Administrative Changes to AFI 63-125 AFRC SUP, *Nuclear Certification Program*

OPR: HQ AFRC/A4MS

Certified by reference to “HQ AFRC/A4O” is hereby changed to “HQ AFRC/A4M”.

References throughout to “HQ AFRC/A4MZ” are hereby changed to “HQ AFRC/A4MS”.

References throughout to “afrc.a4mz@us.af.mil” are hereby changed to “afrc.a4ms@us.af.mil”.

References throughout to “HQ AFRC/A4OP” are hereby changed to “HQ AFRC/A4M”.

References throughout to “afrc.a4op@us.af.mil” are hereby changed to “afrc.a4m@us.af.mil”.

References throughout to SharePoint address “https://afrc.eim.us.af.mil/sites/A4/A4M/A4MZ/Nuclear%20Certified%20Equipment%20Program/default.aspx” are hereby changed to “https://afrc.eim.us.af.mil/sites/A4/A4M/Nuclear%20Certified%20Equipment%20Program/Forms/AllItems.aspx”

14 April 2016

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

***AIR FORCE INSTRUCTION 63-125***

***8 AUGUST 2012***

***AIR FORCE RESERVE COMMAND Supplement***

***24 SEPTEMBER 2014***

***Acquisition***

# *NUCLEAR CERTIFICATION PROGRAM*

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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**(AFRC)**

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This instruction implements Department of Defense (DoD) Manual 3150.2-M, *DoD Nuclear Weapon System Safety Program Manual*, and Air Force Policy Directive (AFPD) 63-1, *Acquisition and Sustainment Life Cycle Management*. This instruction is consistent with DoD Directive (DoDD) 3150.2, *DoD Nuclear Weapon System Safety Program*, and AFPD 13-5, *Air Force Nuclear Enterprise*. It describes the roles and responsibilities and the standards necessary for assurance of the nuclear certification required by Air Force Instruction (AFI) 63-1201, *Life Cycle Systems Engineering*. Specifically, it provides a process for establishing and administering the nuclear certification of Air Force nuclear systems throughout their life cycles by use of disciplined engineering practices, assurance of proper operation and maintenance, and continuous feedback to System Program Managers (SPMs). This instruction applies to military and civilian personnel at all levels, including Air Force Reserve and Air National Guard (ANG) units, involved in research, design, development, testing, acquisition, operation, maintenance, and modification of nuclear weapons and their related systems and subsystems. As appropriate, applicable provisions of this instruction should be included in contracts with private companies providing such support services to the Air Force. Consult NWC Handbook (NWC HDBK) 63-126, *Air Force Nuclear Certification Process Guide*, for more guidance, including detailed

process flow charts and descriptions. NWC HDBK 63-126 can be accessed on the World Wide Web at **https://wwwmil.nwc.kirtland.af.mil/nwc/e-Guide/WebHelp/index.htm**. Refer recommended changes and questions about this publication to the Office of Primary Responsibility using the Air Force Form 847, *Recommendation for Change of Publication;* route Air Force Form 847s from the field through the appropriate chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at **https://www.my.af.mil/afrims/afrims/afrims/rims.cfm**. Additionally, consult cited policy directives, instructions, manuals, and their supplements for specific policies, procedures, and requirements. This publication may be supplemented at any level, but all direct Supplements must be routed to the OPR of this publication for coordination prior to publication. Send requests for deviations, interpretations, or recommendations to change, add, or delete requirements of this instruction, to the Air Force Nuclear Weapons Center, Certification Management Branch, 8601 Frost Avenue SE, Kirtland AFB, NM 87117.

**(AFRC)** This supplement adds and extends guidance in AFI 63-125, dated 8 August 2012. This supplement applies to all personnel involved with Nuclear Certified Equipment in Air Force Reserve Command units and Active or ARC associate units where AFRC is the lead. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) at HQ AFRC/A4OP (**afrc.a4op@us.af.mil**) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. This publication may not be supplemented or further implemented/extended. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, *Publications and Forms Management*, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items. Users of this instruction must notify the Nuclear Certified Equipment Program Manager (HQ AFRC/A4MZ) or the Nuclear Certification Manager (HQ AFRC/SEW) of conflicts between this instruction and other directives, instructions, or technical orders.

## *SUMMARY OF CHANGES*

This document is substantially changed and must be completely reviewed. A new chapter has been added identifying items that are required to be nuclear certified before being used with nuclear weapons or nuclear weapon systems. A new chapter has been added describing the Master Nuclear Certification List (MNCL) and the criteria for listing items in the MNCL. Organizational names have been updated to reflect changes since the original publication. Interim Change 1 has been incorporated into the revision. Training requirements have been clarified, process owner roles and responsibilities have been clarified, and additional definitions have been incorporated into the glossary.

**(AFRC)** Opening paragraph revised to comply with AFI 33-360, *Publications and Forms Management*; References to HQ AFRC A4MZ Portal Page removed, as applicable, or replaced with SharePoint address (**https://afrc.eim.us.af.mil/sites/A4/A4M/A4MZ/Nuclear%20Certified%20Equipment%20Program/default.aspx**); Identified each unit (wing or equivalent, and below, DRU, FOA) compliance item with a tier waiver authority number IAW AFI 33-360, *Publications and Forms Management*, Table 1.1 and time allotted for Unit Safety Managers to train newly appointed NCE Monitors reduced from 90 to 60 days.

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# Chapter 1

## PROGRAM DESCRIPTION

**1.1. Nuclear Certification.** 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. 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 a part of Operational Safety, Suitability, and Effectiveness (OSS&E), as directed by AFI 63-1201, *Life Cycle System Engineering*. Nuclear Certification is required before a nuclear weapon system or item of equipment can be used to support unit nuclear mission taskings. Note: Essential Facility Systems of individual buildings/structures to 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, electromagnetic radiation and radiation monitoring that are used to maintain, store or handle nuclear weapons will be included as part of the certification of Continental United States (CONUS)-based Weapons Storage Areas (WSAs).

1.1.1. Nuclear Certified Item (NCI) is defined as procedures, equipment, software, facilities, systems, subsystems or components which are nuclear certified In Accordance With (IAW) the nuclear certification process outlined in this document. Therefore, NCI consists of anything that is nuclear certified. Only nuclear certified items may be used in nuclear operations. The MNCL is a listing of all NCI and can be located at **https://wwwmil.nwc.kirtland.af.mil/mncl/index.cfm**, identifies equipment, hardware and software that are nuclear certified.

1.1.2. Nuclear Certified Equipment (NCE) is defined as peculiar (i.e., system specific) and common specialized or non-specialized support equipment whose design meets applicable design criteria and is nuclear certified IAW the nuclear certification process outlined in this document and identified on the MNCL.

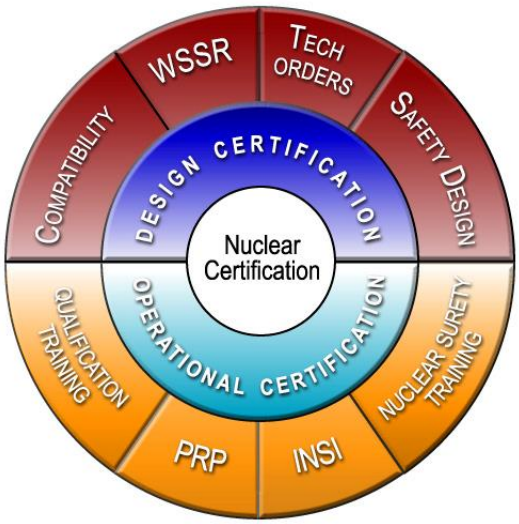
1.1.2.1. NCE is a subset of NCI that consists of support equipment which is nuclear certified. NCE includes vehicles; aerospace ground equipment; munitions material handling equipment; facility lifting and suspension equipment; test equipment; automatic test equipment (when used in a support function); organizational, field, and depot support equipment; and related computer program software.

1.1.2.2. NCE does not include aircraft components and suspension equipment (e.g., pylons, rotary launchers, bomb racks) nor Intercontinental Ballistic Missile (ICBM) system components and items installed in the launch facility/launch control center. These items are referred to as "NCI which are not NCE."

**1.2. Overview of USAF Nuclear Certification Program.** As illustrated in Figure 1.1., the Air Force Nuclear Certification Program has two major elements: Design Certification and Operational Certification. Design Certification consists of four distinct components representing nuclear surety-related tasks (Compatibility Certification, Nuclear Safety Design Certification, Weapon System Safety Rules (WSSR) Development/Approval, and Technical Order

Certification) that must be satisfied in order for a system to be Design Certified. Operational Certification consists of four interrelated personnel/organizational oriented nuclear surety components (Task Qualification Training, Personnel Reliability Program (PRP) Certification, Nuclear Surety Training, and successful completion of an Initial Nuclear Surety Inspection (INSI)). Together, these two elements and their associated components must be satisfied before an item can be nuclear certified. Design Certification components identified in the Certification Requirements Plan (CRP) must be accomplished before the Operational Certification element can be completed (i.e., The weapon system or item must be Design Certified before the Lead/Using command can conduct an INSI). Note: Not all components may be required for nuclear certification. Specific certification requirements will be outlined in the CRP.

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




1.2.1. The Commander, Air Force Nuclear Weapons Center (AFNWC) grants nuclear certification when the system is Design Certified and at least one operational unit is Operationally Certified. The SPM 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 the four components (Compatibility, Nuclear Safety Design, Weapon System Safety Rules, and Technical Orders) illustrated in Figure 1.2. are accomplished for the weapon system or item of equipment.

1.2.2.1. The Air Force Nuclear Weapons Center, Nuclear Systems Division (AFNWC/NCS) provides Compatibility Certification for aircraft, air-launched missile systems, support equipment, and nuclear maintenance, handling, and storage facilities. The Air Force Nuclear Weapons Center, ICBM Systems Directorate (AFNWC/NI) provides Compatibility Certification for ICBM systems. Reference AFI 63-1201; MIL-STD-1822A, *Nuclear Compatibility Certification of Nuclear Weapon Systems, and Support Equipment.*

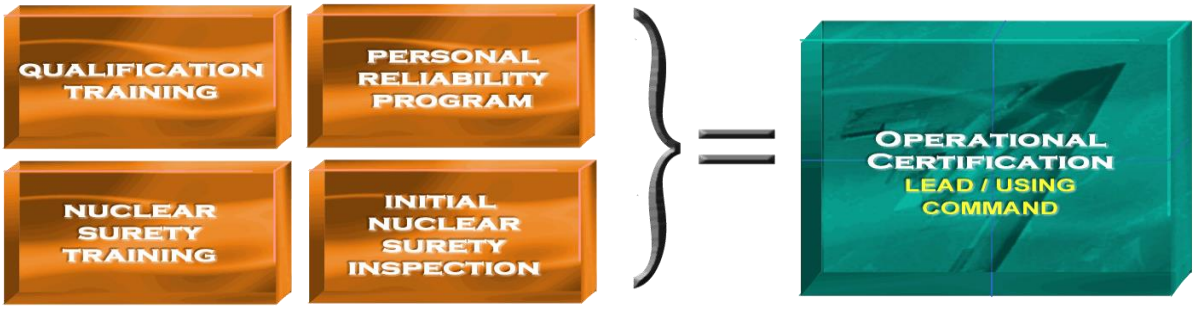
1.2.2.2. Headquarters Air Force Safety Center (HQ AFSEC) provides Nuclear Safety Design Certification. Reference AFI 91-103, *Air Force Nuclear Safety Certification Program.*

1.2.2.3. The Nuclear Weapon System Safety Group (NWSSG) develops/revises Weapon System Safety Rules. The Secretary of Defense (SECDEF) approves them and HQ AFSEC publishes them in the form of an AFI. Reference AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules.*

1.2.2.4. The Technical Order Management Agency (TOMA) approves and publishes technical orders (TOs). Reference TO 00-5-3, *AF Technical Manual Acquisition Procedures*.

1.2.3. Operational Certification occurs, as illustrated in Figure 1.3., when the Lead/Using Command qualifies a unit's personnel to perform the mission, certifies them in the PRP, trains them in nuclear surety, and assigns a "Ready" rating on an INSI. Each unit must be Operationally Certified by the Lead/Using Command to be considered nuclear-mission capable. However, Nuclear Certification of a weapon system is granted based on the Operational Certification of the first unit. Subsequent units receiving the new or modified system/item will undergo an INSI conducted by the using command prior to being considered nuclear-capable. Reference AFI 91-101, *Air Force Nuclear Weapons Surety Program*, DoD 5210.42 R-AFMAN 10-3902, *Nuclear Weapons Personnel Reliability Program(PRP)*; AFI 90-201, *Inspector General Activities, and* CJCSI 3263.05, *Nuclear Weapons Technical Inspection.* Note: Not all components may be required for nuclear certification. Specific certification requirements will be outlined in the CRP

**Figure 1.3. Operational Components.**



# Chapter 2

# ROLES AND RESPONSIBILITIES

## 2.1. Secretary of the Air Force (SAF).

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

2.1.1.1. Directs nuclear-related acquisition programs through the Strategic Systems Program Executive Officer (PEO) and Fighter Bomber PEO.

2.1.1.2. Sets Air Force Acquisition Policy. Develops policy and guidance in conjunction with Assistant Chief of Staff (ACS) Strategic Deterrence and Nuclear Integration Assistant (AF/A10) and Directorate of Logistics (AF/A4L), for managing nuclear capable/certified weapons systems and nuclear certified mission support products.

2.1.1.3. Ensures SPMs follow this policy and guidance.

2.1.1.4. Ensures 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 DoD Foreign Clearance Program*, AFI 16-601, *Implementation of, and Compliance with, International Arms Control and Nonproliferation Agreements*, and AFI 51-402, *Legal Reviews of Weapons and Cyber Capabilities.*

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

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

2.1.2.2. 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 4, Air Force Nuclear Surety Inspection Programs*, and CJCSI 3263.05, *Nuclear Weapons Technical Inspections*.

## 2.2. Air Staff.

2.2.1. Assistant Chief of Staff (ACS**)** Strategic Deterrence and Nuclear Integration Assistant (AF/A10):

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) and AF/A4L (Directorate of Logistics) for management of nuclear capable/certified weapons systems and nuclear certified mission support products.

