Los Alamos Study Group

Nuclear Disarmament • Environmental Protection • Social Justice • Economic Sustainability

Press backgrounder 5/1/14

DISMANTLEMENT DISSEMBLING

U.S. claims of nuclear weapons retirement, dismantlement "may be misleading" – GAO

Thousands of "retired" nuclear weapons (and millions of components) await dismantlement and disposition; many are kept for possible re-use

Nuclear stockpile declining ten times slower under Obama than G.W. Bush; warhead "retirement" is now ambiguous, contingent, and may have nearly stopped

Physical dismantlement slowest in decades; administration proposes to slash dismantlement budget and slow down work in FY15, breaking previous commitments

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Albuquerque, NM – Yesterday the Government Accountability Office (GAO) released the results of a two-year audit of Obama Administration efforts to meet nuclear warhead dismantlement goals, a responsibility of the National Nuclear Security Administration (NNSA).[1] The audit was requested by Senator Feinstein, Chair of the Senate Energy and Water Development Appropriations Subcommittee.

GAO found that NNSA could not unambiguously describe its overall progress in dismantling the "several thousand" U.S. nuclear warheads already retired from the arsenal. This ambiguity arises in part because thousands of these warheads are being held in varying degrees of what in plain English might be called "partial" or "contingent" retirement, their final fate depending on stockpile and infrastructure decisions yet to be made and the completion of actions which cannot be done until the late 2020s or early 2030s.[2]

Some "retired" warheads are already being put back into the deployed arsenal in order to avoid reassembling warheads taken apart for surveillance purposes. This saves money, but according to GAO could cause reliability

[1] Actions Needed by NNSA to Clarify Dismantlement Performance Goal, GAO-14-449, Apr 30, 2014. Page numbers and quotes not otherwise specified refer to this report. "Warheads," in this press release, means missile warheads and gravity bombs, both.

[2] Most nuclear stockpile quantities are classified. We know that since 1989, 25 years ago, 15,005 warheads and bombs of various kinds have been retired, adding to whatever the inventory of retired warheads was at that time. We also know that 9,952 warheads and bombs have been dismantled since 1994. We do not know how many warheads were dismantled previous to 1994. (Transparency in the U.S. Nuclear Weapons Stockpile, U.S. State Department, fact sheet, Apr 29, 2014. See also partial summary table, below.) Neither do we know how many warheads are now considered "retired." In this report GAO, with access to classified inventories, says there are "several thousand;" Hans Kristensen, without that access, estimates 2,500. ("US Nuclear Weapons Stockpile Number Declassified: Only 309 Warheads Cut By Obama Administration," Hans Kristensen, Federation of American Scientists, April 29, 2014.)

risks because "retired" warheads typically undergo less surveillance than stockpile warheads, whether deployed or in the "hedge" arsenal. Approximately 9% percent of all warheads retired prior to 2009 but not yet dismantled are scheduled to be reinstated to the stockpile in 2013 and after (p. 25) for this purpose.

A warhead is deemed "dismantled" when the high explosive surrounding the plutonium warhead core ("pit") is removed. The dismantlement process is thus partial, and typically results in reusable hard-to-make nuclear and non-nuclear components. Nearly all such nuclear components are kept for possible future use, meaning that thousands of pits and canned subassemblies (CSAs) are being kept for this purpose at the Pantex plant in Texas and the Y-12 National Security Complex in Tennessee, respectively.[3]

Millions of non-nuclear components are also being kept for possible reuse at Pantex and at the Kansas City Plant in Missouri (pp. 43-50). One of the revelations provided in this report is that there are also hoards of clearly obsolete classified components being kept at Pantex as well. There is no functional disposition path for these.

The GAO found there is no system of tracking warhead retirement dates, making it doubly impossible to assess progress toward NNSA's previous goal – adopted during the Bush Administration in 2006 but now apparently meaningless – of dismantling all warheads retired prior to 2009 by 2022. This finding implies that either there are no tags or labels on retired warheads that include retirement date – physical or electronic, filed by individual serial number for example – or else, or else warheads are in fact so labeled but there is no inventory mechanism or spreadsheet that can sort retired warheads by date. The lack of this data raises the obvious question, not just whether it is possible to track progress in meeting the previous performance goal, but also of how firm or important "retired" status really is to either NNSA or DoD (which has physical custody of most of these warheads).

Warhead status, as reported here by GAO in more detail than anywhere previously but nonetheless still vague, turns out to be a complex matrix of graded categories, which are themselves being changed, within which warheads can be and are moved administratively with some degree of freedom.

