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# CIVILIAN NUCLEAR COOPERATION AGREEMENTS

U.S. SENATE, COMMITTEE ON FOREIGN RELATIONS

ONE HUNDRED THIRTEENTH CONGRESS, SECOND SESSION

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**U.S. Senator Foreign Relations Committee Hearing  
Section 123: Civilian Nuclear Cooperation Agreements**

**U.S. Senator Bob Corker, R-Tenn., Ranking Member  
Opening Statement**

***\*\*\*Remarks Prepared for Delivery\*\*\****

- Chairman Menendez, thank you for agreeing to hold this important and timely hearing today.
- Not only have I requested that we hold this hearing for some time now, but nearly two years ago Senator Lugar sent a letter to then Chairman Kerry requesting this very same hearing.
- Now, two years later, we have the opportunity to examine and begin the process to weigh in on what shape U.S. policy in this arena should take and review – and cause to be more robust – the role that Congress plays in entering into these important decisions.
- I also want to thank the witnesses for appearing before us today. I am particularly interested in hearing from our private panel today, as we examine U.S. policy as it relates to civil nuclear cooperation agreements and the role they play in achieving U.S. nonproliferation goals.
- As I stated in a letter to Secretary Kerry on October 28 of last year, I am deeply concerned about the administration’s current policy – or rather lack of consistent policy – toward negotiation of civil nuclear cooperation agreements. The administration’s acceptance of enrichment and reprocessing (ENR) capabilities in some but not all new agreements with countries where no ENR capability currently exists is inconsistent and confusing, potentially compromising our nation’s non-proliferation policies and goals.
- The “gold standard,” where nations forswear domestic ENR capabilities, was finalized under this administration with the completion of the civil nuclear cooperation agreement with the United Arab Emirates. The UAE 123 agreement signaled the United States’ strong commitment to nuclear nonproliferation and established a high standard to ensure tight control of potentially dangerous technologies that can also be used for the foundations of a nuclear weapons program.
- The absence of a consistent policy weakens our nuclear nonproliferation efforts, and sends a mixed message to those nations we seek to prevent from gaining or enhancing such capability, and signals to our partners that the “gold standard” is no standard at all.
- I am equally concerned that the current administration has taken an “economics”/industry first, national security second approach to entering into 123 agreements.
- Also, we need to understand how the agreement with Iran relates to our other civilian nuclear agreements and our overall nonproliferation strategy.

- The agreement with Iran is a de facto sign-off on enrichment, and while we are not negotiating a 123 agreement with Iran, these negotiations will have implications for our global nuclear nonproliferation regime.
- As many of us may recall, during the review of the India 123 agreement several years ago, the administration at that time indicated that the value of the agreement, in addition to demonstrating a growing commitment to the bilateral relationship, was in the nature of contracts for our domestic nuclear suppliers.
- Those contracts have yet to appear for U.S. industry, likely never will appear, and we are left holding a bag of goods. To say many in Congress have buyer's remorse would probably be an understatement as it pertains to the concessions made in this agreement in order to "open the market" for U.S. industry.
- It was this administration, following in the disappointing footsteps of the India agreement that negotiated the first "gold standard" agreement between the United States and the UAE.
- This standard, welcomed by Congress, has since been set aside for a "case-by-case" approach that no longer seeks these strong commitments from our partners.
- In a 2012 editorial titled "Shall We Call it the Bronze Standard", the *New York Times* rightly pointed out the following with regard to the new, relaxed standard:

"American officials now say that asking for too much could cost America's nuclear industry valuable new business. Officials also insist that once American businesses have contracts in hand, Washington can still use its nuclear trade rules and suasion to urge countries signing nuclear deals to limit enrichment and reprocessing and meet other nonproliferation standards so there is no diversion.

But if the administration doesn't make curbing the spread of enrichment and reprocessing an explicit priority, it will never happen. As for the business rationale, the Bush and Obama administrations and the nuclear industry made similar claims when they cast proliferation concerns aside and gave India an overly generous nuclear deal in 2008. The Indians are still mainly buying from others because they have yet to institute a sufficient liability regime to protect American firms.

The blowback from not pressing others to accept the same deal as the U.A.E could also be significant. If Vietnam is given easier terms, charges will inevitably arise that Washington is tougher on the Arab world. If the provision is not in the agreement with Jordan or others in the Mideast, the U.A.E. has the right to renegotiate its deal."

- Within this committee, we have an important obligation to review and provide recommendations to the full Congress on all 123 agreements submitted for consideration under the Atomic Energy Act.
- This year, we have already passed an extension to the ROK 123 agreement, providing another two years for the administration to reach a new comprehensive deal. Maintaining uninterrupted civilian nuclear cooperation is important for U.S. political and commercial interests. And while I was pleased to support

this extension, I am concerned that the administration will not hold the line on advanced consent for enrichment and reprocessing.

- We are also presently asked to review the 123 agreement with Taiwan, which was submitted to our committee for consideration on January 7, 2014.
- While this agreement preserves the “gold standard”, I am concerned about the decision to make the agreement of unlimited duration thereby bypassing Congressional review of the agreement beyond this current 60-day statutory review period.
- I do hope that our government witnesses will address the reasons for concluding that this was the best approach, but caution that it should not become common practice.
- Later this year, we will be asked to review a 123 agreement with Vietnam. This agreement reportedly does not meet the “gold standard”. Rather it relies on a political side note that Vietnam will seek to meet its fuel requirements utilizing the international nuclear fuel market.
- If the Vietnamese are willing to buy their nuclear fuel on the international market, why aren’t they willing to agree to legally binding language forswearing enrichment and reprocessing technologies?
- With this great inconsistency across agreements, which standards can we expect the administration to reach for in negotiating new agreements with Jordan or Saudi Arabia?
- I also appreciate the opportunity to raise prospects for an enhanced Congressional role in the 123 approval process. While Congress provides an important check on the administration to ensure that our national security interests are placed first and are being met with each agreement, I am concerned that we will be increasingly marginalized if we do not explore changes to the current process for Congressional approval.
- The law governing the current Congressional role was written decades ago and has had little updating since. With a packed domestic agenda and a growing number of members with little to no background in civil nuclear cooperation agreements, the process by which an agreement goes into effect absent a resolution of “disapproval” opens the door for less and less review of these important agreements.
- We should examine whether it is time to call on Congress to provide a resolution of approval on all agreements prior to them becoming law, except perhaps in the case where an agreement reaches the “gold standard”. I welcome our witness’s comments and observations on this and other proposals to update the Atomic Energy Act.

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# United States Senate Committee on Foreign Relations

WASHINGTON, DC

**FOR IMMEDIATE RELEASE:**

January 30, 2014

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## **Chairman Menendez's Opening Remarks at Hearing on Civilian Nuclear Cooperation Agreements**

**Washington, DC** – U.S. Sen. Robert Menendez (D-NJ), Chairman of the Senate Foreign Relations Committee, delivered the below opening statement at today's hearing on civilian nuclear cooperation agreements.

His statement, as prepared for delivery, follows:

“This hearing will come to order. Let me first welcome our panelists today. We appreciate your participation.

This year, several agreements are set to expire: Taiwan, which has been submitted to Congress. And other countries, including Vietnam, are seeking to negotiate new agreements with the United States. The Vietnam agreement has been initialed and we are looking forward to reviewing it when it is submitted to Congress.

Over the last several years the administration has conducted and recently completed a policy review of 123 agreements. We are looking forward today to hearing the results of this review.

One question is how the review dealt with what has become known as the “Gold Standard.” Should the United States require countries – with which it enters into 123 agreements – completely forgo enrichment and reprocessing (ENR)?

The policy review appears to have settled on a “case by case” basis for the pursuing the “Gold Standard.” If the administration has settled on a case-by-case basis we would like to know what the criteria are for pursuing, or not pursuing, “the Gold Standard”?

This brings up the broader question as to whether the time has arrived to reconsider the underlying laws governing 123 agreements.

In the 1970s nonproliferation concerns prompted Congress to pass the Nuclear Non-Proliferation Act of 1978, requiring states to comply with much more robust nonproliferation preconditions before signing nuclear cooperation agreements with the United States. A lot of water has passed under the bridge since then. Iran and North Korea have sought to use the pretense of a civilian nuclear program to work toward nuclear weapons programs and the A. Q. Khan network spread nuclear technology across the globe.

Another important issue related to 123 agreements is the declining role of United States in the global export market for nuclear technology. Until the end of the Cold War, the U.S. was the dominant global supplier of commercial nuclear energy technology.

Over the last 30 years, we have seen a significant decline in the U.S share of the market and in our ability to promote national security objectives through peaceful nuclear cooperation. For Congress the question is how we can support our nuclear industry while at the same time up holding high nonproliferation standards.

Finally, Section 123 charges the Congress and the Senate Foreign Relations Committee in particular with important oversight duties. The President is required to submit all 123 agreements to the Senate Foreign Relations Committee.

Along with the agreement, the State Department provides an unclassified Nuclear Proliferation Assessment Statement (NPAS) to the committee and a classified annex prepared in consultation with the Director of Intelligence. It is then up to us to decide whether we believe the agreement meets the non-proliferation criteria of the Atomic Energy Act and as in the best interest of the United States.

Today I hope our panelists will help shed light on these issues and help us better perform of our oversight duties.”

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**Testimony of Assistant Secretary Thomas M. Countryman on  
Administration Policy Related to Agreements for Peaceful Nuclear  
Cooperation (123 Agreements)**

**Senate Foreign Relations Committee**

**January 30, 2014**

Mr. Chairman and Ranking Member:

Thank you for the opportunity to testify today before the Committee. The question of the appropriate role of our civil nuclear cooperation agreements in U.S. non-proliferation policy is an important one, and it is my privilege to be here to address it.

*Limiting the Spread of Enrichment and Reprocessing*

Since taking office, this Administration has made minimizing the further proliferation of nuclear weapons material a top priority. In order to do so, the Administration has undertaken a large number of different activities designed to reinforce our longstanding policy of minimizing the further proliferation of enrichment and reprocessing, or ENR, technologies and initiated new efforts to this end. We have many tools to achieve this end,



and for many years we've focused our efforts on raising global standards in this regard.

For example, in the Nuclear Suppliers Group (NSG), six years of effort culminated in the 2011 revised Guidelines establishing criteria for ENR transfers. These new criteria include full compliance by the recipient with the Nuclear Nonproliferation Treaty (NPT) and International Atomic Energy Agency (IAEA), safeguards; reporting on export controls to the United Nations Security Council's 1540 Committee; commitment to IAEA safety standards and adherence to accepted international safety conventions; and conclusion of an inter-governmental agreement with the supplier nation including assurances regarding non-explosive use, effective safeguards in perpetuity, and retransfer. Suppliers also undertook to avoid, as far as practicable, the transfer of enabling design and manufacturing technology associated with nuclear transfers. The NSG has committed to facilitate access to nuclear material for the peaceful uses of nuclear energy, and to encourage states, within the scope of Article IV of the NPT, to rely on the international commercial market and other available international mechanisms for nuclear fuel services that do not undermine the global fuel market.

We've also worked with our global partners to create incentives for states to rely on international markets for low enriched uranium fuel, including separate fuel banks established by the U.S. Department of Energy, Russia, the IAEA, and a fuel assurance initiative from the United Kingdom.

