

Denuclearization Prerequisites in the Western Pacific

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Context

Assume—counterfactually—that it has been agreed to rid the world of nuclear weapons. How to do this remains to be worked out, as does how to sustain a regime of ‘zero nuclear weapons’ once reached. This exercise addresses part of an agenda for denuclearization, focused on issues of special salience in the Western Pacific.

If our counterfactual assumption appears far-fetched, consider the broad consensus for weapons denuclearization of the Korean Peninsula. Consider, too, that Japan is bound by policy not to acquire nuclear weapons, and that Mongolia has declared itself a nuclear-free zone. Five states of Central Asia—Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan—intend to sign in October 2005 a treaty establishing a nuclear weapon-free zone.¹ So let us ignore, for the purposes of this exercise, the conventional wisdom that global denuclearization is impossible.

Far from being an empty exercise, thinking about ‘how’ to implement a ZNW decision contributes to its possibility. Without disciplined thought about how to reach and sustain ZNW, the only policy course on the table will be the *status quo*: ongoing weapons

¹ Nuclear Threat Institute, Global Security Newswire, 1 August 2005, citing Radio Free Europe/Radio Liberty, 30 July 2005.
http://www.nti.org/d_newswire/issues/2005_8_1.html

nuclearism. This paper, then, presumes policy conversations about alternatives to *status quo* nuclearism.

Contentions Between and Among States

Some of issues posed by denuclearization arise from state policy. In this section we consider four regional issues and the long-standing interstate problem of competing claims to territory and sea areas.

[1] The Japanese Plutonium Stockpile

Japan has stockpiled plutonium, extracted from the spent fuel rods of its nuclear reactors. What consequences for weapons denuclearization follow from its policy of stockpiling plutonium?

Access to sufficient plutonium or ‘highly enriched uranium’ (HEU) is, to a first approximation, a *necessary* condition to building a nuclear bomb. Turning that insight on its axis, *denying* a state or group access—while ensuring that no ready-built nuclear weapons come into its hands—is a *sufficient* condition to prevent its acquiring a bomb.

For these reasons, a state’s having ‘sufficient’ quantities of Pu or HEU for *any* purpose implies the *possibility* that it could assemble nuclear weapons. But is building a bomb hard, or easy? A committee of the US National Academy of Sciences recently stated that

Nuclear-explosive materials are readily convertible by nuclear weapon states (or other states or groups that have knowledge of nuclear weapon technology) into the nuclear-explosive components of actual weapons. And the size of the NEM stocks determines, to a reasonable approximation, how many weapons of particular types could be made.²

² US National Academy of Sciences. Committee on International Security and Arms Control. *Monitoring Nuclear Weapons and Nuclear-Explosive Materials: An Assessment of Methods and Capabilities* (Washington, DC: National Academies Press, 2005). <http://www.nap.edu/catalog/11265.html> [pdf]

The significant words are “have knowledge of nuclear weapon technology,” which must include all technologies required to fabricate a bomb from the fissile material as well as the physical means to do so.

In thinking about a denuclearization regime, it is important to keep in mind the distinction between Pu and HEU. Of a uranium device, the Italian physicist Francesco Calogero explains how a hypothetical detonation could be mounted, provided a group possessed HEU:

It is much easier to manufacture a primitive nuclear explosive device with uranium than with plutonium.

... such a device need not be transportable: An easier option would be to build it in a rented garage or apartment near the center of the target city, to be set off by a timer allowing ample time for the perpetrators to get away. It would be easy to smuggle to such a destination a half dozen or so half-liter parcels of highly enriched uranium. A Hiroshima-type nuclear explosive device weapon could then be manufactured rather easily, using openly available information. All the other materials necessary to complete the project could be bought in place without difficulty ...³

Does It Matter In What Form the Plutonium is Stored?

Clarity about Japan’s plutonium stockpile requires being clear about just what is stored: is it simply plutonium metal or in some other form? and what is the isotopic composition of the material?

Then we need to sort out in what forms, and with what isotopic composition, the plutonium is usable, or more effective, as the fissile component of a fission weapon.

Finally, we need to know how easily one type of ‘plutonium’, less suitable or unsuitable for nuclear weapons, can be changed to a suitable type.

a. Metal or Another Form?

Plutonium may be stored as

³ Letter, *Bulletin of the Atomic Scientists*, May-June 2002, p. 5.

- plutonium metal
- plutonium oxide
- plutonium and uranium 'mixed oxide' (MOX)
- plutonium nitrate

It may then be incorporated into fuel rods and weapons:

- as the pit of a nuclear warhead
- in a fuel rod, ready to be inserted into a reactor
- in a fuel rod within a reactor
- in a 'spent' fuel rod, removed from a reactor

From the vantage point of those concerned with nuclear proliferation, diversion of plutonium in any of these forms poses a serious concern.

How long does it take to build a bomb, given Pu in a certain form?

conversion time, defined as the time required to convert different forms of nuclear material to the components of a nuclear explosive device. For metallic Pu and HEU, conversion time was estimated as 7-10 days; for pure unirradiated compounds of these materials such as oxides or nitrates, or for mixtures, 1-3 weeks; for Pu or HEU in irradiated fuel, 1-3 months; and for low-enriched uranium, 1 year.⁴

b. Isotopic Composition?

As a shorthand, a nuclear weapon is best made of the odd-numbered isotope ²³⁹Pu because the even-numbered isotopes produce spontaneous emissions which generate heat and may cause premature ignition leading to a 'fizzle'.

In the case of uranium, the only practical consideration concerns the percentage of ²³⁵U, the higher the better, the remainder being understood as almost completely ²³⁸U, but with 'weapons

⁴ Marvin M. Miller, "Are IAEA Safeguards on Plutonium Bulk-Handling Facilities Effective?" (August 1990), drawing on a report of the IAEA Standing Advisory Group on Safeguards Implementation to the IAEA Director of Safeguards, 1977. <http://www.nci.org/k-m/mmsgdrds.htm>

grade' defined as 90% ^{235}U or higher and the optimal percentage being 93% or 94% (although a device can be made with larger quantities of uranium at lower percentages of ^{235}U). Plutonium is somewhat different.

Nuclear detonations are possible with some range of admixture of isotopes other than ^{239}Pu ; and even if an optimum practical weapon is at least 93% ^{239}Pu , and materials which contain less than 80% ^{239}Pu characterized dismissively as 'reactor grade', a serious 'bomb' can be made with 'reactor grade' material.⁵

⁵ Cf. Richard L. Garwin, "Reactor-Grade Plutonium Can be Used to Make Powerful and Reliable Nuclear Weapons: Separated plutonium in the fuel cycle must be protected as if it were nuclear weapons," 26 August 1998. Garwin takes 'reactor-grade' Pu to be "typically 65% fissile (by thermal neutrons) as compared with 93% fissile for weapon-grade material." <http://www.fas.org/rlg/980826-pu.htm>

United States. Office of Technology Assessment. *Technologies Underlying Weapons of Mass Destruction* (Washington: US GPO, December 1993), p. 133:

Plutonium produced in a reactor continues to be exposed to neutrons until the fuel is removed from the reactor. This prolonged exposure results in the buildup of other plutonium isotopes (atomic numbers 238, 240, 241, 242) in addition to plutonium-239. The even isotopes of plutonium have a high probability of spontaneous fission and thus neutron emission, plus several other deleterious neutronic effects in weapons. By current U.S. definition, reactor-grade plutonium contains at least 20 percent even (non-fissile) isotopes, whereas weapon-grade contains 6 percent or less.

