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Joint Report by the U.S. Department of Defense
and the U.S. Department of Energy

Nuclear Weapons Surety

Annual Report to The President (U)



1989

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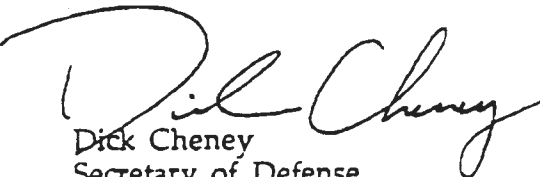
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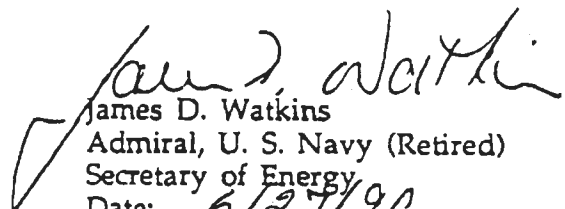
MEMORANDUM FOR THE PRESIDENT

SUBJECT: Joint DoD/DOE Nuclear Weapons Surety Report for 1989

Attached is the Joint Department of Defense/Department of Energy Annual Report to the President on Nuclear Weapons Surety for 1989. It summarizes progress made during 1989 and reports issues where appropriate. The Department of Defense and the Department of Energy will continue to emphasize improvements in safety, security, and control of nuclear weapons.


Dick Cheney
Secretary of Defense

Date: 6/22/90


James D. Watkins
Admiral, U. S. Navy (Retired)
Secretary of Energy

Date: 6/27/90

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EXECUTIVE SUMMARY

JOINT DEPARTMENT OF DEFENSE/DEPARTMENT OF ENERGY
ANNUAL REPORT TO THE PRESIDENT
ON NUCLEAR WEAPONS SURETY FOR 1989 (U)

(~~CFRD~~) This report responds to tasking by National Security Decision Directive 309, "Nuclear Weapon Safety, Security, and Control" dated June 27, 1988, and addresses nuclear weapon safety, security, control, emergency response, inspection and evaluation programs, and the impact of budget constraints on required improvement programs.

(~~CFRD~~) The safety, security, control, and emergency preparedness posture continues to improve. There were no accidents involving nuclear weapons in 1989. Surety improvements that took place in 1989 include:

a. (~~SFRD~~) Completion of the retirements from the stockpile of several older weapon types that lacked modern safety features. Included were the B28FI strategic bombs, W31 Nike Hercules warheads, W44 ASROC warheads, and the B54 Special Atomic Demolition Munition (SADM). The Nike Hercules and ASROC systems were retired because they were obsolete and there was no longer an operational requirement for the B54. All B61-1 strategic bombs have been retired from the stockpile and are being retrofitted to the B61-7 configuration. W55 SUBROC warheads are no longer deployed and will be retired. The retirement of the W68 Poseidon warhead was accelerated and is now scheduled to be completed in 1996.

b. (~~SFRD~~) Development of the B61-6,8,9 and 10 (which retrofit or replace earlier B61s for enhanced safety and use control) and the B90 Nuclear Depth/Strike Bomb (as a replacement for the B57) continued on schedule. Baseline Design and Cost Studies (Phase 2A) were initiated for the W61 earth penetrating weapon and a common warhead for the Follow-On-To-LANCE (FOTL) and SRAM-T missiles.

c. (~~SFRD~~) Modernization of the stockpile continued with the production of the B61-3,4, the W80-0, the W87, and the B83. The W88 warhead for the Navy Trident II D5 missile began production.

(~~SFRD~~) Other actions affecting surety included a one year extension of the W89 warhead development for the Short Range Attack Missile II (SRAM-II) because of unrelated delays in the overall schedule caused by delivery vehicle problems and reduced funding for B-1B systems integration. Additionally, there was a two year extension of the W82 Artillery Fired Atomic Projectile (AFAP) development to incorporate a nuclear safety device to meet one-point safety criteria.

