



Key findings of the 2004 NSW Parliamentary Inquiry into Transportation and Storage of Nuclear Waste

- “Radioactive waste is the biggest problem facing the nuclear industry. Since the industry’s inception, waste has continued to stockpile without satisfactory solutions being found...An important feature of this regime is the classification of waste into three categories:
 - ‘Low level’ (and ‘short-lived intermediate’) waste;
 - ‘Long-lived intermediate level’ waste, and;
 - ‘High level’ waste”
- “The Inquiry found that these classifications **were not helpful** for the general public in understanding the hazard levels involved. It recommended that an Australian classification system incorporate dose ranges so that the public has a **much clearer idea of any potential hazard from the material.**”
- “Most of the waste in Australia is produced by the Australian Nuclear Science and Technology Organisation (ANSTO) at Lucas Heights in Sydney and this is where most of the waste is currently stored. A much smaller amount is stored in dispersed locations, such as hospitals, universities and industry. ANSTO’s operations at Lucas Heights **are the largest generators of radioactive waste in Australia, producing almost 90 per cent of all radioactive waste.** It will be the main contributor of waste to new waste facilities.”
- “The Committee is of the view that the storage and transport of radioactive material is so problematic with the general public that it requires sophisticated consultation processes. **These have been lacking to date...**The Federal Government should as a matter of urgency recommence the site selection process for a waste facility in a genuinely consultative way, in line with more contemporary and democratic approaches being utilised overseas that are based on community acceptance criteria.”
- “The rationale for [new national waste facilities] is to strengthen radioactive waste management in Australia by rationalising and centralising the ‘unsafe’ dispersed (non-ANSTO) storage locations across the country (estimated to be in excess of 100) and providing safe containment until the material decays to background levels. .. However, under the current proposals, both Lucas Heights and the operational non-ANSTO (‘unsafe’) sites **will continue to be waste facilities** as they accumulate waste on a two to five year cycle [before being shipped to the new waste facility]. This neither reduces nor rationalises the number of operating waste facilities. **Rather the proposals actually increase the number of operating [waste] facilities...**”
- “ANSTO acknowledged this point. When asked if, following the initial backlog transfer of waste to the [waste dump], there would be anything stored on site at Lucas Heights, Mr McIntosh (ANSTO) advised that “we will still have a continuing store of a generation of waste on our site from the production of radiopharmaceuticals and from the operation of the reactor.”
- “It is hard to see how the proposal to move waste to remote areas away from the point of production will increase safety **as the transportation of the material actually increases the risk from accident or intervention.**”
- “ANSTO has repeatedly assured the Committee that the storage of the material at Lucas Heights **is safe** (indeed ‘international best practice’) and the Federal Government’s own radiation protection regulator has advised that **there is capacity to store existing and future waste there** (a point confirmed by ANSTO)...There is no doubt that the transportation of radioactive waste increases the risk of accident or incident... By continuing the storage of waste at Lucas Heights on an interim basis, there is no need to transport most of the waste and any risks associated with that transport are avoided.”
- “The Australian community benefits from the products produced by ANSTO’s reactor. But it is hard to see how this justifies imposing the facilities on **unwilling communities chosen virtually at random.** Furthermore, it is arguable that **alternative technologies** and strategies can produce these radioisotopes.”
- “Professor Allen (a former Chief Research Scientist at ANSTO, Director of the Centre for Experimental Radiation Oncology, St George Hospital and Adjunct Professor, Medical Physics, University NSW) did not agree that alternative technologies could provide all the necessary isotopes for the foreseeable future. But he agreed Australia did not need the new reactor for medical reasons. Professor ALLEN: **‘Medically I do not believe the new reactor is essential...What the real reason for the new reactor is really is a matter for the Federal Government. I believe I know what the reason is and in that sense I probably concur with it, but I think it was inappropriate to claim that it was required to save lives with nuclear medicine.’**”
- “Ionising radiation occurs in three main forms: alpha, beta and gamma rays. Although all three forms are potentially harmful, they differ in their penetrating power or energy and in the manner in which they affect human tissue.”
- “In summary then, it is well established that ionizing radiation has both prompt and delayed effects. At very high radiation exposures, death will occur within several months or even less. At moderate levels, radiation exposure increases the chance that an individual will develop cancer, with a time delay of 10 or more years for most cancers. At low levels, the cancer risk decreases, but the relationship between cancer risk and the magnitude of the exposure is uncertain.”
- “In the broadest context the health standards recommended for the public and nuclear industry workers are long outdated. The recent findings of the European Committee on Radiation Risk recommended a tenfold reduction in the legal radiation exposure to members of the public from 1 milliSievert a year down to 0.1 milliSievert a year, and they recommended a fourfold reduction in the legal exposure for a nuclear industry worker over a 12 month period from 20 milliSieverts a year down to 5 milliSieverts a year. The trend is an increasing recognition that

there is **no safe level of ionising radiation exposure** and that the nuclear industry has to change its practices and be wound back in terms of the adverse health impact that it is having.”