Because the non-239 plutonium isotopes are more radioactive and emit more spontaneous neutrons, they make the design of a plutonium weapon more difficult (virtually impossible at high concentrations of Pu-238). The problems are at least two-fold. From the perspective of bomb performance, if too much plutonium-240 or -242 is present its spontaneous neutrons have a high probability of starting the chain reaction too soon, thus substantially reducing the yield. Second, reactor-grade plutonium generates 6 to 10 times more heat per unit mass than does weapon-grade plutonium, and an IAEA significant quantity of RGPu (8 kg) would generate well over 100 watts of heat.

Nevertheless, the critical mass of RGPu is only about 25 percent higher than that of weapon grade, and nuclear explosive devices can be designed that use it.

c. So, What Type and Form Should A Pu Weapon Be?

Production plutonium weapons use Pu in metal form, fashioned into a 'pit', as the core of the device. As noted above, an optimum ^{239}Pu percentage is at least 93%. To achieve a suitable detonation with a more heterogeneous Pu material would typically require using more Pu than the most efficient weapon.

d. Is it 'Easy' or 'Hard' to Fabricate a Bomb ?

Any change in form requires that suitable processing equipment be at hand. Achieving the desired shape of a Pu pit, for example, requires a milling capability that respects the dangerous qualities of shavings from the original block.

While it is 'easy' to bring two properly-designed pieces of uranium together and achieve a significant nuclear explosion—dropping one onto the other relying on gravity could be sufficient—attempting the same with plutonium would likely produce a 'fizzle' because a Pu explosion requires the very prompt bringing together of the fissile material.

While the government of a capable industrial state would find it 'not too hard' to fabricate a Pu bomb (though it would take time to put the needed capabilities in place), an entrepreneurial organization—a 'terrorist group' for example—would find the task 'hard', or 'very hard', or 'unperformable'.

Pu poses problems. The 'gun' method of bringing the fissile material together, which is the simplest method using uranium, will not work, because the critical mass is not joined quickly enough and uniformly enough to avoid a 'fizzle'. Instead, the 'implosion' method must be used: simultaneous chemical explosive detonations on the surface of the pit compress the metal in a moment. So failure to accomplish any one of several requirements—sufficiently pure Pu, of adequate mass, isotopically appropriate, machined to close tolerance, and precisely detonated—could prevent a group from converting diverted material into a bomb. An unauthorized group, unless it had access to extraordinary facilities and experienced personnel, would face daunting obstacles in converting Pu from Japan's stockpile into a bomb.

But for the government of a country that is technologically sophisticated and has experience with nuclear materials, only lack of Pu or HEU presents a significant barrier to building nuclear weapons.

e. Processual Controls

That portion of Japan's Pu stockpile stored outside Japan bears on the general problem of global management of fissile material, but not on the question how easily and quickly *Japan* could render Pu it controls into weapons.

Pu inside Japan is subject to IAEA safeguards. Critics of the completeness of safeguards have questioned assurances about accounting discrepancies, insisting that there are structural impediments to an adequate and persuasive accounting.⁶ Japan's Federation of Electric Power Companies touts the thoroughness of safeguards, citing Japan's 1998 signing of the INFCIRC/540 Additional Protocol (adhesion now in force⁷) and that Japan is estimated to be the subject of "about 20% to 30% of the IAEA's inspection activities."⁸ In response to what it agrees was "inappropriate handling of voluntary inspection records at a number of nuclear power plants," the FEPC draws attention to the Atomic Energy Commission of Japan's issuance of "Basic Principles for the Utilization of Plutonium," spelling out transparency measures.⁹ Skeptics remain unconvinced.¹⁰

⁶ e.g. Paul Leventhal's discussion of IAEA inspections in Japan: "Safeguards Shortcomings—A Critique: The IAEA's Inability to Detect Diversions of Bomb Quantities of Plutonium." Nuclear Control Institute. 12 September 1994. <http://www.nci.org/p/plsgrds.htm>

⁷ Statement of the Deputy Permanent Representative of Japan. United Nations. 3 November 2003. <http://www.un.int/japan/statements/motomura/031103.html>

⁸ *Power Line*, v 19, February 2003. <http://www.fepec.or.jp/english/powerline/19/>

⁹ Federation of Electric Power Companies. "Japan's Nuclear Power Program: Power for the Future of Japan." <http://www.japannuclear.com/nuclearpower/nonproliferation>

¹⁰ See, for example, the views of the Citizens' Nuclear Information Center (Tokyo), <http://cnic.jp/english/cnic/index.html>

e. Is This Trip Necessary?

It may seem malaprop to remind ourselves of Washington's WWII slogan which was calculated to force a second thought about trips on the war-burdened transport system, but the same economic reasoning argues for rethinking Pu reprocessing and storage in Japan. Calls for Pu reprocessing are also being made in the United States, to which respected analysts have responded that reprocessing is costly and does not solve the waste storage problem. Steve Fetter and Frank von Hippel point out that "reprocessing does not eliminate the need for a repository" and that "the price of uranium would have to rise to nearly \$400 per kilogram in order for reprocessing to be cost effective," a price rise they judge extremely unlikely in the next 50 years.¹¹

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Japan's quest for a permanent seat on the UNSC prompts it to take a declaratory position confirming the 'three non-nuclear principles':

2. Security

(1) Disarmament and Non-Proliferation

Up to the present, Japan, as a non-nuclear-weapon State, has been at the forefront in promoting disarmament and non-proliferation of weapons of mass destruction including nuclear weapons. Japan has also played a leading role in the area of conventional weapons, including by promoting international efforts relating to the issue of small arms and light weapons. Japan is resolved to play an ever more active role in a functionally reinforced United Nations to promote these causes, and will continue to uphold its "Three Non-Nuclear Principles".

And "Rokkasho and Proliferation Revisited."

<http://cnic.jp/english/newsletter/nit105/nit105articles/nit105prolif.html>

¹¹ Steve Fetter and Frank N. von Hippel, "Is U.S. Reprocessing Worth the Risk?", *Arms Control Today*, September 2005. Citing New Nuclear Policy-Planning Council, Japan Atomic Energy Commission, "Interim Report Concerning the Nuclear Fuel Cycle Policy," November 2004, they also point out that Japanese officials have calculated the substantial additional cost of reprocessing.

http://www.armscontrol.org/act/2005_09/Fetter-VonHippel.asp

- Although the NPT Review Conference was not able to adopt a consensus document on substantive issues, each one of the States Parties should exert its efforts to overcome the difficulties and to strengthen the NPT regime.
- It is in the interest of all states to make progress in both the disarmament and the non-proliferation areas. It is also of the utmost importance that we reconfirm at the highest level our commitment to disarmament and non-proliferation. Japan will redouble its efforts to this end.
- Japan supports the universalization, strengthening and full implementation of related treaties and norms on disarmament and non-proliferation, and will make further efforts to achieve those goals.¹²

There is no credible evidence that the Japanese government *intends* to launch a nuclear weapons program, acknowledged or clandestine.¹³ That does not mean that there is no discussion of nuclear weapons, or no advocates. But the real issues are different. They are two. Any Pu stockpile, and any reprocessing program, opens the door to illegal, unauthorized, or clandestine diversion. And any Pu stockpile invites a *later* government, under different circumstances, faced with different challenges, to undertake a weapons program.