(U) Surety concerns and initiatives during 1989 included:

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(b) (3) Efforts continue to accelerate replacement of SRAM-A/W69 with the SRAM-II/W89. However, operational, technical, and congressional budgetary reductions now preclude complete replacement any earlier than 1998.

(b) (3)

b. (~~CFRD~~) A joint DoD/DOE study to determine the relative safety and security risks inherent in the logistical transportation of nuclear weapons was started. It is scheduled to be completed October 1990.

c. (~~CFRD~~) Many older weapons lack nuclear detonation design safety features that provide a predictably safe response in credible abnormal accident environments. Reviews of these weapons have been initiated to determine the risk of unintended nuclear yield for such weapons.

d. (U) A briefing was given to the Secretaries of Defense and Energy on July 13, 1989. A significant outcome of this briefing was the establishment of a Nuclear Weapons Council safety committee. This was accomplished when the Nuclear Weapons Council Weapons Safety Committee (NWCWSC) was chartered by the NWC in 1989 to serve as a dedicated body for considering nuclear weapons safety issues.

e. (~~CFRD~~) Use Control measures continue to improve. There remains a need for a broad overarching DoD policy to provide standards and criteria covering issues which are common to all services.

f. (U) The DoD and DOE have separate approaches to plutonium dispersal safety.

g. (U) For the foreseeable future, constrained funding, the increased requirement to expend funds in the areas of environment, safety, and health, and the pressing need to modernize the nuclear weapons production complex will determine the pace at which nuclear surety enhancements are developed and introduced into the stockpile. The rate at which this modernization is achieved is a function of DOE industrial funding and plant capability and not DoD system procurement.

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1.0 INTRODUCTION (U)

1.1 Background. (U)

(~~CFRD~~) This report responds to tasking by National Security Decision Directive 309, "Nuclear Weapon Safety, Security, and Control", dated June 27, 1988, and summarizes nuclear weapon safety, security, control, emergency response, inspection and evaluation programs, and assesses the impact of budget constraints on required improvement programs. This report has been reviewed by the Nuclear Weapons Council.

(~~CFRD~~) The 1988 Annual Surety Report identified three major safety issues: (a) safety concerns regarding the SRAM/W69 on alert; (b) plutonium dispersal as a result of an aircraft transportation accident; and (c) guidance actions concerning reissue of DOE nuclear safety orders. Progress on these issues is addressed in detail within this report.

1.2 Roles and Responsibilities. (U)

(U) The Department of Defense (DoD) and the Department of Energy (DOE) are responsible for our Nation's nuclear weapons program. Various aspects of this responsibility are addressed from both a joint and a departmental position, based on the details and requirements of each specific activity or operation. Paramount is the responsibility to protect public health and minimize danger to life and property.

(U) The NWC, in fulfilling its responsibilities, plays a significant role in assuring the safety of the nuclear weapons stockpile.

2.0 Stockpile Description. (U)

~~SRAM~~

(b) (3)

The characteristics of the nuclear weapon stockpile are depicted in Table 1. Significant stockpile changes in 1989 that affected surety were:

a. (~~SRPD~~) Completion of the retirements from the stockpile of several older weapon types that lacked modern safety features. Included were the B28FI strategic bombs, W31 Nike Hercules warheads, W44 ASROC warheads, and the B54 Special Atomic Demolition Munitions (SADM). The Nike Hercules and ASROC systems were retired because they were obsolete and there was no longer an operational requirement for the B54. All B61-1 strategic bombs have been retired from the stockpile and are being retrofitted to the B61-7 configuration. W55 SUBROC warheads are no longer deployed and will be retired. The retirement of the W68 Poseidon warhead was accelerated and is now scheduled to be completed in 1996.

b. (~~SRPD~~) Modernization of the stockpile continued with the production of the B61-3,4,7, the W80-0, the W87, and the B83. The W88 warhead for the Navy Trident II D5 missile began production.

