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

*AIR FORCE INSTRUCTION 63-125*

*15 MAR 2004*

*Acquisition*

# *NUCLEAR CERTIFICATION PROGRAM*

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

**NOTICE:** This publication is available digitally on the AFDPO WWW site at: **http://www.e-publishing.af.mil.**

OPR: AAC/NW (Mr Harold Camacho)

Certified by: SAF/AQX (Mr. Blaise Durante)

Pages: 34

Distribution: F

This initial instruction implements Department of Defense (DoD) Directive (DoDD) 3150.2, *DoD Nuclear Weapon System Safety Program*, DoD Manual 3150.2-M, *DoD Nuclear Weapon System Safety Program Manual,* and Air Force Policy Directive (AFPD) 63-1, *Acquisition System*. This instruction outlines the procedures and responsibilities for managing the Air Force's Nuclear Certification Program. It delineates roles and responsibilities of the functional areas and introduces the detailed standards necessary for assurance of the nuclear certification required by Air Force Instruction (AFI) 63-1201, *Assurance of Operational Safety, Suitability, and Effectiveness* (OSS&E). Specifically, it defines the overall macro-process for establishing and preserving the nuclear certification of Air Force nuclear systems over their life cycle by prudent use of disciplined engineering practices, assurance of proper operation and maintenance, and feedback to Single Managers (SMs). This instruction applies to Air Force personnel involved in the research, design, development, testing, acquisition, operation, maintenance, and modification of nuclear weapons and their related systems and subsystems. Consult Air Force Pamphlet (AFPAM) 63-126, *Nuclear Certification Process*, for more guidance, including detailed process flow charts and descriptions. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFPD 37-1, *Information Management* and AFMAN 37-123, *Management of Records* and disposed of in accordance with the Air Force *Records Disposition Schedule (RDS)* located at **https://webrims.amc.af.mil**. Additionally, consult cited policy directives, instructions, manuals, and their supplements for specific policies, procedures, and requirements. Send requests for deviations, interpretations or recommendations to change, add or delete requirements of this instruction, to the Air Armament Center Nuclear Weapons Directorate (AAC/NW), 1551 Wyoming Blvd SE, Kirtland AFB, NM 87117-5617.

Implementation will be accomplished using the following criteria, depending upon where the weapon system or mission support product such as hardware (HW), software (SW), technical data, etc., is in the Nuclear Certification process:

Fielded weapon systems/products: Comply with the new Sustainment Phase

Weapon systems/products prior to fielding, but after the Nuclear Certification Impact Statement (NCIS) has been completed:

Identification Phase: N/A

Administration Phase: SM must get Nuclear Certification Summary (NCS) from AAC/NW before release.

Fielding and Sustainment Phase: Comply with new Fielding and Sustainment Phases.

Weapon systems/products prior to fielding and before the NCIS has been completed: Comply with this Instruction.

## Chapter 1

## PROGRAM DESCRIPTION

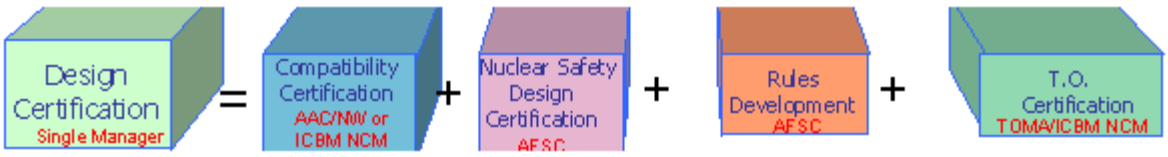
**1.1. Nuclear Certification.** The Air Force Nuclear Certification Program ensures all procedures, software, personnel, equipment, facilities, and organizations are certified before conducting nuclear operations with nuclear weapons or nuclear weapon systems. Nuclear certification occurs when a determination is made by the Air Force that procedures, software, equipment, and facilities, are sufficient to perform nuclear weapon functions and personnel and organizations are capable of performing assigned nuclear missions. Nuclear Certification is a part of OSS&E, as directed by AFI 63-1201.

**1.2. Overview of USAF Nuclear Certification Program.** As illustrated in **Figure 1.1.**, the Air Force Nuclear Certification Program has two major components: Design Certification and Operational Certification.

**Figure 1.1. Nuclear Certification Major Components.**


1.2.1. The Air Armament Center's Nuclear Weapons Directorate (AAC/NW) / Certification Management Division (AAC/NWC) grants nuclear certification when the system is design certified and at least one operational unit is Operationally Certified. The SM is responsible for obtaining and maintaining Design Certification for nuclear weapon capable systems in accordance with requirements identified in this AFI. The Lead/Using Command is responsible for obtaining and maintaining a unit's Operational Certification in accordance with this AFI.

**Figure 1.2. Design Certification Components.**




1.2.2. Design Certification occurs when each of four components, as illustrated in **Figure 1.2.**, is accomplished for the weapon system:

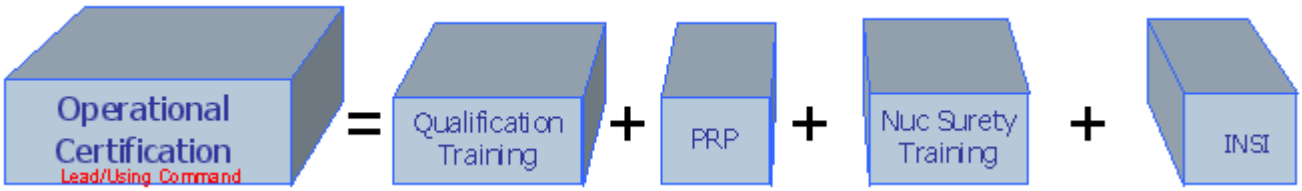
1.2.2.1. AAC/NW or the Intercontinental Ballistic Missile (ICBM) Nuclear Certification Manager (NCM) provides Compatibility Certification.

1.2.2.2. Headquarters Air Force Safety Center (HQ AFSC) provides Nuclear Safety Design Certification.

1.2.2.3. The Nuclear Weapon System Safety Group (NWSSG) develops/revises Weapon System Safety Rules (WSSRs). The Secretary of Defense (SECDEF) approves the WSSRs and HQ AFSC publishes them.

1.2.2.4. The SM's Technical Order Management Agency (TOMA), or Nuclear Certification Manager (NCM) for ICBMs, has approved and published the appropriate technical orders (T.O.s).

**Figure 1.3. Operational Certification Components.**




1.2.3. Operational Certification for a unit occurs, as illustrated in **Figure 1.3.**, when the Lead/Using Command qualifies its personnel to perform the mission, certifies them in the Personnel Reliability Program (PRP), trains them in nuclear surety, and assigns a "Ready" rating on an Initial Nuclear Surety Inspection (INSI). Each unit must be Operationally Certified by the Lead/Using Command to be considered nuclear-mission capable. However, Nuclear Certification of the weapon system is granted based on Operational Certification of only the first unit. Subsequent units will be certified as required.

## Chapter 2

## ROLES AND RESPONSIBILITIES

### 2.1. SAF.

2.1.1. **The Assistant Secretary of the Air Force (Acquisition) (SAF/AQ):**

2.1.1.1. Directs nuclear-related acquisition programs except ICBMs through the Program Executive Officer (PEO).

2.1.1.2. Sets Air Force Acquisition Policy. Develops policy and guidance, in conjunction with HQ USAF/XON, for managing nuclear capable/certified weapons systems and nuclear certified mission support products.

2.1.1.3. Ensures SMs follow this policy and guidance.

2.1.1.4. Ensures the General Counsel and the Judge Advocate General are advised and conduct the appropriate legal reviews of the intended acquisition of a potential weapon or weapon system. The reviews shall be conducted again before the award of a system for the weapon or weapon system and before the award of the initial production contract. Additional guidance and information are contained in AFPD 16-6, *Arms Control Agreements*, AFI 16-601, *Implementation of, and Compliance with, Arms Control Agreements*, and AFI 51-402, *Weapons Review*.

2.1.2. **The Under Secretary of the Air Force (Space Acquisition) (SAF/USA):**

2.1.2.1. Directs all ICBM nuclear-related acquisition programs through the PEO for Space.

2.1.3. **Office of the Inspector General (SAF/IG):**

2.1.3.1. Pursuant to AFI 90-201, manages Air Force nuclear inspection policy (including plans, guidance, and procedures) and provides oversight of inspection policy implementation.

