

# SUPPLEMENTARY REPORT

## AUSTRALIAN DEMOCRATS

### 1. Introduction

1.1 In the main, the Australian Democrats support the majority report. However, we place a different emphasis upon a number of important matters and thus want to expand further on these concerns. **At the outset, the Democrats want to state unequivocally that we do not support the construction of the new reactor and urge the termination of the contract with INVAP.**<sup>1</sup>

In our report to the 1999 inquiry we stated:

We are not satisfied by the justifications that have been provided by ANSTO and the Government for the construction of a new reactor. It is our view that a new reactor can only be justified if the national interest argument is upheld. We are not satisfied by the national interest arguments before the Committee. The Australian Democrats oppose any further Australian involvement in the nuclear fuel cycle.<sup>2</sup>

1.2 We do not believe that this Committee process has revealed any additional information that warrants a change to our previous conclusions.

We have three major and fundamental concerns about the proposal to build a new research reactor:

- the Government's blinkered approach to viable alternatives to a research reactor as a neutron source for research and as a producer of isotopes for use in medicine and industry;
- the poor quality of evidence and lack of transparency concerning the tendering process and contractual arrangements; and
- the Government's complacency in its approach to nuclear safety and nuclear waste management.

1.3 The following comments will address separately the three parts of the report—the need for a new reactor, the tendering process and the contract, and health and safety issues and the management of nuclear waste.

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1 Refer 7.51 and 7.52 of the majority report for analysis of legal situation if contract is terminated.

2 Senate Economics References Committee, *A New Reactor at Lucas Heights*, September 1999, p. 95.

## 2 The need for a new reactor

### *A research reactor—a research tool*

1.4 The Australian Democrats listened carefully to the number of scientists closely related to the work undertaken at Lucas Heights who strongly endorse the plans for a new reactor. They spoke about the future potential that research based on neutron beam research offers, especially in the areas of biotechnology and information technology.

1.5 Considered in abstraction, the Australian Democrats accept that the scientific case for a new reactor has merit, however, we are most concerned that serious consideration has not been given to the long-term view. We believe that those supporting the reactor are too ready to brush aside concerns about the legacy of nuclear waste that the reactor will leave for future generations. The Australian Democrats consider that if research reactors did not produce such waste, then the scientific justification for operating this kind of facility would be powerful indeed. Given, however, that nuclear waste *is* an unavoidable by-product of a research reactor, the purported justification is significantly weakened. For this reason, it is imperative that possible alternatives to a reactor be very seriously considered.

1.6 The Australian Democrats see no evidence, however, that the Government did undertake any but the most cursory of investigations into such alternatives prior to its decision to construct a new reactor. While we are satisfied that no satisfactory case can be made that spallation sources and cyclotrons can *currently* replace all scientific functions of a reactor, we believe these emerging and highly promising technologies should have been closely examined in the light of Australia's scientific and research needs.

1.7 The Australian Democrats consider a consequence of this systematic bias towards reactor-based research is that emerging replacement technologies such as cyclotron and spallation technologies remain underdeveloped. This maintains a vicious circle whereby their lack of development is then used by proponents of reactor technology to argue they do not constitute viable alternatives.

1.8 The Australian Democrats believe that any decision to invest significant public monies in a substantial research infrastructure project must be considered in the context of the serious under-investment in R&D in our universities and research agencies including CSIRO. We are most concerned that there has been no consideration of whether the considerable public money earmarked for the new reactor may be better invested in other science fields.

