DOE/DP/20138--T1

REPORT

DOE/DP/20138--T1

DE86 006407

OF THE

PRESIDENT'S BLUE RIBBON TASK GROUP

ON

NUCLEAR WEAPONS PROGRAM MANAGEMENT

JULY 1985

DISCLAIMER

THE PRESIDENT'S
BLUE RIBBON TASK GROUP ON
NUCLEAR WEAPONS PROGRAM MANAGEMENT
WASHINGTON, DC 20301-3050

July 15, 1985

The President
The White House
Washington, DC 20500

Dear Mr. President:

In compliance with Section 1632 of the Department of Defense Authorization Act, 1985 (Public Law 98-525) and Executive Order 12499 of January 18, 1985, the Blue Ribbon Task Group on Nuclear Weapons Program Management has completed its work. The Task Group addressed procedures used by the Departments of Defense and Energy in establishing requirements and providing resources for the research, development, testing, production, surveillance, and retirement of nuclear weapons. I present its recommendations and supporting analysis in the enclosed report.

The Task Group found that the relationship between the Departments of Defense and Energy for managing the nuclear weapons program is sound. However, the Task Group also determined that current arrangements could be strengthened and rendered more cost-effective if a number of administrative and procedural changes are introduced. These would have the effect of closer integration of nuclear weapons programs with national security planning without sacrifice to the healthy autonomy of the concerned agencies in the performance of their respective missions.

The Task Group was asked to consider three specific goals: improved coordination between DOE and DOD; improved budgeting and management procedures; and a determination whether DOD should assume responsibility for funding current DOE weapon activities and materials production programs. Recommendations in the report address these areas. They would, if implemented, entail no additional cost to the nation and could actually facilitate savings in the years ahead.

Copies of the report have been provided to the Chairmen of the Committees on Armed Services of the Senate and the House of Representatives.

Respectfully yours,

William Clark
Chairman

Enclosure

REPORT

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JULY 1985

THE PRESIDENT'S
BLUE RIBBON TASK GROUP ON
NUCLEAR WEAPONS PROGRAM MANAGEMENT
WASHINGTON, DC 20301-3050

July 15, 1985

The Honorable Barry Goldwater
Chairman
Committee on Armed Services
United States Senate
Washington, DC 20510

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Respectfully yours,

Bill Clark

William Clark
Chairman

Enclosure

THE PRESIDENT'S
BLUE RIBBON TASK GROUP ON
NUCLEAR WEAPONS PROGRAM MANAGEMENT
WASHINGTON, DC 20301-3050

July 15, 1985

The Honorable Les Aspin
Chairman
Committee on Armed Services
United States House of Representatives
Washington, DC 20515

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Chairman

Enclosure

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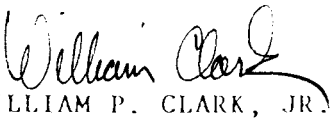

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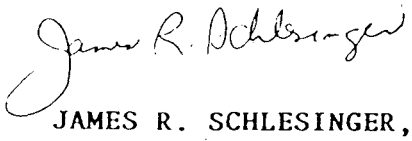

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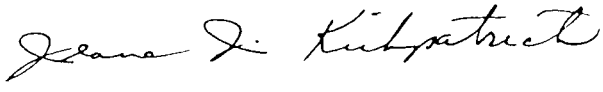

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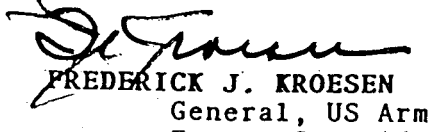

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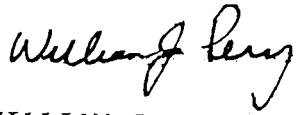

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EXECUTIVE SUMMARY

The President established the Blue Ribbon Task Group on Nuclear Weapons Program Management at the direction of the Congress to address fiscal accountability and discipline in the nation's nuclear weapons program. The Task Group was asked to "examine the procedures used by DOD and DOE in establishing requirements for, and providing resources for, the research, development, testing, production, surveillance, and retirement of nuclear weapons," and to recommend any needed change in coordination, budgeting, or management procedures. The Task Group was also asked to address "whether DOD should assume the responsibility for funding current DOE weapon activities and material production programs."

A major challenge to the Task Group was to reconcile two legitimate concerns. The first is preservation of the strengths and capabilities of the present system. The second is enhancement of the fiscal responsibility and cost discipline within and between each of the responsible departments to provide more opportunities for, and ensure consideration of, trade-offs among defense needs.

The advantages of the current arrangement include checks-and-balances for nuclear weapon safety, security, and control; excellence and vitality of the national laboratories; and unique facilities of the production complex. The three national laboratories that conduct nuclear weapon R&D--Lawrence Livermore, Los Alamos, and Sandia--have long traditions of managerial discretion in defining research programs and in allocating resources quite unlike most of the nation's defense laboratories. Their technical accomplishments have been impressive. Successive generations of weapons have been introduced into the nation's stockpile, generally on schedule, while meeting increasingly high standards of nuclear safety and high performance specifications.

