



U.S. Commitment to Disarmament

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Outline



- Reducing nuclear weapons
- Ceasing production of weapons materials
- Disposing of excess weapons materials
- Managing a smaller stockpile
- Strengthening the nuclear security enterprise
- Increasing transparency



Concrete Steps Toward Disarmament



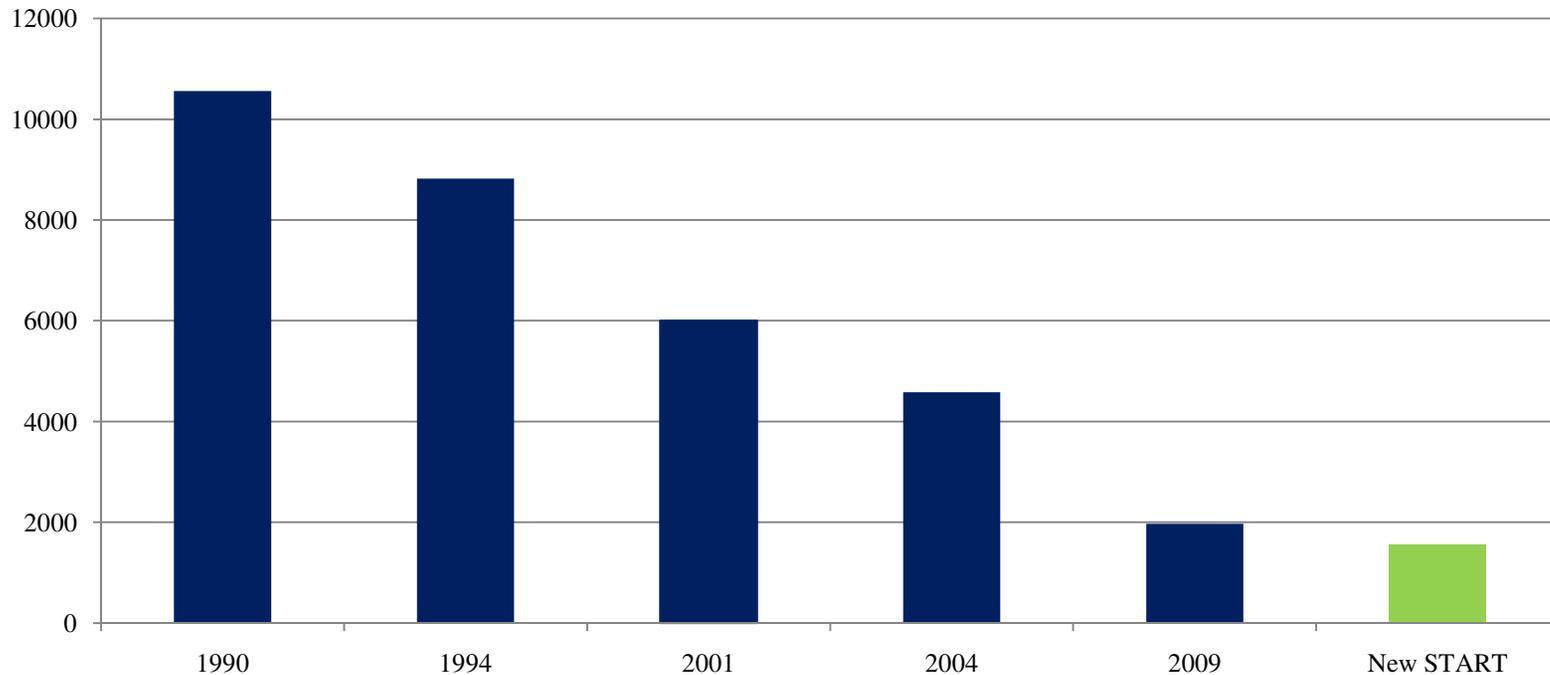
- **Reductions** in deployed nuclear weapons and total stockpile
 - 1,968 operationally-deployed warheads as of December 31, 2009
 - U.S. stockpile reduced 84% from Cold War peak in 1967
 - **New START** commits U.S. and Russia to further significant reductions in deployed warheads
- **Dismantlement** of nuclear weapons
 - 8,748 nuclear weapons dismantled since 1994
 - On track to eliminate warheads currently available for dismantlement by 2022
- **Transformation** of the nuclear security enterprise
 - Consolidating activities and functions; implementing a broad national security mission
- **Removal** of fissile materials from national security stocks continues
- **Cessation of New Fissile Material Production:**
 - No production of fissile material for weapons since late 1980s; support FMCT negotiations
- **Nuclear testing moratorium continues**
 - 17 years since last U.S. test
 - Preparing to request Senate advice and consent to ratification of the CTBT
- **Reduced reliance** on nuclear weapons in U.S. security strategy



