



## Pit Disassembly and Conversion (PDC)

The Savannah River Site (SRS) is the principal location for U.S. efforts to dispose of surplus U.S. highly enriched uranium and weapon-grade plutonium by peaceful use as commercial nuclear fuel. To dispose of surplus weapon-grade plutonium, NNSA is constructing three facilities at SRS. The Mixed Oxide (MOX) Fuel Fabrication Facility will manufacture surplus U.S. weapon-grade plutonium into MOX fuel, which will be irradiated in commercial power reactors. Once irradiated, the plutonium can no longer be used for nuclear weapons. This critical facility, along with the associated Waste Solidification Building (WSB) and a pit disassembly and conversion (PDC) capability also planned to be built at SRS, are essential to U.S. plans to consolidate and dispose of surplus U.S. weapon-grade plutonium. Once operations commence, it is estimated that this surplus nuclear material could generate enough electricity to power all South Carolina households for 20 years, while reducing inventories of surplus weapon-grade nuclear material.

The Pit Disassembly and Conversion (PDC) project is a first-of-a-kind capability that will disassemble surplus nuclear weapon pits and convert the pit plutonium metal, along with other surplus non-pit plutonium metal, into a plutonium oxide powder. The plutonium oxide powder will be sent to the Mixed Oxide (MOX) Fuel Fabrication Facility, currently under construction at SRS. It will be blended with depleted uranium oxide and manufactured into mixed oxide fuel. The resultant mixed oxide fuel would then be irradiated in domestic, commercial light water reactors (LWRs). Liquid waste generated from operations of PDC and MOX will be treated at the Waste Solidification Building (WSB) which is also currently under construction at SRS.

The PDC project was originally conceived as a complex of facilities consisting of a main hardened building that would contain the pit disassembly plutonium processes and a number of conventional buildings and structures that would contain personnel, systems, and equipment. The Department of Energy is now considering an alternative to constructing a new stand-alone Pit Disassembly and Conversion Facility that could establish a more optimal and timely approach in dealing with the disposition of surplus plutonium at SRS. The selection of a preferred alternative will be made at Critical Decision 1 and pursuant to NEPA evaluation.