

DEPARTMENT OF ENERGY DECLASSIFIES LOCATION AND FORMS OF WEAPON-GRADE PLUTONIUM AND HIGHLY ENRICHED URANIUM INVENTORY EXCESS TO NATIONAL SECURITY NEEDS

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The Department of Energy has declassified information about the location and form of the 212.5 metric tons of weapon-grade plutonium and highly enriched uranium that President Clinton recently identified as excess to national security needs.

SPECIFICALLY



- The special nuclear material that has been declared excess to national security needs is made up of weapon-grade plutonium and uranium enriched to over 20 percent of U²³⁵.
- The excess inventory amounts to approximately 38.2 metric tons of weapon-grade plutonium and 174.3 metric tons of highly enriched uranium.
- The excess material amounts to approximately 20 percent of total United States production of plutonium and highly enriched uranium. The excess plutonium amounts to approximately one-half of today's inventory of weapon-grade plutonium.
- The Department of Energy is also announcing the locations and quantities of the excess materials. Excess materials are part of current United States inventories at each site, which are determined not to be needed for future national security.

Site:	Weapon-grade Plutonium (Metric tons)	Highly Enriched Uranium (Metric tons)
Pantex Site plus planned dismantlements	21.3	16.7
Rocky Flats Environmental Technology Site	11.9	2.8
Hanford Site	1.7	0.5

Los Alamos National Laboratory	1.5	0.5
Savannah River Site	1.3	22.0
Idaho National Engineering Laboratory Site	0.4	23.4
Oak Ridge Site (including 10 metric tons previously placed under International Atomic Energy Agency safeguards)	--	84.9
Portsmouth Gaseous Diffusion Plant	--	22.5
Brookhaven National Laboratory	--	0.3
Sandia National Laboratories	--	0.2
Other sites (includes Government and non-Government sites, Department of Energy contractors, research institutes, and universities)	0.1	0.5
TOTALS (may be affected by rounding)	38.2	174.3

- Additional information on the forms and locations of the excess material is provided in the tables and maps attached to this announcement.
- To demonstrate further the commitment of the United States to the objectives of the Nuclear NonProliferation Treaty, of the 212.5 metric tons already declared excess, approximately 10 metric tons of the highly enriched uranium already has been placed under international safeguards at the Oak Ridge Y-12 Site.
- Weapons dismantlement and other programs continue to be reviewed and additional materials may be declared excess as national security requirements change. There will also be changes over time as a result of programmatic decisions such as disposition and consolidation.

BACKGROUND



- President Clinton stated on March 1, 1995, in a speech at the Nixon Center for Peace and Freedom, "To further demonstrate our commitment to the goals of the (Nuclear NonProliferation) treaty, today I have ordered that 200 metric tons of fissile material -- enough for thousands of nuclear weapons -- be permanently withdrawn from the United States nuclear stockpile. It will never again be used to build a nuclear weapon."
- The National Security Council has performed a detailed review in conjunction with the Department of Energy and the Department of Defense of the weapon-grade plutonium and highly enriched uranium requirements to support the nuclear weapons program and other national security needs. Nuclear materials that are not required have been declared excess.
- National security needs relate to special nuclear material in active and inactive weapons, strategic reserve requirements, research and development, Naval Reactors, mutual defense requirements, and tritium production options.
- The Secretary of Energy announced, in her September 18, 1995, speech at the thirty-ninth session of the General Conference of the International Atomic Energy Agency in Vienna, Austria, that the approximate breakdown of the excess material is 38 metric tons of weapon-grade plutonium, 33 metric tons of uranium enriched to over 92 percent in U^{235} , and 142 metric tons of uranium enriched to between 20 and 92 percent in U^{235} . Today's announcement provides additional information on the forms and locations of the material.
- The quantities listed are based on the evaluation of available records. The quantities may be updated after re-evaluation of the original records.

BENEFITS



- The American people will have additional information about the management and disposition of plutonium and highly enriched uranium. The United States hopes that the release of the information will encourage other nations

to release similar information.

