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This instruction implements Air Force Policy Directive (AFPD) 91-1, *Nuclear Weapons and Systems and Surety*. This instruction is consistent with AFPD 13-5, *Air Force Nuclear Mission* and provides guidance on the certification of procedures, equipment, software, facilities, personnel, and organizations conducting nuclear operations with nuclear weapons or nuclear weapon systems. It describes the roles and responsibilities and the standards necessary for assurance of the nuclear certification required by Air Force Instruction (AFI) 63-101/20-101, *Integrated Life Cycle Management*.

This instruction applies to all Regular Air Force, Air National Guard, Air Force Reserve, Department of the Air Force civilian personnel. This instruction also applies to contractors if included in the applicable contract or involved in the research, design, development, testing, acquisition, operation, maintenance, or modification of nuclear weapons or their related systems and subsystems. This publication may be supplemented at the major command (MAJCOM) level, but supplements must be routed to Air Force Nuclear Weapons Center (AFNWC), Nuclear

Technology Surety and Certification Division (AFNWC/NTS) Certification Management Team at **AFNWC.NTSC.WorkflowMailbox@us.af.mil** for coordination prior to certification and approval. 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 requestor's commander for non-tiered compliance items. Waiver authorities for mandates to the acquisition execution chain not Tiered are individually identified. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the Air Force (AF) Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. 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 located in the Air Force Records Information Management System. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

(ANG) This guidance supplements AFI 63-125, dated 16 January 2020. This supplement applies to military and civilian personnel at all levels within the Air National Guard (ANG) involved in research, design, development, testing, acquisition, operation, maintenance, and modification of nuclear weapons and their related systems and subsystems. Users of this instruction must notify NGB/SEW of conflicts between this instruction and other directives, instructions, or technical orders. Forward questions or recommended changes concerning this supplement to the Office of Primary Responsibility at **NGB.SE.SEW.Org@us.af.mil** using AF IMT 847, *Recommendation for Change of Publication*. 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 Air Force Instructions (AFI) 33-360, Publications and Forms Management, **Table 1.1** 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. Ensure all records created as a result of processes prescribed in this publication are maintained in accordance with AFI 33-322, Records Management and Information Governance Program, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located in the Air Force Records Management System.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include revisions to meet the Secretary of the Air Force mandate to update and simplify all Air Force directive publications. Organizational names have been updated to reflect changes since the previous publication. Process owner roles and responsibilities have been clarified, acronyms removed, and additional definitions have been incorporated into the glossary.

Chapter 1

PROGRAM DESCRIPTION

1.1. Nuclear Certification Program.

1.1.1. Procedures, personnel, equipment, software, facilities, and organizations that handle, maintain, or operate nuclear weapons or nuclear weapon systems shall be nuclear-certified before operations with war reserve materiel can be undertaken.

1.1.2. The Air Force may not permit the use of United States nuclear weapons by other domestic or foreign entities unless the Air Force has received confirmation of that entity's nuclear weapon systems, equipment, and procedures compliance with the same nuclear certification criteria required for Air Force systems, equipment, and procedures.

1.2. Nuclear Certification.

1.2.1. The Air Force Nuclear Certification Program ensures all procedures, equipment, software, facilities, personnel, and organizations are certified before conducting nuclear operations with nuclear weapons or nuclear weapon systems.

1.2.1.1. Nuclear certification occurs when a determination is made by the Air Force that procedures, equipment, software, and facilities are sufficient to perform nuclear weapon functions and personnel and organizations are capable of performing assigned nuclear missions. Nuclear certification is required before a nuclear weapon system or item of equipment can be used to support unit nuclear mission operations. **Note:** Essential Facility Systems of individual buildings/structures that are used to maintain, store, or handle nuclear weapons are included as part of the certification of continental United States (CONUS)-based facilities. Such individual buildings or structures include: lightning/side flash protection systems; facility power systems; hoists, cranes, and similar devices (structural support); physical facility security systems and software; blast containment/isolation features; and electromagnetic radiation and radiation monitoring. Intercontinental ballistic missile (ICBM) launch facilities/launch control centers are not considered facilities nor Essential Facility Systems and are part of the overall ICBM weapon system certification.

1.2.2. A nuclear-certified item is defined as procedures, equipment, software, facilities, systems, subsystems, or components that are nuclear-certified in accordance with the certification process outlined in this AFI. Only nuclear-certified items may be used in nuclear operations. The Master Nuclear Certification List (MNCL) is the official AF listing of all nuclear-certified items (excluding procedures) and can be located at **https://wwwmil.nwc.kirtland.af.mil/mncl/index.cfm**.

1.2.3. Nuclear Certified Equipment (NCE) is defined as support equipment that is nuclear-certified.

1.2.3.1. NCE is a subset of nuclear-certified items that consists of support equipment that is nuclear-certified. NCE includes vehicles; aerospace ground equipment; munitions materiel handling equipment; facility lifting and suspension equipment; test equipment;

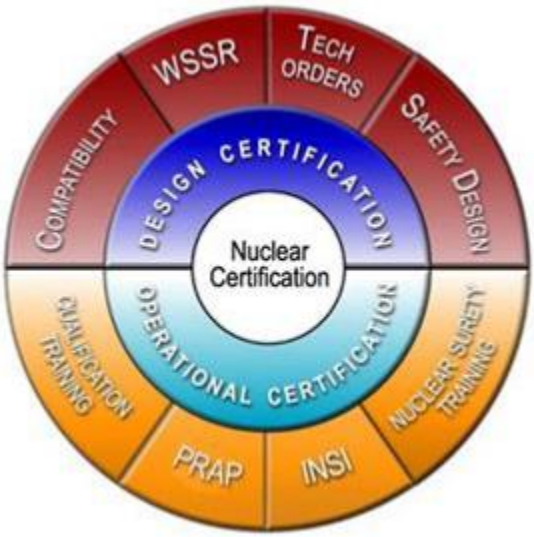
automatic test equipment (when used in a support function); organizational, field, and depot support equipment; and related computer program software.

1.2.3.2. NCE does not include aircraft components and suspension equipment (e.g., pylons, rotary launchers, bomb racks) nor does it include ICBM system components and items installed in the Launch Facility/Launch Control Center. These items are referred to as "Nuclear-certified items which are not NCE."

1.3. Overview of the Air Force Nuclear Certification Program.

1.3.1. As illustrated in **Figure 1.1**, the Air Force Nuclear Certification Program has two major elements: design certification, obtained and maintained by the acquisition program manager, and operational certification, obtained and maintained by the lead/using command. These two elements and their associated components should be satisfied before an item can be nuclear-certified. Design certification components identified in the Certification Requirements Plan should be accomplished before the operational certification element can be completed (i.e., the weapon system or item is design certified before the lead/using command can conduct an Initial Nuclear Surety Inspection (INSI)). **Note:** Not all certification components may be required for nuclear certification. Specific certification requirements are outlined in the Certification Requirements Plan.

Figure 1.1. Nuclear Certification Major Elements and Components.



Legend: WSSR=Weapon System Safety Rules; PRAP=Personnel Reliability Assurance Program; INSI=Initial Nuclear Surety Inspection

1.3.2. Design Certification occurs when each of the applicable four components (Compatibility, Nuclear Safety Design, Weapon System Safety Rules (WSSR), and Technical Order (TO)), illustrated in **Figure 1.2**, are completed.

Figure 1.2. Design Certification Components.

1.3.2.1. The AFNWC, Surety and Certification Division (AFNWC/NTS) provides compatibility certification for aircraft; air-launched missile systems; support equipment; and nuclear maintenance, handling, and storage facilities. The AFNWC, ICBM Systems Directorate (AFNWC/NI) provides compatibility certification for ICBM systems. Reference Military Standard (MIL-STD) -1822B, *Nuclear Compatibility Certification of Nuclear Weapon Systems, Subsystems, and Support Equipment.*

1.3.2.2. Headquarters Air Force Safety Center, Weapons Safety Division (HQ AFSEC/SEW) provides Nuclear Safety Design Certification. Reference AFI 91-103, *Air Force Nuclear Safety Design Certification Program*.

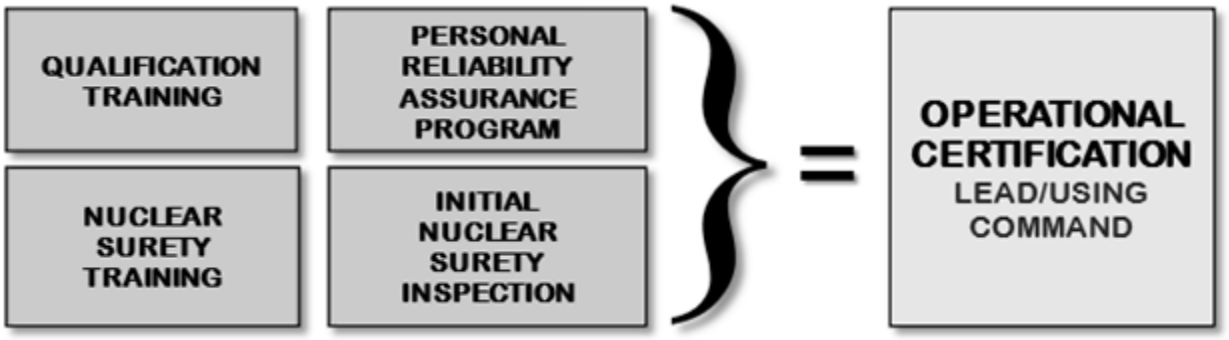
1.3.2.3. The Nuclear Weapon System Surety Group develops/revises Weapon System Safety Rules for Under Secretary of Defense for Acquisition and Sustainment (USD (A&S)) approval, and HQ AFSEC/SEW publishes them in the form of an AFI. Reference AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules.*

1.3.2.4. The Technical Order Management Agent/Technical Order Management Agency (TOMA) approves and publishes technical orders. Reference Technical order (TO) 00-5-3, *Air Force Technical Order Life Cycle Management*.

1.3.3. Operational Certification occurs, as illustrated in **Figure 1.3**, when the lead/using command qualifies a unit's personnel to perform the mission through qualification training, certifies them in the Personnel Reliability Assurance Program (PRAP), trains them in nuclear surety, and assigns a "Ready" rating on an initial Nuclear Surety Inspection. Each unit is operationally certified by the lead/using command to be considered nuclear-mission capable. However, nuclear certification of a nuclear weapon system is granted based on the operational certification of the first unit. Subsequent units receiving the new or modified system/item undergo an initial Nuclear Surety Inspection conducted by the using command prior to being considered nuclear capable. Reference AFI 91-101, *Air Force Nuclear*

Weapons Surety Program, DoDM 5210.42_AFMAN 13-501, *Nuclear Weapons Personnel Reliability Program (PRP)*, AFI 90-201, *The Air Force Inspection System*, and Chairman Joint Chiefs of Staff Instruction (CJCSI) 3263.05D, *Nuclear Weapons Technical Inspection*.

