

# NUCLEAR WASTE



Radioactive waste is material containing the unusable radioactive by products of the scientific, military, and industrial applications of nuclear energy. Nuclear waste is everything from the mildly radioactive gloves and overalls used by nuclear industry workers, to the irradiated buildings of a nuclear power plant and spent nuclear fuel rods.

There is currently no safe way to dispose of nuclear waste. Disposal methods include dumping containers of radioactive waste encased in concrete in the ocean and underground burial in old mines or remote locations. Radioactive wastes are produced at all stages of the mining, manufacturing and use of uranium within the nuclear fuel cycle. The wastes are stored as either liquids or solids and are classified by their level of activity. High-level waste generates heat and has to be continually cooled, intermediate waste is less radioactive but still needs to be shielded and low-level waste is too radioactive for conventional landfill sites but must be buried at special sites.

While mining uranium produces low-level waste, large volumes are left behind at old mining sites as only about three kilograms of uranium oxide are recovered from every tonne of ore. After mining ends, tailings dams holding the 'leftovers' retain 80% of their radioactivity. Waterways can be polluted when dams collapse or through constant erosion, while gas and radioactive dust are dispersed by the wind. With radioactive decay persisting for well over 100,000 years, the potential for disasters is great (SEA-US).

Nuclear reactors (manufacturing plants) transform uranium into reactor fuel, creating liquid, solid and gaseous wastes with low radioactivity. There have been many accidents in the transportation of nuclear products and wastes, with spillages spreading contamination and having major consequences for public health as well as wildlife and our natural resources.

Uranium and plutonium can be recovered from the reactors through reprocessing. Two commercial reprocessing plants presently service all of the world's spent fuel rods, being the source of about two-thirds of all the low-level liquid and gaseous wastes produced in the nuclear fuel cycle. The fuel rods are then sent back to us with just as much radioactivity and 80 times larger in volume (Friends of the Earth). Radioactive wastes are then transported across the country placing many communities at risk to accidental exposure and contamination. Transportation adds another dimension of risk to the already complex issue of radioactive waste management. Global accumulation of nuclear waste continues to accelerate and with no plan for its permanent isolation developed anywhere in the world, nuclear waste is one of the greatest problems of the twentieth century.

#### References:

Friends of the Earth, online at <http://nuclearfreeways.foe.org.au>  
SEA-US-Sustainable Energy and Anti-Uranium Service Inc., online at <http://sea-us.org.au/wastenot.html>

## WHAT CAN I DO?

Support a nuclear free future, where nuclear waste will not be such a growing concern. There are many comprehensive sites including relevant addresses for submissions, and campaigning to become involved in. For example, Irati Wanti at <http://iratiwanti.org/home.php3>, Friends of the Earth at [http://foe.org.au/nc/nc\\_nuke.htm](http://foe.org.au/nc/nc_nuke.htm) and Reaction at <http://www.reactnow.org/>. Join the many email lists and keep abreast of up to date information. Write to your local MP, relevant politicians and your local newspaper outlining your fears.

## MORE INFORMATION

- <http://www.radioactivewaste.gov.au/> - an Australia Government site with information on radioactive waste management in Australia
- <http://www.uic.com.au/wast.htm> - Uranium Information Centre, a pro-nuclear site.
- <http://www.reactnow.org> - Information on nuclear issues in Australia.
- <http://www.geocities.com/jimgreen3/> - provides a nuclear history of Australia
- <http://www.nirs.org/> - the US Nuclear Information and Resource Service