- Declaring the material excess to national security requirements and putting some of it under international safeguards demonstrates the United States' commitment to the objectives of the Nuclear NonProliferation Treaty and support for the International Atomic Energy Agency program to constrain nuclear proliferation. We hope that other nations will follow the United States example.
- The Department of Energy is completing technical, schedule, and cost analyses as well as environmental analyses, as required by the National Environmental Policy Act, to evaluate methods for disposing of excess highly enriched uranium and plutonium. In the case of highly enriched uranium, the Department of Energy has issued a draft and will soon complete an Environmental Impact Statement on the disposition of surplus highly enriched uranium. The Department proposes to eliminate the proliferation threat of highly enriched uranium by blending it down to low enriched uranium, which is not weapons-usable. Over time and where practical, this material will be sold as feed for commercial reactor fuel to recover its commercial value. Efforts in these regards will directly advance United States nonproliferation objectives, reduce stockpiles and associated safeguards and storage requirements, and provide financial returns to the United States Treasury.

Approximately 60 percent of the Department of Energy's surplus highly enriched uranium inventory (103 of the 174 metric tons) is in forms which may allow it to be used for down blending to low enriched uranium. However, the actual rate at which the resulting low enriched uranium could be made available for commercial use would be determined by many factors, including available industrial infrastructure, legislative and policy guidance, and future market conditions.

In the case of plutonium, the Department is completing a Programmatic Environmental Impact Statement on the long-term storage and disposition of surplus, weapons-usable plutonium. Environmental information from the Programmatic Environmental Impact Statement, as well as technical, schedule and cost analyses currently being prepared, will factor into a record of decision on surplus plutonium disposition at the end of 1996. The Department's efforts provide the basis for building public and political consensus and will provide the President the basis and flexibility to initiate implementation of plutonium disposition efforts.

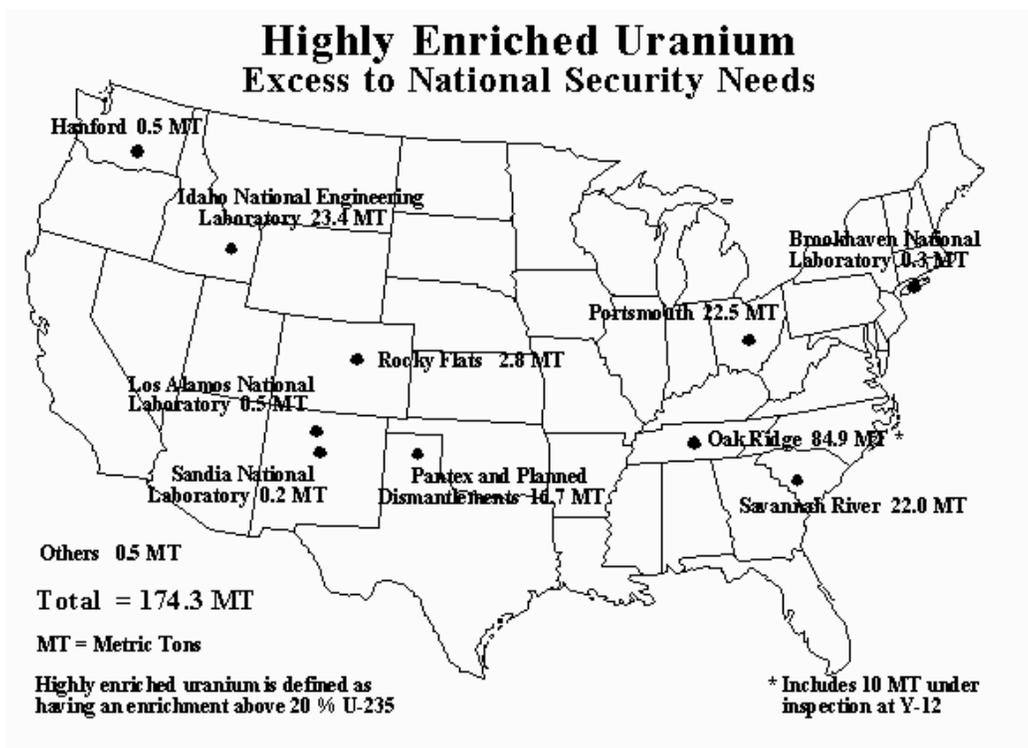
- Release of information on the forms and locations of excess special nuclear materials will facilitate compliance with the requirements of the National Environmental Policy Act. It will allow the National Environmental Policy Act documents, such as Environmental Impact Statements, to better describe the materials requiring disposition, its location and disposition options.
- Release of this information further fosters the position of the United States as a global leader in nuclear transparency. We hope that these actions will encourage other nations to take similar steps.
- Release of this information demonstrates the commitment of the Department of Energy to openness. Once this material had been determined excess to national security needs, information concerning its forms and locations no longer required protection and has been released.
- Release of information, when no longer sensitive, increases trust in Government by demonstrating that only information of verified and current sensitivity will be classified and withheld from the public.

