

NWS 1: United States of America

1. Amount, Location, and Operational Plan of Nuclear Weapons

Strategic Weapons

| Warhead/Weapon | Yield (kilotons) | Number (warheads) | Status |
|-------------------|------------------|-------------------|--|
| B61-7 Strategic | 10* to 350 | 470 | The Mod-7 is the only version in the strategic stockpile. The Mod-7 is a converted Mod-1 with a Cat D PAL and IHE. |
| B61-11 | 10 to 350 | 55 | Mod-11 is an earth penetrator. |
| B83/B83-1 | low to 1,200 | 620 | Strategic bomb replaced B28, B43, B53. |
| W76/Trident I C4 | 100 | 3,200 | Under START I over 1,500 W76 warheads from retired Trident I SSBNs were used to arm Atlantic Fleet Trident II SSBNs. |
| W88/Trident II D5 | 475 | 400 | Warheads supplement the W76 warhead to arm Atlantic Fleet Trident II SSBNs. |
| W62/Minuteman III | 170 | 615 | Will be retired around 2009. |
| W78/Minuteman III | 335 | 920 | 300 will be used to arm single warhead MMIIIs by 2012. |
| W87-0/MX | 300 | 550 | Missile will be retired, and 200 W87s used for single warhead MMIII by 2012. |
| W80-1/ALCM | 5 and 150 | 1,400 | Some 900 ALCMs are in storage with their warheads removed. W80s are used to arm ACMs. |
| W80-1/ACM | 5 and 150 | 400 | Operational in 1991. The original program of 1,461 ACMs has been cut to 460. Uses W80 warheads from ALCMs. |

Tactical Weapons

| Warhead/Weapon | Yield (kilotons) | Number (warheads) | Status |
|-------------------|------------------|-------------------|--|
| B61 Tactical Bomb | 0.3 to 170 | 1,290 | Mods-3,-4,-10. The Mod 10 is a converted W85 Pershing II warhead. All three Mods have Cat F PALs and IHE. Each Mod has four yield options: The B61-3 (0.3, 1.5, 60 and 170 Kt), the B61-4 (0.3, 1.5, 10, and 45 Kt), and the B61-10 (0.3, 5, 10, and 80 Kt). |
| W80-0/SLCM | 5 and 150 | 320 | Nuclear SLCMs now stored ashore. Original program of 758 SLCMs for 200 ships and submarines was reduced to 367 SLCMs for 25 Sturgeon-class, 62 Los Angeles-class, and 3 Seawolf-class attack submarines. |

TOTAL: ~10,240

from the Natural Resource Defense Council, <http://www.nrdc.org/nuclear/nudb/datab12.asp>. (2002)
**nuclear weapons with a yield under 10 kt are considered "low-yield" nuclear weapons*

Deployment Storage Sites

| STATE | LOCATION |
|--------------|-------------------------|
| New Mexico | Kirtland AFB |
| Georgia | Kings Bay |
| Washington | Bangor |
| Nevada | Nellis AFB |
| North Dakota | Minot AFB, Grand Forks |
| Wyoming | F.E. Warren AFB |
| Montana | Malmstrom AFB |
| Missouri | Whiteman AFB |
| Texas | Pantex Plant, Dyess AFB |
| Louisiana | Barksdale AFB |
| South Dakota | Ellsworth AFB |
| Colorado | Peterson AFB |

Storage sites, including sites listed by state, are available at:
<http://www.nrdc.org/nuclear/tkstock/p1-52.pdf>.

Foreign Deployment Sites

| Country | Storage Site | # of Nuclear Warheads |
|----------------|--|-----------------------|
| Germany | Buechel, Memmingen, Norvenich, Ramstein | 45 |
| United Kingdom | Lakenheath | 30 |
| Turkey | Balikesir, Murted, Incirlik | 15 |
| Italy | Ghedi-Torre, Aviano | 30 |
| Greece | Araxos | 20 |
| Netherlands | Volkel | 10 |
| Belgium | Kleine Brogel | 10 |
| Total | | +/- 160 |

The Role of Nuclear Weapons in National Security Strategies:

Key documents: Nuclear Posture Review (January 2002), National Security Strategy (September 2002), National Strategy to Counter Weapons of Mass Destruction (December 2002)

Recent security policy documents such as these maintain the role of nuclear weapons in U.S. national security policy, including the use of nuclear weapons in “immediate, potential or unexpected contingencies” against a number of named countries including Iraq, Iran, and North Korea.