Denying access to Pu is the obvious key measure, and only sure one, guaranteeing that Japan's stockpile not lead to a bomb. But what if adequate quantities of Pu fell from Japan's stockpile into private hands? The difficulties of fabrication pose obstacles that sophisticated amateurs would have to overcome. Without putting that path to a weapon out of mind, the main concern must be what a *later* government, with Pu in store, might choose to do.

It is also awkward that Japan hold Pu while calling for "progress" in non-proliferation. It sets a bad example. If Japan, why not North Korea? The convergence of non-proliferation and economic arguments offers a path, provided there is adequate diversity of supply of reactor fuel, by which Japan's energy requirements could be brought into consistence with weapons denuclearization.

¹² Japan. Ministry of Foreign Affairs. "United Nations Reform: Priority Issues for Japan." June 2005.

<http://www.mofa.go.jp/policy/un/reform/priority.html>

¹³ Henry L. Stimson Center, "*Japan's Nuclear Option: Security, Politics, and Policy in the 21st Century.*" 2003. <http://www.stimson.org>

[2] *Borders*

Border and zonal jurisdictional disputes bedevil relations between neighboring states and those which make competing sea claims. They make agreement on other security issues—for our discussion, achieving nuclear abolition—more difficult.

How have states of the northwest Pacific managed border disputes? Most famously, China and Russia have negotiated differences, bringing to an end disputes that flared in armed clashes in 1969. But other salient disputes remain unresolved:

- Japan and Russia: the ‘southern Kuriles’ or ‘Northern Territories’, occupied by Russia but claimed by Japan
- Japan and China: the Diaoyutai or Senkaku Retto, an island group occupied by Japan but claimed by China (and Taiwan)
- China and others: China claims islands in the Nan Hai (South China Sea) as her territory, implying territorial sea bands and exclusive economic zones, but other countries—Vietnam, Philippines, Malaysia, Brunei—contest China’s position
- Japan and China: where does the line lie which separates their exclusive economic zones?

A full catalog of border and jurisdictional issues would include the status of Taiwan and its island claims on the China coast, Japan-Korea disputes, North Korea’s claim to an ‘historic bay’ as internal waters, the line dividing North and South Korea and its extensions to sea, and China’s arguments with Vietnam and India.

At first glance, these issues seem far removed from management or elimination of nuclear arsenals. They come into the equation in two ways: (first) the leadership of a nuclear state may imagine that it more readily holds territory or sea claims contested by a non-nuclear state, and (second) opposition groups in a nuclear state whose government is considering giving up

nuclear weapons may choose to exploit chauvinist claims, fears or ambitions to undermine the government in office.

The only case of a government giving up nuclear weapons which it had fabricated—South Africa—does not shed light on border conflicts, since the leadership's reasons for giving them up were particular to the South African case, and the coming ANC government committed to global weapons denuclearization.

[3] *Taiwan*

Could China and the United States agree to ZNW, if China had not given up its insistence—backed by displays of forces at the ready—that Taiwan is a part of China?

Taiwan poses a truly tough problem. Even if one judges, as this author does, that China would bring grievous harm on itself by actually using force or enacting a blockade, harm so severe that the Chinese leadership would not cross that line, the very fact of its *political* insistence that Taiwan is part of China creates uncertainty. And uncertainty, coupled with military deployments and posturing, works against the regime of *restraint and reassurance* required for denuclearization. In plain words, as long as China does not preclude the use of force, and the United States does not preclude guaranteeing Taiwan by force, the issue is beset by the language and logic of force.

One way to think about 'Taiwan' is to frame it as a set of three problems in *internal* politics. Between the principal contenders in Taiwan, how to calibrate relations with Beijing and initiatives for or in restraint of 'independence' is both an internal and an external issue. Externally, Beijing has conditioned withholding force on Taiwanese restraint, and Washington in turn has conditioned its guarantee on that same restraint. Failure of restraint in Taiwan would have serious consequences for both major powers. In all other respects, however, 'Taiwan' is altogether an *internal* issue for Beijing and Washington. How can that be? It is so because *there are, in both countries, politically salient groups that would exploit 'weakness' of a government failing to respond with force, or exercise guarantees.* In the

United States, about which we can speak with greater confidence, those opportunists-in-waiting lie on the political right, remnants or reincarnations of the 'China lobby' and 'Taiwan lobby' of the past; and they would find support of those who believe you have an army and a navy to use them. Suspicion of the People's Republic runs deep in the Republican right, and in the Republican Congress. Of China we can say that there are any number of assertive declarations by officials and military figures, but that the interplay of opinion and policy remains largely concealed.

Framing the issue as one in the internal politics of the United States and China is very different from seeing it as a confrontation between two 'powers' seeking, respectively, to deter and to compel.

An internal perspective asks: how can other priorities come to the fore, and factions advocating the primacy of other priorities come to the fore, in a way that displaces encounter? Other priorities would include the security of infrastructure, continued and growing benefit from economic transactions, competing demands on central budget (including military and naval demands not relevant to Taiwan), and concerted action on common problems such as global warming and public health.

Even as an issue in external relations, however, 'Taiwan' can be viewed in different ways. Perhaps what has obtained since 1972, or 1980, is some form of mutual restraint. After all, the issue is now long-standing. Perhaps both believe that 'time is on our side', China that Taiwan will fall into China's orbit, the United States that longer-term political changes in China will lead to increasing acceptance of a separate and autonomous Taiwan.

The United States did not use nuclear weapons in the Korean War or the Vietnam War, but there were calls to do so; and Eisenhower did position nuclear-capable aircraft in the western Pacific in a manner designed to convey the possibility of resort to nuclear weapons. Certainly one reason to avoid actual fighting in the Taiwan Straits, or in breaking a blockade of Taiwan, is to bypass the possibility that there again be calls for use of nuclear weapons.

It should be kept in mind that there have been credible suspicions of Taiwanese interest in nuclear weapons, an interest

that the United States is said to have quashed.¹⁴ Certainly any evidence of an ongoing or renewed Taiwanese program would discomfit Beijing, and place a premium on China's retention of nuclear weapons. Therefore one prerequisite to a 'denuclearization agenda' is continued vigilance, and US readiness to insist that Taiwan not pursue nuclear weapons.

[4] The Chinese Nuclear Weapons Capability

China's declaratory position calls for 'complete prohibition and thorough destruction' of nuclear weapons. In effect that means, "if you'll destroy yours, we'll destroy ours." But as China becomes more accustomed to the sway which follows being both a 'veto power' and a 'nuclear power', would she agree to 'complete prohibition and thorough destruction' if the other nuclear states concurred? The reality is that we can know only if an actual offer were made.

China remains committed to 'no first use'. The logic of 'no first use' is that if all nuclear weapon states agreed to it, then they could all give them up—rather than retaining them for deterrence.

There are three problems with the Chinese declaratory positions. We have identified the first: that the promise can only be valued in practice. Second, the logic of 'no first use' works only if deterrence is the *only* mission for nuclear weapons ... but some nuclear states—foremost the United States, but also Russia—insist there are other missions. Third, there is no evidence that any nuclear state is ready to join in weapon denuclearization, or even *planning* with contingent denuclearization on the table.

On the other hand, China builds her nuclear forces slowly, and both numbers and means of delivery characterize a 'minimum deterrent' force. As long as that is so, sunk costs and vested interests in nuclearism may not be so great that Chinese participation in a zero nuclear weapon regime is ruled out.

