Nonproliferation, Congress, and Nuclear Trade: Plus ça change, plus c’est la même chose
Jodi Lieberman

Introduction
The Fukushima nuclear accident earlier this year undoubtedly has dampened the appetite of a few countries for nuclear power, but there are still many more that still seek to build nuclear power plants. Competition for this new business, given the relatively moribund growth of the last few decades, is fierce. Traditional suppliers (France, Russia, and the United States), as well as new suppliers (China and South Korea), are jockeying for a place at the starting line. The U.S. nuclear industry contends that its competitors are enjoying strong diplomatic support from their government-owned sponsors, but they are also concerned that nonproliferation restrictions the U.S. Congress is currently seeking to impose would additionally hinder their competitiveness. The bill in question—H.R. 1280—has been criticized both by industry and the executive branch even though it has not yet passed the House of Representatives. Surprisingly, the debate about H.R. 1280 and its impact mirrors the debate heard during deliberations over the Nuclear Nonproliferation Act of 1978, a landmark piece of legislation with significant influence both in the United States and abroad. The ultimate impact of that bill on the competitiveness of U.S. industry was difficult to prove at the time. Yet, H.R. 1280 does far less, while the risks of proliferation of certain nuclear technologies are arguably greater. It is also unlikely that the bill will pass in its current form. For example, the provision that requires U.S. approval of third-party access to U.S.-origin technology is considered controversial and, in practice, would be difficult to enforce. Despite this, H.R. 1280 does indicate that Congress sees a need to strengthen U.S. nonproliferation laws.

H.R. 1280: A Modest Bill
On April 14, 2011, the House Committee on Foreign Affairs (HCFA) unanimously approved H.R. 1280, a bill intended to address what the committee considered to be vulnerabilities in the nation’s laws related to nuclear trade under 123 agreements. The bill was prompted by concerns about the spread of uranium enrichment technology by the A.Q. Khan nuclear smuggling network to Libya, North Korea, and Iran and the potential for further proliferation of both enrichment and reprocessing technologies. In the words of committee ranking member Howard Berman, the bill seeks to strengthen

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1 As passed, H.R. 1280 combines previous bills proposed by Representatives Ileana Ros-Lehtinen and Howard Berman—H.R. 1320.
the nonproliferation regime “to better address the enrichment of uranium and reprocessing of spent fuel, along with new technologies that can create fuel for peaceful nuclear reactors or fuel for nuclear weapons.”

H.R. 1280 would require a congressional vote on an Agreement for Peaceful Nuclear Cooperation, commonly called a “123 agreement,” if it did not include a commitment by the recipient country to, inter alia:\(^3\)

1. forgo development of enrichment and reprocessing facilities;
2. bring into force and implement an International Atomic Energy Agency (IAEA) Additional Protocol; and
3. seek U.S. approval before providing access to U.S. exports by “third party nationals.”

Under existing provisions of the Atomic Energy Act, proposed 123 agreements enter into force after 90 days of continuous session if they meet all of the requirements of Section 123a. H.R. 1280 would continue this process of automatic entry into force for countries that agree to forgo enrichment and reprocessing in their 123 agreements. For those that do not, the agreement would require an affirmative vote of both Houses to bring the agreement into force. The bill therefore keeps the same threshold of approval for states that undertake a commitment not to engage in enrichment or reprocessing but raises the bar for those that do not do so. In practical effect, this second track of approval would be less onerous than simply writing another requirement into Section 123a, because a presidential waiver would not be required.

The U.S. nuclear industry has objected to the measures in the House bill, arguing that they would undermine its ability to conduct business since other suppliers do not currently require the same measures. In its view, buyers would therefore turn to other suppliers for nuclear trade, eliminating U.S. leverage in influencing global nonproliferation and nuclear safety practices.