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3.0 Nuclear Weapon Safety (U)

(U) During 1989, the overall nuclear safety posture of the stockpile continued to improve.

3.1 Background (U)

(U) Nuclear weapon system safety studies are conducted by the DoD throughout the stockpile life of the weapon. Nuclear explosive safety studies are conducted by DOE for nuclear explosives and nuclear weapons testing, production, transportation, and retirement. Safety studies make a determination as to whether safety standards are met and provide the safety rules to be followed in operations. DoD weapon system safety rules must be approved by the Secretary of Defense (in coordination with the DOE) prior to their implementation. DOE nuclear explosive safety rules are normally approved by the Manager DOE/Albuquerque Operations Office.

(~~CONF~~) A briefing was given to the Secretaries of Defense and Energy on July 13, 1989. A significant outcome of this briefing was the establishment of a Nuclear Weapons Council safety committee to initially address: safety criteria/standards, including plutonium dispersal; the Nuclear Weapon System Safety Group (NWSSG) process; SRAM-A/W69 nuclear safety; safety of air transportation of weapons lacking insensitive high explosive; and options for accelerating inclusion of modern safety features in the stockpile. This was accomplished when the new flag/general officer or civilian equivalent Nuclear Weapons Council Weapons Safety Committee (NWCWSC) was chartered by the NWC in 1989 to serve as a dedicated body for considering nuclear weapons safety issues.

3.2 Policies, Standards and Criteria (U)

(U) The DoD and DOE have separate, but similar, nuclear weapon safety policies and standards that govern all operations associated with nuclear weapons and nuclear explosives. These weapon system safety standards are qualitative. Military Characteristics (MCs) for each nuclear weapon, approved by the Secretary of Defense and accepted by the Secretary of Energy, quantitatively specify the nuclear safety design criteria the weapon must meet.

(U) The DoD and DOE have separate approaches to plutonium dispersal safety. Since 1983, the DoD policy has been to include the requirement for IHE, the most important plutonium dispersal safety feature, in all new weapon developments unless its use would impose a significant degradation in military capability. This requirement is transmitted to the DOE in the MCs for each weapon.

(U) Since 1980, DOE's stated goal has been to prevent nuclear explosives involved in accidents or incidents from producing high explosive detonation, thereby reducing the risk of plutonium dispersal. The DOE has developed a qualitative plutonium dispersal standard to implement this goal in its "DOE Nuclear Explosives and Weapons Safety Order," now being updated. The standard is, "There shall be positive measures to prevent accidental, inadvertent, and deliberate unauthorized dispersal of plutonium to the environment."

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3.3 Safety Process (U)

(U) Each nuclear weapon system has a specific set of nuclear safety rules, approved by the Secretary of Defense, that provides the procedures to maximize safety consistent with operational requirements. Together with design safety and security features, technical procedures, and operational and administrative controls, these rules provide safeguards necessary to ensure compliance with the safety standards.

(U) In 1989, DOE, after conscious reassessment, determined it can no longer verify that certain weapon systems meet the 1984 DoD Nuclear Weapon System Safety Standards, specifically the portions of the standards that state "there shall be positive measures to prevent." At issue are weapons designed before modern nuclear detonation safety features were available and therefore lacking safety elements that provide a predictably safe response in credible abnormal environments such as fire or severe impact (i.e., not meeting the 1968 detonation safety design criteria). DOE maintains that a nuclear weapon must be designed with a predictably safe response, whose effectiveness can be demonstrated, in order for DOE to verify that the standards are met. In general, positive measures such as operational or procedural restrictions cannot fully compensate for the lack of warhead design safety features.

