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SECRETARY OF THE AIR FORCE**



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Supplement**

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Safety

**AIR FORCE NUCLEAR WEAPONS
SURETY PROGRAM**

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This Instruction implements AFPD 91-1, Nuclear Weapons and System Surety. This publication is consistent with AFPD 13-5, 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 radioactive materials are responsible for compliance. This Instruction is applicable to the Air Force Reserve (AFR) and Air National Guard (ANG) units performing nuclear missions. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, Recommendation for Change of Publication; route AF IMT 847s from the field through the appropriate functional's chain of command. Send major command (MAJCOM) supplements to AFSC/SEWN, 9700 G Avenue SE, Kirtland AFB NM 87117-5670, for coordination before publication. Unless noted otherwise, AF/SE is the waiver authority for

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(USAFE) AFI 91-101, 13 October 2010, is supplemented as follows: This supplement applies to United States Air Forces in Europe (USAFE) nuclear-capable units and to all personnel concerned with maintenance, security, on-load, off-load, transport or storage of nuclear weapons and associated nuclear material and components. It does apply to Air Force Reserve Command (AFRC) or Air National Guard (ANG) units or members performing nuclear missions within USAFE. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, Management of Records, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS) on the AF Portal: https://www.my.af.mil/afirms/afirms/afirms/rds/rds_series.cfm. Refer recommended changes and questions about this publication to the OPR using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847 from the field through the appropriate functional chain of command.

SUMMARY OF CHANGES

This interim change (IC) adds new language in the introductory paragraph, specifically the second sentence, to make this publication consistent with AFPD 13-5, Nuclear Enterprise. This IC also adds AFPD 13-5 in the reference section of Attachment 1.

(USAFE) Provides information for the USAFE nuclear surety program management. Requirements from AFI 63-125 and AFI 91-103, USAFESUP1 have been intergrated into this supplement.

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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 retirement from the inventory.

1.2. Safety 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 3150.2, *DOD Nuclear Weapon System Safety Program*. The DOD safety standards are:

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

1.2.2. 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.

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

1.2.4. There shall be positive measures to ensure adequate security of nuclear weapons, pursuant to DODM S-5210.41-M_AFMAN31-108V1, *The Air Force Nuclear Weapon Security Manual*, DODM S-5210.41-M_AFMAN31-108V2, *General Nuclear Weapon Security Procedures*, and DODM S-5210.41-M_AFMAN31-108V3, *Nuclear Weapon Specific Requirements*.

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 important to the United States. The following is not an all inclusive list of restrictions dealing with nuclear weapons. Commanders should review the Weapon System Safety Rules (WSSR) for their specific weapon system(s) found in AFIs 91-111 thru 91-117.

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.

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

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. Do not store nuclear weapons and conventional munitions together, except:

2.1.3.1. As part of flightline or protective aircraft shelter operations conducted according to nuclear weapon system safety rules.

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 for storage requirements of nuclear weapon components within a weapons storage and security system (WS3) vault.

2.1.3.2. (USAFE) For operations within USAFE follow guidance from AFI 91-112, *Safety Rules for US/NATO Strike Fighters*.

2.1.3.3. The Wing/CC 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 and initiate PINNACLE EMERGENCY EVACUATION (OPREP-3PEV) procedures prescribed in AFI 10-206, *Operational Reporting*. Storage for more than 72 hours requires MAJCOM/CC approval.

2.1.3.4. Storage of nuclear and conventional munitions within a WSA facility for more than 90 days requires a waiver be granted by AF/SE. At a minimum, the waiver shall include a mitigation plan containing: the reasons for requesting the waiver, risk assessment, any corrective action or actions to ultimately correct the waiver, and expected duration of the waiver. While the waiver is in existence it will be reviewed at least quarterly by the affected Wing/CC and MAJCOM/CC for validity and progress updates.

2.1.4. Implement local procedures to:

2.1.4.1. Prohibit direct overflight, 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.

2.1.4.2. Ensure aircraft with forward firing ordnance, to the maximum extent possible, are not parked pointed toward Prime Nuclear Airlift Force (PNAF) flightline operations and active convoy routes.

2.1.4.3. Ensure aircraft with forward firing ordnance are limited, to the maximum extent possible, from sweeping across PNAF flightline operations and active convoy routes.

2.1.4.4. Prohibit direct overflight of PNAF aircraft during ground operations within that airspace controlled by the base.

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

2.2.1. Air Force Chief of Safety (AF/SE) oversees the Air Force Nuclear Weapons Surety Program.

2.2.1.1. Establishes program requirements.

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

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

2.2.1.4. Advises Office of the Secretary of the Air Force, Office of the Assistant Secretary (Acquisition) (SAF/AQ) of required nuclear surety technology.

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

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

2.2.1.7. Provides, at the request of commanders, Nuclear Surety Program Visits and Functional Expert Visits to assist in developing a robust and compliant nuclear surety program.

2.2.1.8. Establishes the minimum content of the Nuclear Surety training program.

2.2.1.8.1. Creates and distributes standardized nuclear surety lesson plan and testing material to MAJCOM Chiefs of Safety.

- 2.2.1.8.2. Provides the testing material to the MAJCOM Chiefs of Safety.
- 2.2.2. Deputy Chief of Staff, Operations, Plans and Requirements (AF/A3/5) is the single point of contact to the Joint Staff.
- 2.2.3. Assistant Chief of Staff, Strategic Deterrence & Nuclear Integration (AF/A10) develops policy for SECAF approval and guidance, and sets goals and priorities for nuclear surety technology.
 - 2.2.3.1. Provides classification guidance and publishes standards for controlling defense nuclear information.
 - 2.2.3.2. Provides coordinated 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. The Director of Logistics (AF/A4L) is the single point of contact for nuclear weapon and nuclear weapon system logistic matters. AF/A4L develops and publishes nuclear weapons and delivery systems maintenance and supply chain guidance.
 - 2.2.4.2. The Civil Engineer (AF/A7C) is the single point of contact for nuclear weapon explosive ordnance disposal matters.
 - 2.2.4.3. Air Force Director of Security Forces (AF/A7S):
 - 2.2.4.3.1. Develops and publishes guidance for the physical security of nuclear weapons and nuclear weapon systems.
 - 2.2.4.3.2. Evaluates 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), as appropriate:

- 2.3.1. Establish a nuclear surety program and provide guidance to subordinate units.
- 2.3.2. Ensure compliance with pertinent AF guidance and TOs.
- 2.3.3. Establish a program to ensure personnel are trained and certified on the following applicable functional tasks:
 - 2.3.3. (USAFE) The USAFE Nuclear University is a training initiative designed to raise the level of Nuclear Weapons associated training and awareness throughout the command. The Nuclear University curricula consist of courses taught by USAFE/A3/10N and other directorates. Each course is specifically tailored for individuals in different levels of the Nuclear Surety arena. Course details are listed below. Personnel eligible/required to attend courses will schedule training through their respective Munitions Support Squadron (MUNSS) training Noncommissioned Officer in Charge (NCOIC) or Main Operating Base (MOB) training function. In-residence courses will be held at Ramstein Air Base (AB), Germany (GE). HQ USAFE will fund mandatory attendees; requests for subsequent “refresher” training will be at the unit’s expense. Required training will be accomplished

within 6 months of duty assignment and attendees must have a minimum of 6 months retainability prior to class start date. If the training requirement or retainability is not met, the unit must request a waiver from Chief, Nuclear Operations Division (HQ USAFE/A3/10N) through the respective Group Commander (CC). Submitted waiver requests will be considered on a case-by-case basis. **Table 2.1** is a course break down and reflects Mandatory (M) / Optional (O) attendee requirements.

