

## CHAPTER 9

### PRESIDENT BUSH'S GLOBAL NONPROLIFERATION POLICY: SEVEN MORE STEPS

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More than any other post-Cold War presidency, the Bush administration has emphasized nonproliferation enforcement. Certainly, its actions in the cases of North Korea, Iraq, and Libya have prompted the most significant debate about how to strengthen nonproliferation since India exploded its first bomb in 1974. This window of interest needs to be exploited to strengthen nonproliferation enforcement in as country-neutral a fashion as possible.

Toward this end, the United States has itself proposed a new, tougher set of nonproliferation rules. By far, the most important of these rules are the seven specific proposals President Bush made on February 11, 2004, in an address at the National Defense University (NDU). Properly understood, these proposals recommend a sounder reading of the Nuclear Nonproliferation Treaty (NPT)—one that is true to the NPT's original intent and that deflates mistaken interpretations of the treaty that have enabled North Korea, Libya, Iran, and, earlier, Iraq, to acquire much of what is needed to make nuclear bombs.

President Bush characterized these states' misguided views as a "cynical manipulation" of the treaty. He specifically referred to these states' efforts to twist the NPT's call for the sharing of peaceful nuclear technology into an *unqualified* right to "the fullest possible exchange of equipment, materials and scientific and technological information."

This it clearly is not. As the NPT's first article makes clear, no nuclear weapons state that is a party to the NPT (the United States, Russia, China, France, or the United Kingdom) is permitted to "in any way . . . assist, encourage, or induce any non-nuclear weapons state to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices." Similarly, the NPT's second article prohibits all

other members of the treaty from “manufactur[ing] or otherwise acquir[ing] nuclear weapons,” and from “seek[ing] or receiv[ing] any assistance in the manufacture of nuclear weapons.” Finally, the NPT requires all peaceful uses of nuclear energy to be safeguarded with the aim of preventing their diversion to help make bombs. When the NPT speaks in Article IV about “the inalienable right” of NPT members to develop nuclear energy “without discrimination,” it explicitly circumscribes this right by demanding that it be exercised “in conformity” with these articles.

For years, too little effort has been made to define what “in conformity” means. This is what President Bush dealt with in his February 11 address. He emphasized that nations seeking to develop peaceful nuclear energy have no need either for materials that can be used directly to fuel bombs—separated plutonium and highly enriched uranium—or for the uranium enrichment and plutonium reprocessing plants required to produce these materials. As such, he proposed that the world’s leading nuclear suppliers of lightly enriched uranium fuel (which cannot be used directly to make bombs) guarantee a steady supply of this fuel to nuclear energy-developing states that are willing to renounce trying to build enrichment and reprocessing facilities themselves. He further proposed that nuclear supplier states should refuse to sell enrichment and reprocessing equipment or technology to any state that does not already “possess full-scale functioning enrichment and reprocessing plants.”

Beyond this, the President proposed to strengthen international efforts to interdict illicit nuclear shipments and procurement networks; do more to reduce the accessibility to nuclear weapons-usable materials; and tighten procedures at the United Nations (UN) nuclear watchdog agency, the International Atomic Energy Agency (IAEA). Finally, President Bush urged that within a year, no nuclear supplier should export nuclear equipment to any state that has not yet signed the new, tougher IAEA inspections agreement known as the Additional Protocol.

All of these proposals help give teeth to the NPT’s prohibitions against the export and acquisition of nuclear weapons related capabilities and materials. They also constitute a useful extension of the calls by former Presidents Gerald R. Ford and Jimmy Carter

nearly 30 years ago to discourage the use of nuclear weapons-usable fuels for commercial purposes.

President Bush's proposals, though, should be viewed only as a start. In fact, several additional measures logically follow from the President's seven proposals and are needed to assure effective nonproliferation. Building on the Bush proposals, the United States, other nuclear suppliers, and like-minded states will also need to:

1. Refuse to buy any controlled nuclear items or materials from new states attempting to develop enrichment or reprocessing plants.

