

MOX Fuel Program: Current Plans and Controversy

The Mixed Oxide (MOX) Fuel Fabrication Facility at Savannah River, South Carolina is intended to manufacture nuclear fuel from surplus weapons-grade plutonium for use in commercial nuclear energy reactors. However, the project has faced serious delays and massive cost overruns – and currently has [no customers](#) for its proposed fuel. As a result, the President’s FY17 Budget Proposal requests \$270 million to begin closing the project, while diluting the plutonium for transfer to the Waste Isolation Pilot Plant (WIPP) in New Mexico, a more cost-efficient option.

What Is It?

The MOX facility at Savannah River was designed to repurpose [3.5 tonnes](#) of surplus weapons-grade plutonium yearly. This facility was intended to play a key role in the United States’ fulfillment of the 2000 [Plutonium Management and Disposition Agreement](#) (PMDA) between Russia and the U.S., which affirms each country’s commitment to dispose of 34 metric tonnes of plutonium, enough collectively for 17,000 nuclear weapons.

Challenges:

The MOX Fuel Fabrication Facility’s anticipated date of operation was 2007, with plutonium disposition set to [end in 2020](#). Multiple delays in construction led to significant cost overruns, with beginning operations delayed until [2019](#). Initially valued at [\\$2.898 billion](#) (2016 dollars), the total cost of the project skyrocketed to [\\$15.683 billion as a result of construction delays and program mismanagement](#). This estimate, however, assumes a steady rate of funding, and fluctuations in [funding levels](#) could exacerbate delays and cost overruns.

Even if completed, the site currently boasts zero customers for MOX fuel. The cost of testing and updating existing reactors is prohibitive. As such, critics have labeled the project the [“nuclear bridge to nowhere,”](#) and the Obama administration has cited the project as unsustainable.

Further Considerations:

To address this, President Obama has proposed transferring diluted plutonium to the Waste Isolation Pilot Plant in New Mexico, which is meant to quarantine radioactive byproducts of nuclear reactors. This approach could save taxpayers [hundreds of millions of dollars per year](#) compared to continuing the status quo. A [government report](#) cited that, “Even the best case scenario for the remaining MOX approach would be more expensive and riskier than the worst case scenario for the Dilute and Dispose approach, assuming that the latter approach is sufficient for compliance with the PMDA and is efficiently enabled in cooperation with the State of New Mexico.”

Russian officials suggest that closing the MOX facility would [violate the PMDA](#). Discussions between the U.S. and Russia are required to alter the MOX plan and preserve the agreement.

Closing the fabrication facility could be an expensive endeavor. Considering the economic impacts of the shutdown, Edward Lyman from Union of Concerned Scientists has suggested an alternative for the infrastructure: preserving the facility as a [training site](#) for nuclear security specialists. This option could recapture sunken costs, and minimize budgetary losses, and help sustain local employment, while addressing the potential risk of nuclear terrorism around the country. This option remains in the proposal stage. A study is needed on viable alternatives to estimate real savings.

***Sources:** National Nuclear Security Administration, US Department of State, Aerospace, Nuclear Threat Initiative, Project on Government Oversight, Union of Concerned Scientists, World Nuclear Association

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