2.1.3.2. Ensures Major Commands (MAJCOMs) with nuclear capable assigned/gained units follow Nuclear Surety Inspection (NSI) guidance as outlined in AFI 90-201, *Inspector General Activities*, Chapter 3, Air Force Nuclear Surety Inspection Program, and T.O. 11N-25-1, *DoD Nuclear Weapons Technical Inspection System*.

### 2.2. HQ USAF.

2.2.1. **Directorate of Nuclear and Counterproliferation (HQ USAF/XON):**

2.2.1.1. Monitors compliance/non-compliance with the Air Force Nuclear Certification Program and analyzes the potential or actual impact on nuclear operations.

2.2.1.2. Develops policy and guidance in conjunction with SAF/AQX (Acquisition Integration Directorate) for management of nuclear capable/certified weapons systems and nuclear certified mission support products.

2.2.2. **Directorate of Operational Requirements (HQ USAF/XOR):**

2.2.2.1. Ensures the need for nuclear certification is addressed in: 1) the Initial Capabilities Document (ICD)/Capability Development Document (CDD)/Capability Production Document (CPD) for a new nuclear-capable weapon system, or for a major modification to the same; and/or 2) the AF Form 1067 for modifications to a new or existing nuclear-capable system.

2.2.2.2. Coordinates with the Lead/Using Command to identify the cost and time impact of nuclear certification as early as possible in the Requirements Generation Process.

2.2.3. **Directorate of Security Forces (HQ USAF/XOF):**

2.2.3.1. Prioritizes and plans the upgrade and installation of nuclear security sensor systems through the Base Physical Security System program.

2.2.3.2. Establishes policy and guidance on nuclear security and monitors NSI results. Develops and coordinates DoD Directives on nuclear security policy as a member of the Security Policy Verification Committee.

2.2.4. **Directorate of Maintenance (HQ USAF/ILM):**

2.2.4.1. Monitors compliance/non-compliance with the USAF Nuclear Certification Program.

2.2.4.2. Reviews USAF policy and guidance for daily unit management of nuclear capable/certified weapons systems and equipment.

2.2.5. **Chief of Safety (HQ USAF/SE):**

2.2.5.1. Oversees the Air Force Nuclear Weapons Surety Program.

2.2.5.1.1. HQ AFSC supports HQ USAF/SE in fulfilling this responsibility:

2.2.5.1.1.1. Implements an effective Nuclear Safety Design Certification Program, as outlined in AFI 91-103, *Air Force Nuclear Safety Design Certification Program*.

2.2.5.1.1.2. Publishes design and evaluation criteria according to 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; and AFMAN 91-119, Safety, Design and Evaluation Criteria for Nuclear Weapon Systems Software.

2.2.5.1.1.3. Approves safety design and rules development portions of the Certification Requirements Plan (CRP).

2.2.5.1.1.4. Approves test and maintenance programs for operational facilities.

2.2.5.1.1.5. Approves weapon maintenance programs performed in Air Force facilities.

2.2.5.1.1.6. Provides nuclear safety design certification for hardware, software, and procedures to be used with nuclear weapons, as outlined in AFI 91-103.

2.2.5.1.1.7. Designates and certifies critical components according to AFI 91-105, *Critical Components*.

2.2.5.1.1.8. Reviews nuclear surety deficiency reports (DRs) for trends or design deficiencies, which require decertification or use restriction.

2.2.5.1.1.9. Appoints the NWSSG chair, executive officer, project officers, and selected technical advisors and provides administrative support for the NWSSG process as prescribed in AFI 91-102.

2.2.5.1.1.10. Ensures the NWSSG conducts scheduled studies and reviews and develops/revises WSSRs, as required by AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules*.

2.2.5.1.1.11. Ensures the NWSSG Support Staff reviews nuclear certified weapon system modifications, changes in operational procedures, or proposed tests to determine if nuclear surety is affected.

2.2.5.1.1.12. Publishes a semiannual report containing the status of NWSSG recommendations according to AFI 91-102.

2.2.5.1.1.13. Provides NSI program oversight as detailed in AFI 90-201.

**2.3. Air Armament Center Nuclear Weapons Directorate (AAC/NW).**

2.3.1. Serves as the Air Force's office of primary responsibility (OPR) for nuclear certification. Grants nuclear certification based upon completion of all necessary certification components as described in this document and other referenced documents.

2.3.2. Manages the Air Force Nuclear Certification Program.

2.3.2.1. Provides guidance to SMs and MAJCOMs on the Nuclear Certification Program.

2.3.2.2. Develops a Nuclear Certification training program and provides the appropriate templates/course outlines to be used at the various levels of certification process involvement (e.g., Air Staff agencies, SM, Lead/Using Command, User, etc.).

2.3.3. Reviews NCIS for completeness and accuracy.

2.3.4. Issues the NCS or Design Certification Summary upon completion of certification actions.

2.3.5. Manages the Master Nuclear Certification List (MNCL).

2.3.6. Provides aircraft nuclear compatibility certification.

2.3.6.1. Develops and publishes criteria for nuclear weapon system compatibility certification.

2.3.6.2. Performs Aircraft Monitor and Control (AMAC) and surveillance tests on USAF and non-U.S. North Atlantic Treaty Organization (NATO) operational nuclear capable aircraft and air-launched missiles systems as required for nuclear compatibility certification.

2.3.7. Provides technical input to Air Force safety publications regarding nuclear weapon systems.

2.3.8. Develops and coordinates the Basic CRP.

2.3.9. Evaluates and coordinates the CRP.

2.3.10. Maintains corporate expertise for the Nuclear Certification process.

2.3.11. Maintains files of pertinent Nuclear Certification documentation and data.

2.3.12. Chairs or co-chairs Nuclear Weapons Delivery System Project Officer Groups (POG) for aircraft systems and Nuclear Surety Working Groups (NSWG) for ICBM Systems. Chairs the Nuclear Airlift POG (NALPOG).

2.3.13. Provides the Air Force Materiel Command (AFMC) voting member and technical support for the USAF NWSSG safety studies and operational safety reviews.

2.3.14. Serves as the Air Force independent review agency for the Air Force Nuclear Safety Certification Program as defined in AFI 91-103 and provides Technical Nuclear Surety Analysis (TNSA) to support nuclear weapon system safety studies conducted by the USAF NWSSG per AFI 91-102.

2.3.15. Develops and publishes assigned Nuclear Weapons T.O.s. Serves as the Air Force TOMA, Technical Content Manager (TCM), and Aircrew Flight Manual Management Agency for USAF and NATO Category I Nuclear Weapons Basic Information and Loading Procedures, Air Transport Procedures and Aircrew Delivery Procedures T.O.s and Category 11N air launched missile warhead mate/demate T.O.s.

**2.4. Single Manager of nuclear capable/certified weapons systems and nuclear mission support products.**

2.4.1. Serves as operating official responsible for program execution of an approved weapon system program.

2.4.2. Establishes, implements, and executes a nuclear certification program to accomplish the requirements specified herein and necessary to provide and maintain a nuclear capability. Identifies funding requirements to the Lead Command for input to the Planning, Programming, Budgeting, and Execution (PPBE) system submission.

2.4.3. Identifies items requiring nuclear certification and assesses modifications to determine if nuclear certification is affected or required.

2.4.4. Notifies the Lead/Using Command whenever weapon system software, firmware, facilities, procedures, and hardware have been nuclear certified and are ready for release/use or have been decertified.

2.4.5. Appoints an NCM to act as the SM's primary interface with the nuclear certification community.

2.4.6. Develops an acquisition strategy that includes certification for any new, modified, or additional nuclear capability.

2.4.7. Develops appropriate documents such as an NCIS to initiate and complete the nuclear certification process.

2.4.8. Reports nuclear certification funding, execution, and implementation issues through the appropriate acquisition and/or sustainment management chain.

2.4.9. Fields, sustains, and maintains the configuration of nuclear hardware and software.

2.4.10. Ensures personnel who directly support the SM are appropriately trained on their nuclear certification responsibilities.

2.4.11. Releases a new nuclear certified item to the end user only via a Technical Order, or modified nuclear certified item via a Time Compliance Technical Order (TCTO) or Interim TCTO (ITCTO).

2.4.12. Develops OSS&E Plan. Documents all modifications/changes to the configuration management and baseline documents to ensure changes will either not affect nuclear certification or certification is re-accomplished.

