Submission
No 432

Submission to the NSW Joint Select Committee on the Storage and Transport of Nuclear Waste

from the Blue Mountains Nuclear Free Zone Group
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Introduction

The Blue Mountains Nuclear Free Zone Group is part of an ongoing local movement which has for many years been working towards a nuclear free environment in the Blue Mountains, in Australia and globally.

These are our aims and they also encapsulate our broad concerns as elaborated on further in this submission.

1 We are opposed to the transportation of nuclear waste through the Blue Mountains or through any other communities.

2 We disagree with the necessity for a new nuclear reactor at Lucas Heights

3 We are opposed to dumping radioactive waste

4 We believe that the management of existing waste should follow World's Best Practice – Storage above ground at source (Absolutely no underground dumps)

5 We want alternatives to nuclear medical products developed in Australia to replace radioactive isotopes.

6 We believe governments should listen to and respect the views of Aboriginal people

7 We believe governments should properly consult with local communities

8 We urge NSW state government to stand up to the Commonwealth Government in these matters

Our submission covers sections a, b, c and d of the terms of reference for this inquiry.

We urge the Joint Select Committee to hold a hearing in the Blue Mountains to allow residents to articulate their concerns to you in person.

If you have any queries please contact us at any of the above addresses

Thank you for your consideration of our submission.

Lesley Sammon

Dianne Jacobus

World Heritage and Sustainability

The 'clean green' image of the Greater Blue Mountains World Heritage Area (GBMWHA), with its major environmental attributes and cultural tourism opportunities, is threatened by the unacceptable presence of radioactive waste and the risks of nuclear accidents, with potentially lethal consequences.

'The City draws national and international visitors with more than one million people visiting annually. The Blue Mountains Tourism Authority estimates that these visitors coming to the mountains each year contribute one hundred million dollars to the regional economy. Of all employed residents in the Blue Mountains thirteen percent work in tourism related activities' (Blue Mountains - Our Future: 2000-2025 Draft Vision, 2003 p58)

'The residential identity and character of the Blue Mountains has developed over a long period of time and reflects the cultural and natural heritage of the area. Many people who have chosen to live in the Blue Mountains have sought an alternative living environment to that of suburban Sydney. They have moved to the Mountains for the fresh air, bush surroundings, sense of village and community, open spaces and slower pace of life.' (BMCC, Residential Character Study, 2002)

Blue Mountains City Council has initiated a 25 year City Strategy 'Blue Mountains Our Future'. Extensive community consultation indicates protection of the natural environment continues to be most important to the Blue Mountains people. The draft vision strongly recommends action to achieve a more sustainable city within a World Heritage National Park. "A sustainable future meets the needs of the present without compromising the ability of future generations to meet their own needs. It's about improving the quality of life while living within the capacity of our supporting environment," Jim Angel, Mayor of Blue Mountains City Council.

The Greater Blue Mountains Area was inscribed on the World Heritage List in November 2000.

The Briefing document, Greater Blue Mountains World Heritage Area (GBMWHA) Interpretation and Visitor Orientation Plan, Objectives 9, Pg. 39, identifies an initial interpretive plan for GBMWHA in which promotion of awareness and understanding of the listing and encourages engagement, inspiration, a sense of place and stewardship, enjoyment, satisfaction, safety and protective behaviour amongst visitors.

It states amongst its aims,
'Encourage local communities to view the WHA as their own backyard'.
'The overall goal of any management program for GBMWHA is the long-term conservation of the area's natural and cultural values.'
'That anyone visiting or residing in the GBMWHA and its environs has a sense of being in a special place – a place where the broader mountains community has taken custodianship of the GBMWHA to the extent that it becomes a unifying motif for the region and a cultural asset in it's own right.'
(Pg 39, OBJECTIVES: 9, GBMWHA Interpretation and Visitor Orientation Plan)

The Commonwealth Government has a key role and obligation to conserve sites recognised to be of national and or international environmental significance.

Unilateral action is needed to ensure the proper management of World Heritage sites such as the GBMWHA, where neglect of responsibility for their protection is likely. Commonwealth Environment Protection legislation and the State Government and its statutory authorities must ensure full protection in order to preserve the integrity of the conservation and environmental values of the Blue Mountains region.

Two State Government agencies bear management responsibilities for GBMWHA constituent Reserves:

- NSW National Parks and Wildlife Service (NP&WS)
- Jenolan Caves Reserve

Two other agencies have certain other complementary responsibilities

- Sydney Catchment Authority
- Environment Australia (responsible for World Heritage matters at Commonwealth level)

Significant other areas may achieve World Heritage Status in due course

- Warragamba Catchment
- Blue Mountains Catchment

'Under the criteria of the World Heritage Convention the Greater Blue Mountains Reserve System has been recognised as being of OUTSTANDING VALUE TO HUMANITY because it represents:

- an outstanding example of Australia's characteristic sclerophyll ecosystems dominated by eucalypts
- a significant representation of Australia's biodiversity
- The habitat of a number of important threatened species.

An additional two values were nominated as being of outstanding universal value under World Heritage criteria:

- The aesthetic beauty of the landscape as perceived by humans; and
- Changing human attachments to the landscape in its natural condition over the last 12,000 years – from the earliest Aboriginal occupation to contemporary communities.

The success of the World Heritage nomination also depended upon the area's integrity – the largely undamaged condition of its ecosystems and the strength of its conservation management.

- Largest integrated system of protected areas in NSW, representing outstanding opportunities for the conservation of natural communities and processes;
- Largest wilderness areas in Eastern Australia between Cape York Peninsula and Tasmania;
- One of the largest protected forest areas in Australia;

- Diversity of landscapes and geological features;
- Diversity of plant and animal communities;
- Extensive dissected sandstone plateau representing ongoing geological processes;
- Ancient karst landscapes with extensive cave systems;
- An ancient freshwater lake system with origins associated with the formation of the Blue Mountains;
- Large number of rare, threatened and restricted plants and animals;
- Many clean catchments and high water quality streams;
- At least 12,000 years of Aboriginal connection;
- A large body of Aboriginal rock art, archaeological sites and spiritual places;
- Aesthetic values demonstrated by a large body of contemporary art inspired by the landscape (visual art, performing art, literature etc.);
- A long history of human attachment and care for the landscape, including modern community action for protection leading to World Heritage status;
- Many sites demonstrating themes of post 1788 human use;
- Extensive opportunities for education and scientific research;
- Recreation opportunities covering the full outdoor spectrum for developed to remote wilderness;
- Economic value to the local and wider communities;'

(Pg 20-21, Greater Blue Mountains World Heritage Interpretation and Visitor Orientation Plan, NSW National Parks an Wildlife Service, 2002)

Transportation of nuclear waste through the Blue Mountains will not only adversely affect our cultural image and eco-tourism, but will also put at risk a large and diverse set of ecosystems that cannot be found anywhere else in the world.

Concerns about the Proposed Nuclear Reactor at Lucas Heights

We are concerned about the unnecessary building of a proposed nuclear reactor at Lucas Heights in Sydney. A new reactor means another 40 years of risk. 'Key aspects of the projects design, siting options and waste management plans do not exist or have never been made public' (Dave Sweeney & Sarojini Krishnapillai, Habitat Australia, Vol 29 No1 Feb 2001). It is not only costly in hundreds of millions of dollars but also in serious environmental health and safety risks. (See attached Appendix A for further details).

A clear and definite radioactive waste management plan was meant to be a prerequisite for the establishment of a new reactor, however ANSTO has commenced construction without any clear plan.

We are concerned about the design of the new reactor and the fact that the Environmental Impact Statement is considered flawed, especially since there was no reactor design plan in the document.

