

14th Feb 2018

To: Committee Secretary

Joint Standing Committee on Treaties

Inquiry "*Reprocessing Nuclear fuel – France*"

jsct@aph.gov.au

Re D Noonan Public Submission: Public Interest Questions, Scenarios and Consequences of "*Reprocessing Nuclear fuel – France*" treaty actions & associated nuclear actions

Dear JSCT Committee Secretary

Please accept this public submission to the JSCT Inquiry "*Reprocessing Nuclear fuel – France*" addressing public interest questions for consideration by the Committee arising from the NIA, the Hearing on 12 Feb with ANSTO, and the proposed treaty actions & associated nuclear actions.

Reprocessing is illegal in Australia and long abandoned in the US for proliferations reasons, is not best practice and is arguable not technically necessary on evidence of key prior US Agreement.

ANSTO is without a Plan B to address key public interest scenarios which demand answers:

- Reprocessing in France will not prove to be available throughout the OPAL reactor Operating License to 2057. At most, this treaty covers the first 2 of 5 decades of OPAL fuel wastes;
- AND the proposed above ground Store in SA for ANSTO's nuclear waste will damage and divide community and fall over and fail just as prior attempts have in SA and in NT.

If the OPAL reactor is to continue to operate ANSTO must address required contingencies:

- Extended Storage of OPAL nuclear fuel waste on-site at Lucas Heights in secure cask storage. Lucas Height operates a Store for HIFAR nuclear fuel wastes with capacity to do so until availability of a final disposal option and can now set up to do so for OPAL fuel wastes;
- AND to have to manage ANSTO nuclear fuel wastes entirely with-in Australia through to final disposal. Sending OPAL nuclear fuel waste overseas for reprocessing is used as an excuse to produce a burden of further nuclear waste without capacity or answers for its disposal.

ANSTO must be made to do far more than just get some of the waste out of the country for a period.

It is untenable for ANSTO to continue to produce OPAL reactor nuclear wastes which require isolation from the environment for over 10,000 years without any disposal capacity or pathway.

National Interest Analysis (2017) ATNIA 33 is inadequate and NIA 22 "*Implementation*" falsely declares: "*The proposed Agreement will not place additional financial costs on Australia.*"

ANSTO should have to formally answer to this JSCT Inquiry for the now considerable additional financial cost to taxpayers in reprocessing the first decade of OPAL nuclear fuel waste in France.

ANSTO had US Agreement to send these wastes for ultimate disposal in US without reprocessing, at only a one-way shipping cost & with no waste return to Australia. ANSTO failed to comply with timelines set in the US Agreement and left Australia with the waste and major reprocessing costs.

Transparency requires full disclosure of ANSTO's undeclared nuclear fuel waste financial cost liabilities to this Inquiry. A range of public interest questions on cost issues are provided herein.

Background to the pending failure of the intended *NRWM Act 2012* above ground Store in SA for ANSTO nuclear fuel waste is provided through a public submission to Minister M Canavan (28 May 2017, Re Kimba siting) and constitutes a formal part of this submission for consideration by JSCT.

South Australia will not tolerate Federal government imposition onto any community in our State of an illegal '100 year' above ground Store for ANSTO's '10,000 year' irradiated nuclear fuel wastes.

Since April 2016 the Federal gov has exclusively targeted communities in SA, in the iconic Flinders Ranges on the traditional lands of the Adnyamathanha people AND in the Kimba prime agricultural region, causing deep concern and deep divisions in community.

Liberal Premier John Olsen legislated to prohibit the import, transport, storage and disposal of ANSTO irradiated nuclear fuel wastes under the *Nuclear Waste Storage (Prohibition) Act 2000*.

Community across SA will stand up for this Act & for each other to protect SA from nuclear dumping:

"The Objects of this Act are to protect the health, safety and welfare of the people of South Australia and to protect the environment in which they live by prohibiting the establishment of certain nuclear waste storage facilities in this State"

ALP Premier Jay Weatherill wrote to Prime Minister M Turnbull (24 Oct 2017, letter attached) regarding the NRWMF to convey the deep concern of the Adnyamathanha community about the proposed site at Hawker, and potential impacts on Adnyamathanha Cultural Heritage.