Figure 1.3. Operational Certification Components.



Chapter 2

ROLES AND RESPONSIBILITIES

2.1. The Assistant Secretary of the Air Force for Acquisition, Technology & Logistics (SAF/AQ) shall:

2.1.1. Execute nuclear-related acquisition programs through the appropriate chain-of-authority; currently via Strategic Systems Program Executive Officer and Fighters and Bombers Program Executive Officer portfolios.

2.1.2. Develop policy and guidance in conjunction with Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration (AF/A10) and Deputy Chief of Staff for Logistics, Engineering, and Force Protection (AF/A4) for managing nuclear-capable/certified weapons systems and nuclear-certified mission support products.

2.1.3. Ensure a memorandum of agreement is in place between joint service developments to capture Air Force nuclear certification requirements for Air Force systems in accordance with this instruction.

2.1.4. Ensure the Air Force General Counsel and The Judge Advocate General of the Air Force are advised of potential weapon or weapon system acquisitions or modifications to enable required legal reviews to be conducted. Additional guidance and information are contained in AFPD 16-6, *International Arms Control and Nonproliferation Agreements and the DoD Foreign Clearance Program*, AFI 16-601, *Implementation of, and Compliance with, International Arms Control and Nonproliferation Agreements*, and AFI 51-402, *International Law*.

2.2. Office of the Inspector General (SAF/IG) will:

2.2.1. Pursuant to AFI 90-201, manage Air Force nuclear inspection policy (including plans, guidance, and procedures) and provide oversight of inspection policy implementation.

2.2.2. Ensure MAJCOMs with nuclear capable assigned/gained units follow Nuclear Surety Inspection guidance as outlined in AFI 90-201 and CJCSI 3263.05D.

2.3. The Deputy Chief of Staff for Strategic Deterrence and Nuclear Integration (AF/A10) will:

2.3.1. Coordinate with SAF/AQ, AF/SE, and the AFNWC/CC to evaluate and integrate policy affecting nuclear certification process.

2.4. The Deputy Chief of Staff for Strategic Plans and Requirements (AF/A5) will:

2.4.1. Facilitate addressing the nuclear certification needs using the following two capability requirement, test, and modification documents: (1) the Initial Capabilities Document/Capability Development Document, or other legacy documents (i.e., Initial Requirements Document, Operational Requirements Document, Combat Mission Needs Statement, etc.); (2) Test and Evaluation Master Plan for a new nuclear capable weapon system or for a major modification to the same; or (3) the Air Force Form 1067, *Modification Proposal*, or other appropriate documentation, for modifications to a new or existing nuclear capable system.

2.4.2. Coordinate with the lead/using command and appropriate Program Manager (PM) to identify the items requiring nuclear certification and to identify the cost and time impact of nuclear certification as early as possible in the Requirements Generation Process.

2.5. The Deputy Chief of Staff for Logistics, Engineering and Force Protection (AF/A4) will:

2.5.1. Prioritize and plan the upgrade and installation of nuclear security sensor systems.

2.5.2. Ensure new or changes to existing security systems (including security system software) developed for use at nuclear facilities or that control access to nuclear weapons are coordinated with the appropriate program office and do not negatively impact the nuclear-certified status of the facility or operation.

2.5.3. Develop policy and guidance, coordinated with AF/A4L, to ensure physical security upgrades to nuclear facilities are properly integrated into the Air Force nuclear certification process.

2.5.4. Ensure policies/guidance developed for the management of Air Force maintenance and logistics functions include criteria necessary to support and sustain the certification of nuclear-certified items.

2.6. Chief of Safety (AF/SE) will:

2.6.1. Coordinate with AF/A10 to develop and establish Air Force Nuclear Surety standards (safety, security, and reliability), guidance, training, planning, programs, and safety design certification of nuclear weapon systems and components.

2.6.2. Headquarters Air Force Safety Center (HQ AFSEC) supports AF/SE in fulfilling this responsibility through the Weapons Safety Division (HQ AFSEC/SEW). HQ AFSEC/SEW will:

2.6.2.1. Serve as the Air Force independent agency for the Nuclear Safety Design Certification.

2.6.2.2. Review and coordinate on all Nuclear Certification Impact Statements.

2.6.2.3. Provide support and guidance for specific events/tasks/documents required to achieve safety design certification or Weapon System Safety Rules development when Nuclear Safety Design Certification or Weapon System Safety Rules are determined to be impacted.

2.6.2.4. Provide support and guidance to determine specific tasks required to prove compliance with nuclear safety and evaluation criteria to achieve safety design certification in the basic Certification Requirements Plan.

2.6.2.5. Approve the nuclear safety design and Weapon System Safety Rules development requirements of the Certification Requirements Plan. **(T-0)**

2.7. Commander Air Force Nuclear Weapons Center (AFNWC/CC) will:

2.7.1. Manage the Air Force Nuclear Certification Program. **(T-1)**

2.7.1.1. Provide technical independent review/evaluation/analysis support to AFSEC/SEW as outlined in AFIs 91-101 and 91-103 as appropriate. **(T-2)**

2.7.1.2. Develop Technical Nuclear Surety Analysis to support nuclear weapon system safety studies conducted by the United States Air Force (USAF) Nuclear Weapon System Surety Group per AFI 91-102. **(T-1)**

2.7.2. Sign the Nuclear Certification Summary letter (or Design Certification Summary), upon completion of all certification actions identified by the Certification Requirements Plan. **(T-0)**

2.7.3. AFNWC, Nuclear Technology and Integration Directorate (AFNWC/NT) supports AFNWC/CC in fulfilling the AF Nuclear Certification Program through the Surety and Certification Division (AFNWC/NTS). AFNWC/NTS will:

2.7.3.1. Provide technical support for the USAF Nuclear Weapon System Surety Group Safety Studies and Operational Safety Reviews. **(T-1)**

2.7.3.2. Serve as the Air Force's OPR for nuclear certification. **(T-1)**

2.7.3.3. Provide guidance to PMs, MAJCOMs and North Atlantic Treaty Organization (NATO) on the Nuclear Certification Program. **(T-1)** Collaborate as necessary with program office/MAJCOM/Host Nation Nuclear Certification Managers (NCM) in determining the need to enter into the nuclear certification process for new acquisitions or modification efforts. **(T-1)**

2.7.3.4. Review, coordinate and distribute the Nuclear Certification Impact Statement. **(T-1)**

2.7.3.5. Notify PM and/or Nuclear Certification Manager of Nuclear Certification Impact Statement disposition as appropriate. **(T-2)**

2.7.3.6. Develop, coordinate and distribute the basic Certification Requirements Plan to appropriate process owners. **(T-1)**

2.7.3.7. Evaluate, coordinate, update and approve the Certification Requirements Plan for implementation. **(T-1)**

2.7.3.8. Manage the MNCL. **(T-1)**

2.7.3.9. Develop and publish nuclear compatibility certification criteria for aircraft; air-launched missile systems; support equipment; and nuclear maintenance, handling, and storage facilities. **(T-1)** **Note:** Nuclear compatibility certification criteria for ground-launched missile systems are developed by AFNWC/NI.

2.7.3.10. Provide nuclear compatibility certification for aircraft; air-launched missile systems; support equipment; and nuclear maintenance, handling, and storage facilities. **(T-1)** **Note:** Nuclear compatibility certification for ground-launched missile systems is provided by the AFNWC/NI.

2.7.3.11. Develop and maintain currency of the Nuclear Compatibility Certification Statement for each nuclear-certified aircraft system type (F-16, B-52, etc.). **(T-1)** **Note:** Nuclear compatibility documentation for ground-launched missile systems is developed and maintained by the AFNWC/NI.

2.7.3.12. Perform Aircraft Monitor and Control certification and surveillance tests on nuclear capable aircraft and air-launched missile systems as required for nuclear compatibility certification. **(T-1)**

2.7.3.13. Provide technical input to Air Force safety publications regarding nuclear weapon systems. **(T-1)**

2.7.3.14. When requested by HQ AFSEC/SEW, conduct safety evaluations of nuclear weapon maintenance procedures (including nuclear weapon alterations and modifications), to be accomplished in Air Force facilities per AFI 91-103. **(T-1)**

2.7.3.15. Develop and maintain nuclear certification process training materials to support in-residence, mobile training team, and distance learning applications. **(T-0)**

2.7.4. AFNWC, Air Delivered Capabilities Directorate (AFNWC/ND) supports AFNWC/CC in fulfilling the AF Nuclear Certification Program through Nuclear Material Management. The AFNWC/ND Directorate will:

2.7.4.1. Develop, verify, and publish assigned nuclear weapons TOs and ensure the Program Office Chief Engineer, or delegated representative, approves all TO updates which could affect system nuclear certification in accordance with TO 00-5-3. **(T-1)**

2.7.4.2. Serve as the Air Force Technical Order Management Agency, Technical Content Manager, and Aircrew Flight Manual Management Agency for USAF and NATO Category I Nuclear Weapons Basic Information and Loading Procedures, Air Transport Procedures, Aircrew Delivery Procedures, and Category 11N air-launched missile warhead mate/demate TOs. **(T-1)**

2.7.4.3. Air Force Nuclear Weapon Center, Engineering Liaison Office (AFNWC/NDNO) serves as the single point of contact for NATO (Host Nations). **(T-1)**

2.8. Commander Air Force Sustainment Center (AFSC/CC) will:

2.8.1. Coordinate with each PM of nuclear capable/certified weapon systems and nuclear mission support products to ensure Life Cycle Systems Engineering requirements are met in accordance with AFI 63-101/20-101. **(T-1)**

2.8.2. Review the MNCL to determine if items support nuclear capable systems and coordinate any changes to items they manage with the appropriate PM. **(T-2)**

2.9. The PM of nuclear capable/certified weapons systems and nuclear mission support products will:

2.9.1. Identify, in coordination with AF/A5, items requiring nuclear certification and assess modifications to determine if nuclear certification is affected or required. **(T-1)**

2.9.2. Notify the lead/using command whenever a nuclear-certified item has been design certified or nuclear-certified, as appropriate, and is ready for release to the field in accordance with guidance in this instruction. **(T-1)**