2. Update and strengthen IAEA controls to account for the new ways states could divert peaceful nuclear activities and materials to military purposes.

3. View large civilian nuclear projects with suspicion—including nuclear power and desalinization plants, large research reactors, and regional fuel cycle centers—if they are not privately financed or approved after an open bidding process against less risky non-nuclear alternatives.

4. Demand that states that fail to declare nuclear facilities to the IAEA (as required by their safeguards agreement) dismantle them in order to come back into full compliance and disallow states that are not clearly in full compliance from legally leaving the NPT without first surrendering the nuclear capabilities they gained while NPT members.

5. Support UN adoption of a series of country-neutral rules that track the above recommendations to be applied to any nation that the IAEA and the UN Security Council cannot clearly find in full compliance with the NPT.

6. Starting with the United States, but including Pakistan and India, formally get as many declared nuclear weapons states as possible to agree henceforth to not redeploy nuclear weapons onto any other state's soil in peacetime and to make the transfer of nuclear weapons-usable material to other nations illicit if the transfer is made for a purpose other than to dispose of the material or to make it less accessible.

7. Build on the successful precedent of Libya's nuclear renunciation by encouraging its neighbors—starting with Algeria, Egypt, and Israel—to shut down their largest nuclear reactors.

What do these ideas entail? How do they relate to the President Bush's proposals? To answer these questions, each suggestion is examined in turn.

1. *Refuse to buy any controlled nuclear items or materials from or to new states attempting to develop enrichment or reprocessing plants.* One of President Bush's proposals that has already been adopted by the G-8 is that nuclear supplier states not sell fresh fuel to nations that are unwilling to renounce reprocessing or enrichment, and that they refuse to sell any enrichment or reprocessing technology and equipment to states that do not already possess "full-scale functioning enrichment and reprocessing plants." Implementing these rules would certainly help establish a norm against the further spread of commercial reprocessing and enrichment plants. What would be even more effective in deterring new states from developing reprocessing or enrichment, however, would be first to restrict nuclear commercial intercourse with such states by getting the Nuclear Suppliers Group (NSG) membership, and as many other states as possible, to refuse to buy any nuclear commodities or services from them. Second, NSG members should back this rule by making it clear that they will cut off nuclear exports to any state that buys enrichment or reprocessing services or goods from these nuclear entrant nations.

Who would this rule hit hardest? Iran for starters. Nuclear officials there claim that they intend to export reactor fuel from their uranium enrichment and fuel fabrication facilities to other members of the NPT. If the United States is strict about what constitutes "full-scale functioning plants," Brazil and Argentina could also be affected. Brazil is about to launch a commercial enrichment effort at Resende. Officials there concede, however, that their effort would not be able to supply even 60 percent of Brazil's own fuel requirements until the year 2010. They have not even reached an agreement with the IAEA about the proper safeguarding of Brazil's enrichment facility. Still, Brazilian officials have already announced that they intend to export enriched uranium by 2014.

Certainly, if the United States and other like-minded nations grandfather Brazil's enrichment effort as being "full-scale and functioning" while demanding that Iran shut its facilities down, the hypocrisy would be more than just clumsy, it would undermine the

credibility of the President's enrichment and reprocessing restrictions for any other country. As for Argentina, it is considering offering reprocessing services to states that buy its large export research reactors.

Neither of these countries' nuclear programs could pretend to be economic without foreign customers. If the United States is serious about achieving the President's goal of freezing the number of states that have reprocessing and enrichment plants, pursuing this complement would be useful.

2. *Update and strengthen IAEA controls to account for the new ways states could divert peaceful nuclear activities and materials to military purposes.* President Bush also backed giving the IAEA more authority to do more extensive nuclear inspection by suggesting that the world's major nuclear suppliers agree to ban controlled nuclear exports to any state that does not sign the IAEA's Additional Protocol for nuclear inspections. Backing the Additional Protocol certainly has merit. The problem with merely backing its adoption, however, is such support fails to address the deficiencies of existing IAEA nuclear audits even with the Additional Protocol. These gaps also need to be addressed.

