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America's Nuclear Nonproliferation Order and Japan-US Relations*

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Introduction

The nuclear nonproliferation order constructed at the initiative of the United States after the Second World War is, roughly speaking, made up of a three-layer structure (Akiyama, 2012). The first layer is the strategic relationship between the United States and Russia (the Soviet Union) based on the “institutionalized Mutually Assured Destruction (MAD)” and their cooperative relationship in nuclear nonproliferation. The second layer consists of the multilateral regime centered around the Nuclear Nonproliferation Treaty (NPT), the International Atomic Energy Agency (IAEA), and relevant multilateral nonproliferation arrangements. The third layer is the so-called “Atoms for Alliance” relationships that, from the desire to ensure the effectiveness of nuclear nonproliferation efforts, politically, economically and technically act upon the unique construct of incentives for nuclear weapon possession held by recipient countries and other states.

First, the security dimension of the international nuclear order, which is the foundation of the three-layer structure, was shaped by the US-Soviet (Russia) relationship, which maintained strategic stability. This relationship was secured by “institutionalized MAD,” the mutual deterrence established through arms control processes and treaties (Tosaki, 2003). Even after the end of the Cold War, despite the United States holding the clear advantage in military balance with Russia, the state of institutionalized MAD realized through US-Soviet arms control has continued to exist on a sort of *pro forma* basis—or, perhaps, a kind of “modality” that regulates US-Russia relations (or one could say that they have a mutual consent that such a relationship exists). Backed by such a mutual consent on strategic stability or “institutionalized MAD,” there is also a cooperative relationship in nuclear nonproliferation between the United States and Russia (Soviet Union) that is based on the shared perception that preventing an increase in the number of nuclear-weapon states is beneficial to both of them (from the perspective of radical non-nuclear-weapon states this relationship might look like “complicity”). This shared understanding explains how they, despite their Cold War confrontation, developed a cooperative relationship in the establishment of multilateral nonproliferation institutions such as the IAEA (1957) and the NPT (1970). In other words, without this common ground, the current multilateral nonproliferation regime would likely have

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been impossible to achieve.

The second layer is the nuclear non-proliferation system with norm-setting and rule enforcement of the NPT/IAEA-based multilateral regime providing the principles and norms. The NPT clearly distinguishes between countries allowed to have nuclear weapons (nuclear-weapon states, NWS) and countries not allowed to have nuclear weapons (non-nuclear-weapon states, NNWS), and stipulates the rights and obligations of the signatories. The inequality in the right to possess nuclear weapons that the nonproliferation obligation creates between NWS and NNWS is generally seen as being balanced out by a “grand bargain” with the obligation to engage in nuclear disarmament negotiation, the inalienable right of peaceful use as well as international cooperation in promoting peaceful use, and the guarantee of security through UN Security Council resolutions¹—a guarantee that was not prescribed by the NPT itself, but was considered a part of the overall package adopted. The obligation of nuclear nonproliferation is guaranteed through safeguards and inspection enforced by the IAEA. Furthermore, in order to ensure compliance with the nonproliferation norms stipulated by the NPT and the IAEA charter, this layer is partly made up of those instruments, such as export controls for monitoring and regulating nuclear-related sensitive technology through guidelines of the Nuclear Suppliers Group (NSG), and UN Security Council Resolution 1540, which calls on members to establish domestic laws to control the proliferation of weapons of mass destruction by non-state actors. The NPT/IAEA-based multilateral regime delegitimizes nuclear proliferation, and in doing so provides norms and guidelines to regulate the actions of states (e.g., guarantees of nonproliferation and sanctions for violating norms and rules).

The third layer is “atoms for alliance,” a comprehensive package of rules and incentives for promoting compliance among NNWS. This is also an implication of America’s nuclear power cooperation policy following President Dwight Eisenhower’s “Atoms for Peace” speech in 1953, and represents a package combining: (1) the promotion of peaceful use as an incentive for compliance, (2) prevention of proliferation activities through safeguards based on bilateral agreement, as a condition for promotion of peaceful use; and (3) the provision of security assurances² as security incentives (Akiyama, 2007, p. 85).

The bilateral agreements for cooperation in peaceful uses of nuclear energy stipulate the conditions of cooperation in civilian nuclear energy. Particularly important among them is the guarantee of the right of the United States as a supplier state to regulate and monitor against the military utilization of materials/equipment provided by the United States, and regulations on enrichment and reprocessing of nuclear materials resulting from the use of transferred nuclear materials/equipment originating in the United States, and on the transfer of those nuclear materials to a third country for reprocessing. The distinctive features of the relations resulting from these bilateral agreements are, first of all, the realization of the benefit to the United States of ensuring nuclear nonproliferation through the provision of an incentive in the form of cooperation in the area of atomic power along with the inclusion of a mechanism by which the United States directly regulates recipient countries (or the discretionary power of the execution thereof). Second, since the details of the agreements are not standardized,³ they may differ depending on the nature of the relationship with the other country. These bilateral agreements are characterized by flexible adaptation to the political milieu of each partner, ranging from the agreement with India that made an exception for that country’s refusal to sign the NPT or enter into an IAEA Comprehensive Safeguards Agreement, to agreements that, like the one with the United Arab Emirates, formally include the partner’s commitment to forgo nuclear fuel cycle technologies (of course, this flexibility could be conversely considered inconsistency of policy).

Also, security assurances against nuclear attack on a NNWS are provided by NWS through individual agreements in alliances and other arrangements. In particular, security assurances (or extended nuclear deterrence) for allies possessing technological expertise, such as Japan and European countries,

may be considered an important means for preventing them from acquiring nuclear weapons (or for not giving them an excuse to become nuclear states) (Kurosaki, 2006; Knopf, 2012).

The relationship between Japan and the United States within this nuclear nonproliferation order is more than just a bilateral relationship; it is a comprehensive relationship deeply intertwined with the formation process of the layers, particularly layers 2 and 3, and it is at once filled with cooperation and tension.

Japan has faced two dilemmas in its relationship with the United States over the nuclear issue. This relationship began with the dropping of the atomic bombs on Hiroshima and Nagasaki in 1945. For Japan it was also the beginning of the dilemma of its reliance on the United States' extended nuclear deterrence for security during the Cold War, versus Japan's position of moral appeal as the only country that was a victim of nuclear bombing. The second dilemma was a choice between deepening its relationship with the United States through the receipt of technology and other forms of cooperation for the peaceful use of atomic power, and aiming to establish a more autonomous nuclear energy program by executing a national nuclear fuel cycle schema. This desire for autonomy was also a cause of apprehension for the United States in the context of nuclear proliferation.

For the United States, the nuclear relationship with Japan symbolically revealed structural problem in its nuclear nonproliferation policy: (1) the need to balance the maintenance of the special relationship with Japan as an ally providing security advantages with the merits of preventing Japan from having nuclear weapons and thus sustaining the nonproliferation order; (2) minimizing the contradiction between the tailored (privileged) approach to alliance management (i.e., bilateral agreements that take into account the variances in regulations among allies) and regulations founded on the multilateral regime's universal norms of a multilateral regime; and (3) the need for compromise and cooperation toward the establishment of partnerships with other countries to ensure the effectiveness of nuclear nonproliferation amid the decline of American influence and the limits of the multilateral regime.