2.9.3. Appoint a Nuclear Certification Manager to serve as the program office's primary interface with the nuclear certification community. **(T-1, with concurrence of the Milestone Decision Authority)**

2.9.4. Include certification for any new, modified, or additional nuclear capability in the Acquisition Strategy with concurrence of the Milestone Decision Authority. **(T-1, with concurrence of the Milestone Decision Authority)**

2.9.5. Develop and submit the Nuclear Certification Impact Statement to initiate the nuclear certification process to the AFNWC/NTS Certification Management Team. **(T-1)**

2.9.6. Ensure identification information for each nuclear-certified item is sufficient for positive identification in the MNCL. **(T-1)**

2.9.7. Ensure the Program Office Chief Engineer or delegated representative approves all TO updates that could affect system nuclear certification in accordance with TO 00-5-3. **(T-1)**

2.9.8. Identify/designate positions or personnel requiring initial and annual recurring nuclear certification process related training as mandated by this instruction and ensure appropriate training is accomplished. **(T-1)**

2.9.9. Release a new nuclear-certified item to the end user only via a TO or a modified nuclear-certified item via a Time Compliance Technical Order (TCTO) or Interim TCTO (ITCTO). **(T-1)**

2.9.10. Develop and execute the Certification Requirements Plan. **(T-1)**

2.10. Lead/Using MAJCOM Commander will:

2.10.1. When required, document nuclear certification as a threshold requirement in appropriate documents. **(T-1)**

2.10.2. Provide operational support and expertise to the PM for identifying and conducting testing as needed in accordance with AFI 99-103, *Capabilities-Based Test and Evaluation*. Provide to the PM the results of the testing as required by the Certification Requirements Plan. **(T-2)**

2.10.3. Ensure appropriate training is accomplished to prepare unit personnel for completing Operational Certification. **(T-2)**

2.10.3.1. Determine what type of training unit personnel need. **(T-3)**

2.10.3.2. Implement training commensurate with unit personnel duties. **(T-3)**

2.10.3.3. Determine which command positions require initial and recurring annual nuclear certification process training. **(T-2)**

2.10.4. Coordinate with AFNWC to provide operational aircraft assets and personnel as necessary to support compatibility certification testing on USAF and non-U.S. NATO operational, nuclear capable aircraft and air-launched missile systems. **(T-2)**

2.10.5. Designate a command Nuclear Certification Manager to serve as the focal point for coordinating and managing the command's day-to-day nuclear certification program activities related to the development and fielding of new or modified systems; hardware; software; or maintenance, handling and storage facilities requiring nuclear certification. **(T-1)** The command Nuclear Certification Manager will:

2.10.5. **(ANG)** NGB/SEW is the Command Nuclear Certification Manager (NCM) and focal point for the nuclear certification program for the Air National Guard (ANG). (T-2)

2.10.5.1. Manage the command's Nuclear Certification Impact Statements and Certification Requirements Plan development, review, and coordination processes. **(T-1)**

2.10.5.2. Ensure Nuclear Certification Impact Statements are properly coordinated and evaluated to determine impacts on the operational certification of the weapon system, item of equipment, or software. **(T-1)**

2.10.5.3. Ensure Nuclear Certification Impact Statements are properly coordinated and evaluated to determine impacts on design and operational certification for maintenance, handling, and storage facilities. **(T-1)**

2.10.5.4. Ensure the command's operational certification requirements are documented in the Certification Requirements Plan for new acquisition and modification efforts. **(T-1)**

2.10.5.5. Establish and maintain a standardized process for authorizing the release of new and modified nuclear-certified items to the user. **(T-1)**

2.10.5.6. Identify/designate command staff positions requiring initial and recurring annual nuclear certification process training as mandated by this instruction. **(T-1)**

2.10.5.7. Provide nuclear certification process guidance to command staff and nuclear-tasked units. **(T-1)**

2.10.6. Ensure units with a nuclear mission use only certified items in operations involving nuclear weapons and nuclear weapon systems. **(T-1)** To verify nuclear certification status, consult the MNCL located at **https://wwwmil.nwc.kirtland.af.mil/mncl/index.cfm**.

2.10.6.1. Ensure units with an assigned nuclear mission develop procedures to review MNCL changes to determine impact on unit operations. **(T-1)**

2.10.6.2. The frequency of MNCL changes impact review is established by the command based on the unit's mission requirements but shall at a minimum be conducted monthly. **(T-1)**

2.10.7. Establish the command's NCE Management Program. **(T-1)**

2.10.7.1. Appoint a command NCE Program Manager to act as the single point of contact for the command program and to establish policies and procedures for the management of NCE used by nuclear and non-nuclear tasked operational units. **(T-1)**

2.10.7.1. **(ANG)** NGB/SEW is the Command Nuclear Certified Equipment (NCE) Program Manager and focal point for the ANG. (T-2)

2.10.7.1.1. Direct commanders of wings, groups, squadrons, or geographically separated units (applies to both nuclear and non-nuclear tasked units) that operate, maintain, acquire, sustain, or modify NCE to appoint NCE monitors at appropriate levels within the unit to manage the unit NCE management program. **(T-1)**

2.10.7.1.2. Require 100% of a unit's assigned NCE (applies to both nuclear and non-nuclear tasked units) be annually surveyed to validate, document and ensure readability of identification information (i.e., data plate, information plate,

appropriate markings, etc.) and ensure that the information matches the MNCL listing (this may be incorporated into regular inspections). **(T-1)**

2.10.7.1.2.1. NCE deployed and possessed by expeditionary forces is exempt from the NCE management program. **Note:** The gaining unit should inspect NCE returned from deployed locations or depot maintenance to determine serviceability and ensure any unauthorized modifications have been corrected or approved prior to utilization in nuclear operations.

Note: DULL SWORD reporting requirements from AFMAN 91-221, *Weapons Safety Investigations and Reports*, apply for deficiencies associated with NCE.

2.10.7.1.2.2. For assets in War Reserve Materiel/extended storage or otherwise inspected at intervals exceeding 12 months, the equipment owners should perform this survey in conjunction with specific regular inspections for this type of equipment in accordance with appropriate technical data.

2.10.7.1.2.3. Tie-down chains, adjusters, straps, load binders, shackles, etc., used for weapon restraint during shipping as well as individual bomb roller assemblies are considered nuclear-certified in accordance with AFI 91-103 but exempt from the NCE management program.

2.10.7.1.2.4. NCE in depot maintenance at a depot facility or owned and operated by the program office (i.e., not used by an operational unit) is exempt from the NCE management program.

2.10.7.1.2.5. NCE in the possession of the program office, depot or product support/distribution function, which is not used by those functions as an end user, is exempt from the NCE management program.

2.10.7.1.2.6. General Services Administration leased vehicles are exempt from the NCE management program.

2.10.8. Appoint/designate the Air Force Program Manager for CONUS nuclear maintenance, handling, and storage facilities (does not include ICBM Launch Facilities/Launch Control Centers). **(T-1)**

2.10.8.1. The PM for CONUS nuclear maintenance, handling, and storage facilities will establish, implement, and execute a nuclear certification program to accomplish the requirements specified herein (to include PM responsibilities detailed in paragraphs 2.9.1, 2.9.2, 2.9.4, 2.9.5, 2.9.6, and 2.9.9.) to provide and maintain nuclear certification of these facilities. **(T-1)**

2.10.8.2. Develop/maintain the Facility Certification Configuration Document for these facilities. **(T-1)**

2.11. Nuclear Certification Manager (NCM) will:

2.11.1. Serve as the primary representative of the program office and/or Host Nation to the nuclear certification community for day-to-day management and execution of the Nuclear Certification Program. **(T-1)**

2.11.2. Coordinate support from engineering, logistics, test, structures, weapons, plans and programs, etc., to facilitate nuclear certification. **(T-1)**

2.11.3. Coordinate the development of all nuclear certification requirements with applicable organizations, (e.g. contractors, AFNWC, HQ AFSEC, test agencies, National Nuclear Security Administration, lead/using command, NATO and higher headquarters). **(T-1)**

2.11.4. Monitor the weapon system nuclear certification process to maintain weapon system configuration and certification. **(T-1)**

2.12. (ADDED-ANG) ANG Wing/ Unit Safety Office will:

2.12.1. **(ADDED-ANG)** Train Squadron appointed Nuclear Certified Equipment (NCE) monitors in accordance with ANG added **para 5.1.1** (T-2)

2.12.2. **(ADDED-ANG)** Ensure Squadron NCE monitors conduct NCE survey annually. (T-2)

2.12.3. **(Added-ANG) (ADDED** When NCE is owned by another MAJCOM and managed by the ANG, the ANG Wing will coordinate any processes related to that NCE with the owning MAJCOM. (T-2)

2.13. (ADDED-ANG) ANG Squadrons will:

2.13.1. **(ADDED-non-nuclear tasked)** appoint squadron NCE monitors for squadrons that operate, maintain, acquire, sustain, or modify NCE. **(T-2) Note:** The primary Squadron NCE monitor should be a fulltime employee e.g. Civilian (T5), Air Guard Reserve (AGR), or Air Technician (T32). **(T-2)**

2.13.1.1. **(ADDED-ANG)** Squadron Commanders will appoint primary and alternate Squadron NCE monitors and submit these appointment letters to the Wing's safety office. **(T-2)**

2.13.1.2. **(ADDED-ANG)** Nuclear tasked units NCE monitors will follow AFGSC guidance, procedures, and AFGSC supplement. (T-2)

2.14. (ADDED-ANG) Squadron Nuclear Certified Equipment Monitor will:

2.14.1. **(ADDED-ANG)** Function as the Squadron Commander's representative for all Nuclear Certified Equipment issues. **(T-2)**

2.14.2. **(ADDED-ANG)** Receive initial training to help identify potential equipment deficiencies that could qualify as a Dull Sword. (Wing Safety Office will conduct initial training to address Dull Sword per AFMAN 91-221 and ANG added **paragraph 5.1.1**) **(T-2)**

2.14.3. **(ADDED-ANG)** Ensure squadron personnel who operate, maintain, acquire, sustain, or modify NCE are aware of reporting procedures for potential Dull Swords. **(T-2)**

2.14.4. **(ADDED-ANG)** Use the MNCL website, to determine applicability of assigned equipment. **(T-2)**

2.14.5. **(ADDED-ANG)** Maintain a listing of 100% of squadron owned NCE and ensure each item is surveyed and documented at least annually. NCE survey listing will include identification such as nomenclature, National Item Identification Number (NIIN), model number, part number and serial number. Discrepancies will be reported in accordance with **Chapter 4** of this publication. **(T-2)**

Chapter 3

NUCLEAR CERTIFICATION PROCESS

3.1. Process Overview.

3.1.1. Weapon systems or equipment items requiring nuclear certification enter and remain in one of four phases comprising the Air Force nuclear certification process until decertified or retired (**Figure 3.1**.).