2.3.3.1. Nuclear weapons handling, storage, and maintenance.

2.3.3.2. Loading and unloading of weapons.

2.3.3.3. Mate and demate of weapons.

2.3.3.4. EOD component diagnosis and recovery procedures.

2.3.3.5. Security procedures.

2.3.3.6. Custody procedures.

2.3.3.7. Operational control.

2.3.3.8. Weapon convoys.

2.3.3.9. Nuclear certified equipment tracking and flag word reporting at both nuclear and non-nuclear units.

2.3.3.10. **(Added-USAFE)** USAFE Nuclear University In-Residence Courses. Personnel who have already had these courses at a previous base are not required to attend. If they attend, they will be funded only on a case-by-case basis.

2.3.3.10.1. **(Added-USAFE)** Senior Leaders Nuclear Course (SLNC). The course is intended to prepare senior leaders (Squadron, Group and Wing Commanders) by introducing them to the basic concepts and programs that support the United States (U.S.) Nuclear Surety Program. Classes may be taught upon request at the requesting unit's station. Please contact the Chief Nuclear Operations Division (HQ USAFE/A3/10N) for more information. See Table 2.1 for M/O attendee requirements.

2.3.3.10.2. **(Added-USAFE)** Managers Course. This course is designed to provide extensive hands-on and practical exercises to all officer and senior noncommissioned officer (SNCO) surety leaders. All MUNSS/MOB officers and SNCOs with a nuclear surety mission and not required to attend may request training through HQ USAFE/A3/A10N. See Table 2.1 for M/O attendee requirements.

2.3.3.10.3. **(Added-USAFE)** Weapons Maintenance (Mx) Supervisors Course. The course is designed to prepare weapons maintenance supervisors for the unique challenges of managing a USAFE weapons maintenance section/flight. The course will cover a wide range of weapons maintenance fundamentals, such as WS3 Communications Security (COMSEC), Quality Assurance (QA), maintenance management and shipment scheduling, Permissive Action Link (PAL) policy and procedures, weapons maintenance and inspection criteria, and Unsatisfactory Reports (UR). See Table 2.1 for M/O attendee requirements.

2.3.3.10.4. **(Added-USAFE)** Personnel Reliability Program (PRP) Monitor Course. This course is designed to provide a fundamental understanding of Department of Defense (DoD) and Air Force (AF) guidance governing PRP. The course will have an emphasis on case studies, teamwork, and projects. The class will also explore best practices with PRP and review current command issues. All mandatory attendees must have 12 months remaining in their positions to be considered for USAFE funding. Certifying Officials, Competent Medical Authorities (CMA), and unit monitors are encouraged to attend at unit expense. See [Table 2.1](#) for M/O attendee requirements.

2.3.3.10.5. **(Added-USAFE)** Load Monitor Course. This course is designed to provide training and guidance to establish an effective Load Monitor program. Students spend two days in residence understanding DoD, AF, and European Command (EUCOM)/ Supreme Headquarters Allied Powers Europe (SHAPE) guidance. Students will also analyze practices in terms of custody concepts, aircraft certification, support equipment, and technical data. The second part of the course is an emphasis on Host Nations/MUNSS relationships, aircraft generation procedures, loading certification program, personnel, and aircraft certification documentation. The unit and command-level oversight perspective will be reviewed and discussed. See [Table 2.1](#) for M/O attendee requirements.

2.3.3.10.6. **(Added-USAFE)** WS3 Advanced Mx/Comm Course. This course is designed to provide procedures for component replacement, unique maintenance, and repair of the WS3 system. It incorporates vault maintenance and communication maintenance elements. Scope of training includes theory of operation, operational maintenance, use of sensors, vault operations, console and monitor-indicator group characteristics and operations, technical order familiarity, deficiency reporting, program management, and cross-functional coordination/interaction with Maintenance Squadron (MXS), Communication (COMM), and Visual Image and Intrusion Detection System (VIIDS) program managers. A minimum core element of four communications maintenance personnel, and eight vault maintenance personnel will be maintained at each WS3 operating location. See [Table 2.1](#) for M/O attendee requirements.

2.3.3.10.7. **(Added-USAFE)** Weapons Mx Road Show Course. This on-the-road maintenance course is designed to provide extensive weapon specific training for (2W2) weapons maintenance technicians and maintenance supervisors so they can return to their units and train all other personnel. See [Table 2.1](#) for M/O attendee requirements.

2.3.3.10.8. **(Added-USAFE)** USAFE Command Post (CP) Course. This course provides an introduction and basic understanding of USEUCOM/NATO/USAFE Emergency Action Procedures. Additional guidance for course attendance and prerequisites may be found in AFI 10-207_USAFESUP, *USAFE Command Posts*. See [Table 2.1](#) for M/O attendee requirements.

2.3.3.10.9. **(Added-USAFE)** Safety MAJCOM Unique. This course is offered by the headquarters Weapons Safety office. This course provides instruction on how to manage Weapon Safety duties and safety reporting. It is required for all Wing

Weapon Safety managers within 90 days of appointment. See [Table 2.1](#) for M/O attendee requirements.

Table 2.1. (Added-USAFE) Training Course Overview

	Nuclear University Courses								Safety
	S L N C	Mngrs Course	Wpns Mx Super Course	PRP Monitor	Load Monitor	Command Post	WS3 Mx/Com	Wpns Mx Road Show	Safety MAJCOM Unique
21 M CGO ²		M	O		O				
31P CGO ²		M							
MUNSS CC/OO		O		O	O				
MOB Flight/CC		M							
SF OPS OIC ²		M							
SF OPS Supt		M							
CP OIC ²		M				M			
CP Supt ²		M				M			
CP Controller						M			
MOB/MUNSS PRP Mon				M					
MUNSS IDMT				M					
Certifying Official/ Competent Medical Authority				O					
Unit PRP Mon				O					
Surety Instructor		O							O
MASO ²		M	O						
3PX SNCOs		M							
2WX SNCOs		M							
Section Supervisors (NCOIC), Flight Chiefs, and Superintendents			M						
Load Monitor					M				
EET		M ⁴							
Weapon Safety Manager		M ³							M
MUNSS CEM		M	O						
MOB Wing Weapons Manager		M							
Senior Load Monitor		M			M				

Senior 2W2		M	M						
2W1/2 and Comm Maint.							M ⁵		
2W2 QAs, Weapons Maint. Trainers and Bay Chiefs								M	
All MUNSS Officers ¹		O							
Wing, Group and Squadron Commanders nuclear-capable units and units with NCE/NCI	M								
31 MUNS/CC, Supt		O							
39 MXS/CC, Supt		O							
31 SFS/CC, Supt		O							
39 SFS/CC, Supt		O							
M = Mandatory, O = Optional									
Notes:									
1. Other MUNSS officers not identified as mandatory to attend the Manager's Course may attend the course on a case-by-case basis.									
2. Only personnel assigned surety duties in these categories must attend the identified training. The Weapons Safety Office is required to train-the-trainers.									
3. MOB Safety Offices are required to send a Primary and Alternate.									
4. Only nuclear capable Exercise Evaluation Team (EET) units are required to send a Primary and Alternate.									
5. A core element of trained personnel will be maintained at each WS3 operating location as deemed appropriate by Maintenance/Communication Supervision.									

2.3.4. Ensure individuals assigned to nuclear safety positions are trained and hold a rank or grade commensurate with their duties.

2.3.5. Ensure subordinate unit civil engineer staffs:

2.3.5.1. Develop an Air Force Emergency Management Plan to include addressing nuclear accidents/incidents IAW AFI 10-2501, *Air Force Emergency Management Program and Operations*.

2.3.5.2. Assist Disaster Response Force members in the development of checklists, and advise on training and equipping personnel to respond to nuclear accidents and incidents.

2.3.5.3. Perform timely inspections, tests, and maintenance on facilities and equipment used with nuclear weapons.

2.3.5.4. Coordinate plans for building or modifying nuclear weapon facilities per AFI 63-125, and AFI 91-103, *Air Force Nuclear Safety Design Certification Program*.