This chapter will discuss, in the context of the United States' policy for building nuclear nonproliferation order, how the Japan-US nonproliferation relationship has been formed within that order, and what kinds of roles Japan and the United States have played amid the order's transformation by landmark changes in the international environment, such as the end of the Cold War and the 9/11 terrorist attacks. This chapter will also examine the future direction of this order.

1. Formation of the Japan-US nonproliferation relationship after World War II

Seeking a monopoly on nuclear technology after the Second World War, the United States' Atomic Energy Act of 1946 banned the provision of such technology to other countries, including the United Kingdom and Canada, which had cooperated in the Manhattan Project. As with Germany, the United States also prohibited Japan from conducting atomic energy research (GHQ Order No. 3, paragraph 8, September 22, 1945). However, as early as in 1949, this monopoly effectively collapsed when the Soviet Union performed its first nuclear test. In 1952, the United Kingdom also successfully conducted a nuclear test, and thereafter emerged other countries that pursued atomic research.

Against this backdrop, President Eisenhower's Atoms for Peace speech to the UN General Assembly in 1953 was followed the next year with an amendment to the Atomic Energy Act (McMahon Act) that changed the US nuclear energy policy. Nuclear technology, theretofore monopolized by the government, was opened to the private sector, and the United States also began providing it to the international community. Along with the idealistic principle of sharing the fruits of nuclear technology for the well-being of the world was born the policy principle of striving for both security and nuclear nonproliferation by strengthening relations with friendly nations through the provision of nuclear technology while managing the risk of proliferation.

Another implication of the Atoms for Peace speech was the US acceptance of coexistence with the Soviet Union. This provided for a general framework of US-Soviet nuclear relationship including the acceptance of mutual deterrence, rejection of the possibility of the abolishment of nuclear weapons, arms control to manage the nuclear threat stemming from that rejection, and joint management of the nuclear order by the United States and the Soviet Union.

In the time from its bilateral agreement with Turkey in May 1955 to 1959, the United States concluded 44 research agreements to provide research reactors and 13 nuclear agreements that included provision of power reactors. Also, the Soviet Union, to compete with the United States, concluded agreements with China and Eastern European countries. This “hub-and-spoke” nonproliferation policy through such bilateral agreements was possible precisely because of America’s overwhelming economic and technological dominance in supplying the international market (and that of the Soviet Union on the markets of the East).

Under new policy, the United States lifted the ban on nuclear research in Japan, and began supporting Japan’s nuclear activities by concluding in November 1955 the US-Japan Agreement for Cooperation Concerning the Civil Use of Atomic Energy, which provided for cooperation in atomic energy research, including the loaning of enriched uranium. Japan’s first nuclear reactor was Japan Research Reactor No. 1, which achieved its first criticality in August 1957 and was run by the Japan Atomic Energy Research Institute (the current Japan Atomic Energy Agency). The provision of power reactors and fuel began in 1958. Japan’s first power reactor was the Japan Power Demonstration Reactor, which was designed by America’s General Electric Company and started operating on October 26, 1963. The reactor’s fuel was manufactured and supplied by Hitachi Ltd.

From the second half of the 1950s through the 1960s Japan expanded its use of atomic energy while further strengthening its relationship with the United States through the acquisition of technology. There was friction in Japan’s nuclear policy circle at the time between one side that advocated domestic, independent development and another that called for imports to enable an early start to nuclear power generation, but ultimately the first commercial reactor introduced by Japan was a British-made improved Calder Hall gas-cooled reactor fueled with natural uranium. This reactor was used in the first commercial nuclear power generation in Japan in November 1965. After that, however, the power companies began switching to light-water reactors developed in the United States because of their low construction cost and because they were expected to increase in size in the future. The choice of the furnace type also dictates the fuel supply route. By choosing light-water reactors, the Japanese power companies increased their reliance on the United States in the peaceful use of atomic energy.

During the same period, the risk of nuclear proliferation rose as the United States and the Soviet Union engaged in the arms race and established a relationship of mutual nuclear deterrence, with events such as France’s nuclear tests (1960) and the Cuban Missile Crisis (1962) also contributing to the heightened risk. The trend of nuclear arms race was manifested in Asia as well. In October 1964, China conducted its first nuclear test at the Lop Nur test ground in Xinjiang-Uygur, followed in 1966 by the successful test of a nuclear warhead-mounted Dongfeng 2-A ballistic missile.

The United States was naturally concerned that China’s successful nuclear tests would trigger nuclear armament by Japan. Meanwhile, there was heightened debate in Japan about the effectiveness of America’s nuclear deterrence in the wake of China’s tests, with opinion largely divided between two camps. One side argued that US deterrence capabilities were reliable, reasoning that if Japan were to come under nuclear attack by China, America would be able to remain calm and retaliate since China’s ballistic missiles could not reach the US mainland. The opposing view was that precisely because the US mainland was out of China’s reach, America might choose to stay out of the fray to preserve its own

security, effectively leaving Japan on its own. The prime minister at the time, Eisaku Sato, mentioned to Washington the idea that Japan might choose the nuclear armament option in order to stand up to China. However, Sato had no real intention of changing policy in this direction; instead, he thought that the public's strong anti-nuclear sentiment made it be impossible for Japan to possess nuclear weapons, and that relying on the United States for extended nuclear deterrence was the realistic policy choice. When President Lyndon B. Johnson asked Sato for his views on the issue in a meeting in Washington in January 1965, the latter affirmed that Japan accepted America's offer of extended nuclear deterrence.⁴ Furthermore, when he again visited the United States in 1967, Sato was even clearer about Japan's choice to be nonnuclear and its reliance on America's extended nuclear deterrence. He indicated that America's extended nuclear deterrence was an important incentive for preventing the proliferation of nuclear weapons. Later in that year, Sato enunciated the Three Non-Nuclear Principles.⁵

2. Structural change of nonproliferation

For Japan, if, amid a worsening of the security environment surrounding Japan, the 1960s were a period of the establishment (institutionalization) of the so-called "four nuclear principles" including (1) denuclearization (Three Non-Nuclear Principles), (2) reliance on the extended nuclear deterrence of the United States, (3) the peaceful use of atomic power, and (4) nuclear disarmament, the 1970s were a period of change in the structure of the nuclear nonproliferation order and the beginning of strained relations between Japan and the United States around the nuclear issue. Moreover, these structural changes greatly reshaped America's nuclear nonproliferation policy. And, the structures of international politics, market and technology diffusion brought about by the changes during that time are the foundation of the current nuclear nonproliferation order.