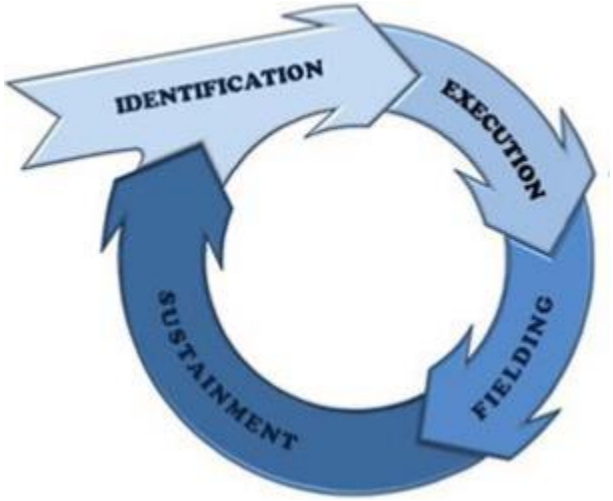
3.1.2. The identification phase begins when the PM and/or lead/using command identifies a requirement for equipment, facilities, or weapon system to be nuclear-certified and begins the nuclear certification process by submitting a Nuclear Certification Impact Statement.

3.1.3. The execution phase begins when the Certification Requirements Plan is approved and signed. Amended Certification Requirements Plans must be coordinated and signed for each revision.

3.1.4. The fielding phase begins with the release of hardware, software, or procedures following the issuance of either a Design Certification Summary or Nuclear Certification Summary from AFNWC to the PM for the use in, or in support of, a nuclear weapon system or its subsystems.

3.1.5. The sustainment phase begins when the fielding process is complete (typically with the user employing the new, nuclear-certified weapon system or item of equipment configuration to meet nuclear mission taskings) and includes all the actions that maintain the nuclear certification status of a weapon system.

Figure 3.1. Nuclear Certification Process Phases.



3.2. Identification Phase.

3.2.1. The identification phase includes: (1) identifying when a new or modified weapon system, component, nuclear mission support product, or nuclear maintenance/storage facility requires nuclear certification and determining how a modification could affect the nuclear certification of an existing weapon system, component, nuclear mission support product, or

nuclear maintenance/storage facility; (2) formally notifying AFNWC/NTS Certification Management Team of a potential impact to the nuclear certification of a weapon system, component, nuclear mission support product, or nuclear maintenance/storage facility via the Nuclear Certification Impact Statement; (3) defining the top-level certification requirements in the basic Certification Requirements Plan; and (4) developing and coordinating the detailed nuclear certification requirements, roles, responsibilities, and schedules in the Certification Requirements Plan.

3.2.2. The identification phase begins with the nuclear weapon system requirements identification process. In conjunction with the lead/using command, the PM identifies if the new system development/acquisition or modification to an existing weapon system/item of support equipment requires nuclear certification or impacts the nuclear certification status of the existing system/item. Systems or items requiring nuclear certification should have these requirements documented as early as possible in the requirements development or acquisition process. For new capabilities, document nuclear certification requirements in the Capability Development Documents. Lead/using commands identify any operational change that impacts nuclear-certified weapon systems (e.g., new Prime Nuclear Airlift Force certified unit, new unit with nuclear mission, new or modifications to nuclear maintenance or storage facilities). New or revised nuclear weapon maintenance or test procedures to be conducted in Air Force facilities are documented and approved in accordance with AFI 91-103. See AFI 91-103 for guidance in determining what is required to be nuclear-certified and exactly what is needed to achieve or maintain the nuclear certification of the weapon system or item.

3.2.3. Nuclear Certification Impact Statement. Once the PM identifies the need to obtain nuclear certification for a new system/item or identifies a potential impact to the nuclear certification of a nuclear-certified weapon system/item, the PM documents that need in the Nuclear Certification Impact Statement. The Nuclear Certification Impact Statement is prepared by the program office, coordinated by the Nuclear Certification Manager, approved by the PM, and routed to AFNWC/NTS Certification Management Team through the program office's Nuclear Certification Manager. The Nuclear Certification Impact Statement provides information used to determine what initial certification requirements have to be met.

3.2.3.1. The Nuclear Certification Impact Statement provides a functional description of the proposed new system or modification and includes the PM's evaluation of its potential for nuclear certification impact. It should address impacts to compatibility certification (reference MIL-STD-1822B, *Nuclear Compatibility Certification of Nuclear Weapon Systems, Subsystems, and Support Equipment*), published TOs, published Weapon System Safety Rules, and nuclear safety design criteria (established in AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapon Systems*, AFMAN 91-118, *Safety Design and Evaluation Criteria for Nuclear Weapon Systems*, AFMAN 91-119, *Safety Design and Evaluation Criteria for Nuclear Weapon Systems Software*). Additionally, the Nuclear Certification Impact Statement should address potential operational certification impacts (i.e., task qualification training, initial nuclear surety inspection, nuclear surety training, or Personnel Reliability Assurance Program).

3.2.3.2. AFNWC/NTS Certification Management Team coordinates the Nuclear Certification Impact Statement with the appropriate nuclear certification process owners (e.g., HQ Air Force Safety Center, AFNWC/NTS, lead/using command). Process owners

evaluate the Nuclear Certification Impact Statement and identify their requirements that the program office must meet in order for the system/item to be nuclear-certified. If it is determined that no certification actions are needed, AFNWC/NTS Certification Management Team notifies the PM via a Nuclear Certification Impact Statement No Impact Notification Letter. This letter may identify any administrative requirements that need to be accomplished (e.g., updating the MNCL or Nuclear Compatibility Certification Statement) and indicate that no further certification process actions are required. If the process owners determine that certification actions are required, the AFNWC/NTS Certification Management Team will notify the PM and develop the basic Certification Requirements Plan.

3.2.4. When nuclear certification is needed, AFNWC/NTS Certification Management Team prepares a basic Certification Requirements Plan for review by all appropriate process owners. The basic Certification Requirements Plan identifies to the PM what certification tasks need to be accomplished in order to achieve nuclear certification. The basic Certification Requirements Plan also identifies the documentation needed to support the certification evaluations (e.g., Nuclear Surety Evaluation, Nuclear Safety Analysis Report, Final Design Approval Report, Electrical Interface Control Drawing, Mechanical Interface Control Drawing, and Facility Certification Configuration Document).

3.2.4.1. The PM develops the Certification Requirements Plan with guidance and support from the process owners as needed.

3.2.5. The Certification Requirements Plan defines the requirements, assigns the roles and responsibilities, and defines all of the activities and tasks required to achieve nuclear certification. Each Certification Requirements Plan is tailored to meet the needs of the particular acquisition/modification effort. As program changes are encountered and incorporated into the acquisition/modification effort, their impact on the nuclear certification process is reviewed and the Certification Requirements Plan is updated accordingly

3.2.5.1. The PM-prepared Certification Requirements Plan contains the details regarding how and when the program office will meet the certification requirements identified in the basic Certification Requirements Plan. The Certification Requirements Plan is forwarded to AFNWC/NTS Certification Management Team for coordination and signature from all appropriate process owners.

3.2.5.2. When the Certification Requirements Plan coordination is complete, AFNWC/NTS Certification Management Team approves the Certification Requirements Plan and returns it to the PM for implementation.

3.3. Execution Phase.

3.3.1. The Execution Phase begins when AFNWC approves the Certification Requirements Plan for implementation. There are five distinct actions that can take place within the Execution Phase: (1) Compatibility Certification; (2) Nuclear Safety Design Certification; (3) Weapon System Safety Rules Development; (4) TO Certification; and (5) Operational Certification. Activities during this phase include the documentation of modifications (to include development/update of Facility Certification Configuration Document); evaluation, testing, and analysis needed to obtain compatibility and safety design certifications; USD (A&S) approval of proposed Weapon System Safety Rules; verification of TOs; and the

operational certification of the weapon system. AFNWC issues a Nuclear Certification Summary when all actions required by the Certification Requirements Plan are accomplished. Issuance of the Nuclear Certification Summary also initiates an update to the MNCL and completes the Execution Phase.

3.3.1.1. Compatibility Certification. Compatibility certification ensures the equipment item or weapon system meets design and evaluation requirements for the physical, functional, and environmental interface between the delivery vehicle or equipment item and the nuclear weapon. A successful nuclear weapon system compatibility evaluation is needed to complete the nuclear compatibility process.

3.3.1.2. Aircraft Compatibility Certification. For aircraft and air-launched missile systems, nuclear compatibility certification is accomplished by AFNWC/NTS. To obtain compatibility certification, the PM develops the compatibility certification documents specified in the Certification Requirements Plan. Any requirements for testing and analysis needed to complete the compatibility certification actions are also identified in the Certification Requirements Plan.

3.3.1.2.1. AFNWC/NTS coordinates the required tests and analysis with the appropriate program office, test organizations (e.g., 49th Test Squadron and Air Force SEEK EAGLE Office, and National Nuclear Security Administration (Department of Energy (DoE)), as needed. In addition, AFNWC/NTS ensures National Nuclear Security Administration (DoE) is aware of system modifications or acquisitions that may affect Nuclear Weapon Major Assembly Release, the Aircraft Compatibility Control Drawings for gravity weapons, or the Compatibility Certification Drawing for cruise missiles via the weapon and/or weapon system Project Officer Group as appropriate. Once all required tests and analyses have been completed, the PM is required to update the compatibility certification documents as indicated by test results and analyses. Flight clearance recommendations and SEEK EAGLE certification is accomplished in accordance with AFI 63-101/20-101. AFNWC/NTS interfaces and coordinates with the National Nuclear Security Administration (DoE), via Sandia National Laboratories, to obtain the initial release of, or updates to, the Major Assembly Release and Aircraft Compatibility Control Drawing as appropriate.

3.3.1.2.2. Upon completion of all actions identified in the Certification Requirements Plan for compatibility certification, AFNWC/NTS shall issue an initial or updated Nuclear Compatibility Certification Statement. **(T-1)** The Nuclear Compatibility Certification Statement defines the nuclear compatibility certified configuration of the nuclear aircraft system. The content of a Nuclear Compatibility Certification Statement is described in MIL-STD-1822B.

