

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

AIR FORCE INSTRUCTION 91-102

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Safety

**NUCLEAR WEAPON SYSTEM SAFETY
STUDIES, OPERATIONAL SAFETY
REVIEWS, AND SAFETY RULES**

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This instruction implements AFPD 91-1, *Nuclear Weapons and Systems Surety*, and is consistent with AFPD 13-5, *Air Force Nuclear Enterprise*. It describes the functions, composition, and membership qualification requirements of the US Air Force Nuclear Weapon System Surety Group (NWSSG); defines the procedures for conducting safety studies and operational safety reviews; outlines the development, approval, and publication process for Nuclear Weapon System Surety Group Reports and Weapon System Safety Rules; and outlines the responsibilities of participating organizations. It applies to all United States Air Force (USAF) personnel who deal with nuclear weapon system surety, including Air Force Reserve Command (AFRC) and Air National Guard (ANG) personnel. 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) using the AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s from the field through the appropriate functional's chain of command. Send major command (MAJCOM) supplements to this Instruction to the Air Force Safety Center at AFSEC/SEW, 9700 G Avenue, Kirtland AFB NM 87117-5670 for review/coordination before publication. The authorities to waive wing/unit level requirements in this publication are identified with a Tier ("T-0, T-1, T-2, T-3") number following the compliance statement. See AFI 33-360, Publications and Forms Management, for a description of the authorities associated with the Tier numbers. Submit requests for waivers through the chain of command to the appropriate Tier waiver approval authority, or alternately, to the Publication OPR for non-tiered compliance items.

SUMMARY OF CHANGES

This revision incorporates Change 1, 6 Oct 2011, making this instruction consistent with AFPD 13-5 and includes minor administrative changes throughout. It defines the concept of proxy voting and restricts Nuclear Weapons System Surety Group (NWSSG) membership to O-5/O-6 and GS-14/GS-15. It also updates the NWSSG reporting process and brings terminology in line with DoD Directive 3150.02, *DoD Nuclear Weapons Surety Program*, dated 24 April 2013, DoD Manual 3150.02, dated 31 January 2014, and also incorporates new AFI 33-360, *Publications and Forms Management*, guidance to include Tier waiver requirements.

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Section A—General Information

1. Terms and Definitions. The terms used in this Instruction are defined in AFI 91-101, *Air Force Nuclear Weapons Surety Program*.

2. Department of Defense (DoD) Surety Standards. DoD Directive 3150.02 establishes the DoD Nuclear Weapon System Surety Program, Policies, and Nuclear Weapon System Surety Standards. The DoD Nuclear Weapon System Surety Standards provide positive measures to:

- 2.1. Prevent nuclear weapons involved in accidents or incidents, or jettisoned weapons, from producing a nuclear yield.
- 2.2. Prevent DELIBERATE pre-arming, arming, launching, or releasing of nuclear weapons, except upon execution of emergency war orders or when directed by competent authority.
- 2.3. Prevent INADVERTENT pre-arming, arming, launching, or releasing of nuclear weapons in all normal and credible abnormal environments.
- 2.4. Ensure adequate security of nuclear weapons, as governed by DoD Directive 5210.41, *Security Policy for Protecting Nuclear Weapons*.

3. Air Force Goals and Requirements.

3.1. This instruction codifies the process whereby the Air Force implements DoD 3150.2M, *DoD Nuclear Weapon System Safety Program Manual*. The Air Force ensures adherence to safety standards by:

- 3.1.1. Convening the NWSSG to evaluate nuclear weapon systems.
- 3.1.2. Proposing nuclear weapon system safety rules for Under Secretary of Defense for Acquisition, Technology, and Logistics (USD (AT&L)) approval.

3.2. Operational units shall:

- 3.2.1. NOT perform any nuclear operations without USD (AT&L) approved safety rules. (T-0).
- 3.2.2. Use only equipment, software, facilities, and procedures certified according to AFI 91-103, *Air Force Nuclear Safety Design Certification Program*. (T-0).
- 3.2.3. Conduct operations with war reserve nuclear weapons according to certified procedures and when authorized by the appropriate level of authority, typically the Combatant Commander for exercises. (T-0).

Section B—Responsibilities

4. Air Force Chief of Staff (CSAF).

- 4.1. Approves the Air Force Safety Rules Packages.

5. Air Force Chief of Safety (AF/SE).

- 5.1. Oversees the Air Force Nuclear Weapons Surety Program.
- 5.2. Manages the safety evaluation process.
- 5.3. Appoints the NWSSG Chairperson.
- 5.4. Approves the Air Force Nuclear Weapons System Surety Group Report (NWSSR).
- 5.5. Resolves disagreements between NWSSG and HAF.
- 5.6. Signs the publishes approved Weapon System Safety Rules (WSSRs).

6. Assistant Chief of Staff, Strategic Deterrence and Nuclear Integration (AF/A10).

- 6.1. Approves or disapproves the Operational Plan Data Document (OPDD) after consulting with appropriate HAF offices.
- 6.2. Designates a NWSSG voting member to represent AF/A10 interest during studies as determined by the NWSSG chairman.

7. Air Force Director of Security Forces (AF/A7S).

- 7.1. Oversees the Air Force Nuclear Weapons Security Program per DoDM-S5210.41-M and AFI 31-108, *Air Force Nuclear Weapons Security Program*.
- 7.2. Designates a NWSSG voting member to represent AF/A7S interest during studies as determined by the NWSSG chairman.