Nonetheless, the conventional arguments for a Chinese nuclear program, to deter others and ensure Chinese autonomy,

¹⁴ Please see my review of this issue in *Designing Denuclearization*, the draft of which is available at <http://www.gcdd.net/>

have such force *in a world of nuclear weapons* that the line between today's world and a denuclearized world must be clearly drawn. China's program was begun in 1955 in response to thoughtless US bluster and threats, but its first deployments warned the Soviet Union that China could retaliate if struck. From 1998 Beijing must also consider India's commitment to a deployable nuclear force.

China's deterrent, because of its size and means of delivery, relies on the *possibility* that an attack could be answered. Twice China has voiced vigorous opposition to measures which, if implemented, would threaten the deterrent capacity she has: during negotiation of the INF Treaty, which China feared would free Soviet SS-20 missiles to be moved from Eastern Europe to Asia, and in the growing US investment in 'missile defense' from the mid-1990s. As concluded, however, the INF Treaty did not permit SS-20s being transferred to Asia. It remains to be seen what will become of the US 'missile defense' program.

From these considerations, however, it follows that China has an additional reason—beyond those which apply to all states—to prefer a denuclearized world to today's world of eight nuclear weapon states: while other states cannot ignore the *possibility* that China would retaliate against a nuclear attack, China cannot claim a 'robust second-strike capability'. Nor does the gradual development of her nuclear forces promise achieving that capability in the next several years. Of course, any sign that the United States were actually able to field an effective missile defense could lead to greater Chinese spending on larger forces, with the two effects of offsetting an anti-Chinese missile defense and bringing about the 'robust second-strike capability' which is not now in place.

In the section of this paper on missile defense we point out that the head of the US program is now touting the need for anti-China capabilities. In effect, China's fears are confirmed, and the case for greater spending will be being argued in Beijing. Observers have long feared that 'missile defense' would prompt a new arms race. A denuclearization agenda does not require that such a race not take place, but it would be well-served by restraint. On this matter it may be necessary to rely on Chinese good

judgment: there is yet no evidence ‘missile defense’ will work, and but if there were Beijing could pursue methods other than building missiles to counter whatever effectiveness ‘missile defense’ might seem to achieve.

[5] The Korean Peninsula

The fourth round of six-nation talks begun in Beijing on 25 July 2005, after a 13-month hiatus, dramatizes the hard case: a state with access to fissile material that has resisted IAEA safeguards and transparency. The round concluded on 19 September with as ostensible accord, though much remained to be specified.¹⁵ Issues which had forced a recess in the fourth round suggest where difficulties may lie.

What differences blocked agreement? According to press reports, North Korea insisted on keeping a civil nuclear program, but the United States and Japan required *complete* denuclearization of North Korea. The North Korean argument is that it would resume a commitment to the NPT, so its civil program would be subject to IAEA safeguards. After 19 September, North Korean officials resumed calls for a light water reactor program.

The US position is that safeguards wouldn’t be enough: North Korea had engaged in secret uranium and plutonium programs in the past with the intent to build nuclear weapons—and there was no practical way to ensure, despite safeguards, that further clandestine weapons work was not being undertaken.

The NPT guarantees States Party the right to conduct a civil nuclear program. The United States holds that North Korea’s weapons work renders that right forfeit.

Washington’s view is a *political* assertion, not a legal argument. Washington will resist any ‘package’ for North Korea that anticipates North Korea’s maintaining a civil nuclear program.

¹⁵ [Joint Statement](http://www.state.gov/r/pa/prs/ps/2005/53490.htm) of the Fourth Round of the Six-Party Talks. Beijing, 19 September 2005. <http://www.state.gov/r/pa/prs/ps/2005/53490.htm>

This position is not the same as that taken by the United States vis-à-vis Iran (if newspaper reports of Washington's stance are correct). They say the United States has assented to an EU-3 proposal stipulating *inter alia* that reactor fuel be provided Iran and spent fuel returned to sender—not contesting that Iran has a right to generate electricity with nuclear reactors.¹⁶

At base, the GW Bush White House refuses to rely on IAEA safeguards to find a clandestine program. It is as if it were still mesmerized by the IAEA's inability to find an Iraqi nuclear program in 2003. That failure *proved* that the IAEA was not up to the job. Nevermind that there was no nuclear program to be found.

The Uranium Program Issue

Washington's insists that Pyongyang come clean about the uranium enrichment program that Washington attributes to it. The United States first told North Korean officials in October 2002 that it had evidence North Korea was pursuing a uranium program. They admitted having a uranium program, US officials say, but have since denied it. According to *The New York Times*, during the fourth six-party talks of July-September 2005 the United States showed North Korea "specific evidence behind American allegations that North Korea secretly obtained uranium enrichment technology" from AQ Khan.¹⁷ Soon after this report, Pakistani President Musharraf said publicly that AQ Khan had given centrifuge parts and units to North Korea.¹⁸

Nonetheless, there are no charges, no claims in the public realm, that North Korea, if it undertook any uranium program at all, went beyond laboratory experiments and small-scale centrifuge

¹⁶ But cf. Katrin Bennhold, in the *International Herald Tribune*, 6 August 2005, quoting an unnamed French diplomat as saying that "the United States has followed our negotiations with enormous skepticism, thinking that it will lead nowhere and that we are being duped by the Iranians."

¹⁷ David E. Sanger and Jim Yardley, "U.S. Offers North Korea Evidence of Nuclear Allegations," *International Herald Tribune*, 30-31 July 2005.

¹⁸ Danny Kemp, "Pakistan Confirms Scientists Supplied N. Korea," Agence France Presse, in the *Globe and Mail* [Toronto], 25 August 2005. Musharraf's statement to the Kyodo news agency was confirmed by his chief spokesman, Major-General Shaukat Sultan.

tests. US official would reply that they want full revelation of the kind Libya is said to have supplied.

What Matters Most?

The Korean issue has moved through three stages. In the mid- to late-1980s it centered on bringing North Korea into the NPT and, therefore, implementing safeguards. In the early 1990s North Korea suspended its NPT participation, throwing open the possibility that it had, and could, extract plutonium from spent fuel of its Yongbyon reactor and fabricate one or more nuclear weapons. Then, in the period from 1994 to the GW Bush administration's taking office, the question was whether the Agreed Framework would work in practice or, if it were abandoned, how the White House would treat with Pyongyang to prevent a nuclear-armed North Korea. Perhaps mesmerized by its long-standing criticisms of Clinton policy, the GW Bush group declined—at least formally—to negotiate directly with North Korea, insisting that negotiations take place within the context of the Six-Party Talks. It has probably not made negotiations easier that GW Bush, John Bolton and Condoleezza Rice have publicly characterized North Korea insultingly. Nonetheless, at this writing—October 2005—the parties are engaged.