3.3.1.3. Aircraft Monitor and Control Testing. AFNWC/NTS and National Nuclear Security Administration (DoE) (via Sandia National Laboratories) determines if Aircraft Monitor and Control testing is necessary for a given certification effort. AFNWC/NTS conducts/directs testing as needed. The purpose of the testing is to demonstrate compliance and functionality of the Aircraft Monitor and Control system with the required Aircraft Monitor and Control specification and to establish that the aircraft is electrically compatible with the required set of nuclear weapons. These results are published in a test report by AFNWC/NTS following each test and shall be used by the

AFNWC/NTS Aircraft Systems Team as source data to issue nuclear compatibility certification. **(T-1)**

3.3.1.4. ICBM Compatibility Certification. ICBM compatibility certification is accomplished by AFNWC/NI in conjunction with the lead/using command. AFNWC interfaces and coordinates with National Nuclear Security Administration (DoE) to obtain the initial release of, or updates to, the Major Assembly Release. The Certification Requirements Plan identifies design and evaluation requirements as well as any special testing or analysis necessary to obtain compatibility certification. Upon completion of all actions identified in the Certification Requirements Plan for compatibility certification, AFNWC/NI will notify AFNWC/NTS Certification Management Team via a Compatibility Certification Letter and forward a copy to AFNWC/NTS. **(T-1)** The Compatibility Certification Letter and the Major Assembly Release serves as the Nuclear Compatibility Certification Statement.

3.3.1.5. Facility Compatibility Certification. Facility compatibility certification ensures nuclear maintenance, handling, and storage facilities and their associated systems are compatible with the nuclear weapon activities performed within the facility with respect to the interface between the weapons and the facility conditions as measured against the weapon stockpile-to-target sequence document criteria. Changes in facility usage (e.g., the introduction of new weapons for which the facility/unit is not certified to store or maintain or the introduction of new or revised nuclear weapon maintenance/test procedures) or modifications to the facility drive the need to evaluate impacts on the compatibility certification of the facility. The Certification Requirements Plan identifies the compatibility certification requirements. Upon completion of all actions identified in the Certification Requirements Plan for compatibility certification, AFNWC/NTS will issue a Compatibility Certification Letter. (**T-1**)

3.3.2. Nuclear Safety Design Certification. This component of design certification evaluates facilities, hardware, and/or software associated with nuclear weapon systems for compliance with nuclear safety design and evaluation criteria. The purpose is to validate that the system; item of equipment; or nuclear maintenance, handling, and storage facility can be used safely in support of nuclear mission operations. Nuclear Safety Design Certification process begins with receipt of a Nuclear Certification Impact Statement (NCIS) and a basic Certification Requirements Plan and determines if there is impact and includes an approved basic Certification Requirements Plan that has identified the need to nuclear safety design certify a system/item that is used with nuclear weapons. AFSEC also ensures the basic Certification Requirements Plan correctly outlines the applicable design and evaluation criteria in AFI 91-103, AFI 91-107, AFMAN 91-118, and AFMAN 91-119 that are satisfied for the issuance of the Nuclear Safety Design Certification. A successful nuclear safety design evaluation and the subsequent issuance of a Nuclear Safety Design Certification letter by HQ AFSEC/SEW, to AFNWC/NTS Certification Management Team, are needed to complete the Nuclear Safety Design Certification.

3.3.2.1. The PM must comply with requirements identified in the approved Certification Requirements Plan and document these actions in accordance with AFI 91-103. **(T-1)** Compliance is documented in a Nuclear Surety Evaluation, which is submitted to HQ AFSEC/SEW with a copy to AFNWC/NTS by the program office.

3.3.2.2. The decision to grant Nuclear Safety Design Certification is based on compliance with design criteria and a suitable exercise of the design as specified by the evaluation criteria outlined in the Certification Requirements Plan. Discrepancies and/or deviations from design and evaluation criteria are assessed for risk (based on a qualitative or quantitative assessment of likelihood and consequence) and impact to operational requirements. If discrepancies or deviations exist, the PM's Nuclear Surety Evaluation should identify each risk, its risk assessment in accordance with MIL-STD-882E, *DoD Standard Practice for System Safety*, the PM's decisions on implementation of mitigations, and formal risk acceptance by the specified management authority as required in AFI 63-101/20-101. Item-specific restrictions cited in the Nuclear Safety Design Certification letter are listed in the MNCL under each item. The PM ensures the appropriate Technical Order Management Agency implements restrictions in technical data, including TOs and Joint Nuclear Weapons Publication System Manuals.

3.3.3. Weapon System Safety Rules Development. The development of a new nuclear capable weapon system or a significant design or mission change (to include a Concept of Operations change) to an existing weapon system may dictate the need for a Nuclear Weapon System Surety Group study to be included in the Certification Requirements Plan. The Nuclear Weapon System Surety Group study leads to the development, USD (A&S) approval, and publication of weapon system specific Weapon System Safety Rules (published in 91-series AFIs). Weapon System Safety Rules are operational restrictions/requirements designed to assure nuclear weapon systems are compliant with the four DoD nuclear surety standards as defined by DoDD 3150.02, *DoD Nuclear Weapons Surety Program.*

3.3.3.1. Weapon System Safety Rules must be approved by the USD (A&S) prior to the operational use of nuclear weapon systems with war reserve materiel. The requirement to convene the Nuclear Weapon System Surety Group and conduct a safety study as described in AFI 91-102 is documented in the approved Certification Requirements Plan. The Certification Requirements Plan identifies a Rules Need Date. This date is used as the baseline for developing the Nuclear Weapon System Surety Group schedule, which includes delivery dates for all required documents (e.g., lead/using command Operational Plan Data Document, Nuclear Safety Analysis Report, and Technical Nuclear Surety Analysis) and other materials needed by the Nuclear Weapon System Surety Group to support the scheduled studies. USD (A&S) approval of new or updated Weapon System Safety Rules, and subsequent issuance of a Safety Rules Approval Letter to AFNWC/NTS Certification Management Team by HQ AFSEC/SEW, completes the Weapon System Safety Rules development activities.

3.3.3.2. For nuclear-certified systems with USD (A&S) approved Weapon System Safety Rules in place, if the Nuclear Weapon System Surety Group determines that the existing Weapon System Safety Rules are adequate, HQ AFSEC/SEW forwards the Safety Rules Approval Letter to AFNWC/NTS Certification Management Team.

3.3.4. Technical Order Certification. The PM is responsible for ensuring the Technical Order Management Agency develops/updates TOs and procedures involved in a weapon system's nuclear mission operations, maintenance, troubleshooting, Operational Certification (ICBM item only), Decertification (ICBM item only), handling, movement, restraint configuration, loading, unloading, delivery, and testing to be complete, accurate, and safe as directed by TO

00-5-3. Procedures that comply with Weapon System Safety Rules, requirements in the AFI 91-series, nuclear safety, nuclear compatibility, and design safety features are the responsibility of the Technical Content Manager. The Certification Requirements Plan describes all TO-related actions required to certify the procedures. When technical data is approved, the Technical Order Management Agency will formally notify AFNWC/NTS Certification Management Team via a Technical Order Approval Notification Letter. **(T-1)**

3.3.5. Operational Certification. Operational Certification ensures that the organization and personnel assigned to support the nuclear mission can effectively and safely operate and maintain their assigned weapon systems (see AFI 13-520, *Aircraft and ICBM Nuclear Operations*). Operational Certification applies to a variety of circumstances: e.g. a new weapon system that has a nuclear capability; an existing weapon system that has had the nuclear mission capability added to the unit's designed operational capability statement; or an existing nuclear capable unit that has received a significant modification to a nuclear-certified weapon system, subsystem, or item of support equipment. The Certification Requirements Plan describes the actions required to achieve operational certification. The lead/using command sends an Operational Certification Letter to AFNWC/NTS Certification Management Team to confirm operational certification actions are complete.

3.3.5.1. Lead/Using Command. The lead/using command has the final authority, responsibility, and accountability to determine the requirements of this certification. The lead/using command develops and implements a tailored nuclear qualification program for each type of weapon system accomplishing this certification. The program includes nuclear-mission qualification training and training programs to ensure compliance and proficiency in all applicable Nuclear Surety Inspection events as listed and described in CJCSI 3263.05D and AFI 90-201 and aircrew/missile crew nuclear mission certifications as applicable to the unit's designed operational capability statement. The Certification Requirements Plan describes the actions required to achieve operational certification.

3.3.5.2. Personnel Reliability and Assurance Program is conducted in accordance with DoDM 5210.42_AFMAN 13-501.

3.3.5.3. Required nuclear surety training is conducted in accordance with AFI 91-101.

3.3.5.4. Applicable nuclear qualification training and task evaluations are accomplished and personnel are graded and qualified in accordance with applicable operations and maintenance TOs, AFIs, and the lead/using command's supplements and instructions.

3.3.5.5. Initial Nuclear Surety Inspection. The lead/using command, in coordination with HQ Air Force Safety Center, determines the need for an initial Nuclear Surety Inspection in accordance with AFI 90-201 and ensures this requirement is included in the Certification Requirements Plan.

3.3.6. Execution Phase Completion. Throughout the Execution Phase, AFNWC/NTS Certification Management Team tracks the status of the nuclear certification process. The Certification Requirements Plan identifies which of the nuclear certification process components (i.e., Compatibility Certification, Nuclear Safety Design Certification, Weapon System Safety Rules Development/Approval, TO Certification and Operational Certification) are required for nuclear certification. Successful completion of these tasks is documented by the following:

3.3.6.1. Nuclear Compatibility Certification Statement (NCCS). For aircraft systems, a Nuclear Compatibility Certification Statement; for ICBM systems the Major Assembly Release and Compatibility Certification Letter serves as the Nuclear Compatibility Certification Statement; for facilities and support equipment, a Compatibility Certification Letter, as appropriate, indicating that all actions for Compatibility Certification are complete.

3.3.6.2. The Nuclear Safety Design Certification Letter.

3.3.6.3. Formal TO approval letter from the appropriate Technical Order Management Agency.

3.3.6.4. Weapon System Safety Rules Approval notification.

3.3.6.5. An Operational Certification Letter from the lead/using command, indicating completion of Operational Certification requirements for the first operationally-certified unit.

3.3.6.6. When all of the Certification Requirements Plan-directed Design Certification components identified above are accomplished, AFNWC/NTS Certification Management Team develops the Design Certification Summary Letter, if necessary, for AFNWC/CC signature. Once signed, the Design Certification Summary is forwarded to the PM and the MNCL is updated to indicate that Design Certification is complete. Once all of the Certification Requirements Plan-directed actions are completed, a Nuclear Certification Summary Letter is issued to the PM, and the MNCL is updated to indicate the system/item is nuclear-certified. These actions complete the Execution Phase.

