

Uranium, some background information...



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This is my attempt to compile some of the information I have found in the net which seems to be most relevant to our tour. I am not covering everything, there is lots more important stuff to be looked at on the net and elsewhere. I will try and include references for where I found the information so you can look in more detail. Last year the Earthdream tour visited Beverley Uranium mine on Adnyamartha land in South Australia and Roxby Downs on Arabunna land, also S.A. We went on the invitation of local Aboriginal custodians. We made camps outside the mines, and it was all fairly peaceful except for one incident at Beverley, where riot cops beat and pepper sprayed blockaders including an 11 year old Adnyamartha girl, Helen. Needless to say this incident is what got us media attention. The rest of the time we played and partied, we had a hilarious sound clash between the two sound-systems, we put on a cabaret and a film night which off duty police and miners came down to and we even got invited into Roxby Downs primary school to perform for the kids! One of the freakiest things about the mines is just how remote they are. For most of the uranium-consuming world it really is a case of "out of site out of mind" but for Aboriginal people there is no ignoring the drastic destructive changes that the mines are making to their land.

Mining.

This is where the problem starts, there are mines all over the world (including Germany, France, Czech and Poland) but most uranium is taken from remote areas or third world countries. This is how they get it:

At the top of the picture you can see that there are two main ways of getting the ore out of the ground, in situ leaching technique and mining. Mining involves digging tunnels or open pits while insitu leaching is where a chemical such as sulphuric acid is pumped into the ground to dissolve the ore; the resulting sludge is then sucked out for processing. Beverly mine in south Australia is an example of in situ mining, while Roxby Downs, also in south Australia is a tunnel mine. In situ leaching is cheaper and puts miners less at risk but it has got some serious implications.



Environmental impacts of mining.

By far the greatest long-term radiation damage to our planet is caused by uranium mining. Mines release the greatest amount of radiation and they're immediate by products. Although processed uranium, nuclear fuel, depleted uranium and all the other stuff that

ends up leaving the mine, releases radiation statistically this is much lower than what gets released at the mines. This brings up the issue of uranium consumers responsibility for the long-term damage they are doing to the countries they mine, which is what our tour is all about. (More on that later)

<http://www.antenna.nl/wise/uranium/nfcr.html>.

"In the long term, the continuing radon emissions from the uranium mill tailings and the long-lived nuclide C-14 released from the nuclear power plant cause the highest collective radiation doses by far for the general population."

To summarise the obvious dangers of mining uranium:

In situ leaching makes a big radioactive sludge in the ground, which may at some point connect up with an underground water table and pollute it. This is the case with Beverley where in some places only 5 metres of clay separates the aquifer (sludge pit) from the great artesian basin, the underground water supply that underpins and nourishes most of Australia. (Not a good risk to take in the world's driest continent) There is also a report of an insitu leaching mine polluting the water supply for Dresden. After mining is finished it is very difficult to clean the aquifer.

<http://www.antenna.nl/wise/uranium/#IMPACTS>

Tunnel and open pit mining generates big heaps of low-grade radioactive rocks, scraped out while they are trying to get at the ore. These mines also use and contaminate waste quantities of water, Roxby downs uses about 42 million litres a day, very greedy in such a dry place. The raw uranium ore is usually milled on site, that is, processed to make yellow cake. The by product of this is vast amounts of tailings which sit around in dams releasing large quantities of radon (radioactive and toxic gas) into the immediate environment (see the pie chart above) The first ones to suffer are of course the miners and other local population. Examples are the Navajo in America, the Arabunna and Adyamartha people in Australia and in India tailings dams from Jaduguda mine is killing local indigenous people, more on this later.



Navajo <http://www.antenna.nl/wise/uranium/ureca.html>



Jaduguda <http://www.antenna.nl/wise/uranium/umopjdg.html>

Mining is the root of the whole nuclear problem, the effects from reach far both geographically and over time (250,000 years of radiation) One Australian aboriginal person has said that they feel responsible that something that comes out of their country could be used to cause death and suffering in another place. I don't remember where I heard this but it seems typical to me of aboriginal sense of mutual responsibility between people and the land. This attitude is totally the opposite of that demonstrated by uranium consuming countries who inflict mines on remote communities with no thought for future responsibility for the damage they are causing. It is this simple question of a relationship of responsibility that I feel is most relevant for our show. We went to uranium mines in Australia and now we are back in Europe we can make the connection between consumers and providers clear. The whole nuclear cycle is a massive subject so I am only going to skim over the rest of the process, more info is on the net.