WHO ARE THE KEY STAKEHOLDERS?

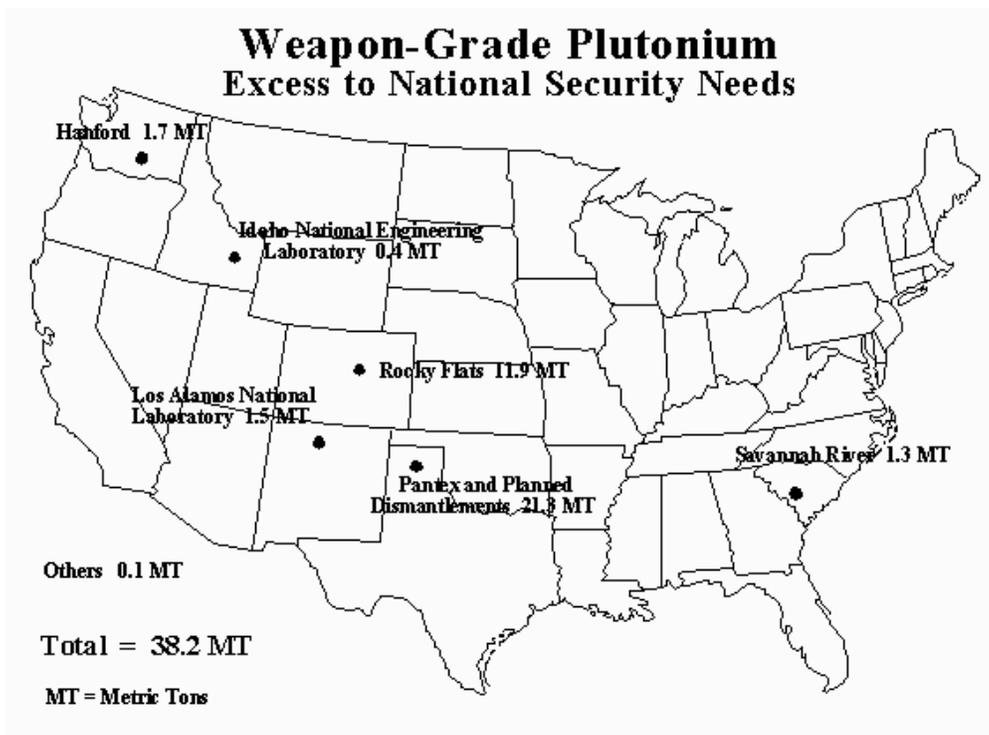


- Regulators. The International Atomic Energy Agency will safeguard some of the excess special nuclear material. The United States Nuclear Regulatory Commission will license facilities used for the disposition of excess special nuclear material.
- The Public. The public will have an opportunity for open discussions about the use and disposition of the excess highly enriched uranium and plutonium.
- Public Interest Organizations. Nonproliferation, environmental, and health and safety groups will be interested in the safeguarding, storage, transportation, and use of the materials.
- Freedom of Information Users. Citizens submitting Freedom of Information act requests will have greater access to the data they seek.