2.3.6. Ensure their subordinate security forces function guidance complies with nuclear surety requirements.

2.3.7. Send data on proposed changes to nuclear weapon systems and noncombat delivery vehicles to Air Force Nuclear Weapons Center (AFNWC) or the appropriate program executive office/program manager.

2.3.8. Conduct NSIs of nuclear-capable units in accordance with AFI 90-201, *Inspector General Activities*, and T.O. 11N-25-1, *Department of Defense Nuclear Weapons Technical Inspection*.

2.3.9. Support the Nuclear Weapon System Safety Group (NWSSG) in accordance with AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*.

2.3.10. Identify a single point of contact for all nuclear issues.

2.3.10.1. **(Added-USAFE)** The Director of Operations Strategic, Deterrence and Nuclear Intergration (HQ USAFE/A3/A10) and specifically the Nuclear Operations Division (A10N), is the single point of contact for all nuclear issues (sustainment, acquisition, staff assistance visits, functional expert visits, health of the fleet, Nuclear Command and Control (NC2), etc.; and will coordinate with pertinent headquarter staff directorates. They are the OPR for the Nuclear Surety Council (NSPSC) and will coordinate with appropriate directorates on criteria and topics. They are the Nuclear Certification Manager (NCM) in accordance with AFI 63-125, *Nuclear Certification Program*, paragraph 2.6.9, serving as the primary representative for day-to-day management and execution of the nuclear certification program. Additionally, A10N maintains the voting membership on the Joint Theater Security Management Group. A3/A10N coordinates with USAFE/A4/7 on Logistics Compliance Assessment Program and Nuclear Weapons Related Material (NWRM) programs.

2.3.10.2. **(Added-USAFE)** The Director of Safety (HQ USAFE/SE) is responsible for Nuclear Surety FLAGWORD and deficiency reporting, NWSSG membership, safety studies, operational safety reviews and weapon safety rules; nuclear surety publication and checklist coordination. They are the Nuclear Certified Equipment program manager (NCE PM) in accordance with AFI 63-125, paragraph 2.6.11, serving as the single point of contact for the MAJCOM program to establish policies and procedures for the management of NCE used by nuclear and non-nuclear tasked operational units.

2.3.10.3. **(Added-USAFE)** The Director of Logistics and Installation Support (HQ USAFE/A4/7) is responsible for the Logistics Compliance Assessment Program, Nuclear Weapons Related Material, infrastructure, facilities, EOD Support and fire department training.

2.3.11. Establish a Nuclear Weapons 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 that all facets of the nuclear weapon surety program function in an effective manner.

2.3.11.1. **(Added-USAFE)** The USAFE Nuclear Weapons Surety Council is known as the Nuclear Surety Program Steering Council (NSPSC). It is part of the command's overall nuclear surety program as outlined in paragraph 2.3. and meets quarterly.

2.3.12. AFR and ANG units with nuclear tasked units or personnel will provide headquarter and unit-level OPRs to coordinate and assist the gaining unit with the duties and responsibilities outlined in this Instruction.

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

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

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

2.4.3. Provides consultant and technical services to support the requirements of AFI 91-108, *Air Force Nuclear Weapons Intrinsic Radiation Safety Program*.

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

2.4.5. Reviews nuclear mishap reports pertaining to materiel or technical data deficiencies, takes corrective action when appropriate; and provides reports and summaries as required by AFI 91-204, *Safety Investigations and Reports*.

2.4.6. Provides the 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 T.O. 11N-5-1, *Unsatisfactory Reports*.

2.4.7. Ensures Air Force Nuclear Weapons Center manages the Air Force Nuclear Certification Program IAW AFI 63-125.

2.4.7.1. Ensures product centers and air logistics centers have policies and procedures in place to identify nuclear certified items, processes, and modifications and assess modifications to determine if nuclear certification is required as by AFI 63-125.

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

2.4.8. Provides technical support for the NWSSG.

2.4.9. Maintains an engineering liaison office collocated with United States Air Forces in Europe (USAFE) to:

2.4.9. **(USAFE)** The Air Force Materiel Command, Engineering Liaison Office (ELO), is part of the 498th Nuclear Systems Wing/Detachment 1, 498nsw.elo@ramstein.af.mil.

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

- 2.4.9.1.1. **(Added-USAFE)** ELO provides nuclear certification oversight and technical direction for all non-U.S. manufactured nuclear weapons systems and nuclear certified support equipment according to ACO Directive 80-76, *NATO Nuclear Certification*.
- 2.4.9.1.2. **(Added-USAFE)** For host-owned U.S.-manufactured nuclear weapons systems and nuclear certified support equipment, ELO serves as a liaison between the owning host nation and DoD/Department of Energy (DOE).
- 2.4.9.2. Provide pertinent nuclear weapon system safety rules to allied nations.
- 2.4.9.3. Ensure the design of ally-operated systems meet Air Force nuclear certification criteria when allied nations have engineering responsibility.
- 2.4.9.3. **(USAFE)** As required, ELO reviews or develops technical data for non-U.S. North Atlantic Treaty Organization (NATO) nuclear weapon systems and support equipment. ELO publishes guidance as listed in USAFEI 25-301, Engineering Liaison Office (ELO) Publications for non-U.S. NATO nuclear weapons systems and nuclear certified support equipment.
- 2.4.9.4. Evaluate efforts for which USAFE has engineering responsibility; including support equipment, hardware, software, firmware, and procedures; against AFI 91-102, AFI 91-103, and AFI 91-107 requirements.
- 2.4.9.4. **(USAFE)** ELO advises and assists Host Nations on submitting nuclear certification impact statements for non-U.S. NATO systems/support equipment.
- 2.4.9.5. **(Added-USAFE)** ELO manages the European Joint Flight Test Program.
- 2.4.9.6. **(Added-USAFE)** ELO participates in USAFE NSSAV and FEV.
- 2.4.9.7. **(Added-USAFE)** ELO chairs the PA-200 Project Officer's Group and F-16 Mid-Life Update (MLU) Trilateral Working Group.
- 2.4.9.8. **(Added-USAFE)** ELO serves as the Technical Publication Manager for unclassified nuclear Technical Orders (TO) for the host nations.

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

- 2.5.1. In addition to the responsibilities listed in paragraph 2.3, USAFE:
- 2.5.1.1. Assists allied personnel in the USAFE area of responsibility with setting up nuclear surety programs for ally-operated systems.
- 2.5.1.2. Verifies allied personnel comply with the nuclear weapon system safety rules for ally-operated systems.
- 2.5.1.3. Verifies allied personnel accomplish time-compliance technical orders (TCTOs) that apply to their nuclear support equipment and notifies the TCTO-issuing agency and AFSC/SEW when TCTOs do not apply.
- 2.5.1.4. Verifies, through the Air Force custodial unit, that allied combat delivery vehicles meet approved standards for nuclear loading and delivery.
- 2.5.1.5. Verifies units report and investigate nuclear mishaps involving US owned ally-operated systems.

- 2.5.1.5.1. **(Added-USAFE)** MUNSS/SEW will work with host nations to ensure Dull Sword reporting is accomplished for host nations NCE and Nuclear Certified Items (NCI) that is committed to the MUNSS mission. Reporting applies to any item/equipment that has had a Nuclear Certification Impact Statement (NCIS) or is listed on the Master Nuclear Certification List (MNCL).
- 2.5.1.5.2. **(Added-USAFE)** MUNSS/SEW will provide sanitized unclassified Dull Sword reports to their respective host nation on similar NCE items.
- 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 2.14 and 2.15 of this publication to wing managers or unit safety representatives as is necessary to best meet nuclear surety and safety requirements. Assignment of responsibilities will be outlined in writing ensuring all requirements are being performed, and procedures do not prevent commanders at any level from performing their program responsibilities.
- 2.5.2.1. **(Added-USAFE)** MUNSS/SEW will be the OPR for surety matters in the squadron. Responsibilities include: Nuclear Certified Equipment program management, Flag word reporting, Spot Inspection program, Radiation Safety program, review of local generated publications.