The *Nuclear Posture Review* (NPR) establishes a New Triad, composed of:

- Offensive strike system (both nuclear and non-nuclear)
- Defenses (both active and passive)
- A revitalized defense infrastructure that will provide new capabilities in a timely fashion to meet emerging threats.

The *National Security Strategy* (NSS) calls for:

- “Proactive counterproliferation efforts...integrated into the doctrine, training, and equipping of our forces and those of our allies to ensure that we can prevail in any conflict with WMD-armed adversaries
- Minimizing the effects of WMD use against our people... (to) help deter those who possess such weapons... the United States must also be prepared to respond to the effects of WMD use against our forces abroad”

The NSS also recognizes that deterrence is no longer “an effective defense” in a post-Cold War scenario. It asserts that “rogue states...see these (WMD) as their best means of overcoming the conventional superiority of the United States.”

It cites “legal scholars and international jurists (who) often conditioned the legitimacy of preemption on the existence of an immediate threat.”

The *National Strategy to Counter Weapons of Mass Destruction* has three principal pillars:

- Counterproliferation: Interdiction, Deterrence, Defense and Mitigation
- Strengthened Nonproliferation: Active Nonproliferation Diplomacy, Multilateral Regimes, Nonproliferation and Threat Reduction Cooperation, Controls on Nuclear Materials, U.S. Export Controls, Nonproliferation Sanctions
- Consequence Management to Respond to WMD Use: Coordination of all Federal Efforts

2. Activities specifically undertaken in accordance with Article VI of the NPT

Nuclear Weapons Reductions

Under the Strategic Offensive Reductions Treaty (SORT, a.k.a. Moscow Treaty), signed May 24, 2002, requires the United States to reduce its strategic nuclear arsenal to 1,700 by December 31, 2012. The treaty was ratified March 6, 2003.

Reductions that were already taking place are considered part of the reductions under the Moscow Treaty. By 2005, 50 Peacekeeper missiles will be deactivated, although not destroyed. Two Trident missile submarines have been removed from strategic service, with two more to follow. Reductions are neither scheduled nor phased.

Nuclear Program Terminations: small ICBM, Peacekeeper Rail Garrison, Lance Follow-on, New Artillery Fired Atomic Projectile (W-81), Tactical Air to Surface Missile, Short Range Attack Missile II, B-1 Nuclear Role.

Program Truncations: Peacekeeper, B-2. Advanced Cruise Missile, W-88 Warhead

Systems Retired: artillery Fired Atomic Projectile, FB-111, Minuteman II, Lance, Short Range Attack Missile-A, Nuclear Depth Bomb.

Major Nuclear Weapons Facilities Shut Down

- Rocky Flats (plutonium pit production)
- Mound, Pinellas, Fernald (weapons components)
- Hanford (plutonium production/reprocessing)
- Savannah River (plutonium production reactors)
- Oak Ridge (uranium enrichment)

Other Facilities Shut Down

- Portsmouth uranium enrichment plant
- Fernald uranium metal production for reactor fuel and target rods

3. Location and Capability of Nuclear Facilities:

Power Reactors

Operational: 103

Shut down: 22

Decommissioned/Under Construction/Planned: 0

A list of all power reactors in the U.S. is available at: <http://www.iaea.or.at/programmes/a2/>

Several reactors that had been out of service for extended periods have been restarted since 1998. The twenty-year contracts for many plants are about to expire and may be renewed. The average capacity factor has increased from 66% in 1990 to 90% in 2001.

Browns Ferry 1 reactor, which has not operated since 1985, will be restarted by 2007.

<http://www-pub.iaea.org/MTCD/publications/PDF/cnpp2002/Documents/Documents/USA%202002.pdf>

Breakdown of United States nuclear energy policy, history, and development:

<http://www-pub.iaea.org/MTCD/publications/PDF/cnpp2002/Documents/Documents/USA%202002.pdf>

Research Reactors

Operational: 52

Shut Down: 107

Decommissioned: 68

Under Construction: 0

Planned: 0

<http://www.iaea.or.at/worldatom/rrdb>

Uranium Mines *(with current or pending licenses)*

| | | | | |
|------------|-------------------|--------------------|------------------|----------------|
| Alta Mesa | Ambrosia Lake | Apex | Arizona 1 | Aurora |
| Bear Creek | Big Red | Bullfrog | Cañon City | Canyon |
| Charlie | Christensen Ranch | Churchrock | Copper Mountain | Crow Butte |
| Crownpoint | Dewey/Burdock | East Shirley Basin | El Mesquite | Ford Gas Hills |
| Graysill | Highland | Hobson | Holiday | Hosta Butte |
| Hot Rock | Irigaray | Jackpot | Kingsville Dome | La Jara Mesa |
| Lisbon | Marquez | Mt. Taylor | North Butte | Peach |
| Pinenut | Red Desert Basin | Reno Creek | Rim | Rio Puerco |
| Rosita | Ruby Ranch | Ruth | San Rafael River | Schwartzwalder |
| Shootaring | Smith Ranch | Sunday Mine | Sweetwater | Taylor Ranch |
| Tony M | Vasquez | Velvet | White Mesa | |