[Table -- Highly Enriched Uranium Excess to National Security Needs](#)



[Table -- Weapon-Grade Plutonium Excess to National Security Needs](#)



QUESTIONS AND ANSWERS



Q. What has the material been used for and why is it now considered excess?

A. As a result of the end of the Cold War and the break-up of the Soviet Union, the United States has embarked on a

major program of nuclear weapons dismantlement, which yields excess material from dismantled components. The United States is also identifying other plutonium and highly enriched uranium from both weapons and nonweapon program sites that is excess to national security requirements.

Q. Why is only some of the material going to be placed under international safeguards?

A. Much of the excess material is in the form of weapons components, whose specific shapes and masses are classified as Restricted Data. The United States and the International Atomic Energy Agency have been working on approaches that might allow the Agency to monitor those materials before they are processed from weapons components into raw material.

Q. How were the excess materials and quantities identified?

A. As directed by the National Security Council, the Department of Energy and the Department of Defense performed a review of special nuclear material needed to support ongoing weapon stockpile and other national security programs. The review included the needs of other programs such as Naval Reactors. Quantities of material greater than those identified in the reviews were declared excess.

Q. Why is the information being declassified now?

A. We declassified the information as soon as we determined, in consultation with the Department of Defense and other Government Agencies, that release would not damage national security. We hope that the United States example will encourage other nuclear nations to take similar actions that promote nuclear transparency.

Q. If portions of the material are coming from weapons, why are no weapons components shown in the tables?

A. Weapons components are included in the category "metal" in the tables.

Q. When the Secretary spoke to the International Atomic Energy Agency in Vienna, she provided information on highly enriched uranium broken down by material enriched to over 92 percent and material enriched to between 20 and 92 percent. Why do the tables lump all highly enriched uranium together?

A. That approach was necessary in order to protect other information that remains classified.

Q. What does the "other forms" category include?

A. The specific makeup of the "other forms" category varies by site and material type. For example, at the Los Alamos National Laboratory, "other forms" of plutonium consists primarily of process residues and chemical compounds. At the Portsmouth Gaseous Diffusion Plant, the "other forms" of highly enriched uranium is primarily uranium hexafluoride.

Q. Why is there no breakdown of Savannah River's excess highly enriched uranium inventory?

A. The actual quantities of plutonium or highly enriched uranium in some areas remain classified because the information might, when combined with other data, create a specific threat or otherwise impair national security.

Q. How do the quantities relate to the inventory quantities released by the Department of Energy in December 1993 and June 1994?

A. Except for the Hanford Site, today's information is consistent with previously reported inventory quantities. In December 1993, the Department of Energy stated that the Hanford Site had an inventory of 11.0 metric tons of plutonium, of which approximately 0.2 metric tons was unprocessed weapon-grade plutonium contained in N-reactor fuel. We should, however, also have stated that there is approximately 1.0 metric ton of weapons grade plutonium in oxides and 0.5 metric tons in other forms, for a total of 1.7 metric tons of weapon-grade out of the 11.0 metric tons of plutonium at the Hanford Site. We regret the error and any confusion that it may have caused.

DEPARTMENT OF ENERGY RELEASES REPORT ON PLUTONIUM RECOVERY FROM SPENT FUEL REPROCESSING AT WEST VALLEY, NEW YORK



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The Department of Energy is releasing a report on plutonium recovery at Nuclear Fuel Services, West Valley, New York. The report is being released in response to many stakeholder requests.