Reduction in U.S. Deployed Strategic Nuclear Warheads



Deployed Strategic Nuclear Warheads*



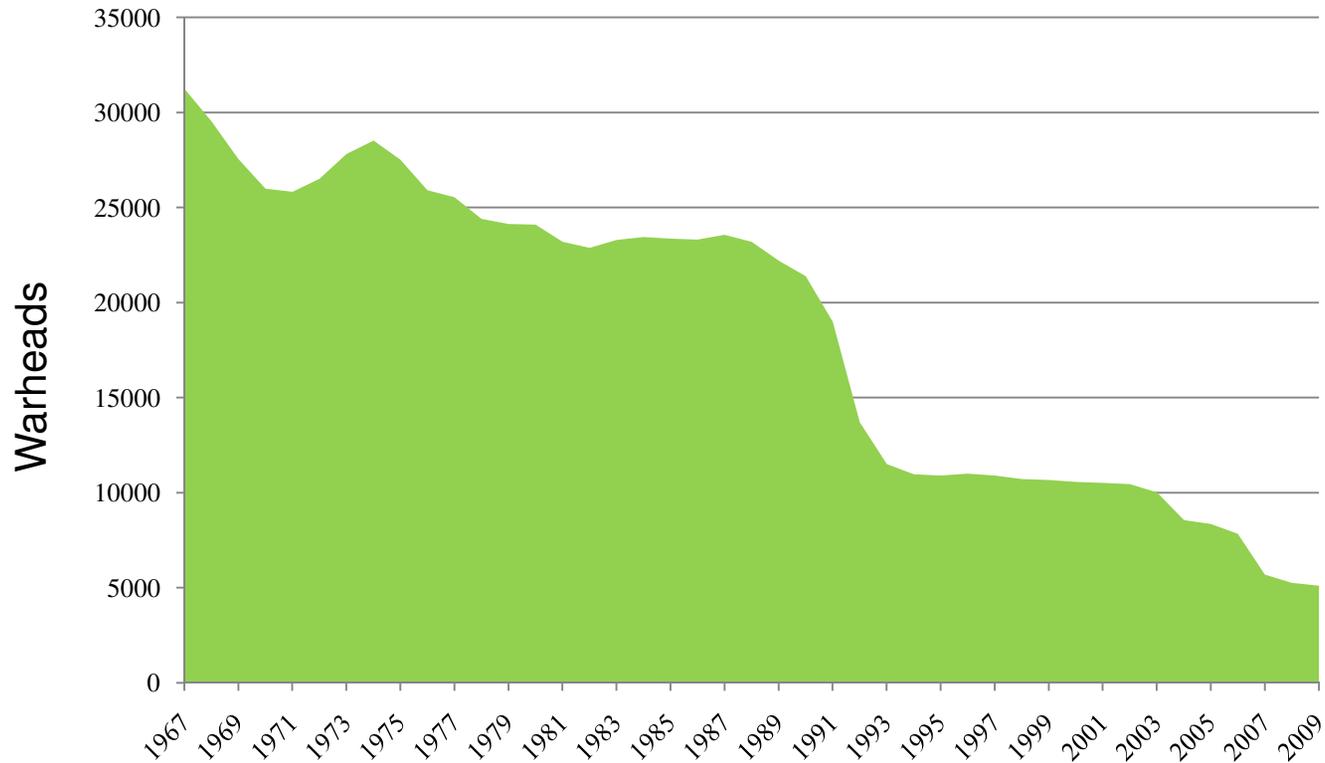
* Figures for 1990, 1994, and 2001 are attributed warheads based on START counting rules.