'Approvals for the project were given amid much criticism after a flawed Environmental Impact Statement (EIS) assessment process in early 1999. There was no design made public for the new reactor, no credible waste management plan, and the Government kept the siting study secret. Later that year the Senate Economics

References Committee reported the findings of its Inquiry which again clearly rejected the new reactor plan.'

('Current Situation' Pg 1,http://acfonline.org.au/asp/pages/document.asp?IdDoc=127)

Not only have many groups been worried about the design plans and EIS submitted by ANSTO but also it now seems to be clear that the construction of the new reactor is not running smoothly. This could be the result of the original design plans or INVAP's execution of the plans, or a combination of both.

'The Australian Nuclear Science and Technology Organisation (ANSTO) has admitted in today's St George & Sutherland Shire Leader, that twenty crucial holes for pipe work in 2 primary safety containments "do not line up." This problem was reportedly known to the contracted builders, INVAP, in February and the latest problem in a long line of incidents and irregularities at the site.

"This basic construction mistake seriously compromises key radiation safety and containment measures at the reactor," said Australian Conservation Foundation nuclear campaigner, Dave Sweeney. "It is a serious public risk for workers, residents and the wider Sydney community and ARPANSA must act immediately." (see appendix A).

Total estimated cost of building and operating the Sydney reactor = over $600 million. This could be spent on developing alternatives to nuclear technology.

Alternatives to Nuclear Medicine

Some corporate and government groups would say that we need the new reactor for the continuation of medical nuclear radioisotopes. **However there are many alternative technologies already in existence that could replace medical nuclear radioisotopes.** Many people believe that the main reason we need the new reactor at Lucas Heights is because of medical nuclear radioisotopes when in reality nuclear medicine only produces 5% of the radioactive waste in Australia annually.

'The key arguments put forward by proponents of the new reactor are that it is necessary in order to provide the medical isotopes used in nuclear medicine and also in the wider "national interest". Neither of these claims stands up to scrutiny and both have recently been rejected by findings of the May 2001 Senate Inquiry "A New Research Reactor"? The necessary medical isotopes can increasingly be generated by non-reactor sources or be imported and the creation of large volumes of radioactive waste is in no one's interest.'

('Current Situation', Pg 1, Australian Conservation Foundation, http://acfonline.org.au/asp/pages/document.asp?IdDoc=127)

There are many different viable alternatives to nuclear produced medical radioisotopes such as:

- Cyclotrons
- Magnetic Resonance Imaging
- X-Radiology

- Computerised Tomography
- Ultrasound
- Spallation Sources

If the Government invested their funds into research and ongoing development of these alternatives there would be no need for a research reactor at Lucas Heights in relationship to medical concerns.

'Almost all the short-lived radioisotopes used in nuclear medicine are produced in cyclotrons, not research reactors. With no research reactor in Australia, over 99% of nuclear medicine would be unaffected, using either cyclotron produced radioisotopes or imported radioisotopes. As for the small number of rarely-used radioisotopes that would not be available, alternative clinical technologies can easily fill this gap.'
('Nuclear Medicine for Dummies', Pg3, Dr Jim Green,
http://www.geocities.com/jimgreen3/dummies.html)

With the development of alternative technologies reliance on nuclear medical isotopes both within Australia and abroad will become non-existent. In the interim period the excess glut of nuclear medical isotopes from Canada could be used up, giving time for new technologies to take over their rightful place in a healthier, greener more forward thinking science.

'Cyclotrons can make medical isotopes for diagnosis and treatment. They're better than a nuclear reactor because they:
- are powered by electricity, not radioactive nuclear fuel;
- make a tiny fraction of the quantity of nuclear waste;
- are much safer;
- can't be used to make nuclear weapons (whereas some nuclear reactors can, and have, been used for weapons production).

About 20% of Australia's medical isotopes are made in cyclotrons in Sydney and Melbourne. This percentage may grow as cyclotrons become more technically advanced.'

(Alternatives to the Sydney Reactor are for Real, Pg 1, Greenpeace,
http://www.greenpeace.org.au/nuclear/whatawaste/alternatives_list.html)

'In fact, many of the isotopes are already produced in non-reactor facilities, like the cyclotron at Royal Prince Alfred Hospital in Sydney or the one proposed for Sir Charles Gairdner Hospital in Perth.'

(http://www.abc.net.au/rn/talks/perspective/stories/s685675.htm)

'Among the radioactive elements commonly found in nuclear reactor "low-level" waste are: Tritium, with a half-life of 12 years and a hazardous life of 120-240 years; Iodine-131, half-life of 8 days, hazardous life of 80-160 days; Strontium-90, half life of 28 years, hazardous life of 280-560 years; Nickel-59, half life of 76,000 years, hazardous life of 760,000-1,520,000 years, and Iodine-129, half-life of sixteen million years, hazardous life of160-320 million years.

By contrast, common medical waste elements include Technetium-99m, with a half-life of 6 hours and a hazardous life of 2.5-5 days; Galium-67, half-life of 78 hours

and hazardous life of 1-2 months; and Iodine-131, with its half-life of 8 days and hazardous life of 80-160 days.

The vast majority of medical waste is hazardous for less than 8 months. Yet, it is in the same category as reactor waste that will be hazardous for hundreds of thousands to millions of years'.

("Low-Level" Radioactive Waste', Pg 3, Nuclear Institute Research Service, March 1992, Dianne D'Arrigo, http://www.nirs.org/factsheets/llwfct.htm)

If the Lucas Heights reactor is not vital for research or radioisotope production, what do we need it for?

The reactor is a response to what some people in the government refer to as the "national interest". That is, the Department of Defence and the Australian Nuclear Science and Technology Organisation (ANSTO) like to believe that a reactor is necessary to protect our diplomatic and security interests, for non-proliferation and safeguards work. This is a very subjective opinion. Greenpeace and many other organisations and individuals believe that **Australia should be joining other global leaders by becoming nuclear-free and helping make the world more stable and safer'.**

(Frequently asked Questions , Pg 1 , Greenpeace, http://www.greenpeace.org.au)

Nuclear Research Reactors can also be used to assist in the production of nuclear weapons in ways such as:

- Plutonium Production
- Uranium Fuel for HEU Bombs
- Creating other isotopes for use in weapons
- Production of Tritium (assists in the fission reaction in nuclear weapons)
- Is one step in the chain for lobbying politically for nuclear weapons production

Some examples of nuclear research reactors being used to assist in the production of nuclear weapons are:

- 'France supplied Israel with a research reactor which they then used to produce plutonium to go towards their nuclear weapons pile.
- Taiwan bought a nuclear research reactor from Canada but after pressure from the United States refrained from producing plutonium for nuclear weapons.
- India, North Korea, Romania and Yugoslavia are other countries where they have worked at obtaining plutonium through research reactors'.

('Research Reactors & The Myth of the Peaceful Atom', Dr Jim Green, Pg 1, http://www.geocities.com/jimgreen3/dualuse.html)

'"Peaceful" reactors can be used for nuclear weapons research. They can be used to make plutonium for use in nuclear weapons.

It's tempting for countries to run covert weapons programs within their civil nuclear programs, so countries that don't have reactors get suspicious of those that do. Simply having a reactor gives a country a potential stake in the nuclear arms race.

It's unlikely that the new Sydney research reactor will have a weapons program. But the Australian government claims the new reactor will actually help our non-proliferation and disarmament activities, by keeping us up with current developments in nuclear technology! The government is giving the world a double message and taking a serious risk.