"Stockpile" warheads, of which there were 4,804 last year,[4] can be brought back from inactive to active status, or to higher degrees of readiness within active status, by replacing limited-life components (pp. 10-12) or with other maintenance. "Retired" warheads, which officially are not in the "stockpile" at all and not released in State Department tallies, may nevertheless still be in "managed retirement" or "war reserve" status. Some of these retired warheads are returned to the stockpile each year to replace warheads removed and destructively surveilled, as noted. An unknown but potentially large number of "war reserve" warheads are kept as yet another layer of hedging against technical failure and political contingencies.

The report states that warheads "removed from the [deployed strategic] stockpile" to comply with New START[5] "are not expected to be retired until the late 2020s or early 2030s" (p. 29). There is no schedule to do so. The warheads removed under New START will be transitioned to "'hedge' status" within the stockpile (not deployed but maintained, and clearly not retired). Thus New START compliance will be achieved "without any significant change in the total stockpile size."[6]

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[3] In 2009 Pantex officials said there were "more than 14,000" pits in storage there, well below the 20,000 pits authorized, with the possibility of reaching that limit by 2014 under some warhead retirement assumptions. (Jim McBride, *Amarillo Globe-News*, Jan. 29, 2009, "Pantex may hit storage limit in 2014." The U.S. has no pit disposition path at this time. We believe only minor numbers of pits (dozens, not hundreds) have left Pantex since 2009, primarily if not exclusively for surveillance purposes. Dismantlement has added 1,560 pits. The GAO reports (p. 39) that Pantex can accommodate the additions to pit inventory from planned dismantlements through 2022 without exceeding the 20,000 pit limit, albeit with reconfiguration of some bays in Zone 12.

[4] Transparency in the U.S. Nuclear Weapons Stockpile, U.S. State Department, fact sheet, Apr 29, 2014.

[5] New START: http://www.state.gov/t/avc/newstart/index.htm.

[6] For the U.S. and the other eight nuclear weapon states, no treaty governs the total number of deployed nuclear warheads, their alert status, the number of maintained, working nuclear warheads held in reserve, the total number of warheads in the retired inventory or in a firm dismantlement queue, the number of warheads actually dismantled, or the number of reusable

According to GAO, any eventual retirement of warheads retired under New START is now contingent on the successful completion of 1) planned warhead modernization programs (i.e. Life Extension Programs, LEPs) and 2) successful acquisition of new warhead production capacity and infrastructure. According to DoD officials to whom GAO spoke, this includes construction of the proposed (but indefinitely deferred) Chemistry and Metallurgy Research Replacement Nuclear Facility (CMRR-NF) at Los Alamos National Laboratory (LANL), and the Uranium Processing Facility (UPF) at the Y-12 National Security Complex in Tennessee (p. 29). Even then there is no guarantee these finally "retired" warheads will not be in a retired "war reserve" and not dismantled.

As the table below shows, President Obama has retired just 309 (net) warheads over 5 years, just 6% of the arsenal he inherited. His warhead retirement rate is less than 10% of the average rate of G. W. Bush. The warheads being retired may well be in "war reserve" status, not to be dismantled for many years – *and only dismantled if* certain projects are successfully carried out, costing in aggregate many tens of billions of dollars (most of which Congress has neither finally approved or funded).

An unwritten conclusion is apparently that permanent, unambiguous warhead retirements may have nearly stopped.

GAO does not say that NNSA or its contractors have mismanaged the dismantlement mission. Nuclear stockpile decisions are made by the President on the recommendations of the Nuclear Weapons Council, the five members of which are all appointed to their respective positions by the President and confirmed by the Senate.[7] NNSA, through its contractors, carries out these decisions but does not itself make them.

The President's budget request for fiscal year (FY) 2015 includes a 45% decrease in the dismantlement budget, from $54.2 million (M) in FY14 to $30.0 M next year.[8] This cut is expected to produce dismantlement workload reduction of 40%, which could set a historic low in dismantlement.[9] Outyear budget plans restore approximately the previous level of funding but are much less of an administration commitment and are subject to much greater political uncertainty than is the request for FY15.

As the table below shows, the average dismantlement rate under President Obama is less than that of the three previous presidents. We do not know which warheads and bombs are being dismantled or the arms control and disarmament significance of these dismantlements, which may be quite low if these warheads and bombs are unsafe and undeployable, like the B53 bomb.

