

U.S.-ROK Nuclear Nonproliferation Cooperation

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ABSTRACT

The United States and the Republic of Korea (ROK) share strong interests in preventing the spread of nuclear weapons, and both states have compelling reasons to expand their cooperation to strengthen the global nonproliferation regime. North Korean nuclear ambitions present direct threats to regional stability and to the security of the United States and its allies in East Asia, particularly the ROK. Beyond the Korean peninsula itself, several developments over the past few years threaten the foundations of the global nonproliferation regime and endanger the national security interests of both the U.S. and the ROK.

This essay describes specific actions that the United States and South Korea have taken to date to prevent the spread of nuclear weapons. It suggests steps that each could take to strengthen the nonproliferation regime, then discusses the question of replacing the existing U.S.-ROK peaceful nuclear cooperation agreement, which expires in 2014. The essay highlights the need to reconcile South Korea's ambitions to reprocess its used nuclear fuel, with U.S. policy to discourage the spread of sensitive nuclear capabilities.

The global nonproliferation system remains under considerable strain, and both the U.S. and the ROK should take additional steps to align their policies and more fully participate in efforts to reduce the risk of nuclear proliferation. In general, the U.S. needs to move forward more aggressively in supporting the reduction of nuclear armaments, the banning of nuclear testing and the production of weapons-usable materials for nuclear weapons. The ROK needs to take on a greater leadership role in the nonproliferation field that is proportionate to its status as a country with a major nuclear power and R&D program.

Since the current U.S.-ROK peaceful nuclear cooperation agreement expires in 2014, the two countries will need to begin to negotiate a replacement agreement. This new U.S.-ROK civil nuclear trade accord could serve as an important vehicle for enhancing the peaceful nuclear programs of both countries while establishing effective nonproliferation conditions and controls that should govern such programs. A new U.S.-ROK accord could have clear benefits for both countries by providing a stable basis for peaceful nuclear trade and cooperation for the future. It could also establish a model for strict nonproliferation controls that South Korea might include in its own bilateral nuclear cooperation with other countries. In this respect the agreement offers the opportunity for both countries to strengthen nonproliferation controls on civil nuclear trade and to lessen the one-sided nature of past U.S.-ROK bilateral nuclear cooperation.

One issue that is most likely to complicate the negotiation of a new U.S.-ROK peaceful nuclear cooperation agreement is the implementation of a U.S. right to consent to the

reprocessing of used nuclear fuel from the South Korean nuclear program. A major objective for South Korea in negotiating a new agreement with the U.S. will most likely be to obtain U.S. consent on an advance, long-term basis both to reprocessing or pyroprocessing of used nuclear fuel subject to the agreement and to the use of the recovered plutonium and other transuranics in fast reactors. However, the U.S. has long approached the issue of reprocessing with great caution.

Given the different positions that the U.S. and ROK have on reprocessing and pyroprocessing/recycling, there are a few options for the two countries: 1) explore the option for an international or regional storage or waste disposal facility, 2) establishment of dry cask storage at reactor sites or the construction of a central storage or regional storage sites in South Korea for short-term relief to the utility industry, 3) U.S. permitting the ROK to transfer some or all of U.S.-obligated spent fuel to Europe for reprocessing, 4) U.S. determining that pyroprocessing is not, in fact, reprocessing, and 5) U.S. making some commitment to approve long-term pyroprocessing in South Korea along the lines similar to the arrangements that the U.S. has made with India and Japan. The ROK and the U.S. could make a joint commitment to work with each other on the development of proliferation-resistant pyroprocessing technology and with the IAEA on related advanced safeguards techniques. The two states would agree that ROK would move toward the establishment of a commercial capability only on a step-by-step basis and only when both the U.S. and the ROK have jointly agreed that pyroprocessing in the ROK is sufficiently "proliferation-resistant" and may be effectively safeguarded.

Another option would be to consider some kind of joint venture or multinational entity that would establish strengthened barriers to proliferation and avoid national control of this sensitive technology. Seoul could commit to making any pyroprocessing facility in South Korea a joint venture that would entail U.S. and/or multinational participation in the management and/or operation of the facility. This approach would help the U.S. maintain its position opposing the spread of sensitive nuclear facilities because the ROK pyroprocessing facility would constitute an alternative to nationally controlled facilities. It would offer a less discriminatory approach than a regime that allows a few states to continue their national programs while strongly discouraging most states from acquiring such technologies.

Whether such additional commitments and restrictions would be acceptable to the United States remains to be seen. Given the importance that the United States has attached to the 1992 ROK-DPRK joint declaration not to possess enrichment or reprocessing capabilities, it is difficult to imagine that the United States would agree to South Korean pyroprocessing until the North Korean nuclear issue reaches a satisfactory resolution. In any event, U.S.-ROK negotiators will be challenged in trying to design a new bilateral agreement that is tailored to the ROK program and at the same time avoids setting a precedent for other states to acquire their own sensitive nuclear facilities. The way the two countries resolve this issue could establish a model for reconciling the nuclear fuel cycle aspirations of an advanced nuclear power such as South Korea with global concerns about the proliferation risks of reprocessing.