<http://www.antenna.nl/wise/uranium/uousa.html>

Uranium Enrichment Facilities

After the Enrichment Plant at Portsmouth, Ohio, closed on May 11, 2001, there only remains the facility at Paducah, Kentucky, and at Portsmouth, for LEU facility.

www.antenna.nl/wise/uranium

There are proposals to build a new uranium enrichment plant in New Mexico (www.ieer.org) as well as one in Piketon, Ohio.

(<http://www.wcpo.com/news/2004/local/02/22/piketon.html>).

Uranium Processing Facilities (6)

- 1- Lynchburg, Virginia
- 2- Erwin, Tennessee
- 3- Savannah River Site at Aiken, South Carolina;
- 4- Y-12 Plant at Oak Ridge, Tennessee.
- 5- Paducah, Kentucky
- 6- Portsmouth, Ohio

There is also a Uranium Hexafluoride Conversion Facility at Metropolis, Illinois.

www.antenna.nl/wise/uranium

Reprocessing Facilities (3)

- 1- Redox Purex plant, Hanford, military reprocessing
- 2- F Canyon (shut, not yet slated for decommissioning), Savannah River Site
- 3- H Canyon, Savannah River Site, military reprocessing.

<http://www.ieer.org/ensec/no-2/repromap.html>

4. Fissile Material Holdings

Military Stocks of Fissile Materials

- Plutonium- 100 tons
- Weapons Grade Uranium Equivalent- 635 tons

Declared Excess

- Plutonium (Pu)- 52.5 tons
- Highly Enriched Uranium- 174 tons

Separated Civil Plutonium

- 4.5 metric tons (in country)

<http://www.isis-online.org>

Cumulative Plutonium Discharges from Civilian Power Reactors

- Pu discharges- ~ 450 tons

Estimated Amounts of Plutonium Contained in Spent Civil Reactor Fuel

- Pu contained in spent fuel at civil reactors- 312 metric tons
- Pu contained in spent fuel at reprocessing facilities- 0 metric tons
- Pu contained in spent fuel held elsewhere- 15 metric tons.

<http://www.ceip.org/files/projects/npp/resources/SpentPlutoniumChart.htm>

Radioactive Waste Management

- Volume of Waste managed by DoE: 336 million cubic meters (~1 billion curies of radioactivity)
- Waste management facilities store and manage more than 700,000 cub. meters of radioactive waste and a wide variety of hazardous chemical wastes at more than 40 sites nationwide. Some 80% of the radioactive waste is also mixed with hazardous chemicals. Much of this waste has been stored at DoE sites for up to 50 years. These wastes include high-level radioactive waste, transuranic waste, and low-level waste.
<http://www.nea.fr/html/rwm/bulletin/bulletin14.pdf>
- ~1.1 metric tons of Pu in waste dumped in shallow pits and trenches in Idaho National Laboratory.
- There is a nuclear fuel production waste treatment facility at White Mesa Mill, Utah.

5. Nuclear Activities

Research Programs

The DoE has plans for two research programs: Generation IV and Advanced Fuel Cycle Initiative (AFCI), to identify, design and deploy new and advanced commercial nuclear power reactor and fuel cycle technologies.

The DoE organized the Generation IV International Forum: 10 countries to jointly develop six nuclear energy systems: South Africa, Argentina, Brazil, South Korea, Switzerland, Japan, Canada, the U.K., France, and U.S.

The DoE's Office of Nuclear Energy claimed in September 2003 that the first commercial Gen IV reactor could be deployed between 2020 and 2035.

Under the DoE's Nuclear Power 2010 program, it hopes to complete two new nuclear power plants by the end of the decade. Under the Vision 2020 plan, the Nuclear Energy Institute hopes to generate 50 GW of new U.S. capacity by 2020.

<http://www-pub.iaea.org/MTCD/publications/PDF/cnpp2002/Documents/Documents/USA%202002.pdf>

Nuclear Cooperation

Under the 1950s-era Atoms for Peace program, the United States would lease HEU to foreign countries with the explicit provision that the spent fuel would be returned to the U.S. for treatment and disposal. In 1964, this policy was revoked.