Premier Weatherill recommended the Commonwealth consider adopting a commitment to provide a local Aboriginal community with a final right of veto over any facility proposed on their lands.

Apparently, the Prime Minister is yet to reply. Nuclear dump siting in SA should stop forthwith.

Please feel free to contact on any aspect of this public submission [REDACTED]

Yours sincerely

David Noonan B.Sc., M.Env.St.

Independent Environment Campaigner

Contents

Summary Letter	1-2
Reprocessing is illegal in Australia, long abandoned in the US, and without a Plan B	3
ANSTO risks OPAL operations by producing nuclear fuel waste without a disposal capacity	4
ANSTO's undeclared nuclear fuel waste cost liabilities must be disclosed to this Inquiry	5
Safety Questions on proposed Shipments of nuclear fuel waste out of & into Australia	6
Extended Storage of ANSTO nuclear fuel waste at Lucas Heights	7
The proposed Intermediate level waste Store in SA is <i>predominantly</i> for ANSTO reactor wastes	
Mr D Noonan public submission to Minister for Resources M Canavan (28 May 2017)	8-9
<i>"RE: Proposed Federal government imposition onto community in South Australia of an illegal '100 year' Store for ANSTO's '10 000 year' irradiated Nuclear Fuel Wastes"</i>	
Attachment: Premier Jay Weatherill's letter to Prime Minister M Turnbull (24 Oct 2017, 2 pages)	

Reprocessing is illegal in Australia, long abandoned in the US, and without a Plan B:

Reprocessing was prohibited by Prime Minister John Howard under the ARPANS Act 1998 Sec.10 **"Prohibition on certain nuclear installations"** and is a prohibited class of nuclear activity and installation under the EPBC Act 1999 Sec.37J, Sec.146M and Sec.140A:

"140A No approval for certain nuclear installations. The Minister must not approve an action consisting of or involving the construction or operation of any of the following nuclear installations: (d) a reprocessing facility."

This is not a matter of capacity in Australia, government or corporate, but a matter of law and policy.

Reprocessing was abandoned in the USA under President Carter, primarily on the basis of proliferation concerns. Reprocessing, in the separation of radioactive isotopes and plutonium fissile materials from irradiated nuclear fuel, is not international best practice as claimed by ANSTO.

Reprocessing is arguably technically unnecessary given ANSTO's prior arrangements for the first decade of OPAL nuclear fuel waste to be shipped to the US for ultimate disposal under long standing US policy not to reprocess Research Reactor (or power reactor) irradiated nuclear fuel waste (SNF).

The Agreement with the US was central to the key ARPANSA Licensing decision on the OPAL reactor by the then ARPANSA CEO John Loy, as stated in an ARPANSA media release dated 14th July 2006:

"Nuclear Safety Regulator Licenses Operation of OPAL Research Reactor"
"I am satisfied that ANSTO has firm arrangements with the United States for the return of OPAL spent fuel to that country for storage and ultimate disposal. This arrangement applies for the ten years until May 2016..."

ANSTO should have to formally answer for agency failure to deliver on the US Agreement through ANSTO's failure to ship a decade of OPAL nuclear fuel waste to the US within the agreed period.

These wastes were be retained in the US without any associated return of equivalent wastes to Australia and the financial cost involved was only for the one-way shipment to the US – significantly less than the now additional cost in reprocessing and in required in-perpetuity management and final disposal of this first decade of OPAL reactor produced nuclear fuel wastes in Australia.

ANSTO should have to formally answer to this JSCT Inquiry for the now considerable additional financial cost to taxpayers in reprocessing the first decade of OPAL nuclear fuel waste in France.