The U.S. Department of State has also objected to the proposed measures, charging that they would impede the U.S. ability to achieve important nonproliferation goals. According to the State Department, other countries would be reluctant to abide by the new restrictions and therefore to conclude 123 agreements, robbing the U.S. government of an important nonproliferation tool.

Some of the criticisms leveled at H.R. 1280 by both parties mirror those put forward during consideration of the Nuclear Nonproliferation Act of 1978 (NNPA). Developments subsequent to enactment of the NNPA cast doubt on the validity of those criticisms. Moreover, the Government Accountability Office (GAO) evaluated a number of those arguments not long after NNPA’s enactment and also found them lacking.

Similarly, a more recent GAO report also calls into question assertions being made by industry against H.R. 1280, finding that a whole host of problems not associated with H.R. 1280 would hinder the U.S. nuclear industry from successfully competing with other civilian nuclear suppliers, including: competition from state-owned suppliers; the lack of

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\(^3\) Section 123 of the United States Atomic Energy Act of 1954, titled “Cooperation With Other Nations,” establishes an agreement for cooperation as a prerequisite for nuclear deals between the United States and any other nation. Such an agreement is called a “123 Agreement.”
indemnification by the U.S. government in the event of an accident; Department of Energy (DOE) export licensing and outdated regulations; and the overall decline of U.S. manufacturing capability.

H.R. 1280: The Critics

Industry: Impact on Competitiveness

In a public statement following the HCFA approval of the bill, Alex Flint, senior vice president for governmental affairs at the Nuclear Energy Institute (NEI), argued that H.R. 1280 would damage the U.S. nuclear industry’s competitiveness, driving potential U.S. nuclear partners to other supplier countries and reducing U.S. global influence on nuclear nonproliferation and safety.\(^4\) Flint charged that the bill “represents a significant challenge to U.S. influence in nuclear safety and nonproliferation matters globally and threatens thousands of American jobs and billions of dollars in exports by U.S. companies… Provisions in this act will reduce U.S. engagement in global commercial nuclear technology development… Further, it will restrict U.S. participation in a $50-billion annual global market, which will equate to sacrificing thousands of high-paying American jobs. The bill’s unilateral approach to enrichment and reprocessing would severely impact America’s important influence in these areas.”

U.S. industry made a similar argument in response to enactment of the NNPA. At the time, industry members were concerned that they would not be seen by recipients as reliable suppliers of nuclear technology and fuel due to the potential interference of nonproliferation laws being enacted in the United States.\(^5\) However, the drafters of the NNPA included a number of provisions that balanced the need for stronger controls on civilian nuclear technology with elements to assure U.S. industry customers that the United States would remain a reliable supplier. For example, the act’s statement of purpose explicitly acknowledges that it seeks to ensure international cooperation in peaceful nuclear activities: “It is the purpose of this Act to promote the policies set forth above by—(a) establishing a more effective framework for international cooperation to meet the energy needs of all nations and to ensure that the worldwide development of peaceful nuclear activities and the export by any nation of nuclear materials and equipment and nuclear technology intended for use in peaceful nuclear activities do not contribute to proliferation.” Moreover, Section I of the act is devoted entirely to “U.S. Initiatives to ensure Security of Supply.” Section 102 of that title states that “The Secretary of Energy is directed to initiate construction planning and design, construction, and operation activities for expansion of uranium enrichment capacity, as elsewhere provided by law. Further the Secretary as well as the Nuclear Regulatory Commission, the Secretary of State, and the Director of the Arms Control and Disarmament Agency are directed to establish and implement procedures which will ensure to the maximum extent feasible, consistent with this Act, orderly processing of subsequent arrangements and export licenses with minimum time delay.” In a May 21, 1981, report to Congress, the General Accounting Office evaluated the NNPA by title and found that, in the three years since enactment, there was no need to change Title I.

