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AIR FORCE NUCLEAR WEAPONS SURETY PROGRAM

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This instruction implements Air Force Policy Directive (AFPD) 91-1, *Nuclear Weapons and Systems Surety*. This publication is consistent with AFPD 13-5, *Air Force Nuclear Enterprise*. It outlines general responsibilities for the Air Force Nuclear Weapons Surety Program and defines implementing requirements. This Instruction applies to all Air Force personnel, nuclear certified equipment, and facilities involved with nuclear weapons, nuclear weapon systems, and radioactive materials-related programs. Personnel involved with nuclear weapons, nuclear weapon systems, and 91(B) radioactive materials are responsible for compliance. This instruction is applicable to the Air Force Reserve Command (AFRC) and Air National Guard (ANG) units performing nuclear missions. Send major command (MAJCOM) supplements to AMC/A3N, 402 Scott Drive, Unit 3A1, Scott AFB, IL, 62225-5302 or by email to **AMC.A3N@amc.af.mil**, and AFSEC/SEWN, 9700 G Avenue SE, Kirtland AFB NM 87117-5670, for coordination before publication. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN)

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(AMC) AFI 91-101, *Air Force Nuclear Weapons Surety Program,* is supplemented as follows. This publication applies to Air Mobility Command commanders, managers, supervisors, safety staffs, base support staffs, aircrew, and workers associated with the transport of nuclear weapons and related components. This supplement does not apply to Air National Guard or US Air Force Reserve units. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, Management of Records, and disposed of IAW Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS).. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using Air Force Form 847, *Recommendation for Change of Publication*; route AF Forms 847s from the field through the appropriate functional's chain of command. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Emphasis on nuclear surety culture has been placed at all levels of leadership throughout revision. Primary changes include updates on independent nuclear surety review/evaluation/analysis support (paragraph 2.2.1.9.1. and 2.4.7.4. to 2.4.7.4.7.); AETC's nuclear surety responsibilities (paragraph 2.6.); Defense Force Commander responsibilities (paragraph 2.10.5.); supervisor responsibilities (paragraph 2.12.); mandatory training topics (paragraph 2.1.5.1.1. to 2.1.5.1.11.); and the nuclear surety deviation process, responsibilities, and criteria (Chapter 3). Revision also includes clarification on definitions for nuclear weapons surety, limited-life components, and nuclear component.

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Chapter 1

PROGRAM INFORMATION

1.1. Goal. The goal of the Air Force Nuclear Weapons Surety Program is to incorporate maximum nuclear surety, consistent with operational requirements, from weapon system development to dismantlement.

1.1. (AMC)The goal of the Air Mobility Command (AMC) Nuclear Surety Program is to ensure the safety and security of nuclear weapons while in the air transportation system and accomplishment of the special mission without incident. This goal is accomplished by a network of MAJCOM and wing personnel combined with support from other DoD organizations. The Nuclear Surety Manager (NSM) must work closely, in staffing issues of joint concern, with the wing Nuclear Surety Office.

1.2. Nuclear Weapons Surety (also referred to as Nuclear Surety). Policies, procedures, controls, and actions that encompass safety, security, and control measures, which ensure there will be no nuclear weapons accidents, incidents, unauthorized detonation, or degradation of weapon effectiveness during its Stockpile-to-Target Sequence (STS).

1.3. Surety Standards. The Air Force Nuclear Weapons Surety Program ensures personnel design and operate nuclear weapons and nuclear weapon systems to satisfy the safety standards in Department of Defense (DoD) Directive 3150.02, *DoD Nuclear Weapons Surety Program*. The four DoD nuclear surety standards are:

1.3.1. There shall be positive measures to prevent nuclear weapons involved in accidents or incidents, or jettisoned weapons, from producing a nuclear yield.

1.3.2. There shall be positive measures to prevent DELIBERATE prearming, arming, launching, or releasing of nuclear weapons, except upon execution of emergency war orders or when directed by competent authority.

1.3.3. There shall be positive measures to prevent INADVERTENT prearming, arming, launching, or releasing of nuclear weapons in all normal and credible abnormal environments.

1.3.4. There shall be positive measures to ensure adequate security of nuclear weapons, under DoD S-5210.41-M, *Nuclear Weapon Security Manual.*

Chapter 2

RESPONSIBILITIES

2.1. Commanders'/Directors' Emphasis. Commanders at all levels are responsible for the success of the Air Force Nuclear Weapons Surety Program. Commanders MUST emphasize that safety, security, control, and effectiveness of nuclear weapons are of great importance to the United States. The following is not an all-inclusive list of restrictions dealing with nuclear weapons. Commanders shall review the Weapon System Safety Rules (WSSRs) for their specific weapon system(s) found in AFIs 91-111 thru 91-117. (T-1)

2.1.1. Do not use nuclear weapons to troubleshoot faults, that is, to confirm a fault exists, to aid in fault isolation, or to verify fault correction. AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapon Systems*, contains specific guidance. (T-1)

2.1.2. During exercises, do not wear complete chemical ensembles when handling war reserve nuclear weapons. Remove the gas mask, to aid in personal identification, and gloves, to ensure weapons are not inadvertently damaged. (T-1)

2.1.3. Storing nuclear weapons in one facility and conventional munitions in another facility within the same weapons storage area (WSA) is not considered simultaneous presence and does not require MAJCOM approval. Conventional munitions inherently part of a nuclear weapon system and/or nuclear weapon component (e.g., forward shroud, forward section, electrical explosive devices, and limited life components) located in the same assembly, surveillance, and inspection (AS&I)/maintenance and inspection (M&I), vault or storage facility are not considered simultaneous presence. Examples of conventional munitions include Mk82, Mk84, and Massive Ordnance Penetrator (MOP). Do not store nuclear weapons and conventional munitions together, except: (T-1)

2.1.3.1. As part of flightline or protective aircraft shelter operations conducted IAW WSSRs. (T-1)

2.1.3.2. The MAJCOM/CC may approve the temporary storage of nuclear and conventional munitions within a WSA facility to facilitate the warehousing of these materials in order to meet immediate operational requirements. AFMAN 91-201, *Explosive Safety Standards*, and Technical Order (TO) 11N-20-7, *Nuclear Safety Criteria*, contain specific guidance. Reference AFMAN 91-201 when storing conventional munitions inside a hardened aircraft shelter with a weapons storage and security system (WS3) vault. (T-1)

2.1.3.3. The wing commander may approve the immediate storage of nuclear and conventional munitions within a WSA facility for 72 hours in the event of fire, flood, or natural disaster, or if the nuclear storage facility can no longer be secured. Initiate PINNACLE EMERGENCY EVACUATION (OPREP-3PEV) procedures prescribed in AFI 10-206, *Operational Reporting*. Storage for more than 72 hours requires MAJCOM/CC approval. (T-1)

2.1.3.4. Storage of nuclear and conventional munitions within a WSA facility for more than 90 days requires approval by Air Force Chief of Safety (AF/SE). At a minimum, the

approval request shall include a mitigation plan containing the following: the reason for the request, risk assessment, any corrective action and expected duration. While the AF/SE approval is in existence it will be reviewed at least quarterly by the affected wing/CC and MAJCOM/CC for validity and progress updates. (T-1)

2.1.4. Implement local procedures:

2.1.4.1. Prohibit direct over flight, in airspace controlled by the base, of WSAs, weapon movements, nuclear-loaded aircraft, and aircraft shelters with nuclear weapons inside. Over flight of aircraft shelters where the weapons inside are secured in a WS3 vault is permitted. (T-1)

2.1.4.2. Ensure aircraft with forward firing ordnance, to the maximum extent possible, will not be parked pointed toward Prime Nuclear Airlift Force (PNAF) flightline operations or active convoy routes. (T-1)

2.1.4.3. Ensure aircraft with forward firing ordnance must be limited, to the maximum extent possible, from sweeping across PNAF flightline operations and active convoy routes. (T-1)

2.1.4.4. Prohibit direct over flight of PNAF aircraft during ground operations within the airspace controlled by the base. (T-1)

2.1.5. Training:

2.1.5.1. Commanders and supervisors at all levels must ensure individuals receive instructor-led initial nuclear surety training and 15-month recurring nuclear surety refresher training before they work with nuclear weapons, nuclear weapons systems, certified critical components, perform nuclear-related duties, or control entry into No-Lone Zones. At a minimum, these individuals will receive initial nuclear surety training prior to performing nuclear-related duties and recurring training will be accomplished by the end of the 15th month thereafter. Individuals must complete a closed-book test with a minimum passing score of 80 percent. A test score of less than 80 percent requires remedial training and retesting with a different test before that person may perform nuclear-related duties. Training/testing will include at a minimum the standardized nuclear surety lesson plan and testing materials described in para 2.2.1.8. Document initial and 15-month recurring nuclear surety training. (T-0) Initial and recurring training will include the following mandatory topics:

2.1.5.1.1. Importance of, and need for, a US nuclear capability. (T-0)

2.1.5.1.2. Nuclear mishap prevention responsibilities of those personnel who work with nuclear weapons and components. (T-0)

2.1.5.1.3. Possible adverse impact on US nuclear capability in the event of a serious nuclear mishap. (T-0)

2.1.5.1.4. Security requirements. (T-0)

2.1.5.1.5. Two-Person Concept, Sole Vouching Authority (SVA), and associated requirements and procedures. (T-0)

2.1.5.1.6. PRP requirements IAW DoD 5210.42-R_AFMAN 13-501, *Nuclear Weapons Personnel Reliability Program*. (T-0)

2.1.5.1.7. Mishap and hazard reporting. (T-0)

2.1.5.1.8. Use of MNCL as the sole source for verifying the certification status of nuclear certified weapon systems, hardware, support equipment, and facilities. (T-0)

2.1.5.1.9. Intrinsic Radiation (INRAD)/As Low As Reasonably Achievable (ALARA). (T-0)

2.1.5.1.10. Weapon System Safety Rules (WSSRs). (T-0)

2.1.5.1.11. Nuclear surety culture. (T-0)

2.1.5.2. Unique topics commensurate with the unit's nuclear duties will also be trained (i.e., Safe Haven procedures, sealing of nuclear components, local situations increasing the risk of nuclear mishaps, etc.). (T-1)

2.1.5.3. Ensure nuclear surety training is provided to all PRP certifying officials. (T-0)

2.1.5.4. Tests will be randomly built from an AFSEC-validated test bank using a minimum of two test questions for each mandatory topic for a minimum of 22 questions per test. MAJCOMs are authorized to add (not substitute) test questions for their unique topics. (T-2)

2.1.6. Nuclear Surety Awards. Use the awards program to recognize deserving individuals and provide incentive for integrating nuclear surety culture and practices into daily activities. Nomination procedures and selection criteria for nuclear surety awards can be found in AFI 36-2833, *Safety Awards*. (T-2)

2.2. Headquarters United States Air Force (HQ USAF):

2.2.1. AF/SE will establish the Air Force Nuclear Weapons Surety Program and shall:

2.2.1.1. Establish nuclear weapons surety program requirements.

2.2.1.2. Publish instructions and guidance on the various portions of the program.

2.2.1.3. Maintain liaison for nuclear surety matters with organizations outside the Air Force.

2.2.1.4. Advise Office of the Secretary of the Air Force, Office of the Assistant Secretary (Acquisition) (SAF/AQ) of required nuclear surety policies associated with new technologies.

2.2.1.5. Provide augmentation, through Air Force Safety Center (AFSEC), to Air Force Inspection Agency (AFIA) Nuclear Surety Inspection (NSI) oversight teams in support of SAF/IG Nuclear Surety Inspection oversight responsibilities.

2.2.1.6. Issue coordinated guidance on radiological health matters pertaining to nuclear weapons.

2.2.1.7. Provide, at the request of commanders, Integrated Surety Visits (ISVs) to assist in developing a robust and compliant nuclear surety program.

2.2.1.8. Establish the minimum content of the Nuclear Surety Training Program. Create and distribute standardized nuclear surety lesson plans and testing materials to MAJCOM Weapons Safety Offices.

