the Commonwealth, and I am just interested in understanding perhaps a bit of background in terms of the effect of internationalism in this area and the international arrangements that have been entered into in how you think about regulation of nuclear activities as it would apply to Australia.  
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MR CARLSON: There's very strong international interest, and it's been brought about for two broad reasons, one is on the non-proliferation side where I think the very first issue on the agenda of the united nations when it was founded in 46 was the dangers of proliferation of nuclear weapons. So right  
5 from that period it was recognised that there was a strong international interest in what individual countries were doing from the potential proliferation risk perspective.

Then in more recent times following major accidents, Chernobyl and most  
10 recently Fukushima, there's been a reinforced view that the international community has a very strong interest in what individual countries are doing, again because of the potential international impact, and the international impact can be both whether contamination spreads to another country but also the political impact, which is what we saw from Fukushima, you know, that an  
15 accident in Japan leads to the closure of the industry in Germany, for instance.

So very strong international interest in what individual countries are doing, and that's been reflected in a series of treaties where there's an international expectation that the country will be answerable to the international community  
20 for maintaining the appropriate standards and so on. That really means there's a role for the Commonwealth government which can't be readily delegated. Clearly on the other hand it would be a state that would be the host of a project, whatever the project is, and therefore clearly the state government has a very close interest as well and there needs to be proper coordination between  
25 Commonwealth and state. You wouldn't a situation where the Commonwealth authorises a project to go ahead which a state doesn't want to have in its territory for instance.

MR JACOBI: Before we get to that, I am just interested, we have spoken of a  
30 number of broad international arrangements, but I am interested the extent to which bilateralism also forms a part of the nuclear arrangements, that is, the extent, which we've heard a little bit about this, particularly with respect to safeguards and entering into particular arrangements, and the extent to which there might be, not full-scale international agreements, but other multilateral  
35 agreements between countries and the extent to which that forms a part of the arrangements for, for example, the sharing of nuclear technology.

MR CARLSON: Yes. The primary treaty base on the non-proliferation side is multilateral through the NPT, Nuclear Non-proliferation Treaty and the  
40 IAEA safeguard system, but complementing that, nuclear suppliers may have conditions of their own that they wish to attach to supply, so a country that's supplying technology like the United States, for instance, supplying a reactor, may have its own requirements that it will apply through a bilateral agreement with the recipient. Australia has a series of bilateral agreements for covering  
45 supply of uranium, for instance, and in those agreements we specify that the

uranium must not be used for any military purpose, for instance, must always be under IAEA safeguards and Australian consent is required before certain actions can be carried out, enrichment or reprocessing or re-transfer to third countries.

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So there's a whole series of bilateral agreements applying those kinds of conditions. They're coordinated to some extent through what's known as the Nuclear Suppliers Group which sets out common conditions that nuclear suppliers will apply as a way of strengthening the NPT and IAEA safeguards.

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MR JACOBI: I think you have picked up the idea that there would be an expectation by the international community that a national government would have control of the matters that were regulated and be answerable for them.

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Do you have other reasons for a view that it might be appropriate that there be national level controls as perhaps opposed to state level controls with respect to nuclear related issues?

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MR CARLSON: I think the obvious reasons there would be as a way of promoting public confidence across Australian states that an activity being carried out in state X is meeting international standards, and also to ensure uniformity if in the future we have nuclear activities in a number of states, that there are common standards that are being met.

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MR JACOBI: You picked up an aspect of bipartisanship I think in the discussion earlier. Is that an important part of the discussion with respect to these issues as well?

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MR CARLSON: Absolutely essential. I think while ever you have got a situation of the major parties being split, one party being prepared to support nuclear activities and one party being opposed, that no company is going to be prepared to make the kind of investments that are required.

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COMMISSIONER: In thinking about that moving forward noting that these activities go well beyond an electoral cycle, have you seen examples of how other nations around the world manage this issue of continuity of political intent for nuclear?

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MR CARLSON: I think I have seen some negative examples. I mentioned before the German industry being phased out following the Fukushima accident, for instance. I think in some countries there's a general commitment to nuclear energy is an important part of the mix.