What matters most? From the viewpoint of Japan, it is that Japan itself not become open to nuclear attack by North Korea. South Korea wants security first (and economic opportunities second) but emphasizes security negotiated with the North. [All North Korea's neighbors prefer she not have nuclear weapons.] From the vantage of Washington—the Washington of 'Dick' Cheney and Donald Rumsfeld—what matters most is that the United States have untrammelled freedom to define North Korea and impose complete, civil and military, denuclearization. [In turn, that outcome would ensure Washington's continued political and military usefulness to Japan and South Korea, key loci of its bilateral strategy.] From Beijing, the problem could be to buy time for the North Korean leadership to judge a package of economic reform, greater access to global trade and finance, and weapons denuclearization as attainable, non-threatening, and desirable: that is, North Korea's leaders to abandon any nuclear weapons plans

and see a future aligned with the ambitions of South Korea and China.¹⁹

By contrast to these discrete substantive interests, North Korea's leaders seem to place continued office as the paramount goal—for they can trust only their own ongoing authority—and independence and autonomy as corollaries. Of course, one could argue that any of these characterizations is inaccurate, or that additional factors need to be taken into account. And they all prefer economic advantage, which a political settlement is likely to bring. But what matters most is security for Japan and South Korea, unchallengable hegemony for the United States, avoidance of crisis for China and South Korea, and political survival for the North Korean leadership.

What is the path past impasse? Objections to China's reliance on change stem from concern that Pyongyang needs only time to build deliverable nuclear weapons. After all, didn't North Korea say in February 2005 that it had already built the bomb? On the other hand, there is no public confirmation, and no evidence of a test. Moreover, even though one nuclear weapon can be a terror device and cause terrible destruction if used, a handful of nuclear weapons is not militarily useful. No one could doubt that China's specialists concerned with North Korea have striven to know the actual state of North Korea's capabilities, though we cannot know if they have done so successfully. Still, China's posture—privileging avoidance of a crisis—taking time for change—is well-conceived, the best of a not-altogether-satisfactory lot.

There are some similarities between China's present stance and US expectations that led to the 1994 Agreed Framework. Both assume that with time and due effort a better result can be achieved than any achievable by force or hardened sanctions. Of course, there are three prime differences between 1994 and 2005: North Korea has had eleven years to work on missiles and to build or refine nuclear devices, the deal fixed in the Agreed Framework has

¹⁹ The 19 September 2005 accord and the 21 October announcement that Hu Jintao would visit North Korea for the first time since 2001 are consistent with such a view of China's expectations. *The New York Times*, 22 October 2005.

come unglued with charges and countercharges from both sides, and there is a different US administration—one which has damned the Agreed Framework and depicted Clinton Administration policy as bribery and appeasement.²⁰ Rose Gottemoeller has called attention to the fact that the Agreed Framework’s operating result, the Korean Peninsula Energy Development Organization (KEDO), remains extant.²¹ Gottemoeller points out opportunities for peaceful nuclear cooperation between the United States and North Korea, a direction also voiced by former US Secretary of Defense William Perry to a San Francisco forum in July 2005. Whether there are sufficient complementarities on the table, and sufficient willingness in Pyongyang and Washington, remains to be seen; the past displays extraordinary obstacles to agreement..

Would acknowledged North Korean nuclear weapons derail the broader denuclearization agenda? Despite concern that the NPT is broken (as some say, citing Israel, India, Pakistan, North

²⁰ To make matters yet more difficult, the right-wing tail is wagging the Republican elephant, having established the post of “special envoy on human rights in North Korea,” independent of the arms negotiator, and then pressed for appointment of the envoy, reportedly against insistence by the Department of State that it would complicate the arms negotiations. “China Says North Korea Nuclear Talks Will Resume Tuesday,” *The New York Times*, 9 September 2005. Brinkley describes the new appointee, Jay Lefkowitz, as “an assertive, voluble former White House aide” whose appointment was made after “conservative Christian groups and other important supporters pushed the White House.”

²¹ Rose Gottemoeller, op-ed piece “The Process in Place,” *The New York Times*, 23 August 2005. She says, of KEDO, that “It has been derided by the Bush administration from the outset as a hapless giveaway that only encouraged the North Koreans to misbehave. Despite this sharp criticism, the Bush administration has not killed the organization outright. The current position of the Bush team is that the organization is in a holding pattern, pending developments with North Korea. The light-water reactor construction project has been suspended, but preservation and maintenance work at the site continues. According to the organization, referring to North Korea by the initials of its official name, the Democratic People’s Republic of Korea, ‘Suspension implies that KEDO and the D.P.R.K. will continue to observe the applicable provisions of the agreements and protocols concluded between them.’ ”

Cf. the KEDO website, which notes (April 2005) the “\$1.5 billion invested to date” and activities to “preserve and maintain” assets at the light-water reactor construction site while its original work is suspended.

<http://www.kedo.org/>

Korea, and a renewed White House dedication to nuclearism) the decadal rate of proliferation is ‘one or lower’ and there is no sign of a sharp increase to come. Moreover, the main argument for a small state to build nuclear weapons is also an argument for it to welcome global denuclearization.

That is a key point. But argument is not always rational, and logic not necessarily compelling. Additional weapon states makes achieving *simultaneity* of denuclearization more difficult. North Korea’s uncertain status and intentions do complicate the denuclearization agenda, but the states in North Korea’s neighborhood have strong incentives to resolve the case. Oddly, one could observe that a United States bent on diverting attention from denuclearization to ‘proliferation security’, and far from Korea, gains from an unresolved dispute. This is a perverse result, and any such intention would certainly be denied in Washington, but there is no doubt that Cheney’s and Rumsfeld’s Washington finds disarmament repugnant unless it is someone else’s disarmament.

Topical Issues

[6] The Missile Defense Problem

When Ronald Reagan declared plans for “National Missile Defense” in March 1983 it was instantly apparent that effective missile defense could defeat a country’s second-strike capability, and so undermine the vulnerability on which mutual deterrence relied. In fact, one of Reagan’s ostensible motives was to find a substitute for deterrence, which he saw as inherently immoral.

Moscow’s massive arsenal almost guaranteed that forces too large for ‘missile defense’ would remain after a strike on the Soviet Union. Not so for China. So there has throughout been a tension between US claims that MD was indeed *defensive*, and Chinese concern that it could be used to disarm China, and support an *offensive* US policy.

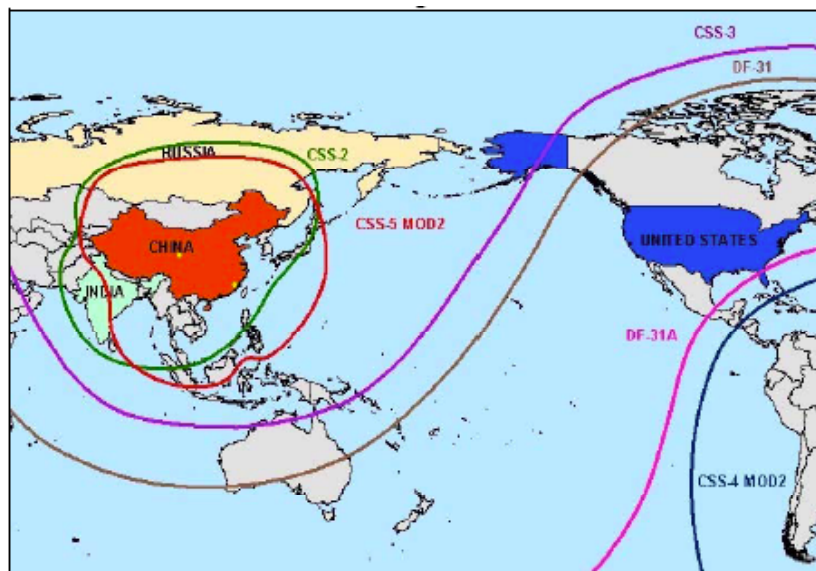
In recent years Washington has insisted that China should have no such fears. MD was directed against 'rogue states' and 'unauthorized or accidental launch'.