Despite this, “industry officials and foreign customers…complained about the Act’s export restrictions and resulting licensing delays, but provided little evidence that it actually caused lost export sales.”\(^6\) For example, industry at the time opined that, because France and West Germany, two major U.S. competitors for light water reactor sales, had less stringent export licensing procedures that could interfere with their issuance, and did not require prior consent for certain activities, “U.S.


\(5\) Concern by industry and trade partners over security of supply actually began prior to enactment of the NNPA when the Atomic Energy Commission revised its enrichment contract procedures to require customers to conclude long-term contracts a minimum of eight years in advance of initial delivery.

nonproliferation policies and the NNPA represent a competitive hurdle in the present nuclear export market.”

However, when GAO examined this contention three years after the NNPA was enacted, it concluded that “The NNPA’s impact is difficult to ascertain” because a number of other factors likely affected reactor exports as well: a general decline in the world nuclear sales market; the fact that U.S. firms had not received any domestic power reactor orders at the time; and there were six cancellations; and many foreign competitors emerged at the time, some aided by U.S. technology sales and licensing arrangements, to capture their own domestic markets and to compete aggressively for export sales.8

Adding to concerns about U.S. nuclear exports were the April 1977 Jimmy Carter administration policy statements on nonproliferation and reprocessing. In a January 16, 1978, report, a Congressional Research Service (CRS) study found that “U.S. nonproliferation proposals have been distorted,” and had “suffered a disservice at the hands of the nuclear opposition. By their interpretations of these proposals, they have provoked what may be an overreaction in Europe.”9 The author also found that “four misconceptions about U.S. non-proliferation policy still tend to color the European views because they are constantly being rehearsed and repeated by opponents to nuclear power”: that U.S. policies are antinuclear; that the United States believes that proliferation can be stopped by controlling peaceful nuclear technologies; and that U.S. policy is imposed and unilateral. Those misconceptions, according to the CRS report, clearly influenced how European industry viewed U.S. nonproliferation laws, including the NNPA.

Department of State: 123 as an Important U.S. Nonproliferation Tool

According to the Department of State, in its “Administration Views on H.R. 1280,” dated July 15, 2011,10 the approach taken in the bill to “unilaterally mandate certain changes in the nonproliferation practice as a condition for future U.S. nuclear cooperation would ultimately impede the achievement of [U.S. nonproliferation-related] objectives… Many of these provisions would be difficult for our nuclear cooperation partners to accept… [T]he bill’s requirements would reduce the likelihood that the United States would be able to conclude 123 Agreements successfully with other countries, thereby limiting our influence over others’ nuclear programs.”

The State Department has also charged that “The bill’s restrictions could cause the US to be seen as an unreliable trading partner. Because the US is no longer the sole supplier of many commodities, other countries would minimize their cooperation with the US in favor of other suppliers whose nuclear requirements are less onerous.”11

With regard to extending the so-called Gold Standard12 to other 123 agreements, Richard Stratford, director of the Office of Nuclear Energy, Safety and Security at the Department of State, stated earlier this year that requiring all countries to forgo enrichment and reprocessing technology in future 123 agreements “…can be problematic. Why? Because a very large part of the Non-Aligned Movement and those who might proceed into nuclear are not people who are going to sign away their ‘inalienable’ Article IV rights to nuclear cooperation.”13

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7 Ibid., p. 6.
10 See http://www.state.gov/t/isn/rls/fs/168659.htm.
11 Ibid.
12 Following completion of the U.S.-UAE 123 agreement, the Department of State referred to the precedent set by that agreement, in which the UAE agreed to forswear development of enrichment and reprocessing technology, as the “Gold Standard” in 123 agreements.
This is not, however, the first time the State Department has made the same arguments. In commenting on the 1980 GAO report examining the NNPA’s impact on nuclear exports, the department noted “that a number of nations are concerned about U.S. reliability of supply and perceived U.S. attempts to unilaterally change conditions of supply. This can, State concluded, have some impact on U.S. export potential.…”

President Gerald R. Ford reflected a similar view. In his October 28, 1976, Statement on Nuclear Policy, he noted that “One of the principal concerns with export legislation…was the fear that foreign customers could be subjected to arbitrary new controls imposed well after a long-term agreement and specific contracts for nuclear power plants and fuel had been signed.”