1.9 Dr Jim Green told the Committee of his “endless astonishment” that the new reactor:

is going to be the largest single investment in a science facility in Australia's history and yet the government did not consult with the Chief

Scientist, did not consult CSIRO and did not consult ASTEC, the Australian Science, Technology and Engineering Council.<sup>3</sup>

1.10 This concern was supported by the Western Australian Branch of the Medical Association for Prevention of War who argued ANSTO's slice of the cake denies other areas of science and technology proper funding to make advances in their fields of research. Mr Stephen Campbell, a campaigner for Greenpeace also told the Committee:

My understanding is that, if you use alternative technologies, you open up and close down a range of options. It just basically depends on where you put your money. If you put your money into one lot of options, you open up research opportunities and opportunities for commercial and industrial research processes and you close down some. But that is a substantive choice you make.<sup>4</sup>

1.11 The Australian Democrats thus endorse and emphasize the majority reports' concerns on the lack of a strategic assessment of research priorities. In addition, the Australian Democrats note that the Government's White Paper on Research and Research Training, Knowledge and Innovation, makes much of requiring Universities to be strategic in allocating resources to research strengths and priorities.<sup>5</sup> It is to be lamented that the Government does not feel the need to be similarly disciplined and accountable in its conduct.

### *Medical Radioisotopes*

1.12 The evidence before the Committee established clearly that medical radioisotopes are an important component of today's health care system. While some submittees argued otherwise,<sup>6</sup> the Australian Democrats accept that in current practice, imaging and other technologies substantially complement rather than replace nuclear medical technologies. Taking a longer term view, the Australian Democrats argue that serious consideration has not been given to developing alternatives, such as using alternative modalities for imaging and using cyclotron produced radioisotopes rather than reactor-based radioisotopes.

1.13 As noted in the majority report, researchers in a number of countries continue to work on the possibility of producing radioisotopes in a cyclotron.

1.14 Professor Barry Allen informed the Committee that the submissions from nuclear medicine physicians do not acknowledge the developing role of accelerator produced alpha sources for therapy. According to the Professor, while such sources have the potential to inhibit early stage secondary disease, they are only now going

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3 Dr Jim Green, *Committee Hansard*, 26 October 2000, p. 117.

4 Mr Stephen Campbell, *Committee Hansard*, 25 October 2000, p. 106.

5 The Hon. David Kemp, *Knowledge and Innovation*, DETYA 1999.

6 Mr Bruce Taylor, submission no. 14; Ms Sharon Davies, submission no. 84.

into clinical trial. He notes that there is no funding allocated to support the accelerator production of actinium-225, which holds promise for the treatment of cancer. He urges physicians to take a more forward-looking assessment of nuclear medicine.<sup>7</sup>

1.15 Dr Jim Green argued likewise that Australia should ‘close the reactor and invest in alternative technologies’.<sup>8</sup> His views are supported by Dr Susan Wareham, President of the Medical Association for Prevention of War (Australia), who also noted the lack of funding into the potential of cyclotrons to produce most of Australia’s radiopharmaceuticals. She maintained that:

a reactor should not be seen as the only way which cancers can be treated. For example, alpha emitting therapies have also not had the research funding that is needed, and they offer some promising cancer treatments.<sup>9</sup>

Dr Wareham concluded that given the significant concerns about the reactor, the justification for the reactor on medical grounds is not well established, especially considering ‘that research into alternatives has not been carried out’.<sup>10</sup>

1.16 Against these views, the nuclear medicine practitioners who made submissions to this inquiry argue that the use of reactor-based radiopharmaceuticals in Australia continues to grow and that the new reactor will provide the extra capacity to meet this demand. They do not believe that the demand could be met satisfactorily from imports, which, they maintain, are subject to disruption.

1.17 The Australian Democrats appreciate the standpoint of nuclear medicine practitioners in underlining the importance for Australia to be self-sufficient in this area. However, the Australian Democrats endorse the majority finding that there now exists an efficient and reliable global supply and distribution network that could supply Australia with most of its medical radioisotopes, including technetium-99m in the form of molybdenum generators.

1.18 We note in particular, the evidence that the USA and Japan, for instance, substantially rely on imported radioisotopes including, and particularly, technetium-99m.<sup>11</sup>

1.19 Accordingly, the Australian Democrats do not consider that the argument for the new reactor on the grounds of Australia’s nuclear medicine requirements is sustainable.