Now in July 2005 the head of the head of the US Missile Defense Agency, Lt. Gen. Henry A. Obering III, comes forward and says, explaining plans to expand the missile defense system to meet threats from the Middle East and China, that

What . . . we have to do is, in our development program, be able to address the Chinese capabilities, because that's prudent.²²

What Chinese missile capabilities does the United States take into account? According to the US Department of Defense, China is engaged in a significant modernization program, and the DoD illustrates vulnerabilities by displaying the range attributed to Chinese systems:

²² Ann Scott Tyson, "U.S. Missile Defense Being Expanded, General Says," *Washington Post*, 22 July 2005. In this same breakfast session with reporters General Tyson said of the system that "We have a better than zero chance of successfully intercepting, I believe, an inbound warhead." One presumes he thought that this was an accomplishment, though whether it would be regarded as such by those in defended cities remained to be seen.



Note: China currently is capable of targeting its nuclear forces throughout the region and most of the world, including the continental United States. Newer systems, such as the DF-31 and DF-31A, will give China a more survivable nuclear force.

The DoD does characterize China's force as a *deterrent* force, and its accounting of present and anticipated missile deployments confirms the small size of the present and near-term force:

Nuclear Deterrence

China is qualitatively and quantitatively improving its strategic missile force. This could provide a credible, survivable nuclear deterrent and counterstrike capability. It is fielding more survivable missiles capable of targeting India, Russia, virtually all of the United States, and the Asia-Pacific theater as far south as Australia and New Zealand. Beijing maintains a small strategic arsenal. Its stated nuclear weapons doctrine remains one of "no first use."

China's future strategic force will likely comprise enhanced silo-based CSS-4 ICBMs (currently deployed), solid-fueled, road-mobile DF-31 (initial operational capability 2005-06) and DF-31A ICBMs (IOC 2007-09), and sea-based JL-2 SLBMs (IOC 2008-10). China will also maintain a force of nuclear-armed CSS-5 MRBMs for regional contingencies. China currently deploys approximately twenty silo-based, liquid-propellant CSS-4 ICBMs, which constitute its primary nuclear deterrent. The Second Artillery also maintains approximately twenty liquid-fueled, more limited-range CSS-3 ICBMs to sustain its regional nuclear deterrent. The Second Artillery will likely keep this older missile in service until it is replaced by the more survivable, road-mobile

DF-31. China supplements the aged CSS-2s with solid-propellant, road-mobile CSS-5 MRBMs.

The introduction of the road-mobile DF-31-series ICBMs will supplement China's silo-based strategic force. The mobility of the new DF-31-class missiles will enable these systems to operate over a larger area, making them more difficult to locate and neutralize. The introduction of a new generation of SLBMs on China's new ballistic-missile submarine will provide an additional survivable nuclear option. Finally, replacement of the older, silo-based CSS-4 Mod 1 with the longer range CSS-4 Mod 2, coupled with the ongoing migration to mobile, solid-fueled systems will enhance the operational capabilities and survivability of China's strategic missile force.²³

Although Japan may be most interested in missile defense as a precaution against North Korean systems, China is watching closely how Japan has engaged with US plans for missile defense. Japan, in December 2003, agreed to deploy an elementary system, based on existing technology, has begun "joint technical research with the United States on a sea-based upper-tier system," and in December 2004 entered into a Memorandum of Understanding on "a general cooperation framework concerning BMD." The ostensible purpose of these steps is defensive, and Japanese public statements make the ritual claim that "[t]he BMD system now being built by Japan is entirely aimed at defending Japan and is not directed to any specific state or region."²⁴ One source of China's concern is fear of the synergism between missile defense and a 'counter-force strike' against China's missiles on the ground, in port, or at sea, for which missile defense—if it worked—would provide the guarantee that residual retaliatory missiles would not be able to reach their targets.

China also worries that 'missile defense' is just one step in US plans to seize control of the 'high ground' of outer space. A world in which orbiting US weapons systems coursed continuously overhead would pose a nightmare to sovereign states. With this in mind, China has pressed unsuccessfully for action at the Conference on Disarmament in Geneva to ban weapons in

²³ United States. Department of Defense. Office of the Secretary of Defense. *The Military Power of the People's Republic of China 2005: Annual Report to Congress*, pp. 28-29.

²⁴ Japan Defense Agency. *Overview of Japan's Defense Policy*, p. 11-12. May 2005. <http://www.jda.go.jp/e/publications/overview/english.pdf>

outer space. Nor is China alone in believing that US ‘space control’ plans are a step too far. Bill Graham, when Canadian foreign minister, said

The big red line we all have is the weaponization of outer space, which I believe would be immoral, illegal and a bad mistake. The fact of the matter is they will have established the principle, and they can’t guarantee they’ll have the technological superiority 25 years from now. And that’s going to be a problem for everybody..²⁵

All of this is rather hypothetical, but then the United States is spending vast sums on ‘missile defense’, and other countries naturally assume—however wrong they may be—that there is some rational purpose in what Washington is doing.

Washington’s position has been that ‘missile defense’ will not threaten China’s deterrent. But Obering says there are plans to do exactly that. Chinese officials charged with responsibility to sustain their deterrent’s credibility will, in response, place greater emphasis—time, money, priority—on techniques to counter missile defense. They cannot assume that Washington’s failure *so far* to demonstrate that missile defense works will guarantee that *unopposed* missile defense will never work. So they will pursue means to improve the likelihood of successful delivery of a Chinese nuclear weapon despite missile defense, such as saturating a target and employing sophisticated decoys,²⁶ and will explore ways to deliver nuclear weapons by means which missile defense does not address. After all, the ‘threat of retaliation’ does not have to mean *immediate* retaliation to be credible and effective.

If such trends emerge, they make not for mutual restraint but for technological racing, and introduce new uncertainties.

²⁵ *The New York Times*, 19 December 2002, citing an interview of Graham by *The Globe and Mail* (Toronto).

²⁶ Mark A. Stokes reviews Chinese discussions of decoy deployment and maneuverable reentry vehicles, issues in the purview of the China Academy of Launch Technology (First Academy) of the China Institute of Astronautical Systems Engineering. Strategic Studies Institute. US Department of the Army. *China’s Strategic Modernization: Implications for the United States* (Carlisle, Pennsylvania: September 1999), p. 89.

<http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB74.pdf>

Missile defense complicates deterrence, and as many critics have observed invites a new form of arms race. While it also complicates paths to zero, missile defense does not alter the calculus of interests in denuclearization. Or one could say it adds a good reason, in that it would spare monies otherwise spent.

[7] *Secrecy*

How could some states' penchant for secrecy be reconciled with ZNW's need for transparency and on-site inspection?

China and North Korea have inherited traditions of secrecy and one-party governance behind closed doors. Secrecy colors North Korea's relations with Japan and the United States, which fear North Korean intentions. An effective non-proliferation regime under the NPT and IAEA safeguards, on the other hand, requires that there be willing transparency, codified in the IAEA Additional Protocol. And by extension, a denuclearization regime—abolition of nuclear weapons and an ongoing prohibition—will require that states be sufficiently open to assure others that they are in compliance.