2.4.13. Serves as the OPR for the Certification Requirements Plan (CRP).

**2.5. Nuclear Certification Manager (NCM).**

2.5.1. Serves as the SM's primary representative within the program office for day-to-day management and execution of the Nuclear Certification Program.

2.5.2. Coordinates all functional elements of the weapon system necessary to achieve nuclear certification.

2.5.3. Coordinates support from engineering, logistics, test, structures, weapons, plans, and programs, etc., to ensure a nuclear capability is obtained and sustained.

2.5.4. Plans and develops programs for the SM's Nuclear Certification Program, including coordinating the management approach and budgetary estimates; developing program schedules; recommending contracting strategies; and interfacing with related weapon system programs, agencies, and contractors.

2.5.5. Coordinates the development of all nuclear certification requirements with applicable organizations, including contractors, AAC/NW, HQ AFSC, test agencies, National Nuclear Security Administration (NNSA), Lead/Using Command, and higher headquarters.

2.5.6. Monitors the weapon system Nuclear Certification process to maintain weapon system configuration and certification.

2.5.7. Manages nuclear certification training for appropriate program office personnel.

2.5.8. Represents the SM at weapon system POGs/Working Groups.

**2.6. Lead/Using Command.**

2.6.1. Accomplishes the required documentation and processes described by this AFI, and other directives, as required. Some requirements such as updating the weapon system ICD/CDD/CPD, are accomplished by the Lead Command. Other requirements such as conducting NSIs are accomplished by the Using Command. In some instances, the Lead Command and Using Command may be the same.

2.6.2. Documents nuclear certification as a threshold requirement in the ICD/CDD/CPD for any weapon system to be developed that will maintain a nuclear mission capability.

2.6.3. Provides the Concept of Operations (CONOPS) to AAC/NWC for a weapon system under development, which will have a nuclear mission capability, for an existing weapon system/platform that will have the capability added to its Designed Operational Capability (DOC) statement, or for an existing nuclear-capable weapon system/platform.

2.6.4. Develops and maintains an accurate OPDD for each nuclear-capable/certified weapon system.

2.6.5. Provides operational support and expertise to the SM for identifying and conducting testing as required (e.g., SEEK EAGLE, Developmental Test and Evaluation (DT&E), Operational Test and Evaluation (OT&E), and Force Development Evaluation (FDE)) for modifications to current nuclear certified hardware/software items.

2.6.6. Performs T.O. verification and provides T.O. updates as required to the SM for nuclear certified items and weapon systems.

2.6.7. Develops and maintains training and nuclear mission certification programs in accordance with (IAW) applicable T.O.s and AFIs to prepare unit personnel for attaining Operational Certification.

2.6.8. Conducts INSIs to establish a unit's Operational Certification prior to employing a new or modified weapon system. Reports the results to MAJCOM commander and applicable staff and AF agencies.

2.6.9. Identifies an OPR who establishes and maintains a standardized process for authorizing the release of new and modified nuclear certified items to the user.

2.6.10. Conducts and reports the results of periodic inspections (e.g., NSIs, Nuclear Operational Readiness Inspections [NORIs], Unit Effectiveness Inspections [UEIs], and Nuclear Surety Staff Assistance Visits [NSSAVs]) to the MAJCOM commander and applicable staff and AF agencies.

2.6.11. Identifies an OPR to establish a program that provides guidance to units with a nuclear mission for monitoring the certification status of the unit's nuclear certified equipment.

2.6.12. Provides combat delivery aircraft as necessary to support flight-testing of NNSA/USAF air-carried test munitions.

2.6.13. Provides 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.

2.6.14. Ensures funding requirements to obtain and maintain nuclear certification are included in weapon system PPBE submissions.

**2.7. User.**

2.7.1. Verifies certification status and configuration of all hardware and software prior to use. Monitors MNCL items as applicable to the unit's nuclear mission and assigned weapon system(s).

2.7.2. Maintains and operates assigned weapon system(s) IAW current AFIs and T.O.s, and Lead/Using Command's guidance.

2.7.3. Identifies and documents deficiencies (e.g., nuclear mission support equipment, procedures, and policies, etc.) IAW reporting guidance and forwards issues with proposed solutions to the appropriate MAJCOM functional agencies.

2.7.4. Establishes and maintains Operational Certification sustainment training and personnel certifications IAW applicable AFIs and MAJCOM guidance.

2.7.5. Corrects MAJCOM's Inspector General (IG) identified nuclear mission related findings and discrepancies.

## Chapter 3

## NUCLEAR CERTIFICATION PROCESS

**3.1. Process Overview.** The Air Force Nuclear Certification process consists of four main phases: Identification, Administration, Fielding, and Sustainment (**Figure 3.1.**). See **Attachment 2** for a macro view of the Nuclear Certification process. The details of the major components of each phase are provided in AFPAM 63-126. First, the Identification Phase describes the actions taken by the SM and/or Lead/Using Command to identify the need for and begin the Nuclear Certification process. Second, the Administration Phase includes actions necessary to obtain or continue the nuclear certification of a weapon system. Third, the Fielding Phase involves the releasing of hardware, software, or procedures for the use in or in support of a nuclear weapon system or its subsystems. Finally, the Sustainment Phase begins when the fielding process is complete 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.** Identification is the process of: (1) identifying when a new or modified system, component, or nuclear mission support product requires nuclear certification and determining how a modification could affect nuclear certification; (2) formally notifying AAC/NWC of a potential impact to the nuclear certification of a weapon system or support item with an NCIS; (3) defining the top level certification requirements in the Basic CRP; and (4) developing and coordinating the detailed nuclear certification requirements, roles, responsibilities, and schedules in the CRP.

3.2.1. **Identification Phase Process.** The Identification Phase begins with the nuclear weapon system requirements identification process. The SM is provided the direction and resources to deliver a capability to the user or warfighter IAW AFI 63-101, *Acquisition System*. The SM, in conjunction with the Lead/Using Command and HQ USAF/XOR, identifies new weapon systems or modifications to existing weapon systems that impact or may impact nuclear certification. Systems or items requiring nuclear certification should have these requirements documented early in the requirements generation or acquisition process. For new capabilities, nuclear certification requirements should be documented no later than in the CDD. Lead/Using Commands must identify any operational change that impacts nuclear certified weapon systems (e.g., new Primary Nuclear Airlift Force (PNAF) certified unit, new unit with nuclear mission, new or modification to nuclear storage facility). The first step in the Identification process is to identify the requirement for a new item or an item that requires modification. The second is to determine if the item will require nuclear certification or will change the status of a previously certified item. The third step is to determine exactly what is required to achieve or maintain the nuclear certification of the weapon system or item.

3.2.2. **Nuclear Certification Impact Statement.** Once the SM identifies a potential impact to a weapon system's/item's nuclear certification, the SM documents it in the NCIS. The NCIS is prepared

by the SM and routed to the AAC/NWC through the SM's NCM. The NCIS describes the proposed new/modified system hardware/software/process and evaluates the potential for a nuclear certification impact. It also provides necessary data for AAC/NWC to define the basic certification requirements. The NCIS includes a functional description of the proposed system/modification or test program and its potential for nuclear certification impact. The NCIS addresses the system/modification/test program in enough detail to substantiate a recommended certification approach. As a minimum, the NCIS addresses any potential impact to AFI 91-107 directed criteria and degradations to existing nuclear weapon system safety features. Additionally, the NCIS identifies the potential impact to compatibility certification, published T.O.s, WSSRs, and Operational Certification. AAC/NWC will coordinate the NCIS with the appropriate offices in HQ AFSC, AAC/NW, and Lead/Using Command, as necessary; to evaluate which certification requirements must be met for the weapon system. AAC/NWC will notify the SM if no certification action is required.

3.2.3. **CRP Preparation Process.** If certification is required, AAC/NWC will prepare the Basic CRP and obtain coordination from all appropriate process owners: AAC/NW or ICBM NCM for compatibility certification, HQ AFSC for nuclear safety design certification and WSSR development, TOMA/ICBM NCM for T.O.s, and Lead/Using Command for Operational Certification. Each Administration Phase process described below is addressed in a separate appendix of the Basic CRP. The SM provides the specific information to complete the Basic CRP appendices and generates the CRP. The CRP is then sent to AAC/NWC for final evaluation and coordination from all appropriate process owners. When all coordination is complete, AAC/NWC approves the CRP and returns it to the SM for execution. A copy of the CRP is sent to all appropriate process owners.

