

Transport of radioactive waste to Muckaty

Radioactive waste in Australia

Radioactive waste is produced by the nuclear research, power and weapons industries. It is classified as low, medium or high level according to its level of radioactivity. Long-lived radioactive waste must be stored in a way that is safe, stable and secure.

Through mechanical failure, human error or natural disaster, transport of radioactive materials is associated with a risk of environmental contamination and exposure of individuals and communities. Current evidence suggests that any exposure to ionising radiation, above natural radiation levels in the environment, is associated with an increased risk of cancers and ill-health¹.

Most radioactive waste produced in Australia is now stored where it is produced, in laboratories and hospitals, and at the nuclear reactor at Lucas Heights.

Transport of radioactive materials

Australia has a *Code of Practice for the Safe Transport of Radioactive Material*, produced by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA)². The Code outlines safe standards for isolation of the waste during transport, and requires that where radioactive material is to be transported, there is an authority which can respond if an incident should occur.

Safe and secure transport of radioactive material to a nuclear waste repository in the NT cannot be guaranteed. The NT Government highlighted its inability to respond to an incident involving radioactive waste in a submission to the Senate Inquiry into the Commonwealth Radioactive Waste Management (Repeal and Consequential Amendment) Bill, in 2010. Furthermore, the NT Government also maintained that it could not ensure the security of nuclear waste, while it is en route to a waste dump³.

The Muckaty proposal

Under the Commonwealth Radioactive Waste Management Bill, Muckaty has been proposed as a site for a 'radioactive waste repository' – that is, a radioactive waste dump.



Transport safety

Road transport of radioactive material poses particular risks to the health of communities and the environment. Heavy trucks make up 3% of vehicles but are involved in 16% of fatalities on Australian roads⁴. Currently trucks travel around 5.5 million km per year, and are involved in around 150 fatal crashes per year⁵. Per kilometre travelled, trucks are 2.4 times more likely to be involved in a crash than passenger cars. NT residents are 3 times more likely to die in road transport crashes than the average for all Australians. This highlights the risks of road transport in the NT^{6,7}.

Rail is another option for the transport of radioactive material in the Northern Territory. Accidents are less likely to occur using rail transport, but occur across Australia at a rate of 0.90 per million km travelled, and at 1.8 times this rate in NT.⁸ Any rail incident that occurs in remote NT would be more difficult to manage due to limited road access.



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Containment of radioactive materials during transport

The International Atomic Energy Agency has standards for containers carrying radioactive materials. These standards are recognised by ARPANSA. Specific containers have been designed to carry material of low to intermediate radioactivity: IP- 2 and IP- 3 containers. According to international standards, these containers would be the type used in transport of radioactive materials to Muckaty. IP- 2 and IP- 3 containers are constructed and tested to maintain their integrity during normal transport conditions. They are not designed to maintain their integrity in road or rail accident conditions.⁹

Because the proposed radioactive waste dump site is remote, response to an incident involving radioactive materials will take time. This may increase the contamination of the environment, and the potential exposure of individuals and communities to radioactive material. Local emergency responders may not have adequate training or equipment, increasing the likelihood of exposure to ionising radiation to themselves and their communities.

This fact sheet was prepared by members of the Northern Territory Branch of MAPW, November 2011.

More fact sheets, including detailed discussion of the proposed radioactive waste disposal and storage facility, can be found at www.mapw.org.au

References:

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5. Australian Transport Safety Bureau. *Road Safety in Australia: A publication commemorating World Health Day 2004*. Commonwealth of Australia, Canberra: 2004.
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8. Australian Transport Safety Bureau. *ATSB Transport Safety Report RR-2011-004 Final. Australian Rail Safety Occurrence Data: 1 January 2001 to 31 December 2010*. Commonwealth of Australia, Canberra 2011.
9. Fact Sheet Number 2. *Package Types used for Transporting Radioactive Materials*, World Nuclear Transport Institute, accessed at http://www.wnti.co.uk/UserFiles/FS2_EN_AUG10_V1.pdf

Conclusion

Transport of nuclear waste to Muckaty cannot be considered fail-safe. Whether transport of radioactive waste is by road or rail, there is always a risk of accidents and escape of radioactive material into the environment.

Accidents can occur because of human error, mechanical failure or natural disasters. Trained staff and appropriate equipment may not be readily available to deal with accidents that result in release of radioactive materials.

Transport of radioactive material to the proposed repository at Muckaty provides unacceptable risk to individuals, communities and the environment.

Recommendations

- Transport, storage and disposal of nuclear waste must be managed as a scientific and community problem, rather than a political problem.
- A comprehensive and independent enquiry into the source, volume, location and radioactivity levels of radioactive waste in Australia needs to be undertaken.