### *123 Agreements Policy*

The implementation of agreements for peaceful nuclear cooperation, or 123 agreements, is another tool we have to limit the further proliferation of ENR. As you know, 123 agreements contain many stringent nonproliferation conditions, making them the strongest civil nuclear cooperation agreements in the world in terms of nonproliferation requirements. Our 123 agreements require partner countries to apply full scope IAEA safeguards to non-nuclear-weapon states; require that all material and equipment transferred under the agreement and special nuclear material used in or produced therefrom, will be for peaceful purposes; require adequate physical protection of material transferred under the agreement; and grant U.S. consent rights over storage of the most sensitive materials, and over the enrichment, reprocessing, alteration in form or content, storage, and retransfer of U.S.-obligated nuclear material. With such high standards, it

follows that the more 123 agreements we conclude, the stronger the nonproliferation controls that will apply to global nuclear commerce. Consequently, it is in the national security interests of the United States to maximize the number of countries with which we conclude 123 agreements. Put simply, global security is enhanced through our 123 agreements.

Some have advocated an approach that would require all future U.S. 123 agreement partners to agree to legal obligations not to pursue ENR technologies from any source. We do not believe such a “one size fits all” approach is in our national security interests. This type of blanket requirement would reduce our ability to extend our strong nonproliferation norms to new parts of the world – norms that have a real impact in preventing proliferation. Instead this blanket approach would likely drive states with emerging nuclear power programs into the arms of suppliers with lower nonproliferation standards.

Moving forward on future 123 agreement negotiations, we will maintain flexibility in the structure of our agreements in order to meet the requirements of U.S. law and advance our primary objective of combating the proliferation of ENR technologies. The commitments we seek may take

a range of forms depending on the approach that best suits our primary policy objective of minimizing the further proliferation of ENR technologies.

*Our Policy Applied to Vietnam*

The text of the agreement we initialed with Vietnam in October is a good example of how our 123 agreement policy advances our objective of minimizing the proliferation of ENR technologies. In the text, Vietnam states its political commitment to rely on international fuel services and comply with the supplier controls adopted by the NSG rather than pursuing its own ENR facilities. This was an important step taken by the Government of Vietnam, because it is a public affirmation that domestic ENR facilities are not necessary. The scale of Vietnam's intended program does not warrant the investment, and international fuel cycle services are adequate to provide for its needs. I would note that this is also the case for the vast majority of states with emerging civil nuclear programs. The text of the 123 agreement with Vietnam is also fully compliant with all Atomic Energy Act of 1954 (AEA) requirements, including the requirement that Vietnam secure

our consent before it can enrich or reprocess U.S.-origin materials. The agreement does not provide any advance consent in this regard.

Our 123 agreement negotiations with Vietnam also demonstrate the additional follow-on nonproliferation benefits that can accrue when we enter into 123 agreements with new partners. Since we began negotiating, Vietnam has brought into force an Additional Protocol with the IAEA, begun participating in the Global Initiative to Combat Nuclear Terrorism, and ratified the 2005 Amendment to the Convention on the Physical Protection of Nuclear Material. We are also seeing greater interest from Vietnam in endorsing the Proliferation Security Initiative.

#### *Congressional Role/Taiwan*

In addition to outlining our 123 policy, you asked us to address three issues. First, you asked about the nonproliferation criteria each 123 agreement is required to meet. In 1978, Congress amended the AEA, thereby strengthening the legal requirements for 123 agreements. These changes addressed major issues associated with civil nuclear cooperation, including nuclear security and nuclear safeguards, ensuring that U.S. civil

nuclear cooperation agreements have the strongest non-proliferation requirements in the world. We feel that these requirements in our 123 agreements, in combination with the other tools I have discussed, are sufficient. With regard to the role of Congress in 123 agreements, we believe Congressional oversight has worked well over the years. As mentioned previously, the changes that Congress made in 1978 to the AEA have addressed the primary non-proliferation concerns about U.S. civil nuclear cooperation. To the fullest extent consistent with presidential prerogatives in the area of foreign diplomacy and the negotiation of international agreements, we will continue to keep Congress informed of our progress in negotiating specific 123 agreements, and address concerns that Congress may raise in the course of our 123 agreement negotiations with potential partners.

Finally, you asked us to address the proposed Taiwan 123 Agreement, recently submitted for congressional review. Under the Taiwan Relations Act of 1979, any programs, transactions or other relations conducted or carried out by the President or any agency of the United States Government relative to Taiwan are entered into by the American Institute in Taiwan, or AIT, and such agreements are concluded with the Taipei Economic and

Cultural Representative Office in the United States, or TECRO, as the representative of the authorities on Taiwan. As a consequence, this proposed agreement is between AIT and TECRO. Upon entry into force, this agreement would replace a similar 1972 agreement for peaceful nuclear cooperation.

The authorities on Taiwan have been long-standing partners of the United States in the peaceful uses of nuclear energy, and we have cooperated closely in developing their civil nuclear program. All their power reactors and their existing research reactor were supplied by U.S. companies. All fuel for these reactors is supplied by the United States. As the President noted in his message transmitting the AIT-TECRO 123 agreement to Congress the authorities on Taiwan, over the last two decades, have established a reliable record on nonproliferation and on commitments to nonproliferation. For example, theirs was the first nuclear power program to accept application of the measures of the Additional Protocol to IAEA safeguards agreements. These commitments were reiterated in the letter from TECRO to AIT provided at the time the proposed agreement was signed.

The AIT-TECRO agreement contains all the provisions required by section 123 of the AEA, as amended, but it also contains additional provisions. One important provision that the authorities on Taiwan reiterated as a legal element in the agreement is their long-standing policy not to seek enrichment and reprocessing technologies.

Also under the terms of the agreement, all nuclear supply to the authorities on Taiwan from any source is treated as though it is supplied by the United States and is brought under the terms and conditions of the agreement. This provision ensures, *inter alia*, that all nuclear activities on Taiwan are subject to the safeguards requirements of the existing IAEA safeguards agreement, which normally applies only to material, equipment, components, or information supplied under the 1972 agreement and any superseding agreement. It has been U.S. practice for over thirty years to allow foreign suppliers to use the 1972 agreement, under appropriate conditions, and to bring nuclear activities on Taiwan under that agreement, in order to maintain full scope safeguards on Taiwan. The new AIT-TECRO agreement ensures that this continues to be the case, establishing a full scope safeguards requirement for the authorities on Taiwan and bringing the full scope of



nuclear activities on Taiwan under the various consent requirements of the new agreement.

A third important feature is the indefinite term of the new agreement, unless the agreement is terminated by either of the parties on one-year's notice. A thirty-year term with rolling renewal for five-year terms has been the usual practice in recent U.S. nuclear cooperation agreements. In this case, however, the agreement provides more than just a vehicle for U.S. supply. According to its terms, the safeguards agreement among the authorities on Taiwan, the United States, and the IAEA remains in force only as long as the peaceful nuclear cooperation agreement between the authorities in the United States and the authorities in Taiwan, including any superseding agreement, remains in force. The new AIT-TECRO agreement will be such a superseding agreement. If the safeguards agreement is terminated the IAEA would have the right to apply safeguards to existing nuclear material and to produced special fissionable material; however, no new material or equipment could be safeguarded. Without a new safeguards agreement, all nuclear trade with the authorities on Taiwan that required safeguards would cease.

In short, the AIT-TECRO agreement is unique, one of the strongest 123 agreements that the United States has ever negotiated, and one that will ensure the continued ability of U.S. industry to work with its partners on Taiwan.

### *Next Steps*

Going forward, we will use our 123 agreement negotiations to achieve a broad range of nonproliferation commitments with our partners. Beyond these commitments, the conclusion of 123 agreements with new partners yields even more nonproliferation benefits: the ability to influence the partner's nuclear programs in such a way that it comports with the highest global standards of safety, security, and nonproliferation. When we establish new nuclear partnerships, our government and private sector experts build new relationships and open up new venues for cooperation across the spectrum of nuclear activities. This gives us the opportunity to guide and shape the policies and practices of emerging nuclear states, and these opportunities are only available to us if we forge new nuclear cooperation relationships.

## *Conclusion*

With these nonproliferation benefits in mind, we have crafted nuclear cooperation policies that are practical and pragmatic. Make no mistake, our policy is to pursue 123 agreements that minimize the further proliferation of ENR technologies worldwide. The United States wants all nations interested in developing civil nuclear power to rely on the international market for fuel services rather than seek indigenous ENR capabilities. These capabilities are expensive and unnecessary, and reliable supply alternatives are available in the global fuel cycle market.

We will continue to advance the highest possible nonproliferation standards worldwide, and at the center of these efforts is limiting the spread of ENR. Our 123 agreements are important tools in that regard, and the principles that we have established for their negotiation will maintain U.S. leadership in preventing the spread of nuclear weapons.

Mr. Chairman and Ranking Member, thank you.

**Testimony of Deputy Secretary of Energy Daniel B. Poneman**  
**Senate Foreign Relations Committee**  
**Hearing on Section 123: Civilian Nuclear Cooperation Agreements**  
**January 30, 2014**

Chairman Menendez, Ranking Member Corker, and distinguished members of the Committee, I appreciate the opportunity to testify before you today on the Administration's policies regarding civil nuclear cooperation.

I first worked on this issue as a summer intern in 1975 for my home state Senator, John Glenn of Ohio. That summer I was assigned to work on S. 1439, the Export Reorganization Act, which was designed to address some of the shortcomings in our system and strengthen our nonproliferation controls. That legislation eventually evolved into the Nuclear Non-Proliferation Act of 1978. So I have nearly 40 years of experience with this issue, including six years on the National Security Council (NSC) staff under President George H.W. Bush and President Bill Clinton, for whom I served as the first Special Assistant to the President for Nonproliferation and Export Controls.

At the NSC, I was proud to be part of the initial team under President Bush that negotiated the agreement with Russia to purchase 500 metric tons of highly-enriched uranium to be blended down into commercial reactor fuel. That 20-year deal concluded last month, having eliminated 20,000 bombs-worth of nuclear material, while providing one-tenth of America's electricity for the last generation. And I was proud to serve on the team under President Clinton that worked to reduce the proliferation threat emanating from North Korea's nuclear programs, an issue that we continue to confront today.

In short, for four decades I have done my best to prevent nuclear weapons or the materials and technologies that can be used to build them from falling into the wrong hands, and have benefited throughout from the wide degree of bipartisan consensus supporting U.S. nonproliferation policy. That consensus was well articulated by President Eisenhower in his historic 1953 "Atoms for Peace" speech, then institutionalized in 1957 with the creation of the International Atomic Energy Agency (IAEA), and ultimately universalized through the Nuclear Nonproliferation Treaty (NPT) of 1968, all of which seek to secure to humankind the benefits of the peaceful use of the atom while guarding against its misuse for military or other destructive

aims. Every President since Eisenhower has embraced these goals, each applying the flexibility of his own policies to achieve these goals.

This is indeed fortunate, since there is no more important task than succeeding in this daunting yet imperative national security mission. So when President Obama delivered his compelling vision to advance our global nuclear security in his 2009 Prague speech, he was following firmly in the footsteps of his predecessors in advancing a strong vision of global leadership in reducing nuclear threats. The Department of Energy (DOE), through its national laboratories and production plants, and in close partnership with the State Department, Department of Defense, Nuclear Regulatory Commission (NRC) and other U.S. government and international partners, has worked and will continue to work tirelessly to reduce this threat and enhance the nuclear nonproliferation regime.

In your letter, Mr. Chairman, you asked about the Administration's policy on 123 agreements. At the broadest level, it is and always has been U.S. policy that 123 Agreements should support U.S. nonproliferation objectives, to combat the threat that nuclear weapons and related materials and technologies should fall into the wrong hands. And, by their structure, 123 agreements serve that mission well. Indeed, our 123 Agreements are the world's strongest framework agreements for peaceful nuclear cooperation. No government requires more stringent nonproliferation conditions than the United States.

