Value-subtracting: Form vs. substance in Australian uranium safeguard policy

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Synopsis

Richard Leaver of Flinders University writes that the Australian activist foreign policy tradition in disarmament has long been “in a state of decline, and the main source of this slippage has been the gradual triumph of form over substance in the realm of safeguards and disarmament diplomacy.” A glutted uranium market meant that “Canberra came under pressure to compromise on its safeguards standards in order to secure any sales at all”, especially to its main customers, nuclear weapons states. Leaver emphasizes the futility of the contemporary situation that has seen Australian acquiesce to the Indian exemption in the Nuclear Suppliers Group come together with a formalistic reiteration of demands that India sign the NPT. “Now that India has effectively been given ‘exceptional’ status as a nuclear weapon state via the 123 Agreement,” Leaver concludes, “it is hard to think of a phrase that adequately captures the low standing of Australian policy; wishful thinking does not go nearly far enough”. He concludes with suggestions for reversing the decline, beginning with policy towards India.

Permalink


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Introduction

In Australia, the merest mention of nuclear non-proliferation and disarmament invariably calls forth its siamese twin, uranium exports. The two issues were joined at the hip in 1976 when the Ranger Uranium Environmental Inquiry into the recently discovered Kakadu deposits of uranium found that the absence of safeguards around uranium exports constituted a massive flaw in the still-new Nuclear Non-Proliferation Treaty (the NPT). To back fill this void, the commissioners therefore recommended that an Australian system of bilateral safeguards – peaceful end-use agreements, verified by International Atomic Energy Agency (IAEA) inspections – should be rolled out alongside the export of Australian uranium. And the Fraser government promptly took up this recommendation, drafting a Model Safeguards Agreement (MSA) that prospective customers for the new, high grade Australian uranium would be required to sign.\(^1\) All subsequent governments in Canberra have, with minor variations, claimed to adhere to this recommendation. The result is three-fold: a network of some twenty one safeguards agreements that now covers almost all conceivable purchasers of Australian yellowcake;\(^2\) a significant expansion in the volume of uranium exports, with much more seemingly in the pipeline of the ‘nuclear renaissance’;\(^3\) and an activist tradition of foreign policy on non-proliferation and disarmament affairs that is leveraged off the ‘clout’ that uranium exports and bilateral safeguards allegedly provide.

This paper is focused on the current status of that activist foreign policy tradition. To foreshadow my major argument: this tradition has, for a considerable time, been in a state of decline, and the main source of this slippage has been the gradual triumph of form over substance in the realm of safeguards and disarmament diplomacy. A complete rendering of the triumph of formalism is not possible here, since the story follows a long and winding historical road traversed by every Australian government that has attended to the safeguards roll-out. Substantive decline is not, therefore, the proprietary product of the Howard government, although the sheer length of its term in office invariably meant that it oversaw a fair share of the fall from grace. Two moments in the Howard government’s twelve years will be of particular interest here: its highly visible role in assisting the birth of a text for a Comprehensive Test Ban Treaty (CTBT) in 1996; and the multi-faceted nuclear ‘debate’ that touched off in Australia a decade later.

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1 For the text of the MSA, see Coral Bell (ed.), _Agenda for the Eighties: Contexts of Australian choices in foreign and defence policies_, Australian National University Press, Canberra, 1980, pp. 240-45.
The new nuclear debate

I start with that nuclear debate because its consequences continue to ripple through the Australian polity, and those ripples, even as their amplitude diminishes, continue to influence the course that the Rudd government plots for its non-proliferation and disarmament diplomacy. The nuclear debate reflected the deeply revolutionary tactical streak in John Howard’s conservative philosophy. Few tasks in politics attracted Howard more than taking aim at the long-established ‘implicit bargains’ that often underpin Australian policy with the intent of undermining their presumptions and ultimately establishing a new order in greater conformity with his conservative values. This was a potentially dangerous tactical ploy that exposed the risk of spectacular political failure (of the kind that he eventually realized over the Work Choices issue, for example). But it also held out the possibility of great success: witness Howard’s masterly management of the Republican debate, which ended with the public purging of the issue for at least the lifetime of the present queen. Much in that same mould, Howard’s fourth term saw him commit significant energies to the question of Australia’s status in the nuclear fuel cycle. This was prompted in part by the beginnings of his begrudging acceptance of the case for climate change, but also by the initiatives of the Bush administration towards the renewal of civil nuclear cooperation with India and the Global Nuclear Energy Partnership (GNEP).

Beginning in late 2005 and continuing through to the middle of the following year, Howard therefore launched a number of trial balloons with a view to mapping the air defences of the ALP, whose neutralization would be a prelude to the transformation of the Australian landscape in these domains. In short order, one of these trial balloons immediately escaped into the upper atmosphere when Beazley’s Labor opposition refused to shoot at it – to wit, the three mines policy, popularly regarded as the cause of a less than spectacular export performance by Australia’s uranium industry. Labor also held its fire at a second balloon that came down to earth in China, where in April 2006 the Howard government concluded a bilateral safeguards agreement that opened the door to expanded uranium exports. Other balloons were not so productive. Some were brought down with a great thud by political fratricide: the less than enthusiastic findings by Ziggy Switkowski’s Uranium mining, processing and nuclear energy review (UMPNER) about an Australian value-adding uranium enrichment industry, and his more than enthusiastic endorsement of an Australian fleet of twenty five power reactors. But many balloons still continue to circulate through the lower atmosphere without drawing high levels of public attention to themselves – or, after Howard, full-blown hostility from the Rudd government.

Rudd may be every bit as conservative as Howard – the comparisons continue to multiply – but his repertoire of political tactics does not include Howard’s penchant

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Nautilus Institute at RMIT
http://www.globalcollab.org/Nautilus/australia
for radical experimentation. The most appropriate metaphor for Rudd-style comes from yacht racing where the tactic of stealing the competitor’s wind determines who arrives at the finish line first, and elapsed time is a matter of no great consequence. The implication is clear: unless the Coalition has taken a tack that needs to be covered, the government is willing to drift on inherited settings. And since, in practice, the Coalition is incapable of defining a clear course on anything in the post-Howard era, least of all on nuclear policy, Rudd is content to reciprocate. Perhaps, therefore, the trial balloons that remain aloft from Howard’s launch of 2005-06 are just tomorrow’s space junk that will eventually fall back down to earth – but perhaps not.

