

June 2024

Health control plan resources

Ionising radiation

What is ionising radiation?	Why is it a health hazard?	What are the exposure monitoring requirements?	What are the health monitoring requirements?
<p>Ionising radiation is the transfer of energy through space or material (human body tissue) in the form of electromagnetic waves or subatomic particles which can cause ionisation in matter, e.g. alpha particles, gamma rays, x-rays and neutrons.</p>	<p>Ionising radiation can damage human cells as it passes through the body.</p> <p>Low doses of radiation over a long period can cause long term health effects. Cells may become cancerous or DNA may become damaged causing mutations.</p>	<p>In mining and mineral processing operations, workers may be exposed to naturally occurring sources of radiation in the work environment, including radiation from mined products (uranium) or processed materials.</p> <p>A person conducting a business or undertaking (PCBU) must ensure that work-related exposures to ionising radiation does not exceed the recommended dose limit of 20 mSv per year, averaged over a period of five consecutive calendar years.¹ There are also annual dose limits for the lens of the eye, skin and hands and feet.</p> <p>Personal exposure monitoring is carried out using devices that detect and measure the concentration of radiation.</p>	<p>Levels of radiation need to be monitored to ensure they remain below a recommended standard. The methods used to measure the amount of radioactive material in the body depend on the nature of the exposure.</p> <p>Biological methods include samples collected from individuals including urine, body fluid, blood, hair clippings etc. Routine health monitoring programs may be established if individuals are exposed to significant quantities.</p> <p>For more information on biological monitoring for ionising radiation</p>

¹ Reference: Code of Radiation Protection in Planned Exposure Situations (ARPANSA 2020).

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		Exposure monitoring of radiation should be undertaken by a competent and specifically trained individual in radiation. Further information is available from Australian Radiation Protection and Nuclear Safety Agency www.arpana.gov.au and Safe Work Australia .	contact should be made with an occupational physician.

Controls – Ionising radiation

When it comes to ionizing radiation control, remember time, distance, and shielding:

- Minimise time spent in areas with elevated radiation levels. ...
- Maximise distance from source(s) of radiation. ...
- Use shielding for radiation sources (i.e., placing an appropriate shield between source(s) of radiation and workers).

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