Reductions in U.S. Nuclear Stockpile



U.S. Nuclear Stockpile 1967-2009





Fissile Material Production for Weapons Stopped



Hanford's F Reactor –
completely dismantled in 2003

- No production of Highly Enriched Uranium (HEU) for weapons since 1964 and HEU production plants closed
 - Oak Ridge HEU plant closed in 1987
- No production of plutonium for U.S. weapons since 1988
 - Last U.S. plutonium reactors shut down in 1989



HEU Removed from National Security Stocks



- In 1994, the United States declared 174 MT of HEU excess to defense needs
 - 118 MT of HEU down-blended to low-enriched uranium (LEU) reactor fuel
 - 13 MT of HEU delivered for near-term down-blending
 - 17.4 MT of HEU set aside for the **Reliable Fuel Supply; down-blending to LEU scheduled to be completed in early 2011**
- In 2005, the United States withdrew an additional 200 MT of HEU from use in nuclear weapons

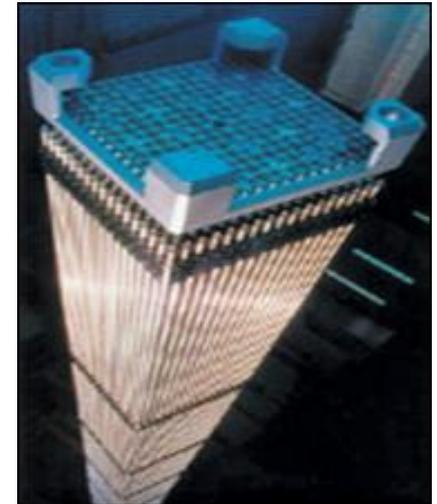
374 MT of HEU made unavailable for weapons use – equivalent to roughly 12,000 nuclear weapons



Plutonium Removed from National Security Stocks



- In 1994, roughly 50 MT of plutonium declared excess to national security requirements
- Plutonium Disposition Agreement with Russia commits both sides to dispose of 34 MT each of weapons-grade plutonium
 - Construction of U.S. MOX facility started in 2007
 - U.S. and Russia agreed upon a technically and financially credible program for Russian plutonium disposition
 - Protocol on implementation signed in April 2010
- In September 2007, declared an additional 9 MT of weapons-grade plutonium removed from national security stocks



Mixed oxide fuel assembly

61.5 MT of plutonium removed from U.S. stocks – equivalent to roughly 15,375 nuclear weapons



U.S.-Russia Weapons-Grade Plutonium Cessation



- **1997 Plutonium Production Reactor Agreement**
- Requires cessation of weapons-grade plutonium production for use in nuclear weapons in United States and Russia
- Monitoring provisions provide confidence that:
 - Shut down reactors in both countries do not resume operation
 - Plutonium produced by Russia's last three operating reactors is stored securely and not used in nuclear weapons
- **Elimination of Weapons-Grade Plutonium**
- Programs in Zheleznogorsk and Seversk to refurbish and build heat and electricity plants to facilitate the shutdown of the last three weapons-grade plutonium production reactors in Russia
 - All three Russian reactors are now shut down
 - The last reactor at Zheleznogorsk shut down in April 2010



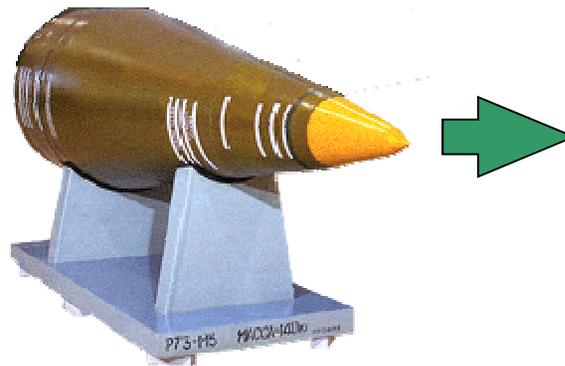
Computer simulation of Zheleznogorsk plant