8. Air Force Safety Center (AFSEC) Weapons Safety Division (AFSEC/SEW).

- 8.1. The Division Chief serves as the NWSSG Chairman and represents NWSSG interests when the group is not convened.
- 8.2. Provides NWSSG Support Staff.
 - 8.2.1. Serves as the point of contact for NWSSG members regarding the timing and conduct of the scheduled studies and reviews.
 - 8.2.2. Schedules NWSSG evaluations and coordinates support with appropriate agencies, and publishes a semiannual NWSSG schedule and a 5-year forecast annually.

8.2.3. Prepares and distributes the Air Force Data Package to NWSSG voting members.

8.2.4. Prepares the NWSSG Report for NWSSG review and signature prior to adjournment of Phase III of the study or review.

8.2.5. Identifies, as necessary through an in-house health physicist, potential SG/Medical issues.

8.3. Manages and tracks the status of the NWSSG Report, Air Force NWSSR, and Safety Rules Package.

8.4. Reviews weapon system modifications, changes in operational procedures, or proposed tests to determine if nuclear surety is affected. The support staff requests an OPDD, or OPDD change, and schedules an NWSSG study when nuclear surety is affected.

8.5. Serves as the Air Force focal point for Department of Energy (DOE) field reviews of nuclear weapon system safety rules.

8.6. Assigns an Air Force member to nuclear surety studies or operational safety reviews conducted by other military Services, if the Air Force also uses the weapon system under evaluation.

9. MAJCOM.

9.1. Ensures that MAJCOM-developed procedures comply with approved nuclear weapon system safety rules and agree with Air Force-approved operational and technical procedures.

9.2. Evaluates proposed modifications, procedural changes, tests, or other activities involving nuclear weapon systems and coordinates appropriate nuclear certification with Air Force Nuclear Weapons Center (AFNWC).

9.3. Revises the OPDD and requests a special safety study when appropriate.

9.4. Coordinates the date the rules are required with AFSEC/SEW to facilitate NWSSG scheduling.

9.5. Designates an individual to serve as an NWSSG member consistent with guidance in this Instruction.

9.6. Provides AFNWC the technical support and data needed to prepare the Technical Nuclear Safety Analysis (TNSA) or abbreviated TNSA.

9.7. Provides required support to AFSEC/SEW and the MAJCOM's NWSSG voting member.

9.8. Hosts and arranges NWSSG field demonstrations to MAJCOM facilities and supports AFSEC/SEW on DOE field reviews.

9.9. Implements recommendations included in the approved AF NWSSR.

Section C—NWSSG Functions and Composition.

10. NWSSG Functions.

10.1. Reviews nuclear weapon system designs and operations, including Concept of Operations, to determine if they meet the DoD Nuclear Weapon System Surety Standards in

accordance with DoDD 3150.02. NOTE: A NWSSG Study/Review is part of the overall nuclear certification process and includes review/ recommendation of hardware and software items for nuclear critical component status; however it does not constitute nuclear safety design certification of the nuclear hardware, software, facilities, or procedures studied by the NWSSG. Reference AFI 91-103 for details regarding the Air Force Nuclear Safety Design Certification Program.

10.2. Proposes new weapon system safety rules and recommends changes to existing USD (AT&L)-approved weapon system safety rules to maximize nuclear weapon system surety commensurate with operational requirements.

10.3. Convenes and remains in session until the Nuclear Weapons System Surety Group (NWSSG) Report is accepted by appropriate Headquarters Air Force organizations for the weapon system under review submitted to AF/SE. Coordination may occur electronically or by any other distance means and therefore, NWSSG sessions do not require physical presence.

11. NWSSG Composition.

11.1. Permanent Voting Membership:

11.1.1. Chair from the Air Force Safety Center Weapons Safety Division (AFSEC/SEW) (votes only to break a tie).

11.1.2. One member each from each of the following organizations: Air Force Materiel Command (AFMC); Defense Threat Reduction Agency (DTRA); Department of Energy (DOE); Directorate of Security Forces (AF/A7S); and Assistant Chief of Staff, Strategic Deterrence and Nuclear Integration (AF/A10).

11.1.3. Agencies appoint permanent members to serve in the NWSSG.

11.2. Additional Voting Membership:

11.2.1. One member from each of the following organizations: Air Mobility Command, Air Combat Command, Air Force Global Strike Command, US European Command, United States Air Forces in Europe, Supreme Headquarters Allied Powers Europe, US Strategic Command (USSTRATCOM), United States Navy, and the National Security Agency when the group addresses topics in their organization's area of responsibility.

11.2.2. A member from another Air Force organization or other military service operating or maintaining the weapon system under study or review.

11.2.3. The Chair shall identify or approve the additional voting members needed for each study/review.

11.3. Voting by Proxy. Members identified in paragraphs 11.2.1 – 11.2.3 may, following coordination with their appointing agency, nominate a replacement voting member to act as their proxy. They should submit a memorandum nominating the proxy to the NWSSG Chair for approval at least 60 calendar days prior to the start of a study phase as described in paragraph 15.3. Proxy members who are nominated to participate as voting members in phases II or III must have attended the previous phases.

11.4. Nonvoting Technical Advisors. Engineers, technical experts, and contractors may attend any phase of the NWSSG study or review when requested by the Chair, the NWSSG

Executive Officer, or a voting member. The Chair may limit how many technical advisors attend Phase II demonstrations. Any limitations should be identified as early as possible.

