Securing Irreversible IAEA Safeguards to Close the Next NPT Loophole

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Over time, states have endeavored to improve the effectiveness of the international nonproliferation regime. These efforts have included the adoption by the International Atomic Energy Agency (IAEA) of the Model Additional Protocol to comprehensive safeguards agreements, the tightening by the Nuclear Suppliers Group (NSG) of export criteria on sensitive nuclear fuel-cycle technology, and the adoption of UN Security Council Resolutions 1540 and 1887.1

One of the main outstanding loopholes that deserve prompt attention is the absence of a requirement for irreversible IAEA safeguards to remain in force should a state leave the nuclear Nonproliferation Treaty (NPT). Today, if Iran or any other NPT non-nuclear-weapon state withdraws from the treaty, its comprehensive IAEA safeguards automatically lapse under the terms of that agreement. Under Article X.[1] of the treaty, an NPT party has the right to withdraw, with three months’ notice, “if it decides that extraordinary events, related to the subject matter of [the NPT], have jeopardized the supreme interests of its country.” The model comprehensive safeguards agreement, which NPT non-nuclear-weapon states are required to adopt, contains no reference to safeguards implications after a state’s withdrawal from the NPT.

As a result, a state may withdraw from the NPT and use previously safeguarded nuclear materials...
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and facilities to produce nuclear weapons without violating any international treaty. This scenario is not hypothetical; it occurred after North Korea announced its withdrawal from the NPT in January 2003.

NPT members should therefore strengthen safeguards rules and practices by creating a legal requirement to maintain safeguards even if a state exercises its right to withdraw from the NPT.

Over the past decade, states and organizations have submitted proposals designed to close this significant loophole. For example, Luxembourg submitted a working paper on behalf of the European Union to the 2005 NPT Review Conference recommending that states “[a]ffirm as a matter of principle that all nuclear materials, equipment, technologies and facilities, developed for peaceful purposes, of a State Party to the Treaty on the Non-Proliferation of Nuclear Weapons remain, in case of a withdrawal from the Treaty, restricted to peaceful uses only and as a consequence have to remain subject to safeguards.”[2] Germany and France made similar proposals in 2004.

The UN Security Council attempted to address this issue in 2009, passing Resolution 1887, which urges states to “[r]equire as a condition of nuclear exports that the recipient State agree that, in the event that it should terminate its IAEA safeguards agreement, safeguards shall continue with respect to any nuclear material and equipment provided prior to such termination, as well as any special nuclear material produced through the use of such material or equipment.”[3] This resolution does not extend to domestically produced nuclear material, equipment, and facilities. Moreover, because it was not adopted under Chapter VII of the UN Charter, it is not legally binding.

None of these proposals have created an effective legal barrier to a state’s utilization of previously safeguarded facilities and materials for military purposes after its withdrawal from the NPT.

Fortunately, there is a simple way to close this major loophole without modifying the NPT, IAEA comprehensive safeguards agreements, or the NSG guidelines. In addition to their comprehensive safeguards agreements, states should ratify facility-specific agreements. These safeguards agreements are sometimes known as INFCIRC/66 agreements, after the IAEA information circular that provides the model language for them. In contrast to comprehensive safeguards agreements, facility-specific agreements do not lapse if the state withdraws from the NPT. Indeed, they can be terminated only if the recipient state returns or transfers to a third state all supplied nuclear material, equipment, and facilities previously subject to safeguards or if those items and materials are “no longer usable for any nuclear activity relevant from the point of view of safeguards or had become practicably irrecoverable.”[4]

This approach does not create a new safeguards standard, as the Model Additional Protocol did in 1997. Instead, it involves the simple adoption of an older type of safeguards. Therefore, it should face fewer political obstacles, would impose a negligible legal and financial burden on the state or the IAEA, and would require only a little extra paperwork at the outset.

For non-nuclear-weapon states, INFCIRC/66 agreements concluded with the IAEA are and would continue to be subsumed under existing comprehensive safeguards agreements. They would become operational only if the latter were terminated.