3.4. Fielding Phase.

3.4.1. The fielding phase typically begins with the issuance of either a Design Certification Summary or a Nuclear Certification Summary from AFNWC to the PM. **Note:** Nuclear Certification equals the Design Certification plus the Operational Certification of one unit. The fielding phase typically ends with the user employing the new, nuclear-certified weapon system or item of equipment configuration to meet nuclear mission operations. This phase also addresses situations that require the release of a new or modified item to the user prior to design certification or weapon system nuclear certification being complete (e.g., conventional-only release or release for operational-certification actions (i.e., for training purposes only)).

3.4.1.1. Release Process. “Release” refers to the process of sending a new or modified item to the user. All items affecting a nuclear-certified weapon system configuration are released via a TO/TCTO, and units process them in accordance with AFI 21-101, *Aircraft and Equipment Maintenance Management* guidance. Items are released in one of three conditions:

3.4.1.1.1. Items that modify an existing nuclear-certified weapon system configuration.

3.4.1.1.2. Items that add nuclear capability to an existing non-nuclear-certified weapon system.

3.4.1.1.3. An entirely new nuclear-certified weapon system.

3.4.2. The lead/using command authorizes the PM to release the item along with any necessary restrictions. The need to include restrictions may come from many sources including operational test results, other limitations identified during Life Cycle Systems Engineering certifications, and circumstances as directed by lead/using command requirements.

3.4.3. Non-nuclear mission requirements may drive the need to field items destined for use on nuclear-certified systems before an item has been appropriately certified.

3.4.4. When the PM's recommendation for release and the lead/using command's release authorization actions are complete, the PM notifies the AFNWC/NTS Certification Management Team that all program office/lead/using command-related Certification Requirements Plan activities are completed. This notification completes the fielding phase.

3.5. Sustainment Phase.

3.5.1. A nuclear-certified system or item enters the sustainment phase once the system is fielded and remains in the sustainment phase until it is decertified, retired, or modified. The purpose of the sustainment phase is to track the nuclear-certified system/item for any changes that would impact the design or operational certification of the system/item. During this phase, monitoring activities include weapon system/safety deficiency reporting, reporting the results of regular system testing, inspections/evaluations, and regular procedure reviews. Any change that alters the certification status would drive the process to reenter the Identification Phase.

3.5.2. Compatibility Certification. During the sustainment phase a certified item is tracked to confirm that it continues to meet the requirements for the interface (physical, functional and environmental) between the item and the nuclear weapon based upon established design and evaluation requirements.

3.5.3. Nuclear Safety Design Certification. Process owners track fielded nuclear-certified systems (i.e., hardware, software, facilities, etc.) for changes that could impact the nuclear safety design certified status of the system/item in accordance with AFI 91-103. Monitoring is accomplished through the use of nuclear surety inspection reports, DULL SWORD reports, and other safety-related reporting, as well as deficiency reports in accordance with AFI 91-204, *Safety Investigations and Reports*, AFMAN 91-221, and AFI 63-101/20-101. These reports serve as the primary means by which the PM and other process owners identify trends or areas of concern affecting the nuclear safety design certification of the system/item. The need to modify the weapon system/item or equipment/facility results in reentry into the identification phase.

3.5.4. Weapon System Safety Rules. Fielded nuclear-certified weapons systems are tracked by the Nuclear Weapon System Surety Group on a recurring basis through Operational Safety Reviews and through special safety studies conducted by the Nuclear Weapon System Surety Group to address specific issues when needed. During these reviews/studies, the Nuclear Weapon System Surety Group assesses compliance of all aspects of the nuclear weapons system with the four DoD nuclear weapon system surety standards as required by DoDM 3150.02, *DoD Nuclear Weapon System Safety Program Manual*. Existing Weapon System Safety Rules are reviewed and modified as necessary and recommendations are made to reduce shortfalls in the system with respect to compliance with the DoD Weapon System

Surety Standards across the entire stockpile-to-target sequence. HQ AFSEC/SEW notifies AFNWC/NTS Certification Management Team of changes to the Weapon System Safety Rules. If there is no impact, then no action is needed. If the new rules or recommendations require changes to the weapon system or otherwise impact the nuclear certification of the particular weapon system, then the next step is to reenter the Identification Phase.

3.5.5. Technical Order Sustainment. Sustainment of current TOs is critical to the continued nuclear certification of a weapon system. Personnel operating and maintaining nuclear-certified weapon systems with approved and verified TOs must identify deficiencies in procedural and/or technical guidance to their lead/using command functional managers. Changes are processed in accordance with existing Air Force guidance (refer to TO 00-5-1, *Air Force Technical Order System*).

3.5.6. Operational Certification. Operational certification is maintained through the inspection process.

Chapter 4

MASTER NUCLEAR CERTIFICATION LIST

4.1. Purpose of the Master Nuclear Certification List (MNCL).

4.1.1. The MNCL identifies equipment, hardware, software, and facilities that are nuclear or design certified. The MNCL is the sole authority for determining the certification status of nuclear-certified weapon systems, support equipment, software, and facilities. It is a web-based database that provides users the nuclear certification status of weapon systems, subsystems, components, software, support equipment, and facilities. Verification of certification status and configuration is accomplished by MAJCOM policy in accordance with paragraph 2.10.7. of this instruction.

4.1.2. NATO Host Nations cannot access the MNCL and are provided and are authorized to use the Engineering Liaison Office-4, MNCL Extract for User Nation Use (Excel spreadsheet), for determining the certification status of host nation owned support equipment, hardware, and software. The Engineering Liaison Office-4 spreadsheet is provided by the AFNWC/NDNO.

4.1.3. The certification status of a listed item is indicated in the Certification Status (Cert Status) column of the MNCL and contains either the word “Design” or “Nuclear.”

4.1.3.1. The “Design” designation indicates the item has been successfully design certified, but has not yet completed its operational certification requirements, and therefore is not authorized for use in support of nuclear operations.

4.1.3.2. The “Nuclear” designation indicates that the item has completed all nuclear certification requirements identified in the Certification Requirements Plan and is authorized for use in support of nuclear operations.

4.1.4. Users of the MNCL should check both the specific item listing as well as the General Guidance section of the MNCL to determine the certified status and usability (i.e., restrictions) of a nuclear-certified item.

4.2. Master Nuclear Certification List Management.

4.2.1. The MNCL is managed by the AFNWC/NTS Certification Management Team.

4.2.2. Routine updates to the MNCL occur on the last duty day of every month. However, out-of-cycle updates can occur at any time based on operational necessity.

4.2.3. The MNCL feedback system is the means of communicating with AFNWC/NTS Certification Management Team regarding MNCL issues, questions, changes, suggestions, etc. This feedback system is initiated via e-mail to **mnclproblem@us.af.mil** or by using the “Problem/Suggestion” link on the main menu page of the MNCL (**https://wwwmil.nwc.kirtland.af.mil/mncl/index.cfm**).

4.3. Accessing the Master Nuclear Certification List Management.

4.3.1. A computer with an internet capability operating from a .mil or .gov domain is required. In addition, Common Access Card/Public Key Infrastructure authentication from a government network is required. Contractor support personnel or organizations that support

program offices or other Air Force entities dealing with nuclear-certified items who do not have a Defense Information Systems Agency Common Access Card operating on a .mil or .gov domain cannot access the MNCL.

4.3.2. Requests for MNCL information should be sent to **mnclproblem@us.af.mil**.

4.4. Master Nuclear Certification List Restrictions.

4.4.1. Items listed in the MNCL that have restrictions apply to nuclear operations only.

4.4.2. An individual nuclear-certified item may be restricted from use with nuclear weapons at any time and for any reason (e.g., damage, modification, or changes to intended usage). The restriction is applied to preclude use of a particular item with nuclear weapons. Such restrictions are clearly marked in the MNCL listing under the restrictions for that particular item and reflect individual item identification information (e.g., item serial number). Such restrictions do not constitute removal of nuclear certification or system decertification. The restricted item must remain accounted for in accordance with the NCE Management Program.

4.5. Removal of Items from the Master Nuclear Certification List.

4.5.1. Request removal of obsolete items from the MNCL via e-mail to **mnclproblem@us.af.mil** or by using the "Problem/Suggestion" link on the main menu page of the MNCL. The MNCL administrators coordinate the request through the lead/using command(s) for concurrence. Once concurrence is received, the item is removed from the MNCL during the next routine update.

4.5.2. All items that are removed from the MNCL are archived for historical purposes.

Chapter 5

TRAINING REQUIREMENTS

5.1. Nuclear Certification Program Training Requirements. All personnel (Regular Air Force, Air Reserve Component, government civilian and contractors) assigned to positions responsible for developing, modifying, or using nuclear-certified weapon systems, nuclear-certified items/support equipment, and facilities receive training commensurate with their level of responsibility as defined in **Table 5.1**. Initial training will be accomplished within 180 days of assignment**. (T-3) Note:** Waiver authority for training requirements is AFNWC/NTS.

5.1. (ANG) ANG Nuclear Certified Equipment Program Training Requirements. The ANG Unit safety office must initially train appointed Squadron Nuclear Certified Equipment monitors within 2 Unit Training Assemblies (UTA's) (60 days) of appointment. Safety managers with weapons safety responsibilities will use Air Force Manual (AFMAN) 91-221, the ANG Dull Sword Training Guide posted on the ANG/SEW SharePoint and the Master Nuclear Certification Listing (MNCL) as a base line to perform initial training for appointed Squadron NCE monitors. NCE training will include Dull Sword Deficiency reporting. ANG added **table 5.1** will be used for training commensurate with responsibilities. **(T-2) Note:** Recurring training will be satisfied via the Air Force Nuclear Weapons Center developed Nuclear Certified Equipment Users Course Computerized Based Training (available on the MNCL website).

Table 5.1. Nuclear Certification Program Training Requirements.