2.2.2. Directorate of Operational Capability Requirements (AF/A5R):

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), or other legacy documents (i.e., Initial Requirements Document (IRD), Operational Requirements Documents (ORD), Combat Mission Needs Statement (C-MNS), etc.), for a new nuclear-capable weapon system or for a major modification to the same; and/or 2) the AF Form 1067, or other appropriate documentation, for modifications to a new or existing nuclear-capable system.

2.2.2.2. Coordinates with the Lead/Using Command and appropriate SPM 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.

2.2.3. Directorate of Security Forces and Force Protection (AF/A7S):

2.2.3.1. Prioritizes and plans the upgrade and installation of nuclear security sensor systems through HQ Air Force Security Forces Center (SFX/XR).

2.2.3.2. Ensures security systems (including security system software) developed for use at nuclear facilities (i.e., weapons storage areas, remote operating locations (e.g., ICBM launch facilities)) or that control access to nuclear weapons, do not negatively impact the nuclear certified status of the facility or operation.

2.2.3.3. Develops 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.

2.2.3.4. 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 Logistics (AF/A4L):

2.2.4.1. Material Support Division (AF/A4LE) monitors compliance/non-compliance with the USAF Nuclear Certification Program.

2.2.4.2. Integrated Life Cycle Management (ILCM) Policy Division (AF/A4LM) publishes and reviews USAF policy and guidance for management of nuclear capable/certified weapons systems and equipment.

2.2.4.3. Nuclear Weapons, Missiles and Munitions Division (AF/A4LW) develops policy and guidance in conjunction with Acquisition Integration Directorate (SAF/AQX) and AF/A10 for management of nuclear capable/certified weapons systems and nuclear certified mission support products.

2.2.5. Chief of Safety (AF/SE):

2.2.5.1. Oversees the Air Force Nuclear Weapons Surety Program.

2.2.5.1.1. HQ AFSEC/SEW supports AF/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 91119, *Safety, Design and Evaluation Criteria for Nuclear Weapon Systems Software*.

2.2.5.1.1.3. Reviews and coordinates on all Nuclear Certification Impact Statements (NCIS).

2.2.5.1.1.4. Approves the nuclear safety design and weapon system safety rules development appendices of the CRP.

2.2.5.1.1.5. Approves test and maintenance programs to be performed in operational facilities.

2.2.5.1.1.6. Approves all new or revised nuclear weapon maintenance programs or test procedures performed in Air Force facilities.

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

2.2.5.1.1.8. Designates critical components according to AFI 91-105, *Critical Components*.

2.2.5.1.1.9. Reviews nuclear safety deficiency reports (e.g., DULL SWORD reports) and other related deficiency reports (i.e., Material Deficiency Reports/Engineering Investigation (MDR/IE), Product Quality Deficiency Reports (PQDR), Unsatisfactory Reports (UR), etc.) submitted on nuclear certified equipment for trends or design deficiencies to determine if decertification or use restriction is warranted.

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

2.2.5.1.1.11. 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.

2.2.5.1.1.12. 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.

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

2.2.5.1.1.14. Provides nuclear surety inspection program support as detailed in AFI 90-201.

**2.3. Air Force Nuclear Weapons Center (AFNWC).**

2.3.1. Oversees the Air Force Nuclear Certification Program.

2.3.1.1. Serves as the Air Force independent review agency for the nuclear safety design certification process as defined in AFI 91-103, *Air Force Nuclear Safety Design Certification Program* and AFNWC policy.

2.3.1.2. Develops Technical Nuclear Surety Analysis (TNSA) to support nuclear weapon system safety studies conducted by the USAF Nuclear Weapons System Safety Group (NWSSG) per AFI 91-102, *Nuclear Weapons System Safety Studies, Operational Safety Reviews, and Safety Studies*.

2.3.2. Commander, Air Force Nuclear Weapons Center signs the Nuclear Certification Summary (or Design Certification Summary, when appropriate) granting Nuclear (or Design), Certification for systems, equipment, and facilities upon completion of all certification actions directed by the CRP.

2.3.3. The Air Force Nuclear Weapons Center, Nuclear Capabilities Directorate (AFNWC/NC) supports the AFNWC in fulfilling this responsibility through the Nuclear Systems Division (AFNWC/NCS). The AFNWC/NCS:

2.3.3.1. Provides technical support for the USAF Nuclear Weapon System Safety Group safety studies and operational safety reviews.

2.3.3.2. Serves as the Air Force's office of primary responsibility (OPR) for nuclear certification. Recommends the AFNWC Commander grants nuclear certification based upon completion of all necessary certification components as described in this Instruction and other referenced documents.

2.3.3.3. Provides guidance to SPMs and MAJCOMs on the Nuclear Certification Program. Collaborates as necessary, with SPMs, Program Office and MAJCOM Nuclear Certification Managers (NCM) in determining the need to enter into the nuclear certification process for new acquisitions or modification efforts.

2.3.3.4. Develops and conducts an initial nuclear certification process training program featuring both in-residence and distance learning training methods. Develops and distributes distance learning course materials for use at various command levels to meet annual recurring/refresher training requirements established by this Instruction.

2.3.3.5. Reviews, coordinates and distributes Nuclear Certification Impact Statements.

2.3.3.6. . Notifies System Program Manager/Nuclear Certification Manager of NCIS disposition as appropriate.

2.3.3.7. . Develops, coordinates, and distributes the Basic Certification Requirements Plan to appropriate agencies.

2.3.3.8. . Evaluates, coordinates, approves and updates, as necessary, the program office CRP.

2.3.3.9. Issues the Nuclear Certification Summary or Design Certification Summary, as appropriate, upon completion of all CRP identified certification actions.

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

2.3.3.11. Maintains corporate expertise for the nuclear certification process.

2.3.3.12. Maintains pertinent Nuclear Certification documentation and data files.

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

2.3.3.14. Develops and publishes nuclear compatibility certification criteria for aircraft and air launched missile systems, support equipment, and nuclear maintenance, handling and storage facilities. (**Note**: Nuclear compatibility certification criteria for ground launched missile systems are developed by the AFNWC/NI.)

2.3.3.15. Develops and maintains currency of the Nuclear Compatibility Certification Statement (NCCS) for each nuclear certified aircraft system type (i.e., F-16, B-52, etc.) (**Note**: Nuclear compatibility documentation for ground launched missile systems is developed and maintained by the AFNWC/NI).

2.3.3.16. Develops and provides to the Kirtland Underground Munitions Maintenance Storage Complex (KUMMSC) SPM, Facility Certification Configuration Documents (FCCD).

2.3.3.17. Performs Aircraft Monitor and Control (AMAC) and surveillance tests on USAF and non-U.S. NATO operational nuclear capable aircraft and air-launched missile systems as required for nuclear compatibility certification.

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

2.3.3.19. Chairs or co-chairs nuclear weapon system Project Officer Groups (POG) for nuclear capable aircraft systems and is a permanent voting member of the ICBM Nuclear Surety Working Group (NSWG).

2.3.3.20. When requested by Headquarters Air Force Safety Center, Weapons Safety Division (HQ AFSEC/SEW), conducts safety evaluations of nuclear weapon maintenance procedures (including nuclear weapon ALTs and MODs), to be accomplished in Air Force facilities per AFI 91-103, *Air Force Nuclear Safety Design Certification Program*.

2.3.3.21. Reviews nuclear safety deficiency reports (e.g., DULL SWORD reports) and other related deficiency reports (i.e., MDR/IEs, quality deficiency reports PQDRs, URs, etc.) submitted on nuclear certified equipment for potential impacts to nuclear safety and certification. Recommends certification/decertification action or operational restrictions, if appropriate, to proper process owner (e.g., AFSEC for safety design certification/decertification)

2.3.3.22. Develops and delivers nuclear certification process training materials to support in-residence, mobile training team (MTT), and distance learning applications.

2.3.3.23. Notifies HQ AFSEC/SEW regarding nuclear weapon alterations (ALTs), modifications (MODs), or other nuclear weapons maintenance procedures to be performed in Air Force facilities. Reference AFI 91-103.

2.3.3.24. Appoints/designates the Air Force System Program Manager for WS3.

2.3.3.25. Air Force Nuclear Weapons Center, Nuclear Weapons Logistics Division (AFNWC/NCL): develops, verifies, and publishes assigned Nuclear Weapons Technical

Orders and ensures the Chief Engineer, or delegated representative, approves all TO updates which could affect system nuclear certification IAW TO 00-5-3.

2.3.3.26. 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, Aircrew Delivery Procedures, and Category 11N air launched missile warhead mate/demate Technical Orders.

2.3.3.27. Ensures all procedures involving nuclear safety processes are marked with the "Nuclear Surety Procedures" (NSP) symbol to enable positive identification. Apply special emphasis to the NSP to protect against degrading or rendering ineffective the critical nuclear safety features of the weapon system. Significant changes to NSP-coded steps must be coordinated with AFSEC/SEW. AFSEC/SEW need not coordinate administrative changes.

**2.4. Air Force Sustainment Center (AFSC):**

2.4.1. In accordance with AFI 63-1201 AFSC will work with each SPM of nuclear capable/certified weapon systems and nuclear mission support products to ensure Operational Safety, Suitability, and Effectiveness, OSS&E requirements are met.

2.4.1.1. AFSC will coordinate any changes to items they manage that interface with nuclear weapon systems with the appropriate SPM.

**2.5. System Program Manager (SPM) of nuclear capable/certified weapons systems and nuclear mission support products.**

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

2.5.2. Establishes, implements, and executes a nuclear certification program to accomplish the requirements specified herein and necessary to provide and maintain a nuclear capability.

2.5.3. Identifies funding requirements to the appropriate organizations/individuals for input to the Planning, Programming, Budgeting, and Execution (PPBE) system submission as identified in AFI 16-501, *Control and Documentation of Air Force Programs*.

2.5.4. Identifies items requiring nuclear certification and assesses modifications to determine if nuclear certification is affected or required. This may be done in collaboration with the Air Force Nuclear Weapons Center, Certification Management Branch (AFNWC/NCSC).

2.5.5. Notifies the Lead/Using Command whenever weapon system software, firmware, procedures, and/or hardware have been Design Certified or Nuclear Certified, as appropriate, and are ready for release to the field in accordance with guidance in this Instruction.

2.5.6. Appoints a Nuclear Certification Manager (NCM) to act as the program office's primary interface with the nuclear certification community (See paragraph 2.6. and Table 7.1., Reporting Requirements for Nuclear Certification).

2.5.6.1. For systems in acquisition, where the SPM and primary NCM are located at a Product Center, a supporting NCM shall also be appointed by the System Support Manager (SSM) to coordinate AFSC-related nuclear certification activities with the primary NCM.

2.5.6.2. For systems in sustainment, where the SPM and primary NCM are located at an AFSC, a supporting NCM shall also be appointed by the Development System Manager (DSM) to coordinate Air Force Life Cycle Management Center (AFLCMC)-related nuclear certification activities with the primary NCM.

2.5.6.3. The SPM shall establish processes to ensure proper coordination of certification activities take place between the supported Program Office and the supporting Program Offices.

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

2.5.8. Develops and submits to the AFNWC/NCSC the NCIS, and other documents as appropriate, to initiate and complete the nuclear certification process.

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

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

2.5.10.1. Ensures that technical orders accurately reflect identification information for items listed in the MNCL.

2.5.10.1.1. Ensures the Chief Engineer, or delegated representative, approves all TO updates which could affect system nuclear certification IAW TO 00-5-3.

2.5.10.1.2. Ensures all procedures involving nuclear safety processes are marked with the "Nuclear Surety Procedures" (NSP) symbol to enable positive identification. Apply special emphasis to the NSP to protect against degrading or rendering ineffective the critical nuclear safety features of the weapon system. Significant changes to NSP-coded steps must be coordinated with AFSEC/SEW. AFSEC/SEW need not coordinate administrative changes.

2.5.11. Ensures personnel who directly support the SPM are appropriately trained on their nuclear certification responsibilities.

2.5.12. 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).

2.5.13. Develops a System Engineering Plan (SEP) as required by AFI 63-1201.

2.5.13.1. Documents all modifications/changes to the configuration management and baseline documents of nuclear certified systems/items and ensures that the changes will either not affect nuclear certification or identify that nuclear certification is re-accomplished.

2.5.13.2. Ensures the need for nuclear certification is addressed in applicable Air Force documents (i.e., AF Form 1067, etc.) for new or modified nuclear capable systems, subsystems, or components.

2.5.14. Serves as the Office of Primary Responsibility for the CRP.

2.5.15. Ensures Deficiency Reports (DRs) and DULL SWORD reports submitted on nuclear certified equipment are reviewed by appropriate program office personnel for trends or design deficiencies which may require decertification or use restriction.

2.5.16. Establishes procedures at the appropriate level to monitor and track the accuracy of identification information for Nuclear Certified Items (NCI) identified in the Master Nuclear Certified List (MNCL) for which the program office has engineering or management responsibility. Note: Does not require physical verification of identification plates in field locations.

2.5.16.1. Reports discrepancies via the MNCL feedback/problem reporting process at **https://wwwmil.nwc.kirtland.af.mil/MNCL/index.cfm**.

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

2.6.1. Serves as the System Program Manager's (System Support Manager/Development System Manager, as appropriate) primary representative within the program office for day-to-day management and execution of the Nuclear Certification Program.

2.6.1.1. For systems that meet the criteria identified in paragraphs 2.5.6.1 and 2.5.6.2, the NCM appointed by the SPM will coordinate on NCIS's developed by the supporting organization prior to submission to the AFNWC/NCSC.

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

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

2.6.4. Plans and develops programs for the System Program Manager'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.

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

2.6.6. Monitors the weapon system nuclear certification process to maintain weapon system configuration and certification.

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

2.6.8. Represents the SPM at weapon system Project Officer Group/Working Group meetings.

2.6.9. For ICBMs, the AFNWC/NI NCM chairs the ICBM NSWG.

**2.7. Lead/Using Command.**

2.7.1. 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 NSI, are accomplished by the Using Command. AFPD 10-9 and applicable Program Action Directives (PAD) may indicate the Lead Using Command is the same entity.

