

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

AIR FORCE INSTRUCTION 91-115

19 JUNE 2014



Safety

**SAFETY RULES FOR NUCLEAR
LOGISTICS TRANSPORT BY THE PRIME
NUCLEAR AIRLIFT FORCE**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

ACCESSIBILITY: Publications and forms are available on the e-Publishing website at www.e-publishing.af.mil for downloading or ordering

RELEASABILITY: There are no releasability restrictions on this publication.

OPR: AFSEC/SEWN

Certified by: AF/SED
(James T. Rubeor, SES)

Pages: 10

Supersedes: AFI 91-115, 8 September
2009

This instruction implements AFD 91-1, *Nuclear Weapons and Systems Surety*. This publication is consistent with AFD 13-5, *Air Force Nuclear Enterprise*. It applies to nuclear logistics transport by the Prime Nuclear Airlift Force (PNAF). Section A assigns responsibilities. Section B contains the nuclear weapon system safety rules. The safety rules in Section B may only be changed using procedures in AFI 91-102, *Nuclear Weapon System Safety Studies Operational Safety Review and Safety Rules*. See attachment 1 for abbreviations and acronyms used in this instruction. 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. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 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). 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 Form 847s from the field through the appropriate functional's chain of command. Field activities must send implementing publications to the higher headquarters functional OPR for review and coordination before publishing. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See

AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items.

SUMMARY OF CHANGES

This document is substantially revised and must be completely reviewed. It incorporates multiple format changes for ease of use and currency. Additionally, Aircrew Possession is more thoroughly defined and Emergency Nuclear Airlift Force (ENAF) has been renamed to Emergency Nuclear Airlift Operations (ENAO). AFI33-360 guidance to include tier waiver requirements has also been incorporated.

Section A—Authority, Limitations, and Responsibilities

1. The Secretary of Defense Direction.

1.1. The Secretary of Defense directs the Chief of Staff, US Air Force, to implement the safety rules.

2. Temporary Limitations.

2.1. The Air Force may impose restrictions that are stricter than those contained in these safety rules, but may not unilaterally change the safety rules.

3. Functional Responsibilities.

3.1. The Commander, Air Force Safety Center:

3.1.1. Must ensure safety rules provide maximum safety consistent with operational requirements.

3.1.2. Must ensure units follow the safety rules.

3.1.3. Is responsible for interpretation/clarification of general and specific guidance in Section B.

3.2. Major Commands (MAJCOMs) will:

3.2.1. Ensure their units follow the safety rules.

3.2.2. Ensure safety standards and policies agree with the approved safety rules.

3.2.3. Inspect for compliance.

3.2.4. Ensure manuals, checklists, and technical orders do not conflict with the safety rules.

Section B—Safety Rules

4. DoD General Nuclear Weapon System Safety Rules.

4.1. Per DoDM 3150.02, DoD Nuclear Weapon System Safety Program Manual, general safety rules apply to all nuclear weapons and nuclear weapon systems. General safety rules

primarily apply safety policy and shall be included as part of the Air Force's safety rules package. Safety rules always apply, even during war.

4.1.1. Nuclear weapons shall not be intentionally exposed to abnormal environments except in an emergency. (T-0)

4.2. Nuclear weapons shall not be used for training or for troubleshooting (i.e. to confirm the existence of a fault, aid in fault isolation, or verify that a fault has been corrected except as explicitly allowed by a specific safety rule). (T-0)

4.3. Nuclear weapons may be used for exercises except when explicitly prohibited by specific safety rules. (T-0)

4.4. Only certified procedures, personnel, equipment, facilities, and organizations, authorized by the appropriate level of authority, shall be employed to conduct nuclear weapon system operations. (T-0)

4.5. The total number of personnel performing nuclear weapon system operations shall be held to the minimum consistent with the operations performed. (T-0)

4.6. At least two authorized persons must be present during any operation with a nuclear weapon, except when authorized by a specific safety rule; i.e., alert fly. They must be able to detect incorrect or unauthorized procedures in the task being performed. They must also have knowledge of and understand applicable safety and security requirements. (T-0)

4.7. Personnel that have physical access to nuclear weapons must be qualified under the Personnel Reliability Program (PRP), in accordance with DoD 5210.42-R, Nuclear Weapon Personnel Reliability Program Regulation. (T-0)

4.8. Physical security will be maintained in accordance with DoD Directive 5210.41, Security Policy for Protecting Nuclear Weapons-series. (T-0)

4.9. Nuclear weapons will be transported as determined by the Combatant Commander or the Military Department, in accordance with DoD Directive 4540.05, DoD Transportation of U S. Nuclear Weapons. Additionally, the following safety guidance applies: (T-0)

4.9.1. Movement(s) will be kept to a minimum consistent with operational requirements.

4.9.2. Custody and accountability transfers during logistic movements shall be by courier receipt system to ensure positive control.

