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Subject: Submission On URANIUM MINING AND THE NUCLEAR FUEL CYCLE

Mr Russel Schafer,
Secretary
House of Representatives Industry and Resources Committee
Inquiry Into Non-Fossil Fuel Energy

Dear Mr Schafer ,

SUBMISSION TO THE INQUIRY INTO NON-FOSSIL FUEL ENERGY
URANIUM MINING AND THE NUCLEAR FUEL CYCLE

This issue should not be a matter of party politics at all . It is a health issue of vital concern to us and our children - a matter of the air we breathe and the water we drink and the food we eat . It has become a political matter because there is money to be made from royalties to any state government , and money to be made by mining companies and investors who can benefit from its sale abroad for commercial or military use . Increased demand from China for uranium has recently activated the pro-nuclear lobby , and therefore political parties are coming under increasingly strong pressure to support that lobby . But victory for any political party should not be at the cost of public health , and literally at the cost of future generations, since radiation affects the human reproductive system . I am convinced that most of our population do not understand the true facts of mining and exporting our uranium , politics . Radiation does not favour any political party . It affects us all. The public in the USA and the UK have learned the hard way that once their atmosphere and their earth has been polluted with radiation it is too late for remedy .

Common pro-nuclear justifications

The level of factual public information through the media is poor, and results in a popular belief that there are no dangers from mining , that if we don't sell others will , that we have a moral duty to provide electricity to less developed countries , and mostly that we will help save the planet by cutting down on greenhouse gases and substituting nuclear. Some have argued, that it is acceptable to export if we take back the waste from any uranium we export , but they ignore the facts that

1) uranium mining , milling or leaching , emits radon, a radioactive gas into the air . Though this is called a low - level waste , when compared to spent reactor fuel , it is also toxic to all living things over a period of time . Radon **can be carried up to 1000 kilometres from the point of origin by a wind of 10km per hour before half of it would have decayed into its solid daughter products and been deposited on soil , leafy vegetables . tobacco , groundwater , human skin , lung tissue , etc.** If the material on which it is deposited is living then it can carry the particles into its cells . such contamination cannot be washed off . (This verifiable information about nuclear energy has been obtained from the writings of the eminent Canadian mathematician Dr Rosalie Bertell , **No Immediate Danger . Prognosis For A Radioactive Earth** , The Women's Press 1985 , P32 . ISBN 0-7043-2846-1)

2) nuclear reactors used for peaceful purposes in countries we export to , routinely emit toxic waste gases as part of their operational procedures , so some of our waste is already in their air, ground and water before the spent fuel rods are recovered .

3) Spent fuel from reactors is much more toxic than the uranium oxide that we export , but no waste from mining or commercial or military reactors , can ever be safely buried anywhere , even if it is buried in our desert, in the Australian invented material called Synroc . In time it will leach out and contaminate groundwater, plants, air, animals and man .

4) We export uranium oxide to the UK and USA . They are using depleted uranium shells in Iraq . This is likely to cause DU illness to some of their troops and also to ours . How can we be sure that they have not used the depleted uranium that is a by- product of their enrichment of our uranium ? I don't believe written guarantees for peaceful use are worth the paper they are written on .

5)The use of nuclear arms contravenes the 1996 decision of the International Court of Justice that the use of force by nuclear weapons is unlawful . Australia is condoning our allies` use of these arms .

Mining Leases

From the point of view of the public health of WA , both Liberal, and Labor governments , either in power or in opposition , should cooperate to revoke all existing uranium mining leases and pay the compensation to mining companies , despite anticipated protest from the pro-uranium lobby and some members of the public . In the long term it will be the salvation of our State .They should also legislate specifically for the prohibition of uranium mining in Western Australia .

Federal Government Uninformed

The Federal government has assumed control of the Northern Territory`s uranium deposits after taking legal advice , though we do not know what advice it received . The Federal Minister for the Environment , Mr Macfarlane says ``This no -uranium policy is a nonsensical policy .`` And yet we have just had the 60th anniversary of Hiroshima , and Australian uranium was used to make the bomb ! It appears that our Federal Minister For Health is uninformed about both the peaceful and the military consequences of the nuclear fuel cycle , as both are dangerous .