**Life after the ‘three mines policy’: value-subtracting**

The three mines policy was an essential element of the Hawke government codicils to Fraser’s exports/safeguards bargain. It was designed to maintain a maximum degree of factional harmony within the government by allowing existing uranium mines to export while holding out the future prospect of an eventual wind-back of the industry (whose very existence was not accepted by large swathes of the Left, the ALP’s largest faction at that time). In the wider public domain, this codicil proved difficult to sell, for it was popularly rendered as creating an untenable distinction between ‘good’ uranium (from one of the three approved mines) and ‘bad’ uranium (from new deposits that would remain locked away).

But there was, in fact, a much stronger argument that could have been used to defend the three mines policy, albeit an argument that was more about political economy than factional rewards or two-bit morality. The argument not adopted was explicitly outlined in the second (relatively neglected) volume of the Ranger Inquiry where a warning was sounded against the ‘unrestrained development’ of the local uranium industry. This, it observed, might well lead to ‘large fluctuations’ in the relationship between supply and demand, with market price instability as one consequence. In a prescient summation, the Inquiry noted that ‘the large proportion of international trade in uranium which Australian production may constitute makes this a possibility’. This foresight was more than borne out by the evolution of the market over the subsequent quarter century, with only minor variation. So Australian production did boom in volume terms (albeit not to the extent hoped for), but demand for new uranium leveled out following the reduced interest in nuclear power in the early 1980s. The end result was falling prices and relatively stagnant Australian export revenue – market conditions that, with short-lived exceptions, persisted right through to the early years of the current century.

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6 For a recent re-telling of the history of that distinction, see Greg Sheridan, ‘Uranium should be the new gold’, *The Australian*, 23rd October 2008.
8 The most important variation was the entry into the international civil market of down-blended enriched uranium from decommissioned Soviet-era warheads under the so-called ‘megatons to megawatts’ programme; see Richard A. Falkenrath, ‘The HEU Deal’, Appendix C in Graham Allison et al., *Avoiding Nuclear Anarchy: Containing the Threat of Loose Russian Nuclear Weapons and Fissile Material*, MIT Press, Cambridge, 1996.
Holes in the safeguard fence

More pertinent to our current concerns was a second, non-economic end result – namely, the pressure that the glutted market placed against the Australian system of bilateral safeguards. Over-supply and falling prices conferred bargaining power upon buyers rather than sellers, thereby empowering them to look for ways around the extra-economic conditions attached to Australian uranium sales. From the very beginning of the MSA roll-out, Canberra therefore came under pressure to compromise on its safeguards standards in order to secure any sales at all. These compromises were thoroughly documented in the very early stages by Martin Indyk and later by Richard Broinowski, although their arguments have never been adequately reflected in the loud public debates about uranium exports. By and large, the public has liked to debate the extremes – exports or no exports – rather than the shades of grey that lie in between.

One of those shaded areas has come to matter a great deal with the passage of time – namely, the discretionary character of safeguards in the NPT’s nuclear weapon states. Under that treaty, and in spite of the fact that it demands IAEA safeguards for Non-Nuclear Weapon States, the five powers that had tested before 1967 were not required to accept safeguards on their civil nuclear facilities. However, without in any way giving up that dispensation, all of these ‘recognised’ weapon states have, in the name of the appearance of equality, offered inspections over some of the civil elements in their national fuel cycles to the IAEA. So as to distinguish these safeguards from those mandated under the NPT, these have come to be known as ‘voluntary offer agreements’ (VOA). Each of these offers has been written down as a unique document lodged with the IAEA, but the fundamental point remains that safeguards that are offered but not required can be withdrawn if and when national policy so determines. As Berkhout and Walker neatly express the state of play, the NPT’s non-nuclear weapons states face safeguards that are permanent and unconditional, while safeguards for its nuclear weapons states are impermanent and conditional.11

What makes matters even worse is that the IAEA is not particularly interested in the enforcement of voluntary offer safeguards. From its perspective, the recognized nuclear weapon states are like the horses that have already gone through the open stable door; their escape was very unfortunate, but the Agency’s main task is to make sure that the remainder of the herd is safely corralled. In the name of political prudence (and the IAEA is nothing if not sensitive to its precarious political position) it cannot afford to state this disinterest too bluntly. And because some of the voluntary offers give the Agency the opportunity to develop expertise in

10 For the formal IAEA texts of Voluntary Offer safeguards, see INFCIRC/263 (for the UK), INFCIRC/288 (for the US), INFCIRC/290 (for France), INFCIRC/327 (for Russia), and INFCIRC/369 (for China).
technically demanding new areas, it can occasionally find redeeming virtues over and above the cause of political appearances. Britain, for instance, offers up URENCO’s Capenhurst enrichment plant for inspection – a plant that the IAEA helped design, and where the Agency has been able to build up its safeguards capabilities over a critical stage in the nuclear fuel cycle. But this is the kind of exception that proves the rule of disinterest.

Topping things off, the process of safeguards offers by nuclear weapons states and the acceptance of those offers by the IAEA is covered in two thick layers of secrecy. The list of civil facilities volunteered for safeguards is not a public document – and neither are the selections that the Agency makes from this list. To outsiders, voluntary offer agreements are therefore anything but transparent, with their substantive content hidden behind a double blind screen of secrecy and confidentiality. Usually, the best one can do to peer through these screens is to adhere to the Deep Throat principle of ‘follow the money’; Agency budgets reveal that only a few per cent of their funds are committed to VOA activities.