First of all, what can probably be mentioned as a change in the environment surrounding the nuclear nonproliferation policy is the formation of the norm system of the NPT-based international nonproliferation order. The NPT mainly stipulates the following two important values. One is the legal distinction (or inequality) between NWS and NNWS. The other one is the "grand bargain" formed among the three rights and obligations of (1) the obligation of nonproliferation imposed upon both NWS and NNWS (including the obligation for NNWS to accept IAEA safeguards guaranteeing compliance with the nonproliferation obligation), (2) the inalienable right of peaceful use and international cooperation, as compensation for the nonproliferation obligation, and (3) the obligation mainly imposed upon NWS to pursue nuclear disarmament in good faith. The establishment of a linkage between the conclusion of the NPT and the IAEA safeguards, along with the restrictions on the export of nuclear power technology centered around the subsequent NSG export control guidelines prompted by India's nuclear testing in 1974 can be seen as the institutionalization of the multilateral nonproliferation regime.

Second was a change in the structure of the international nuclear market, which supported this order. As a result of progress in international cooperation under the idea of "Atoms for Peace," US-led light-water reactor technology spread across the nuclear reactor market, and a number of countries gained possession of nuclear fuel cycle-related technology. This drove a shift in the course of technology dissemination from the hub-and-spoke approach—one-way supply of technology from a handful of countries, notably the United States, the Soviet Union, the United Kingdom and Canada—to a network model in which dissemination increasingly flowed through channels free of intervention by the "hub" countries. This shift to channels in which the United States and the Soviet Union were not directly involved gave rise to concerns that control of the nuclear proliferation regime could be lost.⁶

It also became obvious that America's influence in the nuclear market had waned. The 1973 oil crisis triggered an increase in orders for nuclear reactors, drawing concern that the supply of enriched

uranium, thus far monopolized by the United States, would not be enough to keep up with demand. As a result, the international uranium market became destabilized and by the mid-1970s as France and West Germany acquired the technological capacity to provide atomic energy cooperation to developing countries, they hurried to extricate themselves from their reliance on the United States in the procurement of enriched uranium. In the 1960s America's share of global power reactor exports was 66%, but in the 1970s it dropped to 44% (Kawakami, 1986, p. 76). As a result, its share of the international market for enriched uranium also shrank, which meant that American influence waned not only in the market but also in the maintenance of the international nuclear order. While the light-water reactor paradigm promoted by the United States itself became mainstream,⁷ ironically its supply capacity was unable to keep up with the expansion of the market, and could not take advantage of the technological superiority that its own industry enjoyed on the market, and as a result it allowed the nuclear industries in other countries to grow, providing the economic base by which those countries could independently pursue a nuclear fuel cycle. France and West Germany concluded contracts with developing countries to provide nuclear power programs, including enrichment work and the construction of reprocessing plants. As a result, the number of players on the market increased and it became impossible for the United States alone to control the flow of technology transfer, and in the policy domain of nuclear nonproliferation the superiority of American power to build and maintain a policy system began to decline.

Against this backdrop of declining American influence, India conducted a "peaceful nuclear explosion" (*de facto* nuclear test) in 1974 that used plutonium manufactured in a Canadian-supplied CANDU heavy-water reactor from heavy water provided by the US General Electric. This was a reminder that nuclear proliferation would spread from advanced countries to the level of developing countries and that there was hardly any boundary between civilian and military use.

The United States, which at the time was already considering strengthening restrictions on the transfer of nuclear technology, in addition to changing its own national policy accordingly, worked with the international community to form the NSG (1975). Through restrictions on the transfer of sensitive nuclear technology the United States bolstered its inclination toward nuclear nonproliferation. The NSG established guidelines for peaceful nuclear transfer "not to be diverted to a nuclear fuel cycle without safeguards or to nuclear explosions" (formulated in September 1977, and officially announced in January 1978⁸). Also that year the Nuclear Non-Proliferation Act (NNPA) was enacted in the United States, and regarding the atomic cooperation described in Section 123 of the Atomic Energy Act of 1954 it was stipulated that the requirement of nine items pertaining to nuclear nonproliferation must be satisfied with the cooperation of NNWS. This included the requirement of America's advance consent for enriching or reprocessing nuclear substances transferred from the United States, the application of comprehensive safeguards, America's right to demand the return of any nuclear substances or those portions of subsequent generation that were used in a nuclear explosion or that had been in breach of IAEA safeguards, and America's right of advance consent regarding retransfer to a third country.⁹

Meanwhile, in dealing with the case of Indian nuclear proliferation, the United States showed its relative position of nuclear nonproliferation in the context of its overall foreign strategy.

When China conducted nuclear testing in 1964, the United States predicted that testing would influence India's nuclear weapons development. Actually, India, worried about China's nuclear possession, sought security assurance from the United States, the United Kingdom and the Soviet Union. However, opposing India's nuclear possession, the United States, even while acknowledging a general security assurance for NNWS by NWS, refused to provide security assurance to India bilaterally out of fear that it might worsen its relations with allies, particularly Pakistan.¹⁰

In 1971, at the time of the outbreak of the Third Indo-Pakistani War, with India intervening in the

independence movement in East Pakistan (Bangladesh), the Nixon administration, in efforts to approach China, sent Secretary of State Henry Kissinger on a secret trip to that country, through the mediation of Pakistan. Partly because of that, the United States supported Pakistan in the Third Indo-Pakistani War, deployed the aircraft carrier USS Enterprise to the Bay of Bengal to check India. Meanwhile, India signed the Treaty of Peace, Friendship and Cooperation with the Soviet Union in August 1971, which deteriorated US-India relations. It was in this environment that India pursued its own course of nuclear development.

However, after the May 1974 nuclear test, India's stance toward the United States was more conciliatory. Secretary of State Kissinger visited India in the following October, at which time, rather than criticizing India over its nuclear test, he extolled US-India relations in a joint communiqué. Also, in an unofficial talk he acclaimed Indira Gandhi for having the ability to manufacture nuclear weapons, and made a statement indicating their mutual responsibility of nuclear management, thus treating India as a great power.

In an address to the UN General Assembly in 1974, after the Indian nuclear test, Kissinger stressed the importance of nuclear nonproliferation and declared, "Nuclear catastrophe looms more plausible—whether through design or miscalculation; accident, theft, or blackmail," without directly criticizing India.

The United States, especially the Department of State, feared the potential for India to become involved in nuclear export, rather than India's possession of nuclear weapons itself. During a talk with the Indian foreign minister before his trip to that country, Kissinger only said that India should not export sensitive nuclear technology, adopting a policy of not strongly pressuring India about a second nuclear test. As if in response to this, India informed the United States that it would not export sensitive nuclear technology. Rather than changing the policy of India, which had already joined the "Nuclear Club," perhaps Kissinger was trying to get India to be in tune with the "club rules," so as not to incite further nuclear proliferation.

America's response to India's nuclear test symbolized a United States that wavered between its stance of nuclear nonproliferation, and security and perhaps even its strategic considerations. This response to India is extremely interesting in its contrast with US relations with Japan (discussed below) that were progressing side-by-side during the same time, and with America's efforts to block the growth of South Korea's embryonic nuclear weapons development program. In the 2000s, with the conclusion of a nuclear cooperation agreement with India, the United States was questioned about its inconformity with the norms and rules of the nuclear nonproliferation regime, but it can be said that the structure of the problem of America's order of priority between nuclear nonproliferation and its strategic considerations had already been "established" in the 1970s.