U.S. Nuclear Warhead Retirement and Dismantlement under Four Presidents (State Department, 4/29/14)[10]				
	G.H.W. Bush 1989-1992	B. Clinton	G.W. Bush 2001-2008	B. Obama (to date) 2009-2013

nuclear components held in inventory from those warheads. The 184 non-nuclear weapons state signatories to the Treaty on the Nonproliferation of Nuclear Weapons (popularly, the Nuclear Nonproliferation Treaty or NPT) are by contrast constrained by a quantitative stockpile limit: zero.

[7] "The Nuclear Weapons Council, established by Congress in 1986, is a joint DOD/DOE organization that facilitates high-level coordination to secure, maintain, and sustain the nuclear stockpile. See Pub. L. No. 99-661, § 3137 (1986). The council consists of five members: the Undersecretary of Defense for Acquisition, Technology, and Logistics; the Undersecretary of Defense for Policy; the Vice Chairman of the Joint Chiefs of Staff; the Commander of the U.S. Strategic Command; and the NNSA Administrator. The Nuclear Weapons Council Standing and Safety Committee is a subordinate body to the Nuclear Weapons Council, which advises and assists it, and provides preliminary approval for many of the council's activities. It is a joint DOD-DOE senior executive or flag-level committee that conducts transactions between DOD and DOE on behalf of the council." (This GAO report, footnote 19, p. 11.)

[8] Department of Energy (DOE) FY15 Congressional Budget Request (CBR) Vol. 1, NNSA Weapons Activities, p. 80.

[9] Ibid, p. 103. Last year 239 warheads were dismantled; 60% of that is 143 warheads. That rate would about tie 2001, when 144 warheads were dismantled, for the least productive dismantlement year. The 1994-2013 average dismantlement rate is 498/year.

[10] Transparency in the U.S. Nuclear Weapons Stockpile, U.S. State Department, fact sheet, Apr 29, 2014.

		1993-2000		
Warheads & bombs retired, % initial deployment	8,509 (38%)	934 (8%)	5,253 (42%)	309 (6%)
Average retirement rate, warheads/year*	2,127	117	657	62
Total dismantlements in presidency	(high)	>5,750**	2,642	1,560
Average dismantlement rate, warheads/year	(high)	821	330	312

*According to GAO, many retired warheads are subject to possible reinstatement in the stockpile. How many is not clear and apparently depends in part on policy decisions which have not been made.

**The Clinton Administration dismantled 5,750 warheads during the years 1994-2000; dismantlements in 1993 and earlier years were not provided.

One reason mentioned both by GAO and NNSA's budget request for the planned decrease in dismantlement effort is that, given that warhead retirements under Obama have been made contingent on new warhead production capacity and on successful completion of warhead modernization projects, neither of which can be done before the late 2020s, there won't be enough dismantlement work for Pantex's technicians in a few years unless dismantlements are slowed down now.