2.7.2. Coordinates with the appropriate SPM in determining the need to nuclear certify and documents nuclear certification as a threshold requirement in the ICD/CDD/CPD or other legacy documents (e.g., ORD, IRD, C-MNS, etc.) for new nuclear capable weapon systems or major modifications to currently nuclear certified weapon systems that will maintain a nuclear mission capability.

2.7.3. Provides the Concept of Operations (CONOPS) to the AFNWC/NCSC and to the appropriate SPM for a weapon system under development that will have a nuclear mission capability, for an existing weapon system/platform that will have a nuclear capability added to its Designed Operational Capability (DOC) statement, or for an existing nuclear-capable weapon system/platform undergoing significant modification.

2.7.4. Provides operational support and expertise to the SPM 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. Provides to the SPM the results of the testing (DT&E, OT&E, etc.) as required by the CRP.

2.7.5. Performs Technical Order verification IAW TO 00-5-3 and provides Technical Order updates as required to the SPM for nuclear certified items and weapon systems.

2.7.6. Develops and maintains training and nuclear mission certification programs IAW applicable Technical Orders (TO) and AFIs to prepare unit personnel for attaining Operational Certification.

2.7.7. Determines the need to conduct and conducts Initial Nuclear Surety Inspections (INSI) to establish a unit's Operational Certification and Readiness to assume or resume a nuclear mission, employ a new or modified weapon system, and/or conduct operations in new or modified maintenance and storage facilities

2.7.8. Based on coordination between AFNWC and the Lead/Using Commands, provides combat delivery aircraft as necessary to support flight-testing of NNSA/USAF air-carried test munitions.

2.7.9. Based on coordination between AFNWC and the Lead/Using Commands, 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.

2.7.10. Ensures funding requirements to obtain and maintain nuclear certification are included in weapon system PPBE submissions as identified in AFI 16-501, *Control and Documentation of Air Force Programs*.

2.7.11. Designates a Command NCM 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 or software requiring nuclear certification. The Command NCM:

2.7.11. **(AFRC)** The AFRC Nuclear Certification Manager, HQ AFRC/SEW (**afrc.sew@us.af.mil**) is the Command focal point for the nuclear certification process.

2.7.11.1. Manages the Command's Nuclear Certification Impact Statement and Certification Requirements Plan development, review, and coordination processes.

2.7.11.2. Ensures 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, or maintenance, handling and storage facilities.

2.7.11.3. Ensures the Command's operational certification requirements are documented in the CRP for new acquisition and modification efforts.

2.7.11.4. Serves as the Command's point of contact for TO Verification efforts conducted in support of the nuclear certification process.

2.7.11.5. Establishes and maintains a standardized process for authorizing the release of new and modified nuclear certified items to the user.

2.7.11.6. Identifies/designates MAJCOM staff positions requiring initial and recurring annual nuclear certification process related training as directed by this Instruction.

2.7.11.7. Provides nuclear certification process guidance to MAJCOM staff and nuclear tasked units.

2.7.11.8. **(Added-AFRC)** For modification to nuclear certified equipment, refer to AFI 91-103, as supplemented.

2.7.12. Provide guidance to ensure that units with a nuclear mission use only authorized procedures and Nuclear Certified Items (NCI) in operations involving nuclear weapons and nuclear weapon systems. To verify certification status, consult the MNCL located at **https://wwwmil.nwc.kirtland.af.mil/mncl/index.cfm**. The MNCL is the sole authority for determining the certification status of nuclear certified weapon systems, support equipment, software, and facilities.

2.7.12.1. Ensure units with an assigned nuclear mission develop procedures to survey MNCL changes to determine impact on unit operations. The frequency of this surveillance will be established by the MAJCOM based on the unit's mission requirements, but shall at a minimum be conducted monthly.

2.7.13. Establishes the command's Nuclear Certified Equipment (NCE) Management Program.

2.7.13.1. Appoints a MAJCOM NCE Program Manager to act as the single point of contact for the MAJCOM program and to establish policies and procedures for the management of NCE used by nuclear and non-nuclear tasked operational units. These policies and procedures shall:

2.7.13.1. **(AFRC)** The NCE Program Manager, HQ AFRC/A4MZ (**afrc.a4mz@us.af.mil**), is the Command single point regarding policies and procedures for management of NCE possessed by AFRC units. For specific NCE monitor responsibilities and NCE listing validation see HQ AFRC Nuclear Certified Equipment Program Management Guide at **https://afrc.eim.us.af.mil/sites/A4/A4M/A4MZ/Nuclear%20Certified%20Equipment%20Program/default.aspx**.

2.7.13.1.1. Direct commanders of wings, groups, squadrons or Geographically Separated Units (GSU's) (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.

2.7.13.1.1. **(AFRC)** Non-nuclear tasked unit squadron commanders that maintain NCE will appoint a primary and alternate NCE monitor. Appointment letters will be provided to the unit wing safety office. Unit safety managers will train NCE appointed monitors within 60 days of appointment. AFRC nuclear tasked units will follow Air Force Global Strike Command (AFGSC) as the lead command for guidance, procedures, and MAJCOM supplements. **(T-2)**

2.7.13.1.2. Require 100% of unit assigned NCE (applies to both nuclear and non-nuclear tasked units) be surveyed and documented on an annual basis to ensure legibility of identification information (i.e., data plate, information plate, appropriate markings, etc.) and that the information matches the MNCL listing (this may be incorporated into periodic inspections).

2.7.13.1.2. **(AFRC)** Non-nuclear tasked unit NCE monitors will maintain a listing of all owned NCE and ensure each item is surveyed and documented at least annually. NCE listing will include all applicable elements of identification such as nomenclature, National Item Identification Number (NIIN), part number and serial number. Additionally, discrepancies will be reported to the appropriate program office with engineering authority for the item or system in question and via the MNCL discrepancy reporting system at **https://wwwmil.nwc.kirtland.af.mil/MNCL/index.cfm**. Nuclear tasked unit NCE monitors will follow lead command (AFGSC) guidance, procedures, and MAJCOM supplements. **(T-2)**

2.7.13.1.2.1. NCE deployed and possessed by expeditionary forces is exempt from the NCE management program. NCE returned from deployed locations will be inspected to determine serviceability, that no unauthorized modifications have been performed, and re-entered into the NCE management program. Note: Dull Sword reporting requirements from AFMAN 91-221, Weapons Safety Investigations and Reports still apply for deficiencies associated with NCE.

2.7.13.1.2.2. For assets in War Reserve Material (WRM)/extended storage, or otherwise inspected at intervals exceeding 12 months, complete and document this survey during the inspection nearest this annual requirement IAW appropriate technical data.

2.7.13.1.2.3. Tie-down chains, adjusters, straps, load binders, and shackles, etc., used for weapon restraint during transportation and individual bomb roller assemblies are excluded from NCE management program surveillance and documentation requirements.

2.7.13.1.2.4. Aircraft cargo pallets (463L), model number HCU-6/E, part number 50018-001, NIIN 00-820-4896 are excluded from NCE management program surveillance and documentation requirements.

2.7.13.1.2.5. NCE in Periodic Depot Maintenance (PDM) status is excluded from NCE management program surveillance and documentation requirements. NCE returned from PDM will be surveyed and re-entered into the NCE management

program.

2.7.14. Appoints/designates the Air Force System Program Manager for CONUS Weapon Storage Areas (WSA) responsible for obtaining and maintaining nuclear certification of nuclear maintenance, handling and storage facilities. The SPM:

2.7.14.1. Establishes, implements and executes a nuclear certification program to accomplish the requirements specified herein (to include System Program Manager responsibilities detailed in paragraphs 2.5.1, 2.5.2, 2.5.3, 2.5.4, 2.5.6, 2.5.7, 2.5.8, 2.5.9, 2.5.11. and 2.5.13.) and necessary to provide and maintain a nuclear capable WSA.

2.7.14.2. Integrates host installation and WSA requirements for CONUS WSAs and operations.

2.7.14.3. Develops/Maintains, Facility Certification Configuration Documents (FCCD) for nuclear certified WSAs.

## Chapter 3

## NUCLEAR CERTIFICATION PROCESS

**3.1. Process Overview.** The Air Force nuclear certification process consists of four phases: Identification, Administration, Fielding, and Sustainment (**Figure 3.1**.). See **Attachment 2** for a macro view of the nuclear certification process. The Identification Phase encompasses the actions taken by the SPM and/or Lead/Using Command to identify the need for and begin the nuclear certification process. The Administration Phase includes actions necessary to obtain or continue the nuclear certification of a weapon system, item of equipment, or maintenance, handling and storage facilities. The Fielding Phase involves releasing 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. NOTE: The details of the activities related to the major components of each phase are provided in NWC HDBK 63-126, *Air Force Nuclear Certification Process Guide*, available from AFNWC/NCSC.

**Figure 3.1. Nuclear Certification Process Phases.**

**3.2. Identification Phase.** The Identification Phase encompasses: (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 the AFNWC/NCSC 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 (NCIS), (3) defining the top level certification requirements in the Basic Certification Requirements Plan (Basic CRP; and (4) developing and coordinating the detailed nuclear certification requirements, roles, responsibilities, and schedules in the CRP.

3.2.1. The Identification Phase begins with the nuclear weapon system requirements identification process. The SPM is provided the direction and resources to deliver a capability to the user IAW AFI 63-101, *Acquisition and Sustainment Life Cycle Management.* In conjunction with the Lead/Using Command, the SPM 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 generation or acquisition process. For new capabilities, nuclear certification requirements should be documented in the Capability Development Document (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 modifications to nuclear maintenance or storage facilities). New or revised nuclear weapon maintenance or test procedures to be conducted in Air Force facilities will be documented and approved IAW AFI 91-103, *Nuclear Safety Design Certification Program*. 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 or modification will require nuclear certification or will change the status of a previously certified item (See Table 4.1. for guidance in determining what is required to be nuclear certified). 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 SPM identifies the need to obtain nuclear certification for a new system/item or identifies a potential impact to a nuclear certified weapon system's/item's nuclear certification it is documented in the Nuclear Certification Impact Statement. The NCIS is prepared by the SPM and routed to the AFNWC/NCSC through the program office's Nuclear Certification Manager (Nuclear Certification Impact Statement templates can be obtained from the AFNWC/NCSC). The NCIS provides the data the AFNWC/NCSC, in coordination with the appropriate process owners, uses to determine what certification requirements the program office will have to meet in order to get the system/item nuclear certified.

3.2.2.1. The Nuclear Certification Impact Statement provides a functional description of the proposed new system or modification and includes the SPM's evaluation of its potential for nuclear certification impact. Since the NCIS serves as the source document for determining the impact the program effort has on nuclear certification, it is important that the NCIS address the new acquisition or modification effort in enough detail to allow the process owners to effectively evaluate and substantiate the recommended certification approach. The NCIS should address potential impacts to compatibility certification (reference MIL-STD-1822A), published Technical Orders, published Weapon System Safety Rules, and nuclear safety design criteria established in appropriate 91-series instructions/manuals (i.e., AFI 91-103, AFMAN 91-118, etc.), and for existing systems, degradations to existing nuclear weapon system safety features. Additionally, the NCIS should address potential operational certification impacts (e.g., task qualification training, the potential need to conduct an initial nuclear surety inspection, etc.).

3.2.2.2. The AFNWC/NCSC will coordinate the NCIS with the appropriate nuclear certification process owners (i.e., HQ AFSEC, the AFNWC/NCS, Lead/Using Command, etc.). Process owners will evaluate the NCIS 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 required, the AFNWC/NCSC will notify the SPM via an NCIS Approval Notification Letter. This letter will identify any administrative requirements that need to be accomplished by the AFNWC or other process owners (e.g., updating the Master Nuclear Certification List or Nuclear Compatibility Certification Statement) and that no further certification process actions are

required by the program office. If the process owners determine that certification actions will be required, the AFNWC/NCSC will notify the SPM via memorandum and will coordinate the development of the Basic Certification Requirements Plan.

3.2.3. Certification Requirements Plan (CRP). The CRP is the document that defines the requirements, assigns the roles and responsibilities of the stakeholders, and describes the integrated nuclear configuration of the weapon system or item of equipment or software being certified. It defines the process and structure for the certification of a weapon system, subsystem, associated specialized and non-specialized support equipment, facilities, and software. It defines all of the activities and tasks that must be accomplished in order for nuclear certification to be granted. The CRP defines the configuration of the item(s) that will undergo nuclear certification and contains certification process schedules, to include nuclear certification documentation submittal schedules, and nuclear certification process task assignments. The purpose of the CRP is to ensure proper planning for, and communication of, a coordinated nuclear certification effort.

3.2.3.1. If nuclear certification is required, the AFNWC/NCSC will prepare a Basic CRP and obtain coordination from all appropriate process owners: the AFNWC/NCS for aircraft/air launched delivery systems, support equipment (i.e., bomb loaders, munitions handling equipment, etc.) and nuclear maintenance, handling, and storage facility compatibility certification; the AFNWC/NI for ground launched missile system compatibility certification; HQ AFSEC for nuclear safety design certification and WSSR development; the appropriate Technical Order Management Authority for Technical Orders; and the Lead/Using Command(s) for Operational Certification. The Basic CRP formally identifies to the SPM those certification tasks that need to be satisfied in order to achieve nuclear certification. The Basic CRP:

3.2.3.1.1. Describes basic actions necessary to evaluate new acquisitions or modifications for nuclear certification.

3.2.3.1.2. Identifies the specific certification tasks that must be accomplished, their general requirements, and responsibilities of each process owner. Each of the required certification processes (i.e., Nuclear Safety Design, Compatibility, etc.) will be addressed in separate appendices to the Basic CRP.

3.2.3.1.3. Identifies the documentation needed to support the certification evaluations (e.g., Nuclear Surety Evaluation Report (NSER), Nuclear Safety Analysis Report (NSAR), Final Design Approval Report (FDAR), Electrical Interface Control Drawing (EICD), and Mechanical Interface Control Drawing (MICD)).