Along with the structural changes of nuclear nonproliferation policy, there were also changes in the relations between Japan and the United States. Japan was in the process of acquiring its own expertise in nuclear technology, particularly nuclear fuel cycle technology. On the other hand, looking at the security environment surrounding Japan, there arose the necessity to reestablish the trust and reaffirm the significance of the alliance between Japan and the United States, in the midst of changes in America's policy toward Asia, and the exacerbation of the fear of nuclear proliferation in Asia in the wake of the successful nuclear tests by China and India.

Speaking in Guam in July 1969, President Nixon said, "we must avoid the kind of policy that will make countries in Asia so dependent upon us that we are dragged into conflicts such as the one we have in Vietnam," clearly outlining a policy of decreasing American involvement in Asia and promoting self-supporting efforts by Asian nations in their own national defense—albeit while the United States continued to provide extended nuclear deterrence. Furthermore, Nixon's landmark visit to China in February 1972 produced the Shanghai Communiqué toward normalization of relations between the two countries. This Guam Doctrine and the change in America's policy toward China aroused fear of

abandonment among its allies in Asia. Due to doubts in the reliability of US security, South Korea and Taiwan began to consider the nuclear option.

In Japan, following the success of the China's nuclear test in 1964, a study group called "Minshu-shugi kenkyu-kai" (or Study group on democracy), commissioned by the Cabinet Intelligence and Research Office, studied the technological, organizational, financial, strategic, diplomatic, and political aspects of the possibility of Japan having independent nuclear capability. It was concluded that nuclear armament by Japan would be a big minus as far as international politics were concerned, and would remarkably diminish the effect on security (Minshu-shugi kenkyu-kai, 1968, 1970). Also, in 1970, then-Director General of the Defense Agency Yasuhiro Nakasone, while emphasizing that it was a tentative assumption, conducted a study on an option of nuclear armament based on Japan's capabilities and financial situation and other conditions. His study concluded that while it would be possible for Japan to have nuclear arms within five years at a cost at the time of 200 billion yen, since the country could not secure a test site, realistically it would have been impossible, as he later clarified in his autobiography (Nakasone, 2004). While there is still room for verification of just how these findings were reflected in policy decisions, at any rate Japan chose to be nonnuclear.

Meanwhile, at the end of 1970 Japan concluded a contract for the construction of a reprocessing plant in Tokai-mura, Ibaraki Prefecture, with the Power Reactor and Nuclear Fuel Development Corp and Saint-Gobain Techniques Nouvelles (SGN) of France; and in September 1977 began a hot-testing process using spent fuel from the Japan Power Demonstration Reactor of the Japan Atomic Energy Research Institute, thereby acquiring the expertise for exploiting nuclear fuel cycle technology. A nuclear fuel cycle promotion policy was established amid increasing awareness of energy security caused by the 1973 oil crisis. However, Japan's nuclear fuel cycle program later became a major source of contention with the United States.

3. Change in American policy, and Japan-US friction

With such changes in the market, patterns of technology diffusion and the international security environment, the US government began to take a stricter approach toward the management of nuclear fuel cycle technology from the end of the Ford administration on into the Carter administration. Previously, America's position regarding the possession of nuclear fuel cycle technology by other countries was determined to a certain extent by the political climate surrounding those countries and America's relationship with them. As a result of that selective approach, differences appeared in American policy toward, India, Japan and South Korea. However, President Carter instructed a commission made up of representatives from the National Security Council (NSC), the Department of State, the Arms Control and Disarmament Agency (ACDA) and the Energy Research and Development Administration (ERDA) to review nuclear nonproliferation policy.¹¹ As a result, policy was redirected toward the establishment of principles of nuclear nonproliferation—meaning that a standardized approach would be applied, regardless of each country's political/security environment and relationship with the United States, and toward the construction of an international regime based on objective assessment of economic efficiency and safety conditions. In addition, at home, the US government decided that plutonium reprocessing and a fast breeder reactor project would be postponed in the United States as well.

Such a principle of America's nuclear nonproliferation policy, that is to say, adopting the standards and system of the international regime restricting nuclear fuel cycle possession, developed into friction between Japan and the United States in talks over the operation of the Tokai-mura reprocessing plant.

The Carter administration stopped the operation of the reprocessing plant at Tokai-mura based on the right of advance consent stipulated by the Japan-United States nuclear cooperation agreement, that is

to say, on the necessity of America's consent for the reprocessing of nuclear fuel originating in the United States. After negotiations with Japan, Washington finally allowed Japan to operate the reprocessing plant in exchange for certain concessions from Japan.

In the mid-1970s, France and West Germany sought to promote atomic energy cooperation, including nuclear fuel cycle technology, with Pakistan, Iran and Brazil, but the United States, apprehensive about these projects, attempted to shut down these efforts. Given those circumstances, if the United States had moved to make Japan stop reprocessing, not because the United States was concerned about Japan possessing nuclear weapons but for the purpose of using Japan as an example for other countries in order to get them to give up their efforts to acquire a nuclear fuel cycle (Tomotsugu, 2009), the intention of the United States in its policy toward Japan meant that it aimed to establish a new multilateral standard by changing Japan's policy. As it turned out, however, the United States could not alter the fundamental normative framework of the nonproliferation regime of the coexistence of the inalienable right of peaceful use and nuclear nonproliferation, which it had took the lead in the establishing. If anything, the Tokai-mura reprocessing talks derived significant meaning as an example of an individual approach rather than strengthening the standardized approach based on the universal norms through the multilateral regime. However, the US-Japan Tokai-mura talks, though limited in scale, were, in two ways, a beginning of change in the nuclear nonproliferation order and the way of Japanese and US involvement in nuclear nonproliferation.

First, the Tokai-mura talks initiated the global partnership between Japan and the United States in nuclear nonproliferation, and were the beginning of changes in the shape and maintenance of the nuclear nonproliferation order. That is to say, they contributed to a switch from the former order based on America's hegemony to a kind of system of power sharing, and to a strengthening of the universality of the norms for entrusting such norms with part of maintaining the order.

Secondly, in the talks, Japan agreed to limit the separation of plutonium to only two years, and acknowledged the possibility of changing to plant operation by co-processing with higher proliferation-resistance in the future. This was important in mitigating the threat of nuclear proliferation of Japan. Furthermore, it meant that even though acquiring nuclear fuel cycle technology did not clearly violate norms or regulations, what was agreed between Japan and the United States demonstrated to the international community the necessity to accept any safeguards in order to eliminate the concerns of nuclear proliferation derived from acquiring fuel cycle technology. This is significant because, even if the talks did not bring about changes to the norm system of the regime, they shaped a change in the relationship between the two pillars of peaceful use and nuclear nonproliferation through putting higher consideration on security factors, and reconfirmed the importance of safeguards.