Consider the specific provisions of our 123 Agreements. The United States requires our trading partners to commit to the legal obligations contained in section 123 of the Atomic Energy Act. These obligations are purposely stringent and set the global standard for nuclear commerce. The U.S. Government requires non-nuclear-weapon-state partner countries to have in place IAEA safeguards over all nuclear materials in peaceful nuclear activities within the territory of such state, under its jurisdiction, or carried out under its control anywhere. Additionally, the cooperating party must guarantee that safeguards as set forth in the agreement for cooperation will be maintained in perpetuity with respect to all nuclear materials and equipment transferred pursuant to the 123 agreement and any special nuclear material used in or produced by such material and equipment. The United States requires guarantees that any nuclear material and equipment transferred be used only for peaceful purposes. 123 Agreements also require that the United States has the right to demand the return of any U.S.-

obligated material and equipment if a non-nuclear-weapon state detonates a weapon or abrogates its safeguards agreement. Partners may not retransfer any nuclear material or equipment supplied by U.S. companies without the permission of the U.S. Government. Partners may not enrich, reprocess, or otherwise alter in form or content U.S.-obligated material without U.S. Government permission. Partners also must adhere to U.S. requirements for physical security and storage of U.S. nuclear material and equipment.

It is therefore in the U.S. national interest to encourage other governments that are considering commercial nuclear programs and that are in compliance with their nuclear nonproliferation obligations to sign 123 Agreements with the United States. Our 123 Agreements set the global nonproliferation standard, thereby discouraging a nonproliferation “race to the bottom,” in which potential partners negotiate peaceful nuclear cooperation agreements with suboptimal nonproliferation controls.

The more 123 Agreements that exist in the world, the stronger the nonproliferation controls that will apply to all nuclear commerce. Consequently, it is in the U.S. national security interest to maximize the number of countries with which the United States has 123 Agreements.

There is nothing new in this logic. Indeed, a decade ago, I joined with then-professor Ernest Moniz and other colleagues to argue in favor of a global regime that minimized acquisition of enrichment and reprocessing technologies. Such a regime would achieve this minimization goal, not by legal diktat or diplomatic pressure, but rather by addressing the underlying concern in many countries to secure reliable nuclear fuel services from the commercial marketplace. This approach of acquiring services from the existing market would save nations billions of dollars in unnecessary investments in fuel cycle facilities, thereby becoming a far more attractive prospect. Of course, to be effective, these nuclear fuel service supply assurances would have to be credible – for example, they could only be revoked if the country in question violated its nonproliferation obligations, and not for other important but distinct issues of concern to the United States.

We want other nations to enter into 123 Agreements with the United States because our standards are the highest in the world – bar none. When we

enter into new 123 Agreements, we bring our nonproliferation standards to the partner country, and thereby enhance our national security. Conversely, when a state opts to enter into an agreement for civil nuclear cooperation only with another country but not the United States, then U.S. influence on that state's nonproliferation regime decreases.

Some people have mistakenly viewed U.S. economic interests in nuclear trade as somehow at odds with a strong nonproliferation policy. This is a false dichotomy. A strong U.S. commercial nuclear industry does not weaken our nonproliferation; on the contrary it strengthens U.S. nonproliferation efforts, since it ultimately provides the basis for countries to enter into 123 Agreements. Conversely, failure to reach a 123 Agreement with a potential partner country prevents the United States from extending the coverage of its nonproliferation controls, thus weakening our nonproliferation efforts.

The U.S. commercial nuclear industry is no longer dominant in the global marketplace. Over time, the U.S. share of global exports for enriched uranium and other sensitive nuclear materials declined dramatically. As reported in a 1987 GAO report, the U.S. share of the global non-communist market in enriched uranium declined from 100% in 1969 to 50% in 1987, Since that report, the decline in market share has continued to just 10 percent of the overall market in 2008. Diminishing U.S. market share means diminished controls over materials worldwide and diminished influence over the safety, security, and nonproliferation cultures of those markets.

It is important to remember that 123 Agreements are not the only tools in our nonproliferation arsenal. In addition, we have the NPT regime; IAEA safeguards, now strengthened by the Additional Protocol; U.N. Resolution 1540; nuclear fuel banks; the Nuclear Suppliers Group; as well as a number of nonproliferation conventions on such matters as physical protection, safety, and radioactive waste. All of these tools advance the U.S. national security interest in achieving the lowest number of sensitive nuclear fuel cycle facilities and technologies (specifically enrichment and reprocessing).

Mr. Chairman, you asked whether the Section 123 requirements need to be modified or updated. In our judgment, Mr. Chairman, the current requirements are strong, relevant, and effective. Indeed, in our view no country has more robust nonproliferation criteria, and the current requirements represent a major increase in rigor compared to those in effect

prior to the 1978 Nuclear Nonproliferation Act. The non-proliferation criteria of Section 123 should not lightly be changed. The U.S. Government has been persuading other countries to accept our existing rigorous set of constraints for thirty years, but we will undermine our ability to negotiate agreements and extend our strong nonproliferation controls if we keep changing the rules of the game and cause other countries to view the United States as an unreliable partner.

I would argue that changes made in 1978 were justified, as they addressed genuine weaknesses in the nuclear export regime. Indeed, they have been very successful in minimizing the proliferation of sensitive nuclear technologies like enrichment and reprocessing. While I understand well-meaning efforts to further constrain the acquisition and development of enrichment and reprocessing around the world, ratcheting up restrictions yet again will drive countries away from the United States and therefore out of the reach of U.S. 123 controls. A perfect policy that applies to zero percent of the market would be a perfect failure.

Mr. Chairman, you asked about the proposed Taiwan 123 Agreement. Recently, the President submitted this agreement to Congress for review. As required under the Taiwan Relations Act, the agreement was concluded between the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office (TECRO).

Entry into force of this Agreement constitutes an important step forward in our cooperation with the authorities on Taiwan in the field of civil nuclear energy. The United States supplies all of their power and research reactors, along with the fuel to power them. The AIT-TECRO 123 Agreement will allow this cooperation to develop further.

In the AIT-TECRO Agreement and the supporting side letter, the authorities represented by TECRO renew their commitment to strong nonproliferation norms, including giving legal weight to their existing policy not to seek enrichment and reprocessing technologies. The proposed Agreement prohibits the possession by the authorities on Taiwan of sensitive nuclear facilities and any engagement in activities involving sensitive nuclear technology in the territory of the authorities represented by TECRO. Assistant Secretary of State Tom Countryman will discuss the Taiwan 123 Agreement in greater detail. I simply want to reaffirm the basic point that the 123 Agreement with TECRO is another 123 Agreement that implements



the longstanding U.S. goal to use 123 Agreements as one means to achieve the lowest number of enrichment and reprocessing facilities around the world.

Finally, Mr. Chairman, you asked about the role of Congress in formulating 123 policy. As the Committee knows, the role of Congress has been vital in this area, as has been expressed through the Atomic Energy Act of 1954, as amended. Congress developed and enacted this comprehensive framework, institutionalizing its vital review and oversight function. The documentation required to accompany a 123 Agreement is extensive and requires a joint letter from the Secretaries of State and Energy, supplemented by separate input from the Nuclear Regulatory Commission and the Director of National Intelligence. That documentation is reviewed by both houses of Congress. We believe it is a good system, with a robust role for Congress. As long as the President retains his prerogatives in the area of foreign diplomacy, the non-proliferation criteria of Section 123 should not lightly be changed, for the same reasons our policy should not lightly be changed; the United States should be both strong and steadfast.

### **Conclusion**

The United States has the highest non-proliferation standards in the world. Our 123 agreements remain a highly effective tool in promulgating those standards – though they are far from the only tool. It is in our national security interests to assure that we can renew current and achieve new future 123 agreements.

Though the strategy for engaging with individual nations is tailored to the nation at hand, the underlying principle remains the same: we must do what is necessary to minimize the acquisition and development of enrichment and reprocessing technology and provide persuasive alternatives.

Well-intended changes to requirements for 123 agreements risk making the perfect the enemy of the good – arriving at a policy that is strong on paper and nowhere else. We run the risk of countries moving forward without us – choosing instead to partner with countries that have less stringent non-proliferation controls and losing the opportunity to help new partners and allies use peaceful nuclear power.

The Department of Energy remains committed to implementing President Obama's policies and goals on nuclear nonproliferation and use of civil nuclear cooperation, as President Eisenhower expressed 60 years ago – that cooperation in the peaceful use of nuclear power will bring together an international community committed to using “their strength to serve the needs rather than the fears of mankind.”

Thank you for the opportunity to address to committee, and I look forward to your questions.

## **Testimony for the Record**

**Marvin S. Fertel**  
**President and Chief Executive Officer**  
**Nuclear Energy Institute**  
**Committee on Foreign Relations**  
**U.S. Senate**  
**January 30, 2014**

Chairman Menendez and Ranking Member Corker, thank you for the opportunity to testify today on this important issue. I am Marvin Fertel, President and Chief Executive Officer of the Nuclear Energy Institute<sup>1</sup> (NEI). Our 350 members represent all aspects of peaceful nuclear technology, from nuclear power plant operators and reactor vendors, to major architect/engineering firms, to fuel suppliers and component manufacturers, to educational and research organizations. On behalf of our members, we appreciate the opportunity to provide testimony on U.S. peaceful nuclear energy cooperation to the Senate Foreign Relations Committee.

### **Industry view on Section 123 agreements**

U.S. nuclear cooperation and commercial engagement in other countries' new and expanding nuclear power programs advance global nuclear safety, security and nonproliferation. U.S. commercial involvement ensures the highest possible levels of nuclear power plant safety and reliability, maintains U.S. leadership in nuclear energy technology and maintains U.S. influence over global nuclear nonproliferation policy and practices. Noted national security experts agree that "one of our nation's most powerful tools for guaranteeing that countries acquiring this [nuclear] technology continue to use it exclusively for peaceful purposes is to ensure that the U.S. commercial nuclear industry continues to play a leading role in the international civil nuclear marketplace."<sup>2</sup>

In order to create American jobs and support critical U.S. foreign policy interests, the United States must be fully engaged in the global expansion of nuclear energy already underway. The U.S. nuclear energy industry:

- Supports efforts to limit the spread of uranium enrichment and used fuel reprocessing (E&R) technologies consistent with current U.S. policy. The United States has a broad portfolio of bilateral and multilateral policy instruments that can be used to advance this policy, including: Nuclear Suppliers Group guidelines, assurances of fuel supply, multilateral guarantees of fuel supply and used fuel disposition, bilateral commitments, and other assurances required by the Atomic Energy Act.

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<sup>1</sup> The Nuclear Energy Institute is responsible for establishing unified nuclear industry policy on matters affecting the nuclear energy industry, including regulatory, financial, technical and legislative issues. NEI members include all companies licensed to operate commercial nuclear power plants in the United States, nuclear plant designers, major architect/engineering firms, fuel cycle facilities, materials licensees, and other organizations and individuals involved in the nuclear energy industry.

<sup>2</sup> April 25, 2013, letter to President Obama from Senator William S. Cohen, Dr. James Schlesinger, Admiral Michael Mullen, Dr. John Hamre, General Brent Scowcroft, General James Jones, Senator Pete Domenici and Ms. Susan Eisenhower (attached).