![Figure 1: Australian uranium sales, 2008 (World Nuclear Association)](http://www.world-nuclear.org/info/inf48.html)

Since the lion’s share of Australian uranium exports has always gone to one or another of the five nuclear weapon states – as demonstrated in the pie chart below – one might reasonably anticipate that Australian nuclear debates would centre on

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the vagaries of voluntary offer safeguards. But contrary to expectations, the issue barely rates a mention, even where the contributors are otherwise well informed.\textsuperscript{13} So the preference for global \textit{sturm und drang} over local particularities has held up all too well in this domain.

**China, Olympic Dam, and the copper concentrate train**

All of this began to assume greater significance when China drifted onto the radar of both Australian uranium exporters and the Howard government. China was a relative latecomer in global markets for civil nuclear technologies, with domestic energy being bound to coal and nuclear technology to military uses throughout the Maoist period. These two bonds, however, began to come apart and re-associate once economic reform unleashed high speed growth and its secondary consequence, rising demand for primary energy. But from an Australian point of view, none of this mattered a great deal through the 1980s, since China was not even an NPT signatory. However, when it signed the Treaty in 1992, it had already enjoyed a VOA with the Agency for four years, something that Beijing had foreshadowed at the IAEA’s 1985 General Conference. The bullish plans that subsequently emerged for civil nuclear power therefore enabled Beijing authorities to approach Australia about uranium sales, with the issue being first broached with Foreign Minister Alexander Downer during his memorable August 2004 stop-over in Beijing.\textsuperscript{14} The safeguards agreement was duly done in double-quick time, with signatures delivered in just twenty months.

The April 2006 agreement\textsuperscript{15} was entirely unexceptional, exhibiting a high level of consistency with its nineteen bilateral predecessors. But what was not stock and standard was the context of relations between the IAEA and Beijing into which it was born. For just a few years earlier, a new bilateral safeguards agreement between Canada and China strongly suggested that China’s VOA safeguards lacked substance and were essentially concerned with building a veil of appearances.

The story of this veil is a long one that I have told in greater detail elsewhere.\textsuperscript{16} In summary, China had purchased two CANDU reactors from Ottawa in the mid-1990s, and the Canadians sought to have bilateral safeguards imposed upon them as they neared completion. The technical properties of the CANDU, as is well

\begin{footnotesize}
\textsuperscript{13} For one of the very few exceptions, see Marko Beljac \textit{et.al.}, \textit{An Illusion of Protection: the unavoidable limitations of safeguards on nuclear materials and the export of uranium to China}, a Report prepared for the Australian Conservation Foundation and the Medical Association for the Prevention of War (Australia), October 2006, p. 33.
\textsuperscript{14} For an instant critique of Downer’s apparent blunder over the ‘automatic nature’ of ANZUS obligations, see Greg Sheridan, ‘Return of the old Downer’, \textit{The Australian}, 19\textsuperscript{th} August 2004.
\textsuperscript{15} See fn. 4 above.
\end{footnotesize}
known, have given that reactor a prominent place in the history of nuclear proliferation, and effective safeguards over these reactors therefore require a regime of frequent inspections. But when Ottawa moved to conclude such a regime, they discovered two things: that the Chinese were not interested in safeguards, and that the IAEA was not interested in paying for them. In the end, the Chinese agreed to place these two reactors on their list of facilities under their voluntary offer agreement – but on the understanding that the IAEA would not actually choose these reactors for inspection. This might best be described as a model of the triumph of form over content.

Figure 2. Australian uranium deposits and mines
Source: “Australia's Uranium”, World Nuclear Association, November 2009
http://www.world-nuclear.org/info/inf48.html

This 2002 message in a bottle from inside the China shop slipped under the radar of public attention in Canada – and also in Australia, where the nuclear scene was then in deep political slumber. But it nonetheless foreshadowed a rhetorical question:

17 CANDU’s are fuelled by natural uranium, and therefore avoid the need for low enriched fuel. More important still, irradiated fuel rods can be withdrawn from the CANDU without taking the reactor off-line, thereby creating an easy access route to separated plutonium.

18 For reportage by the legendary Mark Hibbs, see his ‘China or its suppliers must pay for added safeguards, IAEA says’, Nuclear Fuel, 27(15), 2002, and also ‘Fuel Loaded at Qinshan-III PHWRs After Ottawa Passed on Safeguards’, Nuclear Fuel, 27(18), 2002.
given the abject gutting of Canada’s safeguards policy in China, why would one believe that future Australian safeguards on uranium exports to China would do better than repeat this triumph of form over content?

There are a number of largely historical reasons to believe that the answer is nothing at all. But there is one looming reason which is now destined to be overseen by the Rudd government – namely, the debasement of the physical form in which a good share of Australian uranium will be sold to China in the future. At the centre of this issue is the long awaited and dramatic expansion of the Olympic Dam mine in South Australia, where a proportion of future exports will be in the form of uranium-infused copper concentrate rather than traditional yellowcake. BHP Billiton, the owner of the mine since 2005, began its study of this expansion by looking for ways and means to defray the cost of the mine expansion. And the main feature of its cost containment strategy came to revolve around minimizing the new construction of on-site copper smelting capacity. Copper concentrate would instead be exported to China where, it was said, the copper smelting sector is mired in over-capacity.

This minimization of the expansion of local smelting generated a major dispute with the South Australian Labor government, which for some time had been celebrating the job creation entailed in the expansion of mining and processing. But in 2007, a new BHP management team was installed at the mine, bringing with it a brief that emphasized BHP’s competence as a miner rather than an ore processor. The odds on the China option, previously ‘Plan B’, firmed up considerably – and state Premier Mike Rann countered by reminding all and sundry that minerals were ultimately owned by the state. But within a year, Rann was scaling back his rhetoric and withdrawing from the frontline, passing negotiations down to his treasurer. Having thrown in this personal towel, the way was then clear for BHP to draft an environmental impact statement (EIS) on the mine expansion that began to formalize the China option.