Consider 'state secrets'. The very concept assumes that if others know something, it will advantage them and disadvantage us, even imperil the state. But this is wrong, or at least 'right only in certain circumstances'. Certainly we can imagine cases in which keeping a secret is necessary—in the *strict* sense—to achieve a military or diplomatic objective, or is a prudent precaution against imperiling a military or diplomatic mission. Tactical information about the movement of forces on the battlefield is usually of that type, as are communications within a government about just what negotiating posture it will adopt in an oncoming conference. Detailed 'how-to' instructions for building a nuclear weapon may be appropriate state secrets, although this author believes it is more important that the public know how easily a crude uranium device can be built and detonated than that those facts be kept secret. But granted there are appropriate secrets, how is it that the idea of 'state secrets' is problematic?

States must share information if they are to assure each other that they do not have hostile intent. Ongoing mutual assurance offers the only proof against arming and war by misunderstanding. Unevidenced assurances, false representations, and deceit of course do nothing for security. Nor do gestures of assurance provide security if the other's intent is, when the time is ripe, to attack. The point is that *some military information, shared with others, makes for security*. The task is to decide what to share, and what must be withheld. If the issue is keeping a non-nuclear pledge, then the case for full access to sites and physical goods is compelling, while internal communications and documents are withheld.

Care has been given in drafting the INFCIRC/540 terms for IAEA on-site inspections, and drafting of analogous terms for inspection under the Chemical Weapons Convention. Critics cite shortcomings. Still, the texts show that regulated inspection can be agreed. As of 19 July 2005, the status of commitment to the IAEA Additional Protocol, for several states, was ²⁷

China	in force	2002.03.28
Japan	in force	1999.12.16
Russian Federation	in force	2000.03.22
South Korea	in force	2004.02.19
United States	signed	1998.06.12 ²⁸

²⁷ International Atomic Energy Agency. Safeguards Current Status (as of 19 July 2005). http://www.iaea.org/OurWork/SV/Safeguards/sir_table.pdf

²⁸ The Arms Control Association explains that "... the United States has not yet adopted the necessary implementing legislation for the Additional Protocol to become law. President George W. Bush transmitted the protocol to the Senate for its advice and consent on May 9, 2002. In his transmittal letter, Bush wrote that U.S. ratification of an Additional Protocol will 'greatly strengthen our ability to promote universal adoption' of Additional Protocols, which 'will contribute significantly to our nonproliferation objectives.'" Fact Sheet, "The IAEA 1997 Additional Protocol at a Glance." January 2005.

<http://www.armscontrol.org/pdf/iaea1997additionalprotocolataglance.pdf>

On 31 March 2004 the US Senate voted its 'advice and consent', usually the last step before presidential ratification. According to the US Defense Treaty Inspection Readiness Program of the Defense Threat Reduction Agency "[t]he U.S.-IAEA Additional Protocol is now awaiting presidential signature and deposit of instrument of ratification to enter into force."

http://dtirp.dtra.mil/tic/tic_ap.htm

[8] Free Passage

Would exercise of high seas and ‘international straits’ passage be assured, absent hegemonic insistence by the nuclear powers? Japan, after all, is entirely dependent on seaborne and airborne import and export, and China increasingly so.

Blockade and interdiction of shipping in the western Pacific has been an attribute of war already underway, not something to be prevented by nuclear threats. Not only is nuclear compellance untried, but it is difficult to imagine how actual use of nuclear weapons could free trade in an era of stand-off precision missilery, in which cargo ships are sitting ducks.

Nor is it clear that nuclear weapons would be useful—superior to ‘conventional’ weapons—against a blockading force. Again, that force could stand off, or operate undersea.

Of course a nuclear-armed state could exercise ‘first use’ and introduce nuclear weapons into a crisis centered on blockade and interdiction, but to do so would contradict all of the good reasons to avoid nuclear weapon use in the first place. In any case, to blockade is an act of war, so what is at stake—as in many of the hypothetical excursions on the Taiwan Strait—is whether any party judges it in its interest to go to war over simple differences. To date judgment has weighed heavily against doing so.

Conclusion: nuclear weapons are no useful guarantee of free commerce. On the contrary, nuclear weapon use would imperil that infrastructure on which seaborne commerce depends.

[9] The Proliferation Security Initiative

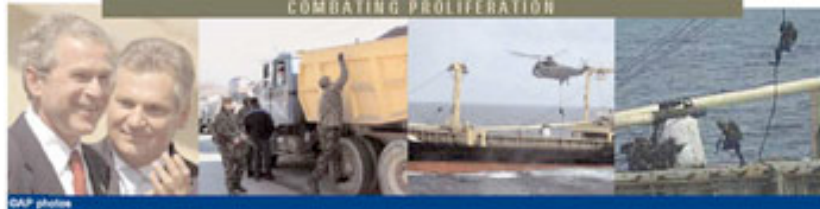
Is there a contradiction between ‘high seas freedom’ and the global nuclear non-proliferation regime?

The United States contends that an organized capability to intercept, inspect, and if necessary detain ships is required to enforce prohibitions against transfer of material and objects which would serve an illicit nuclear weapons program. Its Proliferation

Security Initiative, launched on 31 May 2003, extends to all ‘weapons of mass destruction’, not only nuclear weapons:

The Proliferation Security Initiative (PSI) is a response to the growing challenge posed by the proliferation of weapons of mass destruction (WMD), their delivery systems, and related materials worldwide. The PSI builds on efforts by the international community to prevent proliferation of such items, including existing treaties and regimes. It is consistent with and a step in the implementation of the UN Security Council Presidential Statement of January 1992, which states that the proliferation of all WMD constitutes a threat to international peace and security, and underlines the need for member states of the UN to prevent proliferation.²⁹

PSI “envisions partnerships of states working in concert, employing their national capabilities to develop a broad range of legal, diplomatic, economic, military, and other tools to interdict shipments of such items.”³⁰ By stipulating that “The PSI is not an organization. It is an activity ... ”³¹ the United States retains complete freedom of action and can negotiate initiatives with whom it chooses.



A legal basis for interceptions is made in agreements between the United States and major shipping flag states.

²⁹ US Department of State. Bureau of Nonproliferation. The text continues: “The PSI is also consistent with recent statements of the G-8 and the European Union, establishing that more coherent and concerted efforts are needed to prevent the proliferation of WMD, their delivery systems, and related materials. PSI participants are deeply concerned about this threat and of the danger that these items could fall into the hands of terrorists, and are committed to working together to stop the flow of these items to and from states and non-state actors of proliferation concern.”

<http://www.state.gov/t/np/c10390.htm>

³⁰ *Ibid.*, “Proliferation Security Initiative Frequently Asked Questions (FAQ).”
<http://www.state.gov/t/np/rls/fs/46839.htm>

³¹ *Ibid.*

In October 2005 the *New York Times* revealed US efforts to extend PSI to denial of overflight rights by aircraft said to carry weapons technology, an effort focused on North Korea. Robert Joseph, US Undersecretary of State for Arms Control and International Security, visited Uzbekistan, Tajikistan, Kyrgistan and Kazakhstan, urging them to join PSI.³²

Something akin to PSI would strengthen non-proliferation. Similarly, a ZNW regime would also benefit by provision of stop-and-search facilities. The problem with PSI is that it is not structured as a global measure, but is instead a *unilateral* policy with which other countries have been invited to engage. The United States represents PSI as responsive to law, but there is neither multilateral supervision nor accountability. PSI is consistent with Cheney-Rumsfeld preference for preemptive action under sole US control. In that respect it is a bad model for features of just and persuasive weapon denuclearization.

