

# ISSUE BRIEF

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## Mixed Oxide Fuel Facility in South Carolina Needs Congress's Support

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The Department of Energy (DOE) is constructing a facility at the Savannah River Site in South Carolina to produce mixed oxide (MOX) fuel, which consists of uranium oxide and plutonium oxide, for use in nuclear power reactors. This building project follows from a 2000 agreement with Russia to dispose of 34 metric tons of surplus weapons plutonium by each country. The DOE decided that the best option for disposing of the surplus plutonium is to use it as feedstock for the production of MOX fuel.

There is concern, however, that the production of MOX could undermine the global nuclear nonproliferation regime, because the plutonium feedstock, particularly in this case, includes weapons material and can be difficult to safeguard. While this concern is legitimate, it need not and should not apply in this case.

Congress may proceed in supporting the MOX facility in a responsible way by establishing a policy governing the facility that makes three key distinctions.

**1. The MOX Facility Is for Weapons Disposition, Not Commercial Energy.** Congress should make clear, as a matter of policy, that the

construction of the MOX facility and the production of MOX fuel are weapons disposition activities. This would ensure that this facility is not meant as a model for the provision of fuel to power reactors in general international trade.

The same policy would make it clear that spent nuclear fuel reprocessing that consists of plutonium separation is generally not appropriate for power reactors outside the five weapons states under the Non-Proliferation Treaty (NPT) and can be justified only in terms of weapons material disposition or other weapons-related activities.

Congress should also insist that the DOE retain ownership of the feedstock and the MOX fuel throughout the fuel cycle. This would require that the DOE lease the MOX to utilities around the U.S. (rather than selling it to them) and recapture the spent fuel when removed from the reactor. It should also bar the U.S. from selling or leasing the fuel to any non-weapons state under the NPT.

**2. The Commercial Viability Standard Does Not Apply in This Case.** The construction and operation of the MOX facility is not a commercial nuclear facility and should not be seen as such. The facility is estimated to cost \$7 billion to construct and \$500 million per year to operate over its projected life. The offset value of leasing the fuel to utilities may be in the area of \$1.5 billion for 34 metric tons of fuel.

Thus, Congress should be clear that it accepts that the weapons disposition agreement with Russia will impose a net cost on the U.S. government. As a result, Congress should also make it explicit that it will support public funding for the construction and operation of this facility on this basis. The facility

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deserves the funding and should not be seen as an unwarranted subsidy to the nuclear power sector.

**3. The Agreement with Russia Is a Nuclear Arms Control Agreement, Not a NonProliferation Agreement.** Nuclear arms control agreements are about limiting the quality and quantity of nuclear arms, short of nuclear disarmament, in the hands of the five weapons states. Nuclear nonproliferation agreements are about preventing the diversion of civilian nuclear facilities and materials in the non-weapons states to weapons purposes.

Specifically, the agreement with Russia should be defined as a means to limit the ability of the U.S. and Russia to construct much larger nuclear arsenals in the future. Reinforcing this determination should be the recognition that, as a matter of policy, the U.S. would oppose entering into agreements that would encourage the construction of any nuclear fuel reprocessing facilities that separate pure plutonium in non-weapons states.

Likewise, U.S. policy should prohibit weapons-related technology exchanges—such as is occurring between the U.S. and France at the facility at the Savannah River Site—by the U.S. for the benefit of any non-weapons states.

**Bolstering the Nonproliferation Regime.** Upholding (and ultimately strengthening) the

international nonproliferation regime is a key U.S. national security objective. Governed by a well-crafted policy, the MOX project at the Savannah River Site will pose no danger to this objective.

The object and purpose of the U.S. nonproliferation policy is to achieve a world where nuclear weapons and nuclear weapons capabilities remain only in the hands of the five designated weapons states under the NPT. As a result, all nuclear activities undertaken by the five weapons states—both indigenously and between them—may have serious national security implications, but they do not pose proliferation risks.

This, of course, includes the activities of the U.S. itself as a weapons state. The key is for the policy governing the construction and operation of the Savannah River Site facility to recognize that the activities associated with it have weapons applications and should be treated accordingly, particularly regarding non-weapons states under the NPT.

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