- Opposes initiatives to condition U.S. nuclear cooperation on new terms that our potential partners will not accept and other supplier nations will not require. Each bilateral relationship is unique and complex. Whether and how E&R provisions should be included in a Section 123 agreement, beyond what is already in practice and in statute, should reflect the unique circumstances of each bilateral relationship. Pragmatism should continue to guide the United States as it negotiates Section 123 agreements. NEI supports the flexibility in the Atomic Energy Act that allows the Executive Branch to negotiate agreements based on the concerns and imperatives specific to each nation or region.
- Supports prompt negotiation of new and renewal bilateral agreements for peaceful nuclear energy cooperation. These agreements are essential for substantial U.S. nuclear exports. We are concerned that the Republic of Korea agreement has required a temporary extension to avoid a lapse and that the renewal Taiwan agreement was submitted for Congressional review so late that it may lapse as well. We also note that three agreements were allowed to expire in the past 21 months<sup>3</sup> and that two others will almost certainly expire by July of this year.<sup>4</sup>

Prompt negotiation of 123 agreements will allow Congress the necessary time to conduct deliberative and effective oversight. It will also avoid the uncertainty created by the “just in time” nature of new and renewal agreements that, according to foreign customers, casts doubt on the U.S. as a reliable supplier nation.

- Supports a proactive approach for the negotiation of Section 123 agreements with nations with new or expanding peaceful nuclear energy programs. It is in the U.S. national security, nuclear safety and economic interest to secure agreements early and with a broad set of partners rather than to sit idly by as these nations partner with other nuclear suppliers. Without agreements in force, we forfeit exports, jobs and commercial benefits, and we will fail to influence these programs in terms of their nuclear safety, security and nonproliferation norms.

## **The global nuclear market and U.S. market share**

Beginning with President Eisenhower’s “Atoms for Peace” vision 60 years ago, American expertise established the world’s largest nuclear energy program and fostered the use of this technology around the world. Our dedication to excellence maintains 100 U.S. reactors at world-class levels of safety and reliability. More than 60 percent of the world’s 437 operating reactors are based on technology developed in the United States. Our nuclear industry has the knowledge, experience and infrastructure to support nuclear facility construction, operation and maintenance around the world. In addition, U.S. firms are making major investments in technology development to continue their tradition of innovation. These investments include development of small modular reactors, advanced technologies for uranium enrichment, more advanced large reactors with improved safety features and advanced manufacturing techniques to improve quality and reduce costs.

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<sup>3</sup> Bangladesh (June 2012), Peru (April 2012) and Columbia (September 2013).

<sup>4</sup> Thailand (June 2014) and Norway (July 2014).

Today, there are 71 new nuclear power stations under construction worldwide, of which five are under construction in the United States. An additional 172 are in the licensing and advanced planning stages and virtually all of these plants will be built abroad where the demand for reliable, affordable and clean baseload electricity is growing. Electricity from nuclear energy will help economies expand and lift hundreds of millions from poverty while having a minimal impact on the environment. But with this growing nuclear market comes growing competition from other nuclear supplier nations, which can now provide a full range of products and services.

Over the past two decades, new supplier nations have entered the growing global nuclear market and multi-national partnerships and consortia have been formed to develop nuclear energy facilities. According to a 2010 GAO report, “while the value of U.S. exports of nuclear reactors, major components and minor components have increased, the U.S. share of global exports declined slightly” from 1994 to 2008.<sup>5</sup> Over the same period, the U.S. share in the fuel market declined sharply from one-third to one-tenth of the market.

The declining U.S. share of the global reactor, major component and minor component market is largely attributable to the growth of international competitors who began as suppliers to their domestic markets and over time expanded their offerings to the global market. For example, France’s AREVA and Russia’s Rosatom have steadily increased their presence in the global market. Although 11 of the reactors under construction today are U.S. designs, four are French and 16 are Russian.<sup>6</sup> One of the newest entrants in the global nuclear market is the Republic of Korea. In December 2009, Emirates Nuclear Energy Corporation awarded a multi-billion dollar tender to a Korea Electric Power Corporation-led consortium to build the first nuclear power plant in the United Arab Emirates (UAE). In addition, there has been an expansion of indigenous technologies developed for domestic markets. For example, 20 of the 71 nuclear plants under construction globally are Chinese reactors being built in China.<sup>7</sup>

As additional reactors are brought into service, a growing portion of the global nuclear market is nuclear fuel: uranium, conversion, enrichment and fuel fabrication. Over the past 20 years, economically attractive supplies of nuclear fuel have become available from an increasing number of supplier nations. Australia holds the most extensive identified resources, at 31 percent of the world’s total. In recent years, Kazakhstan has emerged at the world’s largest uranium producer, producing over 36 percent of global primary production in 2012. Conversion, enrichment and fabrication of fuel also operate as a wide-ranging international commercial market.

### **State of the U.S. commercial nuclear energy industry**

Although major components such as ultra-large forgings and reactor pressure vessels are no longer manufactured in the United States, the U.S. nuclear industry continues to manufacture a wide range of equipment, components and fuel for nuclear power plants around the world. U.S.

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<sup>5</sup> “Global Nuclear Commerce: Governmentwide Strategy Could Help Increase Commercial Benefits From U.S. Nuclear Cooperation Agreements with Other Countries”, United States Government Accountability Office Report to the Committee on Foreign Affairs, House of Representatives, November 2010.

<sup>6</sup> International Atomic Energy Agency, 2014.

<sup>7</sup> Ibid.

firms also supply the global market with high-value services, including site evaluation, engineering and construction, fuel supply and transport, expertise in plant operation, decommissioning and more. After a nuclear power plant is constructed, U.S. firms can remain engaged throughout its life, which can last half a century or more, thus having a physical presence at nuclear facilities and influence over safe operational practice.

For example, Westinghouse Electric Company, headquartered near Pittsburgh, Pa. employs nearly 13,000 people, including engineers, technicians and other professionals (8,000 in the United States) who support its global business to provide fuel, services, technology, plant design and equipment to electric utility and industrial customers in the worldwide commercial nuclear electric power industry. Four Westinghouse AP1000® nuclear power reactors are currently under construction in China. Westinghouse is in discussions to contract support for an additional eight plants, with more expected. Support of these follow-on projects employs significant quantities of U.S. content from high-end precision manufacturing to instrumentation and control systems.

GE Hitachi Nuclear Energy, headquartered in Wilmington, N.C., employs more than 1,500 skilled professionals in its U.S. operations. GE Hitachi designs, services and manufactures nuclear components and fuel for the U.S. and global markets, including Taiwan and Mexico. Nearly one fifth of nuclear reactors in operation around the world are based on GE's boiling water technology and GE Hitachi has made significant investments in advanced reactor designs and innovative uranium enrichment technology.

The U.S. nuclear industry does not just supply technology. For example, Curtiss-Wright, an American company that traces its roots back to the Wright Brothers' first flight, employs 10,000 skilled professionals with facilities in some 30 states, is a manufacturer of precision nuclear components such as reactor coolant pumps, advanced valves, and electrical components. These safety-critical components are produced to the highest quality and safety standards for customers in the United States and abroad. As with many nuclear suppliers, Curtiss-Wright's business is increasingly abroad where it supplies components to nuclear facilities around the world including China, Korea, Taiwan, Mexico, UAE and the UK. Roughly a quarter of Curtiss-Wright's nuclear energy business comes from international markets and this is expected to grow significantly in the coming years as nuclear construction outside of the United States accelerates.

In addition to large companies, small businesses also benefit from nuclear exports. For example, Precision Custom Components of York, Pa., employs 270 Americans to manufacture high-end specialized components such as reactor vessel internals and integrated head packages for the U.S. and international markets including China. Nuclear exports support manufacturing jobs in more than 30 states.

### **Section 123 agreements of current interest**

NEI and our members are grateful that this Committee recently approved an extension of the current Section 123 agreement with the Republic of Korea (ROK), and will soon consider renewal agreements with Taiwan and the International Atomic Energy Agency (IAEA), and a new agreement with Vietnam. Each of these agreements has significant potential benefits for

U.S. exports and U.S. jobs. For every \$1 billion in exports, between 5,000 and 10,000 U.S. jobs are created or sustained.

- **Republic of Korea.** South Korea is the world's fourth-largest generator of nuclear energy and a major global supplier in its own right. Nineteen of South Korea's 23 operating plants – and all of South Korea's power plants under construction, on order or planned – are based on U.S. technology.<sup>8</sup> South Korea's licensing of U.S. technologies and export of U.S. components, fuel and services have earned billions for U.S. suppliers. Significant U.S. content in the Korean APR-1400 power plant and other U.S.-South Korea supply relationships earned U.S. suppliers more than \$2 billion in the U.A.E. tender. That project alone is supporting thousands of jobs across 17 states.<sup>9</sup>
- **Taiwan.** Two General Electric nuclear energy facilities are under construction in Taiwan at Lungmen, and other U.S. companies provide equipment, services and fuel to Taiwan's six operating nuclear power plants. Fuel exports to Taiwan's reactors from AREVA North America in Richland, Washington, help support the more than 650 jobs at this facility. Renewal of the bilateral cooperation agreement will result in up to \$10 billion of U.S. exports.
- **IAEA.** The IAEA does not operate nuclear power plants, but the IAEA agreement is commercially significant because, in combination with other agreements, it enables U.S. nuclear energy trade with Mexico. Currently, Mexico operates two General Electric-supplied Boiling Water Reactors at Laguna Verde. In 2012, the Mexican government announced plans to explore expansion of its nuclear program with additional units at the Laguna Verde site.
- **Vietnam.** Vietnam is implementing an ambitious national plan to develop up to 10,000 megawatts of nuclear generating capacity by 2030 with the first reactors coming on line in 2020. Russia and Japan have already secured agreements to develop nuclear energy projects in Vietnam, while U.S. firms have been sidelined absent this important agreement. Conclusion of a Section 123 agreement with Vietnam has the potential to result in \$10-20 billion in U.S. nuclear exports.

### **Section 123 agreements ensure U.S. nonproliferation aims**

Section 123 agreements provide critical nonproliferation benefits. These include significant commitments to safeguard materials, to prevent material diversion for non-peaceful purposes, and to provide adequate security for materials. The agreements provide for U.S. consent rights over the enrichment, reprocessing and retransfer of U.S. materials. This means that obligations are attached to these materials, which include stringent nonproliferation assurances that these materials will not contribute to weapons programs.

Within this framework, Section 123 agreements ensure that U.S. partners agree to rigorous nonproliferation and nuclear security requirements as a prerequisite to nuclear cooperation with the United States. The nine U.S. requirements include prior U.S. consent for any enrichment or reprocessing of U.S. materials and, in post-Nuclear Non-Proliferation Act agreements, consent

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<sup>8</sup> "Nuclear Power in South Korea," World Nuclear Association, December 2012.

<sup>9</sup> Ex-Im Bank News Release, September 7, 2012.

for reprocessing of nuclear fuel that has been used in a U.S.-supplied reactor. The U.S. nuclear energy industry has always supported this approach.

U.S. nuclear energy cooperation is an essential element of the Nuclear Nonproliferation Treaty, which forms the basis of the global nonproliferation regime. Countries commit not to pursue nuclear weapons and, in exchange, are guaranteed support for their right to develop civil nuclear power and other peaceful uses of nuclear energy, subject to international supervision. The United States has relied on this framework for decades to advance its global nuclear nonproliferation agenda.

### **Limiting enrichment and reprocessing (E&R)**

The nuclear industry supports efforts to limit the spread of E&R consistent with current U.S. policy. The United States currently has in force 23 nuclear cooperation agreements covering 50 countries, Taiwan and the IAEA. All agreements negotiated since the Nuclear Non-Proliferation Act of 1978 provide for U.S. consent rights for enrichment or reprocessing of U.S.-flagged materials.

A unilateral and inflexible requirement that potential trading partner countries forswear their rights to E&R as a condition for a Section 123 agreement would have the perverse effect of undermining U.S. nonproliferation interests by significantly reducing the number of countries willing to engage in civil nuclear commerce with the United States.

