National Interest Analysis [2017] ATNIA 33

with attachment on consultation

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

(Canberra, 23 November 2017)

[2017] ATNIF 44

NATIONAL INTEREST ANALYSIS: CATEGORY I TREATY

SUMMARY PAGE

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

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Nature and timing of proposed treaty action

1. It is proposed to bring into force the *Agreement between the Government of Australia and the Government of the French Republic Concerning the Reprocessing in France of Australian Irradiated Nuclear Fuel Elements* (the proposed Agreement) done at Canberra on 23 November 2017.

2. Pursuant to Article 11, the proposed Agreement will enter into force on the date on which both Parties have notified each other that they have completed the domestic procedures required for entry into force for the proposed Agreement. It is anticipated that Australia will provide such advice to France as soon as practicable following consideration of the proposed Agreement by the Joint Standing Committee on Treaties (JSCOT).

Overview and national interest summary

3. The Open Pool Australian Lightwater (OPAL) research reactor produces over 10,000 doses of nuclear medicine per week, and supports cutting-edge research in fields as diverse as materials science, environmental and climate change research, food and agriculture, industrial applications and human health. Like any research reactor, it produces a small amount of spent nuclear fuel, which requires safe management. The Australian Government has decided that reprocessing by Areva NC in France is the most efficient, most economic and safest management option for Australia, given the very small amount of spent nuclear fuel we produce and Areva NC's reprocessing expertise and familiarity with the OPAL fuel design.

4. Under French domestic law, an Intergovernmental Agreement must have entered into force before any spent nuclear fuel is allowed to enter French territory. French domestic law requires that the agreement state that radioactive waste arising from reprocessing of spent nuclear fuel in France will not be stored in France past an agreed date. The proposed Agreement would meet these requirements, thus enabling the sending of spent nuclear fuel from OPAL to France and its reprocessing in France.

5. The proposed Agreement thereby allows the continued safe operation of OPAL and enables it to continue to deliver the health, scientific and economic benefits it brings to the Australian public.

Reasons for Australia to take the proposed treaty action

6. The Australian Nuclear Science and Technology Organisation (ANSTO) has operated the OPAL research reactor since 2006. Through the OPAL reactor, ANSTO provides critical health, scientific and economic capabilities to the Australian public. Such capacity includes the provision of over 10,000 doses of nuclear medicine per week, production and export of neutron transmutation-doped silicon for use in high-end electronic equipment, as well as nuclear science capabilities that are used to conduct cutting-edge research in fields as diverse as materials science, environmental and climate change research, food and agriculture, industrial applications and human health.

7. As part of its operation, OPAL produces approximately 30 spent nuclear fuel assemblies per year. This spent nuclear fuel is managed by initially storing it for a period of some years in the OPAL service pool for cooling before being sent for reprocessing. Should the spent fuel racks in the service pool fill up completely, OPAL would, under current licence conditions, have to cease operation.

8. Reprocessing is the practice by which spent fuel assemblies are dissolved to separate unfissioned uranium and the small amounts of plutonium produced during the operation of the reactor from the fission products. The unfissioned uranium and plutonium are typically reused in new, fresh fuel for power or research reactors, and the fission products are treated as waste. Reprocessing of research reactor fuel such as that from OPAL typically creates intermediate level waste. Some countries choose to directly dispose of spent nuclear fuel from power reactors; however spent nuclear fuel produced from research reactors such as that produced by Australia is not suitable for storage given its chemistry. Reprocessing is the most efficient, most economic and safest option for this type of spent nuclear fuel.

9. Globally, there are only a few companies that provide reprocessing of spent nuclear fuel. Of these companies, Areva NC offers the most reliable, most economic and safest option. Areva NC has a long history of safely reprocessing spent nuclear fuel from both the extensive French nuclear power program as well as that from power plants and research reactors in many other countries. They reprocessed much of the fuel from Australia's first research reactor, HIFAR, with the resultant waste safely returned to Australia in 2015. France also manufactures fresh fuel for the OPAL reactor, so they are most familiar with its technical requirements. The French safety regulator has recently approved a reprocessing process for the modern silicide-based fuel that OPAL uses. Australia also has long-standing Nuclear Cooperation Agreements with France and with Euratom to ensure that any nuclear material arising from reprocessing will be used exclusively for peaceful purposes (that is, use in fresh fuel produced by Areva NC). For these reasons, as part of the 2016 budget process, the Australian Government endorsed ANSTO's 2016 proposal to enter into a contract with Areva NC for the reprocessing of spent fuel from OPAL. This contract is expected to cover reprocessing of spent fuel over the life of OPAL's operation.

Obligations

10. The proposed Agreement creates obligations for both Parties. Broadly, France agrees to accept spent nuclear fuel from Australia for the purpose of reprocessing between entry into force of the proposed Agreement and 31 December 2030, and Australia agrees to accept the return of radioactive waste arising from that reprocessing.

11. The preamble of the proposed Agreement, while not creating any binding obligations on either Party, refers to legal frameworks relevant to the proposed Agreement, notably the French Environment Code which requires an Intergovernmental Agreement between France and Australia to enter into force before spent nuclear fuel can be shipped to France, as well as the Nuclear Cooperation Agreement between Australia and France, the *Agreement between the Government of Australia and the European Atomic Energy Community (Euratom) for Co-operation in the Peaceful Uses of Nuclear Energy*, and the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management*, to which both Australia and France are States Parties.