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COMMISSIONER: Does that normally occur when the country has developed a national energy policy?

MR CARLSON: Yes. I think that's right. I think also in some cases the nuclear industries are very long established, you know, their program sort of started in the 50s and have a very long period of continuity and therefore are more firmly established in political minds as being part of the national energy scene. I think it's maybe some of the more recent programs that are more vulnerable to the winds of political change.

I think it's fair to say that following Fukushima in particular, there's been a crisis of confidence in some countries and that there's a sentiment that maybe nuclear energy isn't essential, that wind and solar might be able to meet national needs, and hence, you've got a number of European countries that have reassessed their commitment to nuclear energy, and this has caused some considerable problem for investors, for companies that have invested in nuclear facilities and subsequently find themselves being phased out, even though there's still some decades of service left in particular facilities.

COMMISSIONER: Okay. Thanks.

MR JACOBI: I just want to come to deal with what are some key objectives or principles to be addressed. If there was to be an expansion and there was need for regulation of safeguards in the event of an expansion, what, in your view, are the key objectives that would need to be addressed given the current existing regime that we have? What are the key objectives or principles that account would need to be taken of going forward in the event of an expansion with respect to safeguards?

MR CARLSON: Well, in safeguards, I think, the situation is well established, and what we have today in broad terms is more than adequate for the future. We have legislation that applies nationally. I'm not sure of the exact number of licensees or permittees at the moment, but it would be well over 100, and I think the only real issue for the future just in the narrow safeguards area would be maybe a need to expand staff and to acquire particular expertise to suit whatever kind of activities were planned, and to give consideration to the introduction of regulations. At the moment, because the individual nuclear projects are fairly specific, project-specific requirements are spelt out in permit conditions.

MR JACOBI: And licences.

MR CARLSON: Yes, and that's been a very convenient way to operate. But as more projects come along, I think we get to a point where it would be better, for transparency reasons as much as anything else, to move those kind of conditions into a regulation form that would be readily available for anyone who is interested in a project to see exactly what the requirements were and so on, but I don't think there's any other major issue on the safeguards side.

MR JACOBI: I guess to ask the same question with respect to safety, do you have a view as to the key objectives or principles that need to be addressed for the regulation of safety if there was to be an expansion into these activities?

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MR CARLSON: Yes. On the safety side, as I mentioned before, the obvious thing is to make the legislation applicable nationwide, and obviously remove the prohibition, and there would certainly be a need to recruit specialist staff or to train specialist staff. I don't think anyone should have the impression that we're starting with a totally blank slate here. There is actually good expertise in ARPANSA or expertise in ANSTO that could be drawn on as a source of recruitment, but there would clearly be a need to expand the ARPANSA resource fairly substantially and to have a large group of people able to carry out the evaluation of major projects.

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MR JACOBI: We had a discussion with Dr John Loy with respect to the issue of independence. I'm not interested in commenting on any particular regulator, but I'm interested in, if we were to move forward with an expanded range of activities, your view about the significance of independence and how independence might be provided for within any new regime.

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MR CARLSON: Yes. Regulatory independence is an essential part of nuclear regulation. Various treaties specific that the regulator must be independent. There's not a lot of definition of what that means. Primarily, what it means is that there needs to be a separation between promotional authorities, promotional departments or ministers, a separation between those and the regulator. To give an illustration, the office that I ended up in charge of, the Safeguards Office, was initially part of the old Atomic Energy Commission, and when the Atomic Energy Commission was transitioned into ANSTO and the Safeguards Office was given legal authority for regulating ANSTO activities, it was obvious that it couldn't stay in ANSTO.

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So for a period, the office was set up in the Energy Department, but even that was seen to be a potential conflict of interest and eventually the office was moved into Foreign Affairs. But I'm not sure that its independence in Foreign Affairs is ideal either, because I think with the recent India agreement we've seen the impact of bilateral relationship considerations cutting across best safeguards practice, what I regard as a rather unfortunate outcome. So I think there are two issues here: one is which portfolio a regulator should be located in; and I think the other problem is that with our current legislation, in both the Safeguards Act and the ARPANSA Act there's a power of ministerial direction, and I think, in principle, that is inappropriate because the regulator needs to be independent of ministerial direction.