Other nuclear suppliers – like Russia, France, Japan and South Korea – stand ready to engage in nuclear commerce with other countries, whether or not those countries have concluded a 123 agreement with the United States. As a result, the net effect of refusing to conclude 123 agreements with countries that are unwilling to renounce E&R would be to encourage them to do business with other suppliers, thereby foregoing the economic and national security benefits of commercial nuclear engagement.

When a country like the UAE is willing, in the context of a Section 123 agreement with the United States, to renounce E&R, the United States should include that commitment in the Section 123 agreement. But when a country, which otherwise demonstrates its intent to develop an exclusively peaceful commercial nuclear energy program, makes clear that it is unwilling to renounce these rights in a bilateral agreement with the United States, it would be self-defeating to forego the nonproliferation and other benefits to the United States of concluding a Section 123 agreement with that country.

Industry is pleased that Taiwan and UAE have committed not to develop E&R, but we believe they are special cases. Taiwan, for example, has minimal need for E&R because its fleet of nuclear power plants is small and will eventually be phased out under the current national energy policy. The United States had unusual leverage in negotiation of the renewal agreement because Taiwan relies on it to enable its nuclear trade with other supplier countries, and because of the important U.S.-Taiwan security partnership. For all of these reasons, we believe the Section 123 with Taiwan is not a realistic model for other countries.



## Conclusion

NEI believes that the global expansion of nuclear energy infrastructure provides the United States a unique opportunity to meet several national imperatives at the same time: (1) increasing U.S. influence over nuclear nonproliferation policy and practices around the world; (2) ensuring the highest possible levels of nuclear power plant safety and reliability around the world, by exporting U.S. advanced reactor designs and America's world-class operational expertise; (3) maintaining U.S. leadership in nuclear energy technology; and, (4) creating tens of thousands of jobs and maintaining a healthy manufacturing base for nuclear energy technology and services.

If U.S. exporters were able to capture 25 percent of the global market – estimated at \$500 billion to \$750 billion over the next 10 years – this would create (or sustain) up to 185,000 high-paying American jobs.

To maintain U.S. influence over global nonproliferation policy and international nuclear safety, the U.S. commercial nuclear energy sector must participate in the rapidly expanding global market for nuclear energy technologies (437 commercial nuclear reactors in operation around the world, 71 under construction, 172 planned or on order).

The U.S. nuclear industry is competitive, but we must be allowed to compete. This requires Section 123 agreements in place. The industry:

- Supports efforts to limit the spread of uranium enrichment and used fuel reprocessing (E&R) technologies consistent with current U.S. policy.
- Opposes initiatives to require new conditions for U.S. nuclear cooperation unilaterally that our potential partners will not accept and that other supplier nations do not impose. Pragmatism should continue to guide the United States as it negotiates Section 123 agreements.
- Supports prompt negotiation of new and renewal bilateral agreements for peaceful nuclear energy cooperation. These agreements are essential for meaningful U.S. nuclear exports.
- Supports a proactive approach for the negotiation of Section 123 agreements with nations with new or expanding peaceful nuclear energy programs, including the ROK, Taiwan and Vietnam. It is in the U.S. national security, nuclear safety and economic interest to secure agreements early and with a broad set of partners rather than to sit idly by as these nations partner with other nuclear suppliers. Without agreements in force, we forfeit exports, jobs and commercial benefits, and we will fail to influence these programs in terms of their nuclear safety, security and nonproliferation norms.

Engaging in nuclear energy markets allows the United States to promote several of its interests at the same time; disengagement is a net loss for safety, security and the U.S. economy. Without U.S. commercial engagement, the United States would have substantially diminished influence over other nations' nonproliferation policies and practices. U.S. technology and U.S. industry form a critical engine that drives U.S. nonproliferation policies.



April 25, 2013

President Barack Obama  
The White House  
1600 Pennsylvania Avenue, NW  
Washington, D.C. 20500

Dear Mr. President:

We write to underscore the importance of preventing nuclear weapons proliferation, and to caution against the adoption of policies that could inadvertently weaken the ability of the United States to continue to provide international leadership on this critically important issue.

For more than half a century, the cornerstone of global efforts to prevent nuclear weapons proliferation has been the “atoms for peace” formula. With very few exceptions, the countries of the world have accepted this formula. Countries that enter into it commit not to pursue nuclear weapons, and in exchange are guaranteed support for their right to develop civil nuclear power and other peaceful uses of atomic energy, and submit to international supervision.

The Atoms for Peace formula has been very successful. Access to commercial nuclear technology was not seen as a threat to the nuclear nonproliferation regime, but rather as a sign of the health of that regime and an essential means for implementing it. One of our nation’s most powerful tools for guaranteeing that the countries acquiring this technology continue to use it exclusively for peaceful purposes is to ensure that the U.S. commercial nuclear industry continues to play a leading role in the international civil nuclear marketplace. Here the news is not encouraging.

While the United States and one or two other countries had a near-monopoly on civil nuclear technology in the 1950s, today the list of countries actively competing in the international civil nuclear marketplace includes Russia, France, Canada, Great Britain, Germany, the Netherlands, Japan and South Korea. And it is likely soon that China and India will become active participants in the international nuclear marketplace. According to a November 2010 Government Accountability Office (GAO) report on nuclear commerce, the U.S. share of global exports of “nuclear reactors, major components and equipment, and minor reactor parts” fell from 11 percent to just 7 percent between 1994 and 2008. The U.S. share of global exports of nuclear fuel fell from 29 percent to just 10 percent over that same period of time.

This decline in U.S. market share translates to substantially diminished U.S. influence in such areas as nuclear nonproliferation and nuclear safety. As a result, the United States is in an increasingly weak position to unilaterally impose onerous requirements on potential buyers of civil nuclear technology, simply because buyers have so many alternatives to U.S. sources of supply. It follows that, in order to restore its nonproliferation influence around the globe, the United States Government must find ways to strengthen the competitiveness of the U.S. nuclear industry, and avoid policies that threaten to further weaken it.

We therefore urge that, as part of your export control reform initiative, streamlining of the process for licensing civil nuclear exports be made a top priority. We know that there are experts who

President Obama  
April 25, 2013  
Page 2.

argue that we should make access to American nuclear technology even more restrictive in the future. This would have the unintended effect of further diminishing America's competitiveness in the global nuclear marketplace. America's ability to lead the global nuclear nonproliferation regime will diminish steadily as America abandons the field.

Consistent with the Atoms for Peace policy framework, America restricts the right of other countries to buy from American nuclear suppliers unless those countries agreed to stringent security procedures and conditions (the so-called 123 process). Historically we have managed this process on a sensible case-by-case basis. If we adopt a much more restrictive approach, we will not prevent countries from acquiring nuclear technology, but instead will encourage nations to turn to suppliers that do not impose difficult standards. The non-proliferation regime is weakened in that circumstance.

We share your Administration's concern about the risks associated with the potential spread of sensitive nuclear fuel cycle technologies such as enrichment and reprocessing. But as our nation seeks to reduce these risks, we must be careful not to diminish America's influence in the international civil nuclear marketplace. America's nuclear industry exports are shrinking, and this is bad for non-proliferation policy.

The U.S. Government must recognize that the U.S. civil nuclear industry is one of its most powerful tools for advancing its nuclear nonproliferation agenda. It is critical to adopt policies that will strengthen that tool. Weakening it will merely cede foreign markets to other suppliers less concerned about nonproliferation than the United States.

Sincerely,



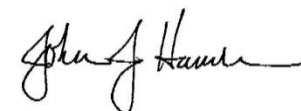
Senator William S. Cohen  
Former Secretary of Defense



Dr. James Schlesinger  
Former Secretary of Energy, Secretary of Defense  
and Director, CIA



Admiral Michael Mullen  
Former Chairman, Joint Chiefs of Staff



Dr. John Hamre  
Former Deputy Secretary of Defense



General Brent Scowcroft  
Former National Security Adviser



General James Jones  
Former National Security Adviser



Senator Pete Domenici  
Former Chairman Senate Budget  
Committee



Ms. Susan Eisenhower  
Chairman Emeritus, Eisenhower  
Institute



**Statement before the U.S. Senate Committee on Foreign  
Relations**

***“CIVILIAN NUCLEAR COOPERATION  
AGREEMENTS:  
ENHANCING OUR NONPROLIFERATION  
STANDARDS”***

A Statement by

**Sharon Squassoni**

Director and Senior Fellow, Proliferation Prevention Program

Center for Strategic and International Studies (CSIS)

**January 30, 2014**

**419 Dirksen Senate Office Building**

Mr. Chairman, Mr. Ranking Member, Members of the Committee, I would like to thank you for this opportunity to appear before the Senate Foreign Relations Committee to discuss U.S. policy on peaceful nuclear cooperation and specifically, the draft agreement with Taiwan recently submitted to Congress.

## **Background**

For almost seventy years, trade in nuclear materials, equipment, and technology has been heavily regulated by the United States and many other countries for one fundamental reason: supplies intended for peaceful purposes can be diverted to help make nuclear weapons. For almost a decade after the first atomic explosion, the United States discouraged the spread of any nuclear technology, advocating international control of nuclear materials and technology to deter or prevent their military use. The 1946 Atomic Energy Act expressly prohibited even exchanges of information until "effective and enforceable international safeguards against the use of atomic energy for destructive purposes" were in place. A few years later, the Soviet and British nuclear tests, as well as nascent nuclear weapons programs in other countries, underscored the futility of trying to keep the lid on this Pandora's box of nuclear energy, and a new approach was born: the Atoms for Peace program. President Eisenhower's December 1953 initiative boldly coupled engagement in the peaceful uses of nuclear energy with reducing the nuclear threat. The establishment of the International Atomic Energy Agency followed within a few years, but the Nuclear Nonproliferation Treaty took more than a decade to take shape.

Ensuring that nuclear energy is used only for peaceful purposes is a *sine qua non* of the nuclear nonproliferation regime that has grown up since then. To do this, the regime has focused on making diversion from peaceful purposes difficult -- from the legal agreements signed by recipients of technology (i.e., NPT and IAEA safeguards agreements) to implementation of accounting and inspections by the IAEA, supplier guidelines promulgated within the Nuclear Suppliers Group (NSG), multilateral and national sanctions, and finally, national export control regimes. Peaceful nuclear cooperation agreements are a mechanism for sharing the benefits of peaceful nuclear energy, but also for promoting national priorities in export control and nonproliferation. In the U.S. case, they establish the scope and guidelines for collaboration, including expectations for and demonstrations of nonproliferation.

The United States has been a leader in both the military and civilian uses of nuclear energy, but its dominance of the civilian market faded some decades ago. While early cooperation agreements envisioned the United States supplying all reactors and enriched uranium for small nuclear power programs in, for example, South Korea and even EURATOM, that kind of supplier relationship is no longer desired or possible. Today, three factors are leading to a reassessment of the role of U.S. nuclear cooperation policy: the need to renew many of the agreements renegotiated after passage of the landmark Nuclear Nonproliferation Act of 1978 (NNPA); the potential for new agreements with countries considering nuclear power for the first time; and a

desire to enshrine policy restrictions on sensitive nuclear technologies like enrichment and reprocessing.