Regardless of the merits of those arguments, conflict between Congress and the executive branch regarding controls on nuclear exports in the late 1970s was inevitable. “The awakening of Congressional concern of the later 1970s about nuclear weapons spread and desire for action inevitably led to tensions and conflicts with the executive branch, which often had different ideas on this matter… Congressional reactions to the events of the mid-1970s [Vietnam, Watergate] were further amplified by pressures from the expanding environmental movement, which included a strong anti-nuclear plank. This popular movement was to bring down the powerful Atomic Energy Commission in 1974.”

Despite executive branch concern over the possible impact of NNPA provisions and other export restrictions on the viability of civilian nuclear trade with other countries, the United States successfully concluded or renegotiated 123 agreements with many countries after its enactment. In 1978, the United States had agreements for cooperation with 25 other countries, EURATOM, and IAEA. To contend with the new NNPA provisions, the Carter administration created a task force to formulate a set of guidelines for negotiation of new 123 agreements, giving priority to those countries that were are most likely to agree to them. Although negotiation of several of those new agreements was difficult, most were successfully concluded. Two agreements that were not renegotiated were those with Taiwan and South Korea.

**U.S. Influence on Nuclear Safety**

Another argument in the debate on H.R. 1280 is that fewer U.S. nuclear exports would reduce U.S. influence on the safety of other countries’ nuclear power programs.

In a letter dated May 13, 2011, a coalition including the Nuclear Energy Institute, the National Foreign Trade Council, the U.S. Chamber of Commerce, and the U.S.-Bahrain, U.S.-India and U.S.-China Business Councils wrote to House leadership urging them to oppose H.R. 1280. Citing a potential loss of jobs and commerce, the signers of the letter claim that nuclear commerce with the United States promotes dissemination of nuclear safety practices and that other nuclear suppliers may not place the same high value on nuclear safety. This claim, while reasonable, discounts other means by which the United States can and does influence nuclear safety in other countries.

The United States is able to influence the safety of another country’s nuclear power sector by providing a range of bilateral and multilateral assistance that is not subject to a 123 agreement, nor, in most cases, a part 810 authorization. Since its establishment in 1975, the U.S. Nuclear Regulatory Commission (NRC) has had in place ongoing regulatory safety cooperation with countries operating nuclear power plants.
For example, in 2009, the NRC:

- conducted high-level regulatory information exchanges and site visits to Belgium, China, Finland, France, India, Italy, Japan, the Republic of Korea, Mexico, the Slovak Republic, South Africa, Spain, Sweden, and the United Kingdom;
- negotiated and/or renewed bilateral technical information exchange arrangements with regulatory counterparts in Brazil, Canada, France, Indonesia, Kazakhstan, and the European Commission. The NRC also signed Memoranda of Cooperation for the Import and Export of Certain Radioactive Sources with Brazil and Canada to harmonize regulatory approaches and ensure consistency with the Code of Conduct on the Safety and Security of Radioactive Sources; and
- implemented a pilot program for new reactor licensing assistance projects with select countries of the former Soviet Union and Vietnam to provide information on critical infrastructure needed for a safe and secure nuclear program.

The United Arab Emirates (UAE), which is actively pursuing a civilian nuclear power program—having awarded a contract to South Korea’s KEPCO to build four reactors at Braka—went so far as to hire former employees from the NRC to bolster its credentials and make sure things were done safely. The head of the UAE nuclear regulatory body is William Travers, a former NRC executive director for operations and a regulatory veteran.