[10] *Civil Nuclear Energy*

As the North Korean and Japanese cases show, there is concern, wherever there is a civil nuclear power generation program, that fissile material will leak into a military program or be diverted to criminal entrepreneurs. Use of nuclear reactors, some fueled with HEU to power icebreakers and naval vessels has created another locus of fissile material, notably but not exclusively in Russia.

Our earlier notice of concern about accounting of fissile isotopes in plutonium reprocessing can be generalized to accounting of all fissile material in the nuclear fuel cycle and to

³² David E. Sanger, "US Widens Campaign on North Korea," *The New York Times*, 24 October 2005. "The new administration effort has three components, according to Mr. Joseph and other officials. The first is to block the sale of any bomb material or radioactive material from North Korea. The second is to beef up anti-proliferation efforts, including denying overflight rights. ... A third component of the effort is to step up 'counterproliferation,' which involves preparing nations to counter chemical or biological weapons, and work out ways to defend against a missile attack."

<http://www.nytimes.com/2005/10/24/international/asia/24korea.html>

state inventories of nuclear weapons (in the northwest Pacific weapons of China, Russia, and—when so deployed—the United States). Expanding civil sector use certainly enlarges and complicates the task of enforcing safeguards. Hydrocarbon fuel shortage and climate warming converge to argue for expansion of the number of nuclear reactors, a path France and Japan have taken and which China is now embarked upon.

While civil nuclear programs carry the risk of diversion to military purposes, states' retaining nuclear weapons—rejecting weapon denuclearization—does not prevent or deter diversion. The argument is sometimes made that having nuclear weapons in a few hands provides the means to strike at any country that sought to break the strictures of a nonproliferation regime. But that is not what has been done, because simple *possession* has not been judged so threatening that it has justified others to break the taboo against actually using nuclear weapons. Against criminal entrepreneurs there is, of course, no deterrence.

Conclusion: a thickening civil nuclear sector requires close and cooperative accounting, to ensure against diversion, but it does not weigh against weapons denuclearization.

[10] Resource Competition

Could fear of being denied food, fuel, or materials judged 'essential' foster a self-help posture in which nuclear-armed states saw a new mission for their forces?

Scholars largely agree that the 1941 US embargo of oil and oil products pushed Japan into war against the United States. Even if one believed that Japanese armed expansion and the 1941-45 Pacific War were not 'caused' by a 'Japanese need for resources' (especially oil, but also coal and rubber) there is no doubt that Japanese assertions and the US embargo appeared to confirm a role for resources.

As we've asserted above, it is hard to see how nuclear weapons could be used to *compel* access to goods. They could be used to punish a denial of access, but that is a different matter. And first use to punish refusal of resources, far from solving an economic impasse, would open an unprecedented global crisis,

with unpredictable consequences. Moreover, markets offer a practical, working alternative.

[11] Growing Reliance on Fragile Networks

Could the very networks—of communications and transportation—which today make for efficiencies, access to far goods and markets, instant exchange of information, assurance that others are not mobilizing to threaten, and a willingness to rely on expectations of future access, by their very vulnerability and fragility make the case for hegemonic guarantors, armed with the ‘ultimate weapon’?

Since 11 September 2001 discussion has focused on the exposure of nodes and networks—underground rail systems, aircraft, electricity grids—to attack by dedicated bands, making a point. If such bands—‘terrorist cells’—came into possession of nuclear weapons they could cause terrible destruction, and if they obtained radioactive materials they could cause panic by exploding a ‘radiological dispersal device’ in a crowded city. Such vulnerabilities are real, but it is hard to conceive any way in which a nuclear arsenal could be used to deter or destroy a ‘terrorist cell’. In fact, the argument runs the other way: as long as nuclear weapons exist, they are an attractive nuisance, a ‘terrorist cell’s’ craving, the perfect terror device.

Conclusions

Our starting point was the assumption that alternatives to *status quo* nuclearism were on the table, talked about, argued, objectives of policy, elements of the daily political agenda. How could denuclearization be achieved, and then sustained, with due regard for justice and security? And how do contemporary circumstances in the northwest Pacific bear on abolition and prohibition? Do they satisfy the prerequisites of denuclearization, or do they pose obstacles?

We observe that three states with a strong interest in the northwest Pacific—China, Russia, the United States—are nuclear

weapon states, and that a fourth—North Korea—has said that it has nuclear weapons. North Korea aside, the nuclear weapon states have made long-standing and deep commitments to nuclear weapons, and give no sign of giving up those weapons. So we have bypassed asking under what circumstances they would see global denuclearization in their interest, and have asked instead how some vexed relationships and policy challenges might affect their judgment. That is, we haven't searched for the conditions under which China, for example, might take a lead in translating her declaratory policy of 'complete prohibition and thorough destruction' of nuclear weapons into concrete initiatives designed to bring other nuclear weapon states to join in that aim. Instead we have looked at long-standing issues—North Korea, Taiwan, missile defense, common vulnerabilities—to assess how these bear on a denuclearization debate.

The perhaps surprising conclusion is that nuclear weapons are of little or no use to those who have them, in the episodes around North Korea and Taiwan. Of course, nuclear weapons can deter nuclear first use, and they could be used to destroy. But they do not appear to be useful instruments of policy. Russia and China resolved their extensive border disputes by negotiation, not nuclear weapons.

On the other hand, *fear that nuclear weapons might be used, or their use threatened*, colors three of the cases we examined, those of the Japanese Pu stockpile, uncertainty about North Korean capabilities and intentions, and the US drive for 'missile defense'. In each case the response, if fears were unanswered, could be to quicken an arms race and foster suspicion.

Nor did we see nuclear weapons as tools for non-proliferation. In considering nuclear proliferation, we instead focused on safeguards—especially rigorous accounting—and transparency. We should add that such merely technical means must be part of a committed and vigorous political will. We did not make the argument that nuclear weapons are also unsuited to counter chemical or biological weapons, but we could have done so; and there are many other means available to enforce prohibitions on CW and BW.

Nuclear weapons have nothing to do with the great political and social challenges of this century—climate change, public health needs, population demands, environmental degradation, calls for social justice. In that sense they are massively irrelevant. The northwest Pacific is as fully confronted by these great global issues as any other region.

One significant source of uncertainty lies outside the region: the United States. Bent on continuing to have a political role, and deploying especially naval forces, the United States figures in almost every important regional issue. And since January 2001 US policies have drummed to rhythms often out of step with its allies, partners, and collaborators. The GW Bush administration began in open defiance of the Korean policies of South Korea. It has opposed consensual initiatives on climate change: the Kyoto Protocol. It has pushed ‘missile defense’ despite strong Chinese and Russian objections. It has pressed Japan to show greater willingness to deploy military force abroad. It has declared China a hostile power. It has refused to negotiate directly with North Korea, and its most raucous voices have disturbed efforts to bring Pyongyang to the table. In insisting on the right of ‘preemption’, incorrectly understood, it justifies any intervention it chooses to make.

If there is one overriding prerequisite for denuclearization, it is that the nuclear weapon states respect others and believe, on good grounds, that their reasonable expectations about the future will be respected by others. Unilateralism, launching a ‘war of choice’, turning a blind eye to multilateral initiatives: all such moves make denuclearization harder. But as we have suggested, that may be just what those who form and animate the GW Bush administration wish: a world in which US nuclear and ‘conventional’ forces are unchallengeable, and the United States dictates policy.

24 October 2005