Meanwhile, the International Nuclear Fuel Cycle Evaluation (INFCE), which was an international consultation mechanism established in October 1977 with the participation of representatives of 40 countries and four international organizations, can be seen as the failed attempt to change the essence of nuclear nonproliferation norms through multilateral cooperation. The United States intended that through the INFCE, it would create a policy system to prevent the emergence of new countries possessing nuclear fuel cycle technology. However, against America's will, the INFCE concluded that the manufacture of nuclear weapons was a matter of a policy decision motivated by political considerations,¹² and avoided judging how to deal with such political motives, since the mandate of the INFCE in the first place, was focused on performing technical and analytical evaluations for minimizing the risk of the nuclear proliferation of the nuclear fuel cycle. In creating a norm for the international community toward banning reprocessing, the attempts of the United States ended in failure; having failed in correcting the structural defects of the existing nuclear nonproliferation regime, with the combination of the weakness

of institutional methods which could not sufficiently monitor the transfer and use of technology through safeguards and export controls, and the absence of an approach toward a political motive for proliferation, the structural defects remain unchanged. And after all, addressing a political motive for nuclear option was not made through a multilateral regime but rather was left to the individual approach.

What were seen in America's policies toward Japan and India was the difficulty of consistently applying the principle of nuclear nonproliferation for any kind of country, as had been the aim of the early Carter administration. On top of that, as far as the individual approach was concerned, as a result of broad compromise, in the end consideration of foreign and security policy exceeded consideration of nuclear nonproliferation in a political, individual approach.

Japan, meanwhile, in maintaining nuclear fuel cycle technology, while managing to get the consent of the United States, also promoted its own image as an "honor student" within the nuclear nonproliferation regime. Being an honor student (or else the "Japan model") in the context of the nuclear nonproliferation regime meant to strictly comply with the NPT, the IAEA Statute and the safeguards agreement, while also promoting the nuclear fuel cycle, which was the most advanced technology in the peaceful use of nuclear power. The logic behind being an honor student in compliance with the obligation of nonproliferation of the nuclear nonproliferation regime can be said to be an effective approach to, while cooperating with the nonproliferation policy promoted by the United States, becoming independent from the influence of American policy, which was highly political in nature, or that is to say, pose low predictability for the future.

Also for the United States, having an ally as an honor student in the nuclear nonproliferation regime had two meanings. One was the political merit of being able to demonstrate correctness in that its own nuclear nonproliferation policy was in line with the norm structure of the multilateral regime, while the other one was the message that an honor student was only an exception rather than being a general example.

As such, the distinguishing characteristics of Japan-United States relations around the nuclear nonproliferation shaped in the 1970s can probably be summarized by the following three points. First of all, amid concern over nuclear proliferation in Asia, including possession of nuclear weapons by China and India, entrusting its security to the extended nuclear deterrence of the United States through the US-Japan alliance, Japan established its nonnuclear choice. Secondly, amid confrontation with the United States over the nuclear fuel cycle, Japan, in order to increase in its own discretion in decisions on the peaceful use of nuclear energy, sought for the legitimacy of the existence of its own nuclear fuel cycle in complying with the norms and regulations of the multilateral regime. Through that Japan performed a risk hedge from America's unilateral policy change (which suggests independence from the United States). And third, amid this cooperation and confrontation, the global partnership between Japan and United States in the area of nuclear nonproliferation was established.

With the Reagan administration in the 1980s, while maintaining its rejection of a nuclear fuel cycle domestically, the United States did not openly demonstrate concern to friendly countries regarding nuclear proliferation. Within the administration, there were voices to place importance on the principle of nuclear nonproliferation, and expressing concern over the individual approach; but based on the concept of "advance consent arrangement" introduced in 1982, it recognized the independence and flexibility of friendly countries in their nuclear policy.¹³

In the talks over the Japan-US Nuclear Cooperation Agreement, which was revised in 1988, the focus was whether or not the United States would recognize this advance consent arrangement with Japan (Endo, 2014). The negotiation was difficult. Even within the US government, there was a divide between the group that placed importance on the Japan-US alliance and the group that placed importance on the principle of nuclear nonproliferation. Eventually, at a meeting attended by

undersecretary-level representatives from the National Security Council (NSC), the Department of State, the Department of Energy, the Department of Defense and the Nuclear Regulatory Commission, it was decided by a narrow margin to recognize an “advanced consent arrangement” for Japan. It is said that the biggest reason for this was because President Reagan personally placed importance on the US-Japan alliance. If we say the Japan-US nuclear relationship during the Carter administration was epitomized by the bilateral talks that helped shape the alliance into a platform for promoting nonproliferation (i.e., an “alliance for nonproliferation”), then the Reagan administration’s nonproliferation policy can be characterized as a return to the “atoms for alliance” approach, which involved strengthening bilateral relations in the context of nuclear energy used as a lever for alliance management.

However, the United States had not forgotten to gain leverage against the Japanese government. In the revised agreement, it was stipulated that even if nuclear fuel did not originate in the United States, the reprocessing of spent nuclear fuel burned in a nuclear reactor using materials/equipment provided by the United States would be subject to control based on the agreement. Japan obtained a stronger alliance with the United States and gained broader discretion in the nuclear fuel cycle project, while the United States, gaining policy measures just in case things should come to a standstill, obtained Japan’s further commitment to nuclear nonproliferation. In that way, starting in the 1970s continuity can be seen in the policy structure in which cooperation between Japan and the United States coexisted along with their mutually dependent and strained relations.

This policy structure continues in much the same way today. What greatly differs, however, is probably the changes taking place in the roles Japan and the United States can play in nuclear nonproliferation based on changes of the threat of proliferation and the multilateral regime.

4. Re-construction of the nuclear nonproliferation order and the US-Japan partnership after the Cold War—The question of effectiveness

After the end of the Cold War, serious concerns of nuclear nonproliferation arose that “rogue states” such as Iraq and North Korea could develop nuclear capabilities secretly, or non-state actors would participate in proliferation activities such as the nuclear black market under the leadership of Dr. A. Q. Khan of Pakistan.

With the diversification of actors who could influence the maintenance and shape of the order and with the difference in the levels of commitment to norms (and with the emergence of actors who do not find value in such a commitment), an important factor for maintaining the international order of nuclear nonproliferation, beside the shaping of norms and rules, is whether or not it is possible to effectively deal with noncompliance. Effectiveness in other words means whether or not defiance against the existing international order, such as North Korea’s unequivocal development of nuclear capabilities and the suspicion that Iran is developing nuclear capabilities, can be adequately eliminated. However, even if examples of this kind of deviation from the order cannot be corrected or eliminated, the risk of proliferation must be managed¹⁵ so as to prevent a reverberating influence on the actions of other countries belonging to the regime (or regimes themselves, or the reliability of the cost-and-benefit structure involved in utilizing a regime), and thus the international order should be maintained.

