

**Joint Standing Committee on Treaties
Inquiry into Nuclear Non-proliferation and Disarmament**

**Supplementary Submission by John Carlson, Director General,
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**CORRECTIONS REGARDING VARIOUS STATEMENTS ATTRIBUTED TO OR REGARDING ASNO,
OR CONCERNING AUSTRALIAN POLICY**

In submissions to and hearings of this Inquiry, a number of witnesses have incorrectly attributed statements to ASNO, or inaccurately described Australian policy. I would appreciate the opportunity to correct the record regarding a number of issues relevant to the Inquiry.

1. The link between nuclear power and proliferation

JSCOT was told **“ASNO falsely claims that nuclear power does not present a weapons proliferation risk.”** – JSCOT submission No. 7 and No. 77.

What ASNO has actually said is that nuclear power reactors have no proliferation capability in themselves. While all uranium-fuelled reactors produce plutonium, this remains inaccessible in spent fuel unless the state has a facility for plutonium separation. Proliferation risk is presented primarily by the processes at the “front end” and the “back end” of the nuclear fuel cycle – uranium enrichment and reprocessing. (See the briefing paper on “Introduction to the Concept of Proliferation Resistance”, provided to JSCOT Secretariat as part of background briefing on 2 April 2009).

Limiting the spread of enrichment and reprocessing capabilities has become a major focus of international non-proliferation efforts in recent years.

2. Whether “reactor-grade” plutonium is suitable for nuclear weapons

JSCOT was told **“One example of some of the false information that ASNO has put out includes: can reactor-grade plutonium be used to fuel weapons? The answer to that is, yes, and that is fairly clear from weapon scientists around the world, including senior ones. Yes, reactor-grade plutonium can be used to fuel weapons. ASNO says it cannot.”** – JSCOT hearing transcript for 25 March, page TR44.

This issue has arisen in the context of claims that export of Australian uranium would result in production of plutonium that could be used for hundreds of thousands of nuclear weapons. Such claims ignore the conditions under which Australia supplies uranium (e.g. careful selection of bilateral partners, bilateral and international safeguards commitments), and technical factors, touched on below, which make it highly unlikely plutonium from the normal operation of power reactors would be used for nuclear weapons.

ASNO has never said that reactor-grade plutonium (e.g. plutonium from the normal operation of light water power reactors) cannot be used for nuclear weapons. This appears to be a misunderstanding of ASNO's publications on this subject, such as: "Plutonium Recycling: the Use of 'MOX' fuel", 1998-99 ASNO Annual Report; ASNO's supplementary submission (of 18 November 2005) to the "Inquiry into the Development of the Non-Fossil Fuel Energy Industry in Australia" by the House of Representatives Standing Committee on Industry and Resources; and an information sheet "Reactor-Grade Plutonium: Use in Nuclear Weapon Tests" published on www.asno.dfat.gov.au since 2006.

In these publications, ASNO explained that

"While [the technical difficulties of using reactor-grade plutonium] could possibly be overcome, to some extent at least, by experienced weapons designers (e.g. from the nuclear-weapon states, with experience from hundreds of tests to draw upon), ASNO is not aware of any successful test explosion using reactor-grade plutonium, typical of light water reactor fuel."

In commentary on the utility of reactor-grade plutonium for nuclear weapons, it is sometimes noted that the US has stated that in 1962 it conducted a nuclear test using what was described as "reactor-grade" plutonium. I also covered this point in the "Reactor-Grade Plutonium: Use in Nuclear Weapon Tests" paper, explaining that:

"There is some confusion over [this test, because] at that time "reactor-grade" was much closer to weapons-grade than is currently the case. While the US has never revealed the quality of the plutonium used in that test, there are indications that it was of "fuel-grade", an intermediate category between weapons-grade and reactor-grade, which has been recognised as a separate category since the 1970s".

Furthermore, in the briefing paper on Proliferation Resistance, mentioned earlier, I wrote (see section 4.C of that paper):

"History shows that all the states with plutonium-based nuclear weapons have specifically produced weapons grade plutonium for this purpose. Discussion of the possible use of reactor grade plutonium for nuclear explosives reinforces the need to ensure that reactor grade plutonium is properly dealt with – but this should not distract from the fact that this material is sub-optimal for weapons use, and has never been so used. There is no doubt that the material of choice for both proliferators and terrorists would be weapons grade plutonium if it were available."

3. Australian consent to reprocessing

JSCOT was told that **"Australia retains the right to prohibit the reprocessing of AONM [Australian obligated nuclear material] but has never once invoked that right, even when reprocessing leads to the stockpiling of separated, weapons-useable, plutonium as it has in Japan and some European countries."** – JSCOT submission No. 7, with a similar point raised in submission No. 77.

JSCOT was also told that **“...the whole process of nuclear nonproliferation that we built into the export of uranium in 1977 when [Fraser] was [PM] has been degraded substantially. He said that we would have case-by-case approval of any of our customers who were allowed to reprocess or enrich our uranium. That statement was made into a blanket approach.”** – JSCOT hearing transcript for 25 March, page TR60.

These claims show confusion about how Australia’s consent rights operate, and about the details of the uranium export policy announced in 1977.

Australia’s safeguards agreements proscribe reprocessing unless Australia gives prior consent. Australia currently has 22 safeguards agreements in place, applying to 39 countries. Australia has given consent to three countries to carry out reprocessing of AONM, namely: France, United Kingdom and Japan.

It is not correct that the 1977 policy was for a case-by-case approach to reprocessing consent. The announcement by the then Prime Minister, Mr Fraser, in 1977 made it clear that Australia would reserve its position on reprocessing, pending the outcome of the International Nuclear Fuel Cycle Evaluation (INFCE) and discussions with other countries. In 1980 then Minister for Foreign Affairs Mr Street announced that the Government had reviewed the findings of INFCE and other studies, and had decided it was consistent with Australia’s non-proliferation objectives to adopt a “program approach” to reprocessing (see House of Representatives Hansard of 27 November 1980, pages 136-139).

The program, or “programmatic”, approach is not, as claimed, a “blanket” approach. Consent is given to a defined nuclear fuel cycle program, using specified facilities, for the purpose of power generation and spent fuel management. Consent is given in circumstances where case-by-case consent would have been given – programmatic consent is more efficient than a requirement to keep seeking case-by-case consents. Australia has the right to withdraw consent if the conditions on which consent was given were not observed. The programmatic approach is similar to that adopted by other countries that have similar safeguards agreements to Australia, namely Canada and the United States.