11.5. NWSSG Support Staff. The support staff includes the NWSSG Executive Officer and project officers.

12. Qualifications and Duties of Members:

12.1. NWSSG voting member general qualifications:

12.1.1. Subject to the exception below, DoD military and civilian members must be of military rank O-5 or O-6 or civilian equivalent, GS-14 or GS-15. (NOTE: DOE and other non-DoD agencies should appoint voting members who meet this qualification as closely as possible). The Chair will approve exceptions to this requirement based on justification provided by first O-6 or equivalent requesting the exception.

12.1.2. Military and civilian members must have operational or technical expertise with nuclear weapons or nuclear weapon systems to include experience or training in evaluation techniques applicable to the DoD nuclear weapon system safety standards.

12.1.3. Military and civilian members must be knowledgeable of nuclear safety policies and procedures.

12.1.4. Military and civilian members must have no direct responsibility for designing, developing, or producing the nuclear weapon system being reviewed.

12.2. Voting Member Responsibilities. Individual voting members must:

12.2.1. Independently formulate their judgments when assessing whether the nuclear weapon system under review meets the nuclear weapon system safety policies and standards.

12.2.2. Be able to identify, analyze, and provide independent assessments of pertinent nuclear weapon system safety-related information and operations.

12.2.3. Have full understanding of their agency's responsibilities for the nuclear weapon system being reviewed and be able to convey to the NWSSG the unique operational requirements and responsibilities of their organization.

12.2.4. Attend all NWSSG study/review phases as described in paragraph 15.3, actively and knowledgeably participate in NWSSG studies and reviews, vote during NWSSG meetings, and sign the NWSSG report.

12.2.5. Be responsible for the following administrative activities in support of the NWSSG:

12.2.5.1. Serve as point of contact to assist in coordinating the activities of the NWSSG.

12.2.5.2. Send their security clearance verification documentation to AFSEC/SEW every year or as required.

12.3. Qualifications and Responsibilities of Advisors. Technical advisors must:

12.3.1. Have relevant technical knowledge of nuclear weapon systems or specific technical knowledge or operational experience with the design, development, production, or operation of the nuclear weapon system under evaluation.

12.3.2. Support the sponsoring member through expert contributions to briefings, discussions and deliberations concerning issues raised in NWSSG discussions.

12.3.3. Submit security clearance verification documentation to AFSEC/SEW at least 5 working days prior to the start of study or review.

12.4. Member Training. NWSSG members are encouraged to complete training on nuclear weapons provided by agencies such as Joint Service Nuclear Weapons School, Sandia National Laboratories, and DOE. Contact NWSSG Support Staff for a list of recommended courses and their availability.

13. Observer Participation. Observers approved by the Chair or the NWSSG Executive Officer may attend NWSSG meetings. Observers must send telephone number (Defense Switched Network [DSN] number, if available), mailing address, e-mail address and visit requests to AFSEC/SEW at least one month prior to the meeting.

13.1. For DoD personnel, send visit requests via Joint Personnel Adjudication System (JPAS) to SMO Code KV2TFQCH6. Include the NWSSG Executive Officer as the meeting POC in the JPAS request.

13.2. For non-DoD personnel, send visit requests via DOE Form 5631.20, *Request for Visit or Access Approval* or similar organization-specific visit request to AFSEC/SEW. Include the following information:

13.2.1. Full name and rank or civilian grade.

13.2.2. Organization.

13.2.3. Security clearance access level and any special access, such as North Atlantic Treaty Organization (NATO), Restricted Data, Formerly Restricted Data or Critical Nuclear Weapon Design Information (CNWDI).

13.2.4. Visit dates and specific NWSSG activities.

13.2.5. Justification for visit.

13.2.6. Telephone number (DSN, if available) of the office that can verify the security clearance and special access.

13.3. Foreign Visitors shall provide visit requests through their Embassy to SAF/IAPD and shall also provide the following information to AFSEC/SEW:

13.3.1. Full name, rank or civilian grade.

13.3.2. Organization.

13.3.3. Security clearance access level and any special access, such as North Atlantic Treaty Organization (NATO) or Cosmic Top Secret Atomic (CTSA).

13.3.4. Justification for visit.

Section D—Scheduling the Study/Review and Processing Reports

14. Types of Studies and Reviews. DoDM 3150.02 describes the types of studies and reviews the Air Force must conduct at a minimum. The NWSSG Chairman will determine the scope of studies, schedule Operational Safety Reviews (OSRs), and determine the need for Preliminary, Interim or Special Safety Studies.

14.1. Initial Safety Study (ISS) examines design features and aspects of the proposed concept of operations (if available) that will affect the safety of the nuclear weapon system.

14.2. Preliminary Safety Study (PSS) examines design features, hardware, procedures, and aspects of the concept of operations that affect the safety of the nuclear weapon system.

14.3. Interim Safety Study (INSS) reviews any changes to the nuclear weapon system since the Preliminary Safety Study.

14.4. Pre-Operational Safety Study (POSS) examines safety procedures for new or modified systems, and aspects of the concept of operations that will affect the safety of the nuclear weapon system to determine if the DoD nuclear weapon system safety standards are met. This is the first opportunity to draft weapon system safety rules for a new system.

14.5. Operational Safety Review (OSR) examines all operational aspects of a nuclear weapon or nuclear weapon system to determine if the DoD four surety standards addressed in identified in paragraph 2 are met. The weapon system's first OSR takes place during the second year after the initial approval of safety rules. Recurring OSRs shall be conducted at intervals not to exceed 5 years from the start of the weapon system's preceding OSR.