Consequences Of Uranium Mining

Australians must not be deluded into thinking that all will be well here if we do no more than mine and export On 7- 9-99 reference was made ,during a debate in the WA Legislative Assembly , to a controversial theory that low level radiation either causes no harm, or is required by human cells to stimulate their natural defence against higher levels of radiation .The argument that uranium mining only results in low level radiation , which is not harmful , or else acts as a natural immunisation , is not scientifically accurate . Uranium mining , milling or leaching methods , releases radium which is toxic , and pollutes the air and groundwater that is absorbed by all living things . Radiation from uranium mining has been proved to cause lung cancer, stomach cancer , bone cancer and brain damage in the long term .``Just one decaying radioactive molecule can produce permanent mutation in a cell`s genetic molecules.`` (Dr John Gofman , Professor Emeritus of Molecular and Cell Biology , Uni Of California 1999)

Medical Use Of Nuclear Materials

We now have a cyclotron at Sir Charles Gairdiner Hospital . This is a device to accelerate charged atomic particles in a magnetic field and produce new radioactive isotopes electrically .These have very short half-lives and decay quickly .We obtain these from Lucas Heights in NSW . We also import nuclear isotopes that the cyclotron can`t make .We take responsibility for the disposal of our own medical waste by burying it at The Mount Walton Intractable Waste Repository located km north-west of Kalgoorlie-Boulder . Funds for research to produce all the isotopes we need in cyclotrons would be a better way to spend our money than trying to cure cancers resulting from a WA uranium mining industry . All waste resulting from the manufacture of radioisotopes should be stored above ground at the Lucas Heights research reactor. This would prevent transport accidents and also ensure continuous close monitoring , and is therefore less dangerous than the transport and burial of wastes .

Nuclear Is Not a Safe Alternative To Coal

I can understand the concerns of the pro-nuclear lobby about global warming caused by the mining and use of coal , and acknowledge accidents in the coal mining industry. But nuclear energy is not the answer because there is no safe level of exposure to ionising radiation , and no safe way to dispose of waste whether low, medium or high . Therefore it is not correct to claim that the nuclear industry is a safe alternative to coal and that failure to use nuclear will kill the planet . And enormous quantities of fossil fuels would still be used in the construction of nuclear power plants . See R. Bertell (above),and also the UK publication **THE ECOLOGIST Vol 29. No 7. 1999 .Website theecologist@org/- 27-**

The Options

We need to accept the Kyoto Protocol , minimise our use of fossil fuels and maximise efficient use of it, and develop alternate energies.

Immediate , Ongoing And Long Term Dangers

The immediate outcomes of most major nuclear accidents at reactor sites which are using nuclear fuel for peaceful purposes have , to date , resulted in relatively few outright deaths , and as a result, pro-nuclear supporters are inclined to claim safety in comparison to coal mining. This has enabled the nuclear industry routinely to ignore the insidious , ongoing , long term , toxic effects of these accidents, and also the harmful effects of the daily processes of the commercial nuclear fuel cycle , all of which do cause immediate damage to the body but which are not manifested until a later date . The toxic pollution of air , ground and water , starts with uranium mining and milling and , continues with routine emissions from nuclear reactors , leakages from storage sites or reactors , accidents at

fuel fabrication plants , theft , transport accidents and unsafe waste disposal methods .

Recent Serious Nuclear Accident in the UK

The last major accident at Sellafield in the UK , was in February 2005 at the Thorp reprocessing plant which was separating uranium and plutonium from waste , so that the uranium could be reused and the polonium stored for future use in planned fast breeder reactors . But there had been an undetected leak for the previous nine months , until a pool was found containing some 83,000 litres of highly active radium and plutonium fuel dissolved in nitric acid --- enough to make 20 plutonium bombs (Independent On Sunday 29-5-05) .To date waste from Sellafield has not only contaminated air and groundwater in local areas but has also been carried by the oceans as far as the eastern coast of Ireland , the west coast of Denmark and the N/E coast of the USA . Reprocessing has been a failure and has added some 38,000 tonnes of uranium and 60 tonnes of plutonium to the piles of unused fuel at Sellafield , making it the most toxic site in northern Europe .Generalised claims by pro-uranium supporters about the safety of the nuclear industry need to be as carefully examined as do all anti-nuclear claims of its dangers .

Radiation resulting from the nuclear fuel cycle has been proved to result in the following illnesses - lung cancers , leukemia , skin cancers , infertility , birth defects , congenital malformations , genetic degradation of the species , mutated viruses , heart diseases , auto-immune diseases , and Down Syndrome .

The Myth Of A Safe Burial Site

The concept of a final safe burial place for stored wastes remains a myth . The British Government has recently estimated that it will cost seven billion Pounds Sterling to decontaminate all toxic sites. But once waste drums have been removed and waste trenches have been dug up there is no where , and no way , that they can be safely disposed of , and once toxic radiation has entered the atmosphere or the ocean it cannot be detoxified . In the US there are thousands of containers of waste stored at civilian and military sites that the government wants to bury in steel -girdered tunnels in Yucca Mountain , but the State of Nevada is resisting for fear of pollution of groundwater or nuclear attack . All radiation will eventually leach out of steel or concrete or vitrified containers (including Australian invented Synroc) buried in any desert .