Long before U.S. nuclear trade opened with India, the NRC and Indian counterparts began exploring nuclear safety cooperation. Despite the lack of a 123 agreement, the NRC and India’s Atomic Energy Regulatory Board have discussed issues of mutual nuclear safety concern, including fire protection.\(^{20}\)

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\(^{20}\) The U.S. was concerned about the state of fire protection at Indian nuclear plants following the March 1993 fire at the Narora plant. Fire protection was also a safety issue at U.S. plants, particularly given two high-profile fire-related incidences: the 1992 Thermo-Lag 330-1 scandal and the fire at Browns Ferry.

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Learning from the Past

One of the more difficult renegotiation cases following NNPA enactment was with EURATOM, which began in 1978 and, after a series of extensions, was not concluded until 1995. The principal issue was “the prior consent provisions required by the NNPA, and in particular, the U.S. insistence on prior consent over re-use [reprocessing ] of U.S. origin nuclear materials in perpetuity and European insistence on objective conditions for revocation of U.S. programmatic consent.”\(^{21}\) The previous U.S-EURATOM agreements did not provide U.S. consent rights over reprocessing of U.S.-origin fuel. However, Title III of the NNPA provided an exemption to this requirement for EURATOM. Specifically, the NNPA “permitted cooperation to continue under the existing agreement provided the President annually made a determination that failure to cooperate would be ‘seriously prejudicial to the achievement of U.S. nonproliferation objectives or otherwise jeopardize the common defense and security.’” However, when the renegotiation discussions between the United States and EURATOM began in 1978, just after the NNPA enactment, EURATOM declined the exemption and refused to begin renegotiations. As a result, U.S. exports to EURATOM were temporarily halted.

However, some believed that the “largely unspoken” reason for the difficult negotiations was the vastly changed nuclear industry environment beginning in the late 1970s—the fact that Europe was no longer dependent on U.S. nuclear exports as it had been when the first U.S.-EURATOM agreement was concluded. When the first agreement was reached, the United States held a monopoly over uranium enrichment for commercial power reactors. However, at the time the EURATOM agreement was being renegotiated, the United States no longer held that position. Europe and Russia were operating enrichment facilities that competed with the U.S. Enrichment Corporation. So, EURATOM was under less pressure to reach an agreement with the United

States. Despite the changed commercial environment and difficult negotiations, the U.S.-EURATOM agreement was concluded in November 1995 and went into effect on April 12, 1996.

Today, several 123 agreements are up for renewal, and new agreements are in the pipeline. Whether or not any of these agreements would be jeopardized should H.R. 1280 be enacted is unclear. However, the Atomic Energy Act (AEA) modifications being proposed in that bill are far less comprehensive than those enacted in the NNPA, and the NNPA did not inhibit the United States from successfully renegotiating most of the existing 123 agreements at that time.

**U.S. Nonproliferation Influence**

While 123 agreements are an important U.S. nonproliferation tool, they are not the only ones available. U.S. nonproliferation policy and bilateral and multilateral initiatives are also a key part of U.S. influence on global nonproliferation norms and actions. U.S. nonproliferation influence is also derived from its leadership role over the last 50 years in making nonproliferation a significant foreign policy objective. The United States has been instrumental in helping create the essential elements of the nonproliferation regime, including the Nuclear Non-Proliferation Treaty (NPT), the Nuclear Suppliers Group, the Convention on the Physical Protection of Nuclear Material, and many others. In addition, its own domestic policies have helped shape norms of nonproliferation. According to Scott Sagan, “U.S. policymakers and scholars…too often ignore or underestimate the influence of U.S. domestic nuclear decisions on those of foreign governments… American nuclear policies play an important role in shaping—if not fully determining—the decisions made in other capitals regarding nuclear power, the nuclear fuel cycle, and nuclear security.”