What are they? The first and perhaps most immediate IAEA shortfall is the agency's lack of near real-time surveillance to prevent the diversion of fresh and spent reactor fuel that could be used to make bombs. IAEA inspectors currently rely on cameras whose "take" of the areas in which fresh and spent fuel are stored is viewed every 90 days.<sup>1</sup> Because these cameras do not have a full view of these storage areas, though, it is possible for would-be bomb makers to divert fresh or spent fuel without the knowledge of the IAEA. If a state has declared or covert reprocessing or enrichment plants, these materials could be converted into weapons usable fuel in a matter of days or weeks – i.e., well before the IAEA could ever know any illicit activity had taken place. To help eliminate this danger, the agency should install real-time full-view surveillance cameras and keep one or more inspectors at the reactor site to keep these cameras running and to report if they should break down.

This, of course, will cost money. The logical parties to foot the bill are the users of the nuclear facilities being inspected. Toward this end, the IAEA's membership should agree to assess an additional

fee based on the actual level of use of each of the nuclear facilities being inspected that the users of these plants would be expected to pay in order to remain in full compliance with the IAEA safeguards obligations.

Another IAEA deficiency is its lack of any public record of the special nuclear materials it is supposed to be auditing. In fact, the IAEA does not publish the actual amounts of special nuclear materials it is supposed to be safeguarding, including separated plutonium and enriched uranium that could be quickly converted into nuclear weapons. The net result is that just how much dangerous nuclear material there is and how well it is being guarded is a matter of speculation. The original argument for keeping this information secret was that it might reveal some industrial secret about the production capabilities of particular states. After more than 3 decades of nuclear activity under the NPT and the events of September 11, 2001, this line of argument no longer seems tenable.

Finally, the IAEA needs to reevaluate its current list of direct use materials—i.e., those nuclear commodities that can quickly be converted into bombs and that, therefore, deserve additional inspections and control attention. Currently, the agency's list is limited to highly enriched uranium, separated plutonium, and mixed oxide fuel. Given all the news about Dr. A. Q. Khan's export of uranium enrichment technology and the enrichment programs in North Korea, Libya, and Iran, there has been some discussion of the need to expand the list to include uranium hexafluoride—the feed stock for uranium enrichment facilities. It might also make sense to include materials nations might use to boost fission devices: Tritium, lithium deuteride, and helium three.

3. *View large civilian nuclear projects—including nuclear power and desalinization plants, large research reactors, and regional fuel cycle centers—with suspicion if they are not privately financed or approved after an open bidding process against less risky alternatives.* Among the most important of President Bush's proposals were two that would assure fresh reactor fuel exports to nations that renounced attempts to enrich uranium or chemically separate plutonium from spent reactor fuel and ban reprocessing and enrichment exports to states that do not already have "full-scale functioning enrichment and reprocessing plants." As the President noted in his February 11 NDU speech, these

steps are essential to help prevent new states from making nuclear weapons fuel.

This is not because the IAEA or national intelligence agencies can detect covert reprocessing or enrichment activities in a timely fashion. As recent experience with covert enrichment and reprocessing activities in Iran and North Korea demonstrates, they cannot. Nonetheless, it is still important to make new reprocessing and enrichment activities illicit, if only to prevent discovered covert reprocessors and enrichers from legally excusing themselves by claiming—as Iran did—that they merely “forgot” to notify the IAEA of their activities.