Reusing HEU from Dismantled Russian Weapons



- **1993 U.S.-Russia HEU Purchase Agreement**
- Provides for the conversion of 500 MT of HEU from dismantled Russian weapons to fuel U.S. nuclear power plants
- Transparency measures give U.S. monitors confidence 30 MT Russian HEU is downblended every year and eliminated from Russian stocks. (IAEA equivalent to 1,200 nuclear weapons destroyed annually)
- By Agreement's end in 2013, 500 MT Russian HEU converted to LEU (20,000 weapons)



382.3 MT of HEU removed from Russian stockpiles to date -- equivalent to destroying 15,292 nuclear weapons



Managing a Smaller Stockpile



U.S. stockpile management principles to sustain a safe, secure, and effective arsenal:

- No nuclear testing – pursue ratification of CTBT
- No new nuclear warheads
 - Life Extension Programs (LEPs) will only use previously tested designs
 - No new military missions
 - No new military capabilities
- Study warhead sustainment options on case-by-case basis, considering all LEP approaches

U.S. seeks to retain the smallest possible nuclear stockpile consistent with our need to deter adversaries, reassure our allies, and hedge against technical and geopolitical surprise



Managing a Smaller Stockpile



- Seeking to extend the life of existing warheads instead of building new ones
- With life extension of existing systems, priority given to enhancements to safety, security and use control
- Consideration of possibilities for reducing the number of warhead types
- New START agreement sets the stage for further reductions in the stockpile



Dismantled B-61 Bomb



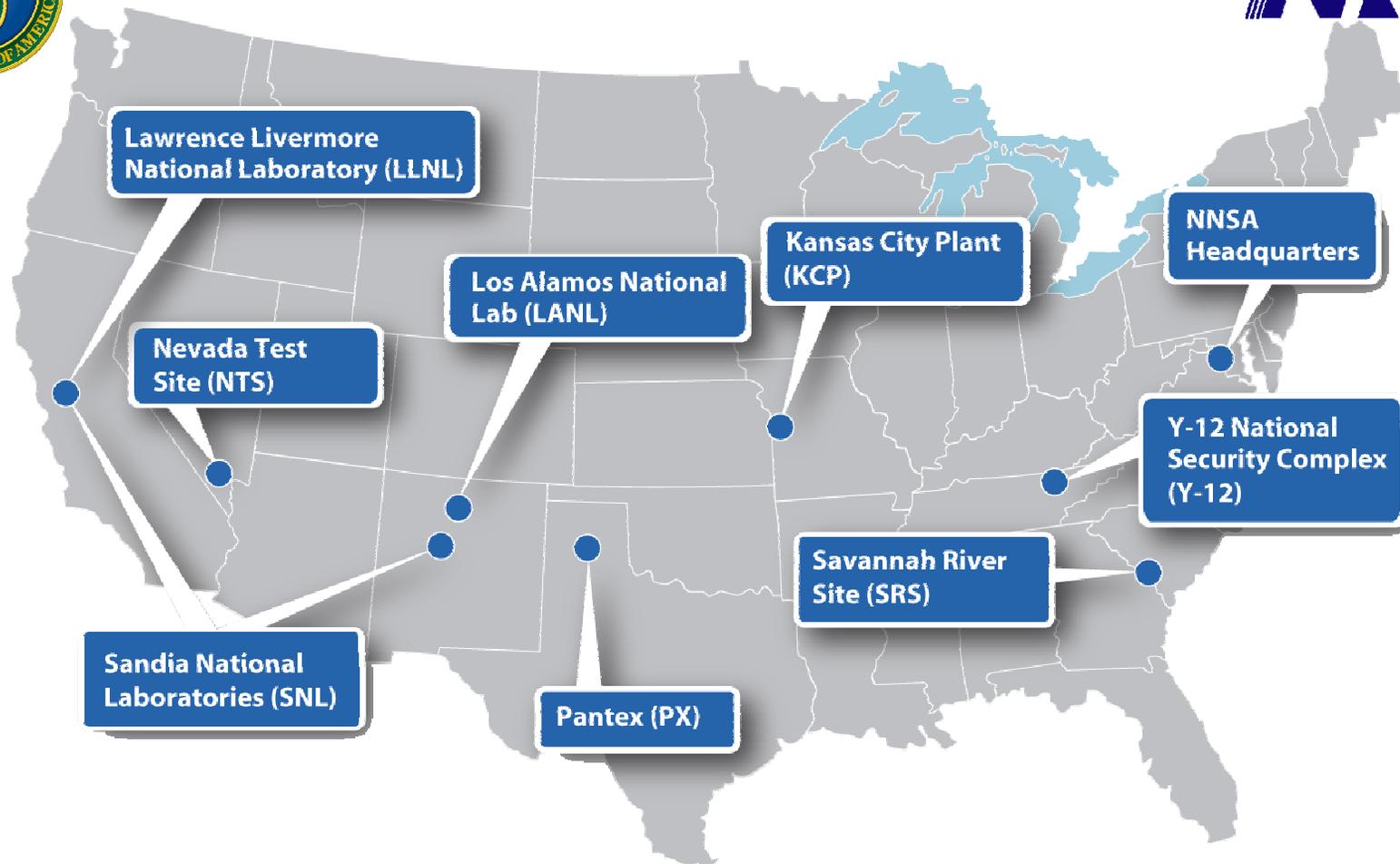
Transforming the Nuclear Security Enterprise