One example of U.S. influence on nuclear issues is its decision to abandon plutonium reprocessing in the 1970s. Once the Carter administration officially withdrew government support for reprocessing in the United States and cancelled construction of commercial breeder reactors in April 1977, it exerted pressure on other countries to do the same. The administration believed that this decision would end U.S. exports of reprocessing technologies, thus limiting their availability, and would ultimately lead other countries to follow suit. While France and Japan went forward with their plutonium reprocessing efforts, of the 32 countries that at some point in their history pursued reprocessing, 12 abandoned plans altogether due, at least in part, to U.S. diplomatic pressure.

Writing in the *Bulletin of Atomic Scientists* in 1976, President Carter reflected on a world in which, “by 1990, developing nations alone will produce enough plutonium in their reactors to build 3000 Hiroshima-sized bombs a year… This prospect of a nuclear future is particularly alarming if a large number of nations develop their own national plutonium reprocessing facilities with the capacity to extract plutonium from the spent fuel… [T]he danger is not so much in the spread of nuclear reactors themselves… The far greater danger lies in the spread of facilities for the enrichment of uranium and the reprocessing of spent reactor fuel.” He stated that while the United States has not approved the export of enrichment and reprocessing technologies, “some of the other principal suppliers of nuclear equipment have begun to make such sales…[making it] absolutely essential to halt the sale of such plants.”

U.S. success in convincing these countries to forgo reprocessing was helped by the United States setting

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22 These include Jordan, Vietnam, Armenia, Saudi Arabia, Mongolia, South Korea, Bangladesh, Colombia, China, Norway, the International Atomic Energy Agency, Thailand, and Taiwan.


an example domestically by not reprocessing (and low uranium prices). Although countries that had already embarked on commercial reprocessing were not swayed to abandon their large investments for nonproliferation reasons, no countries have initiated commercial reprocessing programs since then.

U.S. assistance to other countries in safeguards and nuclear security also helps accomplish its nonproliferation goals. Programs implemented by the Departments of Energy, Defense, and State, as well as the Nuclear Regulatory Commission, generally include technical, financial and/or “in-kind” assistance. Technical assistance is provided in a broad range of areas and has included, inter alia, help in: implementing state systems of accounting and control of nuclear materials (SSACs); training former nuclear weapons scientists in “peaceful” applications of their expertise; implementation of UN Security Council Resolution 1540; development of nuclear security regulations; and strengthening physical protection of nuclear facilities. Financial assistance has included: funding for implementation of IAEA safeguards and UN Security Council Resolution 1540; and contribution to the IAEA nuclear security fund for strengthening protection of nuclear materials. In-kind assistance includes provision of U.S. experts and equipment.

At the highest levels, presidential initiatives can help underscore the importance of nonproliferation in U.S. foreign policy. For example, in April 2010, President Barack Obama convened a Nuclear Security Summit in Washington, D.C., the goal of which was to “come to a common understanding of the threat posed by nuclear terrorism, to agree to effective measures to secure nuclear material, and to prevent nuclear smuggling and terrorism.” More than 40 heads of state attended and made national commitments relating to nuclear security. The countries agreed on a work plan related to support for and implementation of UN Security Council Resolution 1540, the Convention on the Physical Protection of Nuclear Material (CPPNM), IAEA nuclear security efforts, and other activities to account for and protect weapons-usable nuclear material. A second nuclear security summit will be held in South Korea in 2012.

GAO: Reports Evaluate Sales, Other Impacts of NNPA

In two reports—one in 1980 and one in 1981—GAO attempted to quantify the impact of the NNPA on nuclear industry exports. Both reports concluded that, although the NNPA created a negative perception among other countries that the United States was attempting to “unilaterally change conditions of supply” and that they had become “concerned about U.S. reliability of supply,” GAO found it difficult to make a case that nonproliferation law directly hindered reactor and fuel services sales because a number of factors often influence such sales. It therefore “found little evidence that the NNPA actually caused lost export sales.” In its 1980 report, GAO “could not determine the impact of the Nuclear Non-Proliferation Act on the competitiveness of U.S. nuclear exports.” However,

26 See http://www.state.gov/nuclearsummit/.
28 Both reports were required by Section 602(e) of the NNPA.
“the Act had no apparent influence on the award of five nuclear reactor orders to foreign suppliers in the two years after its March 1978 passage and did not prevent the sale of four reactors by a U.S. supplier.”