2.2.1.9. Through AFSEC/SEW will:

2.2.1.9.1. Determine when independent nuclear surety evaluation are required to support nuclear safety design certification as directed by AFSEC IAW AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*, AFI 91-103, *Air Force Nuclear Safety Design Certification Program*, and AFI 63-125, *Nuclear Certification Program*.

2.2.1.9.2. Formally request Air Force Nuclear Weapons Center (AFNWC) support, via AFNWC workflow, by describing the specific review/evaluation/analysis required.

2.2.1.9.3. Provide AFNWC support information, usually in the form of a Nuclear Surety Evaluation, as provided by the Program Manager (PM) for the system/item requiring nuclear safety design certification.

2.2.1.9.4. Identify the suspense time/date (normally identified in the Certification Requirements Plan, if required).

2.2.1.9.5. Ensure information received is from a trusted and independent source to assess compliance with nuclear safety design certification criteria as defined by applicable AF instructions and manuals.

2.2.1.10. Establish nuclear deviation reporting program (NDRP).

2.2.2. Deputy Chief of Staff, Operations, Plans and Requirements (AF/A3/5).

2.2.2.1. Coordinate with AF/A10 to integrate strategic nuclear, tactical nuclear, conventional forces and effects into operational strategies, concepts, policy and guidance, plans, and in compliance with all Arms Control Treaties and Agreements.

2.2.2.2. Coordinate with AF/A10 to ensure nuclear operations capabilities and effects are included in appropriate Concepts of Operations and reviewed and implemented through the AF Core Function Support Plans and Joint capabilities review processes.

2.2.2.3. Seek to ensure that treaties or international agreements do not contain provisions or are implemented in a manner to undermine the physical security of nuclear weapons under Air Force control.

2.2.3. Assistant Chief of Staff, Strategic Deterrence & Nuclear Integration (AF/A10).

2.2.3.1. Ensures consistency of nuclear policy and guidance which impact people, organizations, processes, procedures, infrastructure, and systems that are used to train, plan, develop, test, acquire, support, maintain, execute, inspect, and (when applicable) dispose of nuclear assets, operations, and forces across the Air Force and nuclear enterprise.

2.2.3.2. Assist SAF/AA in developing guidance to manage, control, and classify information related to nuclear weapons and/or nuclear weapon delivery platforms.

2.2.3.3. Provide procedures for the Nuclear Weapons Personnel Reliability Program (PRP).

2.2.4. Deputy Chief of Staff/Logistics, Installations & Mission Support (AF/A4/7):

2.2.4.1. Single point of contact for nuclear weapon and nuclear weapon system logistic matters.

2.2.4.2. Develop and publish nuclear weapons and delivery systems maintenance and supply chain guidance.

2.2.4.3. The Director of Civil Engineers (AF/A7C) is the single point of contact for nuclear weapon explosive ordnance disposal matters.

2.2.4.4. Air Force Director of Security Forces (AF/A7S):

2.2.4.4.1. Develop and publish guidance for the physical security of nuclear weapons and nuclear weapon systems.

2.2.4.4.2. Evaluate nuclear weapon system designs for their impact on nuclear security.

2.2.5. The Surgeon General (AF/SG) and AF/SE issue coordinated guidance on radiological health matters.

2.3. Major Commands (MAJCOMs), Field Operating Agencies (FOAs), and Direct Reporting Units (DRUs) Commanders, as appropriate:

2.3.1. Establish a nuclear surety program and provide guidance to subordinate units. (T-0)

2.3.1. **(AMC)** HQ AMC/SEW is responsible for the command's nuclear surety program.

2.3.2. Establish a program to ensure personnel are trained and certified on the following applicable functional tasks:

2.3.2.1. Nuclear weapons maintenance, mate/demate, handling, and final assembly checkouts. (T-0)

2.3.2.2. Loading and unloading of nuclear weapons for transport and delivery aircraft. (T-0)

2.3.2.3. Explosive Ordnance Disposal (EOD) component diagnosis and recovery procedures. (T-0)

2.3.2.4. Security procedures. (T-0)

2.3.2.5. Custody procedures. (T-0)

2.3.2.6. Operational control. (T-0)

2.3.2.7. Weapon convoys. (T-0)

2.3.2.8. Nuclear certified equipment tracking and deficiency reporting at both nuclear and
non-nuclear units. (T-0)

2.3.2.9. Flag word reporting at both nuclear and non-nuclear units. (T-0)

2.3.2.10. **(Added-AMC)** Nuclear Airlift Operations.

2.3.3. Ensure individuals assigned to nuclear safety positions are trained and hold a rank or grade commensurate with their duties. Nuclear safety position in this context refers to any position having a role in a safety-related activity with respect to nuclear weapons. (T-1)

2.3.3. **(AMC)** Appropriate HQ AMC staff functions ensure formal and proficiency training includes functional tasks related to AMC nuclear operations.

2.3.4. Ensure subordinate unit civil engineer staffs:

2.3.4.1. Develop an Air Force Emergency Management Plan to include addressing nuclear accidents/incidents IAW AFI 10-2501, *Air Force Emergency Management (EM) Program Planning and Operations*. (T-0)

2.3.4.1. **(AMC)** HQ AMC/A7X is OPR for Emergency Management Plan.

2.3.4.2. Assist Disaster Response Force members in the development of checklists, and advise on training and equipping personnel to respond to nuclear accidents and incidents. (T-0)

2.3.4.3. Perform required inspection, test, and maintenance of facilities and nuclear certified equipment used with nuclear weapons. (T-0)

2.3.4.4. Coordinate plans for building or modifying nuclear weapon facilities per AFI 63-125, AFI 91-103, and AFMAN 91-118, *Safety Design and Evaluation Criteria for Nuclear Weapon Systems.* (T-0)

2.3.5. Ensure subordinate security forces functional guidance complies with nuclear surety requirements. (T-0)

2.3.6. Send data on proposed changes to nuclear weapon systems and noncombat delivery vehicles to AFNWC and the appropriate program executive office/program manager in accordance with AFI 63-125. (T-0)

2.3.6. **(AMC)** All proposed changes to nuclear weapon systems and noncombat delivery vehicles will be coordinated through the HQ AMC/SEW office.

2.3.7. Conduct NSIs of nuclear-capable units in accordance with AFI 90-201, *The Air Force Inspection System*, and Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3263.05, *Nuclear Weapons Technical Inspections.* (T-0)

2.3.8. Support the Nuclear Weapon System Safety Group (NWSSG) in accordance with AFI 91-102. (T-1)

2.3.8. **(AMC)** HQ AMC staff functions supporting the headquarters Nuclear Surety and Operations Council (NSOC) also support USAF Nuclear Weapons System Safety Group (NWSSG) in accordance with AFI 91-102. See Table 2.1. for responsibility of group members:

2.3.8.1. **(Added-AMC)** Assist in developing Nuclear Surety policy and procedures.

2.3.8.2. **(Added-AMC)** Provide functional expertise for nuclear airlift operations and support requirements.

2.3.8.3. **(Added-AMC)** Serve as a member of the MAJCOM Nuclear Surety Staff Assistance Visit (NSSAV) team.

Table 2.1. (Added-AMC) Standing NSOC membership includes.

Organization	Program Responsibility

18 AF	Worldwide Operations / Mission Planning
AMC/A1	Personnel Reliability Program (PRP)
AMC/A3	Prime Nuclear Airlift Force (PNAF) Operations Strategic Nuclear Operations (OPLAN 8010) Nuclear Treaties and C-CBRN Operations
AMC/A4	Aircraft Selection, Maintenance, and Equipment
AMC/A7	Nuclear Security / Emergency Management
AMC/SE	Nuclear Surety Program
AMC/SG	Medical Personnel Reliability Program (PRP)
AMC/IG	Nuclear Inspections Information (NSI & NORI)

2.3.9. Identify a single point of contact for all nuclear surety issues. (T-1)

2.3.9. **(AMC)** HQ AMC/A3N is the OPR for all nuclear airlift issues. HQ AMC/SEW is the MAJCOM OPR for nuclear surety matters. (ref. 2.7.1.)

2.3.10. Establish a Nuclear Surety Council to examine and resolve problems affecting the successful execution of the organization's nuclear weapon program and will act as a review board to assist the MAJCOM commander in ensuring all facets of the nuclear weapon surety program function in an effective manner. (T-1)

2.3.10. **(AMC)** HQ AMC Nuclear Surety Operations Council (NSOC) is chaired by the AMC/CV and meets bi-annually, or as directed by the AMC/CV. The NSOC looks ahead at Nuclear Enterprise issues that directly impact AMC and AMC-gained units. It addresses issues related to nuclear airlift, air refueling support to nuclear operations plans, nuclear command and control, nuclear policy and governance and other nuclear issues.

2.4. Air Force Materiel Command (AFMC) Commander. In addition to the responsibilities listed in paragraph 2.3., AFMC serves as the Air Force focal point for the technical aspects of nuclear surety.

2.4.1. Maintain a technology base to support development of nuclear safety design and evaluation criteria for publication in AFI 91-107.

2.4.2. Evaluate nuclear safety effects of all designs, maintenance processes and practices, and modifications of nuclear weapon systems or components for which AFMC has program management responsibility. This includes compliance with AFI 91-102, AFI 91-103, and AFI 63-103, *Joint Air Force-National Nuclear Security Administration (AF-NNSA) Nuclear Weapons Life Cycle Management*.

2.4.3. Provide consultant and technical services to support the requirements of AFI 91-108, *Air Force Nuclear Weapons Intrinsic Radiation and 91(B) Radioactive Material Safety Program*.

2.4.4. Review nuclear mishap reports pertaining to materiel or technical data deficiencies, take corrective action when appropriate, and provide reports and summaries as required by AFI 91-204, *Safety Investigations and Reports*.

2.4.5. Provide technical support for the NWSSG.

2.4.6. AFNWC/CC will act as the single point of contact regarding independent review/evaluation/analysis support to the AFSEC.

2.4.7. Through the AFNWC:

2.4.7.1. Manage the Air Force Nuclear Certification Program IAW AFI 63-125.

2.4.7.2. Provide nuclear certification program guidance to MAJCOMs/Product Centers/Air Logistics Complexes.

2.4.7.3. Ensure product centers and air logistics complexes have policies and procedures in place to identify nuclear certified items, processes, and modifications and to assess modifications to determine if nuclear certification is required in accordance with AFI 63-125.

2.4.7.4. Provide independent nuclear surety review/evaluation/analysis.

2.4.7.4.1. Retain the capability to provide independent nuclear surety review/evaluation/analysis to support nuclear safety design certification required by AFSEC IAW AFI 91-102, AFI 91-103, and AFI 63-125.

2.4.7.4.2. Perform independent reviews/evaluations/analyses when formally requested by the AF Safety Center through AFSEC/SEW.

2.4.7.4.3. Ensure the AFNWC organization tasked to perform the independent analysis does not have direct responsibility for designing, developing, producing, maintaining, operating or providing logistics for the weapon system/item under review.

2.4.7.4.4. Notify AFSEC/SEW which organization within the AFNWC has been designated as the independent review/evaluation/analysis organization.

2.4.7.4.5. Notify AFSEC/SEW if the AFNWC is unable to ensure independence in performing the required safety review/evaluation/analysis.

2.4.7.4.6. Coordinate all required technical assistance to properly assess compliance with applicable nuclear safety design certification criteria.

2.4.7.4.7. Reply to AFSEC/SEW requests for independent review/evaluation/analysis within the suspense time/date.

2.4.7.5. Publish data on weapons maintenance, shipping and storage configurations in the appropriate 11N-series TOs and EOD procedures in the 60-series TOs.

2.4.7.6. Provide single point of contact within the Air Force for the management and coordination of nuclear weapon and associated equipment material defects and deficiency procedures as specified in TO 11N-5-1, *Unsatisfactory Reports*.