3.2.3.1.4. Contains a draft schedule identifying major certification and program milestones.

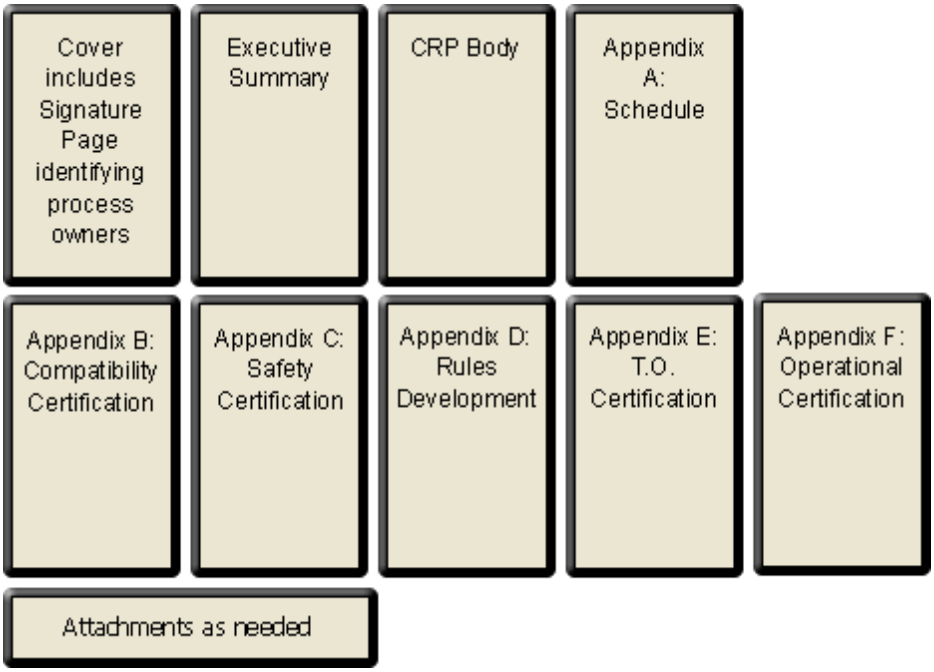
3.2.3.1.5. Contains any other pertinent information that will help the SPM plan for and obtain nuclear certification.

3.2.3.2. The AFNWC/NCSC will coordinate the draft Basic CRP among all the process owners to ensure the plan and its appendices accurately capture process owner requirements. Once the process owners have coordinated on the draft Basic CRP, it will be forwarded to the SPM. The SPM will, in turn, develop the CRP that will be executed.

3.2.3.3. The SPM prepared CRP will contain the details regarding how the program office will meet the certification requirements identified in the Basic CRP. The CRP will be forwarded to the AFNWC/NCSC for final evaluation and coordination from all appropriate process owners. When all coordination is complete, the AFNWC/NCSC approves the CRP and returns it to the SPM for implementation. Copies will also be provided to all appropriate process owners.

3.2.3.4. Figure 3.2 illustrates the general format for the CRP. A signature page included behind the cover page will contain the signatures of the SPM, each of the process owners who coordinated on the CRP, and the AFNWC/NCSC indicating approval of the CRP. The body of the CRP will contain the introduction, background, nuclear certification and nuclear surety synopsis, technical and functional descriptions of the activity, item, list of acronyms and applicable documents, as well as a general description of the design and evaluation approach the program office will use. Also in the body, the program office includes program milestones, action agencies, and defines the relationship between the nuclear certification milestones and the weapon system milestones as appropriate. The detailed certification schedule will be included as Appendix A. Each subsequent appendix will provide detailed information related to the certification requirements (i.e., task descriptions, tasks, reviews, tests, responsibilities, schedule constraints, etc.) necessary to support the certification requirement. Appendices will be developed for only those components of Design and Operational Certification that have been identified as requiring action. (NOTE: Each CRP will be tailored to meet the needs of the particular acquisition/modification effort.) The CRP is a "living" document and as program changes are encountered and incorporated into the acquisition/modification effort, their impact on the nuclear certification process must be reviewed and the CRP updated accordingly.

**Figure 3.2. Notional Certification Requirements Plan.**



**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 the CRP is issued for implementation by the AFNWC. There are five distinct series of actions that can take place within the Administration Phase: 1) Compatibility Certification; 2) Nuclear Safety Design Certification; 3) Weapon System Safety 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 and safety design certifications; Secretary of Defense approval of proposed Weapon System Safety Rules; verification of Technical Orders; and the Operational Certification of the weapon system. The AFNWC will issue a Nuclear Certification Summary (NCS) when all actions required by the CRP are accomplished. Issuance of the NCS will also initiate an update to the MNCL and complete the Administration Phase.

3.3.1. Compatibility Certification. The CRP will identify the need to obtain compatibility certification. Compatibility Certification ensures 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. Nuclear weapon system compatibility evaluations are also a component of Operational-Suitability as established in AFI 63-1201, *Life Cycle Systems Engineering*. A successful nuclear weapon system compatibility evaluation and subsequent issuance of a Nuclear Compatibility Certification Statement (NCCS) are required to complete the nuclear compatibility process. The NCCS defines the nuclear compatibility certified configuration of the weapon system.

3.3.1.1. Aircraft Compatibility Certification. For aircraft and air launched missile systems, nuclear compatibility certification is accomplished by the AFNWC/NCS. To obtain compatibility certification, the SPM 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 Technical Orders as specified in the CRP. Any requirements for testing and analysis needed to complete the compatibility certification actions will also be identified in the CRP. The AFNWC/NCS will coordinate the required tests and analysis with the appropriate program office, test organizations (e.g., 49th Test and Air Force SEEK EAGLE Office (AFSEO)), and National Nuclear Security Administration (NNSA), as needed. In addition, the AFNWC/NCS will ensure AF/A10 and NNSA are aware of system modifications or acquisitions that may affect Nuclear Weapon Major Assembly Release and Aircraft Compatibility Control Drawings (MAR/ACCD) via the weapon and/or weapon system POG as appropriate. Once all required tests and analyses have been completed, the SPM 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*. The AFNWC/NCS will interface and coordinate with the NNSA, via Sandia National Laboratory, to obtain the initial release of, or updates to, the Major Assembly Release (MAR) and Aircraft Compatibility Control Drawing (ACCD) as appropriate. Upon completion of all actions identified in the CRP for compatibility certification, the AFNWC/NCS aircraft compatibility certification office will issue an initial or updated Nuclear Compatibility Certification Statement (NCCS) and notify the AFNWC/NCSC via a Nuclear Compatibility Certification Notification Letter.

3.3.1.1.1. Nuclear Compatibility Certification Statement (NCCS). The NCCS is issued when all aspects of the Compatibility Certification are accomplished. It is a document that consists of seven parts:

3.3.1.1.1.1. Section I: Aircraft System General Information - includes nomenclature, propulsion, nuclear armament, and nuclear certified stations.

3.3.1.1.1.2. Section II: Aircraft Monitor and Control System Components - includes hardware and software identifiers.

3.3.1.1.1.3. Section III: Suspension and Release Equipment - includes explosive cartridge configuration and suitable substitute cartridge, if any.

3.3.1.1.1.4. Section IV: Compatible Weapon/Equipment Configurations - includes, but not limited to, Training Stores, Air-to-Air missiles, Pods, and Fuel Tanks (This section of the NCCS will specify the authorized configurations).

3.3.1.1.1.5. Section V: Carriage and Employment Limitations - includes weapon loads, min/max airspeed and altitudes.

3.3.1.1.1.6. Section VI: AMAC Testers - includes aircraft Flight Line testers, Maintenance testers, and their associated software identification numbers.

3.3.1.1.1.7. Appendix

3.3.1.1.1.7.1. A: Historical AMAC Testing - includes certification and surveillance testing, aircraft types, tail numbers, location and dates.

3.3.1.1.1.7.2. B: Nuclear Certification Documents Reference - includes safety and compatibility documentation.

3.3.1.1.1.7.3. C: Nuclear Certified Technical Orders - ground and flight.

3.3.1.1.1.7.4. D: Open Issues/Restrictions - if any.

3.3.1.1.1.8. Additional aircraft specific information, pertinent to nuclear weapon compatibility certification, may be provided in the NCCS.

3.3.1.2. Initial Surveillance and Aircraft Monitor and Control (AMAC) Testing. The AFNWC/NCS will determine if initial surveillance and/or Aircraft Monitor and Control (AMAC) testing is necessary for each type of aircraft nuclear weapon system. The AFNWC/NCS will conduct/direct testing as required. The purpose of the testing is to ascertain compliance of the aircraft AMAC system with the required AMAC specification and to establish that the aircraft is indeed electrically compatible with the required set of nuclear weapons. 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 the AFNWC/NCS aircraft compatibility office as source data to justify nuclear compatibility certification. Surveillance/AMAC test results will also be provided to the SPM.

3.3.1.3. ICBM Compatibility Certification. The goals of compatibility certification for ICBMs are similar to those for aircraft as they certify 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 AFNWC/NI in conjunction with the Lead/Using Command coordination. Interface and coordination with the AFNWC/NCS and NNSA are required to obtain the Major Assembly Release (MAR). Nuclear Compatibility Certification is documented in the MAR. The CRP will identify 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 CRP for compatibility certification, the AFNWC/NI SPM will notify the AFNWC/NCSC via a Compatibility Certification Notification Letter and will forward a copy to the AFNWC/NCS.

3.3.1.4. Facility Compatibility Certification. The goal of facility compatibility certification is to ensure nuclear maintenance, handling or 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 environments as measured against the weapon Stockpile to Target Sequence (STS) 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 maintenance, handling or storage facility will drive the need to evaluate impacts on the compatibility certification of the facility. The CRP will identify the compatibility certification requirements. Upon completion of all actions identified in the CRP for compatibility certification, the facility compatibility certification office within AFNWC will notify the AFNWC/NCSC via a Facility Compatibility Certification Notification Letter.

3.3.2. Nuclear Safety Design Certification. Nuclear safety design certification evaluates facilities, hardware, and/or software associated with nuclear weapon systems for compliance with nuclear safety design certification and evaluation criteria. The purpose is to validate that the system, item of equipment, or nuclear maintenance, handling or storage facility can be used safely in support of nuclear mission taskings. Nuclear safety design certification begins with an approved CRP that has identified the need to nuclear safety design certify a system/item that will be used with nuclear weapons. The CRP also outlines the applicable design and evaluation criteria in AFI 91-103, AFI 91-107, Engineering Technical Letter (ETL) 11-7; *Nuclear Weapons Capable Maintenance and Storage Facilities*, AFMAN 91-118, and/or AFMAN 91-119, which must be satisfied to meet the requirements of Nuclear Safety Design Certification (NSDC). A successful nuclear safety design evaluation and subsequent issuance of a NSDC Letter by HQ AFSEC/SEW to the AFNWC/NCSC are required to complete the nuclear safety design certification.

3.3.2.1. **N**uclear Safety Design Certification Requirements**.** The SPM must comply with the nuclear safety design certification requirements identified in the approved CRP and document these actions IAW AFI 91-103. Compliance will be documented in a Nuclear Surety Evaluation (NSE) submitted to HQ AFSEC/SEW by the SPM. 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 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. Weapon System Safety Rules Development. The development of a new nuclear capable weapon system or a significant design or mission change (to include a CONOPs change) to an existing weapon system may dictate the need for a Nuclear Weapons System Safety Group (NWSSG) study to be included in the CRP. The NWSSG study leads to the development, SECDEF approval, and promulgation of weapon system specific Weapon System Safety Rules (WSSRs). WSSRs are operational restrictions/requirements designed to assure nuclear weapon systems are compliant with the four DoD nuclear safety standards as defined by DoD Directive 3150.2. WSSRs must be approved by the SECDEF prior to the operational use of nuclear weapon systems with war reserve material. The requirement to convene the NWSSG and conduct a safety study as described in AFI 91-102 will be documented in the approved CRP. The NCIS and CRP will identify a Rules Need Date. This date will be used as the baseline for developing the NWSSG schedule, which will include delivery dates for all required documents (e.g., Lead/Using Command Operational Plan Data Document, Nuclear Safety Analysis Report (NSAR), and TNSA) and other materials needed by the NWSSG to support the scheduled studies. SECDEF approval of new or updated WSSRs, and subsequent issuance of a Safety Rules Approval Letter to the AFNWC/NCSC by HQ AFSEC/SEW completes the weapon system safety rules development activities. For currently nuclear certified systems with SECDEF approved WSSRs in place: If the NWSSG determines that the existing WSSRs are adequate, HQ AFSEC/SEW will forward the safety rules approval letter to the AFNWC/NCSC following Air Staff approval of the NWSSG Report.

3.3.4. Technical Order Certification. The Technical Order Management Agency (TOMA) is responsible for ensuring that Technical Orders and procedures involved in a weapon system's nuclear mission operations, maintenance, troubleshooting, OPCERT, DECERT, handling, movement, restraint configuration, loading, unloading, delivery, and testing are complete, accurate, and safe as directed by TO 00-5-3, *Air Force Technical Order Life Cycle Management.* Compliance with Nuclear Weapon System Safety Rules, requirements in 91-100 series AFIs, nuclear safety, nuclear compatibility, and design safety features is the responsibility of the Technical Content Manager (TCM) (NOTE: For ICBM systems the AFNWC/NI will provide the TCM for Nuclear Surety Procedure (NSP) flagged procedures). Technical order certification begins with the approval of the Technical Order Certification appendix to the CRP, which describes all TO-related actions required to certify the procedures (e.g., Developer/program office certification/validation responsibilities and Lead/Using Command verification responsibilities). When technical data is approved, the TOMA will formally notify the AFNWC/NCS via a technical order approval notification letter. SPMs may devise local procedures for approval and reporting Technical Order Certification. For example, the Nuclear Certification Manager may be assigned review and approval authority for non NSP coded procedures. If requested, the SPM will provide the AFNWC/NCSC nuclear certification engineer advance copies of TOs or TO source data, as applicable, 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. The goal of Operational Certification is to ensure that the organization and personnel assigned to support the nuclear mission can effectively and safely operate and maintain their assigned weapon systems. Operational Certification applies 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 Designed Operational Capability (DOC) 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. One of these conditions will drive the requirement to include an Operational Certification appendix to the CRP.