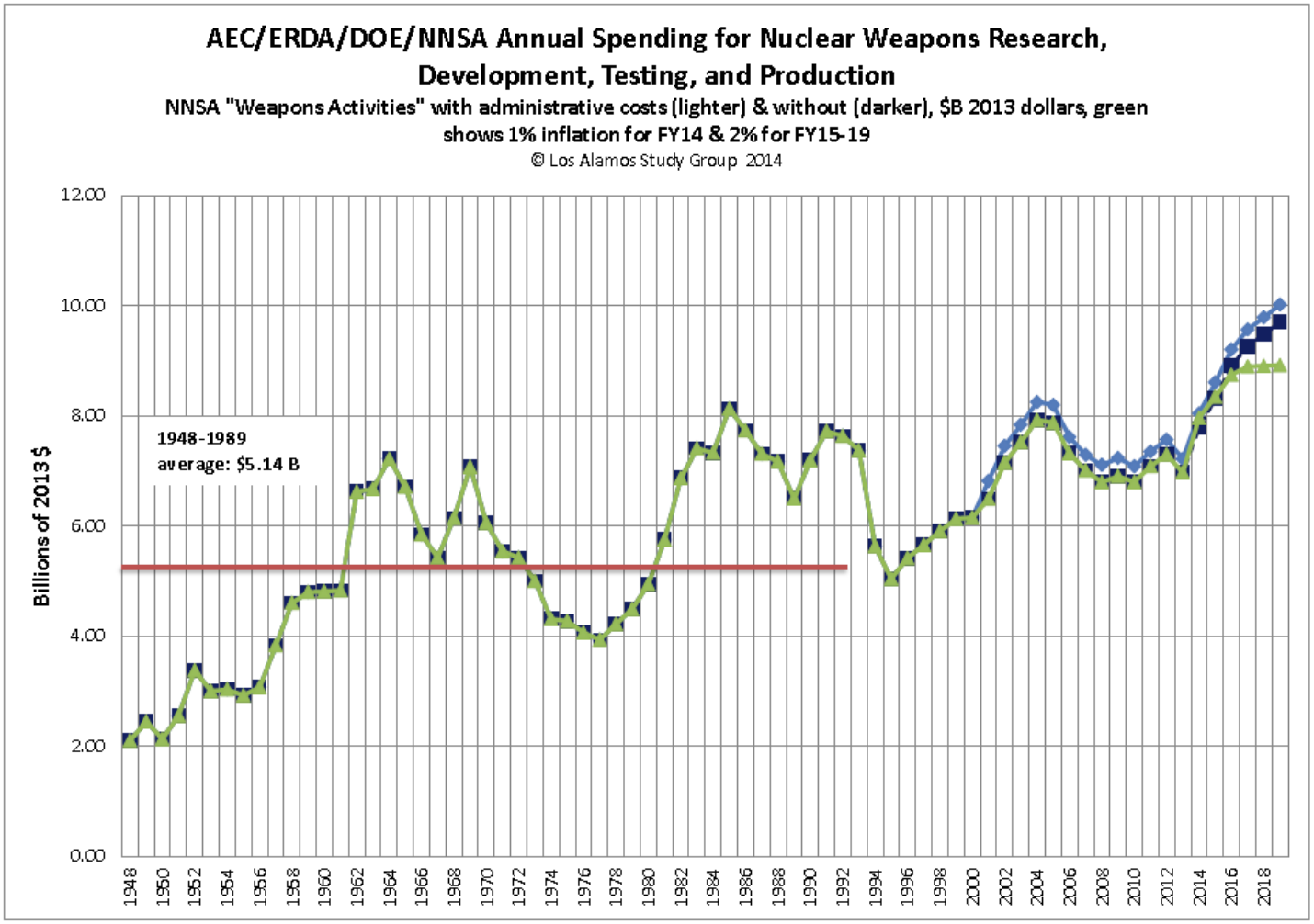
GAO:

> NNSA is unlikely to achieve its goal of dismantling all weapons retired prior to fiscal year 2009 by the end of fiscal year 2022 because of uncertainties surrounding when large numbers of retired weapons that are currently in managed retirement might be released for dismantlement. In addition, because of the possible delay in the retirement of additional weapons resulting from New START treaty implementation, there could be a significant gap in dismantlement workload during the mid- to late-2020s that could affect NNSA's ability to sustain sufficient numbers of certified dismantlement personnel. By relaxing and extending the fiscal year 2022 dismantlement performance goal deadline, NNSA could give itself flexibility to account for the uncertainties associated with weapons in managed retirement and could allow the dismantlement workload to be leveled and extended through the mid-2020s to sustain the dismantlement workforce (p. 50).

In its budget request NNSA cryptically says the same thing. NNSA's disarmament goals include "balancing dismantlement work by mitigating gaps in future stockpile reductions."[11] It is difficult to see how a performance goal that essentially amounts to slowing down and de-prioritizing dismantlement will lead to cost-effective, efficient, and above all safe dismantlement operations.

The near-halt to retirements and slowing of dismantlements is occurring at a time of unprecedented NNSA warhead spending. The President's budget request for FY15 includes a proposed 7% increase in NNSA Weapons Activities, the budget line in which dismantlement is funded.[12] As we have noted, this level of proposed warhead spending is more in constant dollars than the U.S. has ever spent on warhead design, testing, and production, even during the height of the Cold War.[13] See the following chart.

[11] DOE CBR Vol. 1, p. 118.
[12] Los Alamos Study Group, "President Requests Unprecedented Spending on Nuclear Weapons Maintenance, Design, Production," March 4, 2014.
[13] Ibid.



(Sources: pre-1996 data from Steve Schwartz et. al., *Atomic Audit: The Costs and Consequences of U.S. Nuclear Weapons Since 1940,* 1998, Brookings Institution; balance of data from DOE congressional budget requests. Deflator is Bureau of Labor Statistics CPI-U except as stated.