Since its publication in April 2009, the draft EIS has spelled out exactly what is involved over the next decade and beyond. The physical output of ore from the expanded mine will increase nine times, but the ability to smelt copper-rich concentrates will increase only twice. Consequently, when compared to the higher grade concentrates that will continue to be smelted on-site, twice as much uranium-infused copper concentrate will be directly exported, with China explicitly mentioned as the most likely destination. And once smelted there, it is expected to yield (amongst other end-products) two thousand tons of yellowcake per annum, nearly half the current output of the mine. From BHP’s viewpoint, this

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19 This had previously been pitched around A$5 billion. But figures close to A$20 billion began to circulate during 2007- in the first instance from its great commercial rival, Rio Tinto, which was subject to a hostile takeover bid from BHP at that time. See D. Robertson, ‘Costly project threatens BHP takeover bid’, The Times (London), 26th November 2007.

20 For the beginning and ending of this battle, see two articles by Jeremy Roberts; ‘Political foes unite against BHP plan’, The Australian, 13th July 2007, and ‘Treasurer flags talks with BHP over mine’, The Australian, 2nd June 2008.

21 For these relativities, see BHP Billiton, Olympic Dam Expansion, Draft Environmental Impact Statement 2009, Executive Summary, esp. figures 6 and 9, <http://www.bhpbilliton.com/bb/odxEis/downloads/draftEisDocuments.jsp>.
geographical reconfiguration of the value chain will have an important advantage over and above cost avoidance; it will virtually install the company as a preferred uranium supplier to the growing China market. Its commercial competitors for yellowcake will find it difficult to match the financial inducements coming out of BHP’s forfeiture of copper smelting. And since Beijing already has a national stockpile scheme for uranium, this output could be readily integrated into the management of fuel requirements across the civil sector.

What matters from the point of view of Australian bilateral safeguards is the sheer physical volume of this bulk trade in low grade source material. By weight, the exported concentrate will amount to 1·6 million tons per annum – one train per week up the railway to Darwin, and a string of bulk carriers from there to China. No doubt it has already been concluded in Canberra that this new bulk trade can be accommodated under the umbrella of the 2006 safeguards agreement. But the real issue is whether these assurances will prove credible to wider audiences. In particular, will the public be willing to believe that materials accountancy practices developed for an industry where volumes are relatively small can simply be scaled up inside China to cover modest mountains of unrefined Australian concentrate?

One possibility, therefore, is that BHP’s China plans will function as the *reductio ad absurdum* of Australia’s bilateral safeguards agreements. Alternately, as the Canadians did with their CANDU safeguards, Australians might just prefer to ignore the subject completely. Either way, a fork has appeared on Rudd’s road to the future of nuclear disarmament – and, as the American baseballing *philosophe* Yogi Berra once said, it will have to be picked up.

**GNEP and value-adding**

BHP Billiton’s plans for ‘value-subtracting’ from Australia’s uranium exports provide a neat counterpoint to a persistent theme from the Howard era, the quest for ‘value-adding’ through uranium enrichment. The Howard government appeared to have no particular interest in this subject until the Bush administration provoked it. The instrument of provocation emerged from nowhere in January 2006 in the form of the Global Nuclear Energy Partnership (GNEP) that was floated in the president’s State of the Union address. Given that the GNEP had not been subject to any internal discussions, it was soon apparent that the plan was a considerable mystery to many of the Bush administration’s own agencies. And for good measure, it was also buried within the presidential address by the priority that Bush gave to America’s ‘addiction to oil’, potentially an explosive issue given the commitment to Iraq. The sense of mystery was sustained by the massive, sprawling nature of the GNEP proposal. Fully implemented, it threatened to fundamentally re-shape the whole of the global nuclear fuel cycle around new American technologies and practices.

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For more technical details see *Olympic Dam Copper-Uranium Mine*, Adelaide, Australia, mining-technology.com.

At the core of the GNEP lay an old and native American idea that was now being placed under one roof with what seemed like two new ideas. The old idea was that non-nuclear weapon states should be weaned onto new generations of inherently safe nuclear reactors. The new ideas began with the suggestion that the low-enriched uranium fuels needed for these reactors should be leased by states with existing enrichment capacity rather than sold. This would therefore impose a double denial upon the owners of the new inherently safe reactors: they would be denied ownership of irradiated fuel rods, historically the shortest route to plutonium; and denied also of any need to build national enrichment capacity. If these terms and conditions could be internationally accepted, then the spread of the two most proliferation-sensitive stages in the nuclear fuel cycle would come to a halt.

However, those who were leasing nuclear fuel would, down the road, have to resume their ownership of irradiated fuel rods, and so GNEP also proposed building new ‘burner’ reactors in existing nuclear capable states where reprocessed fuels could be consumed. The US would therefore have to go back to reprocessing irradiated commercial fuel, an activity it had rejected for the previous three decades.

Given its secretive origins and complex nature, it was inevitable that everyone inside and outside the US would take some time to make sense of GNEP, and the Howard government was no exception. However, just over two months after its release, it became clear that the penny had dropped in Canberra, for Howard was personally going to Washington to receive a briefing from Bush’s energy secretary, Sam Bodman. In due course, the GNEP and this visit represented the most significant point of inflection in the unfolding course of the renewed Australian uranium debate. Up to that point, local debate had primarily been centred on the expansion of uranium exports and the need to liberalize the three mines policy. But GNEP was about to upgrade that local agenda into something much broader.

The upgrading process commenced immediately after the Bodman briefing and stretched out across the next two months. Howard left Bodman declaring his interest in ‘selling uranium to people who want to buy it – not lease it, buy it – in other parts of the world’. Having ruled out the leasing idea, Howard left Washington and went immediately to Ottawa for further GNEP-related discussions, where before the Canadian parliament he argued that ‘… as holders of these vast uranium reserves, [we must] ensure that that particular partnership [the GNEP] does not work against the interests of countries such as Canada and Australia’. Upon arriving home, Howard then initiated the Uranium Mining, Processing and Nuclear Energy Review (UMPNER), appointed Ziggy Switkowski as its chair, and tasked it with producing an interim report before the end of the year. In the midst of all this, Howard also launched the cause for an Australian uranium enrichment as a value-adding activity. For illustrative purposes, he drew attention to the much bemoaned failure of Australians to ever achieve value-adding in the wool industry, and invited them to do better with uranium. Ball park estimates began floating around: current uranium exports valued at around A$600 million might be worth three times as much in low enriched form.