Countries that want nuclear weapons could justify their military programs by using the same "peaceful" argument we are using.' (Different Reactor Types, Greenpeace, http://greenpeace.org.au/nuclear/whatawaste/solutions_reactortypes.html)

Many people are worried that the research reactor at Lucas Heights will be used for inappropriate reasons such as the above mentioned. Not only could they be used to push us into the Nuclear Arms Race but could place Australia in a situation of a terrorist security alert.

'The IAEA, which helps countries to prevent, intercept and respond to terrorist acts and other nuclear safety and security incidents, has the only international response system in place that would be in a position to immediately react in case of a nuclear terrorist attack.

This week, the agency warned of "the potential of terrorists targeting nuclear facilities or using radioactive sources." The agency noted that "radiation knows no frontiers," and warned that, "safety and security of nuclear material is a legitimate concern of all states."

"An unconventional threat requires an unconventional response, and the whole world needs to join together and take responsibility for the security of nuclear material," El Baradei said.

To prevent a terrorist nuclear attack, the agency is now proposing a number of new initiatives. It estimates that at least $30-$50 million each year will be needed in the short term to strengthen and expand its programs to meet terrorist threats.

('Threat of Nuclear Terrorism Is Growing, Experts Warn', Pg 3-4, Environmental News Service, **http://www.ens.lycos.com**, 10-2-2003)

Radioactive Waste Transport and Repository Issues

Residents of the Blue Mountains have many reasons to be alarmed at the proposal to truck nuclear waste via the Great Western Highway to dumping grounds in NSW, SA or elsewhere. Any transportation of nuclear waste is highly radioactive, unnecessary and dangerous. It is the least safe option. The already congested Highway is totally unsuitable for movement of such hazardous material (see Appendix B).

Radioactive Waste Storage and World's Best Practice

'Much of Australia's former waste has been sent overseas for reprocessing and is due to return to Australia and the waste returning from reprocessing will contain the same amount of radioactivity upon it's return.'

(Greenpeace People's Conference 2000 Radioactive Waste In Australia, Pg.8, Jean McSorley, Greenpeace,
http://www.greenpeace.org.au/nuclear/pdfs/peoples_conf_waste.pdf)

'Apart from some lightly contaminated soil' left over from 1960's experiments are stored above ground 'in a stable condition' at Woomera, the bulk of the remainder of radioactive waste is from Lucas Heights and the decommissioning of the current reactor requires new storage solutions. It will either require regular transport trips to Woomera (or another Dump site) or the creation of an adequate storage facility at Lucas Heights itself.'
('Australia's Radioactive Waste: A Shallow Burial of the Facts', Pg3, Friends of the Earth (Australia)).

In addition the new reactor will generate 30,000 metres of low level waste per year for the next 40 years (90% of all nuclear waste in the next 40 years will be from Lucas Heights).
('Australia's Radioactive Waste: A Shallow Burial of the Facts', Pg.2,Friends of the Earth (Australia))

'Most of the waste created by Lucas Heights is classified as low-level waste (LLW) Category A. However, unreprocessed spent fuel is classified as High Level Waste (HLW). Also ANSTO has estimated that the amount of radioactivity in the spent fuel from the new reactor will be twice that from the current reactor.'

(Greenpeace People's Conference 2000 Radioactive Waste In Australia, Pg.8, Greenpeace, Jean McSorley ,
http://www.greenpeace.org.au/nuclear/pdfs/peoples_conf_waste.pdf)

'Long-lived intermediate level and high-level nuclear waste:

- is radioactive for hundreds of thousands of years;
- emits large amounts of radiation, including alpha particles;
- is typically 1000 times more radioactive than low-level nuclear waste.

Where does this waste come from?

- Production of radioactive isotopes at Lucas Heights in Sydney
- Products from reprocessing Australia's **spent nuclear fuel rods**
- Contaminated laboratory equipment and machinery
- Mining and processing mineral sands

The Australian Nuclear Science and Technology Organisation (ANSTO) produces 44% of Australia's long-lived intermediate level nuclear waste. The government claims that Australia doesn't produce high-level nuclear waste. But, in the USA, spent nuclear fuel rods and the waste from producing isotopes are classed as high-level radioactive waste'.
(http:/www.greenpeace.org.au/nuclear/whatawaste/waste_highlevel.html)

Storage of Radioactive Waste

International Best Practice for storage of radioactive waste is to have 'assured isolation facilities' **on site,** which in this case, would involve above ground dry storage facilities at Lucas Heights. The Commonwealth government has not agreed to adopt this practice although the 1996 report from the Senate Select Committee on the Dangers of Radioactive Waste *No Time To Waste* recommended above ground storage for both low level and intermediate level waste.

The Department of Education Science and Training (DEST) Environmental Impact Statement of January 2003 for the new reactor at Lucas Heights uses the terminology "Accepted International Practices' as opposed to World's Best Practices (WBP) or International Best Practices (IBP). This document recommends a 'near surface radioactive facility', commonly known as 'shallow burial' and the planned transportation to a remote National Radioactive Waste Repository (NRWR).

The report of the Nuclear Safety Committee (an advisory committee to the CEO of ARPANSA) addresses storage of spent fuel on-site via the construction of a 'Reactor Pool Spent Fuel Storage Rack' with a capacity to hold this spent fuel for 10 years. This is acknowledged to be an interim storage solution whilst awaiting 'the accumulation of enough spent fuel to comprise a practicable quantity for shipment. W.3.2.1(a). The overall storage capacity at Lucas Heights has been estimated at 50 years whilst the half-life of some of the long-lived intermediate-level (LLILW Category S) and HLW Category S produced there has been estimated as up to 437 years. **Quite obviously this is far from acceptable practice.**

'The single biggest source of LLILW for disposal in Australia is the Lucas Heights operation.'

(Greenpeace People's Conference 2000 Radioactive Waste In Australia, Pg.7, Jean McSorley, Greenpeace, http://www.greenpeace.org.au/nuclear/pdfs/peoples_conf_waste.pdf)

'Waste containers and forms will not last as long as some waste remains hazardous. Therefore, waste should be placed in a manner which will facilitate recontainerization and make continued isolation from the environment possible in the future. If the waste is "disposed of" as the NRC currently requires, it will not be isolated from the environment. "Planned leakage will occur at (what NRC considers) an "acceptable" leak rate leading to "acceptable" public radiation exposures and health risks. The allowable leak rates and exposure levels are determined by federal agencies, not those experiencing the risk.

To avoid leakage, above-ground, engineered storage at or near the source of generation could allow responsible routine monitoring and repair.'

('"Low-Level" Radioactive Waste', Nuclear Institute Research Service, Pg. 3, March 1992, Dianne D'Arrigo, http://www.nirs.org/factsheets/llwfct.htm)

The advantages of a system which complies with WBP or IBP, that is, above ground and on-site storage, include

- It secures radioactive wastes from accidental or deliberate break-ins
- It keeps the waste separate from people and the environment, preventing exposure and contamination.
- It is easier to deploy emergency services personnel to one central location in the event of an accident
- It makes it easier to monitor the waste over long periods.
- It makes it both easier and safer to access the waste if betters ways to manage it are invented.
- It reduces the risk of terrorism because there is less chance of breaches of security than if it is transported -with the present transport proposal there are 1700kms of road that will need to be secured on a regular basis.

In 1995 the Senate Select Committee on the Dangers of Radioactive Waste conducted an inquiry into the production of radioactive materials and waste management. They strongly recommended against 'shallow burial'. They also recommended the facility be 'adequately engineered to withstand all possible climatic conditions, no matter how unlikely'. Yet, the Bureau of Science admits that the proposed design will not prevent leakage of water, nor human, animal or plant intrusion.

