

Submission against the National Radioactive Waste Management Bill 2010

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**To: Committee Secretary
 Senate Legal and Constitutional Committee
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I welcome my submission to be published on the Inquiry's website and any other publication chosen. I also welcome my contact details to be included.

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1. The Radioactive Waste Situation Internationally

The nuclear industry worldwide is severely constrained by the non-existence of suitable repositories for medium and high-level radioactive wastes. The interim storage facilities at reactor and reprocessing sites are filled to the brim, and beyond.

Consequently, there were various attempts in the past to dump a quarter of the world's radioactive waste in Australia, the most remote dumping ground in the world.

Contrary to various claims about, the bill has to be seen in this context. The railway line for this purpose has already been established by an US military contractor. The true dimensions of this bill and its consequences are far beyond the public perception. The scale and type of wastes to be dumped here far exceed what is inferred.

2. Hazards of Radioactive Wastes

Radioactive wastes pose a whole series of most severe threats to mankind.

- **Radioactivity is a severe health hazard.**

It is well known to cause mutations, cancers, birth defects, stillbirth etc. For example, the biggest waste category eventually to be dumped at radioactive waste facilities is depleted uranium (DU). It is genotoxic (capable of damaging the DNA), cytotoxic (poisonous to cells) and mutagenic (capable of inducing mutations). This means it can trigger just about any disease. Other radioactive isotopes to be dumped at such facilities are so radioactive that a small quantity, perhaps a teaspoon full, can trigger death over a distance of several metres away.

- **Radiation can persist for very long time.**

Depending on the isotope, the radioactive hazard lasts for varying time spans. DU, the largest waste category, is also the waste with the longest half life, billions of years. [The same applies to the uranium in uranium mine tailings but are being dumped at the mine sites]

- **Radioactivity can not be detected with our senses.**

To detect radioactivity one needs a Geiger counter or even more sophisticated and costly instruments. Such instruments are not available to most people today and may not be available at all to future generations. Loss of technology is a common phenomenon in disintegrating civilisations which we certainly are.

- **Chemical hazards of radioactive wastes.**

Several of the radioactive wastes to be disposed off at such facilities pose severe hazards of explosion. This can be triggered by the mixing of liquids from damaged waste containers, which can be the result of corrosion, geological movement, geochemical processes, bad design of the facility or human interference like sabotage, war and mining in ignorance of the facility. The German radioactive waste facility Asse is already experiencing such problems like a stream of liquid radioactive waste, the collapse of the ceiling of one of the

engineered caves – and huge costs of salvage which created the intention to fill the whole facility with a special concrete and then to forget the problem.

- **Criticality hazard.**

Certain radioactive isotopes can reach a 'critical mass' if too much of them is put together. The result is a chain reaction releasing massive amounts of radiation and heat. This in turn can trigger a great variety of chemical explosions and even a nuclear detonation. Such events can lead to the explosion of the whole facility releasing massive amounts of radiation into the atmosphere. This may involve the release of thousands of times more radioactivity than from the Chernobyl accident. To those who believe the IAEA and UN stories of only 30 or 4000 deaths due to the accident I suggest to study the life expectancy statistics for the 3 neighbouring states (Ukraine, Belarus and Russia). These figures are readily available and show that the life expectancy dropped by nearly 5% in the years after the accident. A former health minister in Belarus talked of 500 000 deaths. Also, the video “Chernobyl Heart” gives some illustration of the daily consequences.

3. The Creation of Radioactive Wastes

Nearly all radioactive waste is a direct or indirect result of the operation of nuclear reactors.

Radioactive waste arises from

- the mining of uranium,
- its conversion into nuclear fuel
- the operation and decommissioning of the reactor
- the processing of the spent fuel to obtain plutonium
- the production of nuclear weapons from the plutonium
- nuclear war
- depleted uranium (DU) wars
- nuclear accidents

Uranium mining wastes are usually dumped at the mine sites, either as powdery tailings or as radioactive liquid waste pumped into the groundwater (at least that is the way in Australia and most Asian, African and Eastern European countries). All other above listed waste categories – as long they can be retrieved - are likely to end up at radioactive waste dumps regardless of the claims made at the time of their establishment.

When nuclear reactors are at the root of all those dramatic consequences described in Chapter 1, it becomes essential to ask 'why then nuclear reactors'.

4. Why Then Nuclear Reactors?

Australian History

Australia has a research reactor. Let's have a look how it came about.

From 1953 to 1957 Australia allowed British nuclear testing, costing probably over 10 000 Australian lives due to cancers and other diseases. Honorary professor and former Australian ambassador, Richard Broinowski, writes in his book "Fact or Fission", 2003 [all quotes in this section are from this book]

"As a trade-off for this damage, and for supplying Australian uranium for British nuclear weapons, Australia hoped to gain access to British nuclear secrets" [p.31]

Another trade-off was presumably a 1954 agreement with the UK Atomic Energy Commission which allowed Australia to buy a 10MW reactor from a UK firm. [see p.33,34]

Then, "A conservative Liberal parliamentarian and former chair of Menzies' Atomic Energy Commission, W. C. Wentworth had expressed the idea as early as 1960, when he advocated in parliament home-grown weapons ... he wanted a nuclear reactor to be built in the Snowy Mountains, ostensibly for power, but in reality to provide a supply of plutonium so that Australia could build nuclear weapons at short notice." [p.55, includes Hansard reference]

Australia is no exception. Many countries acquired and acquire nuclear power reactors to gain access to nuclear secrets and to plutonium for nuclear weapons. India developed its nuclear weapons program under the banner "Atom for Peace". Most countries want nuclear reactors to get access to nuclear science and technology to develop the fundamentals of nuclear weapons technology, and perhaps to sideline a bit of plutonium.