In the comprehensive safeguards agreement that is the current standard, the IAEA safeguards are based on verification of the correctness of the declarations made by member countries. This system assumes that the member countries will declare honestly, and it is not assumed that nuclear activities will be malevolently concealed. This is because, in designing the safeguards system, rather than aiming at technologically perfect safeguards, focus was placed on creating political and psychological impediments against nuclear proliferation and on the system’s role as confidence-building measure (Ota, 1978). However, learning a lesson from the revelation of Iraq’s clandestine nuclear development after the Gulf

War, as well as nuclear development by North Korea, the IAEA drew up an additional protocol that strengthened its right of access to plants and other facilities and allowed it to take measures to improve the efficiency of inspection. This was because psychological and political impediments and mere confidence-building were powerless against a “determined proliferator.”

Also, if a case of noncompliance with the NPT, the IAEA Statute or the safeguards agreement is confirmed through inspection, the IAEA can independently impose sanctions such as stopping cooperation for peaceful use, but the effect is considered to be limited. Furthermore, such noncompliance cases are reported to the UN Security Council, as provided by the IAEA Statute based on the decision by the Board of Governors. If noncompliance with the IAEA safeguard agreements poses a threat to international peace and safety, the UN Security Council could impose nonmilitary sanctions or even military sanctions against the noncompliant country. Thus far, in cases of the proliferation of weapons of mass destruction, there has not been any instance of enforcement by military measures under Chapter 7 of the UN Charter.¹⁶ Even for the ongoing problems of North Korea’s nuclear weapon development and Iran’s nuclear activities, UN Security Council resolutions which have been adopted successively contain only nonmilitary enforcement measures such as economic sanctions.¹⁷

Amid this situation, in order to increase the effectiveness of dealing with cases of noncompliance, responses on a case-by-case approach by a single concerned country or a group of such countries. An increase in the importance of domestic law enforcement can be mentioned as part of the trend toward nuclear proliferation during recent years. This means strengthening export controls of sensitive materials pertaining to the manufacture of weapons of mass destruction, illegalizing proliferation activities by non-state actors, and introducing a legal system by which to sanction those activities through UN Security Council Resolution 1540. Also, the NSG revised its guidelines in June 2011 and imposed stricter nonproliferation requirements among countries receiving nuclear power cooperation.

Meanwhile, in the international community there was repulsion against such strengthening of law enforcement. This included, for example, the developing countries group who, strongly arguing in favor of the priority of economic growth and national sovereignty, opposed action to strengthen regulations under the leadership of the United States, Europe and Japan. For countries that did not sense a direct threat of nuclear weapons, there was low incentive to bear the cost of, and to invest policy resources into strict verification. However, in Asia, where there is abundant distribution of various types of technology including dual-purpose high-tech products, if there would be countries that were not actively participating within the framework of multilateral nonproliferation policy, that would create “windows of proliferation.” Or even if they actually intended to participate in nonproliferation and to control it, they might have lacked personnel or capacity within the executive organs of government, or there was the possibility that sensitive materials could slip through export controls by false declarations of companies. If for various reasons domestic law enforcement is weak, this also would create a window of proliferation.

Currently, as the threshold against the possession of technology becomes lower, windows of proliferation pose a danger to the existence of the nuclear nonproliferation order. And selfish behavior by some free-rider-type technology users forces other countries to make extensive investment of policy resources if the effectiveness of the international system of nuclear nonproliferation is to be maintained. Actually, the cost of the current strengthening of the nuclear nonproliferation order by the United States, Japan and European countries is far greater than the investment in nonproliferation policy by developing nations including China (although they are also beneficiaries of nuclear nonproliferation).

The Proliferation Security Initiative (PSI) is an initiative for multilateral cooperation proposed by the United States for the purpose of seizing proliferation material during transport on the open seas, or that is to say, strengthening law enforcement on the open seas, as one of possible measures to prevent

sensitive technology and materials coming from a “window of proliferation” from getting to their intended receiver. On May 31, 2003, then-President Bush of the United States gave a speech in Kraków, Poland, in which he announced the PSI as a new attempt to prevent proliferation.¹⁸ The objective of the PSI was to study and implement measures to prevent the transfer and transport of weapons of mass destruction, missiles and related materials that threatened world peace and stability, within the sphere of international law and the domestic laws of each country, and through the joint efforts of participating countries, in order to prevent proliferation. At first the ones that President Bush invited to participate during this speech were 10 countries including Japan,¹⁹ but currently there are 21 countries participating in a central group called the Operational Experts Group, with 102 countries expressing their support of the basic principles and purpose of the PSI.²⁰

The difficulties of seizing illegal materials for use in weapons of mass destruction and the vessels carrying them are summarized by the following three points. First is the problem of legal basis including jurisdiction at sea. The problem of the proliferation of weapons of mass destruction is not necessarily accurately addressed within the legal system upon which the current international order of seas (or governance) relies, including how to decide on jurisdiction of law enforcement and where to seek a legal basis of regulation. Secondly, with a legal system actually in place, is the question of specifically how to assure the effectiveness of policy enforcement. Thirdly, though closely related to the second point, operations to seize illegal materials loaded on vessels require multilateral cooperation but, in that case, the issue is how to build substantial international cooperation including in the area of intelligence. Expanding membership in order to reduce the existence of the above-mentioned loopholes must be performed in such a way so as not to sacrifice effectiveness.

The PSI is a platform for diplomacy of shaping a norm, rather than a system of enforcement *per se*. And so first a range of activities is to form a norm or a kind of code of conduct for strict law enforcement among concerned countries, and then they expand cooperation toward universalizing such a norm of strict law enforcement. International law and constraints of international norms around preventive activities at sea (prevention of proliferation) that were in place when the PSI was established have hardly changed at all up to the present time. So the PSI, rather than changes in policy through institutional reform of the regime, realizes consolidation of the foundation of policy (reaffirming the interpretation of international law and envisioning practical revision of international law in the future) through changes in norms through political action. This kind of approach of first forming norms among concerned countries and then seeking the universalization of such norms, seems to be more effective than the initial approach of forming consensus in a highly universal forum while making decisions, which often undermines the concreteness and effectiveness of measures as it may have to reflect diverse views.

The first Nuclear Security Summit held in 2010, launched upon a speech by President Obama in Prague, can also be included among new policy initiatives in nuclear nonproliferation and nuclear security. Through universalizing the awareness that stronger nuclear nonproliferation and nuclear security serves the international public interest, there should be stronger responses by the broader members of the international community to nuclear proliferation and the risk of nuclear terror, and based on that the level of the threat of nuclear proliferation and nuclear terror would be dropped. As a result, American security benefited. Also, the resources that need to be invested for such policy purposes can be cut down by cooperative implementation of policy with other countries and increasing voluntary compliance action. Such broadening of norms makes it possible to share the responsibility of maintaining order over a wider spectrum.

The accident at Tokyo Electric Power Company’s Fukushima Daiichi nuclear power plant had great implication for Japan’s nuclear power policy. Furthermore, it has significantly influenced not only nuclear

safety, but also nuclear security and nuclear nonproliferation. What especially came to the attention of the international community was the future of Japan's nuclear fuel cycle project. The "Monju" fast breeder reactor project has already had significant delays due to the effects of troubles, with no prospect in sight for restarting it; and a project to burn Mox fuel, which is a mixture of plutonium and uranium, in a light-water reactor has also been delayed since the Fukushima nuclear accident, without power generation being restarted. Amid this situation, the fact that Japan is stockpiling about 10 tons of plutonium in Japan and about 35 tons overseas has been the object of heightened concern in the international community, including the United States, that there is no economically rational explanation for it.