Over time, costs of producing these weapons have increased substantially. Much of this growth is attributable to enhancements of safety, control, employment flexibility, weapon yield efficiency, and production of weapons of increasing technical sophistication and complexity. Cost growth, particularly in the last several years, also arises from the need for DOE to refurbish aging facilities while meeting increasing security, safety, and environmental requirements. Nevertheless, the Task Group believes that an element in cost escalation is attributable to past inattention to cost in setting nuclear weapon requirements and in designing and producing nuclear weapons.

The Task Group found that DOD and DOE are making some progress toward improved cost consciousness and discipline, despite difficulties of implementation in a community where performance and reliability have been considered more important than cost or measures to control costs. But room for improvement exists. The Task Group has identified opportunities to improve fiscal responsibility and to instill more cost discipline, and has made recommendations to these ends. In making these recommendations, the Task Group cautions that adopting more drastic measures to improve cost consciousness and accountability could upset the delicate balance between competing concerns. It is important that cost control procedures not cut corners in critical areas such as nuclear safety or inhibit the innovative and aggressive technology base activities.

The Task Group found that the present relationship between DOD and DOE for managing the nuclear weapons program is sound. Accordingly, the Task Group sought a process for improving the integrated determination of nuclear weapon requirements and the management of nuclear weapon production. This process should increase cost consciousness and accountability while preserving advantages of dual-agency responsibility.

The following summarizes the Task Group's conclusions and recommendations:

1. Funding responsibilities for DOE's nuclear weapon activities should not be transferred to DOD. Disadvantages of such a transfer would more than offset advantages. A transfer of funding responsibility would undermine DOE's ability to nurture a technology base and to provide independent judgments on nuclear weapon safety, security, and control matters. Other means exist to introduce more fiscal discipline without incurring risks associated with transferring responsibilities.

2. DOD, DOE, and OMB should modify their budget preparation processes to allow fiscally constrained trade-offs among nuclear weapon requirements and other fiscally constrained defense needs.

a. The portion of DOE's nuclear weapons program budget ceiling for incremental costs of nuclear weapon production and nuclear material production, and for nuclear testing of stockpile weapons after a production decision, should be integrated into DOD's programming and budget formulating process.

b. The JCS should be a major participant in the trade-off and resource allocation process and should give high priority to strengthening their capability to analyze theater nuclear force issues.

c. A budget ceiling for DOE nuclear defense activities separate from DOE's other activities should be established, and OMB should consolidate oversight of defense-related budgets within a lead office.

d. Congress may wish to consider review of DOE's Defense Programs activities by Appropriations subcommittees responsible for DOD's budget to encourage treatment of nuclear weapon acquisition as a part of, rather than apart from, the nation's defense needs.

3. DOD and DOE should reinforce their recent initiatives to improve nuclear weapon acquisition processes. Specifically, they should ensure that cost/performance trade-offs are accomplished, elevate decisions to initiate engineering development to the Secretarial (DOD and DOE) level, establish a baseline cost, and monitor subsequent cost projections.

4. The Military Liaison Committee (MLC) should be altered in both mission and membership. It should become a senior-level DOD/DOE group to coordinate nuclear weapon acquisition and related matters, and to oversee joint activities.

5. DOE should revise its procedures for reporting costs to those outside DOE. DOE should also establish procedures to provide the Secretary and Assistant Secretary (Defense Programs) with assessments, independent of the DOE field offices, of the costs of each new weapon.

6. The President, the Secretary of Energy, and the Congress should take steps to strengthen DOE's management attention to its national security responsibilities. One of the two top positions in DOE should continue to be manned by an individual knowledgeable in national security matters and included in the National Security Council process. These steps should include raising the stature of the nuclear weapons program management within DOE, for example, by establishing a separate organizational entity, e.g., an Administration, with a clearly demarcated budget, reporting directly to the Secretary.

7. The introduction of measures to increase fiscal discipline should not be allowed to override requirements in critical areas such as nuclear weapon safety, to inhibit innovative and aggressive technology base activities, or to change a management style that allows discretion to the nuclear weapon laboratories and field offices.

8. The President might consider issuing a directive reaffirming DOE's responsibilities to maintain nuclear weapon technology and prudent production bases, assigning DOE executive agency responsibility for defense-related R&D at national laboratories, and reaffirming the DOD/DOE dual-agency (checks-and-balances) responsibilities for nuclear weapon safety, security, and control.

9. The President should task the Departments with prompt development of an implementation plan to allow the use of new procedures for preparation of the FY 1988 budget.

