



DEPARTMENT OF THE NAVY
OFFICE OF THE CHIEF OF NAVAL OPERATIONS
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OPNAVINST 8110.18C^{IN REPLY REFER TO}
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OPNAV INSTRUCTION 8110.18C

From: Chief of Naval Operations

Subj: DEPARTMENT OF THE NAVY NUCLEAR WEAPONS SYSTEM SAFETY
PROGRAM

Ref: (a) SWOP 4-1 of 31 May 2005 (NOTAL)
(b) SWOP 4-1A (Secret-RD) of 15 June 2005 (NOTAL)
(c) OPNAVINST 8020.14
(d) SECNAVINST 8120.1
(e) DoD Directive 3150.2 of 23 Dec 96
(f) DoD Manual 3150.2-M of 23 Dec 96
(g) through (x), see enclosure (1)

Encl: (1) References, continued
(2) Department of the Navy Nuclear Weapons and
Nuclear Weapons Systems Safety Policy (NWSSP)
(3) Department of the Navy Nuclear Weapons Enterprise
Structure
(4) Department of the Navy Nuclear Weapons Enterprise
Systems Safety Program
(5) Procedures for Navy Nuclear Weapons Systems Safety
Studies and Operational Safety Reviews
(6) Policy Guidance and Requirements for Navy Nuclear
Weapons System Safety Rules and Safety Rule Changes
(7) Concept of Operations for Employment of Navy Nuclear
Weapons Systems
(8) Navy Nuclear Weapons System Safety Design
Certification
(9) Acronyms

1. Purpose. To promulgate the overarching guidance for the Department of the Navy (DON) Nuclear Weapons Systems Safety Program (NWSSP) per all applicable instructions, directives, and procedures found in references (a) through (x) and enclosures (2) through (8).

2. Cancellation. OPNAVINST F8110.18B.

3. Scope. This instruction applies to all U.S. Navy commands, activities, units, and forces having responsibility for custody, operations, life cycle support, development, acquisition, or security of nuclear weapons (NW) or NW systems. This instruction provides safety guidance pertaining to all NW and NW systems for which the DON has operational, custodial, or developmental responsibility. It also focuses on the accountability and responsibility of NW capable operating units, and NW systems safety, security and reliability. Specific emphasis is placed on aggressively implementing and completing corrective actions when deficiencies are identified.

4. Definitions and Acronyms. References (a) and (b) contain definitions and acronyms applicable to this instruction. Acronyms used in this instruction are provided in enclosure (9).

5. Records Management. Records created as a result of this instruction, regardless of media and format, shall be managed per Secretary of the Navy (SECNAV) Manual (M-)5210.1 of November 2007.

6. Reports Control. The reporting requirements contained within this instruction are exempt from reports control by SECNAV M-5214.1 of December 2005.



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REFERENCES, continued

- (g) DoD S-5210.41-M of 13 Jul 09 (NOTAL)
- (h) OPNAVINST 5040.6H
- (i) SWOP 25-1 of 1 Apr 2008 (NOTAL)
- (j) SECNAVINST 5510.35A
- (k) SECNAVINST S8126.1 (NOTAL)
- (l) SWOP 45-51 of 1 Oct 2007 (NOTAL)
- (m) DoD Directive 4540.5 of 04 Feb 98
- (n) DoD Instruction S-5200.16 of 14 Nov 2007 (NOTAL)
- (o) DoD Directive S-5210.81 of 8 Aug 2005 (NOTAL)
- (p) DoD Directive S-3150.7 of 20 Jun 94 (NOTAL)
- (q) SECNAV M-5510.36
- (r) OPNAVINST F3100.6J
- (s) OPNAVINST 3440.15B
- (t) SWOP 5-8 of 16 Jul 2007 (NOTAL)
- (u) OPNAVINST 11012.1E
- (v) DoD Directive 3150.1 of 26 Aug 2002
- (w) OPNAVINST 5100.8G
- (x) OPNAVINST 8023.24B