Irreversible Safeguards

The following proposals suggest ways in which nuclear-weapon and non-nuclear-weapon states can work toward ensuring that future nuclear transfers are conditioned on the implementation of irreversible safeguards. They can and should be pursued in parallel, as they are mutually reinforcing.

Interpreting NSG guidelines. As a first step toward building sustained momentum for this proposal, states could apply the irreversible safeguards principle only to uranium-enrichment and bulk plutonium handling facilities, including reprocessing plants, rather than all nuclear facilities. The NSG has already taken a step in that direction. Its June 2013 updated export guidelines declare that “suppliers should not authorize the transfer of enrichment and reprocessing facilities, and equipment and technology therefore, [unless] the recipient has concluded an inter-governmental agreement
with the supplier including assurances regarding non-explosive use, effective safeguards in perpetuity, and retransfer.”[5]

Discussions with officials from several NSG countries indicate that they intend to implement this NSG export provision by requiring under a bilateral nuclear cooperation agreement that the recipient state commit to concluding a facility-specific safeguards agreement in case its comprehensive safeguards agreement with the IAEA is terminated. If this does not occur, the supplier state would have the right to require the return of all material and equipment it had provided. In the meantime, the supplier state would have the right and obligation to safeguard by its own means any material and equipment previously delivered or that resulted from these deliveries.

Yet, it seems unrealistic to expect that a country deciding to leave the NPT and expel IAEA inspectors would agree to enter into a facility-specific safeguards agreement with the IAEA, return previously delivered material and equipment to the supplier state, or accept inspectors from the exporting state to conduct verification work that IAEA inspectors are no longer allowed to do. It would be much more effective to require states to conclude a facility-specific safeguards agreement with the IAEA before any materials or technology are transferred, rather than as a bilateral and limited fallback obligation after a state has withdrawn from the NPT. NSG members should formally agree to interpret the “safeguards in perpetuity” criterion as requiring the recipient state to have an INFCIRC/66 agreement in force with the IAEA before enrichment- or reprocessing-related equipment, technology, or expertise is transferred.

**Nuclear-weapons states leading by example.** In addition to pressing for an agreement among NSG states on how to implement “safeguards in perpetuity” on transfers of enrichment and reprocessing technology, nuclear-weapons states should lead by example when it comes to their own facilities. Currently, nuclear-weapons states have a voluntary offer agreement with the IAEA, under which they determine which facilities they will make available for safeguards. The nuclear-weapons states provide the IAEA with a list of these “eligible” facilities. In order to demonstrate commitment to the principle of irreversible safeguards, each nuclear-weapons state should agree to place any enrichment or reprocessing facility on its list under INFCIRC/66 agreements.

Under this proposal, enrichment facilities that are on the list of eligible facilities in nuclear-weapons states would be placed under irreversible IAEA safeguards, with the sole objective of providing the IAEA the right, but not the obligation, to verify that no highly enriched uranium is produced in those facilities. For reprocessing and other bulk-plutonium handling facilities, the IAEA would have the right, but not the obligation, to verify separated plutonium until it is incorporated into mixed-oxide fuel or conditioned for final waste disposal. Such a move by the nuclear-weapons states could have a positive impact on the outcome of the upcoming NPT review conference. It would permit them to demonstrate progress toward fulfilling their pledge, contained in the 2010 NPT Review Conference final document, of wider application of safeguards on peaceful nuclear facilities on their territory.[6]

Furthermore, with negotiations on a fissile material cutoff treaty stalled, this proposal would provide an alternate means of achieving similar goals and may enable the nuclear-weapons states to point toward concrete progress in this area.

**Non-nuclear-weapons states leading by example.** Non-nuclear-weapons states that are members of the NSG also should adopt the requirement for irreversible safeguards. In particular, those presently operating enrichment and reprocessing plants should lead by example and place all such facilities, which are already under comprehensive safeguards, under INFCIRC/66 safeguards as well.