4.10. Permissive Action Link (PAL) operations shall be in accordance with plans and procedures prescribed by the applicable Combatant Command and technical publications.

4.11. Verification that a nuclear warhead is not present in a test assembly must be made utilizing nonnuclear assurance procedures at the last practical opportunity agreed upon by the Department of Defense and/or DOE before the conduct of an operational test. (T-0)

4.12. Deviations from safety rules are permitted in an emergency, except as follows: (T-0)

4.12.1. US custody must be maintained until receipt of a valid nuclear control order that permits transferring US nuclear weapons to non-US delivery forces.

4.12.2. Nuclear weapons shall not be expended unless a valid, properly authenticated nuclear control order conveying release or expenditure authority is received.

4.12.3. Jettisoning of nuclear weapons is permitted in the event of an emergency, and is to be accomplished according to plans and procedures prescribed for the area of operations.

5. Safety Standards Compliance.

5.1. These rules, aircraft and weapon design safety and security features, operational and administrative controls, and technical procedures ensure nuclear logistics airlift by PNAF meets the Nuclear Weapon System Safety Standards in AFI 91-101, Air Force Nuclear Weapons Surety Program, and DoD Directive 3150.02.

6. Specific Guidance.

6.1. These rules apply to C-17A Prime Nuclear Airlift operations.

6.2. A commander may deviate from safety rules in an emergency, but must maintain US custody of nuclear weapons. DoDD 3150.02, *DoD Nuclear Weapons Surety Program*, defines an emergency as "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."

7. Nuclear Weapons Movements and Configurations:

7.1. Use shipping configurations in the applicable weapon -1 T.O. and the 11N-45-51 series.

7.2. Move nuclear weapons by the safest, most secure means and routes consistent with operational requirements.

7.3. Custody and transfer of nuclear weapons must be according to T.O. 11N-45-51, *Transportation of Nuclear Weapons Material*.

7.4. The following weapons are authorized to be transported aboard the C-17A:

7.4.1. B61-3, -4, -7, -10, -11.

7.4.2. W78. (See limitations in para 7.5)

7.4.3. W80-1. Do not transport the W80 mated to its missile.

7.4.4. B83-0, -1.

7.4.5. W87 (with Horizontal Transport Fixture).

7.5. Do not air transport designated conventional high explosives (CHE) nuclear weapons (i.e. W78) unless ground transport is not feasible. Air transport of CHE weapons requires approval by the Secretary of the Military Department or a Commander of the Combatant Command or their delegated commanders.

8. Equipment, Procedures, and Checklists:

8.1. Use only equipment, procedures, and checklists that are consistent with US Air Force-approved publications for any operation directly associated with nuclear weapons.

8.2. Approved publications must conform to the safety rules in this instruction and the DoD Nuclear Weapon System Surety Standards as described in DoDD 3150.02.

9. Security Criteria.

9.1. DoD Directive 5210.41, Security Policy for Protecting Nuclear Weapons, DoD S-5210.41-M, Volumes I, II, III, *Nuclear Weapon System Security Manual* (U); AFMAN 31-108, *Nuclear Weapons Security Manual*; AFI 13-526V1, *Prime Nuclear Airlift Force Operations*, AFI 91-526V4, *Emergency Nuclear Airlift Operations*; and AFI 10-1101, *Operations Security (OPSEC) Instructions*, apply.

9.2. Security provided by Non-US military services must meet the above DoD and US Air Force standards as spelled out in ACO Directive 80-6, ECI 6801.01, *Nuclear Surety Management for the Weapons Storage and Security System*.

10. Tamper Control Program.

10.1. AFI 91-104, *Nuclear Surety Tamper Control and Detection Programs*, which defines the Two-Person Concept, applies.

11. Personnel Reliability.

11.1. DoD 5210.42-R, Nuclear Weapons Personnel Reliability Program Regulation, and AFMAN 10-3902, Nuclear Weapons Personnel Reliability Program, apply.