(U) The Nuclear Weapons Council (NWC) endorsed a new safety rules approval procedure for weapons not meeting the 1968 criteria. The Services have been tasked to implement this procedure by reviewing all weapon systems using these weapons and providing a qualitative assessment (along with rationale) of each system's compliance with the DoD standards. If a system cannot be verified to meet the standards, or be reasonably modified to do so, the safety risks associated with continued deployment of the system with the weapon of concern are to be jointly evaluated by DoD and DOE. To the extent possible, the safety risks will be established quantitatively. The Services and the Joint Staff will provide the national security benefits of continued fielding of the weapon system. This new procedure will provide a basis for Secretary of Defense action on safety rules for these weapon systems.

(U) The NWC continued to take an active interest in nuclear weapon safety and was briefed on nuclear safety at each meeting.

3.4 Safety Research and Development (U)

(~~CONF~~) Development of the B61-6,8,9 and 10, which retrofit or replace earlier B61s for enhanced safety and use control, and the B90 Nuclear Depth/Strike Bomb (replacement for the Navy B57) continued on schedule. The W82 Artillery-Fired Atomic Projectile (AFAP) development was extended an additional two years to incorporate a nuclear safing device to meet the one-point safety criteria. Development of the W89 warhead for SRAM-II was extended one year because of unrelated delays in the overall schedule caused by delivery vehicle problems and reduced funding for B-1B systems integration. Baseline Design and Cost Studies (Phase 2As) were initiated for the W61 Earth Penetrating Weapon and a common warhead for the FOTL and SRAM-T missiles. Table 2 describes the characteristics of weapons in development.

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(U) Advanced research and development to improve safety continues. Included are research on one-point/multi-point safety (inherent design features that preclude nuclear yield upon accidental detonation of the high explosive), plutonium dispersal safety features (e.g., energetic IHE and fire resistant features that fully contain plutonium in fire environments), accident resistant containers for non-IHE AFAPs, and improved safety components (e.g., advanced/optical detonation systems).

3.5 Assessment of Stockpile Safety (U)

~~(FRP)~~ The overall stockpile nuclear detonation safety posture continued to improve during 1989 as new weapons with modern designs replaced older weapons, selected older systems were modernized as part of the Stockpile Improvement Program (SIP), and the retirement of obsolete weapons continued.

(b) (3)

~~(FRP)~~ With the exception of the W33, all nuclear warheads in the stockpile contain fissile material in combination with high explosive. HE detonation would result in radioactive contamination of the surrounding area. Weapons that employ insensitive high explosive (IHE) will not detonate in most abnormal environments.

(b) (3) Weapons that incorporate fire resistant pit (FRP) technology will reduce the likelihood of plutonium dispersal in most fire environments. Ten percent of the stockpile incorporates FRP features (Figure 2). Where possible, new warheads will contain IHE and FRP technology. IHE is not currently feasible for some small diameter systems, such as artillery shells.

~~(FRP)~~

(b) (3)

The removal of the W69/SRAM-A is desired; however there is no available replacement for this system. Its replacement, the SRAM II, will not be available for several years. Moreover, there will not be sufficient quantities of SRAM IIs to replace the SRAM-A until late in the decade, even with priority funding and an accelerated schedule. A joint Air Force/DOE study is in progress to assess the risk associated with the current deployment and recommend changes, if warranted. Meanwhile, the Air Force has implemented operational restrictions to reduce significantly the risk associated with this alert posture.

~~(FRP)~~ Air transport of weapons lacking IHE was identified by DOE in 1988 as the transportation mode having a significant risk of plutonium dispersal in the event of an accident. A joint DoD/DOE study is currently underway and due to be completed by October 1990. This study is assessing the relative safety and

security risks inherent in all practical logistical transportation modes. DOE is currently obtaining additional ground transportation capability to eliminate transportation by air of all non-IHE, plutonium bearing weapons in DOE custody. This increased capability is scheduled to be in place by early 1993.