The JSCT Committee should question ANSTO's new assumption of reprocessing OPAL nuclear fuel waste through-out the life of the OPAL reactor Operations License running up to 2057 - while this Treaty only covers OPAL nuclear fuel wastes produced and sent to France by 31 Dec 2030.

JSCT should seriously consider potential scenarios and required alternatives to reprocessing.

NIA 27 "*Withdrawal or denunciation*" states Treaty Article 11(5) "*allows for earlier termination of the proposed Agreement*" with provision for one Party to give written notice "*six months after which the Agreement will terminate*".

Australia faces an explicit treaty scenario that further OPAL nuclear fuel waste accruals will not be accepted in France past some point in time and 6 months-notice.

This could come about because of a change of policy in France, or through a failure of their reprocessing program or a reduction in scope to only reprocess domestic wastes from some point in time – which is what happened with ANSTO's prior UK reprocessing option.

The Dounreay reprocessing facility in Scotland closed for decommissioning while a shipment of ANSTO nuclear fuel waste from the HIFAR reactor was still on the high seas. The UK Sellafield reprocessing facility has also had serious trouble and now doesn't take new overseas contracts.

No other country is in-line to replace France. ANSTO doesn't have a UK or a US fall back option.

ANSTO can-not guarantee there will be no analogous problems with AREVA reprocessing over decades. The French nuclear industry is already in significant financial and organisational difficulties.

ANSTO doesn't have a PLAN B. If Lucas Heights is to continue to operate the OPAL reactor then ANSTO needs to address required contingency for:

- Extended storage of OPAL nuclear fuel waste on-site at Lucas Heights in secure cask dry storage (additional to the limits of reactor pool storage of nuclear fuel wastes);
- AND to have to manage these nuclear fuel wastes entirely with=in Australia though to final disposal, including the potential for required direct disposal of OPAL nuclear fuel waste;
- Along with the opinion of the regulator ARPANSA and requisite public consultation.

ANSTO risks OPAL operations by producing nuclear fuel waste without a disposal capacity:

Fundamentally, ANSTO must start to seriously address a pathway to final disposal of nuclear wastes.

Rather than the current flawed process to impose an above ground Store in South Australia, that is prohibited under State law & is causing deep divisions in community, for indefinite storage of ANSTO nuclear fuel wastes that require isolation from the environment for over 10,000 years.

In the Hearing on 12 Feb the ANSTO Director anticipated ‘final repository over the next 60 years’ for nuclear fuel waste and acknowledged that there is no final pathway for the ongoing production of Intermediate Level Wastes (ILW) accruing from the ongoing OPAL reactor operations.

ANSTO has produced and stored nuclear fuel waste and ILW at Lucas Heights since the 1950’s.

ARPANSA approved the current OPAL reactor Operating License from 2007 through to 2057 “*despite no reactor waste infrastructure long term storage or disposal being in place*”.

ANSTO now proposes to ‘hold back’ and await international developments such that any potential final pathway may not be realised until after expiry of OPAL reactor licensed operations up to 2057.

The public interest can-not be comfortable with agency over-sight of one hundred years of nuclear fuel waste production without a required disposal pathway let alone any actual disposal capacity.

At a minimum, ANSTO must face up as soon as possible to the full requirements: technical, financial and societal, of a required final disposal pathway and actual disposal capacity - if continued ANSTO production of OPAL irradiated nuclear fuel wastes & Intermediate level reactor wastes is to occur.

ANSTO’s undeclared nuclear fuel waste cost liabilities must be disclosed to this Inquiry:

Transparency requires full financial cost disclosure. NIA 22 “*Implementation*” falsely declares:

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

ANSTO must become transparent and should make public the following financial costs before this Inquiry and answer these public interest questions:

- Firstly, the total contract cost involved in “*Reprocessing Nuclear fuel – France*”;
- A breakdown of these costs, specifically the additional financial cost on Australia of now proposing to reprocess the first decade of OPAL nuclear fuel waste in France;