12. Personnel Qualifications and Certification:

12.1. Use only airlift squadrons and aircrews designated for PNAF by Air Mobility Command.

12.2. Crewmembers who occupy a primary crew position when any nuclear weapon is aboard must be qualified and current in: (T-0)

12.2.1. The mission aircraft.

12.2.2. Recurring PNAF training.

12.3. "Qualified" means that the crewmember: (T-0)

12.3.1. Is PNAF and PRP (interim or formal) certified.

12.3.2. Has a minimum final SECRET security clearance.

12.4. The courier must be a PNAF and PRP (formal) certified commissioned officer. (T-0)

13. Passengers and Additional Crewmembers:

13.1. Commanders at all levels must rigidly control the number of people on nuclear weapon airlift missions. (T-0)

13.2. Only allow the following individuals when any nuclear weapon is aboard: (T-0)

13.2.1. Couriers, shipper escorts, and permissive action link teams authorized in the Mission Setup Message.

13.2.2. Authorized inspectors, observers, crew chiefs, and security forces.

13.3. Additional crewmembers must have a specific in-flight duty to perform.

13.4. Authorize mission-essential personnel status only for specific individuals who:

13.4.1. Are on a specific mission.

13.4.2. Have a valid requirement to observe, inspect, or participate in the nuclear weapon airlift mission.

14. Plutonium Limits.

14.1. T.O. 11N-20-7, *Nuclear Safety Criteria*, applies.

15. Maintenance and Servicing Procedures:

15.1. Select the safest, most reliable aircraft available for PNAF missions.

15.2. Consider all available safety and structural enhancements when selecting an aircraft.

15.3. Do not select aircraft that have a history of uncorrected repeat or recurring system malfunctions on any system identified in the aircraft Mission Essential Subsystem Listing, Airland/Air Refueling (MESL, ALA/AR).

15.4. Complete ground fueling, oxygen servicing, and any loading of external chaff or flares before loading nuclear weapons. Perform replenishment of external chaff or flare dispensers and subsequent fuel and oxygen servicing of nuclear-laden aircraft only as necessary to support mission requirements.

15.4.1. Do not transport replenishment chaff or flares.

15.5. The aircrew must control all maintenance activities on aircraft with any nuclear weapon aboard.

15.6. Do not perform any maintenance that increases the probability of fire on an aircraft with any nuclear weapon aboard. (T-0)

15.7. Concurrent servicing of aircraft is not authorized during weapon loading or unloading. (T-0)

15.8. With any nuclear weapon aboard, do not: (T-0)

15.8.1. Park aircraft in hangars.

15.8.2. Jack aircraft, except for lifting of one set of landing gear (integral jacking) for minor maintenance.

16. Fuel Requirements:

16.1. Fuel PNAF aircraft with the best low-volatility fuel available which is compatible with aircraft engine operation.

17. Firefighting Support Requirements.

17.1. Ensure that the required firefighting support is available for: (T-0)

17.1.1. Weapon loading and offloading.

17.2. Aircraft engine starts, taxi, takeoff, and landing.

17.3. Fuel and oxygen servicing of nuclear weapon-laden aircraft.

17.4. Any replenishment of external chaff or flare dispensers on nuclear weapon-laden aircraft.

18. Airfield and Airspace Requirements.

18.1. Prohibit direct overflight of PNAF ground operations within that airspace controlled by the base. (T-0)

19. Pre-load Requirements.

19.1.1. Do not load any nuclear weapon on an aircraft unless the aircraft is mission capable and has been serviced and prepared for loading, to include the following: (T-0)

19.1.2. Remove all nonessential personnel and nonmission-related hazardous materials.

19.2. Search and sanitize the aircraft.

19.3. Establish Type I security.

20. Loading, Tie down, and Unloading:

20.1. The aircrew members are responsible for the safety and security of each nuclear weapon in their physical possession. Aircrew possession begins after the courier and loadmaster have inspected, accepted, and taken physical control of the weapon. Possession continues until weapons are offloaded from the aircraft and the loadmaster transfers physical control to munitions personnel.

20.2. Do not load nuclear weapons on PNAF aircraft unless a loading procedure is published in the aircraft -16 series T.O. (T-0)

20.3. Unused space on nuclear weapon airlift missions may be used for other cargo only if the cargo is searched and security is maintained before loading it on the aircraft and the cargo will not cause:

20.3.1. Mission delay.

20.3.2. Mission rerouting.

20.3.3. Extra landings.

20.3.4. Additional handling or movement of nuclear weapons.

20.3.5. Security problems due to aerial port onloading or offloading.

20.4. Do not load materials that are incompatible with nuclear weapons. (T-0)

20.5. Load aircraft in a way that permits the aircrew to offload, or jettison in flight, any opportune cargo without moving any nuclear weapon. (T-0)

21. Flight Restrictions.

21.1. The US Air Force Special Weapons Overflight Guide (SWOG) applies. (T-0)

21.2. Aircraft transporting any nuclear weapon must not fly within an unsafe distance of unfriendly borders as defined in the SWOG. (T-0)

21.3. Positive measures are required to prevent overflight or landing in unfriendly territories or countries where such actions are prohibited. (T-0)