3.3.5.1. Lead/Using Command. The 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 CJCSI 3263.05, *Nuclear Weapons Technical Inspections*, and AFI 90-201, *Inspector General Activities*, and aircrew/missile crew nuclear mission certifications as applicable to the unit's DOC statement. The Lead/Using Command will develop the Operational Certification appendix, when required, and coordinate with the SPM for inclusion in the final CRP

3.3.5.2. Unit Nuclear Qualification Programs. A variety of programs will be initiated at the operational unit level to prepare personnel for their nuclear mission roles. Units initiate required administrative actions to ensure personnel possess the appropriate security clearances IAW DoDM 5200.01 Vols 1-4, *DoD 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 DoD 5210.42 R-AFMAN 10-3902, *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 TOs, AFIs, and Lead/Using Command's supplements and instructions.

3.3.5.3. Initial Nuclear Surety Inspection. The Using Command, in coordination with HQ AFSEC, will determine the need for an Initial Nuclear Surety Inspection (INSI) and ensure this requirement is included in the Operational Certification appendix to the CRP. The Using Command will determine when a unit is ready to undergo the INSI based on their assessment of the unit's level of nuclear mission proficiency. The 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. After the unit successfully completes the inspection, the Using Command will send an Operational Certification Letter to the AFNWC/NCSC to confirm 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 only required after the first unit passes the Initial Nuclear Surety Inspection.

3.3.6. Administrative Phase Completion. Throughout the Administration Phase, the AFNWC/NCSC will monitor the status of the certification process. The CRP identifies which of the nuclear certification process components (i.e., compatibility, nuclear safety

design, etc.) are required for nuclear certification. Successful completion of these tasks is documented by the following: (1) A Compatibility Certification Letter from the AFNWC/NCS or AFNWC/NI, as appropriate, indicating that all actions for Compatibility Certification are complete, (2) The Nuclear Safety Design Certification Letter from HQ AFSEC/SEW, (3) Formal technical order approval letter from the appropriate Technical Order Management Agency, (4) Weapon System Safety Rules Approval notification from HQ AFSEC/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 all of the CRP-directed Design Certification components identified above are accomplished, the AFNWC/NCSC will develop the Design Certification Summary letter package for AFNWC signature. Once signed, the DCS will be forwarded to the SPM and the MNCL will be updated to indicate that Design Certification is complete. Once the CRP-directed Operational Certification actions are completed, and the AFNWC/NCSC is satisfied that all actions specified in the CRP are complete, a Nuclear Certification Summary letter will be signed out and forwarded to the SPM and the MNCL will be updated to indicate the system/item is nuclear certified. 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 the issuance of either a Design Certification Summary or Nuclear Certification Summary from AFNWC to the SPM (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 or item of equipment 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 TO/TCTO and units will process them IAW AFI 21series guidance.

3.4.1. Release Process. “Release” refers to the process of sending a new or modified item to the user with a TO 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 in the following paragraphs. The Lead/Using Command determines the Release Case and authorizes the SPM 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 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. When the SPM’s recommendation for release and the Lead Using Command’s Release Authorization actions are complete, the SPM will notify the AFNWC/NCSC that all Program Office/Lead/Using Command-related CRP activities are

completed. This notification terminates the Nuclear Certification Process Fielding Phase. (NOTE: The Nuclear Certification process will not be accelerated to allow for earlier-than-planned fielding if the certification process owners determine that 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 scenarios for release. The use of "Release Cases" is intended to provide the Lead/Using Command and SPM 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 receiving the Nuclear Certification Summary, the SPM 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 coordination requirements are satisfied, the Lead/Using Command will authorize the program office to release the item to specified units. The Lead/Using Command will specify the required unit actions in the release instructions.

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 receiving the Design Certification Summary, the SPM 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 program office to release the item to specified units. Typically, this type of release 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. Upon completion of all Operational Certification actions at the initial unit, the Lead/Using Command shall forward the Operational Certification Letter to the AFNWC/NCSC. The AFNWC will issue the Nuclear Certification Summary to the SPM. After receiving the Nuclear Certification Summary, the SPM will send an updated release recommendation to the Lead/Using Command. When the Lead/Using Command's coordination requirements are satisfied, the Lead/Using Command will specify required actions in the release instructions for both Operationally Certified units as well as follow-on units that have not yet undergone their Initial Nuclear Surety Inspection. 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 SPM release an item with the intention of design-certifying or nuclear-certifying the new/modified item or weapon system configuration after release (e.g., avionics software revision). The Nuclear Certification Impact Statement will have identified the Lead/Using Command's intention to have the item released prior to completion of any or all of the nuclear certification requirements. 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. The AFNWC/NCSC will coordinate the restricted release request with all affected certification process owners and provide appropriate direction to the SPM in the Basic Certification Requirements Plan. Once the SPM receives a Design Certification Summary, an updated release recommendation will be sent by the program office 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, but may be used to support conventional mission taskings. After the Nuclear Certification Summary is issued, an updated release recommendation will be sent by the program office to the Lead/Using Command. When the Lead/Using Command's coordination requirements are satisfied, the Lead/Using Command will specify required actions in the release instructions for both Operationally Certified units as well as follow-on units that have not yet undergone their Initial Nuclear Surety Inspection. 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 SPM to develop and release an item with no intention of design-certifying the item or nuclear-certifying the new/modified weapon system configuration. The Nuclear Certification Impact Statement will have identified the Lead/Using Command's intention to have the item released without undergoing nuclear certification. The AFNWC/NCSC will coordinate the restricted release request with all affected certification process owners and provide appropriate direction to the SPM in the Basic Certification Requirements Plan. 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.

**3.5. Sustainment Phase.** The Sustainment Phase includes all actions necessary to maintain the nuclear certified status of a fielded weapon system/item once operational. 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 or retired. During this phase the nuclear certified system/item is monitored for any changes that would impact the design or Operational Certification of the system/item. Activities during this phase include weapon system/safety deficiency reporting, reporting the results of periodic system testing, inspections/evaluations, and periodic procedure reviews. Any change that alters the certification status would drive the process back to the Identification Phase.

3.5.1. Compatibility Certification. During the Sustainment Phase a certified weapon system or equipment item is monitored to confirm that the weapon system or equipment item continues to meet the requirements for the interface (mechanical, electrical, and aerodynamic) between the item and the nuclear weapon based upon established design and evaluation requirements.

3.5.1.1. Aircraft Compatibility Certification. Nuclear certified aircraft and air-launched missile systems will be monitored for changes that could impact the system's Nuclear Compatibility Certification Statement. Once the Lead/Using Command receives the nuclear certified system/item, the unit is required to conduct initial and periodic operational checks IAW applicable technical orders. The AFNWC/NCS will be provided Category I and critical or major Category II Deficiency Reports, as defined in TO 00-35D-54, *USAF Deficiency Reporting, Investigation and Resolution*, for those items listed in the MNCL. The AFNWC/NCS will also be provided testing results to determine if the deficiencies identified or the testing results impact the compatibility certification status of the system. Similarly, the AFNWC/NCS will be provided inspection and evaluation reports generated by the Lead/Using Command (i.e., NSI, NORI, Tactical Evaluation (TAC Eval), etc.) to determine if the compatibility certification may be affected by inspection or evaluation findings. The SPM must be informed of system deficiencies affecting compatibility certification via the reporting processes and/or from the AFNWC/NCS. If the program office determines a baseline configuration change is required, the SPM must initiate/reenter the Identification Phase detailed in Section 3.2.

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

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 the AFNWC/NCS as source data to justify continuing the nuclear compatibility certification. A copy of each surveillance test report shall also be provided to the SPM.

3.5.1.2. ICBM Compatibility Certification. The AFNWC/NI, in conjunction with the Lead/Using Command, monitors ICBM compatibility certification throughout the sustainment phase. Periodic testing (e.g., Simulated Electronic Launch Minuteman (SELM)) and monitoring of Deficiency Reports, DULL SWORD and other mishap reports, and nuclear surety inspections, etc., will be used to ensure the weapon system continues to meet all nuclear compatibility certification requirements. Any impact to compatibility certification will result in a return to the Identification Phase and subsequent submission of a Nuclear Certification Impact Statement. The AFNWC/NCSC in coordination with the other nuclear certification process owners, will evaluate the NCIS to determine if a change in the certification status is appropriate (e.g., restriction or decertification) and to identify any follow-on actions.

3.5.1.3. Facility Compatibility Certification: Host installation MAJCOM will monitor a nuclear certified facility for changes (e.g., changes in the authorized Maintenance Capability Letter (MCL,) implementation of new weapon maintenance procedures, or use of existing approved procedures in different facilities, maintenance facility modifications, etc.) that could impact the compatibility certification of the facility. Any impact to compatibility certification will result in a return to the Identification Phase and subsequent submission of a Nuclear Certification Impact Statement. The AFNWC/NCSC, in coordination with the other nuclear certification process owners, will evaluate the NCIS to determine if a change in the certification status is appropriate (e.g., restriction or decertification) and to identify any follow-on actions.

3.5.2. Nuclear Safety Design Certification. Process Owners will monitor 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 IAW 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 MDRs/PQDRs used to relate non-safety related deficiencies pertaining to all aspects of a nuclear weapon system (i.e., personnel, procedures, equipment, training, etc.). These reports serve as the primary means by which the SPM and other process owners identify trends, or areas of concern, affecting the system/item's nuclear safety design certification. The need to modify the weapon system/item or equipment/facility and restart the certification process, or decertify or restrict the use of a certified system/item will result in reentry into the Identification Phase. Formal notification is provided to the AFNWC/NCSC when decertification or use restrictions are implemented against safety design certified items so these changes can be documented in the MNCL.

3.5.3. Weapon System Safety Rules. Fielded nuclear certified weapons systems are monitored by the Nuclear Weapons Systems Safety Group on a recurring basis through Operational Safety Reviews (OSR) conducted every five years and through Special Studies conducted by the NWSSG to address specific issues when needed. During these reviews/studies, the NWSSG assesses compliance of all aspects of the nuclear weapons system with the four DoD Safety Standards as required by DoD 3150.2-M. Existing WSSRs are reviewed and modified as necessary and recommendations are made to mitigate shortfalls in the system with respect to compliance with the DoD Weapon System Safety Standards. As in the Administrative Phase of the nuclear certification process, the product of the NWSSG study is an Air Force Safety Rules Package and NWSSG Report that is forwarded to HQ USAF and the SECDEF. This phase includes all documentation and staffing actions

necessary to support Operational Safety Reviews (OSRs) and Special Studies by the NWSSG IAW AFI 91-102 and DoD 3150.2-M, 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 re-initiation of the Nuclear Certification process. HQ AFSEC/SEW will notify the AFNWC/NCSC of the approval and publication of WSSRs. The AFNWC/NCSC, in coordination with the appropriate process owners, will determine if there are any impacts to the nuclear certification of the weapon system (i.e., changes to MNCL listing). If there is no impact, then no action is required. 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 return to the Identification Phase of the Nuclear Certification Process and initiate a nuclear certification action.

3.5.4. 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 be vigilant to identify deficiencies in procedural and/or technical guidance to their Lead/Using Command functional managers. The requirement to update a publication may come from a variety of sources. Periodic reviews may reveal the need for more efficient or effective ways to accomplish a task or to maintain a weapon system and its support equipment. Other sources may include, but are not limited to, the following: 1) Unit Inspections (e.g., NSIs, Staff Assistance Visits); 2) Deficiency Reports (e.g., safety reporting system, maintenance quality control reports) and/or; 3) Command level (AF/MAJCOM) requirement to emphasize particular procedures that are vital for a weapon system's continued operational safety and/or security. Changes are processed IAW existing AF guidance (e.g., TO 00-5-1). Proposed changes to Technical Order procedures will be evaluated by appropriate program office personnel (e.g., TOMA, TCM, Equipment Engineer, or NCM) and the system Chief Engineer, or delegated representative, must approve all TO revisions which could affect system nuclear certification. Note: The NCIS for TO revisions will also prompt a review to determine if the changes in the procedures may impact the design certification of the associated system or hardware.

3.5.5. Operational Certification. The Sustainment Phase Operational Certification process begins once a unit is Nuclear Certified.

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. . If an inspection or evaluation documents a nuclear operational certification deficiency, the issue(s) may require entry into the Identification Phase. Recurring nuclear surety inspection reports will be forwarded to the AFNWC/NCSC as required by Table 7.1.

## Chapter 4

## DETERMINING THE NEED TO NUCLEAR CERTIFY

**4.1. It is Air Force policy that procedures, personnel, equipment, facilities, and organizations that handle, maintain, or operate nuclear weapons or nuclear weapon systems shall be nuclear certified before operations with war reserve material can be undertaken.**

**4.2. Use Table 4 1. to determine if an item, or modification to a nuclear certified item, is required to be nuclear certified before conducting nuclear operations or supporting nuclear related taskings such as nuclear generation exercises using war reserve material.**

4.2.1. When used with nuclear weapons in Air Force custody, ally-operated nuclear weapon systems, equipment, and procedures must satisfy the same nuclear certification criteria required for Air Force systems, equipment, and procedures.

4.2.2. When items do not clearly fall into any of the categories identified in Table 4.1., the Air Force Nuclear Weapons Center, in coordination with appropriate process owners identified in Chapter 1 of this publication, will determine if nuclear certification is required. Submit an NCIS to the AFNWC/NCSC per this instruction.

4.2.3. Any item of equipment used with nuclear weapons, but not specifically designed for that purpose, is considered non-specialized equipment.

