

FACT SHEET: The Path Forward on Nuclear Waste Disposal

Finding a path forward for disposition of nuclear waste is needed to help ensure the long-term contribution of nuclear power to meeting the nation's energy needs and to fulfill the federal government's responsibility to manage nuclear waste. Today, Secretary Moniz outlined several steps towards this vital goal.

First, President Obama today authorized the Department of Energy (DOE) to begin the process of developing a repository to be used for disposal of some DOE-managed high-level radioactive waste. Secretary Moniz conducted a careful review of the relevant factors and recommended this course to the President. Second, Secretary Moniz reaffirmed DOE's commitment to moving forward with a solution for disposal of waste from commercial nuclear reactors. As a next step, DOE will work to develop a consent-based process that can be used to support both sets of activities – the development of a defense waste repository and initial work to support the development of interim storage for commercial spent nuclear fuel.

Background

In 1985, a decision was made to dispose of defense and commercial nuclear waste in a dual-purpose repository. Since that time, important circumstances have changed.

- In 1985, the production of new nuclear weapons was expected to continue to grow alongside the increasing inventory of civilian waste. Today, however, the U.S. is no longer generating defense high-level waste associated with weapons production. The inventory of defense high-level waste is therefore finite and known. By contrast, the amount of commercial spent fuel continues to grow.
- Some defense waste is also less radioactive, cooler, and easier to handle than commercial spent fuel. This means that a defense repository for these wastes could have a simpler design and could present fewer licensing and transportation challenges.
- In addition, defense high-level waste streams are heterogeneous, existing in many different waste forms, which could allow for different disposal pathways. A majority of the inventory of defense high-level waste has been or will be vitrified, which means that it could be disposed in a separate repository with a simpler design. For these reasons, a repository for disposal of defense high-level waste

allows greater flexibility in the selection of a site – and greater flexibility can help to keep costs down.

Parallel Paths Forward on Defense and Civilian Waste

As further discussed in a report DOE is releasing today, this new approach presents other potential advantages. A defense high-level waste repository could be selected, licensed, and built sooner. This could lead to reduced ongoing storage, treatment, and management costs for waste currently at DOE facilities. In addition, successful development of a defense-only repository could play an important role in a broader nuclear waste strategy – providing important experience in the design, siting, licensing, and development of the facility that could be applied to the development of a future repository for commercial spent fuel.

In parallel, DOE will move forward to address storage and disposal of commercial spent fuel. As outlined in the Administration's [Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste](#), the Administration has proposed starting with the development of a pilot interim storage facility that could accept spent fuel from shutdown reactors. Although the construction of an interim storage facility requires new authority, DOE will soon initiate a consent-based siting process.

How We Got Here

President Obama directed Secretary Chu to establish the Blue Ribbon Commission for America's Nuclear Future (BRC) in 2010 to conduct a comprehensive review of policies for managing the back end of the nuclear fuel cycle and to provide recommendations for developing a safe, long-term solution to managing the nation's used nuclear fuel and nuclear waste.

The BRC, of which Secretary Moniz was a member, issued a report in January 2012 that recommended a consent-based approach focused on the dual tracks of interim storage and geologic disposal capacity.

In January 2013, the Administration issued the [Strategy for the Management and Disposal of Used Nuclear Fuel and High-Level Radioactive Waste](#). The Strategy embraced the core findings of the BRC and affirmed that any workable solution for the final disposition of used fuel and nuclear waste must be based not only on sound science, but also on achieving public acceptance at the local, state, and tribal levels. Building

upon the BRC Report and the Administration's 2013 Strategy, we are now moving forward on this parallel path for commercial nuclear waste.

Background on DOE's Role in Nuclear Energy

- DOE's roots lie in the Manhattan Project and the global race to split the atom. Following World War II, responsibility for the U.S. Government's nuclear complex fell to the Atomic Energy Commission - which was later merged into the Department of Energy.
- Today, DOE continues to focus on all things nuclear. Nearly two thirds of our budget still goes to maintaining America's nuclear deterrent and cleaning up the legacy of past nuclear arms development.
- DOE's National Nuclear Security Administration is tasked with ensuring that America's nuclear weapons remain safe, secure and effective – while working to combat proliferation and secure vulnerable materials.
- DOE's Naval Nuclear Propulsion Program ensures reliable operation of the Navy's nuclear-powered fleet, including 73 submarines and 10 aircraft carriers.
- DOE's Office of Nuclear Energy is working to support the next generation of advanced nuclear reactors, including small modular reactors, while ensuring that our current fleet has the technology needed to remain safe and efficient.
- To help coordinate all of DOE's nuclear safety, nuclear security, non-proliferation, and disarmament activities, last year Secretary Moniz created a DOE Nuclear Policy Council. This group consists of senior program leaders and advisors to address cross-cutting issues and long term planning in the field.
- Last year, DOE's Loan Programs Office announced that two of the owners of Plant Vogtle received a \$6.5 billion loan guarantee to support construction of the Vogtle facility. Together, these newly constructed units will provide enough reliable, low-emission, baseload electricity to power three million homes in the Southeastern

United States, with current estimates for completion projected in the 2017 to 2019 timeframe.

- A high priority has been to accelerate the timelines for the commercialization and deployment of small modular reactor (SMR) technologies, and DOE has committed \$452 million over six years for small modular nuclear reactor development. This technology offers more safety features, greater siting flexibility, and potentially lower costs than large conventional reactors.
- Along with industry, we continue to see a market for SMRs to be commercialized and deployed around 2022-2025. The Energy Information Administration projects that by the year 2040 electricity demand in the U.S. will increase by 28 percent. SMRs can help meet the nation's growing energy demands – including replacing retiring power plants – while providing reliable, affordable low-carbon power.