Compared to the prior US Agreement to send the first decade of OPAL nuclear fuel wastes to the US (up to May 2016) at only a one-way shipping cost, without any nuclear waste return to Australia OR any reprocessing in the US (this now constitutes a significant additional financial cost due to ANSTO’s failure to comply with requirements of the US Agreement);

- Of the 3.6 tonnes of OPAL spent nuclear fuel that is covered by this proposed Treaty, how much arises before & after the first decade of OPAL reactor operations up to May 2016;
- An estimation of further required OPAL nuclear fuel waste financial costs following on from this proposed Treaty (which is limited to 3.6 tonnes of OPAL reactor spent nuclear fuel AND to shipment of such wastes to France before 31 Dec 2030) for the approx. 30 year remainder of the intended OPAL reactor Operating License period up to 2057;
- Availability, if any, for any other country to agree to reprocess OPAL reactor irradiated nuclear fuel waste, and presumably with higher required cost liabilities, compared to AREVA reprocessing given the NIA's cited familiarity in France with OPAL fuel requirements;
- Indicative costs for required additional on-site OPAL nuclear fuel waste Extended Storage at Lucas Heights (as secure dry storage in casks) in the Plan B scenario that reprocessing in France doesn't prove to be available through-out the OPAL Operating License up to 2057;
- Required *lead time* for planning, consultation and licensing of potentially required additional on-site OPAL reactor nuclear fuel waste storage, compared to the six month period of notice for potential termination of the reprocessing treaty by France in the Plan B scenario;
- Indicative costs for the required disposal pathway and final disposal capacity for ANSTO's accumulated irradiated nuclear fuel waste and Intermediate level reactor wastes, whether through a final geological repository OR through a borehole disposal facility;

Safety Questions on proposed Shipments of nuclear fuel waste out of & into Australia:

The Hearing on 12 Feb raised Safety issues in movement of nuclear fuel wastes. The SA Nuclear Royal Commission, Final Report, Concluded in part of Appendix L *Transport Risk Analysis*, that:

"...if a cask was lost at sea and was irrecoverable, there is a potential for some members of the public consuming locally sourced seafood to receive a very small dose of radiation";

AND **Concludes** that terrorist attack scenarios are conceivable during transport and rocket attack has the greatest potential to cause a release of radiation ([Appendix L - Transport risk analysis](#) p.312).

A further Jacobs MCM desk top report (April 2016) to the SA Nuclear Royal Commission **Concludes** that radioactivity that escapes from an unrecovered and degrading cask is expected:

"to be diluted in thousands of cubic kilometres of seawater"

("Safety and risks in the transportation of radioactive material to and from Australia", p.50)

- ANSTO should answer the public interest safety question of the comparable marine risks and conceivable terrorist attack scenarios in proposed shipments of OPAL reactor nuclear fuel wastes out of NSW, and in 'returns' of reprocessed nuclear waste casks to NSW or to SA.

Extended Storage of ANSTO nuclear fuel waste at Lucas Heights:

In 2015 ANSTO purpose-built an “*Interim Waste Store*” (IWS) at Lucas Heights with a conservative design operating life of 40 years to take reprocessed nuclear fuel waste shipments from France and from the UK (equivalent to HIFAR reactor nuclear fuel wastes previously sent overseas).

This Store is operating at Lucas Heights, having received the French waste late in 2015, and has a plan for its operations to accommodate the waste intended to be returned from the UK circa 2020.

This intended UK shipment of reprocessed nuclear fuel waste (circa 2020) must also go to Lucas Heights rather than targeting communities in SA including the requisition of an as yet unnamed port.

The Operating Licence for this Store at Lucas Heights “*is not time-limited*” and was approved by ARPANSA with a Contingency plan for this Store to operate for longer than 40 years, and potentially to store reprocessed nuclear fuel wastes “*until the availability of a final disposal option*”.

The Federal Industry Department (2014, in consultation with ANSTO & ARPANSA) reported an “*Initial Business Case*” for the NRWMF, with Contingency options:

- for ANSTO nuclear fuel wastes and ILW to “*remain at ANSTO until policy and technological options for permanent disposal of ILW are determined*”;
- AND with proposed additional nuclear fuel waste Stores to be built at Lucas Heights for future shipments of OPAL reactor reprocessed nuclear fuel wastes to return from France.