**TABLE 4.1. Determining Nuclear Certification Requirements.**

| Item | Required to be Nuclear Certified | Considered Nuclear Certified (NOTE 1) | Does Not Require Nuclear Certification |
|---|---|---|---|
| Items requiring Nuclear Safety Design Certification (NSDC) IAW AFI91-103. (Note: See AFI91-103 for additional details)<br>These Items Include: | | | |
| Combat and Noncombat delivery vehicles | X | | |
| Operational and support equipment used to move, support, store, handle, load and unload, or mate and demate nuclear weapons | X | | |
| All hardware and software components that directly interface with a nuclear weapon, critical component, or certified software | X | | |
| Items that, if failed or operating incorrectly, could degrade the nuclear command, control, and | X | | |

| Item | | Required to be Nuclear Certified | Considered Nuclear Certified (NOTE 1) | Does Not Require Nuclear Certification |
|---|---|---|---|---|
| | status reporting capability. | | | |
| | Hardware and software items designated as critical components | X | | |
| | All hardware or software used to directly control critical functions | X | | |
| | TDIs used to maintain the OPCERT status of critical components and protection of secure nuclear command and control codes and coded components. | X | | |
| | Operational and maintenance hardware and software used to command and control critical functions, and perform status reporting | X | | |
| | Nuclear Weapons Maintenance, Handling and Storage Facilities (See note 2) | X | | |
| Items requiring NSDC IAW AFI91-103. (Note: See AFI91-103 for additional details)<br>These Items Include: | | | | |
| | Modifications to non-specialized equipment that could impact the item's primary structure, electrical and hydraulic power systems, load-bearing capacity, steering and braking capability, or positive control features | X | | |
| | Test equipment that:<br>Verifies the proper operation of circuits and functions<br>Interfaces directly with a nuclear weapon or operationally certified critical component<br>Is used to operationally certify, decertify, or verify proper operation, or | X | | |

| Item | | Required to be Nuclear Certified | Considered Nuclear Certified (NOTE 1) | Does Not Require Nuclear Certification |
|---|---|---|---|---|
| | Is used in special test or maintenance programs to identify system anomalies or failures. | | | |
| | Procedures involving a weapon system's nuclear mission operations, maintenance, troubleshooting, OPCERT, DECERT, handling, movement, restraint configuration, loading, unloading, delivery, and testing. | X | | |
| **Item** | | **Required to be Nuclear Certified** | **Considered Nuclear Certified (NOTE 1)** | **Does Not Require Nuclear Certification** |
| Items requiring NSDC IAW AFI91-103. (Note: See AFI91-103 for additional details)<br>These Items Include: | | | | |
| | Non-Specialized Commercial Off-the-Shelf (COTS) Equipment including:<br>Tiedown chains, cables, straps and adjusters used for restraint during transportation<br>Commercial Truck Tractors<br>(See note 3)<br>Commercial Tow Vehicles<br>(See note 4)<br>Semi-Trailers<br>(See note 5) | | X | |
| | Other Agency Items such as:<br>Support Equipment and procedures for nuclear logistics movements that other DoD agencies have certified for nuclear weapons loading<br>DOE Test, Handling and Support Equipment<br>(See note 6) | | X | |
| | European Manufactured Forklifts<br>(See note 7) | | X | |

| Item | Required to be Nuclear Certified | Considered Nuclear Certified (NOTE 1) | Does Not Require Nuclear Certification |
|---|---|---|---|
| Nuclear tasked units (See note 8) | X | | |
| General Purpose Hand Tools such as pliers, wrenches and screwdrivers | | | X |
| Depot and Intermediate-Level Test Equipment, if the critical circuits of the tested items are verified at the organizational level before use with nuclear weapons | | | X |
| Common, multipurpose, and non-specialized test equipment, such as multimeters, decade resistance boxes, and impedance bridges unless the equipment directly interfaces with nuclear weapons or end item that is nuclear safety design certified. | | | X |
| Delivery, Loading, Mating, Maintenance, and Explosive Ordnance Disposal (EOD) Training Equipment such as:<br>full-scale and miniature practice delivery bombs and bomb dispensers<br>practice loading bombs and warheads used for proficiency training,<br>training re-entry vehicles and payload sections<br>EOD disassembly/reassembly training equipment | | | X |
| Aircraft Mission Planning Software (Note: See AFI91-103 for special caveats and documentation requirements) (See note 9) | | | X |

**Notes:**

1. These items are considered to be nuclear certified, and therefore do not require separate Air Force nuclear certification actions provided the items are in their original unmodified condition and are used in their intended operating environment IAW approved technical data.

2. Essential Facility Systems (applies to US owned facilities) must be evaluated for compliance with specific Air Force-directed nuclear weapon system safety design criteria in both AF 91-series publications and applicable Engineering Technical Letters and for compatibility of the

prescribed operational capability assigned to the facility: The following are considered to be Essential Facility Systems with respect to nuclear weapons operations and will be evaluated:
a. Lightning/Sideflash Protection Systems
b. Facility Power Systems
c. Fire Protection Systems
d. Hoist, Cranes and Similar Devices including structural support
e. Physical Facility Security Systems and Software
f. Blast Containment/Isolation Features
g. Electromagnetic Radiation
h. Radiation Monitoring
A Facility Certification Configuration Document (FCCD) defines the configuration of nuclear certified nuclear weapons maintenance, handling and storage facilities. This document will be developed by the MAJCOM and a copy will be provided to the AFNWC, installation and appropriate agencies within the command and will serve as the nuclear certification configuration control document for the facility. Changes or modifications to the documented configuration will require the submittal of an NCIS and review for any impact on the certified status of the facility caused by the change or modification.
3. Commercial truck-tractors meeting the specific criteria in AF 91-series publications are nuclear certified and are authorized for towing certified semi-trailers only.
4. Original equipment pintle assemblies are nuclear certified. Replacements are considered certified if procured and installed per appropriate technical orders.
5. Non-specialized semi-trailers are considered nuclear certified when they are in original unmodified condition and meet applicable industry standards. The addition of items such as a certified rollerized conveyor, rail sets, etc. to a certified trailer does not constitute certification of the new configuration. To have a certified unit, both the trailer and the modification kit are required to be separately safety designed certified according to AF 91-series publications.
6. The equipment must be used for the specified purpose intended in approved JNWPS publications, special procedures, or authorized URs responses.
7. Will be individually listed in the MNCL when AFNWC/NCSC receives a Nuclear Certification Impact Statement (NCIS) indicating compliance with the following European Union (EU) standards. Reference: 498 NSW and AFSC/SEW memorandum, dated 9 February 2009, SUBJECT: Joint AFNWC/AFSC Blanket Nuclear Certification Approach for European Manufactured Forklifts. 1) Directive *98/37/EC Directive 98/37/EC of the European Parliament and of the Council of 22 June* 1998 *on the Approximation of the Laws of the Member States Relating to Machinery, dated 22 June 1998 per the title; the document itself has a date of 23 Jul 98 in the upper left corner*, 2) ENI726-1: *Safety of industrial trucks, Self-propelled trucks up to and including 10000 kg capacity and industrial tractors with a drawbar pull up to and including 20000 N - Part* 1: *General Requirements* , *dated 15 June 1999*, 3) ENI551 *Safety of industrial trucks, Self-propelled trucks over 10,000 kg capacity, dated 15 July 2000.*
Additionally, the following apply to electric powered forklifts; 1) Directive 89/336/EEC *Council Directive of* 3 *May 1989 on the Approximation of the Laws of the Member States Relating to Electromagnetic Compatibility, dated 3 May 1989*, 2) EN 1175-1, *Safety of industrial trucks, Electrical requirements, General requirements for battery powered trucks, dated 15 May 1998*, 3) EN12895, *Industrial trucks, Electromagnetic Compatibility, dated 15 September 2000*, 4) EN60204-1, *Safety of machinery, Electrical equipment of machines, Specification for general requirements, dated 30 June 2006.*

8. Nuclear certification of operational units applies to a variety of circumstances: a new weapon system that will have a nuclear capability, a new or existing nuclear certified weapon system that has had the nuclear mission capability added to a unit's Designed Operational Capability (DOC) 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**.**
9. Aircraft mission planning system software that transfers operational flight program software and cruise missile targeting data must be evaluated to ensure the integrity of data during the transfer process is maintained in compliance with AF 91-series publications.

## Chapter 5

## MASTER NUCLEAR CERTIFICATION LIST

**5.1. Purpose of the Master Nuclear Certification List.** The Master Nuclear Certification List identifies equipment, hardware, software, and facilities which are nuclear or design certified per AFI 63-125, *Nuclear Certification Program*. The MNCL replaced TO 00-110N-16, *USAF Nuclear Certified Equipment and Software*, which was rescinded. 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 which provides users the nuclear certification status of weapon systems, sub-systems, components, software, support equipment and facilities. Verification of certification status and configuration will be accomplished by MAJCOM policy IAW paragraph 2.7.14. of this instruction.

5.1.1. NATO Host Nations are authorized to use ELO-4, *Master Nuclear Certification List Extract for User Nation Use*, for determining the certification status of host nation owned support equipment, hardware, and software. ELO-4 is provided by the 498 NSW/ Det 1.

5.1.2. The certification status of a listed item is indicated in the Certification Status (Cert Status) column and will contain either the word "Design" or "Nuclear."

5.1.2.1. The "Design" designation indicates the item has been successfully design certified but has not yet completed its operational certification requirements and therefore is restricted from operational employment in support of nuclear taskings.

5.1.2.2. The "Nuclear" designation indicates that the item has completed all nuclear certification requirements identified in the CRP and can be employed in support of nuclear taskings.

5.1.2.3. 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.

**5.2. MNCL Management.**

5.2.1. The MNCL is managed by the AFNWC/NCSC.

5.2.2. Routine updates to the MNCL occur on the last duty day of every month. However, out-of-cycle updates can occur at any time when deemed necessary.

5.2.3. Questions regarding items in the MNCL should be submitted to the AFNWC/NCSC MNCL Manager via e-mail to **mnclproblem@kirtland.af.mil** or by using the "Problem/Suggestion" link on the main menu page of the MNCL.

**5.3. Accessing the MNCL.** A computer with an Internet browser, either Microsoft Internet Explorer version 5.0 or higher or Netscape 6.1 or higher, operating from a .mil or .gov domain, is required. In addition, CAC/PKI authentication from a government network is required.

5.3.1. NWC HDBK 63-126, *Air Force Nuclear Certification Process Guide*, is an electronic guidebook containing additional MNCL navigation and use guidance.

5.3.2. Contractor support personnel or organizations that support Program Offices or other Air Force entities dealing with nuclear certified systems that require access to the MNCL but

are not .mil or .gov domain can request access to the MNCL by contacting the AFNWC/NCSC at Kirtland AFB. Access to the MNCL can be arranged upon confirmation of need by the sponsoring SPM or Nuclear Certification Manager.

**5.4. MNCL Criteria.** To be listed in the MNCL, items will meet the following criteria:

5.4.1. Aircraft and Air Launched Missile systems, subsystems and components.

5.4.1.1. End Items (e.g., Line Replaceable Units), readily identifiable in the field, meeting one of the following criteria:

5.4.1.1.1. Weapon suspension equipment providing mechanical interface between the aircraft and weapon (i.e., launchers, pylons, ejector racks, etc.).

5.4.1.1.2. Release system equipment providing weapons release or jettison capability (e.g., pylon jettison panel).

5.4.1.1.3. Aircraft Monitor and Control (AMAC) equipment providing electrical interface for critical function control and/or monitoring capability.

5.4.1.1.4. Nuclear system controls and displays providing nuclear release consent and/or prearm consent.

5.4.1.2. Identification can be ascertained by one of the following means:

5.4.1.2.1. Visual inspection of markings, if feasible (e.g., item data plate or other physical markings).

5.4.1.2.2. Verification of aircraft/maintenance documentation (e.g., identity of installed aircraft components, such as multifunctional display unit).

5.4.2. **Ground Launched Missile systems, subsystems and components.**

5.4.2.1. Items nuclear certified IAW this document and AFI 91-103.

5.4.2.2. Critical Component: Hardware or Software designated as a Critical Component in accordance with AFI 91-105.

5.4.3. Nuclear Certified Support Equipment.

5.4.3.1. Specialized and non-specialized support equipment (e.g., forklifts, bomb jammers, trailers) used to lift, hoist, mate**,** support, store, restrain, tow, transport, or otherwise handle nuclear bombs or warheads, or warheads with attached or integrated assemblies (e.g., re-entry vehicle payload sections) will be listed in the MNCL.

5.4.4. Test Equipment.

5.4.4.1. Specialized test equipment used to test and verify the proper functioning of critical circuits, assemblies, and devices associated with nuclear bombs and warheads.

5.4.4.1.1. Test equipment used only to test, troubleshoot and/or calibrate the above specialized test equipment does not require nuclear certification and will not be listed in the MNCL.

5.4.4.1.2. Depot level test equipment will be listed only if the critical circuits, assemblies, and devices are not tested and verified at the organizational/intermediate level prior to use with war reserve material.

5.4.4.2. Specialized test equipment that directly interfaces with a nuclear weapon or critical component, or is used to operationally certify/decertify a critical component.

5.4.4.3. Common purpose and non-specialized test equipment (e.g., multi-meters, igniter circuit testers, decade resistance boxes, and impedance bridges) will be listed if the item directly interfaces with the nuclear weapon or is part of an end item that is nuclear safety design certified.

5.4.5. **Software.** Nuclear certified software designated as Category I, II, or III as defined in AFMAN 91-119.

5.4.5.1. Category I software controls or performs critical functions and/or is designated as a critical component by the Nuclear Weapons Systems Safety Group or HQ AFSEC/SEW.

5.4.5.2. Category II software controls critical functions, but is not designated as a critical component.

5.4.5.3. Category III software does not control critical function(s), but interfaces with hardware/software which does control critical function(s). Category III software includes, but is not limited to, mission planning system software, and software used to monitor, test, or maintain weapon system interfaces when the warhead or bomb is not mated to or loaded on the delivery system.

5.4.6. Nuclear weapons maintenance, handling and storage facilities.

5.4.6.1. Will be certified IAW this instruction as part of the Weapon Storage Area and listed by location and building number.

5.4.6.1.1. Facility lifting and suspension systems (e.g., cranes, hoists, and suspended frames) will be identified by location and type certified IAW AFMAN 91-118.

5.4.7. **Other**. Items may be added to the MNCL when requested by the SPM and/or Lead Using Command, which support or enhance nuclear surety and configuration control of nuclear certified items. Coordination and approval with HQ AFSEC/SEW and other process owners, as required, will be accomplished before the item is placed in the MNCL.

5.4.8. Items listed in the MNCL retain their appropriate certification (i.e., Design or Nuclear certified) regardless of their application or usage. All appropriate deficiency reporting requirements (i.e., DULL SWORD) must be complied with even though the item is being used in a non-nuclear application.

**5.5. MNCL Restrictions.**

5.5.1. Items listed in the MNCL may have restrictions placed against the system or fleet (e.g., a restriction which limits the maximum towing capacity of a tow vehicle). System restrictions will be clearly marked and readily identifiable in the MNCL listing.

