

## PNFA FACT SHEET

### MEDICAL HAZARDS OF URANIUM MINING

- Uranium is the fuel for nuclear power plants. Australia owns 40% of the world's accessible uranium.

Uranium is a chemical element in the periodic table that has the symbol U and atomic number 92. Heavy, silvery-white, toxic, metallic, and naturally-radioactive, uranium belongs to the actinide series and its isotope  $^{235}\text{U}$  is used as the fuel for nuclear reactors and the explosive material for nuclear weapons.

All isotopes and compounds of uranium are toxic and radioactive.

- There are three operating uranium mines in Australia: Ranger in the Northern Territory, Olympic Dam and Beverley in South Australia. Olympic Dam has been operating since 1988 and is Australia's largest underground mine. It is also the world's largest known uranium resource.

A fourth mine is cleared to start construction: Honeymoon, in South Australia. More mines have been proposed. The most controversial was Jabiluka, to be built inside the World Heritage listed Kakadu National Park.

- The medical risks of nuclear power begin at the uranium mines because the men who mine uranium are exposed to constant levels of radiation both by inhaling radioactive radon gas, by swallowing radium which is very carcinogenic and to whole body exposure to gamma radiation (like X rays) which irradiates their bodies including their testicles. Medical records show that one third to one half of uranium miners in various countries have died of lung cancer.

Men who mine uranium below the ground are and were at increased risk of cancer because they are exposed to a high concentration of the radioactive gas radon 220, which accumulates in the air of the mine. Radon 220 is a highly carcinogenic alpha emitter and if inhaled, can locate in the terminal air passages of the lung, irradiating cells that can then become malignant.

- As a World Health Organisation report *Radon and Health* published in March 2004 notes 'An increased risk of all histological types of lung cancer, including small cell carcinoma, adenocarcinoma, and squamous cell carcinoma, has been associated with occupational exposure to radon'.