- Consolidate activities while addressing an aging infrastructure
 - Chemistry and Metallurgy Research Replacement Project and new Uranium Processing Facility
 - Support the needed recapitalization of the nuclear infrastructure
- Support Science, Technology, and Engineering (ST&E)
 - A strong ST&E base is the foundation of the full range of nuclear security missions: nuclear nonproliferation, counterterrorism, emergency response
 - Investment in NNSA infrastructure provides the tools to tackle a wide range of national and international challenges – everything from climate change to HIV modeling
- Recruit and retain key human capital in DoD and DOE



Nuclear Security Enterprise



“By modernizing our aging nuclear facilities and investing in human capital, we can substantially reduce the number of nuclear weapons we retain as a hedge against technical or geopolitical surprise, accelerate dismantlement of retired warheads, and improve our understanding of foreign nuclear weapons activities.” – 2010 NPR



Transparency and Reporting



- **Longstanding outreach on U.S. disarmament accomplishments**
 - Multiple briefings and presentations on Article VI issues at prior Review Conferences, and Preparatory Committee and First Committee meetings
- **Active public outreach: notice of steps taken & vision for future**
- **Enhanced transparency of U.S. stockpile size and weapons dismantlement**
- **Declared fissile material excess to defense needs**
 - Made excess material available for IAEA verification
- **Released Nuclear Posture Review to the public**
- **More information available at U.S. Government websites:**

<http://nnsa.energy.gov>

<http://www.state.gov/t/>

<http://www.defense.gov/npr>



Toward a World Without Nuclear Weapons



- Continue focus on preventing nuclear proliferation and nuclear terrorism
- Strengthen regional security architectures while placing increased reliance on non-nuclear deterrence capabilities
- Engage Russia, after ratification and entry into force of New START, in negotiations aimed at achieving substantial further nuclear force reductions
- Engage other nuclear weapons states, over time, in a multilateral effort to limit, reduce, and eventually eliminate all nuclear weapons worldwide
- Continue to sustain a safe, secure, and effective nuclear deterrent as long as nuclear weapons exist





Conclusion



- **The United States has a demonstrated record of reducing and eliminating nuclear weapons, disposing of weapons-usable fissile materials, and consolidating the nuclear security enterprise**
 - Pace and progress of reductions in the U.S. arsenal have been extraordinary
 - Partnership with Russia facilitating great progress on reducing nuclear materials
- **The United States has negotiated and implemented significant steps toward disarmament, consistent with its commitments under NPT Article VI**
- **The United States continues to reduce the number and role of nuclear weapons**
- **President Obama has rededicated the United States to the goal of a world without nuclear weapons**
- **All states can contribute to achieving this goal**