5.5.2. A specific nuclear certified item may be restricted from use with nuclear weapons at any time and for any reason (e.g., damage, modification, and changes to intended usage). Such restrictions do not constitute removal of nuclear certification or system decertification. The restriction is placed to preclude use of a particular item with nuclear weapons. Such restrictions will be clearly marked in the MNCL listing under the restrictions for that

particular item and reflect individual item identification information (e.g., item serial number).

5.5.2. **(AFRC)** For MNCL restrictions coordination, see AFI 91-103, AFRC Supplement.

**5.6. Removal of Items from the MNCL.**

5.6.1. Obsolete items can be requested to be removed from the MNCL via e-mail to **mnclproblem@kirtland.af.mil**, or by using the "Problem/Suggestion" link on the main menu page of the MNCL. The MNCL administrators will coordinate the request through the SPM or designee and the Operational MAJCOM for concurrence. Once concurrence is received, the item will be removed from the MNCL during the next routine update. All items which are removed from the MNCL will be archived for historical purposes.

# Chapter 6

## TRAINING REQUIREMENTS

**6.1. Nuclear Certification Process Training Requirements.** The Air Force Nuclear Weapons Center, Nuclear Education Branch (AFNWC/NCSD) will develop and conduct in-residence initial/recurring nuclear certification process related-training courses (i.e., Nuclear Certification Process Course and Nuclear Certified Equipment (NCE) Course), and equivalent MTT initial/recurring core- and executive–level orientation training courses. In addition, the AFNWC/NCSD will provide program offices, Lead/Using Commands, and units with distance learning course computer based training (CBT) materials to support local orientation/recurring training requirements identified in this AFI. Personnel assigned to positions which deal with or use nuclear weapons, or nuclear certified weapon systems, nuclear certified items/support equipment, shall receive nuclear certification process training commensurate with their level of responsibility. Refer to AFNWC/NCSD for training class schedules and access to distance learning materials and templates, and in-residence class registration links.

6.1.1. SPMs, Development System Managers, System Support Managers, Product Group Managers (PGM) and senior level program office personnel identified by the SPM, assigned to program offices with nuclear certified equipment or responsible for developing/modifying equipment which is expected to require certification, will receive, at a minimum, executive-level training upon assignment. Personnel assigned Nuclear Certification Manager duties within Program Offices, AFSC or Special Centers shall complete the in-residence nuclear certification process core-course within 180 days of assignment and recurring training annually. Annual Recurring training will be accomplished by attending either the in-residence Nuclear Certification Process course or its MTT equivalent. If the NCM is unable to attend either of the two prescribed methods due to reasons beyond the individual's control, the SPM may authorize the use of the Nuclear Certification Process CBT (see paragraph 6.2 below) to meet the annual recurring training requirement. The individual must be scheduled to attend the in-residence or MTT course at the earliest available class date. SPMs are responsible for identifying program office personnel (i.e., program managers, engineers, equipment specialists, safety officers, etc.,) requiring training and the level of training required (i.e., core or executive-level), and frequency (i.e., initial training only or initial and annual recurring training). Identified personnel will receive initial training within 180 days of assignment and if designated by the SPM, recurring training annually.

6.1.2. Lead/Using Command. Individuals assigned MAJCOM Nuclear Certification Manager or Nuclear Certified Equipment Manager duties shall receive initial nuclear certification process related training by attending the in-residence Nuclear Certification Process and NCE Users courses within 180 days of assignment and shall receive recurring training annually. Recurring training requirements may be satisfied by attending the in-residence core courses or their MTT equivalents. If the MAJCOM NCM/NCE Manager is unable to attend either of the two prescribed recurring training methods due to reasons beyond the individual's control, they may, with the prior approval of their Staff Director, authorize the use of the Nuclear Certification Process /NCE Users CBTs (see paragraph 6.2 below) to meet the annual recurring training requirement. MAJCOMs will identify personnel/ positions, other than the NCM/NCE Manager, within the command and NAF

staffs with nuclear certification related or nuclear certified equipment related duties requiring nuclear certification process related training, the level of training (core or executive-level) required, and frequency (i.e., one time initial only initial training and annual). Identified positions/personnel should complete the requisite initial training within 180 days of assignment. This training may be accomplished by attending the in-residence nuclear certification process course or MTT equivalent. Recurring training, if required by the MAJCOM, may be satisfied by attending in-residence nuclear certification process courses or MTT equivalent or via the AFNWC developed Nuclear Certification Process/NCE Users Course CBTs to fulfill the recurring training requirement.

6.1.3. Units. Unit personnel, who utilize, manage, or have responsibilities related to nuclear certified items or nuclear certified weapon systems under this instruction will require initial nuclear certification training and annual recurring training commensurate with their duties. Unit personnel may attend the in-residence or MTT equivalent nuclear certification process or NCE Users course conducted by the AFNWC/NCSD, or complete the NCE Users Course CBT to fulfill this requirement. Any locally developed NCM/NCE lesson plans will be coordinated with the unit's safety office, the MAJCOM NCM/NCE, and the MAJCOM Safety Office. Tracking of training completion will be IAW MAJCOM guidance established per paragraph 2.7.11.6 of this AFI.

6.1.3. **(AFRC)** Non-nuclear tasked unit NCE monitors will, as a minimum, complete the NCE Users Course CBT initially and annually thereafter and be initially trained by the Unit Safety Managers within 60 days of appointment. AFRC nuclear tasked units NCE monitors will follow lead command (AFGSC) guidance, procedures, and MAJCOM supplements. **(T-0)**

**6.2. Nuclear Certification Process Computer Based Training (CBT).** The AFNWC/NCSD maintains computer based nuclear certification process-related training programs for use by program office, Lead/Using Commands, and User personnel. These CBTs cover general principles and policies regarding the certification process and nuclear certified item/equipment management and may be used to fulfill orientation for all except NCMs/NCE Managers and others identified by the parent MAJCOM, SPM, or Commander as requiring the more in depth training provided by the in-residence or MTT core/executive level courses. If the MAJCOM NCM/NCE Manager is unable to attend either of the two prescribed recurring training methods due to reasons beyond the individual's control, they may, with the prior approval of their Staff Director, authorize the use of the Nuclear Certification Process /NCE Users CBTs to meet the annual recurring training requirement.

# Chapter 7

## DOCUMENTATION AND REPORTING REQUIREMENTS

**7.1. Documentation and Reporting Requirements.** Documentation and reporting requirements related to the nuclear certification process identified throughout this instruction are summarized in Table 7.1.

**Table 7.1. Documentation and Reporting Requirements for Nuclear Certification.**

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| Basic Certification Requirements Plan (Basic CRP) | AFNWC/NCSC | See Note 2 | SPM (See Note 1) | After review of the NCIS by appropriate process owners, if there is a nuclear certification impact, the AFNWC/NCSC will develop a Basic CRP within 30 days to advise the SPM of the required certification actions. The AFNWC/NCSC provides copies to all appropriate certification process owners. |
| Certification Requirements Plan (CRP) | SPM (See Note 1) | See Note 2 | AFNWC/NCSC | Once the SPM attaches the required appendices and finalizes the Basic CRP, the document becomes the CRP and is forwarded to the AFNWC/NCSC. The AFNWC/NCSC, in turn, coordinates the CRP with certification process owners and provides the approved CRP to the SPM for execution. |
| Design Certification Summary | AFNWC/NCSC | As Required | SPM (See Note 1) | Issued when compatibility, nuclear safety design, weapon system safety rules, and/or TO procedures, as required by the CRP, are certified. The AFNWC/NCSC will |

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| | | | | prepare a Design Certification Summary to advise the SPM 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 | IAW AFI 91-204, AFMAN 91-221, and the AFSAS website. | Units submit upon discovery of a potential nuclear safety deficiency. NOTE: Where differences in the AFSAS website and the AFI/Manuals occur, the AFSAS website will take priority. |
| Formal Technical Order Approval Notification | TOMA | As Required by CRP | AFNWC/NCSC | Documents completion of all TO development actions. |
| Independent Nuclear Surety Review | AFNWC | As Required by CRP | HQ AFSEC/SEW | Conducted when tasked by HQ AFSEC/SEW IAW 91-103 and CRP |
| Lead/Using Command NSI Reports or extracts of certification related information from NSIs, NORIs, UCIs, TAC EVAL summaries | Lead/Using Command IG | After inspection completion | AFNWC/NCS, HQ AFSEC/SEW, SPM | Report critical/major deficiencies which impact nuclear certification. 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 | SPM (See Note 1) | Lead/Using Command accomplishes the required coordination to ensure the conditions are met (i.e., Is the unit ready to receive the item?). |
| Material/IE/Product Quality Deficiency Reports (MDR/IE/PQDR) | User | IAW TO 00-35D-54 | SPM (See Note 1) | |
| **Type of Document** | **OPR** | **When Submitted** | **Submit To** | **Remarks** |
| Nuclear | All SPMs | See Note 2 | AFNWC/N | The NCIS initiates the |

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| Certification Impact Statement (NCIS) | (See Note 1) | | CSC | nuclear certification process. The NCIS advises the AFNWC/NCSC 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. The NCIS must be submitted at least 45 days prior to the release of a request for proposal or an equivalent program milestone. |
| Nuclear Certification Impact Statement (NCIS) (cont) | | | | Upon receipt of an NCIS, the AFNWC/NCSC will contact the appropriate process owners to determine the actions necessary to obtain or maintain Nuclear Certification. The NCIS form/template can be obtained from the AFNWC/NCSC |
| Nuclear Certification Impact Statement Approval Letter No Impact | AFNWC/NCSC | Following completion of process owner evaluation of NCIS | SPM (See Note 1) | Notifies SPM that there is no impact to certification and closes out the certification process. If administrative actions are required (e.g., update of MNCL, etc), the letter will specify those actions. |
| Nuclear Certification Impact Statement Transmittal Letter | AFNWC/NCSC | As required | Certification Process Owners | Serves as the letter of transmittal to Process Owners to initiate NCIS evaluation process. |
| **Type** | **OPR** | **When** | **Submit To** | **Remarks** |

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| **of Document** | | **Submitted** | | |
| Nuclear Certification Manager's (NCM) Appointment Letter | All SPMs; MAJCOMs | As changes occur | AFNWC/NCSC | SPMs with nuclear certified systems and nuclear tasked MAJCOMs must appoint a Nuclear Certification Manager and provide the AFNWC/NCSC written notification within 30 days of appointment. The letter must include POC information including name, grade or rank, office symbol, address, telephone number, and email address. |
| Nuclear Certification Summary | AFNWC/NCSC | As Required | SPM (See Note 1) | Issued when all aspects of Design and Operational Certification are achieved. The AFNWC/NCSC will prepare a Nuclear Certification Summary package for AFNWC/CC signature to advise the SPM that Design Certification and Operational Certification actions prescribed in the CRP are complete. This Summary grants nuclear certification. |
| Nuclear/Facility Compatibility Certification Notification Letter | AFNWC | As Required by CRP | AFNWC/NCSC | Issued when all aspects of Compatibility Certification are accomplished for aircraft/ICBM/ nuclear maintenance, storage or handling facilities. |
| Nuclear Safety Design Certification Letter | HQ AFSEC/SEW | As Required by CRP | AFNWC/NCSC | Provides notification that all nuclear safety design certification actions have been completed. |

| Type of Document | OPR | When Submitted | Submit To | Remarks |
|---|---|---|---|---|
| **Type of Document** | **OPR** | **When Submitted** | **Submit To** | **Remarks** |
| Nuclear Safety Design Decertification/ Use Restriction Notification | HQ AFSEC/SEW | As Required | AFNWC/NCSC, SPM (See Note 1), Lead/Using Command | Notifies AFNWC/NCSC to update MNCL.<br><br>NOTE: Using Command can implement use restrictions at their discretion. |
| Nuclear Surety Evaluation (NSE)/Nuclear Safety Analysis Report (NSAR) | SPM | As Required by CRP | HQ AFSEC/SEW | Serves as the SM's evaluation of compliance with nuclear surety requirements. Reference AFI 91-103. May be used as a source document for a TNSA. Reference AFI 91-102. |
| Operational Certification Letter | Lead/Using Command | As Required by CRP | AFNWC/NCSC | Documents that all required Operational Certification actions have been completed. |
| Weapon System Safety Rules Approval Notification | HQ AFSEC/SEW | As Required | AFNWC/NCSC | Provides notification that the weapon system safety rules have been approved by SECDEF. |
| SPM Release Recommendation | SPM (See Note 1) | As Required | Lead/Using Command | SPM provides release recommendation for use of the system to the Lead/Using Command. |

**Notes:**

1. For this AFI, the term System Program Manager (SPM) applies collectively to: Single Managers, System Program Managers, Product Group Managers, System Support Managers, Development System Managers, Acquisition Program Managers, Program Managers, Project Managers, Weapon System Managers, or any designated person responsible to the customer and industry partners for overarching programmatic issues.
2. 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.