2.6. Air Education and Training Command (AETC). AETC does not have a direct nuclear mission, but its training role is important to the Air Force Nuclear Weapons Surety Program's success. In addition to the applicable responsibilities listed in paragraph 2.3., AETC must:

- 2.6.1. Establish a nuclear surety program tailored to AETC's unique role.
- 2.6.2. Include nuclear surety as an integral part of all training involving nuclear weapons, nuclear weapon systems, or critical components and in courses in which a significant percentage of the students will perform PRP-related duties.
- 2.6.3. Develop inspection standards and inspect the nuclear surety training program, as appropriate, during NAF staff assistance visits (SAVs).

2.7. MAJCOM Weapons Safety Office:

- 2.7.1. Serves as the MAJCOM OPR for nuclear surety matters.
- 2.7.1. **(USAFE)** The Weapons Safety Division (HQ USAFE/SEW) usafew.dmsv@ramstein.af.mil, DSN 314-480-6801 is the USAFE OPR.
- 2.7.2. Develops criteria for wing nuclear surety councils.
- 2.7.2.1. **(Added-USAFE)** Topics for the nuclear surety councils are outlined in [para 2.18.5](#)
- 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.

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.

2.7.7. **(USAFE)** HQ USAFE/SEW provides MAJCOM Unique and Train-the-Trainer training to wing WSMs for Nuclear Surety Training to meet the requirements of paragraph **2.17**

2.7.8. Ensures 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 Agreement 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. As a minimum, the agreement must include the following areas:

2.7.8.1. Nuclear surety program management.

2.7.8.2. Inspections (e.g., nuclear surety, 12-month, spot, etc.).

2.7.8.3. PRP.

2.7.8.4. Review of local procedures in support of nuclear weapon system safety rules.

2.7.8.5. Mishap investigations, boards, and reporting responsibilities.

2.7.8.6. Major accident response procedures.

2.7.9. Distribute standardized nuclear surety training lesson plan to applicable units.

2.7.10. Approve unit's additional instructional material or augmented nuclear surety training lesson plans.

2.7.11. Request nuclear surety training testing material from AF/SEW when test has been compromised, become too familiar, or deemed necessary.

2.7.12. **(Added-USAFE)** HQ USAFE/SEW approves USAFE or wing supplements to Nuclear Surety related Air Force 91series publications. Forward supplements to HQ USAFE/SEW for review and approval prior to release.

2.7.13. **(Added-USAFE)** HQ USAFE/SEW coordinates on all locally developed work cards, checklists, job guides and page supplements impacting Nuclear Surety that are derived from Air Force technical orders. Complete and forward these documents according to TO 00-5-1-WA-1, *Air Force Technical Order System*, and as supplemented. Locally developed checklists and publications includes host nation products developed to assist the U.S. unit in performing its mission.

2.7.14. **(Added-USAFE)** HQ USAFE/SEW is the USAFE NCE/NCI single point of contact for policies and procedures for the management of NCE/NCI used by nuclear and non-nuclear tasked units. (REF: AFI 63-125, para 2.6.11).

2.7.14.1. (Added-USAFE) Wings, groups or GSU's (applies to both nuclear and non-nuclear tasked units) that operate, maintain, acquire, sustain, or modify NCE will appoint NCE monitors at appropriate levels within the unit to manage their unit NCE program.

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

2.8. (USAFE)NAF tasks are managed by USAFE/SEW.

- 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 it in conjunction with assistance visits.
- 2.8.3. Visit subordinate units as needed.
- 2.8.4. Assist NAF staff on PRP issues.
- 2.8.5. Check the adequacy and completeness of nuclear mishap reports and the corrective actions for nuclear surety problems found during higher headquarters inspections or assistance visits.
- 2.8.6. Review plans submitted for new or modified weapon storage sites and notify MAJCOM/SEW.

2.9. Installation Commanders:

2.9. (USAFE)Installation Commanders: Wing commanders will ensure wing-level Nuclear Surety support for all subordinate units, to include GSUs.

- 2.9.1. Ensure WSMs are trained, knowledgeable, and qualified.
- 2.9.2. Ensure senior leadership emphasis on mishap prevention.
- 2.9.3. Ensure nuclear surety deficiencies are identified, investigated, corrected, and reported.
- 2.9.4. Ensure plans and procedures support all tasked nuclear missions.
- 2.9.4. (USAFE) Develop and provide nuclear surety policy and guidance for subordinate units, to include GSUs.
- 2.9.5. Ensure plans and procedures support Safe Haven requirements.
- 2.9.6. Ensure nuclear surety plans and procedures are reviewed by affected agencies before implementation.
- 2.9.7. Organize a nuclear surety council as outlined in paragraph 2.18 below.
- 2.9.8. Ensure full-time WSMs are not assigned additional tasks which detract from their primary safety duties.
- 2.9.9. Perform PRP responsibilities.
- 2.9.10. Establish a nuclear accident/incident response organization in accordance with AFI 10-2501.
- 2.9.11. Ensure the installation Chief of Security Forces, in conjunction with munitions and EOD personnel, reviews the plans for any movement of nuclear cargo, in accordance with AFI 21-203, *Nuclear Accountability Procedures*, and AFI 11-299, *Nuclear Airlift Operations*.

2.9.12. 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.

2.9.13. **(Added-USAFE)** Develop plans and procedures to support PNAF operations.

2.9.14. **(Added-USAFE)** Ensure functional area experts perform 12 month inspections and reports are submitted in accordance with para **2.15.1** (USAFE).

2.9.15. **(Added-USAFE)** Ensure distributed HQ USAFE Nuclear Surety Program Steering Council (NSPSC) minutes are reviewed and distributed to appropriate functional areas within the wing.

2.10. Installation Staff Officers:

2.10.1. Ensure Military Personnel Section (MPS) staff provides guidance and monitor the PRP.

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

2.10.3. Ensure medical treatment facilities comply with all medical and dental PRP requirements in accordance with DOD 5210.42-R_AFMAN 10-3902, *Nuclear Weapons Personnel Reliability Program*.

2.10.4. Civil Engineering staff:

2.10.4.1. Ensure fire protection personnel are trained to fight fires involving nuclear weapons.

2.10.4.2. Conduct timely inspections, maintenance, and repair of facilities and equipment used to secure and maintain nuclear weapons.

2.10.4.3. Coordinate plans for building or modifying nuclear weapon facilities in accordance with AFI 63-125 and AFMAN 91-118, *Safety Design and Evaluation Criteria for Nuclear Weapon Systems*, with the WSM, Chief of Security Forces, and the affected unit.

2.10.4.4. Develop fire fighting checklists for all areas and locations where nuclear weapons or nuclear weapon systems are present.

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.

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 that are in the active inventory. Training and certification requirements are detailed in AFI 32-3001, *AF EOD Program Management*.

2.10.5. Chief of Security Forces:

2.10.5.1. Ensures 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.

2.10.5.2. Evaluates, in conjunction with munitions personnel, logistical plans for the movement of nuclear cargo during the overall review of plans for nuclear weapon sites.

2.10.5.3. Supports PRP investigation requirements.

2.10.5.4. Ensures physical security and/or facility security software updates/upgrades are coordinated through WSM.

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

2.10.7. Airman and Family Readiness Center personnel perform PRP responsibilities.

2.11. Wing/Group Commanders:

2.11.1. Enforce compliance with nuclear surety requirements.

2.11.2. Ensure the WSM reviews all plans, training, and programs that affect nuclear surety.

2.11.3. Perform PRP responsibilities.

2.11.4. Include applicable nuclear surety topics in training directives and programs for assigned personnel.

2.11.5. Ensure compliance of guidance and procedures for maintenance, personnel certification, the logistics movement of, and accountability procedures for nuclear weapons in accordance with AFI 21-203 and AFI 21-204, *Nuclear Weapon Maintenance Procedures*.