SPECIFICALLY



- Nuclear Fuel Services operated the first and only private plant in the United States to reprocess spent nuclear fuel. The plant, located 35 miles south of Buffalo at West Valley, New York, began receiving spent fuel in 1965; it operated from 1966 to 1972 to separate and recover plutonium and uranium from the fuel.
- The plant recovered a total of 1,926 kilograms of plutonium and shipped about 80 percent of the material (1,530 kilograms) to the Atomic Energy Commission, where it was blended with other plutonium for use as reactor fuel. The remaining 396 kilograms was retained by the utility companies, sold to industry by the utilities, or purchased by Nuclear Fuel Services and later resold to industry for use in plutonium recycle operations. Because of the isotopic mixture of the reprocessed plutonium, it was not suitable for use in weapons production, and there is no indication that any of it was used for that purpose.
- Of the 1,530 kilograms of separated plutonium received by the Atomic Energy Commission, 635 kilograms was Atomic Energy Commission origin plutonium. The remaining 895 kilograms came from commercial power-reactor fuel that was purchased for approximately \$10.4 million under the Plutonium Credit Activity authorized by the Atomic Energy Act of 1954, as amended.

BACKGROUND



- In response to stakeholder requests, the Department of Energy prepared a report on the history of plutonium reprocessing operations at Nuclear Fuel Services, West Valley, New York, using automated and manual inventory and accounting system data, various Department of Energy historical reports, and field information. The attached map gives the sources and quantities of plutonium recovered at Nuclear Fuel Services.
- The quantities listed are based on the evaluation of available records. The quantities may be updated should additional information become available.

BENEFITS



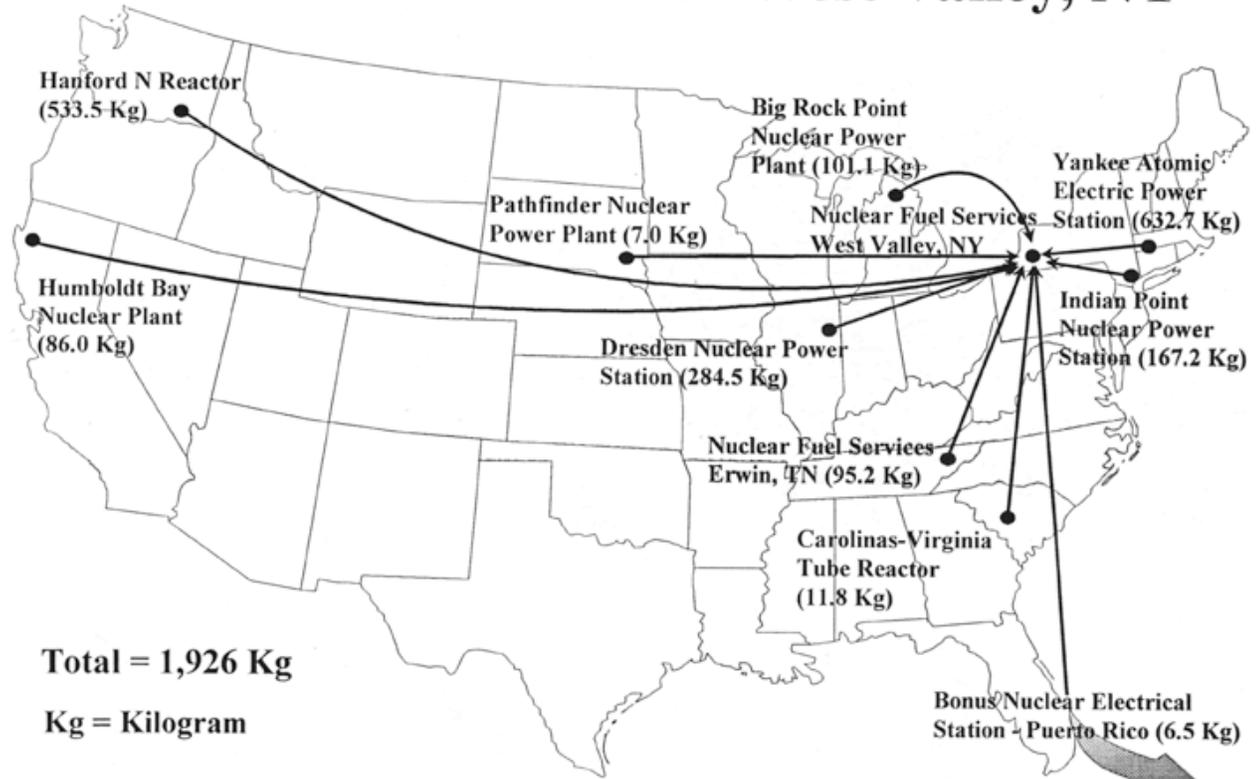
- The public release of the information provides additional data to the public concerning nuclear material processing.
- This additional information assists the public in determining the proper management and ultimate disposition of plutonium.
- The release of this information underscores the Department's commitment to be accountable to the public.
- This information will be of benefit to historians and researchers who are interested in the history of the West Valley Plant.
- The release of this information will enlighten those who are unaware of the potential for use of plutonium as fuel in nuclear reactors.
- This information documents the sources of the fuel that was processed.
- The United States hopes that the release of this information will encourage other nations to declassify similar information.