What happens to the uranium next?

The yellow cake (uranium ore) obtained by leaching, mining and milling is processed to end up with enriched uranium for nuclear fuel and depleted uranium, which is used in weapons.

Depleted Uranium

This toxic and radioactive substance is used to tip missiles and shells, tested and made in Britain. These have been used in the Gulf, Bosnia and Kosova. Radiation from these weapons has effected local environment, civilian populations and military personnel. Lots of information on this is available from www.cadu.org.uk

Nuclear Power

This is supposed to be the cheap clean alternative to fossil fuel power. It only seems cheap or clean if you disregard the whole bigger picture around it, including the long-term costs of mining and waste disposal. Obvious short-term dangers include higher leukaemia rates near power stations and the threat of accidents. More on this www.cnduk.org

Plutonium

This is what the fuel rods get processed into. Sellafield does a lot of this. The industry makes a distinction between civil and military grade plutonium saying that only military stuff can be used to make bombs. In fact both kinds can be used. Civil plutonium is the fuel for fast breeder power stations, a type of design that is proving too unsafe to use. C.N.D point out that during the whole reprocessing cycle there are lots of opportunities for plutonium to disappear and end up in the wrong, bomb building hands. www.cnduk.org (nuclear power and nuclear weapons)

Waste

The long-term problem no one has any answers for except for not in my back yard! C.N.D. say: "Since this is very dangerous and very long-lived, any storage facility has to be very secure (i.e. well guarded) and safer over a longer period - some thousands of years - than anything yet designed and built by humanity."

While Earthdream was in Coober Pedy, a small opal-mining town in the desert, we met the Kunga Juda, a group of senior Aboriginal women who had all been affected by the British nuclear tests at Maralinga in the 1950's. Many people died and others suffered permanent sickness as a result of these tests, no one ever got compensation. Now the Australian Government wants to site a nuclear waste dump in the region. The Kunga's have been lobbying against this. Here is an except from their amazing website:

"We were born on the earth, not in the hospital. We were born in the sand. Mother never put us in the water and washed us when were born straight out. They dried us with the sand. Then they put us, newborn baby, fireside, no blankets, they put us in the warm sand. And after that, when the cord comes off, they put us through the smoke. We really know the land. From a baby we grow up on the land.

Never mind our country is the desert, that's where we belong. And we love where we belong, the whole land. We know the stories for the land. The Seven Sisters travelled right across, in the beginning. They formed the land. Its very important Tjukur the Law, the Dreaming that must not be disturbed. The Seven Sisters are everywhere. We can give the evidence for what we say; we can show you the dance of the Seven Sisters.

Listen to us! The desert lands are not as dry as you think! Can't the Government plainly see there is water here? Nothing can live without water. There's a big underground river underneath. We know the poison from the radioactive dump will go down under the ground and leak into the water. We drink from this water. Only the Government and people like that have tanks. The animals drink from this water malu kangaroo, kalaya emu, porcupine, ngintaka perentie, goanna and all the others. We eat these animals, that's our meat. We're worried that any of these animals will become poisoned and we'll become poisoned in our turn."

<http://www.iratiwanti.org>.



Uranium and Indigenous peoples

This massive subject with lots of information on the net, see the links below. The following comes from a report on a meeting of Navajo people from New Mexico, to discuss how mining had seriously affected their lives:

"The moderator, Phil Harrison, explained that the concept of radioactivity is not easily explained in the Navajo language. He knew from his personal experience that not only the miners were exposed to radiation, but also their families, since the men would come home from the mines with dusty clothes. In the winter the clothes would hang in the kitchens of the small homes. The families didn't know about the radioactivity of the mud. In the mines the workers were breathing the dust, walking in the mud, sometimes drinking water that trickled down the rocks. They were not informed of the dangerous nature of the material they were mining. Often there were three shifts a day labouring to produce their quota of ore for the Government's atomic weapons program." (my underlining)

<http://www.sonic.net/~kerry/uranium.html>

see also whets been happening to the jaduguda people in India

<http://www.antenna.nl/wise/uranium/umopjdg.html>

It's interesting to note that for Navajo people, radiation is not easily explained, Vince Forrester, an Australian Aboriginal man says something similar:

"There is simply no proper information given to Aboriginal people living in the area about the effects of uranium mining on the land. The monitoring scientists have made no attempt to interpret their findings to the effected Aboriginal people." "Without this information, how are we to make a proper decision. It is not correct to say that any Aboriginal community has made a real decision on uranium mining until all the facts are presented to all of our people, and they must be presented in Aboriginal languages in a manner that has meaning to our people." <http://www.sea-us.orgau/index.html> (it's really worth reading what Mr.Forrester has to say.)