2.11.6. **(Added-USAFE)** Appoint the Wing NCE manager. All USAFE Wings which possess, maintain, operate, acquire, sustain or modify NCE will have an NCE manager.

2.11.7. **(Added-USAFE)** Appoint an On-Scene Coordinator for logistical munition movements.

2.12. Unit/Squadron Commanders:

2.12.1. Enforce nuclear surety program requirements.

2.12.1. **(USAFE)** Ensure host nations comply with all surety/security requirements as stated in North Atlantic Treaty Organization (NATO), EUCOM, SHAPE, and joint host/U.S. publications. Immediately notify the host nation commander of any deviations/violations. Ensure reporting is accomplished using command channels or use "Custodian's Report of Deviation and Request for Corrective Action" procedures outlined in ACO 80-6, Vol 2, Part II/USEUCOM Directive 6801.01, *Nuclear Surety Management for the Weapons Survivability and Security System (WS3)* as a reporting tool.

2.12.1.1. **(Added-USAFE)** Ensure adequate means are developed within the unit to notify weapons safety managers of local Nuclear Surety related deficiencies. Weapons safety managers are responsible for the investigation and reporting of Nuclear Surety related deficiencies according to AFI 91-204, *Safety Investigations and Reports* and AFMAN 91-221, *Weapons Safety Investigations and Reports*, unless other agencies are specified in AFI 91-204 or AFMAN 91-221.

2.12.2. Correct nuclear surety findings and deficiencies identified during NSIs and Program Management Evaluations (PMEs).

2.12.3. Perform PRP responsibilities in accordance with DOD 5210.42-R_AFMAN 10-3902.

2.12.4. Appoint primary and alternate unit weapons safety representatives to serve as liaison to the wing weapons safety office.

2.12.5. **(Added-USAFE)** Appoint a squadron NCE monitor to manage the squadron NCE program at units that possess, maintain, operate, acquire, sustain or modify NCE.

2.13. Supervisors:

2.13.1. Ensure personnel are properly trained and certified.

2.13.2. Include nuclear surety as part of each pretask briefing.

2.13.3. Emphasize reporting of all nuclear deficiencies.

2.13.4. Inform personnel of all changes to the nuclear surety program.

2.13.5. Perform PRP responsibilities IAW DOD 5210.42-R and AFMAN 10-3902.

2.14. Individuals:

2.14.1. Inform supervisors if they are not qualified to perform a particular task.

2.14.2. Report nuclear safety hazards/deficiencies or security problems to supervisors and unit safety representatives.

2.14.3. Comply with the Two-Person concept.

2.14.4. Identify unreliable personnel to their supervisors.

2.14.5. Report information which could affect their own ability or reliability to perform a task due to medical or other problems.

2.15. Wing/Base Level Weapon Safety Managers:

2.15.1. Perform 12-month nuclear surety inspections of each wing or base-level unit with nuclear surety responsibilities.

2.15.1. **(USAFE)** WSMs will ensure areas related to safety that are defined in CJCSI 3263.05 and AFI 90-201, including applicable supplements, are inspected at the unit level. AFIA checklist items with 91 series AFI references are the suggested minimum criteria that should be utilized.

2.15.1.1. **(Added-USAFE)** Inspection Briefings. In-briefings are optional. These briefings provide the unit the opportunity to clearly understand the purpose of the inspection, the standards by which the inspection will be conducted and the intent to provide a formal inspection report to wing leadership. Out briefs will be provided to the unit to clearly define the unit's strengths, discrepancies, observations and areas of improvement.

2.15.1.2. **(Added-USAFE)** Inspection Reports. Reports generated from inspections will be signed out by the Chief of Safety to the inspected units. The report will only contain findings with no rating. While the format of the report is not strictly specified, it will

identify unit strengths and recommended improvement areas. Copies of completed inspection checklists may be attached to the inspection report.

- 2.15.1.2.1. **(Added-USAFE)** The out brief and draft report will be provided to units no later than two weeks from the end of the inspection. The final report will be provided to the unit no later than two weeks from the out brief.
- 2.15.1.3. **(Added-USAFE)** Open discrepancies will be tracked by the WSM and reported during the Wing Nuclear Surety Council until closed.
- 2.15.2. Ensure adequacy and completeness of corrective actions for nuclear surety findings and deficiencies found during WSM inspections, NSIs, and SAVs.
- 2.15.3. 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.
- 2.15.3. **(USAFE)** The Wing Weapons Safety is the office of primary responsibility for nuclear safety reporting at the wing. The Weapons Safety Office, in coordination with the unit's nuclear weapons maintenance section, determines if reportable conditions listed in AFI 91-204 and AFMAN 91-221 are also reportable according to TO 11N-5-1, *Unsatisfactory Reports*. Weapons safety is not the agency responsible for Unsatisfactory Reports according to guidance in TO 11N-5-1. WSMs will review these reports for inclusion in AFSAS reporting requirements.
- 2.15.4. Review and disseminate information from nuclear mishap and deficiency reports.
- 2.15.5. Keep the commander, staff, and supervisors informed of issues and changes in the nuclear surety program.
- 2.15.6. Work with commanders, staff, supervisors, and support personnel to ensure the PRP is properly administered.
- 2.15.7. Check aircraft, munitions, and missile maintenance activities to ensure only authorized or certified equipment and Air Force-approved TOs, checklists, or procedures are being used with nuclear weapons.
- 2.15.8. Participate in the preparation of Safe Haven and PNAF mission support plans.
 - 2.15.8.1. **(Added-USAFE)** Review plans and procedures for divert mission requirements as applicable.
- 2.15.9. Perform spot inspections of areas involved with nuclear surety.
- 2.15.10. Develop localized specific training, as applicable, and incorporate into the standardized nuclear surety training lesson plan. Additional training should be inserted into appropriate section to ensure proper flow of lesson objective. Specific training above the mandatory requirements may be added at the end of the lesson plan.
- 2.15.10. **(USAFE)** Forward plan(s) to USAFE/SEW for approval prior to use.
 - 2.15.10.1. Periodically observe training sessions.
- 2.15.11. Review and coordinate site plans for new or modified nuclear facilities in accordance with AFMAN 91-201.

2.15.12. Review all locally developed checklists, instructions, operating procedures, and plans that impact nuclear surety. For locally developed workcards, checklists, job guides and page supplements for nuclear munitions follow guidance in T.O. 00-5-1, *AF Technical Order System*.

2.15.12. **(USAFE)** Review locally developed checklists and operating procedures, derived from Host Nation Technical Orders or operator manuals, which have been provided for U.S. use.

2.15.12.1. **(Added-USAFE)** The Wing / Base Safety Office will forward all locally developed checklists, instructions, operating procedures, and plans that impact nuclear surety to the MAJCOM Safety Office for coordination once the applicable Squadron and Group leadership has reviewed. A letter reflecting staff coordination and feedback will be provided to the Wing / Base Safety Office upon staff coordination.

2.15.12.2. **(Added-USAFE)** The Wing / Base Safety Office will forward all locally developed host nation checklists, instructions, operating procedures, and plans that impact nuclear surety which are intended for US use to the MAJCOM Safety Office for coordination once the applicable Squadron / Group Quality Assurance has validated and leadership has reviewed. USAFE/SEW will coordinate checklists with ELO and appropriate A Staff. A letter reflecting staff coordination and feedback will be provided to the Wing / Base Safety Office upon staff coordination.

2.15.13. Conduct nuclear surety training, tailored to unit mission, for senior staff and unit safety representatives.

2.15.13.1. **(Added-USAFE)** Ensure the senior officers performing On-Scene Coordinator duties for nuclear airlift movement are trained on their responsibilities and have completed Nuclear Surety training.