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LIST OF ACRONYMS

AEC	Atomic Energy Commission
DOD	Department of Defense
DOE	Department of Energy
DSARC	Defense Systems Acquisition Review Council
JCS	Joint Chiefs of Staff
MLC	Military Liaison Committee
NWSM	Nuclear Weapons Stockpile Memorandum
OMB	Office of Management and Budget
POG	Project Officers Group
R&D	research and development
TNF	tactical nuclear forces

INTRODUCTION

The President established the Blue Ribbon Task Group on Nuclear Weapons Program Management at the direction of the Congress to address fiscal accountability and discipline in the nation's nuclear weapons program. Some Members of Congress have expressed concern that, because DOD is not responsible for funding nuclear weapon development and production, DOD treats these weapons as free goods and does not give adequate consideration to alternatives to new nuclear weapons. In the words of one Senator, "there is a built-in incentive for DOE to build the most expensive warhead possible and to build as many as possible. The Department of Defense is not constrained to consider cost in setting warhead requirements because DOE funds the warhead costs."

The Task Group was asked to "examine the procedures used by DOD and DOE in establishing requirements for, and providing resources for, the research, development, testing, production, surveillance, and retirement of nuclear weapons," and to recommend any needed change in coordination, budgeting, or management procedures. The Task Group was also asked to address "whether DOD should assume the responsibility for funding current DOE weapon activities and material production programs."

The Task Group examined procedures for acquiring nuclear weapons and conducting related activities such as materials production and research and development, but it did not judge the merits of alternative deterrence strategies, targeting doctrines, weapon systems, or performance features. The group visited several national laboratories, production facilities, and defense installations, and presentations were made to it by current and former government officials, military officers, and congressional members and staff. Case studies of recent programs were prepared to identify strengths of and deficiencies in existing procedures.

A major challenge to the Task Group was to reconcile two legitimate concerns. The first is preservation of the strengths and capabilities of the present system. The second is enhancement of the fiscal responsibility and cost discipline within and between each of the responsible departments to provide more opportunities for, and ensure consideration of, trade-offs among defense needs.

The advantages of the current arrangement include checks-and-balances for nuclear weapon safety, security, and control; excellence and vitality of the national laboratories; and unique facilities of the production complex. The three

national laboratories that conduct nuclear weapon R&D--Lawrence Livermore, Los Alamos, and Sandia--have long traditions of managerial discretion in defining research programs and in allocating resources quite unlike most of the nation's defense laboratories. Their technical accomplishments have been impressive. Successive generations of weapons have been introduced into the nation's stockpile, generally on schedule, while meeting increasingly high standards of nuclear safety and high performance specifications.

Over time, costs of producing these weapons have increased substantially. The Task Group estimates the average annual rate of cost growth over the past 25 years to be seven to eight percent in constant dollars (Appendix 3). Much of this growth is attributable to enhancements of safety, control, employment flexibility, weapon yield efficiency, and production of weapons of increasing technical sophistication and complexity. Cost growth, particularly in the last several years, also arises from the need for DOE to refurbish aging facilities while meeting increasing security, safety, and environmental requirements. For instance, the cost of providing security for the production facilities has more than doubled in the past four years alone.

Nevertheless, the Task Group believes that an element in cost escalation is attributable to past inattention to cost in setting nuclear weapon requirements and in designing and producing nuclear weapons. Indeed, cost was not a major factor for the first few decades of the nuclear age. Obviously, it is a factor today.

Previous studies have recommended means to improve cost consciousness and discipline in the nation's nuclear weapons program. The Task Group found that DOD and DOE are making some progress in this regard despite difficulties of implementation in a community where performance and reliability have been considered more important than cost or measures to control costs. But room for improvement exists. The Task Group has identified opportunities to improve fiscal responsibility and to instill more cost discipline, and has made recommendations to these ends. In making these recommendations, the Task Group cautions that adopting more drastic measures to improve cost consciousness and accountability could upset the delicate balance between competing concerns. It is important that cost control procedures not cut corners in critical areas such as nuclear safety or inhibit the innovative and aggressive technology base activities.

The Task Group found that the present relationship between DOD and DOE for managing the nuclear weapons program is sound. Accordingly, the Task Group sought a process for improving the

integrated determination of nuclear weapon requirements and the management of nuclear weapon production. This process should increase cost consciousness and accountability while preserving advantages of dual-agency responsibility.

THE KEY ISSUE: FISCAL ACCOUNTABILITY

The underlying realities of federal budget-making have been altered by new congressional budget procedures. Under the new arrangements, budget committees recommend an overall total for defense (the 050 account or national security function) based on broad fiscal and defense considerations. Because that total includes DOD and DOE defense activities, all funds for DOE defense activities come directly from funds otherwise available to the DOD. Higher amounts for DOE thus result in a smaller funding for DOD.

The zero-sum implications of these new budgeting procedures may not have been fully accommodated within the Executive Branch. The Executive Branch should not assume that separate DOD and DOE budget submissions will result in more total resources or that the appropriations for DOE will not directly reduce the appropriation for DOD. The Executive Branch should recognize the need to make trade-offs between DOD and DOE defense activities in preparing a national security budget for submission to Congress.