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At least in the ARPANSA legislation, any direction has to be in writing and



presented in parliament, so there's transparency, but nonetheless, it undercuts independence. In the case of safeguards, the direction can be totally unseen and that's obviously unsatisfactory. So what I think we need to look at for the future is a regulator that would have similar status to the auditor general, would  
5 be responsible to the parliament, would not be subject to ministerial direction, but would have some guarantee through the parliament of having the resources necessary to be able to fulfil the role competently, and would be answerable only to the parliament and not to a minister or a department.

10 MR JACOBI: An aspect of independence that we were discussing with Dr Loy earlier was the notion of having international advisory groups involved in overseeing an organisation which was itself independent. I'm interested in your view as to the value of that sort of international oversight and its ability to comment with respect to any organisation's capacity to develop, I guess, a  
15 credible reputation internationally.

MR CARLSON: I think there's a place for that kind of advisory group. A number of countries have thought about it. Some have actually gone down that path. I think it's essential that it not be described as oversight though. It  
20 should not be a group that has authority to interfere with decisions. Rather, it would be providing expert advice at kind of arm's length, and I think what that brings is the availability of experience from outside, like an ongoing peer review process, if you like, and I think it's actually highly desirable, so long as there's no confusion about where the decision-making authority lies.

25 MR JACOBI: So you draw a distinction between oversight in the sense of – I had in mind the concept of oversight in the sense of being able to comment - - -

MR CARLSON: Yes.

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MR JACOBI: - - - as opposed to being able to direct.

MR CARLSON: That's right. Yes, I thought the word oversight is ambiguous and might imply direction and I certainly think being able to comment is  
35 extremely important.

MR JACOBI: And another aspect of what was discussed was the ability of the regulatory organisation to itself make regulations which is to the Australian lawyer an unusual proposition - - -

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MR CARLSON: Yes.

MR JACOBI: - - - and I am just interested to the extent to which given that an organisation has ultimate responsibility for safety, the extent to which that  
45 could or – whether that ought or indeed even could be accommodated within

the Australian context of being able to make a regulation that ultimately dictates the principle of safety without the potential for interference in the exercise of its functions in that respect.

5 MR CARLSON: I think myself, it's perfectly appropriate for the organisation to be able to – to prepare its own regulations. So I assume – I have not really through this through of how it's work in the Australian context but I assume that the regulations would still be subject to disallowance in the normal course as – and that in a way gives parliamentary oversight. I think it would also –  
10 because this would obviously put considerable power in the hands of the regulator, I think it would be desirable to have some sort of public commentary process before regulations are finalised. But I think in principle it's appropriate to have the regulations in the charge of the regulator because after all, that is where the expertise resides but – that if you had the possibility of the  
15 regulations being rewritten by someone else then you could have a situation where something comes in which is actually problematic from a safety point of view for instance.

MR JACOBI: One of the other aspects that came up in our discussion with  
20 Dr Loy was a view as to the extent to which security and safeguards – sorry, I apologise for that. Safety and security necessarily interacted - - -

MR CARLSON: Mm.

25 MR JACOBI: - - - and his view was that, as I understand it, that they were issues that really needed to repose in the same body. And I am just interested in whether you have a view with respect to whether security and safety have the interaction and necessary interaction in terms of the way that they would operate on someone that was in fact seeking to develop a proposal and then  
30 your view as to whether or not they really needed – that they would in fact need to repose in such a body?

MR CARLSON: Yes, this is a – was a long running subject of discussion between Dr Loy and myself when we were both regulators and he had quite a  
35 strong view on this which was not my view. Safety and security are totally different disciplines. They are very closely related obviously but they are not the same. I think it's absolutely essential to have very, very close collaboration between safety experts and security experts but I don't think that necessarily has to be achieved through having them combined in the one organisation. To  
40 give an example of things that could be problematic, in the event of an accident at a facility, a normal safety regulator's approach would be that any locking systems on doors should be deactivated to give staff the opportunity to evacuate quickly. But from a security point of view, that could be highly problematic because it then creates the vulnerability where a terrorist for  
45 instance could trigger the alarm through simulating an accident, or even

causing an accident, knowing that everything then unlocks and they can then gain entry to any part of a facility that they might be seeking to access.