Moreover, “industry officials and foreign customers have complained about the Act’s export restrictions and resulting licensing delays but provided little evidence that it actually caused lost export sales.”

Although the export market following the NNPA’s enactment was depressed, GAO noted that Atomic Energy of Canada Limited (AECL) sold four CANDU-style reactors to Romania and that Argentina ordered one reactor from Kraftwerk Union, both in 1979. All five of those reactors were natural uranium-fueled heavy-water reactors that U.S. industry did not produce. Therefore, U.S. industry did not actively vie for those contracts. However, U.S. industry did succeed during that time to win orders for four nuclear reactors from South Korea—two in April 1978 and two more in August 1979. While concerns about U.S. nonproliferation policies were raised during the latter order, they were satisfied when Westinghouse agreed to include a clause in its contacts that permitted their cancellation should export licenses not be issued on a timely basis. To further ease South Korean concerns, Congress also passed a resolution that permitted a variance to the enrichment ceiling in the existing U.S.–South Korean agreement for cooperation because it was a party to the NPT. In June 1980, Congress passed a modified version of that resolution (PL-96-280), which eliminated enrichment ceilings for all countries that were party to the NPT.

In its 1980 report, GAO also observed that U.S. influence on the global nuclear industry was already waning as a result of foreign competition from Canada, Sweden, the Soviet Union, and the United Kingdom, each of which had independently developed their own nuclear technology, as well as from France, West Germany, Italy, and Japan, which relied to some extent on purchases of U.S. technology in developing their nuclear industries.

According to GAO, “The U.S. captured 86% of the free world’s reactor export orders during 1970-73 and monopolized the supply of uranium services for free world reactors until 1975. That dominance has since declined. The U.S. share of free-world reactor exports slipped to 47% during 1974-79, and Soviet and European suppliers are competing for enrichment sales.” Therefore, U.S. dominance in reactor sales and fuel cycle services was already in decline by the time the NNPA was enacted.

In its 1981 report, GAO again could not ascertain the impact of the NNPA on U.S. reactor sales overseas. Specifically, it found that “the impact of the NNPA, per se, on the competitiveness of U.S. nuclear exports could not be determined… [W]hether the NNPA, the executive branch policies, financial considerations, type of reactor and equipment or some other factor was the principal reason for [foreign decisions to purchase from a non-U.S. company] was difficult to determine.”

GAO gave a number of reasons for such difficulty, including: that “U.S. policies concerning human rights, political trade restrictions, environmental impact statements, the Foreign Corrupt Practices Act, and anti-boycott statutes can also impact an export sale”; and that “the long-term economic impact of the declining nuclear market and any ‘lost’ sales may not be felt for several years since U.S. companies are still planning, building and supplying plants that were ordered several years ago.”

**Current Environment**

Last year, GAO conducted another study targeted on the principal challenges facing U.S. nuclear industry. In its November 2010 report, GAO identified, based on discussions with the Departments of Commerce, State, and Energy, the NRC, as well as U.S. industry and NEI, the following challenges facing the U.S. nuclear industry:

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30 Comptroller General, *The Nuclear Non-Proliferation Act of 1978 Should Be Selectively Modified*, p. 120.