By virtue of the current roster of NSG members, if this requirement could be achieved, nearly all non-nuclear-weapons states that are parties to the NPT and presently operate enrichment and reprocessing facilities would have endorsed this new mechanism. The only exception would be Iran; Argentina, Brazil, Germany, Japan, and the Netherlands would be covered.

It seems reasonable to expect that once Germany, Japan, and the Netherlands volunteered to place their enrichment and reprocessing facilities under irreversible safeguards agreements, it should be easier to convince Brazil and Argentina to follow suit, especially if the nuclear-weapons states adopted some corresponding measures.
Safeguards in Iran

Many experts deem Iran to be the country most likely to take advantage of the present NPT loophole. The foremost goal of the lengthy and difficult negotiations between Iran and six world powers is to ensure that Iran remains a party to the NPT in full compliance with its IAEA obligations.

These negotiations notwithstanding, if Iran withdrew from the NPT, one of the most effective legal instruments to delay the possible manufacture of nuclear weapons would be a requirement that it place all its present and future nuclear material and facilities under INFCIRC/66 safeguards. If such safeguards were in place, Tehran would not have the right to freely use for military purposes any of its enrichment facilities or stockpiles of nuclear material that were under IAEA safeguards at the time of its withdrawal. Instead, to manufacture nuclear weapons, it would have to decide between violating a treaty obligation or constructing new fissile material production facilities that would not be subject to safeguards. If Iran chose to use an existing and previously safeguarded facility to produce fissile material for weapons in violation of INFCIRC/66 safeguards, the UN Security Council would have a legal basis for action.

Because Iran has long been in noncompliance with its IAEA safeguards agreement and Supreme Leader Ayatollah Ali Khamenei has issued a fatwa forbidding the production and use of any weapons of mass destruction, Tehran should be persuaded to accept the extension of irreversible safeguards to all existing and future nuclear facilities as a confidence-building measure. This would likely be easier to achieve if all non-nuclear-weapon states presently operating enrichment and reprocessing facilities also agreed to voluntarily place their sensitive fuel-cycle facilities under irreversible safeguards.

Countering Potential Objections

Proposals to close NPT loopholes inevitably encounter objections on any number of grounds, whether legal, political, financial, or bureaucratic. Earlier articulations of this proposal raised two main objections.

Why should a state that has decided to leave the NPT and thereby chosen to be a “rogue state” abide by other legal agreements? Under Article X.1, an NPT state-party has the right to withdraw from the treaty. Such a withdrawal could be entirely legal and, under certain circumstances, be seen as legitimate. A withdrawing state should therefore not be considered a priori a rogue state. On the other hand, withdrawing unilaterally from an irreversible INFCIRC/66 agreement would indisputably constitute violation of an international legal commitment, thereby justifying a report by the IAEA to
the UN Security Council for action under Chapter VII of the UN Charter.

Considering the negative consequences that could be expected to follow from any notification of withdrawal from the NPT, a withdrawing country would likely hesitate to simultaneously breach an INFCIRC/66 agreement. Such a breach would lead to lasting international sanctions, which would provide grounds for intensive unilateral sanctions. Therefore, having such a safeguards agreement in place would constitute a significant disincentive for withdrawing from the NPT. If the withdrawing state wanted to develop nuclear weapons without violating INFCIRC/66 safeguards, it would have to construct new fuel-cycle facilities outside of safeguards. This complicates the task, giving the international community more time to respond.

Why should a state with no intent to leave the NPT sign an INFCIRC/66 agreement, as this makes little political sense? A long-term view is necessary when considering nuclear proliferation risks. In the real world, nothing is guaranteed forever. For instance, it is impossible to guarantee that countries presently operating enrichment and reprocessing facilities will never decide to withdraw from the NPT. Additionally, it would not be illegal for other states to construct enrichment and reprocessing facilities in the future, officially for peaceful purposes only but with the long-term objective of becoming a nuclear threshold state. Iran most likely did this when starting its enrichment program while at war with Iraq in the mid-1980s.

