APPENDIX B: ACRONYMS AND GLOSSARY

The following acronyms are used in this report.

ALWR	advanced light water reactor
ANL	Argonne National Laboratory
ANL-W	Argonne National Laboratory-West, near Idaho Falls, ID
ANRCP	Amarillo National Resource Center for Plutonium
ARIES	Advanced Recovery and Integrated Extraction System
BNL	Brookhaven National Laboratory
BWR	boiling water reactor
CANDU	Canadian Deuterium-Uranium Reactor
CANFLEX	advanced fuel for the CANDU reactors
CFR	Code of Federal Regulations
D&D	Decontamination and Decommissioning
DNFSB	Defense Nuclear Facilities Safety Board
DOE/MD	U.S. Department of Energy, Office of Fissile Materials Disposition
DPEIS	Draft Programmatic Environmental Impact Statement
DWPF	Defense Waste Processing Facility
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ES&H	environment, safety, and health
FDI	Fluor Daniel, Inc.
FFTF	Fast Flux Test Facility
FMDP	Fissile Materials Disposition Program
FMEF	Fuel and Materials Examination Facility — Hanford site
FY	fiscal year
Go/Co	government-owned/contractor-operated
GMODS	Glass Material and Dissolution System
HEU	highly enriched uranium
HLW	radioactive high-level waste
HYDOX	Hydride/dehydride/oxidation
IAEA	International Atomic Energy Agency
INEL	Idaho National Engineering Laboratory
LANL	Los Alamos National Laboratory
LEU	low-enriched uranium
LLNL	Lawrence Livermore National Laboratory
LWR	light water reactor
M&O	Management and Operating Contractor
MC&A	Materials Control and Accounting
MGDS	Mined Geologic Disposal System
MOX	mixed plutonium and uranium oxide as in mixed oxide fuel
NAS	National Academy of Sciences
NEPA	National Environmental Policy Act
NRC	U.S. Nuclear Regulatory Commission

OMB	Office of Management and Budget
OPC	operating-funded costs
ORNL	Oak Ridge National Laboratory
PEIS	Programmatic Environmental Impact Statement
PWR	pressurized water reactor
R&D	research and development
ROD	Record of Decision
S&S	safeguards and security
SER	safety evaluation report
SNL	Sandia National Laboratories
SNM	special nuclear material
SRS	Savannah River Site
SST	Safe Secure Trailer
TEC	total estimated cost
TPC	total project cost
TRU	Transuranic (Radioactive) as in TRU waste
WIPP	Waste Isolation Pilot Plant
WSRC	Westinghouse Savannah River Company
Y-12	Y-12 Plant

The following list of terms includes those that have particular meaning to this document or have a specific meaning different from their conventional, lay usage.

Term	*Definition*
Actinide	A chemical element with atomic number between 89 (actinium) and 103 (lawrencium) located in the seventh period of the periodic table. These elements exhibit chemical properties similar to the first element of the series, actinium, due to their similar electronic structure. The actinide chemical elements also are unstable and exhibit radioactive decay. Uranium, thorium, and plutonium are other examples of actinide chemical elements.
Alternative	An alternative is defined as a beginning-to-end network of operations which collectively result in the transition of the inventory of surplus plutonium to forms (for reactor and immobilization approaches) or locations (for the deep borehole approaches) which attain a high level of proliferation resistance. For the reactor and immobilization alternatives, impacts associated with emplacement in a high-level waste repository are included in the discussion of these alternatives for completeness. Some of the alternatives can be incorporated through a variety of deployment strategies. These strategies are referred to as variants in this report.
Alternative Team	Alternative Teams were composed of cognizant engineers and scientists from the national laboratories, contractors and DOE who collectively provide the expertise to represent all the technologies necessary to implement an alternative from its inception to its completion.
Category	Three categories of alternatives are considered in this report, reactors, immobilization and deep borehole alternatives.
Disposition	The disposition of plutonium is achieved when the plutonium-bearing material attains a high degree of proliferation resistance such as meeting the spent fuel standard. Geologic disposal of plutonium is achieved when it is geologically emplaced. For the reactor and immobilization alternatives, DOE will implement disposition of the plutonium to the spent fuel standard, while geologic disposal might take place many years later. For the deep borehole alternatives, geologic disposal is achieved in concert with meeting the spent fuel standard.

Term	*Definition*
Greenfield	Greenfield facility is one located at an existing DOE site which has limited plutonium handling infrastructure, such as PANTEX or the Nevada Test Site. An "existing" site is one which has extensive plutonium handling infrastructure, such as the Savannah River Site. Greenfield siting is assumed bounding for most cost, schedule and environmental analysis.
Hybrid Alternatives	Hybrid alternatives combine two or more technologies for accomplishing plutonium disposition.
Integral Neutron Absorbers	A material (such as hafnium, gadolinium, or erbium) intentionally added into a reactor fuel to absorb neutrons in the reactor. These neutron absorbers are used by nuclear reactor designers to improve the performance of a core.
Lead Use Assemblies	A lead use assembly is a nuclear fuel assembly which is inserted in a reactor core to confirm its performance. Destructive testing of the assemblies after irradiation would not generally be performed. Performance tests which require destructive evaluation after irradiation are referred to as lead test assemblies.
Pit	The core element of a nuclear weapon's "primary" or fission component. Pits are made of plutonium-239 and are surrounded by some type of casing.
Proliferation Resistance	This term conceptualizes the characteristics that are deterrents to theft, diversion, or retrieval of fissile material for use in weapons. Its characteristics relate to the form of the material (chemical and physical), its location (a measure of the degree of accessibility), and applied safeguards and security provisions (which depend on institutional controls). Occasionally, the term "proliferation resistance" is used in the more narrow sense to refer to the first two characteristics only since it is the goal of DOE to achieve a high degree of proliferation resistance that relies minimally on institutional controls. The spent fuel standard is a benchmark for proliferation resistance for plutonium.
Screening	The process of eliminating options for disposition of plutonium from further consideration through use of technical information.

Term	*Definition*
Spent Fuel Standard	The Spent Fuel Standard, a term coined by the NAS and modified by the DOE, means that alternatives for the disposition of plutonium should seek to make this plutonium roughly as inaccessible and unattractive for weapons use as the much larger and growing stock of plutonium in civilian spent fuel.
Stored Weapon Standard	The Stored Weapons Standard invokes the high standards of security and accounting applied to the storage of intact nuclear weapons. Therefore, applying the stored weapons standard means those high standards will, to the extent practical, be maintained for these materials throughout dismantlement, storage, and disposition.
Variant	See alternative definition.
Weapons-grade	Weapons-grade plutonium is plutonium with less than 7% plutonium-240 content. Weapons-grade can be in a variety of chemical or physical forms.
Zeolite	Inorganic aluminum silicate mineral.

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