(~~SFRD~~) Force generation exercises are conducted by the Air Force on a periodic basis to ensure their ability to meet assigned war plan taskings. A secondary benefit of such exercises is personnel proficiency training. The frequency of such activities varies by weapon system and mission. In a few cases such exercises may require a complete load-out of all aircraft tasked. Even though the exercises are conducted under controlled and closely supervised circumstances (to minimize risk), the probability of exposure of the nuclear weapons involved in the exercises to a variety of abnormal environments is increased. The responses of four of the weapon types (B57-2, B61-0, B61-2, and W69) that could be involved in such exercises is unpredictable if they are exposed to certain abnormal environments. The Air Force recognizes the susceptibility of these weapons to the environments identified and safety rules for weapon systems that include B57-2, B61-0, and B61-2 weapons are being changed to minimize the use of such weapons consistent with operational requirements.

(U) While progress has been made since stockpile safety deficiencies were first identified, progress has not been as rapid as planned or desired. The NWCWSC has taken as its highest priority the development of a prioritized listing of safety concerns of weapons in the stockpile.

4.0 Nuclear Weapon Security (U)

(U) During 1989, the overall security of the nuclear stockpile continued to be improved.

4.1 Background (U)

(U) Nuclear weapon security is composed of policies, procedures, people, security equipment, and facilities to protect nuclear weapons.

4.2 Status of Security (U)

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This reduction in sites, coupled with security systems upgrades, reduces our exposure to a terrorist attack or any other peacetime incident. This same reduction, however, leads to increased wartime survivability concerns for the remaining sites.

(U) Significant security improvements include:

- a. (~~UNCI~~) Work continued on the Air Force Weapons Storage and Security System (WS3) to store weapons delivered by tactical aircraft. WS3 will improve operational capability and enhance both safety and security by eliminating weapon movements from weapon storage areas to hardened aircraft shelters. The first Weapons Storage Vault, designed as part of the

WS3, will achieve initial operational status in 1990. WS3 will be fully deployed in 1992.

b. (~~SFRD~~) NATO continues to make progress toward completing the installation of the electronic Intrusion Detection System (IDS) at storage site perimeters and within individual storage facilities. During 1989, 32 systems were installed at bases which hold U.S. weapons.

c. (~~CFRD~~) The Army has completed exploratory development of the Survivability Overpack Container (SOC) for AFAPs. This Container is hardened against small arms and fragmentation projectiles and is compatible with most U.S. and NATO vehicles. The IOC is expected by the end of FY93.

d. (~~USND~~) SAC continues to install an improved sensor system for use in and around ICBM launch facilities. The new sensors improve reliability and reduce false alarm rates. Installation has been completed at over 600 of the 1,000 facilities scheduled to receive it and will be completed in 1992.

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4.3 Security Research and Development (U)

(U) During 1989 the following research and development programs were conducted to improve the security of nuclear weapons:

a. (~~CFRD~~) The Army initiated a program to enhance the security of Maintenance and Assembly (M&A) buildings at European storage sites. The Maintenance and Assembly Secure Storage (MASS) program will upgrade the security of the buildings to provide an access delay time equivalent to the Weapon Access Delay System (WADS). Advanced development is planned to begin in FY92 with fielding beginning in FY93.

b. (~~CFRD~~) The Army has a program in place for development and construction of underground storage facilities with initial occupancy at CONUS depots by end of FY95.

c. (~~CFRD~~) Development of a Waterside Security System (WSS) to enhance protection of critical Navy waterfront assets is nearing completion. The system is designed to detect, localize, classify and automatically alert security forces to threats such as submerged swimmers and small surface boats. IOC is scheduled for 1991.

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5.0 Nuclear Weapon Use Control (U)

(U) During 1989 the use control posture continued to improve.

5.1 Background (U)

(~~SFRD~~) Use control measures are those that allow the authorized use but, given physical access, prevent or delay unauthorized use of nuclear weapons. This is accomplished through a combination of weapon system design features, operational procedures, and system safety rules. Weapon use control features are shown in Tables 1 and 2, and trends are summarized in Figures 3 and 4. All weapons stored on foreign soil are secured by combination locks or Permissive Action Links (PAL).