14.6. Special Safety Studies (SSS) investigate unsafe conditions revealed by operational experience; accidents and/or incidents; modifications (including software), tests, or retrofits involving nuclear safety or nuclear security; significant changes in the concept of operations; additional new equipment and/or weapons; proposed changes to nuclear weapon system safety rules; or inactive storage of nuclear weapons.

14.6.1. Any NWSSG voting member/organization may request a SSS. The member shall provide the request in writing to the NWSSG Chair for final determination and scheduling. The request shall contain the rationale and scope of the proposed SSS.

14.6.2. MAJCOMs must identify any planned configuration or operations change that potentially impacts nuclear certified weapon systems (e.g. modification to nuclear storage facility, Remote Visual Assessment CONOPS, etc.) via a Nuclear Certification Impact Statement in accordance with AFI 63-125, *Nuclear Certification Program*. AFSEC/SEW will determine whether to conduct a SSS.

14.7. Transportation Safety Study (TSS) examines transport operations with the nuclear weapon system.

15. NWSSG Study/Review Process:

15.1. The NWSSG Support Staff is responsible for scheduling studies and reviews. The Support Staff provides an AFSEC/SEW-approved 5-year OSR schedule to the Office of the Assistant Secretary of Defense for Nuclear Matters (OASD (NM)) and maintains the schedule on the AFSEC web site.

15.2. Pre-NWSSG Study/Review Time Lines.

15.2.1. Six months prior to the study/review – Appropriate MAJCOM submits its Operational Plan Data Document (OPDD), including Concept of Operations, to AFSEC/SEW when a Technical Nuclear Safety Analysis (TNSA) is required. If TNSA is NOT required, submit Concept of Operations, only.

15.2.2. Four months prior to the study/review (18 months for NATO operations) – AFSEC/SEW notifies NWSSG members of dates and location(s) of the study/review.

15.2.3. Three months prior to the study/review (12 months for NATO operations) – AFSEC/SEW presents draft agenda to MAJCOM and NWSSG Voting Members, and requests briefings/demonstrations for Phase I and Phase II.

15.2.4. Six weeks prior to the study/review – NWSSG Support Staff submits country clearance for NATO visits.

15.2.5. One month prior to study:

15.2.5.1. Air Force Nuclear Weapons Center (AFNWC) provides the TNSA (if required) to AFSEC/SEW.

15.2.5.2. NWSSG Support Staff distributes an Air Force Data Package to NWSSG members and confirms clearances of all visitors.

15.2.5.3. Briefing Agencies/Individuals provide electronic copy of briefings to NWSSG Support Staff.

15.2.6. Two weeks prior to study/review – NWSSG Support Staff distributes final agenda to NWSSG members.

15.2.7. One week prior to the study/review – NWSSG Support Staff confirms clearances of NWSSG members and technical advisors.

15.3. Conduct of NWSSG Study/Review. Generally, NWSSG studies/reviews will consist of three phases (Phase II will be tailored as necessary depending on maturity of the weapon system under review). Phases I and III will normally be conducted at the Air Force Safety Center and Phase II is conducted at a location(s) where the system under review is operated.

15.3.1. No phase of the NWSSG Study or Review will be initiated without the presence of all permanent voting members identified in paragraph 11.1, or their proxies, and the applicable operational MAJCOM and Combatant Command voting member identified in paragraph 11.2.

15.3.2. Phase I of the study or review includes:

15.3.2.1. Review of the Air Force Data Package.

15.3.2.2. Review of the status of relevant findings, recommendations, and open corrective actions from previous Nuclear Weapon System Safety Reports (NWSSR).

15.3.2.3. Technical and operational briefings on the weapon system under study.

15.3.2.4. Results and recommendations of available inadvertent and unauthorized launch analyses (in accordance with AFI 91-106) and related software and physical security analyses.

15.3.3. Phase II of the study or review will include technical briefings and demonstrations of nuclear weapon-related operations with applicable support equipment in a representative sample of operational environments and in substantially unique operational environments. Demonstrations will normally be conducted in the actual work areas/facilities. Areas of interest with respect to the weapons stockpile-to-target sequence include, but are not limited to:

15.3.3.1. Storage, maintenance, transportation (to include convoy operations), and employment operations (weapon loading as well as maintenance and operations crew procedures).

15.3.3.2. Potential hazards in normal and abnormal environments for impact on safety.

15.3.3.3. Authentication and execution procedures of nuclear control orders at the delivery unit level.

15.3.3.4. Surety-related use control matters in the context of the second DoD safety standards.

15.3.3.5. Surety-related aspects of authoritative nuclear security guidance as outlined by DoDD 3150.02 and the fourth nuclear surety standard.

15.3.4. Phase III of the study or review will make a determination if the nuclear weapon system is being operated in a manner that meets the DoD nuclear weapon system safety policy and standards. Phase III includes:

15.3.4.1. Discussion and deliberation on findings and items of interest raised during Phase I or Phase II.

15.3.4.2. Preparing safety rules for new weapon systems or recommending changes to existing safety rules that ensure the weapon system meets the DoD nuclear weapon system safety standards or recommends improvements to operations.

15.3.4.3. Preparing and signing NWSSG Report for submission to HAF.

15.3.5. NWSSG Executive Support Staff coordinates with the applicable MAJCOM/SEW to make every effort to vary the Phase II locations of studies for multi-unit weapon systems, based upon operational availability.

15.3.6. MAJCOMs will coordinate required briefings and demonstrations with subordinate units supporting Phase II and NWSSG Support Staff.