WHO ARE THE KEY STAKEHOLDERS?



- The Public. As a result of the release, the public will have more detailed information about operations at West Valley.
- Public Interest Organizations. Stakeholders include environmental, safety and health groups; historians, archivists, and researchers; scientists; and State and Federal personnel. Individuals and groups interested in oversight of nuclear activities will have additional information about nuclear material processing operations.

Sources of Plutonium Recovered at Nuclear Fuel Services - West Valley, NY



QUESTIONS AND ANSWERS



Q. What happened to the plutonium received from West Valley by the Atomic Energy Commission?

A. Most of the 1,530 kilograms of plutonium received by the Atomic Energy Commission was blended with Government-produced plutonium and converted to metal or oxide. The blended product was used in the breeder reactor and zero power plutonium reactor programs.

Q. What happened to the plutonium retained by industry?

A. Approximately 60 percent of the 396 kilograms of plutonium retained by industry was shipped to West Germany, the United Kingdom, and Italy for use in research or as fuel for foreign breeder reactor programs. The remaining 40 percent was sold to domestic companies for use in research or the fabrication of reactor fuel.

Q. What reactors from the Atomic Energy Commission were the source of the plutonium?

A. The Government-generated fuel came from three reactors:

The Hanford "N" Reactor, located near Richland, Washington, provided fuel from which 533.5 kilograms of plutonium were recovered.

The Bonus Nuclear Electrical Station, located at Rincon, Puerto Rico, provided fuel from which 6.5 kilograms of plutonium were recovered.

Plutonium in the form of liquids was shipped to West Valley from the Nuclear Fuel Services facility in Erwin, Tennessee. The solutions were generated from the fabrication of fuel for the Southwest Experimental Fast Oxide Reactor, located near Strickler, Arkansas. A total of 95.2 kilograms of plutonium were recovered from these solutions.

Q. What commercial reactors had their fuel reprocessed at West Valley?

A. Seven commercial reactors provided fuel to West Valley for reprocessing:

Big Rock Point Nuclear Power Plant, located on Lake Michigan near Charlevoix, Michigan, provided fuel from which 101.1 kilograms of plutonium were recovered.

Carolinas-Virginia Tube Reactor, located in Parr, South Carolina, provided fuel from which 11.8 kilograms of plutonium were recovered.

Dresden Nuclear Power Station, Unit #1, located near Morris, Illinois, provided fuel from which 284.5 kilograms of plutonium were recovered.

Humboldt Bay Nuclear Plant, located on Humboldt Bay near Eureka, California, provided fuel from which 86.0 kilograms of plutonium were recovered.

Indian Point Nuclear Power Station, Unit #1, located on the Hudson River at Buchanan, New York, provided fuel from which 167.2 kilograms of plutonium were recovered.

Pathfinder Nuclear Power Plant, located on the Big Sioux River near Sioux Falls, South Dakota, provided fuel from which 7.0 kilograms of plutonium were recovered.

Yankee Atomic Electric Power Station, located near Rowe, Massachusetts, provided fuel from which 632.7 kilograms of plutonium were recovered.

Q. How was the fuel shipped to West Valley?

A. Shipments of fuel to West Valley were made by rail and truck. Shipments of plutonium from West Valley were made by truck.



[Table of Contents](#)



[Next Section](#)

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