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7 Professor Barry Allen, Information supplied to the Committee, 29 January 2001.

8 Dr Jim Green, *Committee Hansard*, 26 October 2000, p. 172.

9 Dr Susan Wareham, *Committee Hansard*, 27 October 2000, p. 269.

10 Dr Susan Wareham, *Committee Hansard*, 27 October 2000, p. 268.

11 Senate Economics References Committee, *A New Reactor at Lucas Heights*, September 1999, para. 5.18; see also Dr Jim Green, submission no. 1.

### *National interest*

1.20 The Australian Democrats agree that few Australians would challenge the proposition that it is in the national interest to be a well-informed and active participant in nuclear non-proliferation and safeguards measures. However, we strongly support the view of those who take issue with the assertion that Australia needs a modern research reactor to have an effective role in nuclear disarmament matters.

1.21 The Australian Democrats consider the assertion that nuclear science expertise developed at home is a necessary condition for negotiating agreements, setting standards and strengthening safeguards is spurious, unsubstantiated and self-serving.<sup>12</sup>

1.22 For example, Dr Wareham questioned the connection made between the need to have nuclear technology expertise and the ability to have a significant role in nuclear disarmament and non-proliferation.<sup>13</sup> In her view, the main barrier to non-proliferation is political rather than technical.<sup>14</sup> She stated:

if Australia is serious about non-proliferation we do not need a \$300 million reactor to prove our credentials and offer technical knowledge. We need to address the problem and its root cause by striving for the elimination of all nuclear weapons.<sup>15</sup>

1.23 The Australian Democrats particularly note the evidence of Professor Richard Broinowski, a former Australian diplomat, who stated that officers working in the area of nuclear non-proliferation and nuclear safety are not nuclear-trained scientists but diplomats.<sup>16</sup> He also argued that an effective safeguards system against nuclear weapons proliferation depends more on political intelligence than reactor based technical expertise. For example, Professor Broinowski said that an effective nuclear safeguards regime depends on matters such as an awareness of a state's nuclear related activities and the extent to which monitoring agencies have physical access to relevant locations for independent verification of these activities. Moreover, he argued, the will of the international community to take action against non-complying states is crucial to the success of a safeguards system.<sup>17</sup> Ms Jean McSorley supported this view.<sup>18</sup>

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12 Mr Bill Paterson, DFAT, *Committee Hansard*, 27 October 2000, p. 309; see also submission no. 6, Senate Economics References Committee, p. 7.

13 Dr Susan Wareham, *Committee Hansard*, 27 October 2000, p. 265.

14 Dr Susan Wareham, *Committee Hansard*, 27 October 2000, p. 265.

15 Dr Susan Wareham, *Committee Hansard*, 27 October 2000, p. 265.

16 SBS, *'Insight'*, transcript, 10 August 2000.

17 Professor Richard Broinowski, *Committee Hansard*, 27 October 2000, p. 293.

18 See Ms Jean McSorley, submission no. 122C and 'Current and future safeguards developments; current actions for strengthening of IAEA safeguards', DFAT,

1.24 Clearly one of the major impediments to nuclear non-proliferation is the slow progress being made by the nuclear weapons states to reduce their nuclear weaponry.<sup>19</sup> Their reluctance to move decisively in this direction puts at risk the advances made in the area of nuclear disarmament. The Australian Democrats believe that this is a political matter and one where Australia, as a country with recognized credentials in the field of nuclear disarmament, might have some influence.

### **3. Tendering process and the contract**

1.25 The Australian Democrats endorse the findings of the majority report on the tendering process and the contract. We have strong reservations about elements of the process and agree that too many important questions remained unanswered. We are particularly concerned about the evaluation process and the checks made on the successful tenderer, INVAP. Again and again questions arose about a number of important issues such as INVAP's level of proven experience in designing and constructing a 20-megawatt reactor and the performance of the Egyptian Reactor. These and other matters have not been satisfactorily answered and leave lingering and worrying doubts about the thoroughness and reliability of the evaluation.