15.3.7. The NWSSG is disbanded when the HAF accepts the NWSSG Report.

16. Safety Rules Processing Responsibilities. DOD 3150.2-M requires prompt report processing (See Attachments 3 and 4 for post-study timeline).

16.1. At the conclusion of the study, NWSSG Support Staff will create a NWSSG Report. Once all NWSSG members sign this report, it will be considered completed and will not be changed except to correct minor administrative errors. Within 2 weeks of completing the study, AFSEC/SEW will notify OASD (NM) of completion of the study/review.

16.2. If the NWSSG Report includes proposed rules for new systems or proposed changes to current rules, AF/SE will prepare a separate Air Force Safety Rules Package and draft AFI to

implement the proposed rules. AF/SE will submit the NWSSG Report and, if required, the draft Rules Package and AFI for HAF 2-letter coordination. Additionally, the draft AFI will be submitted to any additional offices as required by AFI 33-360 for coordination.

16.3. AFSEC/SEW will adjudicate all comments and draft the AF NWSSR within 4 weeks of receipt of the HAF 2-letter coordination.

16.4. If there is an AF Safety Rules Package:

16.4.1. AF/SE will submit the Air Force NWSSR and the Air Force Safety Rules Package to the Air Force Chief of Staff for approval.

16.4.2. Once approved by the Air Force Chief of Staff, AF/SE will distribute the Air Force NWSSR and the Air Force Rules Safety Package to appropriate agencies, including OASD(NM), voting member organizations, OPRs for approved recommendations, and the NWSSG technical advisors. OASD (NM) will coordinate it with the Joint Staff, DTRA, and the DOE/National Nuclear Security Administration (NNSA) as described in DoD 3150.2-M.

16.5. If there is no Air Force Rules Package required:

16.5.1. AF/SE will distribute the Air Force NWSSR to OASD(NM), voting member organizations, OPRs for approved recommendations, and the NWSSG technical advisors.

16.5.2. AF/SE will notify OASD(NM) and CJCS certifying the current rules are sufficient.

16.6. Upon notification of rules approval by the USD (AT&L), AFSEC/SEW will include these rules in the appropriate weapon system 91-series AFI. Unless otherwise specified, safety rules and revisions to approved safety rules in the AFI shall be implemented by appropriate agencies within 30 days of approval.

16.7. AF/SE will publish the approved rules following AFI 33-360 guidance for publication and forward to all appropriate agencies (responsible MAJCOM safety offices and system program offices) directing immediate implementation.

16.8. If circumstances necessitate approval of proposed safety rules before completion of the formal coordination process, AF/SE will request interim approval from the CJCS according to the procedures in DoD 3150.2-M.

16.8.1. Interim approval of the safety rules is effective for 6 months and does not negate the requirement for final processing of the Safety Rules Package.

16.8.2. If final processing of the safety rules is not completed within the 6-month period, AFSEC/SEW must request an extension from OASD (NM).

Section E—Supporting Documents and Briefings

17. Air Force Data Package. The Air Force Data package consists of the materials provided to NWSSG voting members prior to the NWSSG study/review for their preparation and use during the study or review. Package includes:

17.1. Operational Plan Data Document (if applicable – MAJCOM).

17.2. Weapon system concept of operations (MAJCOM).

17.3. TNSA for studies and certain reviews (AFNWC).

17.4. Technical description of the weapon system and its system safety features, when not included in TNSA (AFMC/MAJCOM).

17.5. Draft or current safety rules located in the appropriate weapon system 91-series AFI (AFSEC/SEW).

18. NWSSG Report. An NWSSG Report is a summary of NWSSG proceedings. It is not a technical or engineering source document (DoD RCS: AT&L (A) 1994). The report will follow the format contained in DOD 3150.2-M, Appendix 3 and contain the following:

18.1. Executive Summary will summarize the study results and include an appraisal statement as to whether the system meets DoD nuclear weapon system safety policy and standards.

18.2. Study Overview will summarize the study's scope, background, purpose, and comments on the impact of safety on the system's concept of operations.

18.3. Findings, Recommendations and Corrective Actions Section will state facts or conclusions regarding the nuclear safety of the weapon system and recommendations to enhance safety consistent with operational requirements.

18.3.1. A finding or recommendation must be approved by a majority of the NWSSG voting members.

18.3.2. Priority assignments for NWSSG recommendations:

18.3.2.1. Immediate Action. (USE OF THE NUCLEAR WEAPON SYSTEM IS IMMEDIATELY RESTRICTED UNTIL RECOMMENDED ACTIONS ARE COMPLETED.) Reserved for recommendations made to correct deficiencies that prevent the weapon system from meeting one or more of the DoD Nuclear Weapon System Surety Standards. It either restricts certain operations of the nuclear weapon system or completely prohibits use of the system until approved recommendations are complied with.

18.3.2.2. Urgent Action. (USE OF THE NUCLEAR WEAPON SYSTEM MAY BE RESTRICTED IF APPROVED RECOMMENDATIONS ARE NOT COMPLIED WITH BY THE SUSPENSE DATE.) Reserved for those recommendations which conclude that, while the system currently meets required safety standards, prompt corrective actions are required to ensure no violation of any of the DoD Nuclear Weapon System Safety Standards occurs in the future. Peacetime restriction of the weapon system may be warranted, if approved recommendations are not complied with by the suspense date or if an approved extension to the suspense date is not granted.