2.4.7.7. Maintain an Engineering Liaison Office (ELO) collocated with United States Air Forces in Europe (USAFE) to:

2.4.7.7.1. Provide support for nuclear surety programs for ally-operated systems.

2.4.7.7.2. Provide pertinent nuclear weapon system safety rules to allied nations.

2.4.7.7.3. Ensure the design of ally-operated systems meet Air Force nuclear certification criteria when allied nations have engineering responsibility.

2.4.7.7.4. Provide engineering support for host nation support equipment, hardware, software, firmware, and procedures for nuclear safety design certification IAW AFI 91-102, AFI 91-103, and AFI 91-107 requirements.

2.5. United States Air Forces in Europe (USAFE) Commander :

2.5.1. In addition to the responsibilities listed in paragraph 2.3., USAFE/CC will:

2.5.1.1. Assist allied personnel in the USAFE area of responsibility with setting up nuclear surety programs for ally-operated systems.

2.5.1.2. Verify allied personnel comply with the nuclear weapon system safety rules for ally-operated systems.

2.5.1.3. Verify allied personnel accomplish time-compliance technical orders (TCTOs) applying to their nuclear support equipment and notify the TCTO-issuing agency and AFSEC/SEW when TCTOs do not apply.

2.5.1.4. Verify, through the Air Force custodial unit, that allied combat delivery vehicles meet approved standards for nuclear loading and delivery.

2.5.1.5. Verify units report and investigate nuclear mishaps involving US-owned ally-operated systems.

2.5.2. Due to the unique mission and geographic separation between Maintenance Squadrons (MXS)/Munitions Support Squadrons (MUNSS) and their parent wing(s), USAFE MXS/MUNSS and their parent wing(s) are permitted to assign responsibilities outlined in paragraphs 2.15. and 2.16. of this publication to wing managers or unit safety representative (USR) as is necessary to best meet nuclear surety and safety requirements. Assignment of responsibilities will be outlined in writing ensuring all requirements are being addressed, and procedures do not prevent commanders at any level from performing their program responsibilities.

2.6. Air Education and Training Command (AETC) commander. AETC's training and education role is vitally important to the Air Force Nuclear Weapons Surety Program's success, as it enables a successful nuclear surety culture across the Air Force nuclear enterprise. In addition to the applicable responsibilities listed in paragraph 2.3., AETC/CC:

2.6.1. At the direction of Career Field Managers and when properly funded, integrates nuclear surety concepts and skills into technical training courses. (T-1)

2.6.1.1. Nuclear surety concepts and skills will be included in technical training courses involving nuclear weapons, nuclear weapon systems, or critical components. (T-1)

2.6.1.2. Nuclear surety concepts and skills will be included in technical training courses with a significant percentage of students who will perform in positions subject to PRP. (T-1)

2.6.1.3. Those technical training courses which include nuclear concepts and skills will also include a presentation to promote understanding of unique cultural aspects within the nuclear enterprise. Presentation topics should include: deterrence concepts and national

strategy related to nuclear weapons; U.S. nuclear force structure; definition and tenets of nuclear surety; PRP; individual responsibilities and contributions to nuclear deterrence operations. (T-1)

2.6.2. **(AETC/A10)** Develops and implements inspection standards for the AETC Nuclear Surety Program. (T-1)

2.7. MAJCOM Weapons Safety Officer:

2.7.1. Serves as the MAJCOM OPR for nuclear surety matters.

2.7.1. **(AMC)** Nuclear surety program OPR is HQ AMC/SEW (Weapons Safety Division). Address is 510 POW-MIA Dr., Bldg. P-40E, Rm. E-113, Scott AFB IL, 62225-5020. The division can be contacted @ DSN 779-0950 or commercial 618-229-0950. Other related phone numbers are: FAX – DSN 779-0232 or commercial 618-229-0232; and STE – 779-0234 or VoSIP – 302-779- 0950. E-mail address is mail to: **AMC-SEW@scott.af.mil.**

2.7.2. Develops criteria for wing nuclear surety councils.

2.7.3. Advises the MAJCOM staff on nuclear surety issues.

2.7.4. Publishes directives and supplements outlining MAJCOM-unique nuclear surety requirements.

2.7.5. Provides MAJCOM inspection teams with requested information related to nuclear surety matters.

2.7.6. Reviews plans submitted for storage of conventional and nuclear weapons within the same facility/area.

2.7.7. Ensures full-time weapon safety officers and weapon safety managers (WSMs) are trained on MAJCOM-unique items and nuclear surety program management within 90 days of assuming their positions.

2.7.8. Distributes standardized nuclear surety training lesson plans to applicable units.

2.7.9. Approves units' additional instructional material or augmented nuclear surety training lesson plans.

2.7.10. Requests nuclear surety training testing material from AFSEC/SEW if test has been compromised, becomes too familiar, or when deemed necessary.

2.7.11. **(Added-AMC)** Manages the NSSAV IAW AFI 91-121, *Nuclear Surety Staff Assistance Visit (NSSAV) Program*.

2.8. Numbered Air Force (NAF) Weapons Safety Managers (WSMs):

2.8.1. Advise the NAF Director of Safety and staff on nuclear surety issues.

2.8.2. If delegated by the MAJCOM, assume WSM training responsibilities and conduct training in conjunction with staff assistance visits (SAVs).

2.8.3. Visit subordinate units as needed.

2.8.4. Assist NAF staff on PRP issues.

2.8.5. Review the adequacy and completeness of nuclear mishap reports.

2.8.6. Review the adequacy and completeness of the corrective actions for nuclear surety problems found during higher headquarters inspections or assistance visits.

2.8.7. Review plans submitted for new or modified weapon storage sites and notify MAJCOM/SEW.

2.9. Installation/Wing Commanders:

2.9.1. Ensure WSMs are trained, knowledgeable, and qualified. (T-2)

2.9.2. Will ensure senior leader emphasis on nuclear surety culture, enforce compliance with nuclear surety requirements, and mishap prevention. (T-0)

2.9.3. Ensure nuclear surety deficiencies are identified, investigated, corrected, and reported. (T-0)

2.9.4. Ensure plans and procedures support all tasked nuclear missions. (T-0)

2.9.5. Ensure plans and procedures support Safe Haven requirements as outlined in DoD S-5210.41-M_AFMAN31-108V3, *Nuclear Weapon Security Manual: Nuclear Weapon Specific Requirements*, AFI 31-101, *Integrated Defense (FOUO)*, and TO 11N-45-51, *Transportation of Nuclear Weapons Materials*. (T-0)

2.9.6. Ensure nuclear surety plans and procedures are reviewed by affected agencies before implementation. (T-0)

2.9.7. Organize a nuclear surety council as outlined in paragraph 2.18 below. (T-1)

2.9.8. Ensure full-time WSMs are not assigned additional tasks which detract from their primary safety duties. (T-2)

2.9.9. Perform PRP responsibilities. (T-0)

2.9.10. Establish a nuclear accident/incident response organization in accordance with AFI 10-2501. (T-0)

2.9.11. Ensure the WSM reviews all local plans, training, and programs that affect nuclear surety. (T-1)

2.9.12. Ensure applicable nuclear surety topics are included in training directives and programs for assigned personnel. (T-0)

2.9.13. Ensure compliance of guidance and procedures for maintenance, personnel certification, the logistics movement of, and accountability procedures for nuclear weapons in accordance with applicable AFI 21-series publications. (T-1)

2.9.14. Ensure the installation Defense Force Commander, in conjunction with applicable munitions/maintenance and EOD personnel, reviews the plans for any movement of nuclear cargo, in accordance with AFI 21-203, *Nuclear Accountability Procedures*, and AFI 13-526, Volume 1, *Prime Nuclear Airlift Force Operations*. (T-1)

2.9.15. Ensure host and tenant unit(s) relationships are established and reflected in a host-tenant agreement(s). The host-tenant agreement(s) will be developed in accordance with AFI 25-201, *Support Agreements Procedures*. Host-tenant agreements will specify the support required to implement an effective nuclear surety program. Submit in writing, those

areas where mutual agreement cannot be reached to the appropriate MAJCOM(s) for resolution. (T-0) As a minimum, the agreement must include the following areas:

2.9.15.1. Nuclear surety program management. (T-0)

2.9.15.2. Inspections (e.g., nuclear surety, 12-month, spot, etc.). (T-0)

2.9.15.3. PRP. (T-0)

2.9.15.4. Review of local procedures in support of nuclear weapon system safety rules. (T-0)

2.9.15.5. Mishap investigations, boards, and reporting responsibilities. (T-0)

2.9.15.6. Major accident response procedures. (T-0)

2.10. Installation Staff Officers:

2.10.1. Ensure Force Support Squadron (FSS) staff provides guidance and monitors PRP. (T-1)

2.10.2. Ensure Public Affairs office screens and releases mishap information to the public IAW AFI 91-204. (T-2)

2.10.3. Ensure medical treatment facility commander complies with all medical and dental PRP requirements in accordance with DoD 5210.42-R_AFMAN 13-501. (T-0)

2.10.4. Civil Engineering staff.

2.10.4.1. Ensure fire protection personnel are trained to fight fires involving nuclear weapons. (T-0)

2.10.4.2. Conduct timely inspections, maintenance, and repair of facilities and real property installed equipment used to secure and maintain nuclear weapons. (T-0)

2.10.4.3. Coordinate plans for building or modifying nuclear weapon facilities in accordance with AFI 63-125 and AFMAN 91-118, with the WSM, Defense Force Commander, and the affected unit. (T-1)

2.10.4.4. Develop pre-fire plans and firefighting checklists for all areas and locations where nuclear weapons or nuclear weapon systems are present. (T-0)

2.10.4.5. Ensure assigned or host base Emergency Operations Center personnel develop nuclear accident/incident response procedures and ensure Disaster Response Force members and/or Initial Response Element training is accomplished IAW AFI 10-2501. (T-0)

2.10.4.6. Ensure EOD personnel develop nuclear accident/incident response procedures, maintain training on weapons in Air Force custody, and maintain task certification for supported weapons systems/platforms in the active inventory. Training and certification requirements are detailed in AFI 32-3001, *Explosive Ordnance Disposal (EOD) Program*. (T-1)

2.10.5. Defense Force Commander:

2.10.5.1. Ensures, in coordination with Wing WSM, applicable unit security policies, procedures, and directives comply with nuclear surety requirements, nuclear weapon

system safety rules, support Safe Haven requirements, and diversions of nuclear-laden aircraft. (T-0) Ensure Safe Haven plan includes the following responsibilities:

2.10.5.1.1. Park vehicles afforded Safe Haven in a secure, lighted, and paved area. (T-0)

2.10.5.1.2. Temporary security if Department of Energy (DOE) couriers are disabled. (T-0)

2.10.5.1.3. Firefighting, medical, public affairs, and logistics support. (T-0)

2.10.5.1.4. Command and Control (C2), if an accident involving the shipment occurs on the installation. (T-0)

2.10.5.1.5. Ensure Munitions Accountable Systems Officer is notified of Safe Haven. (T-0)

2.10.5.2. Evaluate, in conjunction with munitions personnel, logistical plans for the movement of nuclear cargo during the overall review of plans for nuclear weapon sites. (T-0)

2.10.5.3. Support PRP investigation requirements. (T-1)

2.10.5.4. Ensure physical security and/or facility security software updates/upgrades are coordinated through the WSM. (T-1)

2.10.6. Transportation or contractor personnel will notify the unit WSM if a possible nuclear safety deficiency exists on nuclear certified equipment. (T-0)

2.10.7. Airman and Family Readiness Center personnel perform PRP responsibilities. (T-1)

2.10.8. **(Added-AMC)** Military Equal Opportunity personnel support PRP requirements.

2.10.9. **(Added-AMC)** Command Post will:

2.10.9.1. **(Added-AMC)** Develop/Publish operating instructions (OI) and/or quick reaction checklists (QRC) IAW AFI 10-207-AMCSUP, *Command Posts*.

2.10.9.2. **(Added-AMC)** Ensure controllers coordinate and document required actions IAW AMC, Air Force, and JCS directives. Disseminate appropriate OPREP-3 reports, as applicable.