**3.3. Administration Phase.** The Administration Phase includes actions necessary to obtain or continue the nuclear certification of a weapon system prior to fielding. The Administration Phase begins when AAC/NWC approves the CRP. There are five distinct processes within the Administration Phase: 1) Compatibility Certification, 2) Nuclear Safety Design Certification, 3) Rules Development, 4) Technical Orders Certification, and 5) Operational Certification. Activities during this phase include the documentation of modifications, evaluation, testing, and analysis needed to obtain compatibility, safety, WSSRs, T.O.s, and the Operational Certification of the weapon system. AAC/NWC will issue the NCS when all actions required by the CRP are accomplished. The NCS initiates an update to the MNCL and complete the Administration Phase.

3.3.1. **Compatibility Certification.** Compatibility Certification is the process of certifying that the equipment item or weapon system meets design and evaluation requirements for the mechanical, electrical, and aerodynamic interface between the delivery vehicle or equipment item and the nuclear weapon.

3.3.1.1. **Aircraft Compatibility Certification.** AAC/NW interface and coordination with NNSA via Sandia National Laboratory is required to obtain the Major Assembly Release (MAR) and Aircraft Compatibility Control Drawing (ACCD) as appropriate. The process begins with the approval of the compatibility certification appendix to the CRP and includes all actions required for AAC/NW to issue the Nuclear Compatibility Certification Statement (NCCS). AAC/NW will ensure the appropriate SM and other affected agencies complete a CRP for a system modification or acquisition. To obtain compatibility certification, the SM will generate the compatibility certification documents such as the Electrical Interface Control Drawing (EICD), Mechanical Interface Control Drawing (MICD), Final Design Approval Report (FDAR), and appropriate T.O.s as specified in the CRP. Any requirements for testing and analysis to complete the Compatibility Certifi-

cation process will also be identified in the CRP. AAC/NW will coordinate the required tests and analysis with the SM, test organizations (e.g., 49th Test and Air Force SEEK EAGLE Office [AFSEO]), and NNSA as needed. In addition, AAC/NW will ensure HQ USAF/XON and NNSA are aware of system modifications or acquisitions (via the weapon and/or weapon system POG as required) to obtain initial release or updates to the Nuclear Weapon MAR and ACCD, as appropriate. Once required tests and analyses have been completed, the SM is required to update the compatibility certification documents as indicated by test results and analyses. The AFSEO provides flight clearance recommendations and SEEK EAGLE Certification IAW AFI 63-104, *The SEEK EAGLE Program*. Upon completion of all actions identified in the CRP for compatibility certification, AAC/NW will issue an initial or updated NCCS. The NCCS is provided to AAC/NWC to confirm completion of the Compatibility Certification portion of the Administration Phase.

3.3.1.2. **Initial Surveillance and Aircraft Monitor and Control (AMAC) Testing.** AAC/NW will determine if initial surveillance and/or AMAC testing is necessary for each type of aircraft nuclear weapon system. AAC/NW will conduct/direct testing as required. The results of initial surveillance and/or AMAC testing shall be maintained and published in a surveillance test database or appropriate repository. These results shall also be published in a test report following each test and shall be used by AAC/NW as source data to justify nuclear compatibility certification. AAC/NW will provide surveillance/AMAC test results to the system SM.

3.3.1.3. **ICBM Compatibility Certification.** The goals of Compatibility Certification for ICBMs is similar to that for aircraft as it certifies the equipment item or weapon system meets mechanical and electrical compatibility requirements between the delivery vehicle and the nuclear weapon. For ICBM systems, Compatibility Certification is accomplished by the ICBM NCM in conjunction with Air Force Space Command (AFSPC) coordination. Interface and coordination with AAC/NW and NNSA is required to obtain the MAR, if necessary. The process begins with the Basic CRP, which includes the compatibility certification requirements. Any special testing or analysis necessary to complete certification will be identified. After all testing and analysis are complete; the SM will coordinate with the Lead/Using Command and provide the NCCS to AAC/NWC. The NCCS is provided to AAC/NWC to confirm completion of the Compatibility Certification portion of the Administration Phase.

3.3.2. **Nuclear Safety Design Certification.** Nuclear Safety Design Certification is the process of evaluating the hardware and/or software associated with nuclear weapon systems for compliance with nuclear safety certification design and evaluation criteria. The Administration Phase of Nuclear Design Safety Certification begins with an approved CRP that has identified the need to obtain Nuclear Safety Design Certification. The CRP also outlines the applicable design and evaluation criteria in AFI 91-103, AFI 91-107, AFMAN 91-118, and/or AFMAN 91-119, which must be satisfied to meet the requirements of Nuclear Safety Design Certification. HQ AFSC/SEW (Weapons, Space, and Nuclear Safety Division) will send a Nuclear Safety Design Certification Letter to AAC/NWC to confirm completion of the Nuclear Safety Design Certification portion of the Administration Phase.

3.3.2.1. **Nuclear Safety Design Certification Requirements.** The SM must comply with the nuclear safety design certification requirements identified in the approved CRP and document these actions IAW AFI 91-103. The decision to grant nuclear safety design certification is based on compliance with design criteria and an adequate exercise of the design as specified by the evaluation criteria outlined in the CRP. Discrepancies and/or deviations from or with respect to design

and evaluation criteria are assessed for risk (based on a qualitative or quantitative assessment of likelihood and consequence) and impact to operational requirements.

3.3.3. **Rules Development.** The development of a new weapon system or a significant design or mission change to an existing weapon system may dictate that Rules Development be included in the CRP. The Rules Development process involves SECDEF approval of an Air Force Safety Rules Package. WSSRs are operational restrictions/requirements designed to insure nuclear weapon systems are compliant with the four DoD safety standards as defined by DoD Directive 3150.2. As one component of Nuclear Certification, WSSRs must be approved by the SECDEF prior to operational use of nuclear weapon systems. Administration of the Rules Development portion of the Nuclear Certification process addresses new nuclear weapon systems or significantly modified nuclear weapon systems as described in AFI 91-102. The requirement to convene the NWSSG and conduct a safety study is documented and agreed to in the approved CRP. HQ AFSC/SEW will send a copy of the rules approval letter to AAC/NWC to confirm completion of the Rules Development portion of the Administration Phase.

3.3.4. **Technical Order Certification.** Technical Order Certification is the process of certifying the procedures involved in a weapon system's nuclear mission operations, maintenance, troubleshooting, OPCERT, DECERT, handling, movement, restraint configuration, loading, unloading, delivery, and testing. The TOMA/ICBM NCM shall ensure that these procedures are verified, complete, accurate, and safe. Compliance with nuclear WSSRs, requirements in 91-100 series AFIs, nuclear safety, nuclear compatibility, and design safety features is the responsibility of the TCM. The process begins with the approval of the technical orders certification appendix to the CRP, which describes all T.O.-related actions required for AAC/NWC to certify the procedures. When technical data is approved, the TOMA/ICBM NCM will send a formal technical order approval notification to AAC/NWC. SMs may devise local procedures for approval and reporting Technical Order Certification. For example, the NCM may be assigned review and approval authority. If requested, the SM will provide AAC/NWC advance copies of T.O.s for new items or weapon systems or for those systems with substantial changes to existing procedures for additional review of nuclear certification issues.

3.3.5. **Operational Certification.** Operational Certification procedures apply to a variety of circumstances: a new weapon system that will have a nuclear capability, an existing weapon system that has had the nuclear-mission capability added to the unit's DOC statement or an existing nuclear-capable unit that has received a capability modification. One of these conditions will drive the requirement to include the Operational Certification appendix to the CRP.

3.3.5.1. **Lead/Using Command.** The Lead/Using Command has the primary responsibility to complete the requirements of this certification. The Lead/Using Command will develop and implement a tailored nuclear qualification program for each type of weapon system accomplishing this certification. The program will include nuclear-mission qualification training, training programs to ensure compliance and proficiency in all applicable NSI events as listed and described in AFI 90-201, and aircrew/missile crew nuclear mission certifications as applicable to the unit's DOC statement. The Lead/Using Command will develop the overall operational certification plan and coordinate this plan with the SM.