18.3.2.3. Time Compliance. (USE OF THE WEAPON SYSTEM IS NOT RESTRICTED.) Reserved for recommendations that simply enhance nuclear surety. These recommendations are intended to make the system better and do not imply any failure to meet existing safety standards. The weapon system may be operated while action is being taken to comply with an approved recommendation. Failure to comply by the stated suspense date will not restrict use of the weapon system.

18.4. Draft Safety Rules for new systems or proposed changes to existing rules, which are NWSSG recommendations for safe operations of the weapon system, based upon NWSSG findings during the study/review.

18.4.1. A safety rule must be approved by a majority of the NWSSG voting members.

18.5. An Addendum of Minority Opinions may be included. It shall be appended to the NWSSG Report if agreement is not reached by the NWSSG through discussion and deliberation and those in the minority deem such an addendum is appropriate. The format will be the same as the findings and recommendations of the basic report and signed by each member supporting the minority position.

18.5.1. The Minority Opinion shall be submitted for inclusion into the NWSSG Report prior to adjourning the Phase III meeting and shall be made available for all members to review.

19. Air Force NWSSG Report (NWSSR). The Air Force NWSSR presents the Air Force assessment of whether the weapon system meets the four DoD surety standards identified in paragraph 2. The NWSSG Report is the basis for the Air Force NWSSR. The Air Force NWSSR consists of the following:

19.1. The Executive Summary will summarize the Air Force position on the study results and include an appraisal statement that assesses whether or not the weapon system meets DoD nuclear weapon system safety policy and standards. If there are differences in any portion of the Air Force NWSSR and the NWSSG Report, the Executive Summary will note the differences and rationale for disagreement.

19.2. The Assessment Section will include evaluations and analyses to support the Air Force appraisal statement in the Executive Summary.

19.3. The Findings, Recommendations, and Corrective Actions Section will:

19.3.1. List NWSSG findings, recommendations, and minority opinions, and indicate approval or disapproval of each recommendation with rationale.

19.3.2. List corrective actions with a timeline that the Air Force will implement for approved recommendations.

19.3.3. Provide recommendations on the retention, modification, or retirement of the system.

19.4. The NWSSG Report is included as an enclosure to the Air Force NWSSR.

20. Air Force Safety Rules Package. Parts A and B will be consistent with that provided in the Air Force Data Package. The Air Force Safety Rules Package includes:

20.1. Executive Summary: An appraisal of whether or not the weapon system meets the DoD weapon system safety policy and standards; differences between the NWSSG Report and the NWSSR; and a synopsis of the proposed safety rules or changes to current rules.

20.2. Part A: Technical Description of the weapon system and Concept of Operations.

20.3. Part B: Safety Features incorporated in the weapon system.

20.4. Part C: Proposed Safety Rules.

21. Operational Plan Data Document (OPDD). The OPDD is the operating command's statement of how the command operates and maintains (or, if applicable, for a new or significantly modified weapon system, how the command plans to operate and maintain) the nuclear weapon system being studied by the NWSSG. In addition, the OPDD serves as a source document for the TNSA or abbreviated TNSA when required.

21.1. The OPDD describes:

21.1.1. The nuclear weapon system's current or proposed (for new or significantly modified weapons systems) concept of operations.

21.1.2. General operations commonly performed regardless of geographical location.

21.1.3. Significant variations of the general operations.

21.1.4. Normal operations in the stockpile-to-target sequence during peacetime, wartime, and periods of increased hostilities.

21.1.5. Operations conducted under contingency plans.

21.2. An OPDD will be provided to the NWSSG by the operational MAJCOM. If the OPDD is new or requires changes to support an NWSSG study or review, the MAJCOM will prepare the OPDD in sufficient time to ensure approval and distribution. If a TNSA is required, the MAJCOM must provide the final approved OPDD (or change) to AFSEC/SEW 6 months before the study is scheduled to begin.

21.2.1. The MAJCOM will summarize operations, refer to applicable source documents for greater detail, and include all desired operational and system capabilities in the OPDD. The weapon system safety rules proposed by the NWSSG may not allow all desired capabilities, but they will not even be considered, if not included in the OPDD. Commands can NOT add/significantly change operational capabilities/plans after the SECDEF approves the safety rules without an NWSSG study/review.

22. Technical Nuclear Safety Analysis (TNSA). The TNSA is prepared by the Air Force Nuclear Weapons Center in accordance with AFI 63-125, *Nuclear Certification Program*, and serves as an independent technical analysis of the nuclear weapon system.

22.1. Personnel who prepare the TNSA shall maintain independence from organizations directly responsible for designing, developing, producing, maintaining, operating, or providing logistics for the weapon system under evaluation.

22.2. The TNSA:

22.2.1. Describes the weapon system in depth.

22.2.2. Has a safety and security compliance matrix that shows how weapon system features meet the DoD Nuclear Weapon System Safety Standards (see Attachment 2).

22.2.3. Contains a comprehensive engineering analysis of the weapon system design.

22.2.4. States how the weapon system does or does not meet the DoD Nuclear Weapon System Safety Standards in both normal and credible abnormal environments.

22.2.5. Identifies deficiencies and recommended corrective actions for the weapon system to comply with AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapon Systems*, and AFI 31-108.

22.2.6. Assesses physical security features planned for the weapon system. If appropriate, include an examination of security measures for non-fixed site operations, identify security deficiencies, and propose necessary corrective actions.

22.2.7. Includes a qualitative risk assessment of the weapon's likelihood of violating any of the DoD Nuclear Weapon System Safety Standards or causing plutonium scatter.