COURSE	POSITION	LEVEL	FREQUENCY
Air Force Nuclear Certification Process Course (Executive Seminar)	Program Office Director/Executive Staff AFGSC, AFSC, ACC, AMC, USAFE, AFNWC, AFSEC, AFLCMC	O-6, GS-15 Managers/Executives	One Time
Air Force Nuclear Certification Process Course (In-Residence, Mobile Training Team)	Program Office Nuclear Certification Manager, Program Manager, Engineer, and Equipment Specialist; lead/using command Nuclear Certification Manager; HQ AFSEC Engineers and Action Officers; AFNWC/NTS/NDE/Embeds	All Grades (military and civilian)	Initial Annual Recurring
Air Force Nuclear Certification Process Course (Computer Based Training)	Program Office Nuclear Certification Manager, Program Manager, Engineer, and Equipment Specialist; lead/using command Nuclear Certification Manager;	All Grades (military and civilian)	Annual Recurring when approved by AFNWC/NTS Certification Management Team

	HQ AFSEC Engineers and Action Officers; AFNWC/NTS/NDE/Embeds		
NCE/MNCL Users Course (Mobile Training Team, Computer Based Training)	MAJCOM NCE PM, NCE Monitors, NCE users with Nuclear Duties as identified by the lead/using command	All Grades (military and civilian)	Initial Annual Recurring

Table 5.1. (ANG) ANG NCE Training Requirements (T-2.)

COURSE	POSITION	LEVEL	Frequency
NCE/MNCL Users Course (Mobile Training Team, Computer Based Training)	ANG Wing Weapons Safety Mangers (WSM)	All Grades (military and civilian)	Initial, Annually recurring
	ANG Wing Occupational Safety managers without an assigned WSM		Initial, Annually recurring
	ANG Squadron Commander Appointed NCE Monitor		

5.2. Courses.

5.2.1. Air Force Nuclear Certification Process Course. This course provides attendees with an understanding of the Air Force nuclear certification process as prescribed by the Nuclear Certification Program by defining what nuclear certification is, discussing why nuclear certification is important, and describing how the nuclear certification process works.

5.2.1.1. In-residence is a 2-day course taught at Kirtland Air Force Base, New Mexico. Register at: **https://wwwmil.nwc.kirtland.af.mil/Conference/default.aspx**

5.2.1.2. Non-residence is a 1-day "core" course taught on site by the Mobile Training Team.

5.2.1.3. Executive Seminar is a 1- to 4-hour course taught on site by the Mobile Training Team.

5.2.1.4. On-line computer based training course: **https://wwwmil.nwc.kirtland.af.mil/nuccerts/signon.asp**

5.2.2. NCE/MNCL User Course. This course is designed to enhance Air Force nuclear surety by increasing awareness of the responsibilities and requirements for personnel who operate, maintain, and manage NCE.

5.2.2.1. Non-residence 1-day course taught on site by the Mobile Training Team as requested.

5.2.2.2. On-line computer based training course: **https://wwwmil.nwc.kirtland.af.mil/NCEWBT_V3/index.cfm**

Chapter 6

CERTIFICATION DOCUMENTATION REQUIREMENTS

6.1. Documentation Requirements. Documentation requirements related to the nuclear certification process identified throughout this instruction are summarized in **Table 6.1**. **Note:** Waiver authority for documentation requirements is AFNWC/NTS.

Table 6.1. Documentation Requirements for Nuclear Certification.

REQUIRED DOCUMENT	OPR	WHEN SUBMITTED	SUBMIT TO	REMARKS
Nuclear Certification Manager's Appointment Letter	All PMs; lead/using command, Host Nations	As changes occur	AFNWC/ NTS Certification Management Team	PMs with nuclear-certified systems and nuclear-tasked lead/using commands/Host Nations must appoint a Nuclear Certification Manager and provide AFNWC/NTS Certification Management Team written notification within 30 days of appointment. The letter includes point of contact information including name, grade or rank, office symbol, address, telephone number, and email address.
Nuclear Certification Impact Statement (Reference DI-NUOR-81888, *Nuclear Certification Impact Statement (NCIS)*)	All PMs	When required	AFNWC/ NTS Certification Management Team	The Nuclear Certification Impact Statement initiates the nuclear certification process. The Nuclear Certification Impact Statement advises AFNWC/NTS Certification Management Team that a new weapon system or a change to an existing weapon system, equipment item, software or procedure should be evaluated for its impact to the nuclear certification status of a weapon system.
Nuclear	AFNWC/	Receipt of	Process	Upon receipt of a Nuclear

Certification Impact Statement Coordination Form	NTS Certification Management Team	Nuclear Certification Impact Statement	owners	Certification Impact Statement, AFNWC/NTS Certification Management Team will coordinate with the appropriate process owners to determine the actions necessary to obtain or maintain Nuclear Certification.
Nuclear Certification Impact Statement No Impact Notification Letter	AFNWC/ NTS Certification Management Team	Following completion of process owner evaluation of Nuclear Certification Impact Statement	PM	Notifies PM that there is no impact to certification and closes out the certification process. If administrative actions are needed (e.g., update of MNCL), the letter will specify those actions.
Basic Certification Requirements Plan (CRP)	AFNWC/ NTS Certification Management Team	Required when impacts to nuclear certification have been determined by process owners.	PM	After review of the Nuclear Certification Impact Statement by appropriate process owners, if there is a nuclear certification impact, the AFNWC/NTS Certification Management Team will develop a basic CRP to advise the PM of the required certification actions. AFNWC/NTS Certification Management Team provides copies to all appropriate certification process owners.
Certification Requirements Plan (Reference DI-NUOR-81409, *Certification Requirements Plan (CRP)*)	PM	Required when impacts to nuclear certification have been determined by process owners.	AFNWC/ NTS Certification Management Team	The basic CRP is forwarded to the PM. The PM develops the CRP with guidance and support from the process owners. The CRP is forwarded to AFNWC/NTS Certification Management Team for coordination and signature from all

				appropriate process owners. When complete, AFNWC/NTS Certification Management Team approves the CRP and returns it to the PM for implementation.
Nuclear Safety Design Certification Letter	HQ AFSEC/ SEW	As Required by CRP	AFNWC/ NTS Certification Management Team	Provides notification that all Nuclear Safety Design Certification actions have been completed.
Weapon System Safety Rules Approval Notification	HQ AFSEC/ SEW	As Required by CRP	AFNWC/ NTS Certification Management Team	Provides notification that the Weapon System Safety Rules have been approved by USD (A&S).
Formal TO Approval Notification	TOMA	As Required by CRP	AFNWC/ NTS Certification Management Team	Documents completion of all TO development/modification actions.
Nuclear Compatibility Certification Statement	AFNWC	As Required by CRP	AFNWC/ NTS Certification Management Team	Defines nuclear compatibility certified configuration of aircraft.
Compatibility Certification Letter	AFNWC	As Required by CRP	AFNWC/ NTS Certification Management Team	Issued when all aspects of Compatibility Certification are accomplished.
Facility Certification Configuration Document	PM	As Required by CRP	AFNWC/ NTS Certification Management Team	Issued/updated in accordance with CRP.
Operational Certification Letter	lead/using command	As Required by CRP	AFNWC/ NTS Certification Management Team	Documents completion of all required Operational Certification actions.
Design Certification Summary Letter	AFNWC/ NTS Certification Management	As Required	PM	Issued when compatibility, nuclear safety design, Weapon System Safety Rules,

	Team			and/or TO procedures, as required by the CRP, are certified. AFNWC/NTS Certification Management Team will prepare a Design Certification Summary to advise the PM that all Design Certification actions prescribed in the CRP are complete. This summary provides Design Certification.
Nuclear Certification Summary Letter	AFNWC/ NTS Certification Management Team	As Required	PM	Issued when all aspects of Design and Operational Certification are achieved. AFNWC/NTS Certification Management Team will prepare a Nuclear Certification Summary letter for AFNWC/CC signature to advise the PM that Design Certification and Operational Certification actions prescribed in the CRP are complete. This summary provides nuclear certification.
PM Release Recommendation	PM	As Required	lead/using command	PM provides release recommendation for use of the system to the lead/using command.
Lead/Using Command Release Authorization	lead/using command	Prior to release of an item	PM	lead/using command accomplishes the required coordination to ensure the conditions are met.

WILLIAM B. ROPER, JR
Assistant Secretary of the Air Force
(Acquisition, Technology & Logistics)

(ANG)

ANGEL FIGUEROA, Colonel, USAF
Director of Safety

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 91-1, *Nuclear Weapons and Systems Surety*, 30 November 2016

AFPD 13-5, *Air Force Nuclear Mission Enterprise*, 17 July 2018

AFI 63-101/20-101, *Integrated Life Cycle Management*, 9 May 2017

AFI 33-360, *Publications and Forms Management*, 1 December 2015

AFMAN 33-363, *Management of Records*, 1 March 2008

MIL-STD-1822B, *Nuclear Compatibility Certification of Nuclear Weapon Systems, Subsystems, and Support Equipment*, 11 January 2017

AFI 91-103, *Air Force Nuclear Safety Design Certification Program*, 24 March 2016

AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*, 22 May 2019

TO 00-5-3, *Air Force Technical Order Life Cycle Management*, 15 February 2019

AFI 91-101, *Air Force Nuclear Weapons Surety Program*, 15 August 2014

DoDM 5210.42 _AFMAN 13-501, *Nuclear Weapons Personnel Reliability Program (PRP)*, 19 September 2018

AFI 90-201, *The Air Force Inspection System*, 20 November 2018

CJCSI 3263.05D, *Nuclear Weapons Technical Inspections*, 13 February 2019

AFPD 16-6, *International Arms Control and Nonproliferation Agreements, and the DoD Foreign Clearance Program*, 27 March 2018

AFI 16-601, *Implementation of, and Compliance With, International Arms Control and Nonproliferation Agreements*, 7 August 2018

AFI 51-402, *International Law*, 6 August 2018

AFI 99-103, *Capabilities-Based Test and Evaluation*, 06 April 2017

AFMAN 91-221, *Weapons Safety Investigations and Reports*, 21 August 2015

AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapon Systems*, 11 December 2012

AFMAN 91-118, *Safety Design and Evaluation Criteria for Nuclear Weapon Systems*, 28 July 2015

AFMAN 91-119, *Safety Design and Evaluation Criteria for Nuclear Weapon Systems Software*, 5 June 2012

MIL-STD-882E, *DoD Standard Practice for System Safety*, 11 May 2012

DoDD 3150.02, *DoD Nuclear Weapons Surety Program*, 24 April 2013

AFI 13-520, *Aircraft and ICBM Nuclear Operations*, 22 August 2018

AFI 21-101, *Aircraft and Equipment Maintenance Management*, 21 May 2015

AFI 91-204, *Safety Investigations and Reports*, 27 April 2018

DoDM 3150.02, *DoD Nuclear Weapon System Safety Program Manual*, 31 January 2014

TO 00-5-1, *Air Force Technical Order System*, 15 February 2019

DI-NUOR-81888, *Nuclear Certification Impact Statement (NCIS)*, 20 September 2018