3.3.5.2. **Unit Nuclear Qualification Programs.** A variety of programs will be initiated at the operational unit to prepare personnel for their nuclear mission roles. Units are required to initiate required administrative actions to ensure personnel possess the appropriate security clearances IAW DoD 5200.1R, *Information Security Program* and AFI 31-501, *Personnel Security Program*

*Management* commensurate with the level of training they will receive. Unit commanders will identify, evaluate, and PRP-certify selected individuals IAW AFI 36-2104, *Nuclear Weapons Personnel Reliability Program*. Required nuclear surety training will be conducted IAW AFI 91-101, *Air Force Nuclear Weapons Surety Program*. Applicable nuclear qualification training and task evaluations will be accomplished and personnel will be graded and qualified IAW applicable operations and maintenance T.O.s, AFIs, and Lead/Using Command's supplements and instructions.

3.3.5.3. **Initial Nuclear Surety Inspection.** The Lead/Using Command, in coordination with HQ AFSC, will determine a unit's need for an INSI and ensure this requirement is included in the CRP. The Lead/Using Command will determine when a unit is eligible for an INSI based on their assessment of the unit's level of nuclear mission proficiency. The Lead/Using Command's IG will schedule and conduct the inspection IAW the guidelines described in AFI 90-201. The unit must receive a "Ready" rating to be considered nuclear-mission capable. Additional training and Lead/Using Command assistance will be provided to the unit if they receive a "Not Ready" rating and the unit will be re-evaluated IAW AFI 90-201. When a unit successfully completes an INSI, the Lead/Using Command will send an Operational Certification Letter to AAC/NWC to confirm CRP Operational Certification actions are complete. Even though numerous "like units" may be accomplishing the same operational certifications for a new capability, the Operational Certification Letter is required to be sent to AAC/NWC only after the first unit passes their INSI.

3.3.6. **Administrative Phase Completion.** Throughout the Administration Phase, AAC/NWC will monitor the status of the certification process. There are five specific items, which indicate completion of a particular process. The CRP identifies which of these areas are required for nuclear certification. These include: (1) An initial or updated NCCS from AAC/NW/ICBM NCM indicating that all actions for Compatibility Certification are complete, (2) The Nuclear Safety Design Certification Letter from HQ AFSC, (3) Formal technical order approval letter from the TOMA/ICBM NCM, (4) Rules Approval notification from HQ AFSC/SEW, and (5) an Operational Certification Letter from the Lead/Using Command indicating completion of Operational Certification requirements for the first Operationally Certified unit. When the first four items are accomplished, AAC/NWC will update the MNCL to indicate that Design Certification is complete. Subsequently, a Design Certification Summary will be sent to the SM signifying that all design certification actions are complete. Once Operational Certification is complete and AAC/NWC is satisfied all actions specified in the CRP are complete, they will notify the SM with a NCS. The MNCL will then be updated as required. This completes the Administration Phase.

**3.4. Fielding Phase.** The Fielding Phase procedures ensure an item is sent to the user in the desired, nuclear certified configuration to support the tasked mission. The Fielding Phase typically begins with AAC/NWC issuing a Design Certification Summary or NCS to the SM (Note: Nuclear Certification = Design Certification + Operational Certification of one unit). The Fielding Phase typically ends with the user employing the new, nuclear certified, weapon system configuration to meet nuclear-mission taskings. 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., training purposes only]). All items affecting a nuclear certified weapon system configuration will be released via a T.O./TCTO and units will process them IAW AFI 21-series guidance.

3.4.1. **Release Process.** "Release" refers to the process of sending a new or modified item to the user with a T.O. or TCTO. Various release conditions are: a) items that modify an existing nuclear certified

weapon system configuration; b) items that add nuclear capability to an existing non-nuclear certified weapon system; or c) an entirely new nuclear certified weapon system. New or modified weapon system configurations/items can be released to the user as one of four Release Cases, described below. The Lead/Using Command determines the Release Case and authorizes the SM 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 OSS&E certifications, and circumstances as directed by Lead/Using Command requirements. Non-nuclear mission requirements may drive the need to field items destined for use on nuclear certified weapon systems before an item has been appropriately certified. However, the Air Force Nuclear Certification Program has been designed to find the appropriate balance between operational flexibility and nuclear surety. Note: The Nuclear Certification process will not be accelerated to allow for earlier-than-planned fielding if the certification process owners determine the adequacy or completeness of the process is in question or adversely affected.

3.4.1.1. **Release Cases.** In the Fielding Phase, there are four likely scenarios for release. The use of "Release Cases" is intended to provide the Lead/Using Command and SM with standardized terminology for the release of items affecting nuclear certified weapon systems.

3.4.1.1.1. **Release Case 1:** "Release Now, Certification Complete." Release of a new or modified item for which Nuclear Certification is complete. After the SM receives a NCS, the SM will send a release recommendation to the Lead/Using Command based on the completion of necessary OSS&E certifications and Lead/Using Command requirements. When the Lead/Using Command's internal and external coordination requirements are satisfied, the Lead/Using Command will authorize the SM to distribute the item to specified units. The Lead/Using Command will specify the required unit actions in the release instructions for both an Operationally Certified unit as well as units not yet Operationally Certified. Only units that have completed Operational Certification for the new/modified weapon system configuration may use the nuclear certified, weapon system configuration in support of a nuclear mission with war reserve weapons or certified critical components.

3.4.1.1.2. **Release Case 2:** "Release Now, Certify Now." Release of a new or modified item for which only Design Certification is complete. The most likely reason for this Release Case is the need to release an item so the user can conduct operational certification actions (i.e., qualification training or preparing for and accomplishing an INSI). After the SM receives a Design Certification Summary, the SM will send a release recommendation to the Lead/Using Command based on the completion of necessary OSS&E certifications and Lead/Using Command requirements. When the Lead/Using Command's internal and external coordination requirements are satisfied, the Lead/Using Command will authorize the SM to distribute the item to specified units. Typically, this type of release would include the authorization for units to use the item/weapon system configuration to conduct operational certification actions. Since the released item has not yet been nuclear certified, the item shall not be used in support of an operational nuclear mission with war reserve weapons or certified critical components. After the SM receives an NCS, the SM will send an updated release recommendation to the Lead/Using Command. When the Lead/Using Command's internal and external coordination requirements are satisfied, the Lead/Using Command will specify required actions in the release instructions for both Operationally Certified units as well as units not yet Operationally Certified. Only units that have completed Operational Certification for the new/modified

weapon system configuration may use the nuclear certified, weapon system configuration in support of a nuclear mission with war reserve weapons or certified critical components.

3.4.1.1.3. **Release Case 3:** "Release Now, Certify Later." Release of a new or modified item for which: 1) Design Certification and/or Nuclear Certification is not complete; and 2) the Lead/Using Command does plan to complete nuclear certification in the future. When operational requirements dictate, the Lead/Using Command may direct the SM to develop and release an item with the intention of design-certifying the item or nuclear-certifying the new/modified weapon system configuration after release (e.g., avionics software revision). The SM will submit an NCIS to AAC/NWC stating the Lead/Using Command's "Release Case 3" intention. The Lead/Using Command must restrict the affected nuclear certified platform to a "conventional-only" role until nuclear certification actions have been accomplished and address the impact of the non-nuclear certified weapon system configuration on operational requirements. For example, even though the aircraft at a unit currently are conventional use only, the unit has a requirement to meet their DOC nuclear-mission requirements. AAC/NWC will coordinate the restricted release request with all affected certification process owners and provide appropriate direction to the SM in the Basic CRP. Once the SM receives a Design Certification Summary, the SM will send an updated release recommendation to the Lead/Using Command. When the Lead/Using Command's internal and external coordination requirements are satisfied, the Lead/Using Command will update its release instructions to the appropriate units. Typically, this release update would include authorization for units to use the item/weapon system configuration to conduct operational certification actions. Since the released item has not yet been nuclear certified, the item shall not be used in support of an operational nuclear mission with war reserve weapons or certified critical components. After the SM receives an NCS, the SM will send an updated release recommendation to the Lead/Using Command. When the Lead/Using Command's internal and external coordination requirements are satisfied, the Lead/Using Command will specify required actions in the release instructions for both Operationally Certified units as well as units not yet Operationally Certified. Only units that have completed Operational Certification for the new/modified weapon system configuration may use the nuclear certified, weapon system configuration in support of a nuclear mission with war reserve weapons or certified critical components.