2.10.9.3. **(Added-AMC)** Ensure command and control facilities possess base regulations/plans to support nuclear support operations.

2.10.9.4. **(Added-AMC)** Ensure controllers are trained and knowledgeable in nuclear-support operations.

2.10.9.5. **(Added-AMC)** Ensure compliance with NSI criteria. See AFI 90-201.

2.10.9.6. **(Added-AMC)** Emphasize the importance of monitoring communications security (COMSEC) to avoid compromise and mission degradation.

2.11. Unit/Squadron Commanders:

2.11.1. Provide leadership emphasis on nuclear surety culture and enforce nuclear surety program requirements. (T-0)

2.11.2. Correct nuclear surety findings and deficiencies identified during NSIs and Nuclear Surety Staff Assistance Visits. (T-0)

2.11.3. Perform PRP responsibilities in accordance with DoD 5210.42-R_AFMAN 13-501. (T-0)

2.11.4. Appoint primary and alternate USRs to serve as liaison to the wing weapons safety office. (T-2)

2.11.4. **(AMC)** Appoint a Unit Nuclear Surety Representative (UNSR) to oversee the program.

2.11.5. **(Added-AMC)** Ensure aircraft maintenance squadrons at a PNAF wing comply with aircraft selection and preparation requirements specified in AFI 13-526 Volume 1, *Prime Nuclear Airlift Force Operations*. **(T-2)**

2.11.6. **(Added-AMC)** Ensure Aerial Port Squadrons under PNAF wings comply with nuclear shoring kit requirements as outlined in AMCI 24-101V11, Para 100.2.1. **(T-2)**

2.11.7. **(Added-AMC)** Prepare operating instructions regarding the nuclear mission, as appropriate, and ensure they are reviewed by NSM prior to use. **(T-2)**

2.12. Supervisors:

2.12.1. Emphasize nuclear surety culture and ensure personnel are properly trained and certified before starting nuclear operations. (T-0)

2.12.2. Ensure all personnel entering a No-Lone Zone receive a pre-task/safety brief or visitors brief including nuclear surety prior to entering. (T-0)

2.12.2.1. Pre-task/safety brief must include as a minimum an outline of the operation, identification of applicable No-Lone Zones, location of war reserve weapons and/or critical components within the No-Lone Zone, policy regarding critical components per AFI 91-105, *Critical Components*, intrinsic radiation procedures, applicable safety, emergency procedures and Two-Person Concept. (T-0)

2.12.2.2. Visitors brief should be tailored to personnel being allowed access to the No-Lone Zone and the area being visited. The briefing must include applicable safety precautions, Two-Person Concept/escort requirements, and specific actions to be taken in the event of an emergency at a minimum. (T-0)

2.12.3. Emphasize reporting of all nuclear deficiencies. (T-0)

2.12.4. Inform personnel of all changes to the nuclear surety program. (T-1)

2.12.5. Perform PRP responsibilities IAW DoD 5210.42-R_AFMAN 13-501. (T-0)

2.12.6. Ensure personnel use only authorized and certified equipment prior to operations involving nuclear weapons and or nuclear weapon systems IAW AFI 63-125. (T-0)

2.12.7. Ensure personnel use only Air Force-approved TOs, checklists, and procedures during nuclear operations. (T-0)

2.13. Individuals:

2.13.1. Promote nuclear surety culture and inform supervisors if they are not qualified to perform a particular task. (T-0)

2.13.2. Report nuclear safety hazards/deficiencies or security problems to supervisors and unit safety representatives. (T-0)

2.13.3. Comply with the Two-Person Concept. (T-0)

2.13.4. Immediately identify unreliable personnel to their supervisors. (T-1)

2.13.5. Report information which could affect their own ability or reliability to perform a task due to medical or other problems. (T-1)

2.14. Wing/Base Level Weapon Safety Managers:

2.14.1. Perform 12-month nuclear surety inspections of each wing or base-level unit with nuclear surety responsibilities. (T-2)

2.14.1. **(AMC)** The NSM is the commander's personal representative and the single point of contact regarding nuclear surety matters. The NSM is a coordinator and advisor to the commander and staff on nuclear surety matters. The NSM's primary responsibility of mishap prevention demands active and aggressive involvement in the daily operation of the unit. The NSM must identify programmatic, procedural or equipment problems to the responsible functional manager for resolution and assist with corrective actions, as appropriate. If a problem is significant or resolution does not appear to be timely and effective, inform the commander. The NSM at a PNAF wing is assigned to a funded position earned by application of the Air Force Manpower Standard (AFMS) for weapons safety and associated variance for nuclear surety. Changing the category (example: civilian, enlisted, officer) of a funded authorization is a wing option. NOTE: The NSM (Active Duty or civilian) will have nuclear surety experience and be knowledgeable in PNAF operations.

2.14.1.1. **(Added-AMC)** The NSM may inspect all functions during a single inspection or across multiple minor-inspections throughout a 12-month period. If the NSM chooses to conduct one comprehensive inspection, the inspection will not be completed during the 90-day period following the MAJCOM NSI.

2.14.1.2. **(Added-AMC)** Document an annual inspection in letter format that includes the following: type of inspection, date, functional area inspected, key personnel contacted/interviewed, findings, observations, and recommended corrective actions (if appropriate). Route reports through the Chief of Safety and the Wing Commander to the unit commander. If a response is required to the inspection report, route the response back through the Group Commander and Wing Commander to the NSM, so leadership has visibility of the response. Track open inspection findings and provide timely status reports until closeout. **(T-2)**

2.14.1.3. **(Added-AMC)** The unit annual inspection may be combined with other safety inspections required by AFI 91-202, *The US Air Force Mishap Prevention Program*.

2.14.1.4. **(Added-AMC)** The annual inspection must be completed by the end of the month, 12 months after the previous year's inspection. **(T-2)**

2.14.2. Ensure adequacy of corrective actions for nuclear surety findings and critical/substantive deficiencies identified against the weapons safety office during HHQ inspections, Nuclear Surety Staff Assistance Visits, and WSM inspections. (T-2)

2.14.3. Individuals in these positions must be cleared to have access to restricted data (RD)/formerly restricted data (FRD) and read into critical nuclear weapons design information (CNWDI) if applicable. (T-2)

2.14.4. Conduct and/or assist in nuclear safety reporting as prescribed in AFI 91-204 and AFMAN 91-221, *Weapons Safety Investigations and Reports*, to include safety reporting of nuclear-certified equipment located in both nuclear and non-nuclear units. (T-2)

2.14.5. Review and disseminate information from nuclear mishap and deficiency reports. (T-2)

2.14.6. Keep the commander, staff, and supervisors informed of issues and changes in the nuclear surety program. (T-2)

2.14.7. Work with commanders, staff, supervisors, and support personnel to ensure the PRP is properly administered. (T-1)

2.14.7.1. **(Added-AMC)** Accompany the installation/wing PRP monitor periodically on visits to staff agencies (Military Equal Opportunity, medical and dental facilities, etc.) involved with PRP. When the NSM accompanies the installation/wing PRP monitor on a visit, it may be used to meet the requirements of the PRP portion of the unit (FSS) annual NSI.

2.14.8. Verify supervisors only allow the use of authorized or certified equipment and only allow the use of AF-approved TOs, checklists, or procedures during nuclear operations. (T-2)

2.14.9. Participate in the preparation of Safe Haven and PNAF mission support plans. (T-0)

2.14.10. Perform spot inspections of areas involved with nuclear surety and emphasize nuclear surety culture. (T-2)

2.14.11. Develop localized specific training, as applicable, and incorporate into the standardized nuclear surety training lesson plan. Additional training should be inserted into the appropriate section to ensure proper flow of lesson objectives. Specific training above the mandatory requirements may be added at the end of the lesson plan. (T-1) Periodically observe training sessions. (T-2)

2.14.11. **(AMC)** The wing may supplement the AF standardized nuclear surety lesson plan with unique mission requirements. The wing may augment the standardized nuclear surety test with questions derived from wing supplemental training. Amplified training and tests should ensure the same level of understanding of base concepts of nuclear surety as the original training and test. Send the lesson plan to HQ AMC/SEW for approval. **(T-2)**

2.14.12. Review and coordinate site plans for new or modified nuclear facilities in accordance with AFMAN 91-201. (T-1)

2.14.13. Review all locally developed checklists, instructions, operating procedures, and plans impacting nuclear surety. For locally developed workcards, checklists, job guides and page supplements for nuclear munitions follow guidance in TO 00-5-1, *AF Technical Order System*. (T-2)

2.14.14. Conduct nuclear surety training for senior staff. (T-1)

2.14.15. Ensure currency/completeness of electromagnetic radiation surveys IAW AFI 91-208, *Hazards of Electromagnetic Radiation to Ordnance (HERO) Certification and Management.* (T-0)

2.14.16. Ensure compliance with the Two-Person Concept, IAW AFI 91-104, *Nuclear Surety Tamper Control and Detection Programs*. (T-0)

2.14.17. Ensure compliance with safety requirements/precautions specified in pertinent directives in the areas of weapons handling, assembly, maintenance, storage operations, and logistics movements. (T-0)

2.14.18. Ensure compliance with nuclear weapons system safety rules and safety practices. (T-0)

2.14.19. Ensure nuclear certified equipment monitor are thoroughly trained to identify nuclear certified equipment (NCE) within the unit, utilizing the master nuclear certification list (MNCL), identify deficiencies, and report deficiencies IAW AFMAN 91-221. (T-0)

2.14.20. **(Added-AMC)** The NSM will attend the Defense Threat Reduction Agency (DTRA) Joint Nuclear Surety Executive Course (JNSEC) and should attend the Air Force Nuclear Weapons Center (AFNWC) Air Force Nuclear Management Fundamentals Course. (T-2)

2.14.21. **(Added-AMC)** A NSM is appointed (in writing) by the wing commander.

2.14.22. **(Added-AMC)** Publish policy for appointing, training, and defining responsibilities of a UNSR.

2.14.23. **(Added-AMC)** At least once per quarter, the NSM will accompany one nuclear airlift mission (actual or training). The NSM will focus on PNAF and base support operations to identify any nuclear surety deficiencies. Send a copy of the trip report to HQ AMC/SEW and AMC/A3NA. (T-2)

2.15. Unit Safety Representatives (USR):

2.15.1. Perform nuclear surety spot inspections and emphasize nuclear surety culture. (T-2)

2.15.2. Ensure initial and recurring nuclear surety training is documented for unit individuals. (T-1)

2.15.3. Coordinate with the WSM on all matters concerning nuclear surety. (T-2)

2.15.4. Use nuclear surety cross-feed reports for unit mishap prevention. (T-2)

2.15.5. Contact the WSM for training after being appointed a USR IAW AFI 91-202, *The US Air Force Mishap Prevention Program. (T-2)*

2.15.6. Ensure unit developed checklists, instructions, operating procedures, and plans that impact nuclear surety are coordinated through the WSM. (T-2)

2.16. Wing/Base Nuclear Surety Council:

2.16.1. As a minimum, the council must:

2.16.1.1. Be chaired by the wing/group commander or the deputy wing/group commander. (T-2)

2.16.1.2. Include all members who are PRP certifying officials or their alternate, and the Base PRP Monitor. (T-2)

2.16.1.3. Include, as advisors, functional experts who support the nuclear surety program. (T-2)

2.16.1.4. Monitor wing nuclear surety program. (T-2)

2.16.1.5. Include a review of Wing Nuclear Surety/Security Deviations. (T-2)

2.16.1.6. **(Added-AMC)** Below the MAJCOM level, a Nuclear Surety Council (NSC) is established to monitor, evaluate, and improve policies and procedures for nuclear airlift operations. A NSC is required at a PNAF wing. (T-2)

2.16.1.7. **(Added-AMC)** See Figure 2.1. for functions requiring representation at NSC meetings:

Figure 2.1. (Added-AMC) Functions Requiring Representation

PERSONNEL RELIABILITY PROGRAM (PRP)
(MEDICAL/PERSONNEL) PNAF OPERATIONS
COMMAND POST
AERIAL PORT
AIRCRAFT SELECTION & MAINTENANCE
NUCLEAR SURETY PROGRAM (SAFETY)

2.16.1.8. **(Added-AMC) Others deemed appropriate by the Chairperson.**

2.16.1.9. **(Added-AMC)** A recorder will be present for all NSC meetings. Meeting minutes will be taken and include open action items, OPR, and the estimated completion date for each item. Open items will be reviewed during subsequent NSC meetings until closed. Send a copy of the minutes to HQ AMC/SEW and AMC/A3NA.