Making the mere possession of such facilities illicit would clearly make exposed covert reprocessing and enrichment activities out-of-bounds. Yet, the only surefire technical safeguard against suspect nations quickly acquiring nuclear weapons is to prevent them from acquiring significant amounts of fresh, lightly enriched fuel or from generating significant quantities of spent reactor fuel. Lightly enriched uranium can be fed into a covert enrichment line to make a bomb’s worth of highly enriched uranium in a matter of days: Spent fuel can be covertly reprocessed to extract a bomb’s worth of plutonium just as quickly. Both spent and fresh lightly enriched fuel are part and parcel of most large reactors’ operations. This suggests that rules are needed not only to help make suspect reprocessing and enrichment-related facilities illicit, but to spotlight suspect nuclear reactors as well.

How might this be done? Fortunately, Adam Smith’s “invisible hand” of free markets and competition can help. As it turns out, many large commercial nuclear projects and all suspect nuclear projects in less developed nations are demonstrably uneconomical compared to less risky options. Nuclear power and desalinization plants have significantly higher capital costs than their non-nuclear alternatives. In poor, developing countries, the performance of nearly all these plants has been abysmal.

Given the surfeit of isotope-producing research reactors—there are roughly 140 in operation in over 40 countries worldwide—there is scant economic justification for the further construction of additional large research reactors: One can import medical, agricultural, and

industrial isotopes from existing machines and send one's scientists to these machines to do research much more cheaply than one can build a large research reactor of one's own. Virtually all of the existing research reactors, moreover, can be converted to run on non-weapons-useable fuels.

As for recent Department of Energy (DOE) and IAEA proposals to create regional reprocessing and enrichment parks, these too are a bad buy. Right now, we have more than enough enrichment capacity to supply lightly enriched fuel to all legitimate civilian reactors. If anything, the lack of demand would suggest the need to further downsize existing enrichment capacity. Reprocessing, meanwhile, is an uneconomical answer to a problem that does not exist: It makes much more sense from a security and economic perspective to store spent fuel in casks and to use fresh reactor fuel rather than to recycle weapons-usable plutonium for civilian reactor use.

What this suggests, then, is a simple tenet: Any large civilian nuclear project that is started before considering safer alternatives in an open international bidding process should be regarded as suspect. Certainly, Iran's power reactor and enrichment activities, as well as North Korea's entire program, Pakistan's import of Chinese reactors, Algeria's large research reactor, and Brazil's proposed uranium enrichment undertaking, would all fail this test. To make this guideline credible, however, the United States and its allies will have to apply it to their own civilian nuclear undertakings as well.

Further federal subsidies and funding of commercial-sized undertakings such as the Westinghouse AP1000, international Generation IV reactor and advanced fuel-cycle cooperation, the advanced hydrogen production nuclear reactor, and the ill-starred \$6 billion-plus mixed oxide plutonium disposition program should cease. Such cuts should not be seen as anti-nuclear, but rather as pro-free market. Certainly, if it made sense for Congress and Ronald Reagan to oppose federal funding of such large and potentially dangerous energy projects on economic grounds 20 years ago, it makes even more sense today – after 9/11, the new nuclear security imperatives, and the clear lag in international nuclear demand.

States, of course, are free to do as they please. However, nations that use public funds to support uneconomical nuclear projects should bear the full costs of the risks they are running. Certainly, if

they are in debt or need to borrow, they should recognize that their bad investments will be accounted for in the market's determination of their nation's sovereign credit rating. Uneconomical nuclear projects by definition, after all, lose money. More important, they all too frequently tempt their backers to try to make ends meet by selling parts of the project off to whomever is interested, including would-be bomb makers. Brazil whose nuclear program was running in the red in the 1980s, for example, saw advantage in striking a nuclear cooperative agreement with Iraq. Dr. Khan who needed cash and technology to complete a new missile project for Pakistan did the same with North Korea, Iran, and Libya. Pyongyang, meanwhile, also stretched for funds, is sharing its nuclear know-how with Iran. All of these nations are or have been subject to economic or trade sanctions as a result of these transactions. This, in turn, should also highlight the economic costs of pursuing such risky ventures.

