

Submission to Department of Industry, Innovation and Science

Re National Radioactive Waste Management Facility,

by Dr John Patterson, Secretary, South Australian Branch, Australian Nuclear Association.

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The South Australian branch of the Australian Nuclear Association (SA ANA) welcomes the opportunity to comment on the process to site a National Radioactive Waste Management Facility in South Australia. We strongly support the establishment of a national facility at either Kimba or Hawker, for the management of low and intermediate level radioactive waste from all Commonwealth agencies, States and Territories, including ANSTO in Sydney. A centralised facility, purpose-built to manage these wastes is considered to be international best practice as demonstrated in similar facilities globally.

Australia needs a safe, effective and a permanent solution for managing the radioactive wastes accumulated as a by-product of a wide range of beneficial uses of nuclear science and technology in our modern technological society. Examples include the production and use of medical radio-isotopes for therapy and treatment, industrial processes and university and other research, smoke detectors and agricultural uses such as measuring soil moisture in the wine industry. Important isotopes are molybdenum-99 used to produce 6-hour technetium – 99m, iridium-192 and strontium-89 used for pain relief of bone cancer.

There is also a need to store limited quantities of intermediate level waste arising from the return of reprocessed waste from the decommissioned HIFAR Research Reactor and from the current Opal Research Reactor. The first shipment returned is stored on-site at Lucas Heights on the outskirts of Sydney. The first shipment of four casks of Opal spent fuel were sent to France in July 2018. The reprocessed intermediate level waste will be returned to Lucas Heights in a stable, compact and vitreous form in approximately 20 years.

Currently, other radioactive wastes are stored in over a hundred temporary locations across Australia. Ongoing operation of such storage facilities is not ideal from a management, security and safety perspective. There is a risk of accidental exposure to untrained or unauthorised personnel. A national radioactive waste facility would allow radioactive waste stored in all these sites around Australia to be effectively and securely managed in one centralised location. The ANSTO Act specifically prohibits the Lucas Heights site becoming a national nuclear waste repository (1).

Extensive experience in many countries demonstrates that radioactive waste can be safely managed, stored and disposed of and a centralised purpose-built facility is best practice. We are not able to comment on the relative suitability of the three sites being considered for the National Radioactive Waste Facility. The nearby town to the chosen site will benefit by employment in constructing and operating the facility, providing essential services and building useful experience and expertise. The South Australian locations being considered are convenient for transport of radioactive waste material from the eastern states and Adelaide. We recommend the urgent need to site the facility with continued community engagement at all phases of the process (as is happening now).

Having one centralised facility for Australia is best practice for the management of Australia's nuclear waste. In licencing the Opal reactor, the CEO of ARPANSA noted (2) that "The sustained production of radioactive waste requires a long term plan and an ultimate solution." The establishment of a National Facility is important for the continued beneficial use of radioactivity and radiation in health, industry and research in Australia including the Opal Reactor and ANSTO facility at Lucas Heights. This facility produces radio-isotopes for export and local use for the production of medical isotopes, agriculture, industrial productivity and research.

1) in section 5 Functions of Organisation Para 1A

<https://www.legislation.gov.au/Details/C2012C00046>

2) <https://www.arpansa.gov.au/sites/g/files/net3086/f/legacy/pubs/regulatory/opal/sor-opal2014.pdf> page 23