3.4.1.1.4. **Release Case 4:** "Release Now, Never Certify." Release of a new or modified item for which: 1) Design Certification and/or Operational Certification has not been initiated or completed; and 2) the Lead/Using Command does not plan to initiate or complete nuclear certification in the future. When operational requirements dictate, the Lead/Using Command may direct the SM to develop and release an item with no intention of design-certifying the item or nuclear-certifying the new/modified weapon system configuration. The SM will submit an NCIS to AAC/NWC stating the Lead/Using Command's "Release Case 4" intention. AAC/NWC will coordinate the restricted release request with all affected certification process owners and provide appropriate direction to the SM in the Basic CRP. The Lead/Using Command must restrict the affected nuclear certified weapon system to a "conventional-only" role and address the impact of the non-nuclear certified weapon system configuration on operational requirements. For example, even though the aircraft at a unit currently are conventional use only, the unit has a requirement to meet their DOC nuclear-mission requirements.

**3.5. Sustainment Phase.** The Sustainment Phase includes all actions necessary to maintain nuclear certification of a weapon system once operational. Activities during this phase include weapon system deficiency reporting, reporting the results of periodic system testing, inspections/evaluations, and periodic procedure reviews. A nuclear certified system or item enters the Sustainment Phase once fielded/operational and remains in the Sustainment Phase until retirement, decertification or changes in the design/operational use necessitate reentry to the Identification Phase for nuclear certification process. The status of all nuclear certification activities for both Design Certification (compatibility, safety, rules development, and technical orders) and Operational Certification (qualification training, PRP, nuclear surety training, and NSI/INSI) are monitored in the Sustainment Phase for changes that alter the nuclear certification status of a weapon system. Any change that alters the certification status would drive the process back to the Identification Phase of Nuclear Certification. There are five distinct ongoing processes within the Nuclear Certification Sustainment Phase. These are Compatibility Certification, Nuclear Safety Design Certification, Rules Development, Technical Order Certification, and Operational Certification.

3.5.1. **Compatibility Certification.** The Compatibility Certification process of the Sustainment Phase is the process of maintaining the Compatibility Certification of a certified weapon system or component. Compatibility Certification confirms a weapon system or equipment item meets the requirements for the interface (mechanical, electrical, and aerodynamic) between the delivery vehicle and nuclear weapon based upon established design and evaluation requirements.

3.5.1.1. **Aircraft Compatibility Certification Process.** The process begins once the Lead/Using Command receives the nuclear certified system/item and it includes all actions required for AAC/NW to maintain the nuclear compatibility certification statement. Once the Lead/Using Command receives the nuclear certified system/item, the AF unit is required to conduct initial and periodic operational checks IAW applicable technical orders. AAC/NW will be provided Category I and critical or major Category II DRs, as defined in T.O. 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System* for those items listed in the MNCL. AAC/NW will also be provided those testing results to determine if the deficiencies identified or the testing results impact the compatibility certification status of the system. Similarly, AAC/NW will be provided inspection and evaluation reports generated by the Lead/Using Command (e.g., NSI, NORI, Tactical Evaluation [TAC Eval], etc.) to determine if the compatibility certification may be affected by inspection or evaluation findings. The system SM must be informed of system deficiencies affecting compatibility certification via the reporting processes and/or from AAC/NW. If the SM determines a baseline configuration change is required, the SM must initiate the Nuclear Certification Identification Phase detailed in Section **3.2.**

3.5.1.1.1. **Surveillance Testing.** The AAC/NW will conduct recurring annual surveillance and/or AMAC tests for each type of certified nuclear aircraft weapon system. The Lead/Using Command will provide combat delivery aircraft as necessary to support flight-testing of NNSA/USAF air-carried nuclear weapons. They will also provide operational aircraft assets and personnel as necessary to support AMAC and surveillance testing on USAF and non-U.S. NATO operational nuclear-capable aircraft and air-launched missile systems.

3.5.1.1.2. **Testing Results.** The results of recurring surveillance and/or AMAC testing shall be maintained and published in a surveillance test database or appropriate repository. These results shall also be published in a test report following each test and shall be used by AAC/NW as source data to justify continuing the nuclear compatibility certification. AAC/NW shall also provide the surveillance test reports to the system SM.

3.5.1.2. **ICBM Compatibility Certification.** The ICBM NCM in conjunction with the Lead/Using Command monitors compatibility certification throughout sustainment. They conduct periodic testing (e.g., Simulated Electronic Launch Minuteman [SELM], etc.) and monitor DRs, inspections, etc. to ensure the weapon system continues to meet all nuclear compatibility certification requirements. Any impact to compatibility certification will result in return to the Identification Phase and subsequent submission of an NCIS.

3.5.2. **Nuclear Safety Design Certification.** The Nuclear Safety Design Certification process of the Sustainment Phase is ongoing once a certified weapon system is fielded. It involves those actions, which assess if a change in the status of the nuclear safety design certification of hardware or software is appropriate (e.g., decertification or use restriction) IAW AFI 91-103. The need to modify the weapon system and restart the certification process, decertification or use restriction of a certified item will result in reentry into the Identification Phase. Formal notification is provided to AAC/NWC when decertification or use restrictions are implemented against safety design certified items so these changes can be documented in the MNCL.

3.5.3. **Rules Development.** The Rules Development process of the Sustainment Phase involves those actions, which result in either approval or disapproval of an Air Force Safety Rules Package. This phase includes all documentation and staffing actions necessary to support Operational Safety Reviews (OSRs) by the NWSSG IAW AFI 91-102 and DoD 3150.2-M. OSRs evaluate existing nuclear certified weapon systems on a recurring basis. Exit from the Rules Development Sustainment process occurs with either approval or disapproval by the SECDEF of an Air Force Safety Rules Package and implementation of Air Staff-approved recommendations, which may or may not require initiation of the Nuclear Certification process. AAC/NWC is formally notified of the approval and publication of WSSRs and determines the impact to the nuclear certification of the weapon system. If there is no impact, then no action is required. If they require a change to the weapon system or otherwise impact the nuclear certification of that weapon system, then the process of initiating a nuclear certification action and return to the Identification Phase will be the next step.

3.5.4. **Technical Order Certification Sustainment.** The actions in this phase establish a mechanism to identify and process changes to published T.O.s and other nuclear mission essential guidance. The TOMA/ICBM NCM will address changes.

3.5.5. **Operational Certification.** The Sustainment Phase Operational Certification process begins once a unit is Operationally Certified. A copy of a unit's evaluation and inspection report will be forwarded to AAC/NWC as required by **Table 5.1.**

3.5.5.1. **Unit Program Management.** A Lead/Using Command with a nuclear mission must ensure units maintain and conduct follow-on (continuation) training programs. These training programs include recurring qualification and certification programs, Nuclear Surety programs, and a viable PRP.

3.5.5.2. **Lead/Using Command Evaluations and Inspections.** The Lead/Using Command IG will perform periodic inspections IAW AFI 90-201 and Lead/Using Command supplements. Units with areas rated "Unsatisfactory" under pass/fail criteria outlined in AFI 90-201 and T.O. 11N-25-1 may be reinspected prior to inspection team departure. If the area is not reinspected to at least a "Marginal' level, the inspected unit must discontinue that portion of the operation until reinspected or corrective measures are implemented and approved by the MAJCOM commander pending reinspection. Other inspections or staff assistance visits are also conducted to verify that

a unit is in compliance with all certification requirements. Lead/Using Command oversight can include but is not limited to NSSAVs, NORIs, Unit Compliance Inspections (UCIs), and Combat Capability Assessment. If an inspection or evaluation documents a nuclear operational certification deficiency, the issue(s) may require entry into the Identification Phase.

## Chapter 4

## TRAINING REQUIREMENTS

**4.1. Nuclear Certification Process Training Requirements.** AAC/NWC will develop course templates to provide program office, Lead/Using Command, unit, and executive-level initial orientation/recurring training. This training will cover general principles and policies regarding the certification process. Personnel assigned to positions, which deal with nuclear weapons, or nuclear weapon delivery systems shall receive nuclear certification process training commensurate with their level of responsibility.

4.1.1. **Program Offices.** System Program Directors (SPDs) and SMs assigned to program offices with nuclear certified equipment or Product Group Managers (PGM) developing/modifying equipment which is expected to require certification will receive, at a minimum, executive-level training upon assignment. NCMs will complete initial training within 30 days of assignment and recurring training annually. SMs are responsible for identifying personnel requiring training and ensuring completion prior to performing duties, which affect nuclear certification. Personnel assigned to program offices with nuclear certified equipment will receive initial training within 30 days of assignment.