Pressure for an Australian Nuclear Industry

The more uranium we export the more pressure we will get from mining lobbies and investors to establish our own nuclear power stations , and then their defence will be our major preoccupation, as is the case in all nuclear energy producing countries . It is most likely that pressure for production of nuclear armaments will follow , increasing our vulnerability to attack .

Global Warming

a) Uranium Enrichment Processes

This process is needed to convert the yellowcake (uranium oxide) that we export into reactor fuel . Each 1000 megawatt-electric (MWe) nuclear plant requires the equivalent of a 455 MWe coal plant, which annually burns 135,000 tons of coal to meet its enrichment needs . An enrichment plant using coal emits large amounts of CFC114 which adds considerably to ozone -depleting global warming gas .One fifth part of the enrichment process results in fuel for a reactor and four fifths results in tailings , called depleted uranium (DU) , which is used in explosive shells by the US and USA military.(THE MENACE OF ATOMIC ENERGY Ralph Nader and John Abbots , Outback Press ,1977. P89-90)

b) Radioactive Release From Reactors

The routine release of radioactivity including krypton -85 from the everyday operation of nuclear reactors adds to global warming by causing decay of trees and plankton thereby affecting the ozone layer.

c) Military Interventions in space all reduce the ozone layer .

c1)US and USSR solid fuel space rocket explorations release hydrochloric acid , chlorine , nitrogen, and carbon dioxide , thereby depleting the ozone layer .

c2)Accidents to nuclear space rockets fuelled by plutonium have resulted in the release of plutonium over a large area of the globe .The plutonium from the accident to US rocket SNAP-9A on 21April 1964 is still detectable in soil and the bones of animals .

c3)Nuclear bomb tests in the atmosphere have caused two holes in the ozone layer . The ozone layer in the northern hemisphere was reduced by about 4% by atmospheric nuclear bomb testing from 1940 to the 1970 .Between 1978 and 1990 the ozone layer in the northern hemisphere decreased by a further 4-8% and in the southern hemisphere by 6-10% (R.Bertell , Planet Earth. The Latest Weapon of War. The Women`s Press 2000 .P74 -75)

c4) In 1983 and 1989 the US and Canada conducted experiments to change the ionosphere in order to induce adverse weather changes over enemy countries using barium , which is destructive of the ozone layer, and also lithium , which is highly toxic.

(R.Bertell, Planet Earth P116)

Nuclear Arms

The dangers of nuclear arms proliferation arising from nuclear industries that began as peaceful domestic industries are already evident . In addition to the USA, UK, France, Russia and China , now India, Pakistan , Israel and North Korea also have nuclear weapons. Since the US dropped the atomic bombs on Hiroshima and Nagasaki no country has dropped another but the US and the UK have used depleted uranium (DU) shells in Bosnia and Iraq , causing cancers and leukemia to thousands of soldiers and civilians . Thousands of Iraqi children have been affected with birth deformities which have been genetically inherited from parents who inhaled or ingested depleted uranium during and after the Gulf War. It is possible that these illnesses will be observed in Australian and other Coalition troops returning from Iraq in the same way as US Gulf War veterans and their children were affected .

Test Fallout

In 1975 Dr Gofman estimated that `` the plutonium already dispersed from atmospheric bomb testing has signed the death warrants of some one million persons in the northern hemisphere and the estimate only covers the deaths which will occur in the first 30-50 year period (Congressional Record 121;14616-9,1975).`` Many Australians or their parents are migrants from the northern hemisphere .Whether we like it or not we are passive victims of the past . But we have a choice whether or not to be active persecutors of each other in Australia , or of people living abroad , or future generations , by continuing to participate in the nuclear fuel cycle .

Risk Analysis

Any new, so -called ` In-depth` studies by the nuclear industry or government regulatory bodies on the subject of risks are usually concerned to make out a case for an increase in the prevailing permissible levels of exposure on the grounds of economic profitability , (eg current demand from China) , or military necessity, (eg the need for an Australian nuclear industry because of a perceived threat of terrorism).

But the fact remains that a permissible level is not a safe level . There is no safe level . Surely we cannot be so parochial as to insist that basic scientific information accepted in the UK and USA and France and Germany , Russia, Japan and China , about the effects of radiation on humans , have to be proved in our own backyards in Australia before we believe them ?

Public meetings and opinion polls set up by pro-uranium or anti-uranium interests , without prior factual information in the media , are only an opportunity for those lobbies to get publicity by the media which support them .

Informed Moral Decisions

The use of uranium as a fuel is unfeasible as such . To mine and sell uranium on the excuse that if we don't some one else will is not a scientific issue , it is moral issue and the decision needs to be based on the incontrovertible scientific facts of the dangers of nuclear power and our responsibility for knowingly promoting illness and death for financial gain for ourselves and future generations .As no amount of exposure is safe , no risk is acceptable .

Please acknowledge receipt of this submission .

Yours sincerely ,
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