The NSG export criterion for enrichment- and reprocessing-related equipment requiring safeguards in perpetuity was adopted precisely to diminish that risk. To make this criterion effective, it should be interpreted by the NSG as requiring an INFCIRC/66 agreement to be in force prior to the transfer of nuclear material, technology, or expertise.

If some states perceive an international rule as illegitimate because it is considered a double standard or neocolonialist, this diminishes the likelihood that it will be respected. This is why it is necessary for all non-nuclear-weapon states that are members of the NSG and have operational fuel-cycle facilities to implement the irreversible safeguards principle first and lead by example. Moreover, because none of these states are assessed or perceived to have any intention of leaving the NPT and they in fact have strong nonproliferation bona fides, it should not be a political problem for them to place their enrichment and reprocessing plants under INFCIRC/66 agreements. If implemented in the future, these agreements would be subsumed under the states’ comprehensive safeguards agreements, with no operational cost to the state or the IAEA.

Some of these states may already be starting to recognize the importance of irreversible safeguards and the desirability of leading by example. A March 2014 working paper submitted by the Non-Proliferation and Disarmament Initiative to the Preparatory Committee for the 2015 NPT Review Conference states that if a country withdraws from the treaty, nuclear material, equipment, and technology that the country has acquired under the treaty’s peaceful use provisions “prior to withdrawal must remain under IAEA safeguards or fall-back safeguards even after withdrawal.”[7] Among the initiative’s 11 members are Germany and the Netherlands, which have enrichment plants on their territory. To demonstrate that they are ready to do what they say, these two European countries should be the first to place their enrichment facilities under INFCIRC/66 safeguards.

**Conclusion**

Leading by example remains an elusive objective, but it would be wrong to underestimate its usefulness. A lack of such leadership not only prevents advancement beyond the nonproliferation status quo, but also threatens to undermine the status quo. A continuing failure to lead by example will mean that the legitimacy and effectiveness of the NPT regime will erode slowly but surely.

The nuclear-weapon states should make the first move by placing their eligible enrichment and reprocessing facilities under INFCIRC/66 safeguards. That would make a similar step feasible for NSG non-nuclear-weapon states that operate enrichment and reprocessing facilities. Once these key countries have made a commitment to irreversible safeguards, other non-nuclear-weapon states might be more receptive to arguments that they should take this step.

The proposal presented above, which would close one of the most important remaining loopholes of
the NPT regime, has yet to gain traction. NPT states-parties should recognize that an answer for achieving irreversible safeguards has existed for decades in the form of INFCIRC/66 agreements.

As Jean Monnet once wrote, “Men accept change only when it is necessary; they see the necessity only when there is a crisis.”8 Hopefully, it will not require another major nuclear proliferation crisis before nuclear-weapon and non-nuclear-weapon states work together toward a lasting solution to close this major NPT loophole.

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ENDNOTES

1. UN Security Council Resolution 1540, adopted in April 2004, establishes the obligations under Chapter VII of the UN Charter for all member states to have and enforce appropriate legal and regulatory measures against the proliferation of nuclear and other nonconventional weapons and their means of delivery, in particular to nonstate actors. It closes gaps in nonproliferation treaties and conventions to help prevent terrorists and criminal organizations from obtaining nonconventional weapons. Resolution 1887, adopted unanimously on September 24, 2009, calls on countries to establish measures to reduce nuclear arms. It includes new provisions to deter withdrawal from the nuclear Nonproliferation Treaty, supports stricter national export controls on sensitive nuclear technologies, and calls on states to conclude safeguards agreements and an additional protocol with the International Atomic Energy Agency (IAEA).


8. Jean Monnet was a French diplomat who is regarded as one of the founding fathers of the European Union. The quote in the text above is translated from the French: “Les hommes n’acceptent le changement que dans la nécessité; ils ne voient la nécessité que dans la crise.”

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