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As if to mark the end of this upgrading, Howard delivered an important speech at the Committee for the Economic Development of Australia (CEDA) in July where he unleashed the memorable phrase about Australia’s potential for becoming an ‘energy superpower’ – a construct put into circulation just three days earlier by Stephen Harper in London. So well before Switkowski handed down his quick-fire report, Howard had already re-focussed the Australian debate away from expanded uranium exports towards a broader agenda that included the domestic use of nuclear power and, perhaps, forward integration through the nuclear fuel cycle to enrichment. This entailed the cherry-picking of Bush’s GNEP; fuel leasing was out, but enrichment was potentially in. Foreign minister Downer was amongst the boosters, arguing at one point that he had clearance from the US Secretary of State for an Australian enrichment industry.

This kind of official enthusiasm for enrichment was not the sort of political harvest that Bush would have wanted, although close attention to the historical record might have suggested this predictable consequence. Be that as it may, both Australia and Canada soon bobbed up on authoritative lists of likely enrichers along with Argentina, Ukraine, Brazil and South Africa. Having defined the exclusions and inclusions, the way was then clear for Howard to sign on as a GNEP partner, albeit without any public fanfare at all.

In the meantime, Switkowski had poured considerable cold water on the enrichment idea. He found that the value-adding argument was nowhere near as compelling as the allure of high prices suggested; the global enrichment industry was marked by overcapacity which was likely to persist through the medium term, and production costs would be high. And the ALP, of course, would have no truck with enrichment at all. Although both found value-adding arguments generically attractive in other contexts, its major enthusiasts for expanded uranium sales, Rann and Ferguson, were totally dismissive – even though Rann’s state might well have been a favoured site for any enrichment industry.

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25 For reportage on Harper’s speech, see Jane Taber, ‘PM brands Canada an “energy superpower”’, *The Globe and Mail*, 15th July 2006. For Howard’s Sydney echo of this theme, see his ‘Address to the Committee for Economic Development of Australia’, Sydney Convention and Exhibition Centre, Sydney, 18th July 2006.


28 This was done in Geneva soon after the Sydney APEC of September 2007, where GNEP was discussed in the wings. However, the signature was so low key that only one major newspaper picked it up; Katharine Murphy, ‘Don’t mention the ‘N’ word’, *The Age*, 27th September 2007.

29 See Uranium mining, processing and nuclear energy, Chapter 3.
Given this dead bat, many expected some roll-back under Rudd. In particular, the Howard government’s GNEP signature had explicitly provided for its retraction, and this seemed a likely place to start. But in true yachting style, Rudd set his course according to stronger winds from other quarters. Right through the last year of Bush, GNEP was already losing momentum inside the US while the prospects of a Democrat president were on the rise, and the Democrats were no fans of the package as a whole. For Rudd, there was no need to wake the dog that was sleeping on the foredeck of his yacht or risk aggravate its owner; the dog might never spring to life, and its owner would definitely be moving on.

**Technology changes and Australian enrichment prospects**

Apart from the GNEP dog, Rudd’s yacht also carries three pieces of cargo that are not tied down: the likely impact of technological change upon the global enrichment sector; the political pressures to regionalize the value chain and thereby stabilize it politically, and ‘the India question’.

The endemic problem of enrichment overcapacity identified by Switkowski was a manifestation of the increasing flux of technological change that has been rippling through the enrichment sector in recent times. The original enrichment technology of gaseous diffusion was on the verge of species extinction (and given the extreme demand of these plants for financial subsidies and electricity, everyone should be thankful enough for that). In Russia, Europe and, most recently, in the US, successor generations of improved centrifuge technologies have taken the place of these behemoths, bringing with them reductions up to sixty-fold in the consumption of electricity. On top of that, the GNEP has stirred wider interest in entering the sector. Leaving the two would-be ‘energy superpowers’ to one side, Brazil has already started enrichment; Argentina is in the process of building a gaseous diffusion plant; and South Africa may yet reactivate its mothballed but militarily-proven gas nozzle technology for commercial purposes.

There was, however, very little of this kind of concrete action on enrichment in Australia. Late in the life of the Howard government, a background paper putting the commercial case for an Australian enrichment industry was placed before the Minister for Resources, Ian Macfarlane. It came from Dr. Clarence Hardy, one of the government’s most influential researchers on the topic thirty years earlier, and now one of the major historians of that effort. Little of this proposal entered the public domain, but from what could be seen, he was picking up strands left dangling

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31 Glenn Seaborg, former chair of the US Atomic Energy Commission, once observed that nearly ten per cent of national electricity consumption in the US was dedicated to uranium enrichment for the bomb programme: see Glenn T. Seaborg with Benjamin S. Loeb, *Stemming the Tide: Arms Control in the Johnson Years*, DC Heath and Company, Lexington, 1987, p. 21.

in an untidy manner more than two decades earlier. So he proposed to establish an Australian company, Nuclear Fuels Australia, which would deal with Urenco to establish a plant in Australia that, it appeared, might resemble its nearly complete first adventure outside Europe, Louisiana Enrichment Services in New Mexico. Hardy was almost certainly picking up on Urenco’s 2006 expression of interest in assessing the case for building a plant in Australia that would service emerging regional fuel needs. But start-up in Australia was, at best, still a full electoral cycle away, with Hardy estimating the 2015 finished cost at $2·5 billion. Perhaps, therefore, the most interesting aspect of this attempted re-birth was Macfarlane’s casual admission around the edge of dispatches that he had conducted discussions with ‘one or two companies’ about the idea of enrichment – which begged the question of whom the other party or parties might be.