After the Fukushima nuclear accident, the United States, having recognized the advance consent arrangement with Japan within the nuclear cooperation agreement of 1988 under the precondition that Japan use plutonium properly and that it not stockpile it excessively, demonstrated an understanding that the precondition would be lost if Monju was discontinued and if power generation was not restarted there.²¹ Actually, even before that there had been concern over Japan's reprocessing and fast breeder reactor project delays, but with the occurrence of the Fukushima nuclear accident, doubt was expressed even more strongly and explicitly regarding the propriety and rationality of the nuclear fuel cycle project.

Meanwhile, Japan and the United States agreed, after negotiations for many years, to transfer to the United States plutonium of extremely high purity and highly enriched uranium that had been planned to be used in the Fast Critical Assembly (FCA) of the Japan Atomic Energy Agency, and that the plutonium would be disposed of and the highly enriched uranium would be diluted into lightly enriched uranium for civilian use, and this was announced in a joint statement at the Nuclear Security Summit held at the Hague in the Netherlands in 2014.²² In addition to strengthening the universality and propriety of the guiding principles of policy to reduce the global stockpile of plutonium and enriched uranium, which pose a high risk to nuclear security and nonproliferation, this also can be looked upon as an example of Japan-US cooperation.²³

In the nuclear nonproliferation order after the Cold War, how to supplement the declining American power in ensuring effectiveness became an important challenge. If an approach was to be selected to shape the order through cooperative/coordinated voluntary actions of concerned countries as a response to this challenge, the role of norms would inevitably become critical. The above-mentioned cases of multilateral cooperation and the bilateral Japan-US relations demonstrate the importance of norm-driven nonproliferation policy and the creation of cooperative mechanisms among concerned countries. In revisiting the role of norms in nuclear nonproliferation policy, it would have been no wonder if the behavior of Japan, which, despite of its NNWS status, had a full-scale nuclear fuel cycle ranging from enrichment to reprocessing and had gained a kind of "privileged position" in the current nuclear nonproliferation regime, would be paid more attention as it could shape the trend of the nuclear nonproliferation policy of the international community. It would be natural to take notice of the viability of a narrative of "Japan as a model of nonproliferation."

Conclusion

If a decline in America's power to get other countries to accept the order is understood as a "retreat of the United States," then the peaceful use of nuclear power was a realm in which the tendency of such a decline was even more obvious. The distribution of power in the international nuclear order depends not only on the possession of nuclear weapons but power to enforce laws for maintaining the order. The power to enforce laws is defined with political power, the ability to control nuclear technology that stipulates power in the market, as well as capabilities to ensure law enforcement.

The reason why technical capacity and the international market share are important for securing

power in the field of peaceful use of nuclear energy is because the bilateral relationship within the nuclear power business and cooperation provides incentives to induce, and leverage to force compliance with the nonproliferation rules and norms. Bilateral agreements contain provisions for the supplier country to agree with how the recipient country uses the technology, and if the supplier country does not agree, then it is entitled to, in some form, impose limits on that use. Also, concluding this kind of bilateral agreement provides, in that process, a clue for more forcefully requiring the recipient country to comply with nuclear nonproliferation norms such as signing and ratifying the additional protocol of the IAEA safeguards agreement. However, in cases where competitors exist in the market, if the United States can't provide a more attractive deal to the recipient country, by choosing to have a cooperative relationship with another country it becomes possible for the recipient country to be exempt from the strict regulations that the United States would require. Also, the existence of this option creates a situation in which the United States has no choice but to allow more lenient regulations in its bilateral agreement with the country in question.

Bilateral security relations are also important factors in nuclear nonproliferation. From the 1960s to the 1970s, as the risk of nuclear proliferation rose in Asia, the extended nuclear deterrence provided by the United States played a certain role in Japan's choice to remain nonnuclear. This choice was in contrast to the drive to possess nuclear capabilities by India, for which the United States had refused to provide the extended nuclear deterrence.

As American power relatively declined, the "international order based on liberal internationalism" had to change from a hierarchal order with the United States providing public goods to a flatter order in which the weight of nonwestern countries within the governance of major international institutions rose (Ikenberry, 2000). Under such an order, the modality of governance of the international community should be changed to one relying on network-type of relationships among states that enhances cooperation among nations, with the principle of the rule of law, including law enforcement.

After the end of the Cold War, a situation emerged in which the "incentives" (benefits) and "coercion or compulsion" (sanctions) could no longer be applied in dealing with the new types of proliferators, i.e., "rogue states" and terrorist organizations, that represented the greatest risk to and apprehension regarding nuclear nonproliferation. In order to deal with that and maintain order, the United States came to rely on enforcement and compulsion through measures to complement the conventional NPT/IAEA-based nuclear nonproliferation regime. However, the possible choices of policies and measures for guaranteeing nuclear nonproliferation did not, as far as the technical approach was concerned, differ that much between the time of the Cold War and after the Cold War. It is clear that nuclear nonproliferation could not be guaranteed merely by strengthening the multilateral regime that considered universality as an important factor in its legitimacy (Naya, 2000, pp. 26–27). Whether by unilateralism, or by a joint approach among concerned states, or through the multilateral regime, and no matter how the value of nonproliferation was to be realized, the problem was whether there could be political agreement on who would bear the economic and political cost of realizing policy and guaranteeing its effectiveness, as well as maintaining a long-term sustainable order.

Among emerging countries, there is a persistent orientation in their policy toward prioritizing sovereignty and economic development, and thus they tend to behave in the existing international order in a way intended to maximize their own interests, which they believe as their optimal solution as far as they actions are concerned. There are also countries that do not accept the idea that they need to bear the cost of maintaining the intangible value of nuclear nonproliferation. Meanwhile, some developing nations have grown to the extent that through their own actions they could bring about changes to the existing order while reaping its benefits. They lack the understanding that acting driven by their own self-interest

will bring about the disintegration of the order.

As more diverse types of actors are involved, compulsion and enforcement become more necessary for the maintenance of the regime. Ironically, stricter enforcement for maintaining the regime highlights contradictions which had been in existence in the nuclear nonproliferation order. Contradictions generic to the non-proliferation order are: the unequal status regarding nuclear possession, and subsequent co-habitation of nuclear technology-possessing countries and developing countries that receive technology, both of which have different expectations on the benefits of participating in the regime respectively. They create the divide over perceptions and attitudes toward compliance with norms. This divide may result in a greater concern whether the regime could exist in a self-supported manner, which requires spontaneous commitments by participating states to compliance with norms of the regime. Such a regime crisis, meanwhile, has demonstrated just how much the nuclear nonproliferation order owes to the United States, which has been bearing the responsibility and cost of maintaining the nuclear nonproliferation order.