**DEPARTMENT OF THE NAVY NUCLEAR WEAPONS AND NUCLEAR WEAPONS
SYSTEMS SAFETY POLICY (NWSSP)**

1. Purpose. Department of Defense (DoD) and DON NW and NW systems require special safety considerations due to their political and military importance, their destructive power, and the potential consequences of an accident or unauthorized act. Therefore, NW and NW systems must be protected against risks and threats inherent in their peacetime and wartime environments.

a. All positive measures will be taken to protect NW and NW systems. NW systems safety is a continuous process beginning in the conceptual phase and continues through the development process and the life cycle of an NW or an NW systems. The requirements of the DON NWSSP complement the DON acquisition procedures of reference (c) for all NW and NW systems.

b. The term "positive measures to prevent" can be accomplished by physical, electrical, or mechanical restraints and administrative controls and directives issued by competent authority. The phrase "positive measures to prevent" does not mean "absolute assurance against;" however, maximum safety consistent with operational requirements must be provided.

c. The major objective of the DON NWSSP is to ensure that NW and NW systems are designed, maintained, transported, stored, and employed to maximize safety, security, and reliability consistent with operational requirements.

2. Commander's Responsibilities. NW safety is a command responsibility and commanders shall provide personal leadership executing the DON NWSSP and shall comply with the NW systems safety rules and DON approved technical and operational procedures.

DEPARTMENT OF THE NAVY NUCLEAR WEAPONS ENTERPRISE STRUCTURE

1. Reference (d) defines policy, responsibilities, and authorities for the safe, secure, and reliable stewardship of DON NW and NW systems.
2. Chief of Naval Operations (CNO) Memorandum for the Secretary of the Navy, 8100, serial N00/100091 of 19 September 2008, recognized and established the Navy's NW management construct, and created the Office of the Chief of Naval Operations (OPNAV) Nuclear Weapons Council (ONWC) and the Navy NW Senior Leaders Oversight Council (SLOC).
 - a. The ONWC is a 3-star forum chaired by the Director, Navy Staff (DNS) that will:
 - (1) Assure Navy compliance with NW safety, security, reliability, and personnel policy;
 - (2) Coordinate all OPNAV staff responsibilities for NW safety, security, reliability, and personnel programs;
 - (3) Direct action to resolve NW policy and oversight issues identified by internal and external Navy inspections, assessments, and reports;
 - (4) Coordinate with the Deputy Commander, U.S. Fleet Forces Command (USFLTFORCOM); the Deputy Commander, U.S. Pacific Fleet; the Principal Deputy Assistant Secretary of the Navy (Research, Development and Acquisition); and Assistant Secretary of the Navy (Energy, Installations and Environment) to strengthen ties between the Navy Secretariat and OPNAV regarding policy/oversight functions as they relate to fleet/NW systems program operations/material support functions.; and
 - (5) Coordinate with the Deputy Chief of Naval Operations (DCNO (Integration of Capabilities and Resources) (CNO N8) Resources and Requirements Review Board, and the DCNO (Information Dominance) (CNO N2/N6) Information Technology Management Council to resolve NW program requirements and resource issues.
 - b. The SLOC is a 3-star forum chaired by DNS that will:

(1) Assure Navy compliance with NW safety, security, accident/incident response, reliability, and personnel policy;

(2) Coordinate actions to resolve NW operations, material support, and oversight issues identified by internal and external Navy inspections, assessments, and reports; and

(3) Coordinate with the ONWC to strengthen the ties between OPNAV policy/oversight functions and fleet/NW program operations/material support functions.

**DEPARTMENT OF THE NAVY NUCLEAR WEAPONS ENTERPRISE
SYSTEMS SAFETY PROGRAM**

1. Purpose. The DON NWSSP determines critical safety functions, implements the DoD NW Systems Safety Standards (NWSSS), provides a process for conducting NW safety studies leading to approved NW systems safety rules, evaluates NW safety compliance, and implements corrective actions. These safety studies and reviews ensure that the NW systems design safety features and procedural safeguards provided by NW systems safety rules meet the DoD NWSSS and comply with references (e) and (f).