Most likely he was hinting at Silex, a private entity that had rented research space at the government’s Lucas Heights facility to work on the laser separation of uranium isotopes. Being classified, its work largely escaped public notice until 2004 when a Greenpeace report brought it out into the full light of day. Given the government’s 2006 declared interest in enrichment, it is therefore strange that this was precisely the period of time when Silex terminated its research project, struck a deal with the US firm GE to evaluate the commercial prospects of its laboratory findings, and transferred both equipment and staff to the US. While the auguries of commercial-confidence technology are difficult to read, it is notable that GE, in combination with Hitachi, has moved with considerable speed on this evaluation, and is now on the brink of activating a test loop in North Carolina. Furthermore, that project has recently attracted significant investment from Cameco, the Canadian uranium giant – an indicator of positive prospects, no doubt, but also of the need to lock in raw material supplies. By virtue of its potential military significance, this technology export required the approval of the Foreign Minister, and after brief consideration, Downer did indeed sign off on it. Consequently, if all of GE’s developmental work bears fruit, then the Silex process may be commercially lost to Australia for all time. Future Australian liturgies about losing the battle for value-adding will therefore be able to dwell on uranium rather than repeat the well-worn story about wool.

This raises the question of whether the Silex technology is also lost in a military sense. If strategic circumstances were to change – the change would have to be dramatic – it is hard to believe that the Australian government would not have force majeur rights to access a process developed in its own facilities. This possibility, it is worth saying, is eerily reminiscent of the dark days in Australia in the early 1970s, when uranium enrichment suddenly moved to the forefront of local efforts to attain threshold nuclear capability. This movement was well captured in a mid-1971

35 Quoted, inter alia, in David McLennan, ‘PM supports uranium enrichment investigation’, Canberra Times, 16th June 2007.
37 For some of the early enthusiasm about the Silex test loop, see Michael Knapik, ‘GE delays by a month its request for approval of test of Silex process’, Inside NRC, 5th March 2007.
report by the National Security Council to the Nixon administration, which revealed continuing American anxieties about Australia’s potential as an independent nuclear weapon state. The proximal cause of their concern was their fear that Australia be able to provide ‘unsafeguarded refined uranium’ to other countries. Although the precise meaning of that phrase was not spelled out, it left no doubt that the NSC did not regard Australian hopes for an enrichment industry outside IAEA safeguards as a dead letter.

The problem of defining safeguards procedures in the enrichment sector has been a long-standing issue for the IAEA ever since that time, and the technology changes under way are, either with or without Silex, now compounding it. The Rudd government may not want to talk about this relic from Howard’s nuclear debate, but silence will not make it go away.

**International fuel bank proposals**

This brings us to the second piece of unsecured baggage on Rudd’s deck – the question of fuel banks. Spurred on by GNEP, there has been a string of proposals for international fuel banks dealing in low enriched uranium. The list kicked off in 2006 with Russia’s idea for Global Nuclear Power Infrastructure plan. Germany then followed the next year with a Multilateral Enrichment Sanctuary project, and most recently, the Natural Resource Development Council, a Washington-based NGO, has proposed an International Nuclear Fuel Agency that would stand alongside (rather than fit under) the IAEA.

The Howard government was not entirely a casual observer of these proposals. At a public conference in October 2006, in response to a question from the floor, foreign minister Downer admitted that his department had been giving consideration to EURATOM-style fuel arrangements for Asia. Thoughts about PACATOM are not new, although they have previously not progressed very far, and this consideration, in that vein, appeared to be entirely internal. It was therefore not clear whether the discussion ranged over the commercial form of any Asia-wide enrichment plants, for EURATOM oversees two very different business models in the enrichment sector, Eurodif and Urenco. Eurodif is a single plant located in France with financial

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38 For discussion of this NSC report, see Cameron Stewart, ‘File Reveals N-Weapons Fear’, *The Weekend Australian*, 30th November - 1st December 1996.


41 The symposium on Energy Security was organized in Canberra by the Australian Institute of International Affairs and the Australian Homeland Security Research Centre, and held in Canberra on the 11th October 2006. Downer’s ex tempore argument was picked up and reported by Graeme Dobell, ‘Downer flags regional nuclear power organisation for Asia’, *Correspondents Report*, ABC Radio National, 21st October 2006 <http://www.abc.net.au/correspondents/content/2006/s1770327.html>.
underwriting parceled out between the governments of France, Belgium, Italy, Spain (and, originally, Iran); Urenco, on the other hand, is a group featuring separate enrichment plants in Britain, The Netherlands and Germany that raises capital in a conventional manner. But by linking this discussion to the possibility of Australian entry into the enrichment sector, Downer’s discussions were most probably following Eurodif lines.

One must also presume that this kind of internal departmental discussion will have ceased under the Rudd government. What is less likely to cease, however, is the occasional high level call for Australian entry into the ‘back end’ of the nuclear fuel cycle as an ultimate repository for high level nuclear waste. This was first raised in Labor circles during 2005 by former Labor prime minister Bob Hawke, who saw this as a visionary marriage of Australia’s environmental responsibility with economic self-interest. Whether it was so visionary is questionable: it led directly back to the 1999 Pangea proposal – and, in Hawke’s timeframe, the arguments placed before a parliamentary committee by the French giant Areva-Cogema only three days earlier. For good measure, and just to show that the idea has not gone away, Hawke has recently repeated the same call.

There is, of course, no necessary connection between the acceptance of radioactive wastes and the establishment of an enrichment industry; the two processes are located at different ends of the nuclear fuel cycle. They are, however, inevitably linked when questions of nuclear leasing are put back into play – as Gareth Evans so recently did. Furthermore, a static line in the sand – the reading and re-reading of the present policy of the ALP – is always vulnerable to flanking movements from the rear as well as the front; this, surely, is one of the lessons from the collapse of the ALP’s three mines policy. So the geography and technology of the nuclear fuel cycle are both on the move, and the changing pattern of intersections, complementarities and contradictions between them cannot be defended by ignoring the issues.