4.1.2. **Lead/Using Command.** Lead/Using Command personnel with nuclear-related duties will receive initial training upon assignment. Lead/Using Command staff members with nuclear-related duties and commanders who perform nuclear-related duties or who have subordinates who do will receive executive level training upon assignment. MAJCOMs are responsible for identifying personnel requiring training and ensuring completion prior to performing duties, which affect nuclear certification.

4.1.3. **Units.** MAJCOMs will designate those positions under their control that have responsibilities under this instruction. Those positions will require initial nuclear certification training and annual recurring training commensurate with their duties. This training will be developed by the unit and approved by the MAJCOM.

## Chapter 5

## DOCUMENTATION AND REPORTING REQUIREMENTS

**5.1. Documentation and Reporting Requirements.** There are specific certification documentation and reporting requirements. These are summarized in **Table 5.1.**

**Table 5.1. Reporting Requirements for Nuclear Certification.**

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| AF Form 847, Recommendation for Change of Publication | Users | As Required | SM | SM acts on TO change request. |
| AFTO Form 22, TM Change Recommendation and Reply | Users | IAW T.O. 00-5-1, *Air Force Technical Order System* | SM | |
| Basic Certification Requirements Plan (CRP) | AAC/NWC | See note | SM | AAC/NWC provides copies to all appropriate certification process owners. |
| Certification Requirements Plan (CRP) | SM | See note | AAC/NWC | Once the SM attaches the required appendices and finalizes the Basic CRP, the document becomes the CRP. Upon receipt of an NCIS, AAC/NWC will contact the appropriate process owners to determine the actions necessary to obtain or maintain Nuclear Certification. If there is no impact, the SM will be advised no certification action is required. If it is a component ID change only, an update to the MNCL will be accomplished. If there is an impact, the AAC/NWC will then develop a Basic CRP within 30 days to advise the SM of these actions. AAC/NWC coordinates the CRP with certification process owners and provides the approved CRP to the SM for execution. |

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| Design Certification Summary | AAC/NWC | As Required | SM | Issued when compatibility, safety, safety rules, or T.O. procedures are certified either in part or as a whole. AAC/NWC will prepare a Design Certification Summary to advise the SM that all Design Certification actions prescribed in the CRP are complete. This Summary grants Design Certification. |
| Dull Sword Reports | Unit, Weapon Safety Manager (WSM) | As Required; Submit to MAJCOM / HQ AFSC / AAC/NW, etc. | IAW AFI 91-204 | Units submit upon discovery of a potential nuclear safety deficiency. |
| Formal Technical Order Approval Notification | TOMA/ICBM NCM | As Required | AAC/NWC | Documents completion of all T.O. development actions. |
| Initial and Final NSAR | SM | As Required | AAC/NW | SM develops NSAR, which is the primary source document to build the TNSA, and describes nuclear safety deficiencies. |
| Initial and Final NWSSG Report | HQ AFSC/ SEW | IAW AFI 91-102 | HQ USAF/SEI, NWSSG | |
| Initial and Final TNSA | AAC/NW | IAW AFI 91-102 | NWSSG | |
| Lead/Using Command Nuclear Inspection Reports or extracts of certification related information from NSIs, NORIs, UCIs, TAC EVAL summaries from USAFE | Lead/Using Command IG | After inspection completion | AAC/NW,<br>HQ AFSC/ SEW, SM | Report critical/major deficiencies which impact nuclear certification.<br>Provide copy of formal NSI report and messages of INSI inspection results. |
| Lead/Using Command Release Authorization | Lead/Using Command | Prior to release of an item | SM | Lead/Using Command accomplishes the required coordination to ensure the conditions are met (i.e., Is the unit ready to receive the item?). |

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| Master Nuclear Certification List (MNCL) | AAC/NWC | As Required | AAC/NWC | The MNCL is the sole source used to verify nuclear certification and replaces T.O. 00-110N-16, *Equipment Authorized for Use with Nuclear Weapons* and portions of ICBM-12-1 T.O.s. The MNCL is a web-based tool designed to define the hardware, software, technical data, configuration, and other information that is encompassed within the definition of nuclear certification. Its purpose is to enable users to identify nuclear certification status of a weapon system, sub-system, component, software, or support equipment. The MNCL will be linked to the home page for AAC/NW at: **http://www.nwd.kirtland.af.mil** and managed by AAC/NWC. |
| Material/Quality Deficiency Reports | User | IAW T.O. 00-35D-54 | SM | |
| Nuclear Certification Impact Statement (NCIS) | All SMs | See note | AAC/NWC, SM, HQ AFSC/SEW | NCIS is required to start the process toward achieving the nuclear certification of an item. This statement advises AAC/NWC that a new weapon system or a change to an existing weapon system, equipment item or procedure should be evaluated for its impact to the nuclear certification status of a weapon system. The NCIS must be submitted at least 45 days prior to the release of a request for proposal or an equivalent program milestone. |

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| Nuclear Certification Manager's (NCM) Appointment Letter | All SMs | As changes occur | AAC/NWC | All SMs must appoint a Nuclear Certification Manager. SMs shall identify the organization's NCM in writing. The letter must include POC information including name, grade or rank, office and address, telephone number, and email address. SMs will send a copy of the letter to AAC/NWC within thirty days of appointment. |
| Nuclear Certification Summary | AAC/NWC | As Required | SM | Issued when all aspects of Design Cert and Op Cert are achieved. AAC/NWC will prepare a Nuclear Certification Summary to advise the SM that Design Certification and Operational Certification actions prescribed in the CRP are complete. This Summary grants nuclear certification. |
| Nuclear Compatibility Certification Statement (NCCS) | AAC/NW or ICBM NCM | As Required | AAC/NWC | Issued when all aspects of Compatibility Certification are accomplished. |
| Nuclear Safety Design Certification Letter | HQ AFSC/SEW | As Required | AAC/NWC | Provides notification that all nuclear safety design certification actions have been completed. |
| Nuclear Safety Design Decertification/Use Restriction Notification | HQ AFSC/SEW | As Required | AAC/NWC, SM, Lead/Using Command | Update MNCL. Note: Using Command can implement use restrictions at their discretion. |
| Nuclear Surety Evaluation | SM | As Required | HQ AFSC/SEW, AAC/NW | SM conducts Nuclear Surety Evaluation to determine if the mod satisfies nuclear surety requirements. |
| NWSSG Recommendations Status Report | HQ AFSC/SEW | IAW AFI 91-102 | IAW AFI 91-102 | |
| Operational Certification Letter | Lead/Using Command | As Required | AAC/NWC | Documents that all required Op Cert actions have been completed. |
| Operational Plan Data Document (OPDD) | Lead/Using Command | IAW AFI 91-102 | NWSSG, AAC/NW, HQ USAF/XON | |

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| Rules Approval Notification | HQ AFSC/ SEW | As Required | AAC/NWC | Provides notification that all required safety rules have been approved by SECDEF. |
| Safety Rules Coordination Package | HQ AFSC/ SEW | As Required | HQ USAF/SEI | HQ USAF/SEI coordinates package through Air Staff, DTRA, JCS, and OSD to SECDEF |
| SM Release Recommendation | SM | As Required | Lead/Using Command | SM provides release recommendation for use of the system to the Lead Operating Command. |

**5.2. Forms Adopted.** AF Form 1067, *Modification Proposal,* AF Form 847, *Recommendation for Change of Publication,* AFTO Form 22, *Technical Manual Change Recommendation and Reply*.

***NOTE:*** Submit for a new nuclear weapon system/item or for the modification of a nuclear weapon system/item which impacts nuclear certification. Also required for units assuming or resuming a nuclear mission commitment or when a unit with a nuclear mission relocates and must reestablish the appropriate programs and pass an INSI.