CHARLES R. DAVIS, Lt Gen, USAF

Military Deputy, Office of the Assistant Secretary of the Air Force (Acquisition)

**(AFRC)**

GARY C. BLASZKIEWICZ, Brig Gen, USAFR
Director of Logistics

## Attachment 1

## GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

***References***

DoD Directive 3150.2, *DoD Nuclear Weapon System Safety Program,* 23 Dec 1996

DoD Manual 3150.2-M, *DoD Nuclear Weapon System Safety Program Manual,* 23 Dec 1996

DoD Manual 5200.01 Vols 1-4, *DoD Information Security Program,* 24 Feb 2012

CJCSI 3263.05, *Nuclear Weapons Technical Inspections,* 4 Jun 2010

AFI 16-501, *Control and Documentation of Air Force Programs,* 15 Aug 2006

AFI 16-601, *Implementation of, and Compliance With, International Arms Control and Nonproliferation Agreements,* 18 Feb 2011

AFI 21-203, *Nuclear Accountability Procedures,* 23 Nov 2009

AFI 31-501, *Personnel Security Program Management,* 27 Jan 2005

AFI 51-402, *Legal Reviews of Weapons and Cyber Capabilities,* 27 Jul 2011

AFI 63-101, *Acquisition and Sustainment Life Cycle Management,* 8 Apr 2009

AFI 63-104, *The SEEK EAGLE Program,* 21 Jan 2005

AFI 63-1201, *Life Cycle Systems Engineering,* 23 Jul 2007

AFI 90-201, *The Air Force Inspection System,* 23 Mar 2012

AFI 91-101, *Air Force Nuclear Weapons Surety Program,* 13 Oct 2010

AFI 91-102, *Nuclear Weapon System Safety Studies, Operational Safety Reviews, and Safety Rules,* 24 Jun 2010

**(Added-AFRC)** AFI 91-103 AFRCSUP 1, *Air force Nuclear Safety Design Certification Program, 7 Feb 2012*

AFI 91-103, *Air Force Nuclear Safety Design Certification Program,* 17 Nov 2010

AFI 91-105, *Critical Components,* 7 Jan 2011

AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapon Systems,* 26 Jan 2011

AFI 91-204, *Safety Investigations and Reports,* 24 Sep 2008

DoD 5210.42 R-AFMAN 10-3902, *Nuclear Weapons Personnel Reliability Program (PRP),* 13 Nov 2006

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

AFMAN 91-118, *Safety, Design and Evaluation Criteria for Nuclear Weapon Systems,* 4 Aug 2010

AFMAN 91-119, *Safety, Design and Evaluation Criteria for Nuclear Weapon Systems Software,* 2 Jun 2012

AFMAN 91-221, *Weapons Safety Investigations and Reports,* 8 Nov 2010

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

AFPD 13-5, *Air Force Nuclear Enterprise,* 6 Jul 2011

AFPD 16-6, *International Arms Control and Nonproliferation Agreements and DoD Foreign Clearance Program,* 29 Dec 2010

TO 00-5-1, *Air Force Technical Order System,* 15 Aug 2009

TO 00-5-3, *Air Force Technical Order Life Cycle Management,* 31 Dec 2009

TO 00-35D-54, *USAF Deficiency Reporting, Investigation and Resolution,* 1 Oct 2009

Engineering Technical Letter (ETL) 11-7: *Nuclear Weapons-Capable Maintenance and Storage Facilities,* 1 Sep 2011

NWC HDBK 63-126, *Air Force Nuclear Certification Process Guide,* 9 Feb 2012

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*

AF Form 1067, *Modification Proposal*

AFTO Form 22, *Technical Manual Change Recommendation and Reply*

***Abbreviations and Acronyms***

**ACC**—Air Combat Command

**ACCD**—Aircraft Compatibility Control Drawing

**ACO**—Allied Command Operations

**AFGSC**—Air Force Global Strike Command

**AFI**—Air Force Instruction

**AFLCMC**—Air Force Life Cycle Management Center

**AFMAN**—Air Force Manual

**AFMC**—Air Force Materiel Command

**AFNWC**—Air Force Nuclear Weapons Center

**AFNWC/NCS**—Air Force Nuclear Weapons Center, Nuclear Systems Division

**AFNWC/NCSC**—Air Force Nuclear Weapons Center, Certification Management Branch

**AFPD**—Air Force Policy Directive

**(Added-AFRC) AFRC/SEW**—Air Force Reserve Command/Weapons Safety Division

**(Added-AFRC) AFRCSUP**—Air Force Reserve Command Supplement

**AFSC**—Air Force Sustainment Center

**AFSEC**—Air Force Safety Center

**AFSEC/SEW**—Air Force Safety Center/Weapons Safety Division

**AFSEO**—Air Force SEEK EAGLE Office

**ALTs**—Alterations

**AMAC**—Aircraft Monitor and Control

**(Added-AFRC) ARC**—Air Reserve Component

**ASC**—Assistant Chief of Staff

**BCRP**—Basic Certification Requirements Plan

**CBT**—Computer Based Training

**CDD**—Capability Development Document

**C-MNS**—Combat Mission Needs Statement

**CONOPS**—Concept of Operations

**CPD**—Capability Production Document

**CRP**—Certification Requirements Plan

**DCS**—Design Certification Summary

**DOC**—Designed Operational Capability

**DoD**—Department of Defense

**DoDD**—Department of Defense Directive

**DR**—Deficiency Reports

**DSM**—Development System manager

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

**EI**—Engineering Investigation

**EICD**—Electrical Interface Control Drawing

**ELO**—Engineering Liaison Office (AFNWC/NCSSE)

**ETL**—Engineering Technical Letter

**FCCD**—Facility Certification Configuration Document

**FDAR**—Final Design Approval Report

**FDE**—Force Development Evaluation

**GSU**—Geographically Separated Unit

**HQ**—Headquarters

**IAW**—In Accordance With

**ICBM**—Intercontinental Ballistic Missile

**ICD**—Initial Capabilities Document

**IG**—Inspector General

**IMDS**—Integrated Maintenance Data System

**INSI**—Initial Nuclear Surety Inspection

**IRD**—Initial Requirements Document

**ITCTO**—Interim Time Compliance Technical Order

**MAJCOM**—Major Command

**MAR**—Major Assembly Release

**MCL**—Maintenance Capability Letter

**MDR**—Material Deficiency Reports

**MICD**—Mechanical Interface Control Drawing

**MNCL**—Master Nuclear Certification List

**MODs**—Modifications

**MTT**—Mobile Training Team

**NALPOG**—Nuclear Airlift Project Officers Group

**NATO**—North Atlantic Treaty Organization

**NCCS**—Nuclear Compatibility Certification Statement

**NCE**—Nuclear Certified Equipment

**NCI**—Nuclear Certified Item

**NCIS**—Nuclear Certification Impact Statement

**NCM**—Nuclear Certification Manager

**NCS**—Nuclear Certification Summary

**NNSA**—National Nuclear Security Administration

**NORI**—Operational Readiness Inspection

**NSDC**—Nuclear Safety Design Certification

**NSAR**—Nuclear Safety Analysis Report

**NSE**—Nuclear Safety Evaluation

**NSER**—Nuclear Surety Evaluation Report

**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

**ORD**—Operational Requirements Document

**OSR**—Operational Safety Review

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

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

**PAD**—Program Action Directive

**PEO**—Program Executive Officer

**PGM**—Product Group Manager

**PNAF**—Primary Nuclear Airlift Force

**POG**—Project Officers Group

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

**PQDR**—Product Quality Deficiency Report

**PRP**—Personnel Reliability Program

**RDS**—Records Disposition Schedule

**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

**SECDEF**—Secretary of Defense

**SELM**—Simulated Electronic Launch Minuteman

**SEP**—System Engineering Plan

**SNL**—Sandia National Laboratories

**SPM**—System Program Manager

**SSM**—System Support Manager

**STS**—Stockpile to Target Sequence

**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

**UR**—Unsatisfactory Report

**USAF**—United States Air Force

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

**(Added-AFRC) USAFR**—United States Air Force Reserve

**WSM**—Weapon Safety Manager

**WSSR**—Weapon System Safety Rules

**WSA**—Weapons Storage Area

**WR**—War Reserve

**WRM**—War Reserve Material

***Terms***

**Aircraft Monitor and Control (AMAC)**—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 (ACCD)**—A controlled drawing prepared and maintained by the National Nuclear Security Administration's Sandia National Laboratory (NNSA/SNL). The ACCD 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.

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

**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 Design Certification, Weapon System Safety Rules (WSSRs) Approval, and Technical Orders Approval.

**Electrical Interface Control Drawing (EICD)**—The EICD documents the physical, electrical power, and logical signal circuits in the delivery system between the avionics components at the DOE/AF interfaces. The EICD 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 based WSAs.

**Facility Certification Configuration Document (FCCD)**—The FCCD defines the configuration of a WSA that was assessed and certified to have the capability to conduct nuclear operations with nuclear weapons or nuclear weapon systems.

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

**Lead Command**—The MAJCOM that serves as the operator's interface with the SPM for a weapon system as defined by AFPD 10-9, *Lead Command Designation and Responsibilities for Weapon Systems* or applicable PAD. This term is not to be confused with that MAJCOM designated by HQ USAF/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 HQ USAF/A5R 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. The MAR contains drawings and data defining the mechanical and electrical characteristics of the weapon and the delivery platform. For aircraft systems, the MAR also includes the Aircraft Compatibility Control Drawing (ACCD).

**Mechanical Interface Control Drawing (MICD)**—the MICD defines the physical and mechanical interfaces between the delivery platform and the nuclear weapon. The MICD 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).

**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. (USAF)

**Nuclear CertificationThe process for determining that procedures, personnel, equipment, facilities, and organizations meet nuclear surety standards and are capable of performing assigned nuclear weapon functions and missions. Nuclear certification is a part of OSS&E, as directed by AFI 63**—1201. Nuclear certification is required prior to a system acquiring operational status.

**Nuclear Certified Equipment**—Peculiar (i.e., system specific) and common specialized or non-specialized support equipment whose design meets applicable design criteria and is nuclear certified IAW 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 IAW the nuclear certification process outlined in this publication.

**Nuclear Surety**—All functions and activities that ensure Air Force compliance with the DoD Nuclear Weapon System Safety Standards. To comply with these standards 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**—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. (JP 1-02)

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

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

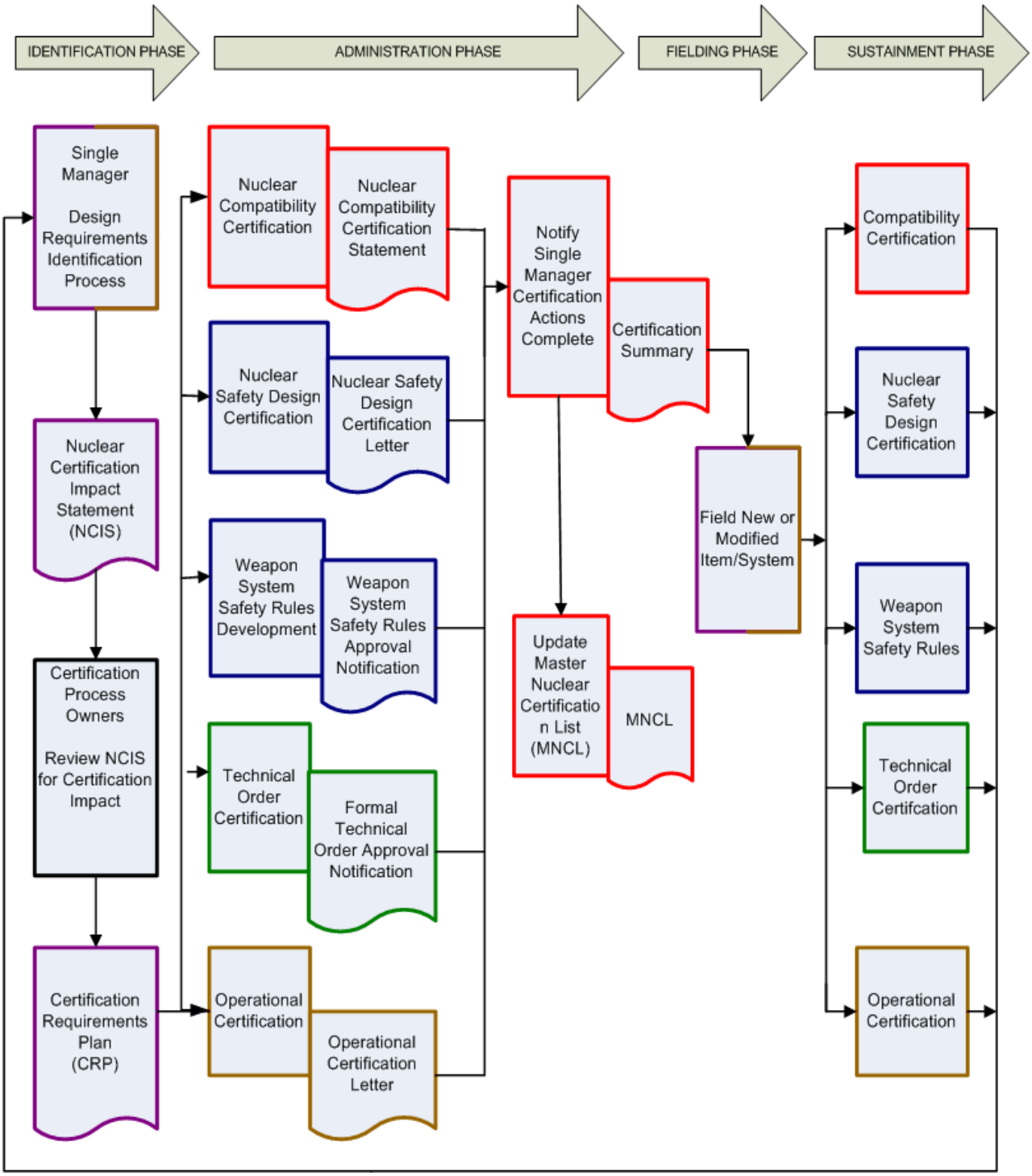
**Support Equipment**— Includes all equipment required to perform the support function, except that which is an integral part of the mission equipment. It does not include any of the equipment required to perform mission operation functions. Support equipment should be interpreted as tools; test equipment;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

**System Program Manager (SPM)**— 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 SPM is accountable for cost, schedule, and performance and is the DoDD 5000.1 Program Manager (PM). Depending on the phase of the system (acquisition or sustainment), the SPM will normally reside at either a Product Center or Air Logistics Center (ALC). If a program is in acquisition,

the SPM will be at a Product Center and will be supported by a System Support Manager (SSM) normally located an ALC. If a program is in sustainment, the SPM will normally reside at the appropriate ALC or other sustainment location and will be supported by a DSM normally located at a Product Center. The SSM/DSM functions as the SPM, for nuclear certification program purposes, for those programs for which they have programmatic responsibility. **Note:** For this AFI, the term System Program Manager (SPM) applies collectively to Single Managers, System Program Managers, Product Group Managers, System Support Managers, Development System Managers, Acquisition Program Managers, Program Managers, Project Managers, Weapon System Managers, or any designated person responsible to the customer and industry partners for overarching programmatic issues.

**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).

## Attachment 2

## NUCLEAR CERTIFICATION PROCESS: MACRO VIEW