Transport of Radioactive Waste

We have serious concerns about the transportation of radioactive waste along the transport routes proposed. Key communities along the transportation routes have made their opposition to transportation clear. We do not support the new reactor at all but if it is established, a more thorough EIS must be undertaken which takes transport and storage issues into account, especially the increased terrorist threat posed by 1700kms of road that needs protection.

There have been many worldwide concerns about the transportation of all types of radioactive waste and the risks they pose.

'Nuclear transports involve risks to human health and the environment. One cask of highly radioactive spent nuclear fuel elements contains about the same amount of radiation released by the Chernobyl accident. Transports are also potential targets for terrorist attacks or the theft of fissile materials.

The nuclear industry claims that the casks are safe because they have to undergo some crash tests. However, the tests are not conducted under realistic conditions. Even if the containers are considered "safe", this does not mean they do not emit radiation. It only means that it does not exceed certain dose limits. In 1998, transports had to be stopped in Europe because radiation leaking from the so-called Castor casks turned out to be higher than allowed'.

('Nuclear Transport", Pg 1, Greenpeace,
http://wwwgreenpeace.org.au/nulcear/transport/)

Our Concerns about the Commonwealth Government's 2003 Environmental Impact Statement (EIS) referring to the National Low Level Radioactive Waste Repository

The risks outlined in the EIS are not acceptable to our group.

The topic of safety risks is not adequately addressed in the level of detail that a local community like the Blue Mountains would like to see. The safety sections of the Commonwealth Government's Environmental Impact Statement 2003 (EIS) about the National Low Level Radioactive Waste Repository, the Emergency Services Plan and other documents, such as that of the Nuclear Safety Committee, refer to a 'reference accident' as a Loss of Coolant Accident (LOCA), that is a working reactor incident, and do not seriously address storage or transport accidents.

'A draft plan for managing an incident at the Lucas Heights reactor has been described by the firefighters union as "breathtakingly inept". The union suggested members would not work in a clean-up because of fears for their safety.

The nuclear watchdog's radiation health committee has also criticised the plan, saying its attitude towards the concerns of people living in the area is "condescending and patronising".'

('Anger at nuclear disaster plan, Stephanie Peatling, Sydney Morning Herald, http://www.smh.com.au/articles/2003/03/30/1048962646232.html)

These comments do not take into account the possibility of a transport accident and the possible leakage of radioactive waste which would pose other serious problems. The FBEU also have grave concerns about the safety and involvement of their workers in such an incident.

Referring to Pg 121 of the EIS by ANSTO subsection 7.1 TRANSPORT OF WASTE TO THE REPOSITORY, we have serious concerns about the following claims which understate the extreme dangers of transporting radioactive waste.

It is stated that within Australia transportation 'of radioactive materials is considerably less hazardous than transporting flammable and corrosive materials'. This confident statement in the EIS is based on previous records involving the transporting of small packages, infrequently, over short distances.
This cannot be compared with the proposed frequent movement of very large volumes, over massive distances; ie the consolidated loads on container trucks, each container carrying 72 drums, each packed with 205L of radioactive material.
The chance of contamination and extent of cleanup operations increases dramatically in the event of an accident.

The long term risk to human health and our precious natural environment is far greater in the case of radioactive material. This can have devastating long-lived toxic effects, and unlike chemicals they do not dilute with exposure to air or water, nor do they evaporate or disperse.

Emergency Personnel have advised that, at present, the labelling and warning signs on vehicles carrying nuclear waste consist of a series of numbers. As radioactive contamination is invisible, there is no smell. People arriving at an accident scene may not be aware that a broken container holds radioactive waste. They may be unable to interpret the warning numbers. This places themselves and the surrounding community at extreme risk. There is also a risk of spreading the contamination through their footwear, clothing, vehicles etc.

The EIS states in Pg 124 , Subsection 7.2.5. Proposed Truck Routes that a 'selection of routes would depend on: conditions of the transport route, including the quality of the road surface and weather conditions in various areas at the time of transport'. What are the plans, if a route has unpredicted extreme weather hazards, bushfires or massive traffic backups due to another accident? This is not covered in the EIS. A more specific plan of action should be developed, particularly as the Blue Mountains area deals with these issues on a regular basis.

Due to extreme weather hazards, bushfires or massive traffic backups due to another accident could the vehicle be halted in a township for lengthy periods of time? Could the trucks be re-routed along roads which have not been scrutinised by the EIS?

The EIS on Pg 124 Subsection 7.2.5 Route Selection Principles states that routes have been chosen 'with many towns and regional centres being bypassed'. However, the Blue Mountains Route through the World Heritage National Park passes along a narrow ridge, through twenty-seven villages. It also runs next to or through many major towns such as Penrith, Katoomba , Lithgow, Orange and Dubbo etc. Nuclear waste will be transported through agricultural regions, important terrain and geological areas including major river systems and catchments, and key tourism areas. These could all be seriously contaminated far into the future in the case of a transport accident involving radioactive waste.

Community Consultation

In the EIS (ANSTO Pg 134 Subsection 7.5 Community Consultation), the process appears to be severely inadequate in its data statements and observations in relationship to the Community Consultation process.
There was no data on the number of people spoken to in each town and only generalised feedback from residents. There is no explanation of the reasoning behind why only a few towns are mentioned.

There were no quantitative survey results, only statements such as:

- Reluctant acceptance
- General willingness
- Most people or some people
- It was indicated to the group

Age groups, socio-economics, families with children, business people, farmers etc are all categories for assessment that could have been used to obtain more relevant, realistic data. This EIS process shows a lack of transparency in its procedures and general statements. There is no statistical data to back up these profoundly general statements. The majority of towns on the proposed routes have been omitted.

Accidents

Pg 137 of the EIS (ANSTO Subsection 7.6.1 Review of International Accidents), states 'accident rates for rail and road are similar but are about 20% higher for road transport, on a per truck-km verus a pre railcar-km basis. The rates for road and rail crashes were higher in the 1990s than the 1980s'. This indicates an escalating accident rate. It states that accident rates are affected by 'cold weather in both road and rail transport'. The Blue Mountains frequently experiences extremely cold weather and poor visibility. Information from the USA on transport safety is not necessarily relevant to Australian conditions. We are concerned that data and information relevant to the transport routes was not sourced.

The traffic accident figures on Pg 140 Table 7.3 'Average truck accident rates' and estimates (referred to) in Australia seem to be based on fatalities or major injury statistics. This is very misleading as breaches of cargo containment on trucks do not involve fatalities and in many cases minor incidents may not ever be reported. There is lack of clarity as to whether the numbers in Fig. 7.3 Pg 140 represent fatalities only. On Pg 137 Subsection 7.6 Transport Safety reference is made to UK records for Railway Safety figures. We believe that Australian records would be more relevant.

'According to the Federal government Environmental Impact Statement, there is a 23% chance of an accident (whilst) trucking the existing national inventory to SA via approx. 170 trucks. That includes minor accidents and serious ones.

The government frequently claims that there are 30,000 packages of radioactive materials are transported safely annually. It's anyone's guess where the 30,000 figure comes from. Moreover the government ignores accidents, e.g.:
* a package containing radioactive material fell from a van in Sydney in September 1997
* reports of spill/s when moving waste to Woomera in 1994-95
* at least one significant accident moving spent fuel within the Lucas Heights site in the late 1990s
* sure to be other accidents ignored by the government'

('Transport issues for planned national nuclear dump in SA', Pg 1, Friends of the Earth, http://www.geocities.com/jimgreen3/dumptrucks.html)

In reference to EIS, Pg 141 Subsection 7.6.4 Emergency Services clearly resources for dealing with a transport emergency of any amount of radioactive material are completely inadequate. In some states training for such an emergency seems to comprise of few words in a manual. Necessary equipment appears to be scarce and situated at great distances from many points along the proposed routes.