2.15.13.2. **(Added-USAFE)** Train unit safety representatives on their Nuclear Surety duties within 30 days of their assignment. This training should be tailored to fit the unit's role in the Nuclear Surety mission.

2.15.14. Ensure currency/completeness of Electromagnetic Radiation Surveys IAW AFMAN 91-201.

2.15.15. **(Added-USAFE)** Manage and administer the nuclear surety council for the council chairman.

2.15.16. **(Added-USAFE)** WSMs will establish and manage the nuclear safety certification program and is the OPR for NCE issues for assigned units. Further, WSMs will:

2.15.16.1. **(Added-USAFE)** Review and forward requests for certification of uncertified equipment assigned to the wing, to include its GSUs, as directed in the basic publication through USAFE (OL-EL/ELO, when applicable) channels.

2.15.16.2. **(Added-USAFE)** Review and forward requests for modification to NCE assigned to the wing to include its GSUs, as directed in the basic publication through USAFE (OL-EL/ELO, when applicable) channels.

2.15.16.3. **(Added-USAFE)** Determine the placement and numbers of NCE monitors to meet operational needs. All squadrons who have NCE assigned to the unit will establish

a NCE program. A primary and at least one alternate NCE monitor will be appointed, by the squadron commander, in each designated squadron by official memorandum to the WSM.

2.15.16.4. **(Added-USAFE)** Train Squadron NCE monitors within thirty days of their appointment on the following:

2.15.16.4.1. **(Added-USAFE)** Applicability and use of AFI 91-101, AFI 91-103 and applicable supplements.

2.15.16.4.2. **(Added-USAFE)** Applicability and use of the MNCL. This includes: MNCL general guidance (scope, positive identification, general restrictions and additional information); how to reference or search items from the MNCL; how to make suggestions; and how to report problems.
<https://www.mil.nwc.kirtland.af.mil/MNCL/index.cfm>

2.15.16.4.3. **(Added-USAFE)** Procedures for requesting certification of previously uncertified equipment and procedures for requesting minor and major modifications to NCE and any follow-on evaluation/certification actions if required.

2.15.16.4.4. **(Added-USAFE)** Actions required when NCE is modified without proper review and approval.

2.15.16.4.5. **(Added-USAFE)** Safety and material deficiency reporting requirements (to include local and higher headquarters reporting timeline requirements) and the use of locally-developed nuclear weapon system safety deficiency worksheets (when used by the unit).

2.15.16.4.6. **(Added-USAFE)** MUNSS ONLY – MUNSS SEW will forward appointment letters and training documentation to 52FW/SEW.

2.15.17. **(Added-USAFE)** Ensures 100 percent of unit assigned NCE (applies to both nuclear and non-nuclear tasked units) is surveyed and documented IAW AFI 63-125.

2.15.17.1. **(Added-USAFE)** WSMs will notify the Command NCE Program Manager by memorandum annually, NLT 31 May, on the status of the the wing's annual verification.

2.15.17.2. **(Added-USAFE)** Tie-down chains, adjusters, straps, load binders, and shackles used for weapon restraint during transportation are excluded from NCE management program surveillance and documentation requirements. However, these items will require MNCL validation prior to use. Individual restraint items will only be listed in the MNCL if a remark is stated or a restriction is imposed. Therefore, individual identification information for all restraint devices must be checked in the MNCL to determine if any remarks/restrictions are applicable.

2.15.17.3. **(Added-USAFE)** Aircraft cargo pallets (463L), model number HCU-6/E, part number 50018-001, NIIN 00-820-4896 are excluded from NCE management program surveillance and documentation requirements; however, if these items are going to be committed to use for nuclear missions they will be verified using the MNCL prior to use.

2.15.18. **(Added-USAFE)** Monitor/Ensure units complete monthly, quarterly and annual NCE checks.

2.15.19. **(Added-USAFE)** NCE monitors will act as the OPR for NCE issues.

2.15.19.1. **(Added-USAFE)** Monitor and advocate for assigned NCE.

2.15.19.2. **(Added-USAFE)** Report deficiencies and situations involving NCE to the WSM.

2.15.19.2.1. **(Added-USAFE)** MUNSS will perform DULL SWORD reporting on all nuclear certified equipment that is committed to use for the surety mission. MUNSS NCE Monitors will coordinate with MUNSS SEW personnel for reporting procedures.

2.15.19.3. **(Added-USAFE)** Inform WSMs and squadron leadership of significant problems or changes associated with NCE.

2.15.19.3.1. **(Added-USAFE)** MUNSS NCE Monitors will coordinate with host equipment managers when NCE issues effect host nation certified equipment i.e. Dull Sword crosstell on similar equipment when received.

2.15.19.4. **(Added-USAFE)** Request modifications to NCE as directed in accordance with AFI 91-103 USAFESUPI, and as supplemented, through the WSM to HQ USAFE or ELO when applicable.

2.15.19.4.1. **(Added-USAFE)** MUNSS NCE Monitors will coordinate with MUNSS SEW personnel for modification procedures.

2.15.19.5. **(Added-USAFE)** Develop and maintain a NCE management book. Any deviation from this format must be approved by the WSM. Minimum requirements of NCE management books are as follows:

2.15.19.5.1. **(Added-USAFE)** Tab A: Appointment Letter

2.15.19.5.2. **(Added-USAFE)** Tab B: Training Documentation (documentation of this type may be maintained in individual training records when applicable).

2.15.19.5.3. **(Added-USAFE)** Tab C: Master NCE listing, Monthly/Quarterly change verification, Annual Inspection documentation (can be included on Master NCE listing)

2.15.19.5.4. **(Added-USAFE)** Tab D: FY Dull Sword Worksheets/Open Formal Dull Swords.

2.15.19.5.5. **(Added-USAFE)** Tab E: Closed Dull Swords Crosstell, Safety and Unsatisfactory Reports.

2.15.19.5.6. **(Added-USAFE)** Tab F: Self-Inspection Checklists (USAFE version of others, as applicable).

2.15.19.5.7. **(Added-USAFE)** Tab G: General Correspondence (Examples of items that can be filed: copies of modification requests, studies, photographs, or other significant records. No items are mandated for this tab. It is for continuity if other processes do not exist for filing related documents).

2.15.19.6. **(Added-USAFE)** May appoint and train flight level monitors. If appointed, Flight Monitors will be trained on the reporting procedures for NCE. Documentation requirements for the flight program will be determined by the squadron monitor.

2.15.19.7. **(Added-USAFE)** NCE Programs at Non-Nuclear Wings:

2.15.19.7.1. **(Added-USAFE)** NCE monitors at the unit level will maintain a listing of all NCE that is on an equipment account (owned) and/or maintained and will ensure each item is inspected at least annually IAW AFI 63-125, para 2.6.11.3. Listing will include nomenclature, part number, and serial number (if applicable) and be approved by the WSM. Additionally, discrepancies will be reported to the appropriate program office with engineering authority for the item or system in question and via the MNCL discrepancy reporting system. (Ref: AFI 63-125, para 2.6.11.3) Owing units are responsible for reporting discrepancies and keeping the WSM informed of reports sent.

2.15.19.7.2. **(Added-USAFE)** Unit NCE lists will be validated with the MNCL quarterly to assess integrity of the list ensuring accuracy of data and no items have been added or removed from the MNCL. Units will document the quarterly checks in their NCE program books.