2.16.2. As requested, host or tenant units will attend nuclear surety councils. (T-2)

2.16.3. Units without nuclear mission and nuclear surety council establish a process to inform local commanders on nuclear surety issues, including nuclear certified equipment. (T-2)

2.17. Joint Basing: Unless otherwise provided for in the Joint Basing Memorandum of Agreement, all applicable responsibilities prescribed in this instruction will remain with the Joint Base (JB) Air Force Commander exercising command and control over mission functions.

Chapter 3

SPECIAL NUCLEAR SURETY POLICY AND GUIDANCE WAIVER PROCESS

3.1. Purpose: This chapter supplements the AFI 33-360 policy and guidance waiver process by establishing special procedures and delineating specific responsibilities for units requesting waivers to nuclear enterprise-related policy and guidance. This chapter refers to this special process as the Nuclear Deviation Reporting Program (NDRP). The NDRP augments the AFI 33-360 process by implementing an initiative designed to catalog/track deviations to nuclear weapons and nuclear weapons systems-related publications, standardizes approval/risk acceptance processes, and prescribes periodic review/reporting criteria.

3.2. Scope/Applicability. The NDRP is applicable to directive publications, as defined by AFI 33-360, prescribing policy and guidance throughout the Air Force nuclear enterprise. The NDRP will be utilized anytime an organization requests a waiver to a compliance item within a nuclear-related publication.

3.2.1. Security Forces units will follow the nuclear security deviation process as outlined in DoD S-5210.41-M-V2_AFMAN31-108V2, Enclosure 7, *Nuclear Weapon Security Manual: The Air Force Nuclear Weapon Security Manual for nuclear security deviations*.

3.2.2. For Weapon System Safety Rules, see DoD 3150.2-M, *DoD Nuclear Weapon System Safety Program Manual*.

3.3. General. The NDRP was established to address deviations from nuclear weapons and nuclear weapons systems-related publications to systematically and uniformly identify, assess, and approve by the proper level of command and allow for informed risk decisions to be made. Additionally, the NDRP will:

3.3.1. Evaluate the potential impact of deviations on entire systems since individual deviations by themselves may or may not create vulnerabilities.

3.3.2. Ensure adequate compensatory measures are implemented and remain in place until the deviation is no longer required.

3.3.3. Ensure timely and aggressive actions are taken to apply resources to implement corrective measures to eliminate deviations.

3.3.4. Ensure programmatic/operational risks are fully vetted and accepted by the proper risk acceptance authority.

3.3.5. Provide a feedback mechanism to validate requirements against operational feasibility.

3.4. Functional Responsibilities.

3.4.1. Headquarters USAF.

3.4.1.1. As the Authorizing OPR for Air Force publications and forms, they serve as review authority for deviations to nuclear-related guidance for which they are OPR as stipulated in AFI 33-360, *Publication and Forms Management*. Approval shall ensure adequate compensatory measures have been established to meet guidance intent.

3.4.1.2. Air Force Chief of Safety (AF/SE) will:

3.4.1.2.1. Consolidate annual MAJCOM nuclear deviation reports, evaluate the impacts to nuclear surety, and provide an analysis of the annual reports to CSAF each year. AF/SE will ensure coordination from A7S during development of annual report.

3.4.1.2.2. Ensure deviations are reviewed by the technical authorities and AF Nuclear Surety Council.

3.4.1.2.3. Develop and maintain Air Force authoritative tracking catalog for all deviations.

3.4.2. MAJCOM Commanders will:

3.4.2.1. Designate a MAJCOM NDRP OPR.

3.4.2.2. Submit an Annual Nuclear Surety Deviation Report, no later than 15 February to AFSEC/SEW.

3.4.2.3. Annually certify to the CSAF, through AF/SE, as to the operational risk, compensatory measures, corrective actions, and resulting vulnerabilities.

3.4.3. Lead/Using MAJCOM Commanders will:

3.4.3.1. Serve as the deviation approval and operational risk acceptance authority for nuclear weapons systems and nuclear related facilities.

3.4.3.2. Evaluate operational risks of any deviation to nuclear safety design and evaluation criteria and approve if warranted.

3.4.3.3. Consult Combatant Commanders on all risk management decisions affecting the combat capability of allocated/assigned nuclear systems.

3.4.3.4. Annually report approved deviations to nuclear safety design and evaluation criteria.

3.4.4. MAJCOM NDRP OPR will:

3.4.4.1. Maintain a log of draft and approved deviations and send copies of approved deviations to AFSEC/SEW.

3.4.4.2. Review the deviation request, compensatory measures, associated risks, and proposed corrective actions. Route the request to the MAJCOM functionals.

3.4.4.3. Ensure deviation status is reviewed during MAJCOM Nuclear Surety Councils.

3.4.5. MAJCOM Functionals will:

3.4.5.1. Review deviation requests, compensatory measures, associated risks, and coordinate the deviation with the Headquarters Air Force (HAF) functional.

3.4.5.2. Submit the deviation request to the MAJCOM Commander for approval and risk acceptance.

3.4.5.3. Retain the original (MAJCOM/CC-signed) deviation. Send copies of approved deviations to MAJCOM NDRP OPR for distribution.

3.4.6. Wing Commanders will:

3.4.6.1. Review, and sign requests for deviations as Requestor/Initiator. Submit request for deviations to MAJCOM NDRP OPR, through the NAF (if applicable). (T-1)

3.4.6.2. Include deviation status as a topic during Wing/Base Nuclear Surety Councils. (T-1)

3.4.6.3. Implement compensatory measures immediately upon identification of the deficiency. Pursue/implement corrective actions until the deviation is corrected or no longer required. If deviation cannot be corrected within 30 days a deviation must be submitted to the MAJCOM/CC. (T-1)

3.4.7. Program Managers (PM) will:

3.4.7.1. Provide support to the Lead/Using MAJCOM/CC to evaluate the potential impacts of submitted deviations on nuclear weapons safety design and evaluation criteria. (T-2)

3.4.7.2. Implement programmatic changes as required by applicable guidance. Any programmatic changes should be accompanied with funds. (T-2)

3.5. Deviations and Categories. A nuclear deviation is an inclusive term identifying specific departure from a nuclear weapons and nuclear weapons systems related publications for operational necessity based on strategic and compelling reasons. Nuclear deviations are further categorized as technical, temporary, or permanent deviations depending on duration, threats, and associated vulnerabilities. Note: Deviations do not always equate to vulnerabilities.

3.5.1. Technical. A technical deviation is a departure from a nuclear weapons and nuclear weapons systems related requirement but essentially affords the same level of nuclear surety. Technical deviations do not create vulnerabilities and, as such, do not require compensatory measures, and may be approved for an indefinite period of time.

3.5.2. Temporary. A temporary deviation is the approved temporary continuation of a non-standard condition which deviates from established standard and requires compensatory measures. Temporary deviations shall be approved for a period not to exceed 12 months.

3.5.3. Permanent. A permanent deviation is a departure from a nuclear weapons and nuclear weapons systems related guidance that creates vulnerability and the corrective actions are either not feasible or not cost effective. Permanent deviations require compensatory measures. Permanent deviations need only be approved once and do not require an expiration date. However, the owning MAJCOM will review permanent deviations for validity annually, and whenever criteria or conditions change that may positively or negatively affect them.

3.6. Compensatory Measures. A compensatory measure is an action designed to mitigate risk to an acceptable level. If appropriate, one compensatory measure may suffice for more than one deviation.

3.6.1. Compensatory measures shall be instituted whenever two or more technical deviations, taken together, are determined to constitute a vulnerability.

3.6.2. Compensatory measures shall also be instituted for each temporary and permanent deviation.

3.7. Deviation Submission/Cancellation Process. Deviations will be initiated by local commander and must be reviewed by the applicable HAF functional and then approved by the MAJCOM/CC. Deviation cancellation requests, stemming from the originating organization, shall follow the same process as approval thereby ensuring all the appropriate offices/agencies have verified that corrective actions are sufficient for cancellation. All deviations submissions/cancellations will be submitted on AF IMT 116, *Request for Deviation from Security Criteria*. (T-1)

3.7.1. Deviation requests shall be initiated by the organization tasked to implement the applicable guidance. The request must be routed through the weapon safety manager for approval by the Wing Commander or equivalent. The request will be submitted to the MAJCOM NDRP OPR for tracking, routing, functional review, and approval. (T-2)

3.7.2. Each deviation shall be evaluated and approved on a case-by-case basis. Any level in the chain of command may recommend disapproval of a request for deviation and return the request to the initiator.

3.7.3. When considering a deviation request for a particular system, ensure a thorough review of all other approved deviations currently in effect for that system. This review is to ensure that the collective deviations do not establish an overall system vulnerability greater than the designated compensatory measures.

3.7.4. MAJCOM NDRP OPR will forward request to MAJCOM functional. The MAJCOM functional will review the deviation, compensatory measures, associated risks, and if required, route the deviation request to the HAF functional. The HAF functional may deny the request, recommend approval, or return it to the MAJCOM functional requesting additional information.

3.7.5. The MAJCOM functional will submit the deviation request to the MAJCOM Commander for final approval and risk acceptance. MAJCOM functional will return the approved deviation to the originating organization with courtesy copy to the MAJCOM NDRP OPR.

3.7.6. MAJCOM NDRP OPR will update the tracking status and route approved deviations to AFSEC/SEW.

3.7.7. **(Added-AMC)** The Wing NSM is trained by the MAJCOM Nuclear Surety Manager using a command-developed plan.

3.8. Deviations to Nuclear Safety Design and Evaluation Criteria. Deviations related to the design of a nuclear weapon system shall follow established processes in accordance with AFI 63-131, *Modification Management*, AFI 10-601, *Operational Capability Requirements Development*, AFI 63-101/20-101, *Integrated Life Cycle Management*, AFI 63-103, and AFI 63-125.

3.8.1. If the design conflicts with criteria in AFMAN 91-118 or AFMAN 91-119, *Safety Design and Evaluation Criteria for Nuclear Weapon Systems Software*, PMs shall submit a notification via memorandum to AFSEC/SEW requesting disposition. (T-1)

3.8.2. AFSEC/SEW shall provide direction to comply with policy, obtain a deviation to requirements, or to initiate changes to the publications as appropriate.

3.8.3. If a deviation is required, PM's will submit an AF Form 116 to AFSEC/SEW. If a publication change is required, PMs will submit an AF Form 847 to AFSEC/SEW. (T-1)

3.8.4. Upon receipt of the deviation, AFSEC/SEW will send the AF Form 116 to the applicable Lead/Using MAJCOM NDRP OPR for further coordination and operational risk acceptance. (T-1)

3.8.5. Once the deviation is approved, the Lead/Using MAJCOM NDRP OPR will update tracking status and route the AF Form 116 to AFSEC/SEW.