In particular, monitoring equipment, which is the primary necessity for any such accident, would seem to be many hours away from those initially dealing with the situation. As fire, injury and entrapment could be involved, SES, Ambulance, Council, RTA and Police Personal could be attending the scene. Motorists, concerned residents and sightseers could join the emergency workers and also be unaware of the potential danger. We are aware that local authorities will not be informed of transport details and dates. The NSW Fire Brigade Employees Union's have suggested that the

number of volunteers in the event of a high risk accident could be inadequate to deal with the emergency situation.

'Fire fighters must also contemplate that workers at Lucas heights and specialist staff for the Environmental Protection Agency (EPA) might not be willing to volunteer in a Category 1 situation. The absence of technical advice from specialist staff would have a profound effect on how an incident might be dealt with and provides no certainty to fire fighters that the incident could be dealt with safely let alone contained.

In short, recommendations in this section are breathtakingly inept in their inability to comprehend how an incident might be fought effectively at Lucas Heights. The FBEU strongly suggests that fire fighters, aware of the right to decline involvement, aware of the quality of pre-planning, and aware of a proposal to permit exposure in excess off 500mSv will have made their decision upon arrival. It is reasonable to expect that the participation rate may be extremely low.'

(Submission, Australian Radiation Protection and Nuclear Safety Agency, INTERVENTION IN EMERGENCY SITUATIONS INVOLVING RADIATION EXPOSURE, Pg 6-7, NSW Fire brigade Employees Union, Feb. 2003)

Apart form any initial contamination, clean up operations produce vast amounts of additional contaminated material. Decontamination of personnel and equipment would result in large volumes of contaminated water at the site. In some areas complete decontamination may never be possible and the results may not be evident for years.

The proposed transport plans would incur massive expense which could be non-existent if we had onsite storage which is considered Worlds' Best Practice Even a minor accident would increase these costs significantly. This money should be spent securing the contaminant on site and providing adequate long term security and protection for the community. Money also needs to be directed into research into alternatives and the reduction of Radioactive waste.

Terrorism risks

We are concerned about the risk of the new reactor and existing reactor at Lucas Heights being targeted by terrorists, particularly in light of heightened global unrest.

'Although concrete evidence is rare, and signs are unclear, people around the world dread the possibility that terrorists will attack a nuclear installation - be it a power plant, a reprocessing facility or nuclear waste storage. According to the Vienna based UN-International Atomic Energy Agency (IAEA), "we have (now) been alerted to the potential of terrorists targeting nuclear facilities or using radioactive sources to incite panic, contaminate property and even cause injury or death among civilian populations." The IAEA calls on countries around the world to take a careful inventory of the security risks at their nuclear power plants and other facilities and to spend the money necessary to ensure that they can prevent or withstand terrorist attacks.'

('No Sanctuary Any More, No Safety Zone', World Information Service on Energy(WISE), News Communique#557, 02-10-2002)

Waste repositories and opposition to waste dump site

Building the new reactor at Lucas Heights increases the possibility of a medium and high-level waste dumpsite in New South Wales.

'Science Minister McGauran, in announcing the approval (of the low-level waste repository), ruled out South Australia as a potential site for the additional medium and high level waste form the reactor. The statement increases pressure for the higher level waste to remain in NSW.'('Kemp Dumps on National Interest', Pg 1, 09-05-2003, Friends of the Earth (Aust.), http://www.foe.org.au/mr/mr_9_5_03.html)

The creation of radioactive waste create a burden of responsibility for the Federal Government and the New South Wales Government. It also puts pressure on other states when they are off loaded with the waste. Such is the situation of the South Australian Government and people of South Australia, as they take on the onus of waste from the Lucas Heights reactor. Even though this NSW inquiry limits itself to its own borders, it still affects others outside of them.

A great majority of the people of South Australia strongly oppose the building of the proposed radioactive waste dump, as do both parties in the South Australian parliament. This is reflected in the following figures:

'Community opposition has moved the issue past the stage of Government denials. Polling in SA showed 87% of people oppose the dump and 95% oppose the Store for the reactor's long-lived wastes. This opposition saw a major petition of 130,000 signatories against any radioactive waste dump in SA.

The nuclear dump and reactor agenda was realised to be a serious threat to democracy with Senator Minchin's statement in May 2000 that: "Any legislation passed by the SA or other State or Territory Governments will not change our plans."'

('Nuclear Waste Dump Woomera, Situation at April 2003', Pg1, ACF Website, http://www.acfonline.org.au/asp/pages/print.asp?IdDoc=121)

States Rights Issues

The rights of states to determine what goes on within their borders is clearly of crucial importance and yet has been disregarded by the Federal Government, as they used derogatory terms like 'parochial' and 'pathetic' to describe state opposition to the imposition of the Federal nuclear regime.

Not only will the action of the Federal Government and ANSTO affect South Australia but it will also have long-lasting and detrimental outcomes for the cultural heritage of the Indigenous people of the area. Although this inquiry addresses issues within the limits of NSW legislation and government perimeters, the effects will be felt by other states and territories.

It is vitally important for the NSW Government to assist South Australia in their opposition to the Federal Government's blatant rail-roading of Nuclear Waste production, transport and storage. There is a very likely possibility the medium and/or high-level dumpsites will be in NSW and then we will be in the same position as South Australia. The New South Wales Government must be aware of the importance of the states to pull together in relation to dealing with the Federal Government on nuclear issues.

Community Opposition to Nuclear Transport

Local communities are concerned because the Federal Government is under no obligation to give notice to local governments and communities of the specific plans to transport the nuclear waste through their areas. This raises grave concerns about local emergency services and what needs to be done in case of an accident.
Other community groups along the transport route to the dumpsite in South Australia and the possible dump sites in outback New South Wales are very adamant about their rejection of the transport of nuclear waste through their communities and possible dump site in outback New South Wales. They object because of the risks involved with health and safety, environmental issues and cultural heritage integrity.

Opposition from the communities along the transport route:

Blue Mountains - Local Council, Blue Mountains City Council is a nuclear free zone, and strongly opposes the transport of nuclear waste through the area. There is widespread opposition to the dangers of the nuclear industry and in particular to the transport of radioactive waste through the World Heritage listed Blue Mountains National Park.
State Environment Minister Debus – "I can assure the Federal Government that, as Minister for the Environment, I would lead a co-ordinated community movement against any attempt to truck nuclear waste across NSW, especially through heavily populated and environmentally sensitive areas, including my own electorate of the Blue Mountains."
Lithgow Council – Has acted to confirm its status as a Nuclear Free Zone and will lodge an objection to the waste program.
Orange – Member for Orange Russell Turner is against the inland transportation of radioactive waste to anywhere within Australia. Dave Shearing Orange City Council's Emergency Management Committee Chairman, "emergency services in the region were not geared up to handle an emergency involving radioactive material."
Calare – Member for Calare, Peter Andren, "The plan to transport radioactive waste on trucks through Central Western NSW is of grave concern to many people in the region, regardless of how low the level of radioactivity is."
Central Darling – Central Darling Shire Council, "The council is totally opposed to the transportation of radioactive waste across the Central Darling Shire."
Parkes – Federal member for Parkes MP John Cobb has sent a firm message to the Federal Government not to use his electorate's backyard as a dumping ground for intermediate radioactive waste.
Murray Darling – Member for Murray Darling, Peter Black will protest any plans for a dump in Western NSW.
Broken Hill – Broken Hill City Council has declared itself a nuclear free zone and is opposed to the transport or storage of nuclear waste through the city.'

