

## Submission to Senate Standing Committees on Economics “**Selection process for a national radioactive waste management facility in South Australia**”

My name is Noel Wauchope. I am a former school teacher, having taught science in secondary schools. I have a long term interest in nuclear issues. I would say that I am a generalist, rather than a specialist in a scientific field. I believe that this generalist approach is an advantage in examining and communicating about a nuclear waste dump proposal. All too often, even very well educated people are intimidated by the technical jargon of experts on nuclear technology, and thus become reluctant to form their own opinion.

I note the specific terms of reference that we are encouraged to address, and I deplore the fact that they, and the title of this Inquiry, are already begging the question – by stating “in South Australia”.

Already we are all supposed to accept without question the proposition that South Australia is the location for the federal nuclear waste dump – done and dusted!

### **SUMMARY**

My main concern is in addressing **b** the concept of "broad community support". The Inquiry's brief for this appears to be confined to the Kimba and Hawker people. The establishment of a nuclear waste facility at Kimba or Hawker will involve transport of radioactive wastes through the region, and will have ramifications for its economy, agriculture and tourism. The local communities have not been properly informed, and pretty well brain-washed with the myth that the nuclear waste dump is a "medical necessity". The nature of the wastes, lumping together Intermediate Level Wastes (ILW) and Low Level Wastes (LLW) is a messy and confusing plan, and its real meaning has not been explained to them. The safety problems with waste canisters have not been discussed. These local communities are not aware of their future in hosting "stranded wastes" - as there is no existing plan for the permanent burial of the very long lasting ILW wastes.

**c** The involvement of indigenous people by the National Radioactive Waste Management Facility (NRWMF) has been inadequate, and the idea that they support the plan is simply not believable, in view of the poor survey practices carried out, and the clear opposition of leading Aboriginal organisations.

**e** Eyre Peninsular, state-wide and nation-wide community views should be considered.

**f** Related matters include South Australia's law prohibiting nuclear waste facilities, best practice for managing nuclear wastes, publicity and media coverage, and a responsible approach to radioactive waste management, and Australia-wide decision-making.

## **Addressing TOR (b) relating to “broad community support”.**

### **Well – just who are the communities involved?**

It would seem that the writers of this TOR have no idea that the choice of Kimba and Hawker for nuclear waste dumping must mean the transport of the (so-called) Intermediate Level Wastes (the French call these High Level Wastes (1) 1700 km through towns, communities on fringes of 3 States. Those communities don't need to be consulted?

What about the region, and indeed, the State of South Australia? Much hype has been put out by the National Radioactive Waste Management Facility about the assumed economic benefits, and yes, the government promises to pour various benefits into the region. In the early decades of nuclear power, communities accepted various facilities, without concern for their effect on the market for agricultural products.. The millstone of nuclear wastes was not yet hanging around their necks. But things are different now. No – I can't produce detailed economic statistics, but I can quote this comment from a marketing manager:

***Kristen Jelk, Your Say** Last month I was in China promoting an Australian product that comes from SA which is pitched as a clean, green, environment. The full potential of the market in China for South Australian produce is immeasurable. From a Chinese consumers point of view, the environmental conditions where the product is sourced or grown, is pivotal to the choices made when purchasing.*

*Chinese consumers will pay top prices for products that are considered SAFE – produced where the source is known to be an unpolluted clean environment. Perception is everything, and if a consumer becomes aware that SA had developed a nuclear waste dump, then that perception of a safe environment will be shattered. It will not matter that the dump is in a desert, nor will it matter if the dump is considerable distance from prime agricultural land, nor will it matter if experts assure of safety standards.*

*The perception that would prevail is that SA will be a dumping ground for nuclear waste. If this is a discussion over commercial viability verses environmental risks long term, then I would argue that the real cost of the dump being located in SA is the loss in the perception that SA is a “clean, green” state. Questions would be raised over validity of the safety of the states produce.*

*Science does not dispel the pervading distrust of nuclear waste storage. Impassioned long standing anti-nuclear supporters cannot be placated and therefore ongoing discourse over the proposed dump will just shine a brighter light on the discussion world wide. The long term impact on the revenue of export sales will, without doubt be affected.*

*To risk the potential of long term growth in export sales due to a short term vision on job creation,( which is questionable ) is not good economics. SA has the potential to be a renewable energy ambassador with exciting projects already in development. We have to think globally, not locally if we are to sustain economic growth based on the real tangible asset that we have, which is our environment.(2)*

**“Broad community support” is meaningless, if the community is not properly informed.**

Here we find that not only the local community, but the State, the nation, the politicians are being continually misinformed by ANSTO and the National Radioactive Waste Management Facility (NRWMF) on the nature of the radioactive materials to be transported to Kimba or Hawker and left there indefinitely, in above ground containers.

The NRWMF's hype is that this waste dump is a medical necessity – it's all about the application of radio-isotopes in Australian hospitals. Well – it's not.