3.8.6. AFSEC/SEW will return the approved AF Form 116 to the PM. (T-2)

3.9. Risk Management. Commanders at all levels must ensure risks to nuclear weapons and nuclear weapon systems are identified and understood and shall establish procedures to reduce such risks. Notify the Combatant Commander for all issues affecting combat capability of allocated nuclear systems. AFI 90-802, *Risk Management*, will be utilized as a framework for reducing risk to the lowest level commensurate with operational requirements, unless the Office of Secretary of Defense directs a different framework. For acquisition-related programs, risks will be managed in accordance with DoDI 5000.02, *Operation of the Defense Acquisition System*, AFI 63-101/20-101, and MIL-STD-882E, *Systems Safety*. (T-0)

3.10. Annual Reporting. MAJCOM Commanders shall report all nuclear surety deviations annually to AFSEC/SEW who shall forward to the Air Force Chief of Safety (AF/SE). MAJCOM NDRP OPR will prepare the annual report and obtain functional coordination prior to submitting it for MAJCOM/CC approval. MAJCOMs will submit current year AF Forms 116 to AFSEC/SEW NLT 1 February.

3.10.1. The annual nuclear weapon deviation report shall be submitted NLT 15 February and include all deviations valid and cancelled during the reporting period. The reporting period is 1 January through 31 December.

3.10.1.1. AFSEC/SEW will provide MAJCOMs a template NLT 15 October each year for deviation annual report.

3.10.1.2. USAFE shall annually report North Atlantic Treaty Organization (NATO) approved deviations through U.S. European Command (USEUCOM) directly to AFSEC/SEW.

3.10.2. AFSEC/SEW shall consolidate MAJCOM reports, evaluate the impacts to nuclear surety, and provide an analysis of the deviation reports to the CSAF through AF/SE by 1 March. This analysis shall be a quantitative and qualitative evaluation of the impact to nuclear surety resulting from the aggregate of all deviations.

KURT F. NEUBAUER
Major General, USAF
Chief of Safety

(AMC)

MICHAEL R. SEILER, Colonel, USAF
Director of Safety

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

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Abbreviations and Acronyms

AETC—Air Education and Training Command

AF—Air Force

AFI—Air Force Instruction

AFIA—Air Force Inspection Agency

AFMC—Air Force Materiel Command

(Added-AMC) AFMS—Air Force Manpower Standard

ANG—Air National Guard

AFNWC—Air Force Nuclear Weapons Center

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFRIMS—Air Force Records Information Management System

AFSEC—Air Force Safety Center

ALARA—As Low As Reasonably Achievable

(Added-AMC) AOC—Air Operations Center

AS&I—Assembly, Surveillance, and Inspection

AT&L—Acquisition, Technology, and Logistics

C2—Command and Control

CJCSI—Chairman of the Joint Chiefs of Staff Instruction

CNWDI—Critical Nuclear Weapons Design Information

(Added-AMC) COMSEC—Communications Security

DOE—Department of Energy

DoD—Department of Defense

DRU—Direct Reporting Unit

(Added-AMC) DTRA—Defense Threat Reduction Agency

EOD—Explosive Ordnance Disposal

ELO—Engineering Liaison Office

FOA—Field Operating Agency

(Added-AMC) FOUO—For Official Use Only

FRD—Formerly Restricted Data

FSS—Force Support Squadron

HAF—Headquarters Air Force

HQ USAF—Headquarters United States Air Force

INRAD—Intrinsic Radiation

ISV—Integrated Surety Visit

JB—Joint Base

(Added-AMC) JNSEC—Joint Nuclear Surety Executive Course

M&I—Maintenance and Inspection

MAJCOM—Major Command

MDA—Missile Defense Agency

MNCL—Master Nuclear Certification List

MOP—Massive Ordnance Penetrator

MUNSS—Munitions Support Squadron

MXS—Maintenance Squadron

NAF—Numbered Air Force

NATO—North Atlantic Treaty Organization

NCE—Nuclear Certified Equipment

NDRP—Nuclear Deviation Reporting Program

(Added-AMC) NSC—Nuclear Surety Council

NSCCA—Nuclear Safety Cross-Check Analysis

NSI—Nuclear Surety Inspection

(AMC) NSI—Nuclear Surety Inspection

(Added-AMC) NSM—Nuclear Surety Manager NSWG—Nuclear Surety Working Group OI—Operating Instruction

(Added-AMC) NSSAV—Nuclear Surety Staff Assistance Visit

NWSSG—Nuclear Weapon System Safety Group

OPDD—Operational Plan Data Document

OPR—Office of Primary Responsibility

(Added-AMC) OPSEC—Operational Security

PNAF—Prime Nuclear Airlift Force

(Added-AMC) QRC—Quick Reaction Checklist

RDS—Records Disposition Schedule

PM—Program Manager

PRP—Personnel Reliability Program

RD—Restricted Data

RSO—Radiation Safety Officer

SAV—Staff Assistance Visit

SNM—Special Nuclear Material

STS—Stockpile-to-Target Sequence

SVA—Sole Vouching Authority

TCTO—Time Compliance Technical Order

TNSA—Technical Nuclear Safety Analysis

TO—Technical Order

UL—Unauthorized Launch

(Added-AMC) UNSR—Unit Nuclear Surety Representative

USAFE—US Air Forces in Europe

USD—Under Secretary of Defense

USEUCOM—United States European Command

USR—Unit Safety Representative

WSA—Weapons Storage Area

WSSR—Weapons System Safety Rules

WSM—Weapons Safety Manager

WS3—Weapons Storage and Security System

Terms

Abnormal Environment—An environment outside the levels specified for the normal environment described in the stockpile-to-target document. In an abnormal environment the nuclear weapon or nuclear weapon system is not expected to retain full operational reliability. (USAF)

Access Procedures—Those actions taken to locate exactly and to gain access to unexploded explosive ordnance. (DoD)

Accident—An unexpected event involving destruction of, or serious damage to, nuclear weapons, nuclear weapon systems, or nuclear components resulting in an actual or potential threat to national security or to life and property. (USAF)

Accidental Motor Ignition—The unplanned initiation of propulsive burning of a missile stage motor, including the post-boost vehicle, from causes other than the propagation of a launch sequence. (USAF)

Air Force Nuclear Weapons Surety Program—Air Force policies, procedures, and safeguards used to comply with DoD Nuclear Weapon System Safety Standards. (USAF)

Aircraft Monitoring and Control—Equipment installed in aircraft to permit monitoring and control of safing, arming, and fuzing functions of nuclear weapon systems. (JP 1-02, *Department of Defense Dictionary of Military and Associated Terms*)

Ally—Operated Nuclear Weapon System—A nuclear weapon system used by an allied nation with US nuclear weapons that are in US Air Force custody. (USAF)

Arm/Disarm Device—A mechanical or electromechanical device providing a positive interruption of the firing circuit to prevent initiation of an explosive or pyrotechnic train before the device's commanded closure. (USAF)

Arming—Operations that configure a nuclear weapon or nuclear weapon system so application of a single signal will start the action required for obtaining a nuclear detonation. (DoD) As applied to explosives, weapons, and ammunition, the changing from a safe condition to a state of readiness for initiation. (JP 1-02)

As Low As Reasonably Achievable (ALARA)—A major philosophy of current radiation protection practice which requires every reasonable effort be made to keep radiation exposures as far below the dose limits as practical when technical, economic, and social factors are taken into account. (USAF)

Authorization—The critical function preventing unauthorized use of a nuclear weapon system. This function is executed by the weapon system operator's transmission of secure codes (released by National Command Authority direction) to the nuclear weapon system's authorization device or devices to allow prearming, arming, or launching of a nuclear weapon. (USAF)

Automata—Electronic machines, control devices, etc., capable of performing logical, computational, or repetitive routines designed to operate automatically in response to a predetermined set of instructions. (USAF)

Certification—A determination by applicable service that procedures, personnel, equipment, software, facilities, and organizations are capable of safely performing assigned nuclear weapon functions and missions. (DoD)

Certification Effort (Software and Firmware)—The means for verifying a component (hardware or software) complies with AFI 91-107. (USAF)

Certified Critical Component—A critical component that has successfully completed operational certification according to approved technical order procedures. (USAF)

Code Component—Any device, assembly material, software, or information so designated by the National Security Agency. (USAF)

Cognizant Agent—A clandestine agent, with authorized access to a classified system, who conducts or supports an attack against the system. Also, a person whose normal duties afford the knowledge and opportunity to tamper with certified critical components, codes, or the nuclear command and control system of a nuclear weapon system. (USAF)

Combat Delivery Vehicle—A vehicle, with its installed equipment and components, used to deliver a nuclear weapon to a target. (USAF)

Command Disable—A feature which allows manual activation of the nonviolent disablement of critical weapon components. The command disable system may be internal or external to the weapon. (USAF)

Compensatory Measure—An action designed to mitigate risk to an acceptable level. (USAF)

Contribute To—This term is applied when an unauthorized launch (UL) study team determines a component would play an important part in an UL scenario but could not alone cause a launch. (USAF)

Credible Abnormal Environment—An abnormal environment that has a plausible and reasonable probability of occurrence under a given set of circumstances. (USAF)

Credible Threat or Scenario—A threat or scenario, fitting the assumptions and ground rules in AFI 91-106, *Unauthorized Launch, Threat Mitigation, and Launch Action Studies,* that a federal agency responsible for establishing policy with regard to the type of vulnerability identified in the threat or scenario (i.e., National Security Agency when addressing code components) has determined to be credible. (USAF)

Critical—A term describing a function, circuit, or activity that directly controls the authorizing, prearming, arming, or launching or releasing of a nuclear weapon, or the targeting of a ground-launched nuclear weapon system. (USAF)

Critical Component—A component of a nuclear weapon system that if bypassed, activated, or tampered with could result in or contribute to deliberate or inadvertent authorizing, prearming, arming, or launch of a combat delivery vehicle carrying a nuclear weapon, or the targeting of a nuclear weapon to other than its planned target. AFSEC/SEW designates critical components. (USAF)

Critical Fault—Any nuclear weapon system malfunction that results in inadvertent application of control signals or power to the bomb, warhead, or missile propulsion system; degradation in the integrity of prearm, launch, or release primary safety features; unintentional issuance of critical function command signals; or inability to determine weapon system safe status. (USAF)

Current Limited—Monitor or test currents limited so that the maximum current which can be delivered to a nuclear weapon for monitoring or testing purposes will be less than required to operate the most sensitive component in the arming and fuzing sequence. (USAF)

Custody—The responsibility for the control of, transfer and movement of, and access to nuclear weapons and components. Custody also includes the maintenance of accountability for nuclear weapons and components. (DoD)

Design Decertification—Action by proper authority to remove a system or component from design certification. (USAF)

Deviation—A specific departure from a nuclear weapons and nuclear weapons systems related publications for operational necessity based on strategic and compelling reasons. (USAF)

Diagnostic Procedures—Those actions taken to identify and evaluate unexploded explosive ordnance. (DoD)

Dynamic Load—An external force or combination of forces (i.e., g-loads, vibration loads, shock loads, and centrifugal loads) that result in acceleration of an object. (USAF)

Electrical Isolation—Separation of electrical circuits, signals, or data by physical isolation or the use of any property (i.e., time, phase, amplitude, or frequency) that distinguishes one electrical signal from all others to preclude ambiguity, interference, or altered information. (USAF)

Electro-explosive Device—An explosive or pyrotechnic component that initiates an explosive, burning, electrical, or mechanical train and is activated by the application of electrical energy. (JP 1-02)

Electromagnetic Compatibility—The ability of systems, equipment, and devices that utilize the electromagnetic spectrum to operate in their intended operational environments without suffering unacceptable degradation or causing unintentional degradation because of electromagnetic radiation or response. It involves the application of sound electromagnetic spectrum management; system, equipment, and device design configuration that ensures interference-free operation, and clear concepts and doctrines that maximize operational effectiveness. (JP 1-02)

Electromagnetic Interference—Any electromagnetic disturbance that interrupts, obstructs, or otherwise degrades or limits the effective performance of electronics and electrical equipment. It can be induced intentionally, as in some forms of electronic warfare, or unintentionally, as a result of spurious emissions and responses, intermodulation products, and the like. (JP 1-02)

Electromagnetic Pulse—The electromagnetic radiation from a nuclear explosion caused by Compton-recoil electrons and photoelectrons from photons scattered in the materials of the nuclear device or in the surrounding medium. The resulting electric and magnetic fields may couple with electrical and electronic systems to produce damaging current and voltage surges. May also be caused by nonnuclear means. (JP 1-02)

Electromagnetic Radiation—Radiation made up of oscillating electric and magnetic fields and propagated with the speed of light. Includes gamma radiation, X-rays, ultraviolet, visible, and infrared radiation, and radar and radio waves. (JP 1-02)

Emergency—An unexpected occurrence or set of unexpected circumstances in which personnel or equipment unavailability due to accident, natural event, or combat, may demand immediate action that may require extraordinary measures to protect, handle, service, transport, or employ a nuclear weapon. (DoD)

Engineering Review—A review of the nuclear safety engineering evaluation and program documentation by an Air Force engineering agency independent of the organization performing the engineering evaluation. (USAF)

Exclusion Area— A designated area immediately surrounding one or more nuclear weapons(s). Normally, the boundaries of the area are the walls, floors, and ceiling of a structure or are delineated by a permanent or temporary barrier. In the absence of positive measures, access to the exclusion area constitutes access to the nuclear weapon(s).

