

**Medical Association for Prevention of War (Australia):
Submission on proposed expansion of Olympic Dam mine: 7 August 2009**

**ASSESSMENT BRANCH, DEPT OF PLANNING AND LOCAL GOVERNMENT
STATE GOVERNMENT OF SOUTH AUSTRALIA**

SUBMISSION ON PROPOSED EXPANSION OF OLYMPIC DAM MINE

The Medical Association for Prevention of War (Australia) submits the following evidence in relation to the proposed expansion of the Olympic Dam mine. The evidence presented leads us to strongly oppose the proposed expansion.

Risks addressed inadequately or not at all

MAPW believes that the proposed expansion carries significant risks that are either inadequately addressed in the Environmental Impact Statement or not addressed at all. Principal among the latter risks is the contributions made by the nuclear fuel chain, of which uranium mining is the beginning, to the greatest environmental threat that humanity faces – nuclear weapons. These threats will now be addressed.

Contribution to risk of nuclear war

The environmental threat posed by nuclear weapons is extreme. It was described by the International Court of Justice, the world's highest legal authority, in its 1996 landmark ruling on the general illegality of these weapons, as follows:

“The destructive power of nuclear weapons cannot be contained in either space or time. They have the potential to destroy all civilisation and the entire ecosystem of the planet.”

The environmental damage wrought by nuclear weapons is not confined to their immediate and catastrophic destructive effects. Radioactive contamination, which can last many thousands of years, is known by repeated plant and animal studies, and documented in humans also, to cause genetic changes. The full impacts of these changes over such time spans are not yet known

Recent studies also have confirmed research from the 1980s of the climatic consequences of the use of nuclear weapons. The use of just 100 Hiroshima-sized weapons in urban areas, for example a war between India and Pakistan where each side used 50 weapons, could cause severe global climatic changes.¹ Fires ignited would release copious amounts of light-absorbing smoke and debris into the upper atmosphere, causing persistent surface cooling even a decade later. In such a scenario, there would be decreases in growing seasons in many of the most important grain producing parts of the world, with severe reductions in food production.

In the 1970s, the Ranger Uranium Environmental Inquiry found that “the nuclear power industry is unintentionally contributing to an increased risk of nuclear war”. That remains as true today as it was then. Much more recently, in 2008, a report of the US State Department International Security

Advisory Board, “Proliferation Implications of the Global Expansion of Civil Nuclear Power” noted that “the rise in nuclear power worldwide . . . inevitably increases the risks of proliferation”.

Former Director-General of the International Atomic Energy Agency, Mohamed El-Baradei, recognised the ease of converting a “peaceful” nuclear program to a military one in 2005, when he observed that more countries were seeking to master the nuclear fuel cycle, which “essentially transforms them into what might be called a “virtual” or “latent” nuclear weapons state”.

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The intricate web linking military and “peaceful” uses of the atom incorporates every single nuclear weapons state, some non-weapons states and non-state actors. The “civilian” nuclear power program in the UK has produced not only electricity but also plutonium for British and American weapons. In the US, “civilian” plants are used in the production of tritium, which is used to boost the explosive yield of nuclear weapons.

India and Pakistan both conducted their first nuclear tests with material from “peaceful” reactors supplied by Canada. Israel’s “research reactor” was built by France and used heavy water supplied by Britain. North Korea’s nuclear weapon test in 2006 used plutonium from its “experimental power reactor”. Clandestine nuclear weapons research was conducted in South Korea by civilian scientists for many years.

In China, which now receives Australian uranium, the China National Nuclear Corporation controls all fissile material, both civilian and military, and it is impossible to ensure that Australia’s uranium is not used for weapons. Similarly in Russia, there is grossly inadequate separation of the civilian and military sectors, and missing fissile material is a major reason for fears that terrorists have had access to it.

Safeguards inspections by the International Atomic Energy Agency are close to non-existent in the five nuclear weapons states that are party to the Non-Proliferation Treaty (Russia, the US, China, France and the UK). All of these except Russia receive Australian uranium, and even Russia will do so if the Australian government approves a proposed sales agreement. There has not been a single IAEA safeguards inspection in Russia since 2001. In any event, the International Atomic Energy Agency has admitted that its rights of inspection are “fairly limited” in any country and that it operates on a “shoe-string budget comparable to a local police department”.

With the proposed Olympic Dam expansion, export of uranium is expected to increase from an average of 4,000 tonnes per year to 19,000 tonnes. In power reactors, 19,000 tonnes of uranium produces enough plutonium to build 2,850 nuclear weapons. The total amount of uranium at Olympic Dam would produce enough plutonium to build over 340,000 nuclear weapons.

The standard response that safeguards keep our uranium out of weapons has been repeatedly shown to be untrue. It is therefore imperative that the environmental destruction caused by nuclear weapons be considered in its entirety as an integral part of the Olympic Dam EIS. That has not been done.

Radioactive waste

Radioactive tailings wastes are exposed and open to the environment and currently amount to about 100 million tonnes. The tailings contain a toxic, acidic soup of radionuclides and heavy metals. They are the most environmentally damaging part of the whole nuclear fuel chain. One of the isotopes of concern, thorium-230, has a half-life of 75,000 years. Proper management of the tailings over such a period of time is clearly an absurd concept.

Radon gas in tailings dams is “safe” only as long as the dams remain intact. This is not likely to be longer than several hundred years at best.

BHP Billiton plans to increase the production of radioactive tailings waste seven-fold to 68 million tonnes annually to cover an area of up to 44 sq kms to a height of up to 65 metres. This toxic

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mountain is designed to leak on average 3 million litres of radioactive waste a day. BHP plans to line only 15% of the proposed tailings facility.

Overseas, Olympic Dam uranium will end up as high level nuclear waste. However no country has a permanent repository for this waste. The most advanced high-level nuclear repository project was the US site at Yucca Mountain, which President Obama abandoned earlier this year.

Water

BHP Billiton proposes an increase in water consumption from 37 million litres daily (from the Great Artesian Basin) to over 250 million litres daily (up to 42 million litres from the Great Artesian Basin, the remainder from a proposed desalination plant near Whyalla). That's over 100,000 litres every minute - in the driest state in the driest inhabited continent.

Such profligate use of our most precious resource, in a warming climate, is irresponsible in the extreme.

Electricity consumption and greenhouse emissions

The expansion will see the mine's electricity consumption increase over six-fold from 125MW to 775MW. BHP plans to source this from some combination of the state electricity grid, a proposed on-site gas-fired plant, and a proposed on-site plant powered by waste heat. There is no requirement for BHP Billiton to source any electricity for the mine site from renewable sources.

Greenhouse emissions from the mine are projected to increase from 1.2 million tonnes annually to up to 5.9 million tonnes. This will make it all but impossible for SA to reach its legislated emissions target of 13 million tonnes annually by 2050.

Most phases of the nuclear fuel chain are greenhouse intensive. This applies particularly to uranium mining.

ⁱ Robock A et al. Climatic consequences of regional nuclear conflicts. Atmospheric Chemistry and Physics Discussion 2006; 6 :11817 - 11843