1.26 The Australian Democrats also join with the majority report in expressing our concern that critical aspects of the tender documentation and the contract have not been disclosed. We endorse the majority's view that the issue of access to information is a very serious matter. We are highly critical of ANSTO's disregard for its responsibility as a government agency to be accountable to the Parliament and, through it, to the Australian people. Both ANSTO and the Minister for Industry, Science and Resources frustrated the Committee's efforts by resorting to claims of cabinet-in-confidence or commercial confidentiality. There are good grounds to be concerned that ANSTO's near contempt for the Committee's task has seriously compromised its standing in the community.

### **4. Health, safety and the management of nuclear waste**

#### *Waste management*

1.27 The McKinnon Review—which remains the benchmark for analysis of Australia's need for a nuclear reactor—set a number of conditions that needed to be in place before a decision to proceed with a new reactor could be made. Notable among these was the need for a high level waste site.<sup>20</sup> While the original context was an Australian high-level waste site, McKinnon's key point remains that effective and reliable management of high-level waste is a necessary condition for any decision to proceed with a new nuclear reactor.

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<http://www.dfat.gov.Australia/aso/topics/strength/htm> (15 January 2000). See also Dr Susan Wareham, *Committee Hansard*, 27 October 2000, p. 266.

19 Senate Foreign Affairs, Defence and Trade References Committee, *The 1998 Indian and Pakistani Nuclear Tests*, June 1999, pp.136, 139.

20 K.R. McKinnon et al., *Future Reaction: Report of the Research Reactor Review*, August 1993, p. xv.

1.28 While we acknowledge that some progress has been made on establishing a storage facility for low-level radioactive waste, the Australian Democrats believe the Government's contract with INVAP and the serious limitations of arrangements with COGEMA manifestly fails this crucial test in respect of high-level waste.

1.29 The Australian Democrats condemn the Government for this extraordinary complacency on waste management issues and note that strategies for dealing with long term management and eventual disposal is a matter for the Minister of Industry, Science and Resources and the Minister of Health rather than ANSTO itself.

1.30 As has been pointed out in the majority report, the arrangements for reprocessing spent fuel from the new reactor at overseas facilities are vulnerable to challenge by a number of parties, including international environmental organisations, and local communities in both France and Argentina.

1.31 For these reasons, the Australian Democrats have no confidence that the arrangements for reprocessing spent fuel and the arrangements for storing the waste returned to Australia from overseas are guaranteed or reliable. The fact that uncertainty continues to surround these crucial issues indicates that the Government is far more concerned with justifying the decision to build a new reactor than with resolving the grave and on-going consequential problems associated with nuclear technology. The Australian Democrats consider that such selective attention to the implications of the new reactor project is irresponsible in the extreme.

1.32 We note the Minister's response in the Senate to a question without notice on the recent court ban in Cherbourg to unloading nuclear waste from Lucas Heights. The Minister stated:

The French government have indicated that they strongly support COGEMA on this. If, after appeal and all legal processes have been duly met, there is any technical difficulty, they have indicated their willingness to ensure that that impediment is overcome.<sup>21</sup>

1.33 Far from taking comfort from these words, we believe that reliance on action from the French government merely underscores the extreme vulnerability of the arrangements with COGEMA.

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21 Senator the Hon. Nick Minchin, Minister for Industry, Science and Resources, *Senate Hansard*, 27 March 2001.

1.34 We also note a submission from Greenpeace Australia, which goes to the heart of the legal action in France. It cites appendix 2.2 to the initial contract between COGEMA and ANSTO.<sup>22</sup> This states:

**2.2 For The Additional Quantities To The Basic Quantity**

The spent fuel to be delivered beyond the basic quantity is deemed to be suitable for the reprocessing at the reprocessing site.

It shall be compatible with the presently implemented processes at the reprocessing site (including the shearing - dissolution, separation and waste conditioning processes).