2. Requirements

a. The DoD mandates four DoD NWSSS, per references (e) and (f), as follows:

(1) There shall be positive measures to prevent NW involved in accidents or incidents, or jettisoned weapons, from producing a nuclear yield;

(2) There shall be positive measures to prevent DELIBERATE pre-arming, arming, launching, or releasing of NW, except upon execution of emergency war orders or when directed by competent authority;

(3) There shall be positive measures to prevent INADVERTENT pre-arming, arming, launching, or releasing of NW in all normal and credible abnormal environments; and

(4) There shall be positive measures to ensure adequate security of NW, per reference (g).

b. The DON implements the four DoD NWSSS by:

(1) Including NW safety considerations in the design and modification of NW systems per reference (f);

(2) Conducting NW and NW systems safety studies and operational safety reviews (OSRs) on a routine basis;

(3) Ensuring NW systems safety rules are available per reference (e) and enforce their use through the chain of command to the NW capable operating unit level;

(4) Following prescribed NW safety technical and operational procedures, standards, and policies;

(5) Certifying NW systems, equipment, procedures, and software for use with NW through detailed inspection procedures in references (h) and (i);

(6) Setting and maintaining high training and performance standards for personnel assigned to NW duties per reference (j);

(7) Training and certifying personnel to conduct NW operations consistent with approved procedures;

(8) Incorporating advances in NW safety technology via the NWSSP process identified in reference (e);

(9) Reviewing and evaluating the condition of DON NW and performance of NW systems for changes that may impact safety. Trend analysis shall be continuously performed to identify systemic problems, determining root causes, and identifying corrective actions; and

(10) Assessing capabilities of NW and NW systems certified units.

c. All commands that have NW and or NW systems related responsibilities shall ensure completion of functions or compliance with standards per this instruction. Responsible organizations are those that:

(1) Maintain, handle, load, or unload, mate or de-mate, inventory, and store NW per the approved procedures and reference (f);

(2) Ensure security of NW per references (g) and (k);

(3) Conduct logistics movements and convoys of NW and NW systems per references (l) and (m);

(4) Ensure operational control and use of NW and NW systems per references (n) through (p);

(5) Screen, select, and continuously evaluate individuals who work with NW and NW systems via the personnel reliability program (PRP) per reference (j); and

(6) Develop and maintain a concept of operations (CONOPS) for NW and NW systems per enclosure (7) of this instruction.

d. NW safety items are included in DON Nuclear Weapons Technical Inspections (NWTIs) to determine the extent that an adequate NWSSP is maintained in nuclear capable activities and to issue corrective guidance when appropriate. NWTIs are conducted per references (h) and (i).

e. Per reference (f), the responsible Federal organizations, which include the Assistant to the Secretary of Defense (Nuclear, Chemical and Biological Defense Programs) (ATSD (NCB)); Defense Threat Reduction Agency (DTRA); Joint Chiefs of Staff (JCS); Department of Energy (DOE); National Nuclear Security Administration; USFLTFORCOM; Commander, U.S. Pacific Fleet (COMPACFLT); and NW systems program managers (PMS), shall:

(1) Conduct NW systems safety studies and OSRs of NW and NW systems for which the DON has an operational, custodial, or developmental responsibility;

(2) Develop proposed NW systems safety rules which are derived from NW systems safety studies or OSRs that govern NW systems operations. Submit proposed NW systems safety rules additions or changes to the Secretary of Defense (SECDEF) via the Chairman of the Joint Chiefs of Staff (CJCS) for approval. Upon SECDEF approval, the CJCS will direct CNO to implement the new NW systems safety rules;

(3) Ensure that all NW operations are conducted per SECDEF promulgated NW systems safety rules; and

(4) Develop detailed technical and operational procedures that comply with and augment the NW systems safety rules.

3. Organizational and General Responsibilities. Reference (e) assigns SECNAV responsibility for ensuring the safety and security of all NW and NW systems for which the DON has an operational, custodial, or developmental responsibility.

Reference (d) assigns general responsibilities and authorities within the DON. Within the Navy, CNO is the principal advisor to the President and to SECNAV for all matters relating to the naval application of NW and NW systems. CNO establishes the overarching requirements for NW and NW systems. USFLTFORCOM and COMPACFLT are responsible for the safe and secure operations and maintenance of fielded NW and NW systems under their cognizance. Director, Strategic Systems Programs (DIRSSP) is responsible for the development, fielding, and life cycle support of NW, NW systems, and NW systems components. Program Executive Office, Unmanned Aviation and Strike Weapons (PEO (U&W)) supports DIRSSP for program management, technical operations, and integrated logistic support for the Tomahawk land attack missile-nuclear (TLAM-N) air vehicle under a memorandum of understanding (MOU) between DIRSSP and PEO (U&W). PEO (U&W) also provides program management and technical authority for the TLAM-N Weapons Control System.