5 So it is clearly undesirable to have safety requirements and security requirements being promulgated in isolation, one from the other because they could easily be counterproductive. But close collaboration is perfectly possible and in fact between John Loy's office and mine, we developed an MOU and the two organisations, I think, work very effectively together.

10 MR JACOBI: And can I just pick up on some observations both made this morning by Donald Hoffman with respect to the issue of developing a regulatory culture - - -

MR CARLSON: Mm.

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MR JACOBI: - - - which promotes the purpose of the organisation.

MR CARLSON: Mm.

20 MR JACOBI: You had responsibility for an organisation, I am just interested in understanding – in picking up the idea about going beyond the regulations and the rules themselves, how you in fact promote a culture which actually delivers those objectives?

25 MR CARLSON: Yes, that is absolutely essential to develop the right culture in any organisation, particularly in this area. How to go about it? It's partly a process of education and training and partly I think emphasises the importance of peer review or peer interaction of sharing best practices with like organisations. But what is absolutely essential is to get staff thinking beyond  
30 the narrow requirements of their particular job to have them having a more critical attitude, a sense of continual improvement if you like. But also understanding the bigger context that they operate in, so that they can see whether the regulatory approach is really delivering the kind of outcomes that all stakeholders want to see, or is perhaps more rigorous than it needs to be,  
35 more narrow than it needs to be and so on. So I think that is absolutely essential to encourage sort of broader thinking by regulating staff.

MR JACOBI: Can I come back to the theme that I developed with respect to safeguards and safety and really ask the same question again but with respect  
40 to environment, which is - - -

MR CARLSON: Mm.

45 MR JACOBI: What are the key objectives or principles that would need to be addressed for the future regulation of environmental impacts? Bearing in mind

the current state of the law as it is at the moment, if there was to be a future expansion of activities?

5 MR CARLSON: At the moment the Environment Act stipulates that nuclear activity is a matter of national importance and therefore requires to be assessed under that Act. The objective of the Act however is to ensure the protection of the natural environment and people from potential harmful effects of radiation. And that is also exactly what the safety regulator would be looking at, so in my view the environmental objectives would be met if the safety regulator is doing  
10 his or her job properly. In other words, there is no particular reason to have two organisations doing a similar assessment.

MR JACOBI: Coming back to the division between the Commonwealth and the states, is there, with respect to radiation, protection for example? There is –  
15 the states have a significant involvement - - -

MR CARLSON: Mm.

MR JACOBI: - - - through their environmental protection authorities and I am  
20 just - if there was to be a national regulator, is there a logical division that one can divide at any point with respect to radiation protection and the existing role of the states and any regulation of the sorts of facilities that the Commission is considering?

25 MR CARLSON: At the moment that separation exists. ARPANSA took over what was known as the Environment Protection Nuclear Codes Act which put the Commonwealth in to a coordinating role in establishing uniform standards through Commonwealth state cooperation but with the states then being responsible for applying those standards within state jurisdiction. I would see  
30 for the future that there is no reason to change that model, so that the dividing line would be between nuclear activities, or nuclear materials where there are very specific international obligations and radiation more generally where there's absolutely no reason why that shouldn't continue to be the primary responsibility of states, but with a coordinating mechanism to ensure  
35 uniformity of standards across the Commonwealth, across the country.

MR JACOBI: I just want to pick up your comments with respect to cooperation and this comes to the question of cooperation between a state and were it so minded to proceed with a proposal, and the Commonwealth, and I  
40 am just wondering whether you think there are any key objectives or principles again that apply here in terms of Commonwealth or state operation with respect to the potential to develop those activities, and again I am addressing this at a higher level, not necessarily at the level of the law in terms of how such a proposal or project ought proceed and the sorts of principles that ought be  
45 borne in mind.