### **Renewal of Existing Nuclear Cooperation Agreements**

The 1978 Nuclear Nonproliferation Act amended the Atomic Energy Act of 1954 in several important respects, but particularly by incorporating nine requirements in Section 123 that helped to ensure that U.S. nuclear cooperation would not be diverted for military uses. India's 1974 nuclear test certainly played a role in increasing concerns that there were not enough safeguards in place to ensure that peaceful nuclear atoms were not misused for weapons, but attempts by countries like Brazil, Pakistan and South Korea to openly acquire full fuel cycle capabilities from U.S. allies also played a role. The nine provisions, briefly, included requirements for 1. The perpetuity of safeguards on all material and equipment supplied; 2. Full-scope safeguards (safeguards on all nuclear material in a country) for non-nuclear weapon states; 3. Assurances that nothing transferred or subsequently produced from U.S. material, equipment or technology would be used for nuclear explosive purposes or for any other military purpose; 4. The right of return in the event a recipient state detonates a nuclear explosive device or terminates or abrogates an IAEA safeguards agreement; 5. Prior consent by the United States for any transfers; 6. Adequate physical protection; 7. prior consent by the United States for enrichment, reprocessing or other alteration in form or content of U.S.-supplied material or material used in or produced through the use of U.S.-supplied material equipment or facilities; 8. Approval in advance of storage facilities; and 9. Application of all the previous requirements by a recipient state to any special nuclear material, production facility or utilization facility produced or constructed by or through the use of any sensitive nuclear technology transferred under a peaceful nuclear cooperation agreement. A detailed analysis of these requirements and how they have been applied over time and how they can be strengthened is available in a report written by Fred McGoldrick and published by CSIS entitled "Nuclear Trade Controls: Minding the Gaps" (January 2013).<sup>1</sup>

These requirements provided a benchmark against which the U.S. Congress could judge the adequacy of peaceful nuclear cooperation agreements and were folded into export licensing requirements. Many, but not all, existing U.S. nuclear cooperation agreements were renegotiated after the NNPA was enacted (Section 404 of the NNPA required renegotiation of all existing cooperation agreements) and the few that remained outside are now up for renewal, including those with Thailand, Taiwan and South Korea. The agreement with Taiwan was submitted to this Committee on January 7, 2014 and the Senate recently voted to extend the existing South Korean agreement for two years.

Other agreements with approaching expirations include Norway (2014), China (2015), Egypt (2021) and Morocco (2022). The 1988 agreement with Japan has a thirty-year duration but specifies that it will remain in force thereafter (2018) unless terminated by either party with 6-months notice. Since the negotiation of the agreement with Japan, subsequent U.S. nuclear

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<sup>1</sup> Available at: <http://csis.org/publication/nuclear-trade-controls>

cooperation agreements have adopted increasingly creative approaches to duration, with the practical impact of reducing congressional approval responsibilities. Whereas agreements written prior to the NNPA did not commonly include language on extensions of duration (for example, the Taiwanese and South Korean agreements have simple 42 and 41-year durations, respectively), those following the NNPA all refer to either mutually agreed extensions, automatic 5- or 10-year rolling extensions, or in the case of the agreement with Japan and the draft agreement with Taiwan, indefinite extensions or indefinite duration. While mutually agreed extensions may require legislative action, the automatic, rolling and indefinite extensions seem designed to circumvent the congressional approval process in the long run.

### **The Proposed Agreement with Taiwan**

Earlier this month, the President submitted the Proposed Agreement for Cooperation Between the American Institute in Taiwan (AIT) and the Taipei Economic and Cultural Representative Office in the United States (TECRO) Concerning Peaceful Uses of Atomic Energy to this Committee.

The draft agreement supersedes a 1972 agreement (amended in 1974) signed with the Republic of China (the first such cooperation agreement dates back to 1955) that is similar to the 1974 agreement signed with South Korea. It provided for all enriched uranium fuel for Taiwan's reactors at the time (ChinShan I and II) with an option to seek outside sources if the then U.S. Atomic Energy Commission could not supply the requisite amount. It also allowed for reprocessing "in facilities acceptable to both Parties" upon a joint determination that safeguards could be applied. Taiwan would retain title to special nuclear material resulting from reprocessing. Although the Republic of China ratified the NPT in 1970, the agreement provided for U.S. safeguards and the application of IAEA safeguards under a 1964 trilateral (U.S., ROC, IAEA) that could be replaced by IAEA NPT safeguards once they came into effect. In light of what we now know about Taiwan's clandestine activities at the time, the fuel assurances on the front end and relative lack of restrictions on the back end seem too little and too late.

Although the unclassified Nuclear Proliferation Assessment Statement refers only to "the direction of the nuclear program of the authorities on Taiwan in the 1970s and 1980s" as having been "widely reported in the press," the classified version should provide this Committee with the details of a Taiwanese nuclear weapons program that reportedly began in the mid-1960s and continued somewhere into the 1980s, at least according to IAEA reports of undeclared plutonium activities and other sources. The plutonium program included a research reactor (from Canada), heavy water production, and plutonium separation. U.S. official documents released under the Freedom of Information Act detail repeated demarches to Taiwanese representatives by U.S. government officials in the mid-1970s to halt clandestine nuclear activities.<sup>2</sup>

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<sup>2</sup> National Security Archive Electronic Briefing Book No. 221, available at <http://www2.gwu.edu/~nsarchiv/nukevault/ebb221/>

With the establishment of U.S. diplomatic relations with the People's Republic of China in 1979, Taiwan's political status changed and although Taiwan is prevented from formally joining multilateral treaties and export control regimes, the authorities on Taiwan have voluntarily committed to adhering to all the major nonproliferation-related agreements and initiatives. A U.S.-Taiwan nuclear cooperation agreement is critical for Taiwan to engage in nuclear supply relationships with other countries, since the trilateral safeguards transfer agreement provides the functional equivalent of Taiwan's adoption of full-scope safeguards under the NPT. In other words, the 123 agreement with the United States is critical for Taiwan's nuclear power program as long as it intends to operate those reactors. From November 2011, authorities on Taiwan have declared they will phase out nuclear power eventually.

The current Taiwan agreement has a few notable characteristics: Article 7 provides that TECRO shall not possess sensitive nuclear facilities or otherwise engage in activities related to enrichment or reprocessing of material or alteration in form or content and it is the first agreement to specify an indefinite duration. Like the UAE agreement, there is a provision for advance consent to transfer irradiated source or special fissionable material to France or other countries as agreed for storage or reprocessing. In the Agreed Minute, the scope of the agreement specifically covers tritium, an item that is not found in many other agreements.

The Taiwan agreement has been heralded in some press reports as a victory for the "gold standard" – that is, for the United States requiring that its nuclear partners rely on the international market for fuel supply services instead of leaving future options open for domestic enrichment or reprocessing. As a country of unique political status that is overwhelmingly dependent on U.S. nuclear technology and trade, with a documented history of clandestine nuclear activities, it is hard to see how Taiwan would have otherwise reacted to a U.S. request for such restrictions. In light of Taiwan's envisioned phase-out of nuclear energy, it would also have been difficult to insist on leaving its options open for future domestic enrichment or reprocessing. Thus, while the Taiwan agreement may helpfully build a norm of countries declaring they will rely on the international market, it is hardly a bellwether for future agreements.

### **New Agreements with Countries and Policy Restrictions on Enrichment and Reprocessing**

The rising enthusiasm for nuclear energy of the past decade, tempered somewhat by the 2011 accident at Japan's Fukushima Daiichi nuclear power plant, has spurred interest in cooperation agreements with new nuclear partners, including those in the Middle East (the United Arab Emirates, Saudi Arabia and Jordan) and in Southeast Asia (Vietnam). Concerns about the spread of sensitive nuclear technology are particularly high in the Middle East in light of Iran's continued development of uranium enrichment technology. The conclusion of an agreement in 2009 with the UAE that incorporated language in Article 7 specifying that the UAE would not possess sensitive nuclear facilities on its soil or otherwise engage in reprocessing of spent fuel or enrichment of uranium raised expectations that the United States would require similar commitments by other nuclear partners in the Middle East, or even globally. In fact, the 1981 U.S. agreement with Egypt contains an agreed minute that any reprocessing that might in



future take place would be conducted outside of Egypt, which has the same practical effect of the UAE agreement (although Egypt did not make the same commitment for uranium enrichment).

Like Taiwan, the nonproliferation “win” in the UAE case may also have resulted from other mitigating circumstances. The UAE already had a policy not to seek domestic enrichment and reprocessing, whether to burnish its nonproliferation credentials as the first state in the Middle East with nuclear power or because it simply did not make economic sense. Although it would be useful for the UAE to enlist other countries in the region to create an Enrichment-&-Reprocessing-Free-Zone, other countries currently seeking nuclear power are slow to follow. For example, Saudi Arabia reportedly has signed a memorandum of understanding with the United States to that effect, but there is no evidence that Saudi officials are eager to tout their nonproliferation credentials openly or that such language would make its way into a formal peaceful nuclear cooperation agreement. Jordan has resisted U.S. requirements for similar restrictions in its draft agreement with the United States. Outside of the Middle East, Vietnam reportedly has agreed to rely on the international market for fuel cycle services but is not eager to put such language in a legally binding agreement.

New agreements, particularly with states that have few if any nuclear power plants operating, are not an unreasonable place to begin to strengthen standards for nuclear cooperation agreements. Since 2009, the policy debate about the “gold standard” has centered on whether, in the absence of a consistent policy that applies to all U.S. nuclear partners, the executive branch can persuade other countries that it is pursuing a politically neutral nonproliferation goal. Critics of the case-by-case approach believe that a consistent policy strengthens U.S. negotiating leverage because it cuts off debates in negotiations about prestige, national sovereignty or allies’ worthiness while proponents believe that an inflexible approach will result in fewer nuclear cooperation partners for the United States, with diminished nonproliferation returns.

U.S. policy for many years has proceeded on a “case-by-case” basis in order to preserve flexibility in negotiating, despite an extended period of review under the Obama administration. Recently, administration officials have reiterated their policy goal of discouraging the spread of enrichment and reprocessing technologies. However, this has been articulated as a comprehensive policy that extends beyond the scope of peaceful nuclear cooperation agreements and officials have suggested that other policy tools to achieve this objective may be preferable to incorporating specific language in 123 agreements. Acting Undersecretary of State Rose Gottemoeller told an Atlantic Council audience in December 2013 that legally binding requirements were too inflexible and that many tools were available, referring to the 2011 revised NSG guidelines on restraint in transferring sensitive nuclear technology and to the availability of fuel banks of low-enriched uranium for fuel. Privately, administration officials have suggested that Vietnam’s reported willingness to rely on the international market for nuclear fuel and the U.S. consent rights for enrichment or reprocessing are enough.

Clearly, the Obama administration should use multiple tools to discourage the spread of enrichment and reprocessing. In thinking about the broader nonproliferation tools that could be applied, however, it is important to step back and place this debate in context.

### **A Changing Landscape**

The proliferation landscape has shifted over time, both in terms of the technologies that are perceived as posing significant proliferation risks and the countries (or non-state actors) that may have clandestine intentions. For example, at the time of NPT negotiations, experts assumed that the tremendous costs, energy requirements and physical footprint of uranium enrichment plants (based on gaseous diffusion technology) would make clandestine enrichment very difficult if not impossible. This is certainly not the case today, as we have discovered with Iran and North Korea. In fact, the major difficulty is in detecting such clandestine enrichment. Looking forward, the commercial development of laser enrichment could shrink detection parameters even further.

Not all elements of the system adapt at the same time in the face of changing technical and/or political proliferation risks and some do not adapt at all. The NPT remains constant, while IAEA safeguards were strengthened in response to Iraq's nuclear weapons program in the early 1990s (i.e., with the adoption of the Additional Protocol in 1998). Although some observers might wish for stronger withdrawal provisions or penalties for non-compliance in the NPT, the tension among its states parties makes amendment a rather risky enterprise. The Nuclear Suppliers Group, for its part, responded relatively quickly to Iraq's noncompliance by finally implementing a requirement for full-scope safeguards for nuclear trade in 1992 that several members had adopted more than a decade earlier (e.g., Canada, Japan, United States, Australia). In response to revelations in 2004 about the A.Q. Khan nuclear black market network, the NSG was a bit slower: after seven years of debate, the NSG tweaked its restrictions regarding sensitive nuclear technology transfers in 2011.