2.15.19.8. **(Added-USAFE)** NCE Programs at Nuclear Capable Wings

2.15.19.8.1. **(Added-USAFE)** NCE monitors at the unit level will maintain a listing of all NCE that is assigned and/or maintained. Units will ensure each item is inspected at least annually IAW AFI 63-125, para 2.6.11.3 (MUNSS only will report on host nation NCE that is committed for use). Listing will include nomenclature, part number, and serial number (if applicable) and be approved by WSM. Additionally, discrepancies will be reported to the appropriate program office with engineering authority for the item or system in question and via the MNCL discrepancy reporting system. (Ref: AFI 63-125, para 2.6.11.3) Owing units are responsible for reporting discrepancies and keeping the WSM informed of reports sent.

2.15.19.8.2. **(Added-USAFE)** Unit NCE lists will include an additional tab or paragraph to identify all NCE not owned by the unit, but maintained and operated by unit personnel (i.e. NCE, vehicles/AGE assigned to a unit or dedicated for mission requirements).

2.15.19.8.3. **(Added-USAFE)** The list will be validated with the MNCL monthly to assess the impact of MNCL changes on mission operations. Units will document the monthly checks in their NCE program books. Operators will refer back to the NCE monitor to validate the monthly check was accomplished prior to committing the equipment to use. This verification can be done verbally with control centers or NCE monitors as determined by each unit. Individual pieces of NCE/Nuclear Certified Items (NCI) do not have to be called in for verification prior to committal to use provided the unit has accomplished the monthly verification. (Ref: AFI 63-125, para 2.6.11.4)

2.16. Unit Safety Representatives (USR):

2.16. (USAFE) Squadron additional duty safety personnel will be identified as Unit Weapon Safety Representative (UWSR).

- 2.16.1. Perform nuclear surety spot inspections.
- 2.16.2. Ensure nuclear surety training is accomplished.
- 2.16.3. Coordinate with the WSM on all matters concerning nuclear surety.
- 2.16.4. Evaluate corrective actions for nuclear surety findings and deficiencies found during inspections, evaluations, and assistance visits.
- 2.16.5. Use nuclear surety cross-feed reports for unit mishap prevention.
- 2.16.6. Contact the WSM for training after being appointed a USR IAW AFI 91-202, *The US Air Force Mishap Prevention Program*.
- 2.16.7. Ensure unit developed checklists, instructions, operating procedures, and plans that impact nuclear surety are coordinated through the WSM.

2.17. Training:

2.17.1. Commanders and Supervisors at all levels must ensure individuals receive 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 must receive initial nuclear surety training prior to performing duties and 15-month recurring training thereafter, not later than the end of the 15th month following initial nuclear surety training and every 15 months 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. Document initial and 15-month recurring nuclear surety training. Initial and 15-month recurring training will include the following mandatory topics:

- 2.17.1.1. Importance of, and need for, a US nuclear capability.
- 2.17.1.2. Nuclear mishap prevention responsibilities of those personnel who work with nuclear weapons and components.
- 2.17.1.3. Possible adverse impact on US nuclear capability in the event of a serious nuclear mishap.
- 2.17.1.4. Security requirements.
- 2.17.1.5. Two-Person Concept, Sole Vouching Authority (SVA), and associated requirements and procedures.
- 2.17.1.6. PRP requirements IAW DOD 5210.42-R/AFMAN 10-3902.
- 2.17.1.7. Mishap and hazard reporting.
- 2.17.1.8. Use of Master Nuclear Certification List (MNCL) as the sole source for verifying the certification status of nuclear certified weapon systems, hardware, support equipment, and facilities.
- 2.17.1.9. Additional Topics:

2.17.1.9.1. INRAD/ALARA

2.17.1.9.2. Weapon System Safety Rules (WSSRs)

2.17.2. Unique topics commensurate with the unit's nuclear duties will also be trained (i.e., Safe Haven procedures, sealing of nuclear components, local situations that increase the risk of nuclear mishaps, etc.).

2.17.3. Ensure nuclear surety training is provided to all PRP certifying officials.

2.17.4. Tests will be randomly built from an AFSC validated test bank using two test questions for each mandatory topic and each common additional topic for a minimum of 20 questions per test. MAJCOMs are authorized to add (not substitute) test questions for their unique topics.

2.17.5. **(Added-USAFE)** MUNSS/MOB Nuclear Surety Instructors will be trained by the parent wing weapon safety office. Once trained, these individuals will train required personnel using the AFSC curriculum/test material.

2.17.6. **(Added-USAFE)** The base Weapons Safety office will maintain a list of qualified Nuclear Surety instructors.

2.18. Wing/Base Nuclear Surety Council:

2.18.1. As a minimum, the council must:

2.18.1.1. Be chaired by the wing/group commander or the deputy wing/group commander.

2.18.1.1. **(USAFE)** Council meetings will be conducted quarterly.

2.18.1.2. Include all members who are PRP certifying officials or their alternate, and the Base PRP Monitor.

2.18.1.2. **(USAFE)** Attendance by council members is the responsibility of the council chairman and not the council administration. The council chairman may require other wing personnel to attend the council beyond that prescribed by the basic paragraph. Include MUNSS commanders as council members whenever feasible.

2.18.1.3. Include, as advisors, functional experts who support the nuclear surety program.

2.18.1.3. **(USAFE)** Advisors and functional experts are available from the wing or other organizations, e.g., fire department, explosive ordnance disposal, security forces, Air Force Office of Special Investigations (AFOSI), maintenance, operations, and other offices with a responsibility for nuclear surety missions.

2.18.1.4. Monitor wing nuclear surety program.

2.18.2. As requested, the host or tenant units will provide attendees at unit nuclear surety councils.

2.18.3. Units without nuclear mission and nuclear council establish process to inform local commanders on nuclear surety issues, including nuclear certified equipment.

2.18.4. **(Added-USAFE)** The wing weapon safety office administers the nuclear surety council for the council chairman. Provide adequate notice of scheduled council meetings to

all members and attendees. The notice will include the scheduled date, time, location, and agenda.

2.18.5. (Added-USAFE) Mandatory Nuclear Surety Council Topics:

2.18.5.1. **(Added-USAFE)** Unit nuclear mishap or deficiency reports since the last council meeting and status of open unit mishap or deficiency reports. Briefing pertinent mishap or deficiency reports from units with a similar mission is encouraged.

2.18.5.2. **(Added-USAFE)** Review all open findings from 12 month unit surety inspections.

2.18.5.3. **(Added-USAFE)** Results of higher headquarters-conducted Defense Nuclear Surety Inspection (DNSI), Nuclear Surety Inspection (NSI), and NSSAV for the wing and for the wing's subordinate units with nuclear missions. Briefing pertinent results from DNSIs, NSIs, and NSSAVs from units with similar missions is encouraged.

2.18.5.4. **(Added-USAFE)** Review publications and release of new or revised directives, instructions, regulations or manuals affecting nuclear surety at the unit.

2.18.5.5. **(Added-USAFE)** Review of local nuclear surety exercise status to include schedule, results and corrective actions.

2.18.5.6. **(Added-USAFE)** Other topics at the discretion of the council chairman.

2.18.6. **(Added-USAFE)** Council meeting minutes. The council chairman provides a formal memorandum of the minutes to all members and attendees. Weapons safety office maintains the minutes from the last four council meetings. The nuclear surety council minutes and the minutes of other safety councils may be combined. At a minimum, the minutes include a synopsis of topics addressed during the council meeting.

2.18.7. **(Added-USAFE)** The wing determines the need for nuclear surety councils at the supported MUNSSs. The wing develops the criteria for conduct of the MUNSS nuclear surety council if established as a requirement.

2.18.8. **(Added-USAFE)** When Nuclear Surety issues cannot be resolved at the wing, the council chairman may forward issues to HQ USAFE/SEW for presentation to the USAFE NSPSC.

2.18.9. **(Added-USAFE)** Report date of NSC and chairperson in AFSAS quarterly.

2.19. Nuclear Surety Awards. Use the awards program to recognize deserving individuals and provide incentive for integrating nuclear surety practices into daily activities. Nomination procedures and selection criteria for nuclear surety awards are found in AFI 36-2833, *Safety Awards*.