To this end, a most important step is to enhance DOD's fiscal accountability in establishing its nuclear weapon requirements. Although such accountability appears to be compelled by the changing congressional environment, DOD and DOE, independently, continue to prepare separate budgets, with few opportunities for trade-offs. DOD allocates resources among competing requirements through its programming and budgeting process without formally considering DOE's nuclear weapon costs. Even within the Office of Management and Budget (OMB), DOE's Defense Programs budget is examined apart from the DOD budget.

Quite apart from the fact that the funding of DOE Defense Programs has a corresponding impact on the DOD budget, nuclear weapons are not free to DOD. All decisions to develop and produce nuclear weapons entail some direct DOD costs. These range from the relatively large acquisition costs of the associated delivery system to the much smaller costs of associated nuclear weapon components and ancillary equipment. Custodial costs, both in dollars and manpower, particularly for security, can be significant. DOD also recognizes other costs, for example, the loss of conventional firepower if nuclear weapons displace limited shipboard or other transport space otherwise available for conventional munitions.

In most cases, the DOD costs for systems greatly exceed the DOE warhead costs. This is not the case, however, for replacement of weapons such as gravity bombs and artillery projectiles, for which DOD does not face new delivery system acquisition costs or a major change in custodial requirements. Since the total cost to the nation of such weapons is not small, the Task Group believes that the real cost of these weapons should receive more management attention in DOD.

The recommendations of prior studies to couple more closely DOD and DOE planning, programming, and budgeting activities have not been effectively implemented. Indeed, the coupling of nuclear weapon stockpile and production options to the resource allocation and budget process remains inadequate, and the costs of these options lack visibility to decisionmakers (see Appendices 1 and 2).

DOD and DOE do work together to prepare the annual Nuclear Weapons Stockpile Memorandum (NWSM), which is signed by the Secretaries of Defense and Energy. The NWSM is used to fulfill the Atomic Energy Act requirement to obtain Presidential approval for nuclear weapon production at least once a year. Nuclear material constraints are considered in the NWSM, which addresses long-lead materials and facilities, and recently has been extended to cover a 16-year term. However, since this extension exceeds the period for which DOD projects its forces, it lacks credibility. In addition, the NWSM does not provide for costs of building the projected stockpile. Thus, the current process does not go far enough in presenting to decisionmakers explicit options, with their benefits, risks, and costs.

Would decisions regarding production quantities and performance characteristics have been different if DOD had to budget for the entire weapon? In most cases, the Task Group believes not. "Free warheads" clearly did not drive recent missile decisions (i.e., to develop and produce the Trident II, Peacekeeper, the cruise missiles, and Pershing II). To cite an opposite example, however, an earlier version of the strategic bomb program (the B77) was cancelled by OMB because of cost concerns. Requirements were reassessed and modified, and a less costly version was subsequently developed and produced. Thus, cost performance trade-offs were accomplished although it took pressure from the Congress and action by OMB to force the issue. The decision to pursue the less costly alternative might well have been made by DOD without outside influence if DOD had to "pay" for the weapons.

By themselves, DOD and DOE cannot ensure a smooth acquisition process. In 1973, Congress alleged insufficient use of new technology and cancelled two artillery projectile programs

already in the development stage. In response to the congressional action, enhanced radiation versions of the projectiles were later developed. The subsequent neutron bomb controversy led to several program stops and restarts. In the end, a different Congress with different views prohibited production of the enhanced radiation versions and set both dollar and numerical limits on other versions.

OPPORTUNITIES FOR IMPROVEMENT

Procedures for Programming and Budgeting

The Task Group believes that funding responsibilities for DOE's nuclear weapon activities should not be transferred to DOD. Although such a transfer would subject those who set requirements in DOD to more fiscal accountability, the disadvantages more than offset the advantages. DOE has nuclear weapons program responsibilities other than developing and producing warheads to meet DOD's requirements. A transfer of funding responsibility would undermine DOE's ability to nurture a technology base and to provide judgments on nuclear weapon safety, security, and control matters. Strong laboratories are essential to fulfill these functions. The Task Group believes that the laboratories' independence and competence would be eroded if funding responsibilities were transferred to DOD. Some might also see such a transfer as an erosion of civilian control over nuclear weapon production. A more important concern is that the transfer of funding control would impair DOE's ability to ensure the operating efficiencies of its nuclear weapon production base.

There are other means to introduce more fiscal discipline without incurring the risks associated with transferring responsibilities. To ensure that the Military Services and other DOD components examine cost-effectiveness trade-offs, the Task Group recommends that, for purposes of fiscal planning only, a substantial share of the intended allowances for DOE defense activites, primarily for production of nuclear weapons and materials, be incorporated into DOD's programming and budgeting process. This arrangement will require a change in procedures, but existing DOD and DOE funding and management responsibilities would remain unchanged. OMB would continue to include the funds for the nuclear weapons program in DOE's budget submission to Congress.