Sanctions, on the other hand, can be quite flexible, for better or worse: some U.S. sanctions imposed on Pakistan and India after the 1998 nuclear tests were famously short-lived, while imposition of other sanctions was delayed until it was no longer possible to hold them off (e.g., declaring that Pakistan was in possession of nuclear weapons). In the multilateral realm, U.N. sanctions have generally been slower to ramp up but fairly flexible: in the case of Iran, the scope of sanctions has expanded from those targeted on the nuclear program and the Iranian Revolutionary Guard to wider petroleum-related investments and trade over the course of a decade. They could shrink substantially if Iran responds well to the latest negotiated deal.

National export control regimes, including policies and laws governing nuclear cooperation and exports, can also be flexible compared to other tools and powerful if harmonized with those of other countries. In the United States, the Atoms for Peace program required a big shift from the 1946 Atomic Energy Act to allow international cooperation. Section 3e of the Atomic Energy Act of 1954 called for "A program of international cooperation to promote the common defense and security and to make available to cooperating nations the benefits of peaceful

applications of atomic energy as widely as expanding technology and considerations of the common defense and security will permit." The scope of activities included: "1) refining, purification, and subsequent treatment of source material; 2) civilian reactor development; 3) production of special nuclear material; 4) health and safety; 5) industrial and other applications of atomic energy for peaceful purposes; and 6) research and development relating to the foregoing." The United States put in place bilateral research agreements, the first of which was signed in 1955 with Turkey. According to the Congressional Research Service, the "United States established its own program for promoting the peaceful uses of atomic energy with the idea that later they would be coordinated with and even undertaken by the International [Atomic Energy] Agency."<sup>3</sup> By the end of 1967, the United States had 34 agreements in place with countries or groups of countries (e.g., EURATOM); of these, about two-thirds were strictly for research.

Comparing U.S. nuclear cooperation agreements of almost fifty years ago with those of today, two changes are striking: We have changed partners several times (sometimes in reaction to bad behavior and sometimes not) and we have changed what we are willing to supply. This is fairly unsurprising over a span of fifty years, but provides a few lessons.

In 1967, the United States had agreements with some countries with which it does not now have agreements: Iran, Israel, Venezuela and Vietnam. Cooperation with the Soviet Union over the years was sporadic until a 123 agreement entered into force in 2010.<sup>4</sup> In addition to Iran and Israel, two others on the 1967 list of partner countries are still cooperating partners, but had at that time nuclear weapons programs that were subsequently abandoned: South Korea and South Africa.<sup>5</sup>

The nature of cooperation has also changed over time. First, the 1954 Atomic Energy Act allowed for cooperation in the production of special nuclear material. The Ford Administration adopted the first restraint policy in the transfer of sensitive nuclear technology and facilities in 1974, prohibiting export of reprocessing and other nuclear technologies, firmly opposing reprocessing in Korea and Taiwan, and negotiating agreements for cooperation with Egypt and

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<sup>3</sup> Ellen C. Collier, "United States Foreign Policy on Nuclear Energy," Library of Congress Legislative Reference Service, May 6, 1968, p. LRS-7.

<sup>4</sup> Collier, *op. cit.*, describes an arrangement in 1967 for cooperation in atomic desalination; in 1973, the United States and the Soviet Union signed a 10-year agreement for cooperation in fast breeder reactors, fusion, and fundamental research. See Mary Beth Nikitin, "US-Russian Civilian Nuclear Cooperation Agreement: Issues for Congress," CRS Report, RL34655, January 11, 2011.

<sup>5</sup> In the case of South Africa, the U.S. first signed a 50-year nuclear cooperation agreement in 1957. Cooperation lapsed in the 1970s because of evidence of South Africa's nuclear weapons program. When South Africa dismantled its nuclear weapons and joined the NPT in 1991, the United States negotiated a new cooperation agreement that entered into force in 1997.

Israel that contained “the strictest reprocessing provisions”.<sup>6</sup> In his 1976 statement on nuclear policy, President Ford called on all nations to join the United States “in exercising maximum restraint in the transfer of reprocessing and enrichment technology and facilities by avoiding such sensitive exports or commitments for a period of at least three years.”<sup>7</sup> This policy of restraint has endured despite the fact that the Atomic Energy Act itself does not prohibit sharing of enrichment and reprocessing technologies (although the NNPA amendments ensured that any production facilities transferred would be subject to all the nonproliferation requirements outlined in Section 123).

Second, for many years, the United States exported quantities of uranium enriched between 20% and 90% (in U-235), U-233 and plutonium routinely under nuclear cooperation agreements. In 1993, the U.S. Nuclear Regulatory Commission reported to Congress that the United States had exported 25 metric tons of HEU, at which time about 17 metric tons were still abroad. By 1978, the United States began a program (the Reduced Enrichment for Test Reactors program, now encompassed in the Global Threat Reduction Initiative Convert Program) to encourage the use of lower enriched uranium in research reactors abroad that continues today. The current policy of the U.S. government is to support the minimization of HEU in civilian nuclear commerce where technically and economically feasible.<sup>8</sup>

The examples above illustrate that nuclear cooperation does and must shift over time to reflect changing circumstances, whether or not laws change. The trend over time largely has been to tighten restrictions. Exceptions to that trend should be undertaken only in circumstances where a country overwhelmingly has demonstrated its commitment to nonproliferation. Even then, it is far better to adopt an approach that is justifiable for how it reduces the risk of proliferation than what was simply politically possible at the time.

The current justification for adopting a case-by-case approach to U.S. 123 agreements is the need for diplomatic flexibility. But the examples above should also suggest that a principled approach could weather political changes in governments much better and help minimize the costs of walking back less restrictive policies.

## **The Role of Congress**

Although peaceful nuclear cooperation agreements tend to be treated as foreign policy initiatives, they fall squarely within the Congress’ constitutional mandate to regulate trade. Activism on this issue by Congress has varied with the agreements: more controversial countries and capabilities have attracted more attention. Although early legislation may have

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<sup>6</sup> President Ford, “Statement on Nuclear Policy,” October 28, 1976, reprinted in *Nuclear Proliferation Factbook*, Senate Print 103-111, December 1994, pp. 48-62.

<sup>7</sup> President Ford, “Statement on Nuclear Policy,” op. cit., page 54.

<sup>8</sup> <http://www.whitehouse.gov/the-press-office/2012/03/26/belgium-france-netherlands-united-states-joint-statement-minimization-he>

envisioned a bigger role for Committees in vetting peaceful nuclear cooperation agreements (for example, in the 30-day period after initial transmittal), many are submitted as boilerplate agreements (the India agreement notwithstanding). The NNPA's adoption of a more streamlined approval process for new agreements, as well as a relatively short (15 days) approval process for subsequent arrangements (e.g., arrangements for partner countries to reprocess U.S.-origin material) has made significant congressional involvement less likely. The fact that 123 agreements compliant with Section 123 requirements enter into force unless Congress passes a law otherwise presents a serious bar for disapproval that subsequent legislation (e.g., 1984 Proxmire amendment to the Export Administration Act) has attempted to address without success.

Members of Congress may want to consider the following issues:

1. ***Approval of 123 agreements may become a historical relic:*** Administrations since the enactment of the 1978 Nuclear Nonproliferation Act have lengthened the duration of agreements, including bestowing rolling or indefinite extensions on certain nuclear cooperation partners (Australia, Canada, EURATOM, Switzerland and Turkey have 5-year rolling extensions; India has a ten-year rolling extension and Peru has one automatic 10-year extension). Japan's agreement from 1987 has such an "indefinite" extension while the Taiwan agreement duration itself is indefinite. Whether this is intended to minimize congressional interference by eliminating the need for congressional approval for renewals or whether this is the result of demands from cooperating partners is not clear. However, it seems similar to the Reagan administration's development of the practice of "advance consent" as a form of prior consent. In other words, it seems to contradict the intention of the law. Members of Congress may want to consider whether specific language regarding extensions or congressional review is desirable to protect its equities in ensuring that U.S. nuclear cooperation does not contribute inadvertently to proliferation.

2. ***The Atomic Energy Act does not reflect long-standing policies:*** There are several key nuclear nonproliferation policy initiatives that usefully could be supported and strengthened by incorporation into law.

a. ***Additional Protocol:*** The first is to require all new nuclear partners (and in renewal agreements) to have Additional Protocols in force before a 123 agreement can be approved. U.S. policy is to seek inclusion of language in 123 agreements but this could be strengthened legally. It should be noted that the NSG has not been able to make the Additional Protocol a condition of supply, despite the fact that many members do require it. Two particular holdouts are Argentina and Brazil, although there are others. Making the Additional Protocol a legally binding requirement could eventually help NSG adoption, in much the same way that countries adopted full-scope safeguards as a condition of supply before the NSG did. In addition, Congress might consider whether additional language in the AEA would be useful regarding the incorporation of improvements in the IAEA safeguards system into U.S. 123 agreements beyond the Additional Protocol. There has been talk of provisions that might amount to the "Additional Protocol Plus" in the case of Iran. Language requiring the executive branch to

report on status of IAEA safeguards improvements, particularly with respect to safeguards for reprocessing and enrichment plants, including an IAEA assessment of the effectiveness of current black-boxing techniques for enrichment technology could help inform the Congress and potentially lead to some on-the-ground improvements.

b. Interim storage over reprocessing: The United States as a matter of policy prefers interim storage over reprocessing, both for itself and its partners where proliferation or security risks might be a concern. And yet, recent 123 agreements do not reflect this. In the UAE and Taiwan agreements, advance consent is given for transfer to storage or reprocessing facilities (in third countries like the UK, France, or other). Although some flexibility with regard to the final destination for irradiated fuel may be desirable, U.S. policy clearly places priority on interim storage over reprocessing and this should be reflected in all future agreements.

### ***3. Implementation of certain Atomic Energy Act and 1978 Nuclear Nonproliferation Act provisions are weak:***

a. NPAS makeover: The 1978 NNPA requires the executive branch to submit a Nuclear Proliferation Assessment Statement with each new agreement or renewal agreement. If the current trend toward indefinitely extended agreements deepens, the ability of Congress to judge the non-proliferation worthiness of partner countries will diminish even more. Even if Members of Congress see no drawback to these agreements of indefinite duration, it may be worthwhile to mandate periodic NPASs from the executive branch. Separately, the Atomic Energy Act provides no guidance to either Congress or the executive branch on the kinds of issues that should be covered in an NPAS. Some of these documents (at least the unclassified versions) do little more than recite how the agreement meets Section 123 criteria. At a minimum, the Congress could require the executive branch to consult with Members on the general scope of Nuclear Proliferation Assessment Statements or about individual NPASs before they are written or more substantially, Congress could enact legislation to specify reporting requirements for NPASs.

b. Title V: Title V of the NNPA required the United States to conduct non-nuclear energy cooperation and energy assessment assistance with developing states. All countries need help pursuing low-carbon, renewable options for generating electricity. This Title should be funded, implemented and monitored by Congress.

c. International fuel cycle collaboration and multilateral approaches: A holistic and multilateral approach that reduces proliferation risks from nuclear cooperation and fuel cycle activities continues to elude the U.S. government. This, however, was not always the case. In the late 1970s, U.S. nonproliferation policies at both ends of Pennsylvania Avenue seemed to recognize that promotion of nuclear energy cannot come at the expense of nuclear nonproliferation. In the words of Henry Kissinger, "We must take into account that plutonium is an essential ingredient of nuclear explosives and that in the immediate future the amount of plutonium generated by peaceful nuclear reactors will be multiplied many times. Heretofore the United States and a number of other countries have widely supplied nuclear fuels and other nuclear

materials in order to promote the use of nuclear energy for peaceful purposes. This policy cannot continue if it leads to the proliferation of nuclear explosives. Sales of these materials can no longer be treated by anyone as a purely commercial competitive enterprise.”<sup>9</sup>

This dilemma is no longer painted so starkly. More often now, one hears the argument that if the United States adopts stricter controls, other states will step in to supply nuclear reactors and components with lower requirements, creating a lose-lose proposition for both U.S. nuclear industry and nonproliferation.