The truth is that radioactive waste resulting from Australian use of medical isotopes is a small fraction of Australia's total radioactive wastes. Most of the medical radioisotopes lose

their radioactivity within hours or a few days. The rest is best stored at the existing facility at Lucas Heights.

**Percentage of medical wastes in Australia's total radioactive wastes:** 5 % of the national radioactive waste results from medical isotope production. Currently  $(72\% \times 80\%) = 57.6\%$  of that comes from Mo99 exports: which in future will triple, but currently stands at  $(57.6\% \times 42.5\%) =$  only 24.5% of the total radioactive waste accumulation from all sources results from Australian radio-pharmaceutical use. Only 18%, of the current Australian radioactive waste inventory results from actual national use of medical isotopes: and not all of the 18% requires containment in the proposed facility. (3)

**So – what are the 82% of the radioactive matter for the dump?** The short term plan is to bring reprocessed nuclear wastes returned to Lucas Heights, from France, where they are classified as High Level Wastes, not Intermediate Level Wastes (ILW) The vitrified waste we received back from France has a radioactivity over one Billion Becquerels per gram (one GigaBq/gr). France considers this High Level Waste. (4)

Then there's the material from Woomera – a somewhat unknown mix of radioactive trash in 9,725 rusting drums . It may contain some plutonium and other high level radioactive material (5) Clearly the long-term need is not for medical wastes, especially in view of the trend to non-nuclear production of medical radioisotopes (6)

It is for the storage of the Lucas Heights nuclear reactor wastes from the past, the present, and ad infinitum.

**The lumping together of Low Level Waste and Intermediate Level Wastes means that there is confusion about the type of storage required.**

In USA The Nuclear Regulatory Commission (NRC) legislates that nuclear waste be categorized and treated based on level of radioactivity. Very Low Level Waste, twice as radioactive as natural granite, will decay to natural levels within 30 years. This material is disposed of in monitored landfills. Low Level Waste, about 20 times more radioactive than granite, contains isotopes with long half-lives. In the US, this material must be buried in one of four NRC regulated sites.

Intermediate Level Waste, generated from reprocessing spent fuel rods, is 100K to 100M times more radioactive than granite and can take more than 100 thousand years to return to natural levels. (7) The government could choose the option of disposing of Intermediate level Wastes in a separate location from Low Level Wastes - but has this been explained to the communities near Kimba and Hawker? (8)

The high level wastes from the Opal nuclear reactor have to go somewhere. Reprocessing in France will not prove to be available throughout the OPAL reactor Operating License to 2057. At most, this treaty covers the first 2 of 5 decades of OPAL fuel wastes. Will the High Level Wastes then go to the proposed South Australian dump? Does the community understand this problem?

**Problems with the canisters containing the nuclear wastes**

There is much controversy over the safety of radioactive waste containers. Have the local communities, or any communities, been made aware of these problems? (9)

### **Stranded nuclear wastes**

Has it been explained to the people of Kimba, of Hawker, of the region, of the State – that there is no existing plan or location for the permanent burial of these radioactive wastes? That they can look forward to being lumbered with what is known as "stranded wastes" for many decades, perhaps for hundreds of years?

### **Addressing TOR C How any need for Indigenous support has played and will continue to play a part in the process.**

AS a resident of Victoria, I don't have much firsthand connection with Aboriginal communities in South Australia. I have known several members of Aboriginal communities of the Northern Territory, and have been much impressed by their passion and understanding of their historic lands, and their environmental knowledge, and strong resistance to nuclear waste dumping or near their land.

I know that there is equally strong opposition in South Australia, from Aboriginal groups - as there has been historically, and in relation to the recent South Australian Nuclear Fuel Cycle Royal Commission. (10)

I know that in South Australia and Barndioota the 'Adnyamathanha Traditional Lands Association' is the peak body.

ATLA were NOT consulted prior to the Wallerberdina preferred site announcement:

*"I'm surprised and disappointed that we haven't been consulted before the announcement was made, once again it appears the traditional owners have been overlooked. . The support for this is mainly coming from the non-Aboriginal community, who will generally be in our country for a few of generations, but for us this is our land forever and we have a cultural duty to protect it." (11)*

I very much doubt that the NRWFM really canvassed Aboriginal opinions in any meaningful way. As an example, telephone surveys were done (12) of the Barndioota area asking set questions by means of cold calling. According to the survey cohort parameters, the 'Barndioota' adult population was 1,331: the number of available phones was 266, 228 responded; from which 146 people were interviewed resulting in 65%29 = 95 people who were not opposed to furthering the investigative process. I reckon that this would mean that many Aboriginals,(and poorer white people also) were excluded from this survey - simply by not having a landline phone. As I understand that Aboriginal groups will not have the right of vetoing this plan - the whole pretence of getting Aboriginal support looks pretty cynical anyway.