Obviously mining companies don't go out of their way to explain the health hazards involved, but I think that this cross cultural misunderstanding tells us more than that. Can we as scientifically conditioned Westerners and Europeans take indigenous understandings of uranium and radiation seriously? At Roxby Downs the Arabunna say there is a sleeping lizard under the mine, other stories in Australia link uranium to the rainbow serpent and the seven sisters who made the land. If we value aboriginal view points then we have to consider these interpretations along side all the scary scientific stuff..

From Kevin Buzzacott and the Arabunna People:

"In the past we were forced to leave our lands by the killing mobs who massacred our countrymen, our mothers and our little children. The racist system forced our Old People to leave so a few of us would survive. You see our lands as remote just like your principle of law terra nullius. This is not an uninhabited wasteland for your waste. It is our home. We became refugees but always maintained contact with our country. That is only temporary and now we need to have our land back, so we can look after it the proper way and heal ourselves. We plan to go back there and take away the evil. We have to go back whether the land has been poisoned or not. We've got nowhere else to go. Our life exists with our land. It is our foundation. It is our past, present and future. Our lands are sacred."

<http://come.to/lakeeyre> website for Arabunna people's campaign to protect Lake Eyre from Roxby Downs uranium mine.

<http://www.mirrar.net> website for mirrar people's campaign against Jabaluka, northern territories.

Responsibility..

"most of the uranium produced worldwide is mined in remote areas and is exported to customers abroad. This means that the consuming countries take the benefit of the electricity produced, while the producing countries take a major share of the risk and the long-term problems." antenna uranium customers liability report.

This is what we were looking at before, with the pie chart. This situation is in some ways typical of the whole globalisation model, rich countries consume while the worst damage is done somewhere far away and out of site. However some political parties with in the consuming countries have been questioning this process and pushing legislation to make safety and environmental standards the same for all. In 1989 the German green party pointed out this issue of responsibility to the German government who replied "The buyers of uranium are not responsible for the safety of the installations during construction, operation, and decommissioning." (BT-Drs. 11/5788 of Nov. 23, 1989, questions VI 2, VI 3d, VII 4)

A similar non-uranium story is the Ok-teni gold and copper mine in Papua New Guinea. This mine was tipping 60 to 70 million tonnes a year of toxic tailings straight into a major river. Then in 1992/93 the German government actually agreed to put pressure on mine share holders and the Papuan government to improve things. Whether they actually have improved the situation the report didn't say, but this sets an important precedent.

In Sweden the green party has been pushing this responsibility issue. 40% of Swedish used uranium comes from mines in Russia which green peace have condemned as particularly deadly. So far the Swedish government haven't agreed to take any responsibility.



Australian uranium and Europe.

"On January 15, 1998, the European Parliament adopted an urgency resolution in favour of indigenous peoples concerned from uranium mining, and against the Jabaluka project in Australia, in particular." <http://www.antenna.nl/uranium/uipep.html>

This is particularly relevant for us and our tour. The resolution condemns Jabaluka uranium mine, in the unbelievably beautiful Kakadu national park, northern territories, a project that is currently on hold due to the low price of uranium and strong local resistance. The resolution also states:

"G. concerned about the health effects of the already existing mining facilities at Roxby Downs, Ranger and the currently planned Jabiluka project for the aboriginal people;
H. noting that Australia is exporting uranium into the European Union;"
Agenda 21 also gets a mention, it's well worth looking closer at this document because it is particularly relevant to our concerns.

The information we still need is who and where exactly is buying Australian uranium...any ideas?

Thank you for ploughing through this with me, hopefully it proves to be inspiring. It's a massive, depressing subject and it's good to be informed about the facts.

Once we have the facts though, I think it's up to us to be creative and imaginative, presenting a show that is true to the message but knows how to take the piss, entertain, amuse and generally shake people up a bit...here's to imagining a radiation free future!

Other websites.

SEA-US Inc. The Sustainable Energy and Anti-Uranium Service
Background information for schools and community.
<http://www.sea-us.org.au/>

Greenpeace - A New Reactor is Nuclear Waste
<http://www.greenpeace.org.au/campaigns/nuclear/whatawaste/>

Uranium Research Group <http://www.urg.org.au/>