(from 'Trail of Opposition – response to planned transport/storage of nuclear waste through New South Wales', Friends of the Earth (Victoria))

Opposition to the Low Level Waste Dump

Communities outside NSW are affected by waste made here. We have the following statements about South Australia and the Indigenous people affected by the Federal Government's decisions.

Human rights: Indigenous Opposition

It is not an ethical solution to put the waste dump on Indigenous people's land, especially not on the land of people who don't want it and have already experienced the impacts of the nuclear industry in the nuclear tests of the 1950s.These people are still suffering from the impacts of those tests.

The use of outback Australia as a dumping ground for nuclear waste contributes to an 'out of sight, out of mind' mentality. The desert is home for many Aboriginal and other communities and must be recognised as such.

The Kupa Piti Kungka Tjuta are a council of senior Aboriginal women. As a group they have been campaigning against the proposal for a radioactive waste repository in South Australia for over ten years. In that time, their concerns have not been addressed, nor have they been properly consulted, demonstrating a clear disregard for Aboriginal community concerns.

The Aboriginal people of the South Australian desert endured atomic testing in the 1950s and 60s. Their communities are still suffering from the ongoing effects of radiation exposure. In light of such a history, the proposal for a waste repository raises fundamental issues of human rights in relation to Aboriginal peoples' rights to self-determination.

> *"We had enough at Maralinga and Emu Junction. They never let people know. Never ask Aboriginal people. We never tell them to go ahead, wiya - no. This time we say NO. But they are still coming. We say NO."*
> (the Kupa Piti Kungka Tjuta, www.iratiwanti.org)

As the Kungka Tjuta state, the radioactive waste repository cannot be justified. This is a call to recognise and defend the human rights of traditional owners, who oppose the imposition of poison onto their country and culture.

Cultural heritage

Traditional owners of the country where the dump is proposed have this to say of the waste that is produced at Lucas Heights but sent to their lands,

> *Please no poison. We got water and bush tucker; kangaroo, emu, bullocks. What about the bullocks and the sheep? That's farming country too, they come from the station. What will happen when they are poisoned? Emu drink same water. Kangaroo, goanna, Perentie, cattle and sheep, all drink the same water. Then we eat them, like you. The water will poison the animals and kill them all, then you fellas and us.*

No more – just leave it now. We've got a lot of spirit in the land. You have taken so much from us. Leave us now. We tired now. We want to live in peace. Please listen this time
(Kupa Piti Kungka Tjuta, Letter to Ministers McGauran and Minchin, 9.7.03)

The site selection process placed Aboriginal representatives in a completely compromised position. Their choice was between having no involvement and therefore no voice whatsoever, or to participate in the process in an attempt to minimise the inevitable damage. While the site selection process for the waste repository did engage with traditional owners, many of the Aboriginal elders who took part were dissatisfied and upset with the way in which this 'consultation' was carried out.

Mrs Eileen Wingfield, a member of the Kupa Piti Kungka Tjuta states,

"we done a lot of those clearances and that. And we trying to tell them it's all over, you know sites are all through there. We done all that but they just shift their pegs to one corner and they're not listening properly".

This quote clearly demonstrates the inadequacy of consultation processes and the disrespect for cultural knowledge Aboriginal representatives were there to impart.

This way of mistreating Indigenous peoples and their country is indicative of the disrespectful attitude of the Federal Government. The same attitudes will extend to Indigenous people of New South Wales in the determining of any nuclear waste repository in this state.

Environmental protection and health

There is no safe way to store the waste and particularly not in country where underground water is so vital to the survival of everything and everyone and the waste will be buried underground where seepage into the water table can occur.

There are large reserves of life-sustaining ground water in the SA desert region in the Great Artesian Basin [GAB]. This water resource is critical for all human activity, as well as for the unique mound springs, plant and animal life in the area. If radionuclides leak from the proposed waste dump, huge tracts of ground water may be permanently contaminated. This would have a huge impact on the health of inhabitants in the area.

In 1995 the Senate Select Committee on the Dangers of Radioactive Waste conducted an inquiry into the production of radioactive materials and waste management. They strongly recommended against 'shallow burial'. They also recommended the facility be 'adequately engineered to withstand all possible climatic conditions, no matter how unlikely'. Yet, the Bureau of Science admits that the proposed design will not prevent leakage of water, nor human, animal or plant intrusion.

Our Responsibilities

At a gathering near Broken Hill in July 2003, Eileen Kampakuta Brown one of the Kupa Piti Kungka Tjuta said,

> *"We are singing out to you mob to help us. And we are all one. We are all together and we can fight against this poison - uranium. Don't bury this poison in our land. We need you to help us. We can all work together. We are all living in Australia. We can all work together to help"* (July 2003).

The Kungka Tjuta spoke of the `poison' and their experiences as women who carry the responsibility of caring for all current and future generations, passing on their strong cultural knowledge.

Adnyamathnya elder Ron Coulthard, who has actively fought against uranium mining on his country said,

> *"... like the old ladies said we got to help each other. And it doesn't matter where we come from, brown yellow black or white, let's get together and pull together."* (July 2003)

This is an important directive for all Australians - and especially those of us in NSW where most of the nuclear waste is being produced. We believe that we have responsibility to end the radioactive genocide that has been waged upon the Indigenous people of this country and now, with this NSW inquiry, we have an opportunity to make an ethical decision to stop the production, transport and storage of radioactive waste which directly contributes to this genocide.

Conclusion

Any credible waste management plan must involve:

1. A full and comprehensive consultation process with all communities affected.
2. A halt to the production of radioactive waste from the existing and proposed reactor in Sydney.
3. A halt to the production of more nuclear waste from the mining of uranium in Australia.
4. A full public inquiry into radioactive waste management under the E PBC Act (1999).

In conclusion, we reiterate our opposition to all aspects of the nuclear industry.

There is no safe way to store or transport radioactive waste.

It is the nuclear industry which creates the conditions for radioactive contamination to humans, the environment and the food chain for 250,000 years.

We are also concerned about the possible future production of nuclear weapons which would jeopardise Australia's non-proliferation position.

Appendix A

Concerns about the New Reactor at Lucas Heights

We are concerned about the design of the new reactor and the fact that the Environmental Impact Statement is considered flawed, especially since there was no reactor design plan in the document.

'Approvals for the project were given amid much criticism after a flawed Environmental Impact Statement (EIS) assessment process in early 1999. There was no design made public for the new reactor, no credible waste management plan, and the Government kept the siting study secret. Later that year the Senate Economics References Committee reported the findings of its Inquiry which again clearly rejected the new reactor plan.'

('Current Situation', Pg 1,
http://acfonline.org.au/asp/pages/document.asp?IdDoc=127)

Not only have many groups been worried about the design plans and EIS submitted by ANSTO but also it now seems to becoming clear that the construction of the new reactor is not running smoothly. This could be contributed by the original design plans or INVAP's execution of the plans, or a combination of both.

'The Australian Nuclear Science and Technology Organisation (ANSTO) has admitted in today's St George & Sutherland Shire Leader, that twenty crucial holes for pipe work in 2 primary safety containments "do not line up." This problem was reportedly known to the contracted builders, INVAP, in February and the latest problem in a long line of incidents and irregularities at the site.

"This basic construction mistake seriously compromises key radiation safety and containment measures at the reactor," said Australian Conservation Foundation nuclear campaigner, Dave Sweeney. "It is a serious public risk for workers, residents and the wider Sydney community and ARPANSA must act immediately."