Explosive Ordnance Disposal Procedures—Those particular courses or modes of action taken by EOD personnel for access to, diagnosis, rendering safe, recovery, and final disposal of explosive ordnance or any hazardous material associated with an EOD incident. (JP 1-02)

Facility—One or multiple buildings used for maintenance, handling, and storage of nuclear weapons, the associated physical security features, and supporting infrastructure located within CONUS based WSAs. (USAF)

Final Disposal Procedures—The final disposal of explosive ordnance that may include demolition or burning in place, removal to a disposal area, or other appropriate means. (DoD)

Facility Lifting and Suspension Systems—Equipment (i.e., a hoist, crane, or suspended load frame) installed in a facility and used to lift or support nuclear weapons. (USAF)

Fail-Safe—A characteristic of a fuze system, or part thereof, designed to result in a dud round when one or more safety features malfunction. A design feature of a nuclear weapon system or component that ensures a critical function or weapon damage will not occur because of a failure in the system or component. (USAF)

Firmware—Combination or executable computer programs and data (software) stored in any form of read-only memory that will be unalterable during program execution. (USAF)

First-Level Interface Software—Software that controls the critical functions of a nuclear weapon system. (USAF)

Hardware—Generic term dealing with physical items as distinguished from its capability or function such as tools, implements, instruments, devices, sets, fittings, trimmings, assemblies, subassemblies, components, and parts. The term is often used in regard to the stage of development, as in the passage of a device or component from the design stage into the hardware stage as the finished object. (JP 1-02) In data automation, the physical equipment or devices forming computer and peripheral components. (JP 1-02)

Hardwire—A dedicated discrete electrical circuit. (USAF)

Inadvertent Programmed Launch—The inadvertent entry into terminal countdown or launch countdown and the resultant launch of a missile to a predetermined target. (USAF)

Incident—An unexpected event that presents the potential for negative consequences that may be caused by accidental or intentional acts, acts of God, unfavorable environmental conditions, or other factors. (DoD)

Independent Verification and Validation—The analysis and test of computer software by an organization that is separate from the development contractor or organization. (USAF)

Informational Storage Media—Documents, tapes, disks, cards, plugs, memories, and other devices used to store information. (USAF)

Installation Radiation Safety Office (RSO)—A person designated by the installation commander to conduct the base-wide radiation safety program and assist the unit RSO in maintaining a comprehensive radiation safety program. This individual will usually be the base bioenvironmental engineer or health physicist, if assigned, but may be a senior bioenvironmental engineering technician. (USAF)

Integrated Surety Visit—A technical visit by AFSEC subject matter experts to review areas for compliance with directives and policies rated during NSIs. CJCSI 3263.05 identifies areas to be reviewed. Visits are at the request of unit commanders and the results will only be provided to the requesting commander. (USAF)

Intrinsic Radiation (INRAD)—Ionizing radiation emitted through the weapon surface or directly from exposed components of nuclear weapons. (USAF)

Ionizing Radiation—Electromagnetic or particulate radiation capable of causing ionization in its passage through matter. Alpha, beta, gamma, X-rays, and neutrons are examples of ionizing radiation. (USAF)

Jettison—The selective release of stores from an aircraft other than for normal attack. (JP 1-02)

Launch—The transition from static repose to dynamic flight of a missile. (JP 1-02)

Launch Action Study—An analysis of a specific weapon system component to determine the actions necessary to cause the component to contribute to an unauthorized launch. (USAF)

Launch Action Threat—A description of how an individual component can be tampered with to achieve a specific unauthorized result. (USAF)

Launch Activation Path—The path by which information and energy flow to effect a missile launch. (USAF)

Launch Control Point—The control center from which system operators control, monitor, and launch a ground-launched missile. (USAF)

Launch Point—The geographical area or facility from which a ground-launched missile is launched. (USAF)

Limited-Life Component—A weapon component that deteriorates in some respect over time, and must be replaced periodically during weapon stockpile life: principle classes of limited-life components are reservoirs, neutron generators, and parachutes.

Military Characteristics—Those characteristics of equipment upon which depends its ability to perform desired military functions. Military characteristics include physical and operational characteristics but not technical characteristics. (JP 1-02)

Modifications—Physical or functional configuration changes to equipment or software. (USAF)

Monitor Current—A limited current introduced into a nuclear weapon to determine the functional state of selected components. (USAF)

Multiplexed System—A signal transmission system in which two or more signals share one transmission path. (USAF)

No-Lone Zone—An area where the Two-Person Concept must be enforced because it contains a nuclear weapon, nuclear weapon system, or certified critical component. (USAF)

Noncombat Delivery Vehicle—Any vehicle, other than combat vehicles, used to move nuclear weapons. (USAF)

Nonsensitive Task—Any Nuclear Safety Cross-Check Analysis (NSCCA) activity in which no opportunity exists for an individual to affect the outcome of the NSCCA, or where a subsequent review or analysis exists that would reveal any act of omission or commission affecting the NSCCA outcome. (USAF)

Nonspecialized Equipment—Equipment used with nuclear weapons but not specifically designed for that purpose. (USAF)

Normal Environment—The expected logistical and operational environments defined in the stockpile-to-target sequence document that the nuclear weapon system is required to survive without degrading operational reliability. (USAF)

Nuclear Cargo—A nuclear weapon or nuclear component (except limited life components) prepared for nuclear logistics movement. (USAF)

Nuclear Certification Impact Statement—A description and evaluation of the potential nuclear surety impact a proposed modification or test program may have on an assembled weapon system or its subsystems. (USAF)

Nuclear Certified Equipment—Peculiar (i.e., system specific) and common specialized or non-specialized support equipment whose design meets applicable design criteria and is nuclear certified IAW AFI 63-125 and identified in the MNCL. (USAF)

Nuclear Certified Item—Procedures, equipment, software, facilities, systems, subsystems or components which are nuclear certified IAW AFI 63-125. (USAF)

Nuclear Command and Control System—Hardware, software, and firmware components required for proper authorization-to-launch sequence. (USAF)

Nuclear Component—A Major subassembly of a nuclear explosive that contains Special Nuclear Material (SNM) in quantities sufficient to fuel a nuclear explosion (e.g., pit or canned subassembly). Note that subassemblies containing tritium are not nuclear components.

Nuclear Consent Function—A function implemented by a deliberate act that provides two-person control over the release system unlock and nuclear weapon prearm functions. (USAF)

Nuclear Cross-Check Identified Software—Includes all first-level interface software and certain second-level interface software identified by AFSEC/SEW (the Nuclear Weapon System Safety Group may recommend software) as cross-check identified software. (USAF)

Nuclear Logistic Movement—The transport of nuclear weapons in connection with supply or maintenance operations. Under certain specified conditions, combat aircraft may be used for such movements. (JP 1-02)

Nuclear Operating Command—The major command responsible for operating, maintaining, and providing security for the nuclear weapon system. (USAF)

Nuclear Safety-Certified Procedures—Procedures approved for use with nuclear weapons, nuclear safety-certified equipment, or nuclear weapon systems and published in Air Force technical orders or technical publications. (USAF)

Nuclear Safety Certified Software—Software that has received nuclear safety design certification by AFSEC/SEW. (USAF)

Nuclear Safety Criteria—Design and evaluation criteria for ensuring nuclear safety is a basic system engineering and procedural requirement in nuclear weapon and logistics systems. (USAF)

Nuclear Safety Cross-Check Analysis—An analysis by an organization that is independent of the software developer to ensure critical software does not contain improper design, programming, fabrication, or application that could contribute to: Unauthorized or inadvertent authorization, prearming, arming, or launching or releasing of a nuclear weapon or nuclear weapon system. Premature or unsafe operation of a nuclear weapon system. Delivery of a nuclear weapon outside the specified boundary of the planned target. Unauthorized, improper, or erroneous display of status or classified information that could degrade nuclear surety. Improper handling of classified cryptographic codes, invalid verification, or the retrieval of such codes by unauthorized persons in a manner that could degrade nuclear surety. (USAF)

Nuclear Safety Design Certification—A determination by AFSEC/SEW that all applicable nuclear safety criteria for a given hardware or software design have been met and the design is authorized for use with nuclear weapons upon nuclear certification. Also referred to as "nuclear safety certification" or "design certification." (USAF)

Nuclear Safety Discrepancy Report—A discrepancy report that references the program material or output in which the discrepancy was detected and provides a detailed description of the problem with reference to the nuclear safety objective violated. (USAF)

Nuclear Surety Culture—Nuclear surety culture is a critical body of supporting knowledge which frames and explains the supporting concepts and broader national and international importance of our nation's nuclear deterrence mission as well as the criticality of the mission our nuclear professionals perform each day. It includes the "whys" of nuclear surety, essential strategy/policy elements, reasons for having pride in their mission, current nuclear issues related to allies and adversaries and system sustainment and modernization information. It is vitally important to shaping individual and institutional attitudes that Airmen across the Air Force have toward a variety of key nuclear mission issues. It also plays a critical role in the Nuclear Enterprise's overall professional development and individuals' desire to make the "nuclear business" their long-term career. (USAF)

(Added-AMC) Nuclear Surety Manager (NSM)— As used in this supplement, the term NSM identifies individuals performing nuclear surety functions as a primary duty at AMC headquarters and wing-level.