- “Nuclear reactors... require fuel to operate. This energy is provided by fuel rods. When this fuel has been irradiated to the point where it is no longer usable due to the depletion of fissile material and the build up of poison or radiation damage, it is removed from the reactor. At this stage the fuel rod becomes known as **spent fuel**... Reprocessing the spent fuel means separating it into three components – uranium, plutonium and residual non-fission products.”
- “Whether you choose to call it ‘spent fuel’, ‘high level waste’ or whatever I do not find particularly enlightening...It is a highly hazardous material, inherently, no question.” [Dr Loy, CEO of ARPANSA, Australia’s nuclear regulatory body, quoted in the report].
- “One of the most contentious issues put to the Committee was the management of spent fuel...There is no disagreement on the hazard presented by spent fuel when it has been removed from a reactor – it is the **most highly radioactive** of substances...Dr Loy, CEO of ARPANSA, observed that ‘it is a highly hazardous material ... it has to be handled with a very strict and careful method’.”
- **NOTE: the reprocessed spent fuel rods from Lucas Heights ARE INTENDED TO COME TO THE N.T. WASTE DUMP FOR THE NEXT 40 YEARS. This is long-lived, highly radioactive waste.**
- **NOTE** – According to ANSTO (2005) **plutonium** will be sent to the NT dump if it goes ahead:

*“As stated in ANSTO’s supplementary submission to the Senate Select Committee Inquiry into the Contract for the Replacement Research Reactor at Lucas Heights, the current arrangements ANSTO has with reprocessing companies (and any future possible arrangements foreshadowed with others for the processing of spent reactor fuel) specify that the very small quantities of **plutonium contained in the spent fuel are to be returned to Australia in a non-recoverable form, incorporated into the long-lived intermediate level waste.**”*

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- “Clearly these proposals for the new waste facilities fail the test of their own objectives. They do not appear to be cost-effective, a genuine rationalisation nor improve safety. They certainly do not reduce the number of operating waste facilities. It is also hard to see how moving waste from Lucas Heights, a storage facility which already, according to ANSTO, “meets international best practice”, and transporting it thousands of kilometres can represent a “cost-effective solution”. The Committee certainly supports attempts to improve the management of waste at the non-ANSTO sites and supports the audit of these sites and, given that these sites will continue to store waste, an urgent upgrade of those facilities if needed. The best short-term solution to the storage of waste, one that will achieve the objectives the government is claiming for these proposals, is to maintain waste facility at Lucas Heights.”

END OF NSW INQUIRY EXCERPTS

Minister Nelson’s misinformation campaign

Federal Science Minister Dr Brendan Nelson has made numerous false claims in relation to his plan to dump the Commonwealth’s nuclear waste on Territorians. Dr Nelson told Alice Springs Radio 8HA that the waste to be dumped in the NT is low-level waste. **Wrong**. If built, the dump will also take long-lived intermediate-level waste, including reprocessed spent nuclear fuel rods from the Lucas Heights reactor.

Dr Nelson said that “preliminary assessment in terms of environmental impacts, particularly water tables, is that these three sites do lend themselves to the storage of this nature.” (Press conference, Lucas Heights, 15/7/05.) ABC *Science Online* was unable to obtain the “preliminary assessment” from Nelson’s Department of Education, Science and Training (DEST). DEST said it based its assessment on Geoscience Australia’s *Hydrogeology of Australia* publication – but that document indicates that the short-listed **Fishers Ridge** site near Katherine has extensive, highly productive aquifers. DEST tried to wriggle around that contradiction by saying that the ‘defence in depth principle’ would be applied ensuring multiple barriers between the waste and the environment. (ABC Science Online, July 2005)

Dr Nelson said that: “... you’ve got a lot of uranium in the ground up there in the Territory, and that’s actually more radioactive than the waste we’re talking about.” **Wrong**. The spent fuel reprocessing waste – and some other waste to be dumped in the NT – is far more radioactive and hazardous than unprocessed uranium.

Dr Nelson repeatedly claimed that every Australian will undergo a nuclear medicine procedure at some stage of their life. **Wrong**. Dr Nelson said the waste ‘facility’ would be an above-ground store. **Wrong**. The government’s own literature makes it clear that some wastes might be buried underground.

The waste “represents no threat to human health or life”, Dr Nelson said. **Wrong**. On July 26 Dr Nelson said that there had been a number of “misleading” comments in relation to the government’s plan to dump nuclear waste dump in the NT. **Indeed!**

So what IS planned for the NT waste dump?

1. Approx. 50 cubic metres of highly radioactive waste from reprocessing more than a thousand existing and future **spent reactor fuel rods from Lucas Heights, arriving over next 40 years**;
2. Approx. 130 drums per year of radioactive ‘compactable low level solid waste’, e.g. vials, gloves etc (Lucas Heights);
3. Approx 20 drums per year of solidified radioactive ‘sludge’ produced in the treatment of reactor wastewaters (Lucas Heights);
4. Hundreds of tonnes of radioactive ‘non-compactable contaminated items’, e.g. materials from the decommissioned old Lucas Heights reactors;
5. A stockpile of over 5,000 drums of ‘low level radioactive waste’ (Lucas Heights);
6. A stockpile of over 200 cubic metres of ‘intermediate level solid waste’ some with ‘unknown radioactive inventory’ (Lucas Heights);
7. Over 800 drums of ‘historical wastes’ including radioactive thorium, beryllium and uranium (Lucas Heights);
8. Over 2000 litres of radioactive contaminated charcoal (Lucas Heights);
9. Hundreds of used air filters containing radioactive contamination (Lucas Heights);
10. Around ten cubic metres of highly dangerous molybdenum ‘long lived intermediate level waste’ (Lucas Heights);
11. Over 2000 cubic metres of radioactive contaminated soil currently stored at Woomera;
12. Other Commonwealth Defence Department and CSIRO ‘historic’ radioactive waste.

It must be stressed that radioactive waste in many of these categories will be produced and transported to the NT **on an ongoing basis** if and when the new Lucas Heights reactor is activated, so the volume of radioactive material, especially the most hazardous of all – reprocessed spent fuel rods – will go on increasing every year for the next 40 years.