The proposed process would not affect the total funds available for national security, but would allow more flexibility to allocate these funds. Specifically, it would make clear to DOD the total DOE production cost of proposed nuclear weapon systems and encourage judgments about the relative priority of nuclear weapons and competing defense requirements.

The process could work in the following way. DOE, in consultation with DOD and OMB, would identify those portions of its proposed budget that represent the "production decision costs" of DOD requirements for nuclear weapons and materials. (Production decision costs are those related to new weapon and material production over and above funds needed to sustain weapon and material production bases and to maintain the stockpile. These costs also include any additional nuclear testing of stockpile weapons required after the production decision is made.) Those portions would be shifted for planning, programming, and budget formulation purposes to DOD during the decisionmaking phase of DOD's process. DOD would then be able to make trade-offs among nuclear weapons and between nuclear weapons and other defense requirements within the fiscal constraints of these combined allowances. After the trade-offs were made, an adjusted allocation for nuclear weapons and nuclear material production would revert to DOE for inclusion in DOE's budget request to Congress. Thus, DOD would have the latitude either to reduce or augment the funding requested for DOE nuclear weapon and material production.

The Task Group believes that DOE's weapon engineering development costs, though arguably a part of decision costs, should be excluded from this process to ensure that DOD is not in a position to micromanage the laboratories. Thus, DOE budget allowances for all RD&T (engineering development and a robust technology base, but not nuclear testing of stockpile weapons), would be unavailable for trade-offs within DOD and thus beyond the reach of DOD managers. Also unavailable would be funding for sustaining prudent base capabilities to produce nuclear weapons and materials, and for maintaining weapons in the stockpile.

Such a process will clearly require a change in DOE's current budgeting procedures.

It is the judgment of the Task Group that trade-offs should be a part of the Military Service planning, programming, and budgeting process insofar as Service-specific weapons are concerned. Fiscal accountability for nuclear material production (for specific weapons or for a reserve) may more appropriately be addressed in a joint DOD forum. The Task Group does not wish to increase bureaucratic complexity and therefore leaves the implementing arrangements to the Secretary of Defense. It is, however, the Task Group's intent that the Service Chiefs have the opportunity to address these issues during their planning, programming, and budgeting process. When DOE appears before congressional committees requesting funds for new nuclear weapon or material production, DOD should have present representatives, including those from the Military Services, to defend the requirements when specific weapons are an issue.

The Task Group recommends the issuance of a Presidential directive on implementing the modified budget preparation process. The directive should also reaffirm (1) DOE's responsibility to maintain nuclear weapon technology and production bases and (2) DOD/DOE dual-agency (checks-and-balances) responsibilities for nuclear weapon safety, security, and control.

The Task Group notes that, although the Budget and Armed Services Committees in Congress treat all defense items collectively, the DOE's nuclear weapons program budget is considered by the Energy and Water Development Subcommittees in the appropriation stage. The Congress may wish to consider review of DOE's defense activities budget by the Appropriations subcommittees responsible for DOD's budget to encourage consideration of nuclear weapon acquisition as a part of, rather than apart from, the nation's defense needs.

With regard to the production of nuclear weapons and of nuclear materials other than materials needed to maintain the stockpile, the Task Group envisages DOD as the "order placer" and DOE as the "order filler." Increased fiscal accountability is needed in the process by which DOD "orders" the number and performance features of weapons. However, it is the intent of the Task Group that DOE should retain total responsibility for the management of production.

Procedures for Defining Performance Characteristics

In contrast to the lack of constructive response to previous recommendations on budgeting and programming (where production quantities are determined), changes over the past few years in the procedures used to determine performance features represent a significant improvement over previous practices. However, opportunities exist for further improvement.

DOD and DOE personnel work effectively to coordinate activities for individual weapon programs. The Project Officers Groups (POGs), established for each weapon program with members from both departments (chaired by a member of the cognizant Military Service), are the vehicle for this coordination. Until recently, cost trade-offs related to DOD requirements received little attention from the POGs. That situation is changing. The Task Group found that, in the past few years, there has been an increase in the cost/performance trade-off analyses accomplished by the POGs. These include options for yield, reliability, maintenance, safety, and control (what are frequently called the "bells-and-whistles"). For example, three recent POGs, on the basis of cost/performance analyses, established reliability specifications that were high enough to be sound but lower than the traditional and previously

unquestioned levels. These actions reduced costs. The changes proposed in this report are designed to further enhance the incentives for such trade-offs.

The Task Group believes the most important of the recent initiatives to be the design definition and cost study (or Phase 2A) activity. The purpose of Phase 2A (accomplished before initiating engineering development) is to "conduct trade-off studies to identify baseline design(s) which best balances resources and requirements." Only the two most recent programs to enter engineering development (warheads for the Trident II and the Peacekeeper missiles) have gone through the new process. The Task Group found that appropriate trade-off analyses were conducted in these programs and made visible to decisionmakers. Before the Phase 2A process was established, there were no procedures to ensure such analyses. In the past, DOE's generally pro forma acceptance of DOD's requests to initiate engineering development apparently had not been based upon consideration of the cost of meeting performance specifications and had not had adequate corroborative analyses and review.