The already tested and acceptable fuel meat compounds are U-A1 and U-Mo alloys, U oxide and A1 dispersant. *U3Si2 and U-Zr alloys are not acceptable.*

In any case, COGEMA shall be consulted by ANSTO as regards the suitability for reprocessing at the reprocessing site (emphasis added).

1.35 As the Greenpeace submission points out (p. 2), this means the reprocessing of U<sub>3</sub>Si<sub>2</sub> is explicitly unavailable under the contract. This does not sit well with the original ANSTO submission which states: "COGEMA has confirmed that ... silicide would *in principle* be reprocessable" (emphasis added).<sup>23</sup>

1.36 Moreover, it raises serious questions about the evidence from ANSTO's Professor Helen Garnett who has stated:

We have agreement with COGEMA that they will take certain amounts of silicide fuel.

and

As I have repeatedly said, we have a contract with COGEMA - and had supplementary agreements with COGEMA - in relation to the handling of certain amounts of silicide fuel.<sup>24</sup>

We do not believe such statements are substantiated by the contract.

1.37 As the issue of the quality of evidence from ANSTO to this inquiry has already been dealt with above, the Australian Democrats re-iterate that the problem of wastage has not been dealt with openly or satisfactorily. It is clear that the strategy for dealing with the current waste issue is not satisfactorily resolved, let alone future arrangements for a new reactor.

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22 Mr Stephen Campbell, *Letter to Inquiry Chair*, 8 May 2001.

23 ANSTO, submission no. 118, para. 170.

24 Professor Helen Garnett, *Committee Hansard*, 9 February 2001, p. 527.



1.38 We strongly endorse the majority report's concerns (11.21) that growing opposition overseas to the transportation and reprocessing of radioactive waste and continuing doubts to the legality and capacity of Argentina to accept and reprocess silicide fuel means there are no adequate arrangements in place for the reprocessing of spent fuel from a new reactor.

1.39 Accordingly, the Australian Democrats argue that the absence of a proven or acceptable solution to the problem of nuclear waste provides sufficient reason to reject the proposal to construct a new reactor.

1.40 If, however, the Government refuses to acknowledge this serious deficiency and proceeds with the construction of a new reactor, the Australian Democrats endorse the recommendations of the majority report on this issue as the set of minimum conditions that must be fulfilled (Recommendations, Chapter 11, p. 232). In particular, the Australian Democrats emphasise the need for ANSTO to prepare and cost a contingency management plan for spent fuel conditioning and disposal within Australia.

#### *Health and safety*

1.41 The Australian Democrats accept that the probability of risk to public health and safety as a result of the routine operation of a new reactor is very low. However, we regard it as scientifically and ethically irresponsible to equate low risk with no risk.<sup>25</sup>

1.42 Accordingly, we remain very sympathetic to the continuing anxiety experienced by members of the Sutherland Shire community in relation to both potential accidents at Lucas Heights and the adequacy of emergency planning. Community concern about such matters can only be allayed through full and frank provision of information by ANSTO, and the establishment of strong procedures for public consultation and emergency planning.

1.43 The Committee heard evidence from a number of concerned citizens that ANSTO's briefings on emergency procedures were far from adequate.<sup>26</sup> The Australian Democrats are not confident that this issue is taken as seriously as it ought by the NSW State Government. We believe that urgent remedies to deficiencies in emergency planning and dissemination of information to relevant people including local schools are urgently required.

1.44 The majority report has noted that the nature of the public consultation required during the licensing stages of the new reactor project is largely left to the discretion of the CEO of ARPANSA. The Australian Democrats agree with the majority report that the mechanisms for ensuring adequate public consultation must be

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25 On this see detailed evidence by Mr Daniel Hirsch, *Committee Hansard*, 30 October 2000, pp. 335 – 366.

26 See, for instance, Ms Julie Evangelinos, submission no. 152 and Ms Ann Wilkins, submission no. 153.

specified by the Government, and that the ARPANS Act must be amended to legislate a public consultation process that conforms to world's best practice.

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