21.4. Aircraft transporting any nuclear weapon must avoid flying over heavily populated areas when possible. (T-0)

21.5. Aircraft with any nuclear weapon aboard must not take off until all destinations and planned divert stations acknowledge that they are capable of meeting security requirements. (T-0)

22. Air Refueling:

22.1. Minimize air refueling; however, air refueling can be planned when feasible to reduce ground exposure to the nuclear weapons. (T-0)

22.2. Do not delay missions for air-refueling considerations. If the mission is delayed, manage the mission in the most effective manner possible without degrading nuclear surety. (T-0)

22.3. Air refuel over open ocean at least 12 nautical miles offshore. (T-0)

22.3.1. Maneuver the aircraft only as needed to transfer fuel.

22.3.2. Do not conduct air-refueling training when any nuclear weapon is aboard.

23. Contingency Transfer:

23.1. PNAF crews are authorized to perform PNAF aircraft crossloads.

23.2. Park the two aircraft as close together as possible in a single Protection Level I restricted area.

24. Disable/Jettison:

24.1. When applicable, use the Command Disable System (CDS), if available, before crash landing or jettisoning a nuclear weapon. (Refer to the US Air Force SWOG for jettison restrictions.)

24.2. CDS codes and at least one individual knowledgeable in CDS procedures must remain on the aircraft: (T-0)

24.2.1. Until Type I security is established after arrival.

24.2.2. When ropes and stanchions are removed for taxi and departure.

24.3. Use the CDS if capture of any nuclear weapon is imminent.

24.4. Aircrews must not use emergency destruct procedures on nuclear weapons.

25. Emergency Nuclear Airlift Operations (ENAO).

25.1. ENAO plans will comply with these weapon system surety rules to the maximum extent possible.

KURT F. NEUBAUER, Major General, USAF
Chief of Safety

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

- DoD Directive 3150.02, *DoD Nuclear Weapon System Surety Program*, 24 April 2013
- DoD Directive Manual 3150.02, *DoD Nuclear Weapons System Safety Program Manual*, 31 Jan 2014
- DoD Directive 4540.05, *DoD Transportation of U.S. Nuclear Weapons*, 23 June 2011
- DoD Directive 5210.41, *Security Policy for Protecting Nuclear Weapons*, 1 Feb 2007
- DoD Directive S-5210.41M, *Nuclear Weapon Security Manual*, Volumes 1, 2, & 3_AFMAN 31-108, *Nuclear Weapon Security Manual*, 13 Jul 2009
- DoD Directive 5210.42-R_AFMAN 10-3902, *Nuclear Weapon Personnel Reliability Program Regulation*, 2 Nov 2010 (with IC2)
- Allied Command Operation (ACO) Directive 80-6 Volume 2, Part II/USEUCOM Directive 60-12, *Nuclear Surety Management for the Weapon Storage and Security System (WS3)*, 6 Dec 2006
- AFPD 13-5, *Air Force Nuclear Enterprise*, 6 July 2011
- AFPD 91-1, *Nuclear Weapons and Systems Surety*, 13 Dec 10
- AFI 10-701, *Operations Security*, 8 Jun 2011
- AFI 13-526V1, *Prime Nuclear Airlift Force Operations*, 14 Jun 2013
- AFI 91-526V4, *Emergency Nuclear Airlift Operations*, 14 Jun 2013
- AFMAN 33-363, *Management of Records*, 1 Mar 08
- AFI 33-360, *Publications and Form Management*, 25 Sep 13
- AFI 91-101, *Air Force Nuclear Weapons Surety Program*, 13 Oct 2010
- AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*, 25 Feb 2014
- AFI 91-104, *Nuclear Surety Tamper Control and Detection Programs*, 23 Apr 2013
- T.O. 11N-20-7, *Nuclear Safety Criteria*, 2 Jan 2008
- T.O. 11N-45-51, *Transportation of Nuclear Weapons Material*, 22 Mar 2006

Adopted Forms

- AF Form 847, *Recommendation for Change of Publication*.

Abbreviations and Acronyms

- CD**—Command Disable
- CDS**—Command Disable System
- CHE**—Conventional High Explosive

DoD—Department of Defense

DOE—Department of Energy

ENAF—Emergency Nuclear Airlift Force

ENAO—Emergency Nuclear Airlift Operations

EWO—Emergency War Orders

HE—High Explosive

MAJCOM—Major Command

MESL, ALA/AR—Mission Essential Subsystem Listing, Airland/Air Refueling

PAL—Permissive Action Link

PNAF—Prime Nuclear Airlift Force

PRP—Personnel Reliability Program

SWOG—Special Weapons Overflight Guide