MR CARLSON: I think the key point is that putting aside Commonwealth territory, any nuclear project is likely to be in the territorial jurisdiction of a state and therefore clearly the state has a very strong interest in whether or not a project should proceed and whether it's been regulated appropriately. So I think there clearly needs to be very close cooperation between Commonwealth and state in terms of if the state wishes a project to go ahead the Commonwealth should facilitate that.

One would hope that that wouldn't be an arbitrary decision by the Commonwealth side to block something that the state wanted to do if it complied with regulatory requirements. Conversely, clearly one wouldn't want the situation where the Commonwealth could approve a project that the state didn't want, you know, taking advantage of the fact that it's regulated at the Commonwealth level. So I would hope that there would be some Commonwealth state consultation process which would talk about the specifics of project approvals but also look at a broader view of energy policy, for instance, and how particular projects should be coordinated to ensure the best outcome across the country.

MR JACOBI: I think this might pick up a little bit on your comment with respect to licensing safeguards on a case by case basis and then thinking about the idea about making more general regulations. I'm interested to generalise that out and to think about the idea about how far you might need to go in developing a regulatory regime if you were minded to proceed to permit private sector investment before you then, I think, in a sense thought about a particular proposal coming forward and developing the specific regulations that might apply to it. Do you have a view about how far you might need to go in developing a regulatory regime to allow people to think about the concept of making a private sector investment before you stopped and waited to see whether there might be such proposals?

MR CARLSON: Clearly there would be no point in developing a very elaborate regime if it ends up that no-one is interested in bringing a proposal forward. That would be a waste of effort on everyone's part. I think we really should look at it as an integrative process that if a project comes forward then the proponent and the regulator can sort of work in parallel in developing what the regulatory framework should be, but I think right at the outset there needs to at least be the basic framework in place, so that there needs to be a national regulator, there's prohibitions that have obviously got to be gone, so there has got to be a clear indication to a proponent that when a proposal is put forward it will be considered positively, that there won't then be a protracted process of setting in place the basic regulatory building blocks.

So there needs to be the legislation in place, the regulator in place, the key staff

in place, but when you come to the very specific details for a particular facility then that could take some years to develop and I don't see that there would be a reason to refuse to accept an application until that work had been done. I think it's something that could proceed in parallel and here again I'd say we're not  
5 starting with a blank page, that for most projects that one could think of, there is already considerable overseas experience which obviously the Australian regulator would take advantage of and which would give some assurance to the proponent of the likely direction that Australian regulation was going to be developed.

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MR JACOBI: I am just wondering about - to the extent to which you have considered the issue, we have had some evidence this morning about the extent to which a host country that's proposed to build a project can take advantage of international regulatory decision-making. I am just wondering whether you  
15 have got any particular views about that particular issue and the extent to which it's possible for a country to take advantage of an international approval and it would be appropriate for Australia to take advantage of such approvals that have been given, for example, in the United States or elsewhere, and take them into account in its own decision-making and its own licence granting.

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MR CARLSON: I think it would be poor regulation, poor administration, to totally start from scratch to assess something that has already been assessed by a competent authority in another country. So I think so long as the Australian regulator is in a situation to draw an independent view on the adequacy of the project, it would be in order to take advantage of the work that's already been  
25 done by a peer regulator. So that means our regulator has to have sufficient expertise and competence to make that judgment as to whether the work by a regulator in country X is of a sufficient standard, and if the answer is, "Yes," then clearly we could take advantage of what's been done in the other country. There would be, as I said, absolutely no point in going through the whole  
30 process from the start.

MR JACOBI: I just want to come to a final question specifically with respect to safeguards and non-proliferation and that is that the Commission has heard  
35 some evidence with respect - we've asked some questions with respect to multilateralism and the benefits of multilateral proposals with respect to certain facilities, and it was suggested to the Commission in some of the evidence, particularly from Mr Switkowski, that multilateralism was really an exercise in diplomacy - "diplomatic physics" I think was the way it was expressed. I am  
40 just interested in your views about the extent or the values of multilateralism in that particular context and whether it has any role to play.