5. A Look at the Economics of Nuclear Power

The purpose of nuclear power reactors is supposedly the production of electricity. An investigation of the hidden cost of nuclear power will quickly reveal that electricity can't be the reason for nuclear reactors.

Hidden costs of nuclear power, usually not included in the price of nuclear electricity and their effect on the true cost of nuclear electricity

Costs carried mainly by the government, ie the taxpayer:

- | | | |
|----|-------------------------------------|------------|
| 1. | Provision of infrastructure | +0.2 cents |
| 2. | Provision of education and training | +0.1cents |
| 3. | Provision of loan guarantees | +5 cents |

Since nuclear power is connected with such severe risks, the sourcing of loans without loan guaranties by the government might be impossible. If loans can be sourced, the

interests and conditions would be exorbitant.

4. Establishment of radioactive waste facilities, containers etc. +2 cents
5. Part of the reactor decommissioning costs +1 cent

Costs carried mainly directly by the people contemporary to reactor operation:

1. Accident risk +\$1
Nuclear reactors are not insured for their true risks. The cost of Chernobyl accident has been estimated at 3 trillion dollars (1986 value). Less than 5% of the reactor's radioactive inventory have been released.
2. Diminished health due to routine releases of radionuclides +5 cents
3. Loss of a democratic, equitable and constructive society +10 cents
To maintain the nuclear industry the government will have to engage more and more in deception and oppression (see the presented bill), and only the worst type of people will feel attracted to become politicians and public servants. A gradual erosion of constructive participation in society is the consequence, leading to 'soft dictatorship' ie rule by manipulation using mass media.

Costs to be carried by the future generations:

1. Loss of health and life - inadvertent exposures to radioactive wastes +\$1000
2. Management of waste facilities +\$500
This includes repair of major breakdowns of tailings deposits, and waste storage facilities, provision of security, daily maintenance, training for continuity of relevant knowledge. The timeframe for these activities is hundreds of thousands of years for radioactive waste storage facilities and billions of years for tailings dams. Failure to provide these services results in exponential increase of 'Loss of health and life'

So, if the wholesale price of electricity from a nuclear reactor is for example 4c/kWh, then the true cost amounts to

$$0.2+0.1+5+2+1+100+5+10+100000+50000 \text{ cents} \\ = 150128 \text{ cents/kWh or } \$1501/\text{kWh}$$

Using these very rough estimates, the true cost per kilowatthour of nuclear energy is \$1500.- as opposed to some 25 cents.

The above figure suggest that **the government** has to provide a hidden **subsidy of 8 cents** for each kilowatt hour of nuclear energy produced.

The people will incur **direct costs and risks of \$1.15** for each kilowatt hour of nuclear energy produced.

And the **future generations** will have to bear the bulk of the consequences of our nuclear madness equivalent to some **\$1500** for each kilowatt hour of nuclear energy produced.

All these estimates are just an outline for a proper assessment. Many parameters would have to be fixed nearly arbitrarily, like the size of future populations, the value of human life etc. An investigation of the true costs of nuclear power using for example litigation figures for loss of life and health would result in a much higher cost / kWh

Such an investigation should also include the cost of a global nuclear war, the ultimate consequence of the nuclear fallacy. The cost may be extinction.

Electricity is not the reason for nuclear power. There remains only one reason – nuclear weapons.

Nuclear reactors are plutonium factories and / or provide backdoor access to nuclear weapons technology – electricity is a byproduct only. Military reactors and so-called research reactors don't even bother about electricity.

6. Prevention of Radioactive Waste

Any reasonable person accepting this explanation, will be asking how to prevent nuclear weapons, nuclear waste – the nuclear industry.

With any crime, the first responsibility is with the government to legislate against the crime. Since governments are here apparently the main culprits, the next approach is to push the application of established principles of harm minimisation.

In the case of the waste storage facility I propose the following:

1. No permanent waste storage facility as long there is ongoing production of nuclear waste. This would just put the issue “out of sight, out of mind”
2. Temporary waste storage at the creator of the waste. This increases motivation to stop waste production.

There are two parties responsible for the production of most of the radioactive waste in Australia, ANSTO at Lucas Heights (the facility) and the Federal government (the decision maker).

I suggest therefore for the temporary storage of our radioactive waste to arrive from reprocessing

1. a highly secured and fortified purpose-built above-ground building at Lucas Heights where also scientific competence is at hand
2. and the bunker underneath Parliament House in Canberra

I suggest that 90% (by activity) of the radioactive material be stored at Lucas Heights, especially the more critical wastes requiring nuclear competence, and 10% be stored in the bunker underneath Parliament House.

Dumping the radioactive waste on Aboriginal land, just like all Australian uranium mines with their associated radioactive wastes, appears racist and is unacceptable, akin to a 'nuclear intervention' on the heel of the Howard / Rudd 'Human Rights intervention'.

7. Foreign Radioactive Wastes

As mentioned at the beginning, there is a great desire to dump the world's radioactive waste in the most remote corner of the planet (relative to the US and Europe), and there were various attempts in the past.

Allowing the import and disposal of high-level wastes into Australia would open the door for further expansion of the highly destructive nuclear industry worldwide. This is what this highly deceptive and oppressive bill is all about. Establishing a temporary facility in Lucas Heights and Canberra would preclude this option.

8. The National Radioactive Waste Management Bill 2010

I suggest that the National Radioactive Waste Management Bill 2010 reflect the following:

1. No permanent storage facility as long there is ongoing nuclear waste production
2. No nuclear waste storage facility on Aboriginal land
3. Exclusion of imports of foreign wastes to be stored in Australia
4. The nuclear waste should be stored where it is produced
5. Where possible, some nuclear waste should be stored where the decisions for waste production are being made
6. Temporary storage should be above ground in a purpose-built facility