- **A decline in domestic manufacturing capabilities.** The nuclear industry, according to a January 2010 International Trade Administration (ITA) report, had “atrophied” to the point where the United States is a net importer, not exporter, of nuclear components and materials;

- **Increased international competition from foreign state-owned suppliers, which are heavily subsidized and supported by their governments.** Foreign firms receive strong financial and political support through direct government ownership and subsidies, including government support for bids through high-level advocacy or by providing customers additional services and expertise. For example, the French and Korean presidents traveled to UAE to advocate for their country’s respective bids to build new reactors there. French officials told GAO that their government’s philosophy on nuclear cooperation includes providing a package of regulatory, financial, and technical assistance to partner countries developing their civilian nuclear power programs. Further, some of the largest markets for nuclear goods and services—France, Russia, and the Republic of Korea (ROK)—have significant barriers to U.S. industry entry because of the presence of a state-owned competitor;

- **Lack of a global liability regime.** The United States has ratified the Convention on Supplemental Compensation, but the convention has not come into force yet. Without a global liability regime in force that channels liability for accidents at a nuclear facility to the operator, industry fears they may be held liable as suppliers. Foreign state-owned companies do not face the same problem because they are indemnified by their government. U.S. industry cannot obtain insurance sufficient to cover their potential liabilities resulting from a potential nuclear reactor accident overseas.

- **DOE process for authorizing transfer of U.S. nuclear technology and technical information overseas (Part 810 authorizations).** According to industry, DOE regulations are outdated, lack clarity, and place U.S. companies at a competitive disadvantage. According to a foreign country official interviewed by GAO, buying fuel from the United States is not “client-friendly.”

That GAO report also concluded that the Commerce Department Civil Nuclear Trade Initiative is not as effective as it could be in promoting U.S. nuclear exports because it has limited resources, no dedicated funding, and is organized and run by one staff member working at 80 percent time and two staff members working at 75 percent and 50 percent time.

In that same report, GAO noted that no federal agency collects or tracks information on exports that would have enabled them to fully assess the amount and value of exports facilitated by U.S. nuclear cooperation agreements. However, using available information from the UN Commodity Trade Statistics Database (Comtrade), GAO found that the U.S. share of global nuclear exports had decreased significantly over the last 15 years. This decline included sales of sensitive nuclear material: $1.8 billion in 1994 versus $1.6 billion in 2008 (or a decline from 29 percent of the market to 10 percent of the market over that period). Moreover, while the value of U.S. nuclear reactor exports, major components, and equipment increased between 1994 and 2008, the global share of such exports had declined from 11 percent to 7 percent.

GAO concluded that U.S. industry already faces significant challenges in export competitiveness. If laws seeking to tighten nonproliferation restrictions somehow made U.S. products less attractive to buyers overseas, there would be little data to establish a direct link.

**Conclusion**

The competitiveness of the U.S. nuclear industry has been a concern for the last decade, and there have been several U.S. government programs to support new nuclear construction in the United States. There have been fewer efforts to support U.S. nuclear exports akin to those employed by other countries. Without significant government support and subsidies, U.S. nuclear export competitiveness will continue to face serious challenges.
H.R. 1280 does not change this reality, and there is no indication that Congress will move in that direction. The question is whether it significantly degrades the attractiveness of U.S. nuclear exports. Countries seeking 123 agreements with the United States have a variety of reasons for pursuing them, including prestige and earning a U.S. nonproliferation stamp of approval. If H.R. 1280 is enacted—which is by no means a sure thing—recipients will still earn the prestige and stamp of approval, but at a slightly higher cost. Those that do not wish to forgo domestic enrichment and reprocessing may face a more rigorous approval process. It remains to be seen whether countries will walk away from nuclear cooperation with the United States because they believe it would be more difficult to get congressional approval. China, which waited 13 years for its 123 agreement with the United States to enter into force because of nonproliferation concerns, seemed to conclude it was worth the wait. India, which faced a significant hurdle in congressional approval because of its nuclear weapons program, managed the process in three years and used the U.S. agreement to win additional nuclear cooperation agreements with other states.

The arguments against H.R. 1280 are familiar ones that deserve close scrutiny. If history is any guide, however, strengthening U.S. nonproliferation law nets the U.S. government, the nonproliferation community, and the world far greater benefit than it does to impede civilian nuclear commerce.

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