4. *Demand that states that fail to declare nuclear facilities to the IAEA (as required by their safeguards agreement) dismantle them in order to come back into full compliance and disallow states that are not clearly in full compliance from legally leaving the NPT without first surrendering the nuclear capabilities they gained while NPT members.* The Bush Administration, by its actions and words in North Korea, Iraq, and Libya, has gone a long way toward establishing the rule that whenever a violating nation fails to properly declare nuclear facilities to the IAEA, it must dismantle them in order to come back into full compliance with its NPT obligations. What the United States should do now is to propose this requirement explicitly.

This would certainly be a helpful, country-neutral rule to have in place when dealing with countries like Iran. The United States should also make it clear that no nation that the IAEA and the UN Security Council is unable to clearly find in full compliance with the NPT will be allowed to leave the treaty legally without first surrendering all the nuclear capabilities it gained while a member of the NPT. The idea behind this is that one cannot enter into a contract, violate it, then announce withdrawal, and not be held accountable for one's misbehavior while a party to the contract.

Some U.S. government legal counsels have objected to this commonsense requirement in the case of the NPT out of fear that

adopting such a rule might somehow raise questions about the legality of the United States withdrawing from treaty obligations, such as the ABM Treaty. Their concerns, however, are unfounded: The United States is a law-abiding nation that complies with its treaty obligations. If it takes actions inconsistent with a treaty, it only does so *after* it is no longer a member of the agreement or because it has formally chosen not to be a party. This certainly was the case with the ABM Treaty.

5. *Support UN adoption of a series of country-neutral rules that track the above recommendations to be applied to any nation that the IAEA and the UN Security Council cannot clearly find in full compliance with the NPT.* The idea here would be to take advantage of something that, so far, has frustrated U.S. and allied diplomats – the IAEA’s and the UN Security Council’s reluctance in making definitive determinations of any nation being in violation and worthy of being sanctioned. Rather than wait upon either of these bodies actually to find a specific country in clear violation of the NPT and then try to get a consensus to sanction, it would make far more sense to delineate in country-neutral terms and in advance what the minimal consequences should be for any country the IAEA and the UN Security Council cannot clearly find to be in full compliance. This approach has the clear advantage of being country-neutral and of forcing the IAEA and the UN Security Council to reach consensus only if they want to prevent action.

6. *Starting with the United States, but including Pakistan and India, formally get as many declared nuclear weapons states as possible to agree henceforth to not redeploy nuclear weapons onto any other state’s soil in peacetime and to make the transfer of nuclear weapons-usable material to other nations illicit if the transfer is made for a purpose other than to dispose of the material or to make it less accessible.* One of the most nettlesome nonproliferation challenges President Bush discussed in his February 11 NDU speech was reining in the nuclear proliferation activities of non-NPT states such as Pakistan. Islamabad’s blatant proliferation activities technically broke no law. Even worse proliferation, however, is possible: There is reason to worry that a future Pakistan might transfer nuclear weapons to another country. Saudi Arabian officials are reported to be studying how they might acquire nuclear weapons from another country such as Pakistan.

What makes these plans plausible – besides Pakistan’s and Saudi Arabia’s close security ties – is that they could be carried out legally under the NPT. The treaty, in fact, allows nuclear weapons to be transferred to nonweapons state members (e.g., to nations like Saudi Arabia) so long as the weapons remain under the control of the exporting state. This loophole was explicitly inserted into the NPT in the 1960s by U.S. officials who were anxious to continue deploying U.S. tactical nuclear weapons on NATO’s and Pacific allies’ soil.

Today, keeping this loophole open no longer looks so attractive. In fact, the United States already has withdrawn its tactical nuclear weapons from foreign allied bases it had in the Pacific, including South Korea, Japan, and Taiwan. The reason is simple: With air- and sea-launched cruise missiles, nuclear-capable carrier-based aircraft, stealth bombers, and accurate submarine-launched and land-based intercontinental ballistic missiles available to quickly deliver nuclear weapons, there is no longer any U.S. or allied need to base tactical nuclear weapons on foreign soil.