5.2 Policies, Standards, and Criteria (U)

(~~SFRD~~) The requirements for nuclear weapon use control derive from National Security Decision Directive (NSDD) 281 and indirectly from DoD Directive 3150.2 and DOE Order 5610.3. NSDD 281 establishes the President as the sole authority for the release for use of nuclear weapons and requires an integrated system of positive measures to protect that authority. There remains a need for a broad, overarching DoD policy to provide a use control policy foundation covering issues that are common to all services. A draft DoD Use Control Policy, that articulates NSDD 281, is still in the review process and requires renewed efforts throughout the DoD to expedite approval.

(~~SFRD~~) DOE has established a policy, implementing a portion of NSDD 281, that addresses the DOE's responsibilities regarding prevention of deliberate unauthorized use. It provides for the establishment and periodic assessment of a system that integrates use control with security and other positive measures to protect weapons in the DOE's custody. It also provides for control technology R&D, and assistance to the DoD and other Federal agencies.

(~~SFRD~~) In September 1989, the Assistant to the Secretary of Defense (Atomic Energy) (ATSD(AE)) issued a memorandum which proposed and supported the development of a nuclear weapons coding and verification system that embodied full end-to-end encryption capability and established the concept of Verifiable Control Procedures (VCP). Under VCP, all nuclear weapon coding equipment would be brought into and maintained in a secure environment. The Joint DoD/DOE Project Officers Group (POG) for Nuclear Weapon Use Control Systems (Use Control-POG), chartered by the NWCSC, is currently reviewing the ATSD(AE) proposal and determining what use control hardware would be required if it were implemented.

5.3 Use Control Research and Development (U)

(~~CRD~~) Weapons in development (B61-6,8,9,10, 155mm/W82, SRAM II/W89, and the B90) incorporate warhead use control features as do weapons expected to enter development (W61, FOTL, and SRAM-T). Advanced R&D continued on improved use control features. Control equipment capable of end-to-end encryption is being developed by the DOE for SRAM II/W89. Beyond

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this application, there is no requirement to extend end-to-end encryption to other weapon systems.

5.4 Use Control Assessment (U)

(U) Use control measures continue to support the required balance between the authorized use of nuclear weapons and protection against the deliberate unauthorized use. As stated previously, renewed efforts to complete a DoD Use Control Policy are needed. Additionally, there is a need for standards, criteria, and a generally accepted methodology for use control evaluation. ATSD(AE), DOE and the Use Control POG have initiated efforts to identify evaluation approaches that can systematically assess all types of use control measures.

6.0 PERSONNEL SURETY, RELIABILITY, AND ASSURANCE (U)

(U) The requirements for personnel security, reliability, and assurance derive from NSDD 281, DOE Orders, and DoD Directives.

(U) Every individual assigned to a nuclear duty position who has access to, or controls access to, nuclear weapons, nuclear components, or sealed authenticators must be formally certified and continually evaluated and observed in accordance with established departmental standards and procedures. Such certification is granted only after completing a required security investigation, a favorable review of personnel and medical records, and a personal interview.

(U) New, more stringent, requirements are mandated by NSDD 281 for critical nuclear command and control personnel; however, no national criteria has been established to designate personnel as "critical". DOE has established a policy that designates certain critical nuclear command and control positions and requires the personnel volunteering for those positions to undergo special background investigations, counterintelligence polygraph testing, and drug testing.

(U) Service technical inspection programs and DoD and DOE oversight visits continue to meet established standards.

7.0 JOINT EMERGENCY PREPAREDNESS AND RESPONSE (U)

(U) In 1989 there were no nuclear weapon accidents.

(~~SPRD~~) In the event that a nuclear weapon is involved in an accident, the Federal agency with custody of the weapon involved will respond, in conjunction with other Federal Agencies, in accordance with the Federal Radiological Emergency Response Plan. DoD will respond in accordance with DoD Directive 5100.52 and the Nuclear Weapon Accident Response Procedures (NARP) manual. DoD and DOE work together in the safing of the weapon(s) and the removal of classified material from the accident site. Should a malevolent nuclear incident occur overseas, DOE and DoD Nuclear Emergency Search Team (NEST) assets are prepared to assist foreign governments in locating and recovering weapons or Improvised Nuclear Devices (INDs).