Nuclear Surety Program Visit—A review by AFSEC subject matter experts of all or portions of a unit's Nuclear Surety Program. Includes, but not limited to, nuclear surety awareness briefings, review of training programs, and town hall type meetings to answer questions regarding nuclear surety. Visits are at the request of unit commanders and the results will only be provided to the requesting commander. (USAF)

(Added-AMC) Nuclear Surety Staff Assistance Visit (NSSAV)— The Secretary of the Air Force established the NSSAV program to assist nuclear tasked units, on a non-attribution basis, in maintaining effective nuclear surety programs. The NSSAV is an opportunity to receive assistance from experienced headquarters personnel who write nuclear surety policy and guidance. It is not an inspection nor is it intended to prepare units to pass Nuclear Surety Inspections (NSI). NSSAV will not give a rating, score, grade, or assessment statements about units, however if the NSSAV team identifies critical systemic deficiencies, they can recommend that the wing conduct root cause analysis of each critical deficiency and provide results to the NSSAV Lead Division or Team Chief. The NSSAV also provides an opportunity for resolution and clarification of issues between the unit and headquarters functional managers. See AFI 91-121 *Nuclear Surety Staff Assistance Visit (NSSAV) Program*, for NSSAV program management

Nuclear Weapon—A complete assembly (i.e., implosion type, gun type, or thermonuclear type) in its intended ultimate configuration which, upon completion of the prescribed arming, fusing, and firing sequence, is capable of producing the intended nuclear reaction and release of energy. (JP 1-02)

Nuclear Weapon System—A combat delivery vehicle with its nuclear weapon or weapons and associated support equipment, noncombat delivery vehicles, facilities, and services. (USAF)

Nuclear Weapon System Safety Group—The NWSSG is composed of representatives from applicable Air Force major commands, Combatant Commands, Air Force Security Forces Center, Department of Energy, and Defense Threat Reduction Agency and is chaired by an appointee from AFSEC/SEW. It conducts all nuclear weapon system safety studies and operational safety reviews to evaluate Air Force nuclear weapon systems and ensure the DoD Nuclear Weapon System Surety Standards are met in weapon system design and operations. (USAF)

Nuclear Weapon System Safety Rules—Under Secretary of Defense for Acquisition, Technology, and Logistics (USD (AT&L)) approved procedural safeguards governing all operations with nuclear weapons or nuclear weapon systems. (USAF)

Nuclear Weapons Surety— Policies, procedures, controls, and actions that encompass safety, security, and control measures, which ensure there will be no nuclear weapons accidents, incidents, unauthorized detonation, or degradation of weapon effectiveness during its Stockpile-to-Target Sequence (STS). (DoD)

Operational Certification—The process of verifying a system or critical component is functioning as design certified and all credible threats and scenarios are mitigated. (USAF)

Operational Decertification—Action by proper authority to remove a system or component from operational use. (USAF)

Operational Plan Data Document (OPDD)—A document that describes normal nuclear weapon system operations in the stockpile-to-target sequence during peacetime and periods of

increased tension. The OPDD serves as a source document for the nuclear weapon system safety rules. (USAF)

Opportunity—The time and physical proximity needed to tamper with or damage a nuclear weapon, nuclear weapon system, or certified critical component. (USAF)

Permanent Deviation— A departure from a nuclear weapons and nuclear weapons systems related publications that exceeds 48 months and creates a vulnerability. (USAF)

Permissive Action Link—A family of devices and subsystems designed to reduce the possibility of obtaining nuclear detonation from a nuclear warhead without the use (insertion) of a controlled numerical code. (DoD)

Personal Dosimeter—A device used to monitor the ionizing radiation exposure of an individual. (USAF)

Physical Isolation—The physical separation of wiring, parts, modules, assemblies, and similar items to preclude physical contact or interaction so as to prevent common malfunctions and activation of critical functions in all environments. (USAF)

Positive Measure—A design feature, procedure, safety rule, accident prevention or mitigation measure that works to reduce the likelihood, severity, or consequence of an accidental or deliberate threat involving a nuclear weapon or nuclear weapon system. An example of a specific positive measure would be a permissive action link designed to prohibit the arming of the weapon, except when properly authorized. An example of a general positive measure would be the presence of a certified firefighting capability at an operational air base. (USAF)

Prearm Command Signal—A signal to the weapon that the personnel controlling the weapon want it to function and produce a nuclear detonation. (USAF)

Prearming—Operations that configure a nuclear weapon system so that arming, firing, launching, or releasing will start the sequence necessary to produce a nuclear detonation. (DoD)

Prime Nuclear Airlift Force—Those aircrews, aircraft, and other functions provided for peacetime support of logistical airlift of nuclear weapons and nuclear components. (USAF)

Program Manager (PM)— The designated individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user's operational needs. The PM shall be accountable for credible cost, schedule, and performance reporting to the Missile Defense Agency (MDA). (DoD)

Radiation Safety Officer—The functional title assigned to an individual designated by the commander to manage a radiation safety program and provide advice on the hazards associated with radiation and the effectiveness of measures to control these hazards. The following functional titles are not intended to denote either a commissioned status or an occupational position title within the Air Force.

Radioactive Material—Any material or combination of materials that spontaneously emit alpha, beta, gamma, X-ray, or neutron radiation. (USAF)

Recovery Procedures—Those actions taken to recover unexploded explosive ordnance. (DoD)

Release—In air armament, release is the intentional separation of a free-fall aircraft store from its suspension equipment for purposes of employment of the store. (JP 1-02)

Separation of a missile from a carrier aircraft with the intended result being programmed flight to target. (USAF)

Reliability—The ability of a system and system parts to perform their mission without failure, degradation, or demand on the support system. (USAF)

Render-Safe Procedures—The portion of the EOD procedures involving the application of special EOD methods and tools to provide for the interruption of functions or separation of essential components of unexploded explosive ordnance to prevent an unacceptable detonation. (DoD)

Reversion—The process or event of returning to the original state, phase, or condition. (USAF)

Risk— The probability and severity of effect on, or adverse impact to, nuclear surety produced by the aggregate deviations from nuclear weapons and nuclear weapons systems related publications. (USAF)

Safe and Arm Device—A device that provides electrical and mechanical interruption of the firing circuits or mechanical interruption between the initiator and the subsequent explosive or pyrotechnic train. (USAF)

Safe Haven—Designated areas to which noncombatants of the US Government's responsibility, and commercial vehicles and materiel, may be evacuated during a domestic or other valid emergency. (JP 1-02) Temporary storage provided Department of Energy classified shipment transporters at Department of Defense facilities in order to ensure safety and security of nuclear material and nonnuclear classified material. Also includes parking for commercial vehicles containing Class A or Class B explosives. (JP 1-02)

Scrolling—In a multifunction control and display system, the replacement of the active nuclear weapon system function with a nonnuclear function. (USAF)

Second-Level Interface Software—Software that may interact with first-level interface software but does not control any critical functions of a nuclear weapon system. (USAF)

Security (Internal)—Design features internal to the nuclear weapon system or nuclear weapon that prevent unauthorized use (i.e., use control). (USAF)

Security (Physical)—The part of security concerned with physical measures designed to safeguard personnel, to prevent unauthorized access to equipment, installations, material and documents; and to safeguard them against espionage, sabotage, damage, and theft. (DoD)

Sensitive Task—Nuclear Safety Cross-Check Analysis activity in which an individual could cause or allow unauthorized programming to be introduced into a nuclear weapon system. (USAF)

Significant Nuclear Yield—The energy released through nuclear fission or fusion that is equivalent to or greater than the energy released by detonation of four pounds of TNT. (USAF)

Simultaneous Presence—The storage of nuclear weapons and conventional munitions in the same facility. (USAF)

Software—A set of computer programs, procedures, and associated documentation concerned with the operation of a data processing system; e.g., compilers, library routines, manuals, and circuit diagrams. (JP 1-02)

Software Advisory Group—A forum of interested parties to discuss the software nuclear safety design certification effort and provide a consensus of resolutions on nuclear safety concerns. (USAF)

Sole Vouching Authority—The SVA is responsible for ensuring the need of individuals to enter an exclusion area; this includes aircraft generation exclusion areas. Only one SVA is permitted per exclusion area. The SVA will ensure only one entry control point at one time is used to control access to an exclusion area. NOTE: Unless custody of weapons has been transferred, host-nation personnel will not act as the SVA. (DoD)

Specialized Equipment—Equipment designed specifically for use with nuclear weapons. (USAF)

Split-Handling—A stringent procedure used to maintain a launch function separation that was intentionally designed into two or more different critical components. This procedure prevents a single individual or Two-Person Concept team from having access to the entire launch function. (USAF)

Split-Knowledge—The separation of information contained in the complete certified critical component so an individual or Two-Person Concept team is denied knowledge of the total information. (USAF)

Static Load—A load imposed during normal operations (in normal environments) in a static state. (USAF)

Stockpile-to-Target Sequence—The order of events involved in removing a nuclear weapon from storage and assembling, testing, transporting, and delivering it on the target. (JP 1-02) A document that defines the logistical and employment concepts and related physical environments involved in the delivery of a nuclear weapon from the stockpile to the target. It may also define the logistical flow involved in moving nuclear weapons to and from the stockpile for quality assurance testing, modification and retrofit, and the recycling of limited life components. (JP 1-02)

Stores Management System—The portion of the aircraft system that provides weapon control, release, and monitor functions. (USAF)

Support Equipment—Includes all equipment required to perform the support function, except that which is an integral part of the mission equipment. It does not include any of the equipment required to perform mission operation functions. Support equipment should be interpreted as tools, test equipment, automatic test equipment (when used in a support function), organizational, field, and depot support equipment, and related computer programs and software. (USAF)

Tamper—To knowingly perform an incorrect act or unauthorized procedure involving a nuclear weapon, nuclear weapon system, or certified critical component. (USAF)

Tamper Detection Indicators—A sealing method that provides evidence in the event a critical component has been tampered with or inadvertently activated. (USAF)

Targeting—Operations that involve identifying specific target sets, transferring target data to a guidance computer, and following the programmed flight path to the specified target. (USAF)

Technical Deviation— A departure from a nuclear weapons and nuclear weapons systems related publications, but does not create vulnerabilities nor require compensatory measures. (USAF)

Technical Nuclear Safety Analysis (TNSA)—An independent technical analysis of a nuclear weapon system and its associated operational procedures. The TNSA provides the Nuclear Weapon System Safety Group with an independent opinion as to whether the weapon system's design safety and security features, in conjunction with its operational procedures, satisfy the DoD Nuclear Weapon System Safety Standards. (USAF)

Temporary Deviation— A departure from a nuclear weapons and nuclear weapons systems related publications that creates a vulnerability. Temporary deviations shall not exceed 48 months. (USAF)

Third-Party Agent—Any individual who does not meet the criteria of a cognizant agent. (USAF)

Time-Division Multiplexing—The transmission of information from several signal channels through one communication system with different channel samples staggered in time to form a composite pulse train. (USAF)

Two-Person Concept—Designed to ensure that a lone individual is denied access to nuclear weapons, nuclear weapon systems or critical components, never allowing the opportunity for tampering, damage, or an unauthorized act to go undetected. The Two-Person concept requires the presence at all times of at least two authorized persons, each certified under PRP, knowledgeable in the task to be performed, familiar with applicable safety and security requirements and each capable of promptly detecting an incorrect act or improper procedure with respect to the task to be performed. Both members must have completed required nuclear surety and PRP training.

Unauthorized Launch—A deliberate unauthorized act that causes any movement (resulting from the direct impulse of a propulsion subsystem) of a nuclear weapon mated to a ground-launched missile.

Unauthorized Launch Report—A documented analysis of a nuclear weapon system's susceptibility to unauthorized launch. (USAF)

Unauthorized Launch Scenario—A complete account of how an unauthorized launch can be achieved by using specific launch action threats. The scenario may include one or more launch action threats. It will describe the procedures the agent needs to follow, the tools needed for each step of the procedure, and the normal operating conditions that must be overcome. (USAF)

Unique Signal—A digital or analog signal that operates only one specific and corresponding critical function by allowing the receiver to discriminate this signal from all other signals in the nuclear weapon system and from those signals that may be generated accidentally or applied from outside the nuclear weapon system. (USAF)

(Added-AMC) Unit Nuclear Surety Representative (UNSR)— As used in this supplement, the term UNSR identifies an individual responsible for many of the nuclear surety program requirements at the group and squadron level.

Unit RSO—A person designated by the unit commander to act as the single focal point for unit radiation safety matters and coordinate radiation protection activities with the base RSO. Each operational unit that maintains or stores nuclear weapons must have a unit RSO. (USAF)

Use Control—The control of unauthorized use or detonation of a nuclear weapon. Includes passive and active protection, and disablement systems.

Volatile Memory—A storage medium that loses information when power is removed from the system. (USAF)

Vulnerability— The susceptibility to any action by any means through which its war potential or combat effectiveness may be reduced or its will to fight diminished. (USAF)

Weapons Safety Manager—An individual who manages a base, wing, or equivalent safety program consisting of explosives safety, missile safety, nuclear surety, or any combination of these. (USAF).

Attachment 2

NUCLEAR SURETY AUGMENTATION PROGRAM

A2.1. Purpose and Scope. AFSEC/SEW provides assistance to the MAJCOM/SE on request. AFSEC personnel may augment MAJCOM inspections, staff assistance efforts, or special interest evaluations relating to nuclear surety at any level within the command.

A2.2. Coordination. The MAJCOM safety office will forward requests to AFSEC/SEW. Include a proposed schedule and locations to be visited. AFSEC/SEW will respond with the level of support that can be provided and proposed team composition. The MAJCOM is responsible for making any other required notifications.