The United States is now withdrawing much of its military from Europe. As these troops are withdrawn and as concerns about nuclear terrorism and proliferation grow, the rationale for keeping U.S. tactical nuclear weapons in places like Germany will become weaker, and the desire to prevent other states from redeploying their nuclear weapons onto other states’ soil will increase. To address this concern, it would be useful to close the loophole in the NPT that allows this.

The question is how. Some have suggested that we simply make these nations nuclear weapons state members of the NPT. The problem with this approach is that such a move would appear to reward states that have stayed out of the treaty and violated its tenets. A sensible alternative would be for the United States to work with as many nuclear weapons states as possible to get a formal agreement that, henceforth, no nation will redeploy nuclear weapons onto another nation’s soil during peacetime. The United States could also try to get other nuclear weapons states to agree to make the redeployment of such weapons or the transfer of nuclear weapons-usable materials illicit so long as the transfer was for purposes other than disposing of these materials or making them less accessible. Such a proposal might usefully be raised in the context of upcoming talks with the

Indian government regarding President Bush's promised reopening of U.S. nuclear cooperation.

Certainly, if the United States agreed to impose such limits on itself, it could help persuade other nuclear weapons states – including those that have not yet signed the NPT – to agree to do so as well. One also could match such diplomatic efforts with initiatives to get as many nonweapons states as possible to agree not to *receive* nuclear weapons in peacetime.

7. *Build on the successful precedent of Libya's nuclear renunciation by encouraging its neighbors – starting with Algeria, Egypt and Israel – to shut down their largest nuclear reactors.* President Bush rightly has spotlighted the success he has had in getting Libya to renounce its nuclear weapons program. The challenge now is figuring out how to establish this precedent as a practical nonproliferation standard that can be applied again in at least one other case. In this regard, neither North Korea nor Iran seem particularly promising prospects, since they are resisting cooperation – much less denuclearization.

The prospects, on the other hand, look much better closer to Libya itself. Specifically, now that Tripoli no longer has a nuclear program, it would seem reasonable for its neighbors to reciprocate by at least shutting down their largest nuclear plants.

Questions have been raised about Algeria's need for a second large research reactor. This reactor can make nearly a bomb's worth of plutonium per year; is located at a distant, isolated site; is surrounded by air defenses; and only makes sense if it is intended to make bombs. In fact, Algeria already has a second, smaller, less threatening research reactor in Algiers. Shutting down the larger plant at Ain Ousseara would save Algeria money and make everyone breathe easier.

Additionally, there is Egypt's large research reactor purchased from Argentina. It, too, can make nearly a bomb's worth of plutonium annually. Perhaps Egypt could offer to mothball this plant in exchange for Israel shutting down its large plutonium production reactor at Dimona. The latter is quite old and will require hundreds of millions of dollars to refurbish. Israeli critics opposed to the continuing operation of the Dimona reactor have publicly called for its shutdown in the Knesset.

Certainly, progress on any of these fronts would be helpful in addressing other proliferation problems in the Persian Gulf and elsewhere. At a minimum, they would help isolate Iran's nuclear misbehavior and establish a stricter norm that for the time being, no nation in the Middle East should operate a large reactor or commercial sized nuclear facility of any kind.

The point here, as with the other proposals above, is to build on the clear nonproliferation successes we now have. Certainly, if we do, we will be safer. If we do not, it is just as certain that we will be buying far more trouble than we can afford.

## **ENDNOTES - CHAPTER 9**

1. One of the ironies of the IAEA's current efforts to promote adoption of the Additional Protocol is that the agency is offering to reduce the number of times it will review its camera takes of fresh fuel storage areas to once a year for those nations it has determined do not have a covert nuclear weapons program. Given the intelligence surprises regarding covert enrichment activities that have taken place in Iran, Iraq, Libya, South Korea, and North Korea, one would think the agency would want to increase its inspections of such fuel.