MARVIN R. SAMBUR
Assistant Secretary of the Air Force
(Acquisition)

## Attachment 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

***References***

DoD 5200.1R, *Information Security Program*

DoD Directive 3150.2, *DoD Nuclear Weapon System Safety Program*

DoD Manual 3150.2-M, *DoD Nuclear Weapon System Safety Program Manual*

AFI 16-601, *Implementation of, and Compliance with, Arms Control Agreements*

AFI 31-501, *Personnel Security Program Management*

AFI 36-2104, *Nuclear Weapons Personnel Reliability Program*

AFI 51-402, *Weapons Review*

AFI 63-101, *Acquisition System*

AFI 63-103, *Nuclear Weapons Program Management*

AFI 63-104, *The SEEK EAGLE Program*

AFI 63-1201, *Assurance of Operational Safety, Suitability, and Effectiveness*

AFI 90-201, *Inspector General Activities*

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

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

AFI 91-103, *Air Force Nuclear Safety Certification Program*

AFI 91-105, *Critical Components*

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

AFI 91-204, *Safety Investigations and Reports*

AFPAM 63-126*, Nuclear Certification Process*

AFMAN 37-123, *Management of Records*

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*

AFPD 16-6, *Arms Control Agreements*

AFPD 10-9, *Lead Operating Command Weapon Systems Management*

AFPD 37-1, *Information Management*

AFPD 63-1, *Acquisition Systems*

T.O. 00-5-1, *Air Force Technical Order System*

T.O. 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*

T.O. 00-110N-16, *Equipment Authorized for Use with Nuclear Weapons*

T.O. 11N-25-1, *DoD Nuclear Weapons Technical Inspection System*

***Abbreviations and Acronyms***

**AAC/NW—**Nuclear Weapons Directorate

**AAC/NWC—**AAC/NW's Certification Management Division

**ACC—**Air Combat Command

**ACCD—**Aircraft Compatibility Control Document

**AFI—**Air Force Instruction

**AFMAN—**Air Force Manual

**AFMC—**Air Force Materiel Command

**AFPD—**Air Force Policy Directive

**AFSC—**Air Force Safety Center

**AFSC/SEW—**AFSC/Weapons, Space, and Nuclear Safety Division

**AFSEO—**Air Force SEEK EAGLE Office

**AFSPC—**Air Force Space Command

**AMAC—**Aircraft Monitor and Control

**CDD—**Capability Development Document

**CONOPS—**Concept of Operations

**CPD—**Capability Production Document

**CRP—**Certification Requirements Plan

**DAC—**Designated Acquisition Commander

**DOC—**Designed Operational Capability

**DoD—**Department of Defense

**DoDD—**Department of Defense Directive

**DR—**Deficiency Reports

**DT&E—**Developmental Test and Evaluation

**DTRA—**Defense Threat Reduction Agency

**EICD—**Electrical Interface Control Drawing

**FDAR—**Final Design Approval Report

**FDE—**Force Development Evaluation

**HQ—**Headquarters

**HQ USAF/IL—**HQ Air Force Deputy Chief of Staff of Installations and Logistics

**HQ USAF/ILM—**HQ Air Force Deputy Chief of Staff of Installations and Logistics, Maintenance Division

**HQ USAF/SE—**HQ Air Force Chief of Safety

**HQ USAF/SEI—**HQ Air Force Chief of Safety Issues Division

**HQ USAF/XOF—**HQ Air Force Directorate of Forces

**HQ USAF/XON—**HQ Air Force Directorate of Nuclear & Counterproliferation

**HQ USAF/XOR—**HQ Air Force Directorate of Requirements

**HW—**Hardware

**IAW—**In Accordance With

**ICBM—**Intercontinental Ballistic Missile

**ICD—**Initial Capabilities Document

**IG—**Inspector General

**INSI—**Initial Nuclear Surety Inspection

**ITCTO—**Interim Time Compliance Technical Order

**MAJCOM—**Major Command

**MAR—**Major Assembly Release

**MICD—**Mechanical Interface Control Drawing

**MNCL—**Master Nuclear Certification List

**NALPOG—**Nuclear Airlift Project Officers Group

**NATO—**North Atlantic Treaty Organization

**NCCS—**Nuclear Compatibility Certification Statement

**NCIS—**Nuclear Certification Impact Statement

**NCM—**Nuclear Certification Manager

**NCS—**Nuclear Certification Summary

**NNSA—**National Nuclear Security Administration

**NORI—** Operational Readiness Inspection

**NSI—**Nuclear Surety Inspection

**NSSAV—** Nuclear Surety Staff Assistance Visit

**NSWG—**Nuclear Surety Working Group

**NWSSG—**Nuclear Weapon System Safety Group

**OPDD—**Operational Plan Data Document

**OPR—**Office of Primary Responsibility

**OSR—**Operational Safety Review

**OSS&E—**Operational Safety, Suitability, and Effectiveness

**OT&E—**Operational Test and Evaluation

**PEO—**Program Executive Officer

**PGM—**Product Group Manager

**PNAF—**Primary Nuclear Airlift Force

**POG—**Project Officers Group

**PPBE—** Planning, Programming, and Execution System

**PRP—**Personnel Reliability Program

**SAF—**Secretary of the Air Force

**SAF/AQ—**SAF/Assistant Secretary for Acquisition

**SAF/AQX—**SAF/Assistant Secretary for Acquisition, Acquisition Integration Directorate

**SAF/IG—**SAF/The Inspector General

**SAF/USA—**SAF/Under Secretary for Space Acquisition

**SECDEF—**Secretary of Defense

**SELM—**Simulated Electronic Launch Minuteman

**SM—**Single Manager

**SNL—**Sandia National Laboratories

**SPD—**System Program Director

**SW—**Software

**TCM—**Technical Content Manager

**TCTO—**Time Compliance Technical Order

**TNSA—**Technical Nuclear Surety Analysis

**TO—**Technical Order

**TOMA—**Technical Order Management Agency

**UCI—**Unit Compliance Inspection

**UEI—**Unit Effectiveness Inspection

**USAF—**United States Air Force

**USAFE—**United States Air Forces in Europe

**WSM—**Weapon Safety Manager

**WSSR—**Weapon System Safety Rules

**WR**War Reserve

*Terms*

**DECERT—**(ICBM only term) Action by proper authority to remove a certified critical component from operational use. When it becomes necessary to remove an operationally certified critical component from the operational weapon system, DECERT is accomplished prior to removing two-person control. DECERT consists of removal of classified/code material and the subsequent removal from nuclear certified control.

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

**Lead Command—**The MAJCOM that serves as an operator's interface with the Single Manager for a weapon system as defined by AFPD 10-9, *Lead Operating Command Weapon Systems Management*. This term is not to be confused with that MAJCOM designated by HQ USAF/XOR as OPR for authoring a requirements document (i.e., This MAJCOM would be the "Using Command"). Although, in most cases, the MAJCOM designated by HQ USAF/XOR to sponsor a requirement will become the "Lead Command" for a weapon system.

**Major Assembly Release (MAR)—**A Sandia National Laboratories (SNL) prepared, DOE/AL approved statement that war reserve (WR) weapon material is satisfactory for release on a designated effective date to the DoD for specified uses which are qualified by exceptions and limitations.

**Nuclear Certification—**This occurs when a determination is made by the applicable Service that procedures, personnel, equipment, facilities, and organizations are capable of performing assigned nuclear weapon functions and missions. Nuclear certification is a part of OSS&E, as directed by AFI 63-1201. The Air Force Nuclear Certification Program has two major components: Design Certification and Operational Certification.

**Nuclear Surety—**All functions and activities to ensure Air Force nuclear systems are designed, developed, operated, maintained, transported, and controlled to provide maximum safety to the public and operating personnel while protecting the environment and maintaining reliability to support mission accomplishment.

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

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

**Operational Certification—**This occurs when the Lead Command/Using Command qualifies its personnel to perform the mission, certifies them in the Personnel Reliability Program (PRP), trains them in nuclear surety and assigns a "Ready" rating on an Initial Nuclear Surety Inspection (INSI).

**OPCERT—**(ICBM only term) The process of verifying a system or critical component is functioning as design certified and all credible threats and scenarios are mitigated. An item identified as a nuclear critical component must successfully complete OPCERT procedures prior to installation in the operational weapon system or whenever two-person control has been lost, the component has been decertified, or

when directed by higher authority.

**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 USAF aircraft.

**Single Manager (SM)—**The primary single interface to the customer for a system or product group. The SM directs one or more programs and is accountable to the PEO or the DAC. The SM is vested with full authority, responsibility, and resources to execute a program on behalf of the Air Force. The SM is also responsible for life cycle management of the weapon system.

**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., Air Combat Command [ACC], AFSPC, USAFE).

## Attachment 2

## NUCLEAR CERTIFICATION PROCESS: MACRO VIEW