



Australian Government
**Australian Radiation Protection
and Nuclear Safety Agency**



ARPANSA Submission to Joint Standing Committee on Treaties

Agreement Between the Government of Australia and the Government of the French Republic Concerning the Reprocessing in France of Australian Irradiated Nuclear Fuel Elements

23 February 2018

On 14 February 2018, the Chair of the Joint Standing Committee on Treaties, the Hon Stuart Robert MP, wrote to the CEO of ARPANSA, Dr Carl-Magnus Larsson, regarding the safety of intermediate level waste stored at the Interim Waste Store at the Australian Nuclear Science and Technology Organisation's (ANSTO) Lucas Heights site in Sydney. This submission addresses the questions and issues posed in the letter.

Background on the ANSTO Interim Waste store

On 30 November 2015, ARPANSA issued a licence to ANSTO to operate the Interim Waste Store at Lucas Heights. This licence was issued after several years of assessment work by ARPANSA.

The Interim Waste Store was designed to accommodate the radioactive waste material arising from reprocessing the spent nuclear fuel from the HIFAR reactor, which had operated at Lucas Heights since 1958. The spent fuel elements from HIFAR were sent both to France and the UK for reprocessing. After reprocessing, the arising waste, minus the major part of the fissionable material, was to be returned to Australia.

Only the waste resulting from reprocessing in France has been returned to Australia. The waste from this reprocessing was returned in December 2015 in a vitrified matrix contained in a massive shielded flask known as a TN81. In addition, technological waste from the reprocessing has also been returned to Australia from France. This includes contaminated pipework in concrete shielded waste drums housed in an ISO transport container. The waste stored in the UK is due to be returned around 2020-21, and it is expected to be returned in another TN81 flask.

The current Interim Waste Store at Lucas Heights is only licensed to hold the waste from HIFAR reprocessed in France, and ANSTO will be required to obtain separate approval from ARPANSA to accommodate the waste in the UK from HIFAR when it returns in 2020-21.

Under condition 2 of the Interim Waste Store licence, ANSTO must review the safety of the TN81 package every 10 years. The first review of the current TN81 flask is due by 31 December 2025.

In addition, under condition 5 of the Interim Waste Store licence, ANSTO must submit a plan, by no later than June 2020, for removal of the waste stored in the facility. The contents of this plan will be contingent on the progress made by the Department of Industry, Innovation and Science in establishing a National Radioactive Waste Management Facility and establishing a final disposal pathway for Australia's intermediate level waste.

The design life of the TN81 flask is 40 years, which covers storage out until 2055, contingent on outcomes of the 10-yearly safety reviews. The Department of Industry, Innovation and Science expects that a pathway for the final management of intermediate level waste will be available by this time, and has commenced work in this area.

Safety and Effectiveness of the Current Storage Facility and Future Requirements

The safety of the current interim waste storage facility at ANSTO is primarily dependent on the safety of the TN81 flask which contains the vitrified HIFAR radioactive waste. ARPANSA has a high degree of confidence in the safety of this facility which is underpinned by an inspection and compliance monitoring program.

With regards to future requirements for intermediate level waste, the remaining vitrified waste from reprocessing of HIFAR spent fuel will be returned from the UK to Australia in 2020-21 in a second TN81 flask. In order for it to be stored in the ANSTO Interim Waste Store, as stated earlier, an application will need to be submitted and approved by ARPANSA.

There has been no indication from ANSTO of using this facility for anything other than storage of the HIFAR waste.

With regards to the radioactive waste from reprocessing of OPAL spent fuel, which is expected to be returned to Australia between 2035-40, the intention is to store the waste in the National Radioactive Waste Management Facility (NRWMF).

However, the NRWMF has not yet been established, and the proponent, the Department of Industry, Innovation and Science is actively pursuing a suitable site at present. ARPANSA would be the responsible regulator to receive and assess an application to site, construct and operate such a facility, but is unable to pre-empt any regulatory decision or provide any estimate of timeframes of when this will occur.

Point of Contact:
Ryan Hemsley
Director
Government and International Relations
03 9433 2414
Ryan.hemsley@arpansa.gov.au

Cleared by:
Carl-Magnus Larsson
CEO
ARPANSA