America's initiative in maintaining the nuclear nonproliferation order can be an expression of its position of fixed dogmatic liberalism in an attempt to unconditionally apply the "universal" norm (of non-spatial and non-historical qualities), namely nuclear nonproliferation, to the entire international community (Hartz, 1955; Nakayama, 2005). The United States may see the maintenance of the nonproliferation regime as a "manifest destiny" or an unquestionable national interest, while for other states, the righteousness of nonproliferation may not be so obvious. This creates a dilemma. In the end, there is no alternative in the nuclear nonproliferation order but to continue to depend on America's leadership as the universal, spontaneous compliance with rules and norms may not be expected. But now it lacks sufficient policy resources. From America's perspective, it would not be able to achieve its policy objectives if it were to act on its own. As a result, the United States, with the incompatibility between its nonproliferation policy objectives and the policy resources that it can invest in them, faces the possibility that such a policy approach could fail in the future, or that is to say, it faces the risk of being forced into a situation of strategic insolvency (Mazarr, 2012).

Under the current situation, cooperation among countries traditionally friendly to nonproliferation, including Japan, the United States and Europe, will probably remain the main drivers in maintaining norms and order. This is the reason that the United States continues to emphasize the importance of its global partnership with Japan in nuclear nonproliferation. However, looking at things from the medium to long term, it is essential to involve developing nations such as China and India, both of which will naturally expand their presence in the market. Substantially speaking, the universality of the value of nuclear nonproliferation (or a convergence of understanding of the substantial implication of nuclear nonproliferation) must be increased, and commitment must be obtained from more countries. It will be extremely significant for so-called "concerned countries" that find high stakes in nuclear nonproliferation, such as Japan, the United States, along with France and the United Kingdom, to cooperate to promote a broad sharing of the burden of policy resource investment.

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1. UN Security Council Resolution 255, which was passed around the time of the NPT's adoption in 1968, included language supporting positive security assurance, the pledge that NWS shall aid NNWS if the latter come under nuclear attack. In 1995, shortly before the NPT was indefinitely extended, the UN Security Council adopted Resolution 984, which included a statement of negative security assurance, the pledge that nuclear weapons shall not be used against NNWS.
 2. In the context of actual policy decisions, the level of security assurance varies according to the strategic thinking behind it,

with extended nuclear deterrence considered the maximum degree of commitment. Furthermore, the credibility of the commitment depends on the political environment.

3. In 2009 the United States concluded an agreement with the United Arab Emirates in which the latter was assured a supply of nuclear fuel in exchange for forgoing nuclear cycle programs. The United States attempted to apply this arrangement as a “gold standard” for subsequent bilateral agreements with other countries, but this endeavor has not succeeded.
4. Memcon, Sato, Johnson, et al., January 12, 1965, NSF, Co, Japan, 1/11-14/65 Sato’s Visit Memo & Cables, Box253, CBJL, Kurosaki, 2006, pp. 57, 191.
5. Minutes from the 57th Diet House of Representatives Committee on the Budget, No. 2, December 11, 1967, p. 18.
6. For example, China initially received atomic energy technology for civilian purposes from the Soviet Union. However, Mao Zedong’s denouncement of the Khrushchev policy of peaceful coexistence with the West further soured the the two countries’ deteriorating relations, prompting the Soviet Union to annul in 1959 its agreement to provide China with technical cooperation in nuclear weapon development. China subsequently pursued this development on its own, paving the way to its first successful nuclear test in 1964. In the 1970s, countries such as France and West Germany expanded their nuclear energy business activities.
7. In Japan, the No. 1 nuclear reactor of Japan Atomic Power Company’s Tsuruga Nuclear Power Plant entered commercial operation in March 1970, followed by the No. 1 nuclear reactor of Kansai Electric Power’s Mihama Nuclear Power Plant in November. Tokyo Electric Power Company’s Fukushima No. 1 nuclear reactor began commercial operation in March 1971.
8. IAEA Document INFCIRC/254, *Guidelines for Transfers of Nuclear-related Dual-use Equipment, Materials, Software, and Related Technology*, February 1978.
9. The Nuclear Non-Proliferation Act of 1978, P.L., pp. 95-242.
10. Memorandum for the Secretary of Defense: “The Indian Nuclear Weapons Problem: Security Aspects,” January 4, 1967, attached to a Letter from Morton H. Halperin, Special Assistant to the Secretary of Defense, to Douglas Heck of the State Department (SECRET). Source: Subject-Numeric File, 1967-1969; Central Files of the Department of State, Record Group59; National Archives, Washington, D.C., <http://www2.gwu.edu/~nsarchiv/NSAEBB/NSAEBB6/docs/doc13.pdf>.
11. *Presidential Review Memorandum/NSC 15*, Jan. 21, 1977.
12. International Nuclear Fuel Cycle Evaluation, *INFCE Summary Volume*, 1980, p. 23.
13. *NSDD 39 U.S. Policy on Foreign Reprocessing and Use of Plutonium Subject to U.S. Control*, June 4, 1982.
14. Interview with former high official of Department of Energy, October 3, 2011, Washington, DC.
15. In this case, “manage” means working to eliminate regional security concerns (for example, providing extended deterrence and reassurances) and controlling the risk of proliferation, such as by implementing stronger nonproliferation measures to prevent NNWS from acquiring capabilities for nuclear weapon development.
16. However, a precedent was set by the invasion of Iraq by the US-led coalition of multinational forces, which was based on the combined interpretation of UN Security Council Resolutions 678 (November 1990), 687 (April 1991), and 1441 (November 2002).
17. See UN Security Council Resolution 1929 against Iran (June 2010), Resolution 1874 against North Korea (June 2009), etc.
18. Remarks by the President to the People of Poland, May 31, 2003. <http://georgewbush-whitehouse.archives.gov/news/releases/2003/05/20030531-3.html>
19. Japan, the United Kingdom, Italy, the Netherlands, Australia, France, Germany, Spain, Poland, and Portugal.
20. Ministry of Foreign Affairs Nonproliferation, Scientific Atomic Power Section “Security Plan Against Proliferation” June 20, 2013, http://www.mofaj/gaiko/fukaku_j/PSI/pdfs/PSI.pdf.
21. Dan Poneman, deputy secretary of energy, speaking to Seiji Maehara, former chairman, Policy Affairs Research Council, Democratic Party of Japan, in September 2012. (Ota, 2014, pp. 159-162)
22. “Joint Statement by the Leaders of Japan and the United States on Contributions to Global Minimization of Nuclear Material,” Ministry of Foreign Affairs, March 24, 2014. http://www.mofa.go.jp/mofaj/dns/n_s_ne/page18_000244.html.
23. Some have argued that this issue stemmed from American concern over the Abe government’s drive to become a military power, but the origins and development of this matter make it clear that such a concern was not discussed in this context. Also, a key point of this agreement was that Japan would hand over to the United States nuclear material procured from other countries (specifically, the United Kingdom)—i.e., material for which the United States technically did not have the right to demand return.

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