22.3. Prepare a preliminary TNSA for an initial safety study. Prepare a final TNSA for a preoperational safety study. NOTE: An abbreviated TNSA may be used for a special safety study, an interim safety study, a preliminary safety study or as required by the NWSSG Chair. It is limited in scope and only covers the specific study topic.

22.4. Provide a preliminary or final TNSA, as appropriate, no later than 30 days before the first NWSSG meeting.

23. Support Briefings:

23.1. The operational command, development agency, TNSA authors, subject matter experts, and contractors brief the NWSSG.

23.2. NWSSG Support Staff tells the agencies what topics they must cover in the briefing.

23.3. Topics should include, but are not limited to:

23.3.1. History of Safety Studies, Operational Safety Reviews, and Safety Rules.

23.3.2. NWSSG recommendations disapproved by AF.

23.3.3. Deficiency report history.

23.3.4. Nuclear surety inspection findings since last review.

23.3.5. Weapons system safety assessments and/or TNSA.

23.3.6. Unauthorized Launch/Access Analysis.

23.3.7. Weapon safety data applicable to the weapon system.

23.3.8. Status of nuclear certification actions.

23.3.9. Nuclear certified configuration issues.

23.3.10. Weapon modifications.

23.3.11. Use control.

23.3.12. Pending changes to nuclear surety features and procedures affecting nuclear surety.

23.3.13. Review of Current Technical Data (including review of any problems with compatibility of technical data with nuclear weapon system safety rules).

23.3.14. Nuclear Surety Concerns (including a review of any unresolved problems relating to nuclear surety).

- 23.3.15. Weapon System Safety Features Technical Description, Function, and Purpose.
- 23.3.16. Weapon System Support Equipment Technical Description, Function, Purpose, and History.
- 23.3.17. Weapon System Modification Program and Pending Logistical Factors Affecting Nuclear Surety.
- 23.3.18. A summary of relevant mishaps and incidents which could adversely affect nuclear surety.
- 23.3.19. Weapon System Operations Briefings.
 - 23.3.19.1. Operational Capabilities.
 - 23.3.19.2. Safety Features.
 - 23.3.19.3. Special Preparations for Nuclear Missions.
 - 23.3.19.4. Unit Locations, Capabilities, Command and Control.
 - 23.3.19.5. Security Procedures.
 - 23.3.19.6. Explosive Ordnance Disposal Procedures
 - 23.3.19.7. Accident History.
 - 23.3.19.8. Personnel Certification.
 - 23.3.19.9. Unique Country and Service Requirements.
 - 23.3.19.10. Contingency and Emergency Plans
 - 23.3.19.11. Configurations and Load Limits
 - 23.3.19.12. Nuclear Surety Concerns.
 - 23.3.19.13. Flying Restrictions.
 - 23.3.19.14. Maintenance Requirements.
 - 23.3.19.15. All deviations to nuclear safety/security instructions and directives currently in effect for the weapon system.

Section F—Actions Required on NWSSG Recommendations Approved by the HAF.

24. Implementing HAF-Approved Recommendations.

- 24.1. Designated action agencies must implement all safety recommendations approved by the HAF. Each action agency will:
 - 24.1.1. Notify AFSEC/SEW of the agency's office of primary responsibility, telephone number (DSN, if available), and point of contact.
 - 24.1.2. Set up a schedule to implement the recommendations.
 - 24.1.3. Send AFSEC/SEW a status report of NWSSG Studies and Reviews, Recommendations, and Safety Rules by 15 May and 15 November of each year. The agency will begin reporting after receiving the Air Force NWSSR and include a schedule for completing each action item identified in each recommendation.

24.1.4. Request AFSEC/SEW to close the recommendation after implementing the required actions. A recommendation is not closed until AFSEC/SEW notifies the action agency in writing.

24.2. AFSEC/SEW will monitor agency actions (through biannual status reports) and publishes a semiannual status of recommendations. Additionally, AFSEC/SEW at the discretion of the Chairperson can conduct semi-annual NWSSG meetings to review the status of recommendations and receive updates from OPRs. An annual status report is due to OASD (NM) with informal copies provided to Joint Staff and DOE by 1 July.

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

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

DoD Directive 3150.02, *DoD Nuclear Weapons Surety Program*, 24 Apr 13

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

AFPD 13-5, *AF Nuclear Enterprise*, 6 Jul 11

AFPD 91-1, *Nuclear Weapons and Systems Surety*, 13 Dec 10

DoD Directive 5210.41, *Security Policy for Protecting Nuclear Weapons*

DoDM S-5210.41-M, Vol 1, *Nuclear Weapon Security Manual: The Air Force Nuclear Weapon Security Manual*, 13 Jul 09

DoDM S-5210.41-M, Vol 2, *Nuclear Weapon Security Manual: General Nuclear Weapon Security Procedures*, 13 Jul 2009

DoDM S-5210.41-M, Vol 3, *Nuclear Weapon Security Manual: Nuclear Weapon Specific Requirements*, 13 Jul 2009

DoD Directive O-5210.41-M, *Security Policy for Protecting Nuclear Weapons*, 1 Nov 04

AFI 90-201, *Air Force Inspection System*, 2 Aug 13

AFI 31-108, *Air Force Nuclear Weapons Security Program*, 7 Mar 13

AFI 91-101, *Air Force Nuclear Weapons Surety Program*, 13 Oct 10

AFI 91-103, *Air Force Nuclear Safety Design Certification Program*, 17 Nov 10

AFI 91-106, *Unauthorized Launch, Threat Mitigation, and Launch Action Studies*, 13 Aug 10