12. In addition to defining terms under the proposed Agreement, Article 1 refers to a number of related documents that are relevant to the proposed Agreement. These include:
    a. a contract agreed between ANSTO and Areva NC concerning the reprocessing of 3.6 tonnes of spent nuclear fuel from the OPAL research reactor (the Contract);
    b. an agreement between ANSTO and Areva NC regarding transfer of title of uranium and plutonium from any reprocessing conducted by Areva NC; and
    c. relevant laws enacted by either Australia or France in accordance with its constitutional arrangements.

13. Articles 2 and 3 state the purpose and scope of the proposed Agreement. Article 3 notes that the proposed Agreement will be carried out in accordance with provisions of the French Environment Code and that under the proposed Agreement spent fuel will enter France only for the purposes of reprocessing and radioactive waste arising from reprocessing of Australian spent nuclear fuel will not be stored in France.

14. Articles 4 and 5 of the proposed Agreement prescribe the timing of the shipment of spent nuclear fuel to France and that of the shipment of the waste arising from the reprocessing operation. The former is to occur between the date of entry into force of the proposed Agreement and 31 December 2030. The latter is to occur between 1 January 2019 and 31 December 2034.

15. Pursuant to Article 6, Australia agrees to accept the return of radioactive waste resulting from the reprocessing of Australian spent nuclear fuel that will be carried out under the proposed Agreement. This provision is consistent with the requirements of Article 3 of the proposed Agreement. Both Parties are obliged to use their best efforts to minimize the number of shipping operations required for the return of radioactive waste under the proposed Agreement. Pursuant to Article 6(3), the final date for Australia to accept return of the resultant radioactive waste will be 31 December 2035 unless an extension to the Contract is signed by 31 December 2028

(in which case return of radioactive waste to Australia must occur by 31 December 2040).

16. Article 7 obliges both Parties to adopt such measures as may be reasonably necessary and within their competence to enable the provisions of the proposed Agreement to be implemented. Article 7(3) provides that Australia shall ensure compliance with time limits in relation to the authorization procedures, permits and licences required for the shipment of radioactive waste to a storage or warehousing facility in Australia. Pursuant to Article 7(4), Australia will be responsible for safe storage of radioactive waste arising from the reprocessing.

17. Article 8 of the proposed Agreement requires both Parties to carry out the transport of the radioactive waste in accordance with applicable laws and regulations. For France, this includes relevant obligations arising from its participation in Euratom. In practice, the international transport of spent fuel and radioactive waste is governed by standards developed by the International Atomic Energy Agency and implemented by the International Maritime Organisation. Such shipments have an outstanding safety record.

18. Article 9 of the proposed Agreement pertains to the management of transferred spent fuel and the uranium and plutonium that is extracted from the spent nuclear fuel during reprocessing. This material will be governed by the Contract and the agreement between ANSTO and Areva NC. In addition, this material shall be treated in accordance with the relevant laws and regulations and with Nuclear Cooperation Agreements between both Australia and France, and – given France's membership of Euratom – Australia and Euratom.

19. Article 10 sets out the procedure for the resolution of disputes arising under the proposed Agreement. Should a dispute arise under the proposed Agreement the Parties shall consult one another with a view to settling the dispute speedily through negotiation, mediation, conciliation or any other peaceful means.

Implementation

20. No new legislation or regulation is required to implement the proposed Agreement. The relevant existing legislation includes the *Australian Radiation Protection and Nuclear Safety Act 1998*, the *Environmental Protection and Biodiversity Conservation Act 1999*, the *National Radioactive Waste Management Act 2012*, and the *Nuclear Non-Proliferation (Safeguards) Act 1987*.

21. No changes to the existing roles of the Commonwealth or the States and Territories will arise as a consequence of implementing the proposed Agreement.

Costs

22. The proposed Agreement will not place additional financial costs on Australia.

23. Costs associated with shipment of spent nuclear fuel to France and its return to Australia are a normal operating cost for operating a research reactor and would be required with or without the proposed Agreement.

24. No additional costs are anticipated from storage of radioactive waste returned from France, as it is anticipated that the material would be stored at the facility to be established under the *National Radioactive Waste Management Act 2012*.

25. The Office of Best Practice Regulation has assessed that there is no regulatory impact on business, community organisations or individuals arising from the proposed Agreement.

Future treaty action

26. Article 11 allows for the proposed Agreement to be amended by mutual agreement and in writing by the Parties. Any such amendments would be subject to domestic treaty-making requirements.

Withdrawal or denunciation

27. Pursuant to Article 11(2), the proposed Agreement will remain in force until the date of the last shipment of radioactive waste to Australia, which is 31 December 2040 at the latest (Article 6(3)). Article 11(5) allows for earlier termination of the proposed Agreement. Such termination must be done in writing and either by mutual agreement of the Parties, or by one Party giving the other written notice, six months after which the agreement will terminate. Termination of the proposed Agreement does not absolve the Parties of obligations regarding Article 6 (Shipment of Waste to Australia), Article 7 (Implementation), Article 8 (Transport of Radioactive Waste) or Article 9 (Management of Nuclear Material).

Contact details

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ATTACHMENT ON CONSULTATION

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CONSULTATION

28. The State and Territory Governments were consulted through the Commonwealth-State-Territory Standing Committee on Treaties (SCOT). Information on the proposed Agreement was provided to State and Territory representatives through the biannual SCOT meetings.