3. Adopted Form:

AF Form 847, *Recommendation for Change of Publication*

GREGORY A. FEEST, Major General, USAF
Chief of Safety

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

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AFI 91-204, *Safety Investigations and Reports*, 24 Sep 2008
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T.O. 11N-25-1, *Department of Defense Nuclear Weapons Technical Inspection*, 19 Feb 2008
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Abbreviations and Acronyms

AETC— Air Education and Training Command
AFMC— Air Force Materiel Command
AFNWC— Air Force Nuclear Weapons Center
AFRIMS— Air Force Records Information System
AFSC— Air Force Safety Center
AS&I— Assembly, surveillance, and inspection
DRU— direct reporting unit
EOD— Explosive Ordnance Disposal
FOA— field operating agency
M&I— Maintenance and inspection
MAJCOM— Major Command
MPS— Military Personnel Section
NAF— Numbered Air Force
NSI— Nuclear Surety Inspection
MUNSS— Munitions Support Squadron
MXS— Maintenance Squadron
NWSSG— Nuclear Weapon System Safety Group
OPDD— Operational Plan Data Document
OPR— Office of Primary Responsibility

PNAF— Prime Nuclear Airlift Force
RDS— Records Disposition Schedule
PME— Program Management Evaluations
PRP— Personnel Reliability Program
RSO— Radiation Safety Officer
SAV— Staff assistance visit
SVA— Sole Vouching Authority
TCTO— Time Compliance Technical Order
TNSA— Technical Nuclear Safety Analysis
TO— Technical order
UL— Unauthorized launch
USAFE— US Air Forces in Europe
USR— Unit Safety Representatives
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)

Accident—An unexpected event involving destruction of, or serious damage to, nuclear weapons, nuclear weapon systems, or nuclear components that result 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)

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 that provides 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—A major philosophy of current radiation protection practice which requires that 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 that prevents 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 appropriate government agencies that a nuclear weapon system is safe for use with nuclear weapons; that the nuclear weapons are compatible with the nuclear weapon system, and whether any operational restrictions will be placed on the nuclear weapon system to ensure safety and compatibility. This determination is required before the nuclear weapon system achieves operational status. (USAF).

The process through which all nuclear weapon—related requirements pertaining to the broad areas of safety, compatibility, and unit readiness are accomplished. (DOD).

Certification Effort (Software and Firmware)—The means for verifying that 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)

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 and Launch Action Studies*, that a federal agency responsible for establishing policy with regard to the type 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. AFSC/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)

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)

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)

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

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

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)

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

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)

Functional Expert Visit—A technical visit by AFSC subject matter experts to review areas for compliance with directives and policies rated during Nuclear Surety Inspections (NSIs). T.O. 11N-25-1 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)

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. See also “Software”. (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, not constituting an accident that involves a nuclear weapon, nuclear weapon system, or nuclear component and results in:

An increase in the risk of nuclear or high—explosion or radioactive contamination. (USAF)

Errors committed in the assembly, testing, loading, or transporting of equipment, or the malfunctioning of equipment and material that may lead to unintentional operation of any part of the weapon arming and firing sequence. (USAF)

Significant damage to nuclear weapons or nuclear components caused by any natural occurrence, unfavorable environment, or other conditions. (USAF)

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)

Intrinsic Radiation—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)

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, *Nuclear Certification Program* and identified in the MNCL.

Nuclear Certified Item—Procedures, equipment, software, facilities, systems, subsystems or components which are nuclear certified IAW AFI 63-125, *Nuclear Certification Program*.

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

Nuclear Component—Weapon component composed of fissionable or fusionable materials that contribute substantially to nuclear energy released during detonation. (USAF)

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 AFSC/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 AFSC/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. (USAF)

Premature or unsafe operation of a nuclear weapon system. (USAF)

Delivery of a nuclear weapon outside the specified boundary of the planned target. (USAF)
Unauthorized, improper, or erroneous display of status or classified information that could degrade nuclear surety. (USAF)

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 AFSC/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 Program Visit—A review by AFSC 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)

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 AFSC/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 Safety Standards are met in weapon system design and operations. (USAF)

Nuclear Weapon System Safety Rules—Secretary of Defense-approved procedural safeguards governing all operations with nuclear weapons or nuclear weapon systems. (USAF)

Nuclear Weapons Surety—Materiel, personnel, and procedures which contribute to the safety, security, and reliability of nuclear weapons and to the assurance that there will be no nuclear weapon accidents, incidents, unauthorized weapon detonations, or degradation in performance at the target. (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—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)

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)

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 a job classification within the Air Force:

Base 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)

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)

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

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)

Reversion—The process or event of returning to the original state, phase, or condition. (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 Sole Vouching Authority (SVA) identifies individuals wishing to gain entry to a no-lone zone, verifies authorization, and validates need for entry into the no-lone zone. Note: SVA is the representative identified as having responsibility for deciding who will enter the no-lone zone.

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 Nuclear Safety Analysis—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)

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 the Personnel Reliability Program (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. **NOTE:** Also known as Two-Person Rule. (JP 1-02)

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. The UL categories are:

Type 0 Launch—Ignition of a propulsive stage or engine that results in missile movement but without the missile exiting the launch platform due to physical restraints. (USAF)

Type 1 Launch—Ignition of a propulsive stage or engine that results in missile launch from the launch platform but with an inactive guidance system. (USAF)

Type 2 Launch—Missile launch with an active guidance system that results in powered flight to a preprogrammed target but without a nuclear yield. (USAF)

Type 3 Launch—Missile launch with an active guidance system that results in powered flight to a preprogrammed target with a nuclear yield. (USAF)

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)

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)

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 1 (USAFE)**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

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*Abbreviations and Acronyms***AF**—Air Force**BAF**—Belgian Air Force**C2**—Command and Control**CBT**—Computer Based Training**CC**—Commander**CC/DO**—Commander, Directorate of Operations**CEM**—Chief Enlisted Manager**CGO**—Company Grade Officer**COMM**—Communication**COMSEC**—Communications Security**CP**—Command Post**DIAMONDS**—Defense Integration and Management of Nuclear Data Services**DNSI**—Defense Nuclear Surety Inspection**EA**—Emergency Action**EET**—Exercise Evaluation Team**EUCOM**—European Command**FEV**—Functional Expert Visit**GAF**—German Air Force**IDMT**—Independent Duty Medical Technician**ITAF**—Italian Air Force**LRU**—Line Replaceable Unit**MASO**—Munitions Accountable Systems Officer**MED**—Medical**MMG**—Munitions Maintenance Group**MOB**—Main Operating Base**MSG**—Mission Support Group**MUNSS**—Munitions Support Squadron**Mx**—Maintenance**MXG**—Maintenance Group**NATO**—North Atlantic Treaty Organization**NIE**—Normally Installed Equipment**NCOIC**—Noncommissioned Officer in Charge**NOCM**—Nuclear Ordnance Commodity Management**NSPSC**—Nuclear Surety Program Steering Council**NSSAV**—Nuclear Surety Staff Assistance Visit**OIC**—Officer in Charge**OL-EL/ELO**—Engineering Liaison Office

OPS—Operations

OPSO—Operations Officer

OSC—On-Scene Coordinator

QA—Quality Assurance

RNLAF—Royal Netherlands Air Force

SF—Security Forces

SHAPE—Supreme Headquarters Allied Powers Europe

SLNC—Senior Leaders Nuclear Course

SNCO—Senior Noncommissioned Officer

SUPT—Superintendent

TPC—Two Person Control

U.S.—United States

Attachment 2**NUCLEAR SURETY AUGMENTATION PROGRAM**

A2.1. Purpose and Scope. AFSC/SEW provides assistance to the MAJCOM/SE on request. AFSC 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 AFSC/SEW. Include a proposed schedule and locations to be visited. AFSC/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.