Another recent procedural change requires at least two DOD reviews of each weapon program during engineering development. These reviews should help redress another past deficiency: the inadequate attention to changing cost projections and to reassessing requirements in the light of the new projections. Moreover, there is still no joint consideration of a baseline cost (i.e., a targeted production cost) for each program. Thus, under the current process the two departments do not formally agree upon a baseline cost before beginning engineering development.

The Task Group believes that cost discipline can be enhanced by DOD and DOE working together to establish formally a baseline cost at the start of engineering development. Subsequent cost projections should be monitored and, if necessary, performance specifications modified to ensure cost-effective designs. The POGs are the appropriate groups to accomplish the monitoring and reassessment responsibilities.

The record indicates that the Military Services do not automatically accept nuclear warheads for all feasible applications, but there are no formal procedures to ensure that conventional alternatives are considered. The Chief of Naval Operations addressed this matter in a January 1985 policy paper, stating that "It is not Navy policy to buy nuclear weapons automatically as replacements for systems being retired. We require a clear case for the utility of each weapon. Nuclear weapons should not serve as substitutes for conventional weapons where improved conventional weapons will

suffice. The Navy will procure only those nuclear weapons which provide a unique and substantial military capability." Although the Army and Air Force assert that they have similar policies, none is written. The Task Group believes that such policies should be generally applied throughout DOD to encourage consideration of alternative means of accomplishing military objectives.

Nuclear weapon systems and, to some extent, the associated nuclear warheads receive formal high-level DOD review by the Defense Systems Acquisition Review Council (DSARC). This is not the case for gravity bombs and artillery projectiles. However, the total cost to the nation of such weapons is not small. Recent gravity bomb and artillery projectile programs would have qualified for DSARC review if combined DOE and DOD costs had been considered.

The Task Group believes that DOD and DOE should reinforce their recent initiatives to improve the nuclear weapon acquisition process. Cost/performance trade-offs (Phase 2A) should be required for all programs before initiating engineering development. Attention should be given to using existing warheads and components whenever possible. The decision on whether to proceed to engineering development should include consideration of projected costs (feature by feature), a review of the trade-off studies which address performance specifications, and a validation of the absence of credible nonnuclear alternatives. The Task Group believes that a decision to develop a new nuclear weapon is sufficiently important to be made jointly by the Secretaries of Defense and Energy.

DOD/DOE Coordination

There is no high-level joint DOD and DOE body charged with coordinating nuclear weapons program activities. The Military Liaison Committee (MLC) has no such mandate. The purpose for which it was established in 1946--to provide a voice for the Armed Forces in the atomic energy program controlled by the powerful AEC--appears to have little relevance to today's environment. The MLC is a DOD, not a joint, organization. DOE is an observer to the MLC and participates in the exchange of program information. However, the MLC no longer has the staff or the stature within DOD to allow it effectively to analyze cost trade-offs, to establish program priorities, and to address budget and resource allocation issues.

The Task Group believes that a senior-level joint DOD/DOE group is needed to coordinate nuclear weapon acquisition and related matters, and to oversee joint activities. The MLC should be significantly altered, with its membership expanded and new

responsibilities added. The Task Group suggests a new name, the Nuclear Weapons Council, which would reflect its new stature and role.

The Council's responsibilities should include: preparing the annual Nuclear Weapons Stockpile Memorandum; developing stockpile options and their costs; coordinating programming and budget matters; identifying cost-effective production schedules; considering safety, security, and control issues; and monitoring the activities of the POGs to ensure attention to cost as well as performance and schedule issues.

A dedicated staff drawn from both departments and reporting to a full-time staff director would be needed to fulfill the new responsibilities. The Task Group recommends that the Council be chaired by a senior DOD official. However, when matters of primary concern to the DOE are under discussion, the Task Group suggests that the meeting be chaired by the senior DOE official.

For the Council to be effective, it is particularly important that its activities be coupled to major DOD decisionmaking fora, such as the Defense Resources Board and DSARC. The DOD chairman should be a participant in these fora to a greater degree than is the case today for the MLC Chairman when nuclear weapon matters are discussed.

The Task Group believes that regardless of how the MLC is altered, it is important that the Secretary of Defense maintain a high-level office primarily dedicated to nuclear weapon matters. The Nuclear Weapons Council would not relieve the departments of any responsibilities to manage their respective programs.

DOD's Capabilities for Requirements Analysis

The Task Group believes that DOD's capabilities to accomplish cross-Service analysis of weapon options, particularly with regard to the role of theater nuclear forces (TNF), need to be strengthened.