MR CARLSON: It certainly has a role and there are a number of objectives for it. If you look narrowly at non-proliferation then I think there are two  
45 objectives. One is to limit the number of national projects, so if you have got -

and we're talking about enrichment and reprocessing basically as being the sensitive stages of the fuel cycle where nuclear materials suitable for nuclear weapons can be produced. In those two areas if you have got, you know, for argument's sake, five countries interested in carrying out enrichment to meet  
5 their own fuel needs, then I would suggest that it's better to amalgamate those into one single project rather than having five separate ones. So, you know, in that very simple example, having a multilateral project makes sense.

Secondly, with a multilateral project there is a confidence building function  
10 because by having the involvement of other countries in what the host country is doing it provides a level of oversight which complements and strengthens what safeguards can do, because in the case of safeguards you have inspectors who visit facilities from time to time or who view surveillance films and so on and so forth, but the point is they're coming and going, and I think you get a  
15 stronger oversight from people who are actually working in a place on a continual basis and form relationships with fellow workers. They will very quickly get an idea if there's something peculiar going on, and I think that's a value in itself.

20 From a counter-proliferation point of view of creating barriers to the misuse of a facility, I think what multi-lateralisation gives is a delaying factor and a disincentive or deterrent factor, if you like. If the host country is starting to think, well, maybe we could take this facility over and use it to produce weapons material, then for a start, they're going to have to expel the staff from  
25 the other countries and that immediately puts several governments on notice that agreements are being violated. But secondly, depending on how the technology has been supplied, the host will have to figure out how to use the plant in the way that it has in mind.

30 The ideal multilateral model would be if there's a division between the host state and the technology supplier. So you could have an enrichment plant in one country that is using technology from Urenco, say the European enrichment company or from TENEX, the Russian enrichment company. They both supplied two facilities on what's called a black-box basis, so that the  
35 facility operator receives the technology but has no hand in manufacturing it, doesn't see inside the casing, doesn't really know exactly how things are made. If the host then decides they're going to take over the plant and use it to produce HEU, then there's a substantial delay while they have to disassemble the equipment, figure out how to replicate it.

40 Specialist manufacturing skills have to be set up to be able to replicate the equipment. They've got to figure out how to perform the connections between machines to get to high enrichment level, so on and so forth. In that time, obviously the international community won't be sitting on its hands. So I think  
45 a state in those circumstances is facing a very daunting prospect compared with

if they're operating their own program with no one else looking in apart from inspectors. They're manufacturing their own components. There may be the opportunity to set up a parallel program that's secret, unknown to the agency inspector. I think the multilateral direction has a number of obvious advantages.

COMMISSIONER: Yet it didn't prevent the leakage of technology in days gone by.

MR CARLSON: No, and of course you're referring to the AQ Khan network and the fact that Khan was a dual national who was employed in a Dutch facility. I think all I can say is that was in the past, the lesson has been learnt. Obviously in establishing - - -

COMMISSIONER: So what has changed, Mr Carlson, since those days where it was relatively easy for the technology to be copied and sold?

MR CARLSON: Procedures are much tighter in any respectable operating company. I can't speak for how things are done in North Korea or Iran, or Pakistan, for that matter, but certainly in Europe or the US or Russia, Japan, the controls are much more rigorous, and in a situation of black box supply, which we were referring to before, then there's absolutely no prospect of getting access to the technology. If the operator is simply receiving equipment that is in a sealed container and all they do is join the pipes, then there's nothing to steal, provided that the security is there to stop someone just walking out the door with a part, with a module, but obviously security would be in place against that.

So I think the real dangers come where equipment is being manufactured and that gives someone who wants to steal the technology - they can see the specific details of how something is made, as Khan did take blueprints and so on. If there's a separation between the host state and the technology supply state, then that's an added barrier of protection against that kind of happening.

COMMISSIONER: All right. Thank you very much, Mr Carlson, for your evidence and for the proposition of it. We'll now adjourn.

MR CARLSON: Thank you.

**MATTER ADJOURNED AT 12.55 PM ACCORDINGLY**