But this is only the beginning. This administration seeks continually-rising warhead spending through at least 2039. See the following figure.[14]

[14] NNSA, FY 2015 Stockpile Stewardship & Management Plan, Apr 10, 2014, p. 8-9.

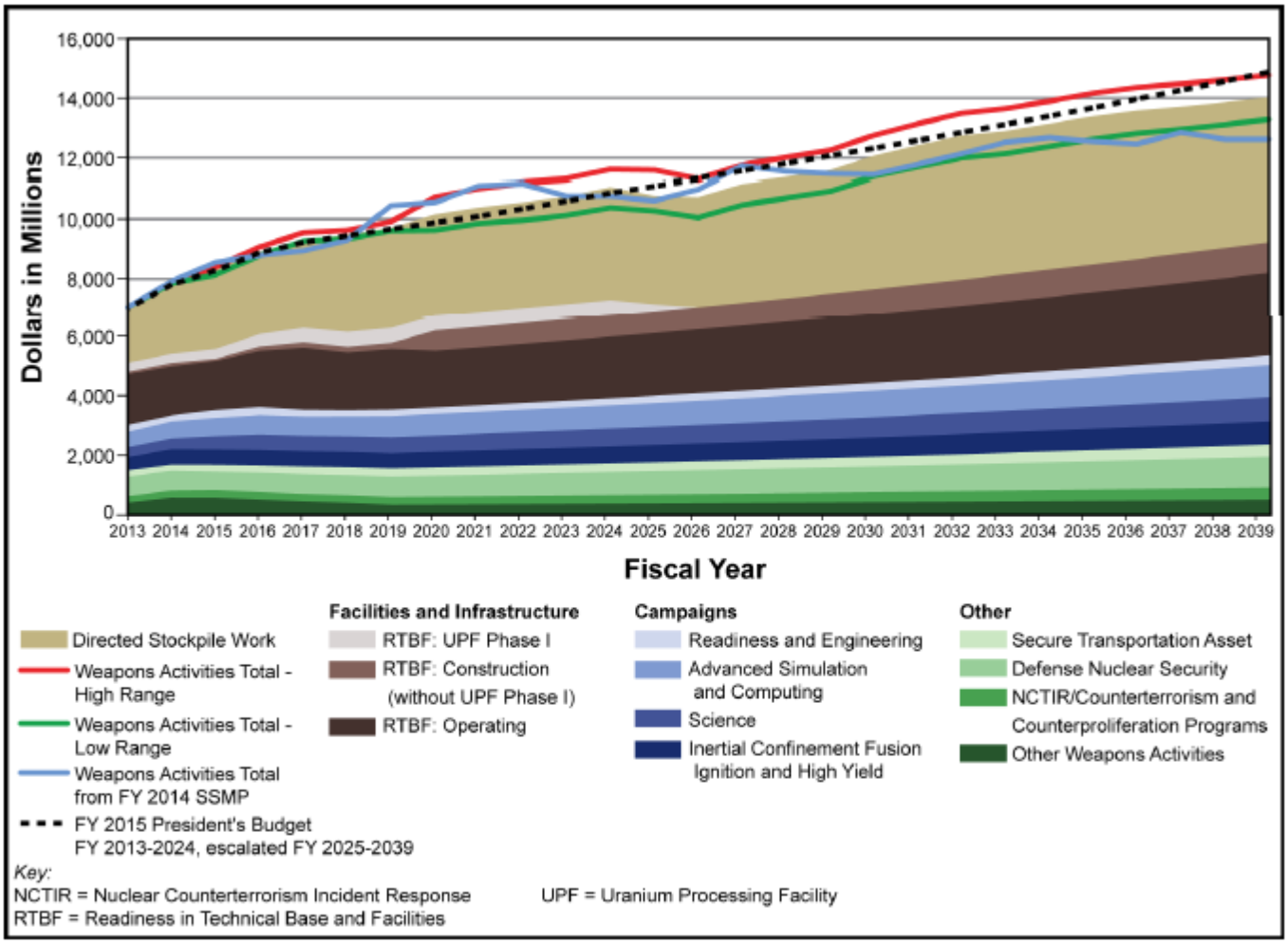


Figure 8–11. Estimate of out-year budget requirements for Weapons Activities of the NNSA in then-year dollars

Dramatic increases in nuclear weapons spending are planned for DoD as well. The Congressional Budget Office (CBO) estimates that the cost of the administration's nuclear weapons plans, barring egregious modernization project failures (a nearly constant feature so far[15]), will total $355 billion (B) through 2023.[16]

A largely independent estimate over a three-decade period that embraces the entire planned modernization program, rather than just the first decade as CBO has done, estimated the total cost of the administration's nuclear weapons plans as about $1 trillion, a large but inescapable number implied by extrapolation of the previous month's CBO study as well.[17]

The budget and program prioritization of modernization over dismantlement is not at all new, although it is certainly new in this extreme degree. What is new is that warhead retirements and dismantlements are being held politically hostage to the approval and success of modernization programs, and also that the concept of warhead retirement and the data quality concerning the size of the stockpile have been eroded.