There are well-established methodologies to determine strategic force requirements and to compare alternative weapons and weapon systems. TNF issues have proven to be less susceptible to quantitative analysis. Theater situations are complex and military judgments weigh heavily. The relatively clean and straightforward targeting analyses done in the strategic arena are precluded. Further, the requirements-setting process is complicated by the changing doctrinal base for the use of these weapons.

There is evidence of improvement in the process. An enhanced procedure in the European Command now addresses TNF needs. The Army Training and Doctrine Command has made progress in addressing nuclear, conventional, and improved conventional forces collectively. Perhaps the most significant innovation is the current Joint Chiefs of Staff (JCS) effort to upgrade its capabilities for analysis and evaluation of TNF issues. The Task Group believes that high priority should be given to these efforts, particularly within the JCS. The Task Group believes that an active JCS role supported by a strong analysis capability is important to achieve trade-offs among nuclear weapon and nuclear material options, and between nuclear weapons and other defense needs.

Accomplishing these trade-offs will also require sound and clear information on nuclear weapon costs.

DOE's Cost Management and Reporting Procedures

The Task Group finds that DOE's record of estimating nuclear weapon acquisition costs is mixed. Several recent weapons (including the warheads for the Air Launched Cruise Missile, Tomahawk, and Pershing II) have a very sound cost-estimating history. However, estimated costs of warheads for the Ground Launched Cruise Missile and for the artillery projectiles have increased significantly, independent of quantity changes. DOE's nuclear weapon cost-estimating procedures can be improved.

The Task Group found that DOE has taken measures to improve cost management, cost estimating, and the development of cost trade-off information. These measures more closely integrate design and production activities, and include more formal and detailed procedures to review costs and to assess the difficulty of producing the components designed by the laboratories. DOE's nuclear weapon cost management and reporting are treated in some depth in Appendix 3.

The Task Group suggests that cost discipline would be further improved by providing the Secretary of Energy and the Assistant Secretary (Defense Programs) with assessments, independent of the DOE field offices, of the acquisition and life-cycle costs of each new weapon. An independent cost-estimating process should be established to provide cost estimates at the two key milestones, the decisions to enter development engineering (Phase 3) and production engineering (Phase 4). This cost assessment should involve individuals with a broad background in nuclear weapon development and production.

The Task Group finds DOE's reporting of nuclear weapon costs to Congress and DOD to be inadequate. One motive for the creation

of the Task Group's review was said to be frustration by some Members of Congress and their staffs with DOE explanations of nuclear weapon costs. After several months of effort, the Task Group members understand the congressional frustrations.

Contributing factors include the confusing array of different cost measures in use and the problem of explaining DOE's management arrangement to those more familiar with DOD's. In general (and with some over-simplification), DOD manages projects and buys "things" (e.g., so many tanks, ships, and aircraft). By contrast, DOE manages a nuclear weapon complex and buys "capabilities" (e.g., so many manhours to meet production targets and to provide technology and production bases). Weapon production budgets are managed on a complex-wide basis. Therefore, DOE has not used individual weapon production costs as a basis for program management.

Another factor contributing to this communication problem is the consequence of what is most often viewed as a major program strength: the decentralization of DOE's management responsibilities. The expertise is largely in the field, not in headquarters; but it is headquarters people who are most often called upon to explain the program, including costs, to Members of Congress and their staffs.

Failure to communicate clearly the reasons for changing costs and cost estimates can weaken the credibility of the entire program. The Task Group believes that DOE needs to revise its approach to reporting and explaining costs to those outside the department. DOE's apparent reluctance to adopt customary, and thus more understandable, concepts of cost measurement and presentation requires serious attention. Experienced field personnel should be used to a greater degree in presentations to Members of Congress and staff. However, this is not a substitute for upgrading capabilities at DOE headquarters. The Task Group believes that a stronger, more knowledgeable headquarters is compatible with retaining technical decisionmaking in the laboratories and the field. It will, in fact, be needed to sustain the program in the long run.

DOE's National Security Responsibilities and the Mission of the Laboratories

Witnesses before the Task Group expressed concern that at times in the past DOE leadership has focused on activities and priorities other than DOE's national security responsibilities. The Task Group recommends that Congress, the President, and the Secretary of Energy take steps to ensure DOE's future performance in its national security responsibilities (Appendix 4). Given the importance of these responsibilities to the nation and the large share of DOE's budget allocated to them,

the Task Group believes it is important that one of the two top positions in DOE should continue to be manned by an individual knowledgeable in national security matters and included in the National Security Council process.

DOE's capabilities to fulfill its national security responsibilities can be further enhanced by raising the stature of the nuclear weapons program management within DOE. The Secretary of Energy should consider alternatives such as establishing a separate organizational entity, e.g., an Administration, reporting directly to the Secretary. The budget for this Administration should be separate from that of the balance of DOE.

One of the national security responsibilities of DOE leadership is to make available sufficient information to allow informed public debate on nuclear weapon issues. The Task Group urges that DOE review its classification procedures to ensure that criteria are based upon current requirements rather than historical precedent.