4. Responsibilities

a. CNO. CNO supports the DON within their functional areas of responsibility of the NWSSP.

(1) DCNO (Manpower, Personnel, Education, and Training) (CNO N1). CNO N1 will approve policy pertaining to the PRP as developed by the Assistant for Information and Personnel Security (CNO N09N2).

(2) DCNO (Operations, Plans and Strategy) (CNO N3/N5). CNO N3/N5 will:

(a) Serve as the CNO's principle advisor to plan, monitor, coordinate, and advise CNO on Navy NW and NW systems global employment, operational strategy, policy, and plans; international politico-military matters; and the operational status of Navy NW and NW systems forces;

(b) Coordinate Navy NW policy issues with Office of the Secretary of Defense (OSD), JCS, Strategic Systems Programs, Naval Sea Systems Command, as well as other DoD and government agencies:

1. Provide the Navy voting representative to the Title X mandated Nuclear Weapons Council;

2. Establish operational, employment, and strategic force structure strategy and policy. Translate strategy into planning to reflect the CNO's strategic priorities for the development of resource allocation plans for fleet and Navy NW and NW systems;

(c) Implement CNO responsibilities for development and dissemination of Navy strategies, plans, and policies; and

(d) Establish the required operational capabilities (ROC) level for strategic installations and activities based on the criticality of assets assigned, functions performed, and supported. NW facilities are doctrinally designated as ROC level 1 providing the highest level of antiterrorism and force protection in direct support of strategic missions.

(3) DCNO (Fleet Readiness and Logistics) (CNO N4). CNO N4 will:

(a) Serve as the principal interface for all DON NW systems safety and related policy issues to OSD, JCS, other Federal agencies, and services;

(b) Approve NW and NW systems safety policy and standards, and is the Navy's primary office for physical security procedures per reference (k);

(c) Chair the annual safety and scheduling review and the monthly NWSSP teleconference. Emphasis is placed on identifying areas needing corrective remedial action;

(d) Convene the Nuclear Weapon Systems Safety Group (NWSSG) to conduct safety studies and OSRs, per reference (e). CNO N4 chairs the NWSSG meetings or appoints a chair for each meeting. Participants include representatives from: ATSD (NCB), DTRA, JCS, DOE/National Nuclear Security Administration, USFLTFORCOM, COMPACFLT, and PMs. Additional organizations are invited when appropriate;

(e) Submit proposed NW systems safety rules to SECDEF via the JCS for approval per enclosures (4) and (5) of this instruction;

(f) Issue approved NW systems safety rules to USFLTFORCOM, COMPACFLT, DIRSSP, and PEO (U&W) per enclosures (5) and (5) of this instruction, subsequent to the review and approval of the CNO and appropriate DoD leadership;

(g) Provide the annual safety report to the ATSD (NCB) no later than 1 July. This report describes the status of corrective actions for each of the open approved NWSSG findings from completed studies and reviews. Information copies of this report will be provided to the CJCS, the DOE, USFLTFORCOM, COMPACFLT, DIRSSP, PEO (U&W), and NWSSG member commands;

(h) Evaluate NW and NW systems policies for their impact on physical security;

(i) Observe NWTIs and reviews findings of NW inspection reports to assess whether all commands are in compliance with NWSSP applicable policies; and

(j) Ensure that all commanders having an NW or an NW systems acquisition responsibility implement the DON NW safety design criteria for safety evaluation and safety certification of NW systems and comply with the guidance within this enclosure.

(4) OPNAV Submarine Warfare Directorate (OPNAV N87).
ONAV N87 will:

(a) Provide resources for NW safety from the submarine homeport to the dive point and from the surface point to the submarine homeport; and

(b) Issue guidance concerning classification and publish standards for safeguarding, transmitting, and storing defense information related to NW and NW systems.