The Indian contradiction

The final piece of unsecured baggage on Rudd’s deck concerns policy towards India – in particular, policy regarding the possible sale of Australian uranium to that country. This piece of baggage is not so much a left-over of the Howard years as a direct creation of the ALP – although it does have an older pre-history whose highlights are worthy of a brief re-telling.

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43 For this argument, see House of Representatives, Standing Committee on Industry and Resources, Reference: Australia’s developing non-fossil fuel energy industry, Perth, 23rd September 2005.
46 Resource Minister Martin Ferguson responded to Evans by referring to the current ALP platform; see Christian Kerr, ‘Rudd slams door on nuclear waste’, The Australian, 7th October 2009.
The pre-history begins with India’s 1974 ‘peaceful nuclear test’, which quickly saw the country locked out of the global civil nuclear fuel cycle for the next three decades. That test was critical in shaping new principles governing civil nuclear cooperation in Canada and the United States,\(^47\) the suppliers of technology and raw materials to the reactor where the plutonium for that bomb was produced, and then in Australia, where Fraser’s MSA closely followed the Canadian template. So Australian policy went on to restrict sales to countries that had signed the NPT, and later pushed the principle of ‘full-scope’ safeguards (safeguards, that is, over the totality of nuclear industry in a non-nuclear weapon states) as a pre-condition for supply. Then, in a great success for Australian diplomacy, full-scope safeguards were accepted by the Nuclear Suppliers Group (NSG) after the end of the Cold War breathed new life into the organization. Consequently, India’s nuclear tests of 1998 had the effect in Canberra of re-confirming the correctness of all these calls, and the official bilateral relationship hardened quite markedly.

Given all this, the proposed resumption of civil nuclear cooperation that was central to the Bush-Singh initiative of 2005 was quite a shock in non-proliferation circles. But what was even more surprising, if only on the local scale, was the lack of public critical comment from Canberra. A large proportion of nuclear policy and posture that had enjoyed bipartisan support for three decades was potentially on the block, but the new enthusiasm of the Howard government for nuclear energy as the solution to climate change totally occluded its mention. Instead India was repeatedly described by relevant Australian ministers as a country with an ‘impeccable’ non-proliferation record\(^48\) – a fair call only if the comparison were with Pakistan (where the recent exposure of the A.Q. Khan network was attracting considerable public interest), and if the events of 1974 were swept under the carpet. Less obviously, the Howard government also wished to quietly support an objective that was up-front in Washington – that India could become a useful ally in the future containment of China. So no sooner had embryonic trilateral American-Japan-Australia strategic arrangements begun to emerge than there was pressure to extend them to India, and this momentum of events was willingly accepted by the Howard government. One of the central tenets of Canberra’s established nuclear policy was, it seemed, on the brink of being grandfathered.

In opposition, the ALP had been quietly torn over this package deal. There was widespread enthusiasm for a vast upgrading of western relations with New Delhi, but not if it implied a new containment of China, and not at the cost of long-standing policy on nuclear supply. These tensions received their most perfect embodiment in the person of shadow resources minister Martin Ferguson, the man who led the ALP charge for the abolition of the three mines policy and the expansion of uranium sales. But on the question of sales to India, Ferguson repeatedly insisted that India would have to sign the NPT if it wanted to purchase


\(^{48}\) For this assessment as rendered in slightly different ways by John Howard and his resources minister Ian Macfarlane over a one year period, see, respectively, ‘Aust-China may reach uranium agreement’, *Australian Associated Press General News*, 28\(^{th}\) March 2006, and David Weber, ‘Cabinet to consider selling uranium to India Aust considers uranium sale to India’, *Australian Broadcasting Corporation Transcripts*, 26\(^{th}\) July 2007.
Australian uranium.\textsuperscript{49} Howard, on the other hand, was progressively edging closer to pre-approving such sales. Once the China safeguards were done and dusted, he began to suggest that equality of treatment with China should be the principle guiding sales to India: ‘…if India were to meet safeguard obligations, some Australians would see it as anomalous that we would sell uranium to China, but not India…’.\textsuperscript{50} Characteristically, Howard never once spoke about the impact that sales would have on Canberra’s non-proliferation and disarmament objectives.\textsuperscript{51} It therefore fell to the new Labor government to fill in the silence by effectively re-validating Canberra’s traditional insistence upon ‘full-scope safeguards’.

By this stage, Howard’s biggest problem was that he was out in advance of actual developments on the ground. The so-called 123 Agreement that would give expression to renewed nuclear cooperation with the US was stalled in the Indian parliament, where government coalition members on the left held severe reservations about it.\textsuperscript{52} And in the absence of a signed agreement, there could be no IAEA approval of a safeguards package, nor any NSG registration of India as an exception to the principle of full-scope safeguards. Howard was never able to act in advance of these agreements, but his government did try to hurry things along. Most notable here was the blunt public reading of Australian policy by resources minister Ian Macfarlane; that Canberra had a prohibition on sales to India because they had not signed the NPT, and that the Australian uranium industry could prosper quite nicely without India.\textsuperscript{53} Given that he had previously been silent on the matter, his gruff and apparent rejection caused widespread consternation. But by pointing out the consequences of inaction, his primary effect was to shake the tree of Singh’s coalition – probably his main intention all along. Nevertheless, the apples did not fall.

The inability to conclude the 123 Agreement meant that the yawning gap between the government and the ALP on India policy was effectively neutered as an electoral issue in the lead-up to the November 2007 election. Insofar as any nuclear issue figured in that event, it was Switkowski’s fleet of twenty five reactors, which played to Rudd’s advantage by generalizing NIMBY politics. But once in office, the question of sales to India jumped back to front stage, put there by courtesy of the new foreign minister Stephen Smith. Perhaps because he understood that, due to his prime minister’s preferences, his ministerial writ was in practice largely restricted to the Indian Ocean region, Smith focused on India in his first public function in DFAT, highlighting the latent potential for ‘depth and vigour’ in relations with New


\textsuperscript{50} Quoted in Katharine Murphy, ‘Howard signals option of uranium sales to India’, \textit{The Age}, 26\textsuperscript{th} September 2006.