Maintaining a vigorous nuclear weapon technology base will remain important for the foreseeable future, not merely to develop whatever munitions may be needed, but also to ensure the safety and reliablity of the weapons already in the stockpile and to provide a capability to assess nuclear weapon development in other countries. However, the three laboratories also constitute a reservoir of substantial talent that should contribute to developing advanced conventional munitions and other defense needs.

After careful consideration, the Task Group concludes that the mission of the three national laboratories should be broadened to give them a considerably greater role in other defense R&D, in particular, advanced conventional munitions. The Task Group finds the laboratories already moving in this direction. DOD directly funds over $400 million (in FY 1985) in R&D at the laboratories, though largely for nuclear weapon-related activity. Recent DOD/DOE agreements are establishing a framework for increased laboratory involvement in advanced conventional munitions, and the three laboratories currently have a small but growing effort in this area. The Task Group endorses the use of block funding for these efforts in order to make best use of the laboratories' talents.

The laboratories are national assets. The Executive Branch should provide oversight of these laboratories to ensure that they can address a broad range of national technical problems, not just those related to nuclear weapons or other DOE programs. The Task Group recommends that the Department of Energy be formally charged to fulfill its stewardship responsibility through designation by the President as the "executive agency" for the national laboratories.

In its executive agency role, DOE would be responsible for sustaining the excellence of laboratory facilities and capabilities. For nuclear weapons and other R&D, DOE should perform a policy and directive role. For R&D funded by others, DOE should ensure that there are no administrative or legal obstacles to the performance of that R&D and that it receives a laboratory priority commensurate with its value to the nation. In particular, the DOE should ensure that DOD has enhanced access to the laboratories for R&D on advanced conventional munitions and other defense needs.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

1. Funding responsibilities for DOE's nuclear weapon activities should not be transferred to DOD. Disadvantages of such a transfer would more than offset advantages. A transfer of funding responsibility would undermine DOE's ability to nurture a technology base and to provide independent judgments on nuclear weapon safety, security, and control matters. Other means exist to introduce more fiscal discipline without incurring risks associated with transferring responsibilities.

2. DOD, DOE, and OMB should modify their budget preparation processes to allow fiscally constrained trade-offs among nuclear weapon requirements and other fiscally constrained defense needs.

a. The portion of DOE's nuclear weapons program budget ceiling for incremental costs of nuclear weapon production and nuclear material production, and for nuclear testing of stockpile weapons after a production decision, should be integrated into DOD's programming and budget formulating process.

b. The JCS should be a major participant in the trade-off and resource allocation process and should give high priority to strengthening their capability to analyze theater nuclear force issues.

c. A budget ceiling for DOE nuclear defense activities separate from DOE's other activities should be established, and OMB should consolidate oversight of defense-related budgets within a lead office.

d. Congress may wish to consider review of DOE's Defense Programs activities by Appropriations subcommittees responsible for DOD's budget to encourage treatment of nuclear weapon acquisition as a part of, rather than apart from, the nation's defense needs.

3. DOD and DOE should reinforce their recent initiatives to improve nuclear weapon acquisition processes. Specifically, they should ensure that cost/performance trade-offs are accomplished, elevate decisions to initiate engineering development to the Secretarial (DOD and DOE) level, establish a baseline cost, and monitor subsequent cost projections.

4. The Military Liaison Committee (MLC) should be altered in both mission and membership. It should become a senior-level DOD/DOE group to coordinate nuclear weapon acquisition and related matters, and to oversee joint activities.

5. DOE should revise its procedures for reporting costs to those outside DOE. DOE should also establish procedures to provide the Secretary and Assistant Secretary (Defense Programs) with assessments, independent of the DOE field offices, of the costs of each new weapon.

6. The President, the Secretary of Energy, and the Congress should take steps to strengthen DOE's management attention to its national security responsibilities. One of the two top positions in DOE should continue to be manned by an individual knowledgeable in national security matters and included in the National Security Council process. These steps should include raising the stature of the nuclear weapons program management within DOE, for example, by establishing a separate organizational entity, e.g., an Administration, with a clearly demarcated budget, reporting directly to the Secretary.

7. The introduction of measures to increase fiscal discipline should not be allowed to override requirements in critical areas such as nuclear weapon safety, to inhibit innovative and aggressive technology base activities, or to change a management style that allows discretion to the nuclear weapon laboratories and field offices.

8. The President might consider issuing a directive reaffirming DOE's responsibilities to maintain nuclear weapon technology and prudent production bases, assigning DOE executive agency responsibility for defense-related R&D at national laboratories, and reaffirming the DOD/DOE dual-agency (checks-and-balances) responsibilities for nuclear weapon safety, security, and control.

9. The President should task the Departments with prompt development of an implementation plan to allow the use of new procedures for preparation of the FY 1988 budget.