Since May 1996, under the DoE's Foreign Research Reactor Spent Nuclear Fuel Acceptance Program has attempted to recover foreign research reactor spent fuel containing HEU that was produced in the U.S. The DoE reports that the program addresses approximately 30% of the HEU produced in the U.S. and used in foreign countries.

The Cooperative Threat Reduction (CTR) program began in 1991 to help safeguard and secure fissile materials and other materials used in nuclear, chemical or biological weapons. In December, 2003, Congress passed \$450.8 million for the CTR program to help safeguard and secure fissile materials in the former Soviet Union. To encourage the expansion of the CTR program, Congress also included a provision allowing up to \$50 million of CTR funds to be used in projects beyond the boundaries of the former Soviet Union.

The Nuclear Cities Initiative started in 1998 to help the Russian Federation downsize its nuclear weapons complex and reduce its capacity.

6. International Nonproliferation Efforts

Treaties Signed and Ratified, Date of Deposit

Agreement Between the United States of America and the Union of Soviet Socialist Republics on Notification of Launches of Intercontinental Ballistic Missiles and Submarine-Launched Ballistic Missiles, 31 May 1988

Antarctic Treaty, 18 August 1960

Biological and Toxin Weapons Convention, 26 March 1975

Certain Conventional Weapons Convention, 24 March 1995

Chemical Weapons Convention, 25 April 1997

Comprehensive Nuclear Test Ban Treaty (*not ratified*)

Convention on the Physical Protection of Nuclear Material, 1980

The Intermediate Nuclear Forces Treaty, 1 June 1988

Nuclear Non-Proliferation Treaty, 5 March 1970

Outer Space Treaty, 10 October 1967

Partial Test Ban Treaty, 10 October 1963

Seabed Arms Control Treaty, 18 May 1972

Strategic Offensive Reductions Treaty, 6 March 2003

Treaty of Pelindaba Protocol, 11 April 1996

Treaty of Rarotonga Protocol, 25 March, 1996

Treaty of Tlatelolco Protocol, 12 May 1971

The U.S. has signed the Additional Protocol and ratification is expected to take place in 2004.

Multilateral Groups

Conference on Disarmament
Hague Code of Conduct
Missile Technology Control Regime
Nuclear Suppliers Group
Proliferation Security Initiative
Wassenaar Arrangement
Zangger Committee

7. Positions Taken in International Fora on Various Issues of Nuclear Disarmament

Negative Security Assurances: “We wish to make clear, however, as we have made clear in other contexts, that the United States continues to oppose any proposal for an NSA treaty, or other global, legally binding security assurances regime.” **United States explanation of vote in the GA First Committee, on draft resolution L.8 “Conclusion of effective international arrangements to assure non-nuclear weapon States against the use or threat of use of nuclear weapons”;** **October, 2003.**

Fissile Material: “U.S. supports a Fissile Material Cutoff Treaty that would advance U.S. national security. This Treaty would ban new production of fissile material for nuclear weapons.” – **U.S. Actions and Policies in Support of Its NPT Article VI Obligations Related to Nuclear Disarmament Fact Sheet, circulated at the 2003 NPT PrepCom, Geneva.**

Peaceful (sic) Uses of Nuclear Technology: “We will help nations end the use of weapons-grade uranium in research reactors... The world must create a safe, orderly system to field civilian nuclear plants without adding to the danger of weapons proliferation. The world’s leading nuclear exporters should ensure that states have reliable access at reasonable cost to fuel for civilian reactors, so long as those states renounce enrichment reprocessing. Enrichment and reprocessing are not necessary for nations seeking to harness nuclear energy for peaceful purposes.” – **Statement by the President of the United States of America, circulated as official text to the Conference on Disarmament, February 12, 2004.**

Safeguards: “Some argue that, absent a formal finding of noncompliance with safeguards, NNWS have a ‘right’ to acquire nuclear technology for peaceful purposes. Article IV provides for cooperation among NPT parties in pursuing peaceful nuclear programs...Nuclear commerce must not continue when there are questions, even if those questions have not yet resulted in formal findings of noncompliance...Some argue they must see the ‘smoking gun.’ Unfortunately, the smoking gun for clandestine nuclear programs may well be the mushroom cloud above an exploding weapon.” – **Assistant Secretary of State John S. Wolf to the NPT PrepCom, Geneva, April 28, 2003.**