## **Addressing TOR e - whether wider (Eyre Peninsular or state-wide) community views should be taken into consideration**

**The Eyre Peninsula residents** will, of course, be affected by the transport of radioactive trash through the region. They are placed at risk in the same way that all communities have the danger of accidents, extreme weather events, even acts of sabotage, even terrorism, when nuclear waste convoys pass near them. The Eyre Peninsula's farms are with family owned businesses taking up over half of the region's land. The area is known as "Australia's Seafood Frontier". For the region to become Australia's Nuclear Waste Dump could well be the deathnell for its agricultural marketing and its tourism. Whether or not there's really any negative impact on the produce is irrelevant. That negative perception will be there, especially for the Chinese market, as I have mentioned earlier.

**Impact on South Australia and other States** I have previously mentioned the issue of transporting nuclear wastes for 1700km from Lucas Heights. This would involve passing through, or near, many communities in New South Wales and South Australia, and on the fringes of the ACT and Victoria. There is that same risk of accidents, extreme weather, and sabotage.

Of course the communities in the Eyre Peninsula need to have a say. And so do South Australians, New South Wales residents, Victorians, and the people of the ACT.

## **Addressing TOR f - any other related matters.**

**Storage and Disposal of nuclear wastes affects the rights, interests and safety of all South Australians and is prohibited in that State under the Nuclear Waste Storage (Prohibition) Act 2000.** That law was made for good reason. Is it going to be overruled by the federal government - based on the supposed welcoming of a nuclear waste dump by one small rural community - enticed by promises of local economic gain?

**Best practice for managing nuclear wastes.** It is generally accepted internationally that nuclear wastes should be stored as *near as reasonably possible to the point of production*. Obviously this has the advantages of proximity to skilled staff and technical resources. More importantly, it limits the risks of transport and the very reasonable anxiety of communities along the route. At present Lucas Heights has the facilities already in place to store the radioactive trash produced there. Later, the question of deep waste repository will have to be faced, in an area as close as reasonably possible. With the increasing trend towards non- nuclear production of medical radioisotopes, the much hyped need for the

Lucas Heights reactor will come into question. There is a case for closing down this reactor, and preventing further production of long-lasting highly toxic trash.

Meanwhile, at Woomera the mixtures of radioactive trash in 9,725 rusting drums need to be analysed and dealt with, with appropriate disposal established as near as possible to their existing site. The concept of a single national facility for High Level, Intermediate level, and Low Level waste needs to be re-examined. It is impractical and confusing, as each type requires a different type of eventual disposal, with different depths of burial required. (7)

**Publicity and media coverage of this issue has been atrocious.** For a start, it has been confined pretty much to the area now selected. It has been dominated by propaganda from the National Radioactive Waste Management Facility, and Department of Industry Innovation & Science. Even the wider Eyre Peninsula region has not had much public discussion. The State of South Australia had its election, and, except for The Greens and the Australian Conservatives., the subject of the proposed nuclear waste dump was not mentioned. The enthusiasm of the Australian Conservatives for the nuclear industry did not seem to help them, as they got only 3% of the vote. By and large, it's as if South Australians are unaware that their State could be the Nuclear Dump State.

As for Australia at large - blissful ignorance of this matter. The only thing that Australians ever seem to hear is the deceptive ANSTO spiel about the "health necessity of nuclear power" etc. ANSTO itself and the Department of Industry Innovation & Science collude to keep the public in the dark. Unfortunately, the media goes along with this deception.

### **What needs to be done?**

**1. Cessation of the current ill-advised rush** to impose a so-called voluntary nuclear waste dump on Kimba, Hawker, Brewarrina

**2. Community information and discussion** - and I mean the Australian community, not a small number of people in one geographic location.

## **3 A RESPONSIBLE APPROACH TO RADIOACTIVE WASTE MANAGEMENT**

All options for radioactive waste management need to be considered – not just 'remote' repositories (always more remote for some people than for others). The option of ongoing storage at ANSTO's Lucas Heights site needs to be independently assessed. All relevant organisations have acknowledged that this is a viable option including the government

department driving this process, the regulator ARPANSA, the Australian Nuclear Association, and ANSTO itself.

Requiring ANSTO to store its own waste is the best way of focussing the Organisation's mind on the importance of waste minimisation. It avoids the risks of transportation. It avoids double-handling – i.e. long-lived intermediate-level waste being moved to a store only to be moved again should progress be made in relation to a deep geological repository which is the designated method of disposal for long-lived intermediate-level waste and high-level waste. "

ANSTO is capable of handling and storing wastes for long periods of time. There is no difficulty with that." -- Dr Ron Cameron, ANSTO. "It would be entirely feasible to keep storing it [radioactive waste] at Lucas Heights ..." -- Dr Clarence Hardy, Australian Nuclear Association "A significant factor is that ANSTO has the capacity to safely store considerable volumes of waste at Lucas Heights ..." -- Department of Resources, Energy and Tourism, 2003 (13)

#### **4. Australia- wide decision-making - a national referendum**

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