DI-NUOR-81409, *Certification Requirements Plan (CRP)*, 22 October 2018

AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems*, 8 March 2007

Prescribed Forms

None

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

AF Form 1067, *Modification Proposal*

Abbreviations and Acronyms

ACC—Air Combat Command

AF—Air Force

AFGSC—Air Force Global Strike Command

AFI—Air Force Instruction

AFLCMC—Air Force Life Cycle Management Center

AFMAN—Air Force Manual

AFNWC—Air Force Nuclear Weapons Center

AFPD—Air Force Policy Directive

AFSC—Air Force Sustainment Center

AFSEC—Air Force Safety Center

AMC—Air Mobility Command

CJCSI—Chairman Joint Chiefs of Staff Instruction

CONUS—Continental United States

CRP—Certification Requirements Plan

DI-NUOR—Data Item (Description): Nuclear Ordnance

DoD—Department of Defense

DoDD—Department of Defense Directive

DoDM—Department of Defense Manual

DoE—Department of Energy

HDBK—Handbook

HQ—Headquarters

ICBM—Intercontinental Ballistic Missile

IG—Inspector General

INSI—Initial Nuclear Surety Inspection

ITCTO—Interim Time Compliance Technical Order

MAJCOM—Major Command

MIL-STD—Military Standard

MNCL—Master Nuclear Certification List

MPTO—Methods and Procedures Technical Orders

NATO—North Atlantic Treaty Organization

NCE—Nuclear Certified Equipment

NCIS—Nuclear Certification Impact Statement

NCM—Nuclear Certification Manager

NNSA—National Nuclear Security Administration

NWSSG—Nuclear Weapon System Surety Group

OPR—Office of Primary Responsibility

PM—Program Manager

PRAP—Personnel Reliability Assurance Program

PRP—Personnel Reliability Program

SAF—Secretary of the Air Force

TCTO—Time Compliance Technical Order

TM—Technical Manual

TO—Technical Order

TOMA—Technical Order Management Agency

U.S.—United States

USAF—United States Air Force

USAFE—United States Air Force Europe

WSSR—Weapon System Safety Rules

Terms

Aircraft Monitor and Control—Equipment installed in aircraft to permit nuclear weapon monitoring and control of safing, pre-arming, arming, and fuzing functions on nuclear weapons or nuclear weapon systems.

Aircraft Compatibility Control Drawing—A controlled drawing prepared and maintained by the National Nuclear Security Administration's Sandia National Laboratories (NNSA/SNL). The Aircraft Compatibility Control Drawing establishes the extent of compatibility and restrictions between a nuclear weapon and an aircraft.

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

Compatibility Certification Drawing—A control drawing prepared and maintained by Sandia which establishes the extent of compatibility and restrictions between a nuclear warhead on an Air Launched Cruise Missile and an aircraft. The Compatibility Certification is released after the compatibility tasks have been successfully completed. The Compatibility Certification is maintained by Sandia.

Delivery Vehicle—Portion of a weapon system that delivers a nuclear weapon to its target. This includes cruise and ballistic missile airframes as well as delivery aircraft.

Design Certification—This occurs when each of four components is accomplished for the weapon system: Compatibility Certification, Nuclear Safety Design Certification, Weapon System Safety Rules Approval, and Technical Orders Approval.

DULL SWORD—Reports of minor involving nuclear weapons, components or systems, or which could impair their deployments.

Electrical Interface Control Drawing—The Electrical Interface Control Drawing documents the physical, electrical power, and logical signal circuits in the delivery system between the avionics components at the Department of Energy/Air Force interfaces. The Electrical Interface Control Drawing includes all types of electrical interfaces in the monitor and control circuits of the nuclear weapon and nuclear weapon system, including man-machine, discrete lines, and multiplex data buses.

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

Facility Certification Configuration Document—The Facility Certification Configuration Board defines the configuration of facilities certified to have the capability to conduct nuclear operations with nuclear weapons or nuclear weapon systems. At a minimum the Facility Certification Configuration Board will contain a functional description of the facility, identification and configuration information for all facilities capable of conducting maintenance and storage of nuclear weapons. Additionally, each facility's Essential Facility Systems will be described in sufficient detail to explain functional capabilities and configuration information to include any inter-relationships between these systems which affect the capabilities.

Initial Nuclear Surety Inspection (INSI)—An inspection to evaluate a unit's readiness to assume or resume a nuclear mission or to evaluate and certify new or significantly modified maintenance and storage facilities or significant changes to weapons systems or portions thereof.

Lead Command—The MAJCOM that serves as the operator's interface with the PM for a weapon system as defined by AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems* or applicable Program Action Directive. This term is not to be confused with that MAJCOM designated by AF/A5R as OPR for authoring a requirements document (i.e., This MAJCOM would be the "using command"). Although, in most cases, the MAJCOM designated by AF/A5R to sponsor a requirement becomes the "lead command" for a weapon system.

Major Assembly Release—A Sandia National Laboratories prepared, NNSA approved statement that war reserve weapon material is satisfactory for release on a designated effective date to the DoD for specified uses which are qualified by exceptions and limitations. The Major Assembly Release contains drawings and data defining the physical, functional and environmental characteristics of the weapon and the delivery platform. For aircraft systems, the Major Assembly Release also includes the Aircraft Compatibility Control Drawing.

Master Nuclear Certification List (MNCL)—Identifies equipment, hardware, facilities and software that are certified in accordance with AFI 63-125. The MNCL is the sole source for verifying the nuclear certification status of NCE (system, hardware, software).

Mechanical Interface Control Drawing—the Mechanical Interface Control Drawing defines the physical and mechanical interfaces between the delivery platform and the nuclear weapon. The Mechanical Interface Control Drawing includes dimensions, clearances, forces, installations, etc., associated with the weapon's suspension and release equipment (for aircraft, on the wing or in the weapons bay).

Mission Capable—A system's ability to perform at least one of its assigned peacetime or wartime missions. If no wartime mission is assigned, the system will be capable of performing any one assigned peacetime mission.

Mission Qualification Training—Training needed to qualify mission crewmembers to perform their specific squadron mission in an assigned position. This training is a prerequisite for CMR or BMC status.

Non-Combat Delivery Vehicle—Any vehicle, other than combat vehicles, used to move nuclear weapons.

Non-Specialized Equipment—Equipment used with nuclear weapons but not specifically designed for that purpose.

Nuclear Certification—The process for determining that procedures, personnel, equipment, software, facilities, and organizations meet nuclear surety standards and are capable of performing assigned nuclear weapon functions and missions. Nuclear certification is necessary prior to a system acquiring operational status.

Nuclear Certification Impact Statement—Document issued by the PM to initiate the certification process of an item/software, etc. This statement advises AFNWC that a new weapon system or a change to an existing weapon system, equipment item, software, facility, or procedure needs to be evaluated for its impact to the nuclear certification status of a weapon system. The Nuclear Certification Impact Statement must be submitted at least 45 days before the release of a request for proposal or an equivalent program milestone.

Nuclear Certified Equipment (NCE)—Nuclear Certified Equipment is defined as either system-specific, common specialized, or non-specialized support equipment whose design meets

applicable design criteria and is nuclear-certified in accordance with the nuclear certification process outlined in this publication and identified in the MNCL.

Nuclear-Certified Item—Procedures, equipment, software, facilities, systems, subsystems or components which are nuclear-certified in accordance with the nuclear certification process outlined in this publication.

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

Nuclear Weapon—A complete assembly (e.g., 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.

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

Nuclear Weapon System Surety Group (NWSSG)—The NWSSG is composed of representatives from AF/A10/A4S applicable Air Force major commands, combatant commands, Department of Energy, and Defense Threat Reduction Agency and is chaired by an appointee from HQ AFSEC/SEW. It conducts all nuclear weapon system safety studies and operational safety reviews to evaluate Air Force nuclear weapon systems and ensure the DoD Nuclear Weapon Surety Standards are met in weapon system design and operations.

Operational Certification—This occurs when the lead/using command qualifies its personnel to perform the mission, certifies them in the Personnel Reliability Assurance Program, trains them in nuclear surety, and assigns a “Ready” rating on an Initial Nuclear Surety Inspection.

Operational Necessity—A mission associated with war or peacetime operations in which the consequences of an action justify the risk of loss of aircraft and crew.

Prime Nuclear Airlift Force—The aircraft and aircrew that provide peacetime logistical airlift support for the movement of nuclear weapons and or nuclear components.

Program Manager (PM)—The designated individual with responsibility for and authority to accomplish program objectives for development, production, and sustainment to meet the user’s operational needs. For platforms/programs in the acquisition phase, the PM is accountable for credible cost, schedule, and performance reporting and analysis, and has responsibility and authority to accomplish objectives for the total life cycle of the program.

SEEK EAGLE—The Air Force certification program for determining safe carriage, employment and jettison limits, safe escape, and ballistics accuracy, when applicable, for all stores in specified loading configurations on Air Force aircraft.

Specialized Equipment—Equipment designed specifically for use with nuclear weapons.

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.

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 program software.

Suspension Equipment—All aircraft devices, such as racks, adapters, missile launchers, and pylons, used for carriage, employment and jettison of aircraft stores.

System Safety—The application of engineering and management principles, criteria, and techniques throughout all phases of the system life-cycle to optimize safety within the constraints of operational effectiveness, time, and cost.

Technical Order (TO)—Air Force publications that give specific technical directions and information regarding inspection, storage, operation, modification, and maintenance of Air Force equipment. The various types of TOs include technical manuals (TM), time compliance technical orders (TCTO), methods and procedures technical orders (MPTO), automation type TOs (tapes and cards that are TO data in digital, magnetic, film, or sound form), index type TOs, and abbreviated TOs.

Time Compliance Technical Order (TCTO)—An authorization directive issued to provide instructions to Air Force activities for accomplishing one-time changes, modification, inspection of equipment or installation of new equipment.

Training—In-Residence, Mobile Training Team and computer based training cover general principles and policies regarding the certification process and nuclear-certified item/equipment management

User—The unit (squadron, wing, etc.) actually operating a system on a daily basis.

Using Command—The MAJCOM operating a system, subsystem, or item of equipment. Generally applies to those operational commands or organizations designated by Headquarters, US Air Force to conduct or participate in operations or operational testing (e.g., ACC, AFGSC, USAFE).

War Reserve Materiel—stock required to sustain operations for the scenarios authorized for sustainability planning in the combatant commander war plans and war mobilization planning documents.

Weapon System—A combination of one or more weapons with all related equipment, materials, services, personnel, and means of delivery and deployment (if applicable) required for self-sufficiency.