The Australian Radiation and Nuclear Protection Agency (ARPANSA), has said that it will not approve the repairs unless the tank meets all the originally specified standards. The federal nuclear safety regulator also wants ANSTO to demonstrate that a thorough examination has been undertaken of the quality assurance process. Green groups believe this can only be done with an independent Inquiry.'
('New Reactor Safety Fears', Pg 1,29-05-2003, Friends of the Earth Australia,
http://www.foe.org.au/mr/mr_29_5_03.htm)

'There are serious concerns that any attempt to repair the tank will reduce the integrity and effectiveness of the tank, which is a key safety item for the planned reactor.
The Construction, Forestry, Mining and Energy Union has joined the Reaction coalition – the Australian Conservation Foundation, Friends of the Earth, Greenpeace and People Against a Nuclear Reactor to urge ARPANSA to respond transparently and effectively to the "serious construction irregularities".'

('Construction union joins call for scrutiny on Reactor construction', Pg 1, 20-06-2003, Greenpeace, http://www.greenpeace.org.au/media/press_details.php?site_id=8&news_id=1105)

Considering ANSTOs' track record, our group and many other groups and concerned citizens worry about the future of the already troubling new reactor for Lucas Heights. The local environment group Sutherland Shire Environment Centre came up with the following lists of incidents that create credibility issues over ANSTOs 'standing as an organization to administer the 2nd nuclear reactor at Lucas Heights.

'ANSTO maintains that "the existing reactor has operated safely for over 40 years since it was commissioned in 1958." It also states that "safety inspections of the reactor are carried out on a regular basis and have shown it to be in excellent condition." (ANSTO Website: www.ansto.gov.au)

'On the contrary, the history of ANSTO is a litany of accidents - euphemistically termed incidents -in which workers and the general public have been put at risk. Two independent assessments of the facility have reported safety problems. For example:

11 October 1978 a worker at the facility was irradiated due to inexperience. (Letter to Minister Newman 14.12.78)

23 November 1978 an electrician and his equipment were irradiated. (Letter to Minister Newman 14.12.78) The following day, a union meeting was held outside the front gates in which the members resolved "It is not in the best interest to work in Buildings 23 and 23A because of radiation and contamination problems in those buildings."

29 May 1979 two workers carried radioactive material into their cars and homes.

4 December 1980 a truck carrying several radioactive sources crashed on the Pacific Highway near Laurieton. Dr John MacKay claimed that 16 people in and near the crash site suffered from radioactive poisoning subsequently and accused the AAEC and Health Commission of a cover-up.

17 November 1983 Bomb Alert. An explosive device was discovered in an electrical sub-station inside the AAEC compound. It comprised 9 sticks of gelignite surrounded by an estimated 25 kilos of ammonium nitrate that had been soaked in distillate. There were 3 detonators and a chemical/thermo igniter. (Letter to Minister, Press Statement and AAEC Annual Report 1983-4 p64)

15 May 1984 a ruptured pipe joint released about 100 litres of radioactive sludge into storm-water drains. Two operators were contaminated.

6 July 1984 2.12 kilograms of unenriched uranium hexafluoride were released into the atmosphere. When uranium hexafluoride reacts with the air it forms hydrofluroic acid. State Emergency Services were not notified; State Pollution Control Commission and staff were notified well after the event. A committee of enquiry was appointed to establish the cause of the release. (AAEC Annual Report 1984-5 page 67)

July 1984 A leaflet delivered to residents - and sent to media outlets - threatened to demolish the nuclear reactor using an aircraft packed with explosives.

1984 A driver transported isotopes through Sydney in an improperly sealed container. The driver was exposed to the maximum radiation dose considered acceptable for a year. The public was also exposed.

1985 "A radioactive substance called tritium has been flowing into two New South Wales rivers used for swimming and oyster farming for more than 10 years." (SMH 30.1.85)

15 September 1985 Vandalism to a pipe resulted in radioactive liquid draining into the Woronora River. The accident was not reported for 10 days.

18 March 1987 a fire in the Radioisotope Processing Cell Building 54.The fire occurred in a charcoal filter in processing cell 500m from the reactor (HIFAR). The cell is used to process irradiated uranium to separate radioisotope molybdenum-99. Some radioactive contamination escaped into the operating area and three officers were found to be contaminated.

1989 A Report by Canadian nuclear engineers from Atomic Energy of Canada Ltd found major problems at ANSTO.

- "Poor morale and poor management-staff relations"
- " a deficiency in safety culture"
- key personnel not being trained
- out of date and unmaintained operating manuals
- no regular review of maintenance, testing and inspection programs
- poor health and safety practices
- improper management of high-level radioactive waste
- inadequate emergency arrangements
- efforts to improve safety were not properly planned and implemented.
- review of the current refurbishment program was inefficient and 'could cause the reactor to be exposed to risk unnecessarily"
- problems with contamination detection and control waste management, relations with regulatory bodies
- the emergency core cooling system had been compromised and the reactor exposed to unnecessary danger for two years.

23 April 1992 a radiation leak occurred while a spent fuel element has being handled inside a storage block (Leader 5.5.92).This resulted in 4 workmen being exposed to as much radiation in 20 seconds as they would normally receive in a year. (Committee Report investigation into abnormal occurrence at HIFAR 23 April 1992, May 1992) (See also the claim for compensation described below on 27th July 1999.)

11 June 1992 a raid by the NSW Environment Protection Authority found that "drums of radioactive waste were leaking and vital safety equipment was out of order. Leaking waste may have washed into the stormwater system." (Telegraph Mirror 12.6.92)

November 1992 a fire destroyed a laboratory. It cost $500,000 to clean up the laboratory.

21 January 1995 an accident while unloading a 400 milligram gallium arsenide irradiation target caused the spread of radioactive material. Two workers were contaminated, one of whom took home radioactive material on his clothing. (ANSTO memo to SSC 23.1.95)

2 May 1997 a radioactive item was stolen - and not recovered - from an ANSTO display at Menai High School, caused concern in the community. An ANSTO spokesman said the source could be handled 'quite safely but shouldn't be for long periods.' (Leader 8.5.97)

28 May 1997 radioactive water dripped from a container being used to transfer two fuel rod elements from one building to another. A road inside the ANSTO grounds was closed for two hours while ANSTO health physicists identified spots of contamination. (Leader 3.6.97.) In its Annual Report for 1996-7, the Safety Review Committee suggested that rainwater had entered the underground dry storage tubes prior to 1985 and that alleged inspections since then had failed to notice the 90 litres of water! It said that monitoring and inspection arrangements have been inadequate.

November 1998 an ANSTO worker received a dose to his fingers of 550mSv – above the international limit of 500 mSv. The report by nuclear regulator ARPANSA said that the investigation into the incident revealed similar incidents had occurred previously involving lower doses. Inadequate follow-up and management procedures had failed to prevent a recurrence. ("Leader" 5th October 1999)

1 February 1999 a damaged and corroded spent fuel element (see report 28 May 1997 for reason) was slipped from its protective flask whilst being inspected. It was placed on the ground and the flask placed over it. There it remained for ten weeks until a means of recovering it was performed. Four operators were subjected to radiation exposure during the incident.

February 1999 the medical radioisotope production plant was closed down on two occasions due to accidents involving the release of gases to the atmosphere that were greater than the "normal routine" releases. The first allowed inert noble gases, Xenon and Krypton to escape due to the failure of an operator to check the position of a valve. The second involved the release of Iodine when a filter on a hot cell failed. ("Leader" 11th March 1999)

May 1999 Contractors for Sydney Water struck a sewer pipe located 1 Km from ANSTO whilst using a backhoe. Some radioactive material escaped from the resultant crack. ("Leader" 27th May 1999)

23 June 1999 Again in the medical isotope production plant a filter "failed", allowing noble gases to escape to the atmosphere.