AFI 91-107, *Design, Evaluation, Troubleshooting, and Maintenance Criteria for Nuclear Weapon Systems*, 11 Dec 12

AFI 33-364, *Records Disposition—Procedures and Responsibilities*, 22 Dec 06

AFI 63-125, *Nuclear Certification Program*, 8 Aug 12

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

DOE Form 5631-20, *Request for Visits or Access Approval*

Abbreviations and Acronyms

AFMC—Air Force Materiel Command

AFNWC—Air Force Nuclear Weapons Center

AFPD—Air Force Policy Directive

AFRC—Air Force Reserve Command

AFSEC—Air Force Safety Center

ANG—Air National Guard
CNWDI—Critical Nuclear Weapons Data Information
CTSA—Cosmic Top Secret Atomal
DoD—Department of Defense
DOE—Department of Energy
DSN—Defense Switched Network
DTRA—Defense Threat Reduction Agency
HAF—Headquarters Air Force
ISS—Initial Safety Study
INSS—Interim Safety Study
MAJCOM—Major Command
NATO—North American Treaty Organization
NNSA—National Nuclear Security Administration
NWSSG—Nuclear Weapon System Surety Group
NWSSR—Nuclear Weapon System Surety Group Report
OASD (NM)—Office of the Assistant Secretary of Defense for Nuclear Matters
OPDD—Operational Plan Data Document
OPR—Office of Primary Responsibility
OSR—Operational Safety Review
POSS—Preoperational Safety Study
PSS—Preliminary Safety Study
RDS—Record Disposition Schedule
SECDEF—Secretary of Defense
SSS—Special Safety Study
TNSA—Technical Nuclear Safety Analysis
TSS—Transportation Safety Study
USAF—United States Air Force
USD (AT&L)—Under Secretary of Defense for Acquisition, Technology, and Logistics
USSTRATCOM—US Strategic Command

Attachment 2

SAMPLE FORMAT FOR DOD NUCLEAR WEAPON SYSTEM SAFETY STANDARDS MATRIX

Figure A2.1. Safety Compliance Matrix.

DoD Standard Concern	Loading	A Ground-Power OFF	B Ground-Logic OFF	C Ground-Safe AMAC ON	D Flight-Safe/ LOCKED	E Flight-Arm/ UNLOCKED
Accidental Yield (1st Standard)	1 2 3 -- ----10 -	1 2 3 -- ----10 -	-2 3 -- ---- 10	-2 3 -- 6 - 8 -10 -	-2 3 -- ----10 -	---- 5 ----10 -
Unauthorized Prearm (2d Standard)	1 ---- 6 ---- 11	1 ---- 6 ---- 11	-- 3 -- 6 ---- 11	6 7 8 -- 11	6 7 8 -- -	-
Inadvertent Prearm (3d Standard)	1 2 3 -- -	1 ---- -	--3 -- -	-2 3 -5 6 7 8 9 10 -	-2 3 -5 6 7 8 9 - -	-
Inadvertent Release (3d Standard)	1 - 3 4 - 6 ---- -	1 - -4 - -	--3 4 - -	- -3 4 5 6 7 -9 - -	- -3 4 5 6 7 -9 - -	-- -9 - -

NOTE: This example is adapted from an actual matrix for illustrative purposes only.

Attachment 3

POST-STUDY TIMELINE WITH NO RULES PACKAGE

Table A3.1. Post-Study Timeline.

Action	Includes	OPR	Time Allotted (calendar days)
NWSSG Report prepared for coordination	Preparation Time after OSR Administrative corrections	AFSEC/SEW	14 days
NWSSG Report HAF 2-Letter Coordination	2-letter coordination at appropriate HAF agencies	AF/SEI	21 days
Air Force NWSSG Report (NWSSR) prepared	Incorporation and resolution of comments from HAF 2-Letter coordination	AFSEC/SEW	28 days
Air Force NWSSR provided to AF/SE for approval	N/A	AF/SE	14 days
Air Force NWSSR submission to OASD (NM), CJCS, voting member organizations, OPRs for approved recommendations, and the NWSSG technical advisors	AF/SE notification to OASD (NM) and CJCS certifying the current rules are sufficient	OASD (NM)	14 days

Attachment 4

POST-STUDY TIMELINE WITH RULES PACKAGE

Table A4.1. Post-Study Timeline with Rules Package.

Action	Includes	OPR	Time Allotted (calendar days)
NWSSG Report and Rules Package prepared for coordination	Preparation Time after OSR Administrative corrections	AFSEC/SEW	14 days
NWSSG Report and Rules Package HAF 2-Letter Coordination	2-letter coordination at appropriate HAF agencies	AF/SEI	21 days
Air Force NWSSG Report (NWSSR) and Rules Package prepared	Incorporation and resolution of comments from HAF 2-Letter coordination	AFSEC/SEW	28 days
Air Force NWSSR + Rules Package provided to AF/SE for approval and submission to CSAF	N/A	AF/SE	14 days
Submit Air Force NWSSR and Rules Package to OASD(NM), CJCS, voting member organizations, OPRs for approved recommendations, and the NWSSG technical advisors	Distribution of approved Air Force NWSSG Report and Rules Package within the Air Force.	AFSEC/SEW	14 days
Final Air Force NWSSR and Rules Package to OASD (NM) for coordination	Incorporation and resolution of comments from OASD(NM) (includes DTRA, Joint Staff, and DOE)	OASD (NM)	45 days
USD (AT&L) approval		OASD (NM)	14 days