However, the nuclear industry has shrunk since the 1980s, and a truly zero-sum competitive market does not exist – there are many more interdependent suppliers than was the case decades ago. Rather than undercutting each other with government subsidies for nuclear deals, suppliers should be cooperating to encourage the sustainability of their enterprise. Fundamentally, this will require confronting nuclear waste challenges up front to provide favorable options for new recipients (like interim storage for spent nuclear fuel or space in a shared repository) and opportunities to invest in nuclear capacities they cannot themselves develop. A market-driven twist on collaborative fuel cycle approaches, if it is implemented in an equitable fashion among advanced and developing nuclear states, could overcome the inertia that has swallowed virtually all proposals to internationalize the fuel cycle and perhaps, finally, bring much-needed balance to the task of reducing proliferation risks.

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<sup>9</sup> Henry Kissinger, “An Age of Interdependence: Common Disaster or Community,” Address before the 29<sup>th</sup> United Nations General Assembly, September 23, 1974

**Putting Security First:  
Principles for Amending the Atomic Energy Act**

Testimony

By

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Presented before a Hearing

“Section 123: Civilian Nuclear Cooperative Agreements”

of the Senate Foreign Relations Committee

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Mr. Menendez, Mr. Corker, members of the Committee, I want to thank you for holding this hearing. The principles behind US nuclear export and control policies, nonproliferation, and our diplomacy efforts to reduce the spread of enrichment and reprocessing activities have been matters of keen interest for several years.<sup>1</sup> Generally, these matters have been discussed in the context of promoting nuclear power's further expansion overseas, of increasing the number of jobs or of concluding nuclear agreements and cooperation initiatives more generally. All of these considerations are important. They are not, however, the primarily lens that should be used for weighing these matters

I've served in the US Senate as military legislative aide to a senior member of the Senate Armed Services Committee, in the Pentagon as a deputy assistant secretary-level official responsible for nuclear proliferation matters, as a member of two Congressionally mandated commissions on strategic weapons proliferation threats, as a former consultant on proliferation issues to the CIA and the Commission on Strategic Posture of the US, and as a DoD contractor with a Pentagon office that details future threat assessments directly to the Secretary of Defense. In each of these positions, my key focus has been on clarifying the national and international security implications of the further spread of dual-use nuclear technology.

These security concerns should be the first business of our government. Certainly, the most profound contributions Congress has made to promoting and controlling truly peaceful foreign nuclear activities were premised on putting U.S. national security first. This was true in 1946 when Congress created the Atomic Energy Commission, in 1978 when it passed the Nuclear Nonproliferation Act, in the 1990s when it conditioned the Nuclear Agreed Framework with North Korea, and today as it considers legislation relating to our nuclear negotiations with Iran.

That said, the last time Congress revamped the Atomic Energy Act significantly was over 35 years ago. That overhaul, finalized in 1978, followed Taiwanese and South Korean efforts to acquire nuclear weapons and India's explosion of a "peaceful" nuclear explosive. India's bomb used US civilian nuclear technology and materials in violation of India's peaceful end us pledges to the US. Given these events, Congress demanded that any future US nuclear deals with states that, like India (which did not have all of its nuclear facilities under IAEA safeguards and were not members of the NPT), could only come into force with a Congressional joint resolution of approval.

That was three and half decades ago. Since then, Iraq used its safeguarded "peaceful" nuclear program to develop a nuclear weapons option; India and Pakistan broke their pledges (including several to the US) not to develop nuclear weapons or to test; North Korea developed a covert enrichment program, in violation of the Agreed Framework, and withdrew from the NPT even as it imported and perfected US light water reactor technology; Syria and Libya both violated their IAEA safeguards agreements and nearly completed an enrichment plant (in Libya's case) and a plutonium production reactor (in Syria's) covertly; and Iran imported foreign and US nuclear assistance (which began in 1957) under IAEA safeguards, developed a nuclear weapons option by enriching uranium claiming it is peaceful and now is negotiating to keep as much of its nuclear program as it can.

Most recently, and in light of the concerns that other states might inch closer to making bombs by enriching or reprocessing, the US insisted that the UAE and Taiwan foreswear engaging in these nuclear

activities in their nuclear cooperative agreements with the US. It now is trying to persuade South Korea to do the same.

This is a good deal of history – more than enough to suggest that there is a clear need for Congress to adjust again what kinds of agreements should be expedited under the Atomic Energy Act and which should require a Congressional joint resolution.

In trying to determine the specifics of any such adjustment, three general points are worth keeping in mind:

1. ***One should resist arguments that further Congressional involvement in reviewing and approving nuclear deals is either unnecessary or unhelpful.*** Nuclear industry's supporters and our own government negotiators clearly prefer that no additional Congressional review or voting be allowed. They argued against the Nuclear Nonproliferation Act (NPPA) of 1978 using the very same arguments they are now using for any additional Congressional involvement in nuclear deal making.<sup>2</sup> Passage of the NNPA, though, was critical to raise US nonproliferation standards and impose controls over the export of dual use nuclear goods. This, in turn, made it possible for the US to persuade all of the members of the international Nuclear Suppliers Group (NSG) to adopt similar restraints on their own exports. Without NSG adoption of these controls, the Proliferation Security Initiative would be unable to track the fulsome list of nuclear goods it does with so many other states. This would clearly be against our national security interests. Similarly, if as our government claims, we want other nuclear suppliers to promote the Gold Standard, we must be willing to set an example. Establishing a stronger international presumption against ever more states enriching uranium and reprocessing weapons usable plutonium certainly is unlikely unless Congress makes it clear to the Executive that if it brings new nuclear cooperative agreements to the Hill that don't meet the Gold Standard, they will not come into force until Congress votes to approve them because both Houses are persuaded that they are in the nation's security interest. Delay in voting on these matters should not be allowed.
2. ***Congressional review of nuclear deals ought to be considered beyond what has already been proposed in the House.*** Congress is currently frustrated by its inability to engage the Executive over what the final shape of a nuclear agreement with Iran might look like. It was equally frustrated a decade ago regarding the implementation of the nuclear Agreed Framework with North Korea. Congresswoman Ileana Ros-Lehtinen and Congressman Brad Sherman recently reintroduced draft legislation H.R. 3677 that the House Foreign Affairs Committee first approved back in 2011. It addresses a number of needed changes to the Atomic Energy Act of 1954. What it does not consider, however, is amending the act so that any nuclear understanding that the Executive might reach with a state that is in violation of existing United Nations resolutions relating to suspect nuclear activities, IAEA safeguards agreements or the NPT need to be approved by a joint resolution of Congress before it can come into force. The rationale for such a provision would be the same as for voting on nuclear cooperative agreements with states that fail to meet key nonproliferation criteria: Such agreements and their long-term national security implications should be treated not as executive agreements or as minor understandings that need only sit before Congress a number of legislative days before automatically coming into force. Instead, they should be treated as being as important as a treaty or, at the very least, as being at

least as important as a law.<sup>3</sup> Certainly, the national security implications of the US-Iran nuclear cooperative agreement of 1957 (which Congress did not even bother to hold a hearing on) now dwarfs the importance of benign trade agreements that Congress routinely votes upon. Finally, it would be useful to amend the Atomic Energy Act to require the Executive to routinely assess what the IAEA's ability is to prevent military diversions of the declared materials and activities it must safeguard and to detect undeclared covert nuclear efforts and materials. This would be in line with the recommendations of the Congressional Commission on the Prevention of WMD Proliferation and Terrorism and the most recent Defense Science Board report on monitoring nuclear threats.<sup>4</sup> These assessments should be shared with Congress and the IAEA. Additional routine assessments should be made of what our own intelligence system can detect. Without this baseline information, there is no way to know whether the risks of nuclear proliferation are growing or are under control.

- 3. *The primary point of departure for considering any revisions to the act should be security.*** Any business the US engages in can only be considered to be good business if it safe. If not, it's not just bad business, it's dangerous. We learned this after conducting nuclear commerce under lax conditions with India in the 1960s. We learned after sharing reactor technology with North Korea with no routine IAEA safeguards in place under the Agreed Framework. We certainly are learning it now with Iran. If we do not take proper care, we may come to learn it with others including South Korea, Japan, Turkey, the UAE, and Saudi Arabia. The most recent Defense Science Board study on nuclear monitoring warns us all that the proliferation threat will be far more challenging in the future than it ever has been in the past. All of this recommends that we take our nuclear dealings and their potential security implications more seriously. We say we want South Korea not to enrich or reprocess. Yet, we have encouraged Japan to do so even now that its nuclear fleet is unlikely ever to be more than half of its pre 911 size. Worse, the State Department believes the US should not bother taking the option of renewing its agreement with Japan even though we are insisting on doing so with our other key Asian ally, South Korea. This not only is insulting to Seoul, but reckless. If Japan ever decided to open its large reprocessing plant at Rokashho, it would be producing roughly 2,000 bombs worth of nuclear weapons usable plutonium a year. This would almost certainly prompt South Korea to initiate nuclear enrichment or reprocessing of their own as hedge or weapons option. And China? What would it do in response? We don't know but whatever it might choose to do would likely challenge not only Japan's and South Korea's security, but our own treaty commitment to defend our Asian allies. For all these reasons, Congress should demand that our government encourage Japan to review its nuclear plans openly by calling for renegotiation of our nuclear cooperative agreement with them. We may not chose to change any of the terms of the current agreement but we should do all we can to encourage Japan to use the negotiations to clarify their own plans. More Congressional review, not less will help assure the best policies are pursued.

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1. This hearing was first requested nearly two years ago. See letter from Senator Richard Lugar to Senator John Kerry, February 10, 2012 available at [http://www.npolicy.org/article\\_file/Letter\\_from\\_Senator\\_Lugar\\_to\\_Senator\\_Kerry.pdf](http://www.npolicy.org/article_file/Letter_from_Senator_Lugar_to_Senator_Kerry.pdf)

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2. See Jodi Lieberman, "Nonproliferation, Congress, and Nuclear Trade: Plus ca chang, plus c'est la meme chose," *CSIS Policy Perspectives* (Washington, DC: CSIS November 15, 2011), available at [http://csis.org/files/publication/111116\\_nonproliferation\\_congress\\_and\\_nucleartrade.pdf](http://csis.org/files/publication/111116_nonproliferation_congress_and_nucleartrade.pdf).

3. U.S. Senate Committee on Foreign Relations, Treaties and Other International Agreements toe Role of the United States Senate: A Study Prepared for the Senate Foreign Relations Committee, (Washington, DC: Committee Print, January 2001), pp. 24-25. Available at <http://www.gpo.gov/fdsys/pkg/CPRT-106SPRT66922/html/CPRT-106SPRT66922.htm>.

4. See Bob Graham, et. al., *World At Risk*, (New York, NY: Vintage Books, 2008), pp. xx. Also see 44-46. 49-50 and U.S. Department of Defense Defense Science Board, *Task Force Report: Assessment of Nuclear Monitoring and Verification Technologies*, January 2014, available at <http://www.acq.osd.mil/dsb/reports/NuclearMonitoringAndVerificationTechnologies.pdf>.