(~~CPRD~~) Exercises concerning nuclear weapon accident and malevolent incident response were conducted to review existing plans, policies, and

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procedures. There were five exercises in 1989, two of them in conjunction with the United Kingdom. The exercises with the U.K. reviewed the coordination procedures established by the Third Tier Arrangement. In 1989, exercises were conducted to test multi-agency command and control structures, deployment of the newly formed Federal Radiological Monitoring and Assessment Center, the Defense Senior Representative (DSR) concept and effectiveness of the NEST Technical Operations Center (TOC).

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8.0 INSPECTION AND EVALUATION PROGRAMS (U)

(U) During 1989 the inspection and evaluation programs remained satisfactory.

8.1 Background (U)

(U) Both the DOE and the DoD conduct various inspection and evaluation activities to assure that an adequate level of oversight is provided for the safety, security and control of the U.S. nuclear weapon stockpile. Many of these activities are conducted jointly.

8.2 DoD Programs (U)

(U) The DOD Nuclear Weapons Technical Inspection (NWTI) program requires both Service and DNA inspections of designated nuclear-capable units. The Services conduct these inspections at least once every 18 months and DNA evaluates each unit once every 4 to 5 years. Both types of inspections evaluate the safety, security, and reliability of the weapons systems, as well as special interest items as tasked by OSD or Joint Staff.

(U) The Army, Air Force, and Navy continued their minimum-notice NWTI programs in calendar year 1989. The Army continued to conduct nuclear surety inspections of both custodial and noncustodial units. There were no special interest items during this period.

(CFRO) DoD continues to experience a reduction in the number of nuclear-capable units, from 488 in 1988 to 394 by the end of 1989. This past year, DNA inspected 75 of those units, 92 percent of which received a SATISFACTORY rating, which is consistent with previous years.

8.3 DOE Programs (U)

(U) DOE conducts annual appraisals of all its operations and organizations involved with nuclear explosives or nuclear weapons. These appraisals are conducted to assure nuclear weapons programs activities are being performed in compliance with federal law and Departmental safety, security, and control policies. Specifically DOE: 1) Conducts safety studies/surveys of all its operations involving nuclear explosives at the PANTEX plant and the Nevada Test Site; 2) Participates as a voting member in all Military Service NWSSG studies of nuclear

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weapon systems; 3) Conducts an Evaluation and Inspection (E&I) program of the safeguards and security of the major nuclear facilities in the DOE complex.

(U) During 1989, the overall appraisal results indicated that DOE activities were in compliance with established criteria.

9.0 IMPACT OF BUDGET CONSTRAINTS (U)

(U) The Presidentially approved 1989-1994 Nuclear Weapons Stockpile Memorandum (NWSM) reflects tradeoffs made between new builds, modifications, and/or replacements of older weapons that lack modern detonation safety features. To assure continued progress in this area, priority funding must be provided to address the environmental, health, and safety issues associated with the DOE production facilities as well as to support DOD production requirements. Two specific DOE facilities are particularly critical to achieving the projected stockpile modernization: the pit production facility at Rocky Flats, Colorado, and the new Waste Isolation Pilot Plant (WIPP) in New Mexico.

(U) Both the DoD and DOE remain committed to supporting enhanced nuclear surety in the stockpile. This will be accomplished after considering the relative benefits of new warhead builds versus modernizing older warheads, in recognition of the fiscal resources available versus the relative costs of the options. The rate that modernization can proceed is a function of DOE industrial plant capability, not DoD system procurement. For the foreseeable future, zero growth funding, increased requirement to expend funds in the areas of environment, safety, and health, and the pressing need to modernize the nuclear weapons production complex will determine the pace which nuclear surety enhancements are developed and introduced into the stockpile.