("Leader" 27th July 1999) Compensation claim appeal by former ANSTO cleaner. The claim related to 2 incidents, the first occurring on 11th November 1991 when an isotope was dropped on the floor. The second took place on 23rd April 1992 when a spent nuclear fuel rod was raised out of its protective casing, exposing staff to radiation.

March 2002 following a fuel rod cropping accident in the storage pool the pool was seriously contaminated. ANSTO spokesperson said that whole body radiation checks of staff in the vicinity had shown no radiation doses. ("Leader" 26th March 2002)

26th March 2002 a release of radioactive tritium was reported to the regulator ARPANSA. It occurred on March 26th during routine maintenance work in building 57

1st April 2002 ANSTO sources told the "Leader" that 'a cocktail of fission products' contaminated the clothing of 4 to 6 workers involved in the clean up. This was subsequently carried into their cars and homes. ("Leader 30th April 2002)

April 2002 local fire fighters were called to a fire in an electrical sub-station believed to have been caused by an electrical fault. ANSTO emergency teams had initially attempted to extinguish the fire. ("Leader" 11th April 2002)

July 2002 the regulator ARPANSA confirmed that bores had been sunk around building 23 that houses the cropping pond in an attempt to establish whether water may have escaped into the surrounding environment. Sources at ANSTO said 'that despite extensive filtration, the quality of the water was still not of a standard that allowed more fuel rods from the reactor to be added. ("Leader" 2nd July 2002)' ('Safety Problems, Updated 1st September 2002', Sutherland Shire Environment Centre, 01-09-2002, **http://ssec.org.au/**, Michael Priceman, Nuclear Study Group)'

(Safety Problems at ANSTO updated 1st September 2002, Sutherland Shire Environment Centre, http://wwwssec.org.au/Safety.html)

A clear and definite radioactive waste management plan was meant to be a prerequisite for the establishment of a new reactor, however ANSTO has commenced construction without any clear plan.

Accidents have occurred at research reactors with a similar level of radioactive waste to Lucas Heights:

- Yugoslavia in 1958 there was one death.
- Idaho in 1961 three people died
- Argentina 1983 one person died

Some environmental groups question the capabilities of the Argentinean company INVAP on whether they were an appropriate and reliable choice for the development of the new reactor at Lucas Heights.

'"We're now seeing that Argentinean company INVAP, can't meet the safety requirements to build a nuclear reactor in Sydney - Australia's largest population centre," said James Courtney. "Despite this the Federal Government continues to play russian roulette with the health and safety of locals and the Sydney community." Environment groups feared just such problems based on INVAP's poor track record -

their Egyptian ETRR-2 reactor has been plagued by safety and operational problems. A factor acknowledge by ARPANSA CEO John Loy as a concern when he granted the construction licence:

"There do appear to be contractual issues between Egypt and INVAP regarding the issue of completion and handover. There are also some issues that relate, at least potentially to safety, that are still the subject of debate between INVAP and the EAEA."'

(Nuclear Reactor Safety Fears, 29-05-2003, Friends of the Earth, http://www.foe.org.au/mr/mr_29_5_03.htm)

There are also grave concerns over the fact that the new nuclear reactor at Lucas Heights is being built over an earthquake fault line which raised attention at the Local Government Association of NSW Annual Conference in 2002.

1. 'That the Local Government Association call on the Federal Government to abandon plans to construct a new reactor at Lucas Heights because of the unacceptable risks posed to the people of Southern Sydney by the recent discovery of an earthquake fault line directly below the existing facility.
2. That Lgov advise the Premier the Hon Mr Bob Carr that Council offers their full support to any measures his Government may take to force the abandonment of this project in its present location.
3. That Lgov call on the Federal Government to urgently conduct an independent enquiry into the adequacy of the risk assessment in both the EIS for the new nuclear reactor and its licence application.'

(LOCAL GOVERNMENT ASSOCIATION OF NSW ANNUAL CONFERENCE 2002, Action Sheet – Conference Resolution, Resolution/Motion No: 149.2, Category One)

The logistical arrangements must include the expense of sourcing for the new nuclear reactor at Lucas Heights which was suppose to cost approximately $300 million, but its is now coming out that it will cost far more. Many believe that the money could be better spent.

'TAXPAYERS will have to foot a $530 million bill for the new nuclear reactor in Sydney's southern suburbs – almost double the amount the Federal Government has previously claimed would be needed.

The revelations, contained in documents obtained by Sutherland Shire Council form the Federal Department of Finance, show that the total cost of a new reactor will be $527 million – not $286 million as has been claimed.'

('New reactor bill doubles to $530m', by Simon Benson, Daily Telegraph, 16-06-2000)

'**What are the real costs?**

- Design and construction: at least $370 million
- Project management: $5 million

- Ongoing capital costs (like upgrading existing facilities and buying more research instruments. In fact they plan to buy three times as many as the old reactor has!): $20-80 million (Greenpeace estimate)

- Selecting the **long-lived intermediate level waste** storage site: $3 million (Greenpeace estimate)

- Constructing the long-lived intermediate level waste store: $5 million (Greenpeace estimate)

- Fuel and fuel management (for 40-plus years): $180 million

- Plus yearly operating costs and waste management costs.

Total estimated cost of building and operating the Sydney reactor = over $600 million

In 1997, the Department of Finance sent a memo to the Department of Industry Science, estimating that the Sydney reactor would actually cost $532 million to build. This estimate includes many costs that the government has decided not to include in its current budget for the reactor. But they know the real cost.'

('The Real cost', Pg 1-2, Greenpeace, http://www.greenpeace.org.au/nuclear/whatawaste/costs.html)

Another concern is having safety procedures in order for any accidents at the new reactor but this is in question when the Fire Brigade Employees Union has made its concerns very clear. They have many doubts about whether they will be able to assist in any accidents that may occur.

'In the event of a response to the facility where it is suspected a release may have occurred fire fighters have been instructed to stop en-route to monitor zones during the response. Where levels are found to exceed safe limits fire fighters are advised to cease responding, retreat to an area that monitoring indicates is safe and await further advice.'

(Submission, Australian Radiation Protection and Nuclear Safety Agency, INTERVENTION IN EMERGENCY SITUATIONS INVOLVING RADIATION EXPOSURE, Pg 5, NSW Fire Brigade Employees Union , Feb. 2003)

We would hope that ANSTO and the government would have logistical arrangements with safety procedures and the new reactor already clearly in place.

APPENDIX B

Blue Mountains – Our Future

How We Did It

DRAFT 2003

APPENDIX B

Challenge	Opportunity
Providing local access across and along the Transport Corridor	**To use the existing transport corridor as a central spine that supports linkages across the City provided by improved public transport and walking and cycling opportunities**

The fact that the Great Western Highway also forms a much used and critical "local road" is often not well understood.

In many parts of the Blue Mountains the highway is the only road linking communities to facilities such as a hospitals, shops and schools and commuters to jobs. For many Blue Mountains residents moving across their town or visiting another town or getting to work requires travelling on the Great Western Highway. Yet not infrequently and generally always on a Sunday afternoon or the beginning or end of a holiday period, the highway is clogged with traffic moving at a snails pace.

One in ten households in the Blue Mountains do not have access to cars and in the case of the Upper Mountains – one in five. Ensuring these residents are able to move about using public transport, walkways and cycle ways is important.

While the fishbone settlement pattern, with the highway and rail line running down its back as a central spine, constrains car movement, it represents a significant opportunity for public transport access options. Most towns and villages are located on the rail line. Increased bus services or other sustainable transport choices such as walking and cycling, combined with greater use of the existing under-utilised rail facility, presents a possible way forward in the future.