ANSTO’s Lucas Heights is by far the best resourced and secure facility to responsibly manage the Extended Storage of all of Australia’s nuclear fuel waste including the intended accruals of OPAL reactor nuclear fuel waste and Intermediate level waste production through to the 2050’s.

There is arguably no technical reason why Lucas Heights can-not also conduct Extended Storage of OPAL reactor nuclear wastes, at least through-out the period of ongoing waste production on-site.

The proposed Intermediate level waste Store in SA is *predominantly* for ANSTO reactor wastes

The Federal government’s NRWMF above ground Store in SA is *predominantly* for ANSTO irradiated nuclear fuel wastes and Intermediate level wastes (ILW). This is arguably not a ‘national’ facility.

ANSTO holds an existing inventory of approx. 450 m³ of various Intermediate level reactor wastes and intends to more than double that inventory through decades of OPAL reactor waste production.

In addition, ANSTO has HIFAR reactor decommissioning waste (scheduled circa 2024 on) of up to 1,000 m³ of mixed low level & Intermediate level wastes (that should also remain at Lucas Heights).

In comparison, a total of 100 m³ of ILW is held by other Federal agencies (CSIRO and Defence) and a total of 105 m³ of ILW is held by all States & Territories.

These are largely historical wastes, with the Federal Industry Department projecting only minor future arising of ILW (other than reactor wastes) in Australia.

28 May 2017

To: Senator The Hon Matthew Canavan
The Minister for Resources and Northern Australia

c/o The Department of Industry, Innovation and Science
National Radioactive Waste Section
radioactivewaste@industry.gov.au

RE: Proposed Federal government imposition onto community in South Australia of an illegal “100 year” Store for ANSTO’s “10 000 year” irradiated Nuclear Fuel Wastes.

Dear Minister

Storage of nuclear wastes affects the rights, interests and safety of all South Australians and is prohibited in our State under the *Nuclear Waste Storage (Prohibition) Act 2000*.

Proposed imposition of ANSTO reactor nuclear wastes is a major public interest concern in SA and detracts from public trust and confidence in the Federal government, in ARPANSA and in ANSTO.

The National Radioactive Waste Management Facility (NRWMF) comprises two co-located waste management facilities: an above ground 100 year Store for wastes that ARPANSA states require isolation for 10 000 years, AND a Disposal Facility for wastes requiring isolation for up to 300 years.

This submission focuses on the proposed imposition of the illegal Store & consequences thereof.

The Store is primarily for ANSTO irradiated Nuclear Fuel Wastes (NFW) and other existing and proposed reactor wastes, with only minor projected future arising’s of Intermediate Level Wastes (ILW) from States & Territories or from other Commonwealth agencies.

ARPANSA’s CEO (May 2015) has formally considered the proposed NRWMF Store and stated:

“This plan will have the provision for ILW storage above ground for approximately 100 years.”

This *indefinite* storage plan compromises safety in importing nuclear waste to SA without a waste disposal capacity or even a requisite program for disposal of NFW and ILW.

ARPANSA’s Radiation Health and Safety Advisory Council (April 2010) has provided formal advice which concluded: *“that Australia’s current policy of indefinite storage for intermediate level waste does not appear to be consistent with International best practice.”*

The import, transport, storage and disposal of ANSTO irradiated Nuclear Fuel Wastes is illegal in SA and was prohibited under the leadership of Liberal Premier John Olsen in 2000:

“The Objects of this Act are to protect the health, safety and welfare of the people of South Australia and to protect the environment in which they live by prohibiting the establishment of certain nuclear waste storage facilities in this State”

Since April 2016 the NRWMF project has *exclusively* targeted community and environment in SA in an attempt to again impose an illegal Store for ANSTO’s irradiated Nuclear Fuel Waste in our State.