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TABLE 1
Weapons in Stockpile (U)

Category	Weapon	Ship/ OCONUS	On-Alert/ Allowed/ Prohibited	ENDS ¹	HE	Use Control Design Feature	Retirement ²	Comments
<u>Stockpile</u>								
Strategic Bomb	B28-0,1	No	O		Conv.	Cat D	1993	Off Alert 1990
AFAP	W33	O	P		None	CombLock		
Tactical Bomb	B43	Ship	A		Conv.	Cat B	1991	
AFAP	W48	O	P		Conv.	CombLock		
Pershing 1A	W50	O	A3		Conv.	Cat A	1991	
Strategic Bomb	B53-1	No	O		Conv.	None	1994	Replacement - W61
Minuteman II	W56-4	No	O		Conv.	None		
Tactical Bomb	B57-1	Ship	A		Conv.	None	1998	Rplacmt-B90
Tactical Bomb	B57-2	Ship/O	A		Conv.	Cat B	1999	Rplacmt-B90,B61-4
Tactical Bomb	B61-0	O	A		Conv.	Cat B	1993	Modified to B61-8
Tactical Bomb	B61-2	Ship/O	A		Conv.	Cat D	1994	Modified to B61-8
Tactical Bomb	B61-3	O	A		Insen	Cat F		
Tactical Bomb	B61-4	O	A		Insen	Cat F		
Tactical Bomb	B61-5	O	A		Conv.	Cat D	1998	Modified to B61-8
Strategic Bomb	B61-7	No	O		Insen	Cat D		
Minuteman III	W62	No	O	(b) (3)	Conv.	None		
Poseidon	W68	Ship	O		Conv.	None	1996	
SRAM A	W69	No	O		Conv.	None	1998	Replacement - W89
Lance	W70-1	O	P		Conv.	Cat D	1998	Replacement - FOTL
Lance	W70-3	No	P		Conv.	Cat D	1999	
Spartan	W71 (IR)	No	P		Conv.	None	1991	
Poseidon/Trident I	W76	Ship	O		Conv.	None		
Minuteman III	W78	No	O		Conv.	None		
AFAP	W79	O	P		Conv.	Cat D		
Cruise Missile	W80-0	Ship	A		Insen	Cat D		
Cruise Missile	W80-1	No	O		Insen	Cat D		
Strategic Bomb	B83	No	O		Insen/FRP	Cat D		
Cruise Missile	W84	O	A		Insen/FRP	Cat F	1991	
Pershing II	W85	O	A		Insen	Cat F	1991	
Peacekeeper	W87-0	No	O		Insen/FRP	None		
Trident II	W88	Ship	A		Conv.	None		

1 Enhanced Nuclear Detonation Safety

2 FY89-94 NWSM Change 3A

(b) (3)

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Table 2

Weapons Under Development (U)

<u>Category</u>	<u>Weapon</u>	<u>ENDS</u>	<u>HE</u>	<u>Use Control Design Feature</u>	<u>Initial Operational Capability</u>	<u>Comments</u>
<u>Development</u>						
Tactical Bomb	B61-6		Insen	Cat D	1991	
Tactical Bomb	B61-8		Insen	Cat D	1993	
Tactical Bomb	B61-9		Insen	Cat F	1992	
Tactical Bomb	B61-10		Insen	Cat D	1990	
Strategic Bomb	W61		Insen	Cat D	1993	
AFAP	W82		Conv.	Cat D	1992	
SICBM	W87-1	(b) (3)	Insen/FRP	None	1997	
SRAM II	W89		Insen/FRP	Cat D	1993	
Tactical Bomb	B90		Insen/FRP	Cat D	1993	
Follow on to Lance	WFOTL		Insen/FRP	Cat F	1994	
SRAM T	WTASM		Insen/FRP	Cat F	1993	

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