\textsuperscript{51} There was considerable debate about this inside DFAT, but none of it escaped into the public realm.

\textsuperscript{52} For the politics of the stalling process, see Nick Hordern, ‘India’s rising nuclear hurdle’, \textit{Australian Financial Review}, 22\textsuperscript{nd} January 2007.

\textsuperscript{53} For the relevant reportage, see Katharine Murphy, ‘No uranium for India: Macfarlane’, \textit{The Age}, 23 May 2007.
No doubt the Indian government noticed this and decided to test his mettle on the one thing they truly wanted from an Australian government. In January 2008, a special envoy was therefore dispatched to watch the test cricket with Smith in his home town, and engage, no doubt, on more serious matters between play. In the event, the Indians took away the game but not the main prize; the Rudd government was not going to compromise existing Australian policy of restricting uranium sales to NPT signatories.

This did not, however, mean that it would defend that policy internationally. Six months later, prime minister Singh recomposed his governing coalition, jettisoning small parties on the left for religious ones on the right, and thereby obtaining a green light for the terms of his civil cooperation deal. In very short order, it then became apparent that the Rudd government was not going to stand in the way of IAEA safeguards that were, as previously mentioned, only going to cover fourteen out of India’s twenty two nuclear facilities, and which were therefore considerably less than full-scope. But Australia and Canada made sounds at the Agency discussion about ‘exact ing a price’ for the Indian exemption at the Nuclear Suppliers Group (NSG). Since the forty five member NSG worked on the principle of consensus, this was theoretically a serious matter.

In practice, the NSG debates did prove interesting – but not by virtue of any significant Australian contribution. Others, particularly the Scandinavians, came to the NSG suggesting that conditions be applied to nuclear trade with India, but Australia did not join them. But these suggestions then evaporated during the two weeks that separated the two rounds of NSG discussions. So what should one make of the August reportage that Canberra wanted India to pay a price? Perhaps it was meant to be read in reverse: that Australia was not going to burden itself with a diplomatic price by frustrating an agreement that enjoyed widespread support (beginning in Washington). Be that as it may, it was clear that Labor support for unconditional full-scope safeguards was now a posture designed for domestic rather than international consumption. In this sense, the policy that Howard looked set to abolish outright has ended up being ‘repatriated’.

**Conclusion: reversing the victory of form over content**

The Rudd government, as we all know, has taken up the cause of advancing the international agenda on nuclear non-proliferation and disarmament – a cause that first seized the Keating government a decade and a half ago, and was then left without a sponsor by the coming of the Howard government. This initiative, however, sits uneasily alongside the unwillingness of the Rudd government to defend Australia’s traditional full-scope safeguards policy in international forums - or, one might add, to adequately explain that ‘repatriated’ policy to domestic

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54 For one of the very few reports, see ‘India to play increasingly important role for Aust – Smith’, Australian Associated Press General News, 3rd December 2007.
55 For pertinent reflections on the ‘innenpolitik’ of the NSG after India’s exemption, see ‘Fighting the nuclear fight: When nuclear sheriffs quarrel’, The Economist, 1st November 2008.
audiences. So the long term hollowing out process of Australian safeguards described earlier continues apace on a new front.

Looking on the bright side, the domestic repatriation of full-scope safeguards policy provides an opportunity for the evaluation and refurbishment of national policy so that it better serves the ends promoted by the successor of the Canberra Commission. To this end, it helps to contextualize the extent of change over the recent period. Perhaps, when Australia’s full-scope safeguards policy was first accepted internationally, it was still remotely possible that India would follow the recent South African precedent by rolling back its nuclear weapons programme and signing the NPT. For the NPT, recall, has never had the capacity to admit new nuclear weapon states; they are defined within the Treaty as those who have tested before 1967, and an Indian signature on the NPT would therefore have to be premised on its unilateral nuclear disarmament. But once India tested again in 1998 and openly demanded recognition as a nuclear weapon state, this remote possibility became a complete pipedream. This was quickly acknowledged in the US where, within a matter of weeks, the Clinton administration stopped demanding that India sign the NPT, with one senior official saying that this traditional demand was now ‘beyond the pale’.  

Canberra did not, however, follow this American lead, although the frequency with which the Howard government repeated the call to sign on to NPT fell away quite notably – until, that is, the ALP revived the tradition in 2006. Now that India has effectively been given ‘exceptional’ status as a nuclear weapon state via the 123 Agreement, it is hard to think of a phrase that adequately captures the low standing of Australian policy; wishful thinking does not go nearly far enough. So the policy that the Rudd government has preserved by refusing to sell Australian uranium to India is simply not worth the candle in any practical sense. And an arms control policy that has no practical value will soon enough lose its place as an instrument of national security policy.

In the name of renovating this fallen policy, it is, however, conceivable to think about raising the bar. The NPT has always been regarded as the first in a series of steps down the road to disarmament, where the next steps would be a Comprehensive Test Ban Treaty (CTBT) followed by a Fissile Material Cut-off Treaty (FMCT). If India can be induced to make these second and third steps, then the fact that it will never sign the NPT might not ultimately matter. Hence the simplest of suggestions for the renovation of Australian policy: that the preconditions for the supply of Australian uranium should be a signature on the NPT or the CTBT (as appropriate), plus a bilateral safeguards agreement.  

Unlike the policy of requiring New Delhi to bay at the moon of the NPT, this, at least, has some chance of success, for the Singh government has already indicated its willingness to sign the CTBT once Washington and Beijing have done so. Given

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58 I am currently working with Carl Ungerer of the Australian Strategic Policy Institute on a paper to be published next year that will explore some more complex options.
India’s evident desire to secure access to Australian uranium, a policy from Canberra along these lines might just induce greater priority to that positive cascade for disarmament objectives. And a re-worked full-scope safeguards policy along the lines suggested above could therefore aid in returning a great deal of substance to the content of Australian diplomacy and reverse the quiet drift into formalistic irrelevance.
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