[15] See Comparison chart of the Feb 2011 "1251 report," and the Section 1043 report of the National Defense Authorization Act (NDAA), Senator David Vitter, Apr 10, 2014.

[16] Projected Costs of Nuclear Forces, 2014 - 2023, Congressional Budget Office, Dec 19, 2013 (pdf)

[17] John B. Wolfsthal, Jeffrey Lewis, and Marc Quint, "Trillion Dollar Nuclear Triad: US Strategic Modernization over the Next Thirty Years," James Martin Center, Jan. 7, 2014; comments at "New study of nuclear deterrent costs: current plans to cost $1 trillion over 30 years, therefore impossible," Los Alamos Study Group, Jan. 8, 2014.

This new state of affairs, especially when considered in light of other information not discussed here, amounts in practical terms to a nearly complete halt in nuclear disarmament.[18] This is potentially important diplomatically.

By way of background, the U.S. is a signatory to the NPT, and Article VI of that Treaty says:[19]

> Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a Treaty on general and complete disarmament under strict and effective international control.

In 1996, the International Court of Justice unanimously ruled that the NPT and other law create a binding treaty obligation "to pursue in good faith *and bring to a conclusion* negotiations leading to nuclear disarmament in all its aspects under strict and effective international control"[20] (emphasis added).

Yesterday's GAO report reveals *new* ambiguities and contingencies that must qualify claimed progress in nuclear disarmament, along with the unprecedented modernization expenditures that are already widely discussed. Both these developments are contrary to treaty obligations "to pursue negotiations in good faith" to end "the nuclear arms race" and achieve "nuclear disarmament in all its aspects under strict and effective international control."

Study Group Director Greg Mello: "Beneath the ambiguities and contingencies discovered and described by GAO in this report lies presidential indecision. The president is kicking the can down the road, and there are great costs to this. We didn't know some of those costs until this report. We didn't know nuclear warheads could come back from the dead as "zombie WMDs." We thought retired warheads were out of commission. We didn't know they weren't all "rusting in peace" quite yet. We now know rumors of their demise have been exaggerated.

"The number of backups and hedges to our mutually assured destruction plan is getting too many to count. We've got multiple warheads on targets; multiple legs in the triad; multiple warheads for each kind of missile; gravity bombs and cruise missiles on bombers, both; thousands of "hedge" warheads in bunkers; additional zombie "retired" warheads that aren't really retired – almost certainly more in this new category alone than are in the total arsenals of any country but Russia; more than 15,000 extra plutonium pits, and probably as many secondaries; the capacity to build more of each, with the ability to increase that capacity in a number of existing facilities and with extra shifts; and finally millions of non-nuclear spare parts hoarded in giant classified warehouses. How can U.S. diplomats explain away these ugly facts to the 184 countries which have agreed to entirely forego this lovely technology?"

ENDS

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[18] This goes beyond the scope of these remarks but it is useful to say here that the modest or even trivial decreases in delivery systems and launchers required under the terms of New START, some or perhaps even all of which are reversible, do not in any case constrain the number of deployed strategic warheads within the terms of the treaty, which count each heavy bomber as "one warhead." It should be noted in this context that acquisition of a new stealthy cruise missile with a new nuclear warhead – a strategic nuclear weapon type which is relatively unconstrained by New START – is an early priority of the administration's modernization program. Production of a new cruise missile warhead is a condition of retirement of some other warheads, according to this GAO report.

[19] Treaty on the Non-Proliferation of Nuclear Weapons (NPT), http://www.state.gov/t/isn/trty/16281.htm.

[20] International Court of Justice, *Legality of the Threat or Use of Nuclear Weapons*, Dispositif paragraph 2F. See summary or entire opinion. Expert analysis of the implications and context of this decision and the legal developments which have followed it can be found on the web site of the Lawyer's Committee on Nuclear Policy (LCNP).