(5) Special Assistant for the Naval Investigative Matters and Security (CNO N09N). CNO N09N will:

(a) Develop and coordinate PRP policy; and

(b) Promulgate applicable program office requirements regarding marking, safeguarding, transmission, and

destruction of classified and controlled unclassified information related to NW and NW systems per reference (q).

b. USFLTFORCOM/COMPACFLT. Fleets will:

(1) Implement guidance for the DON NWSSP policy. Ensure NW systems safety rules compliance within their respective fleet nuclear capable units and activities, and report NW safety issues to DIRSSP;

(2) Support DON NW systems safety studies and OSRs for their assigned forces per enclosure (4) of this instruction;

(3) Ensure the resources necessary to maintain the equipment, materials, facilities, and support services for forces under their cognizance to meet the requirements of the DON NWSSP, are included in Program Planning Budget Execution System;

(4) In conjunction with DIRSSP, conduct investigations of NW incidents and recommend appropriate corrective actions to CNO;

(5) Participate in the CNO N4's annual NW safety and schedule review, as well as the monthly NWSSG teleconference;

(6) Ensure that all of their subordinate commands which have an NW mission or have been tasked to support the NWSSP take actions to:

(a) Comply with the NW systems safety rules and approved technical and operational procedures during all NW operations throughout the stockpile-to-target sequence (STS);

(b) Enforce NW incident prevention, NW system monitoring, and the identification, investigation, reporting, and correction of all problems affecting NW safety;

(c) Report NW incidents per reference (r), and comply with reference (s), for NW incident response. Investigate and report per reference (t) any event that involves NW, NW systems, certified support equipment, certified nuclear capable delivery vehicles, or procedures and any situation or occurrence that degrades or could degrade NW safety; and

(d) Use only authorized and certified equipment, procedures, and software in operations involving NW and NW systems.

(7) Provide for DIRSSP's review coordinated CONOPS per enclosure (7) of this instruction for those NW and NW systems for which they have responsibility;

(8) Advise CNO N4 and DIRSSP on trends and issues related to NWSSP and, when warranted, recommend special safety studies (SSS); and

(9) Ensure a nuclear weapons safety council (NWSC) is established at appropriate command levels.

c. Commander, Submarine Atlantic Fleet (CSL)/Commander, Submarine Pacific Fleet (CSP). Submarine fleets will:

(1) Ensure subordinate units appoint a knowledgeable and qualified person as the nuclear weapons safety officer (NSO) to perform nuclear safety duties. Provide guidance that delineates, but is not limited to, the following:

(a) The NSO may be assigned other duties, but these duties will not prevent the NSO from fully performing all duties connected with the NWSSP;

(b) The NSO's rank should be commensurate with the scope, complexity, and span of the duties assigned;

(c) The NSO shall have a broad working knowledge of each weapon system under their cognizance, but does not need to be technically qualified in specific areas of weapon maintenance, storage, and handling;

(d) The NSO must be thoroughly knowledgeable of the OPNAV NW systems safety rules and must be familiar with appropriate security measures, systems operational procedures, and applicable restraints; and

(e) The NSO shall complete all prescribed formal training courses for the NW systems involved.

(2) Implement a PRP per reference (j);

(3) Recommend nuclear certified equipment changes to the appropriate PMs;

(4) Provide appropriate inputs to the Joint Nuclear Weapons Publications System (JNWPS) and Special Weapons Ordnance Publications (SWOPs) consistent with established DoD and DON policy;

(5) Ensure commanders having a capability to store, maintain, or employ NW, will continue to maintain the NWSSS, safety features, and positive measures developed by DIRSSP and PEO (U&W) while NW/NW systems are in the commander's custody;

(6) Screen personnel who will perform nuclear related duties and certify them under the PRP in their specific areas of responsibility; and

(7) Evaluate NW/NW systems capable commanders for NWSSS compliance. Assess findings for trends and provide NW policy and procedures improvements.

d. DIRSSP. DIRSSP will:

(1) Perform as technical authority and PM for technical operations and maintenance of DON NW and NW systems to ensure they comply with DON NWSSP policy:

(a) Ensure the safety design, development, analysis, and testing of NW systems under their cognizance;

(b) Provide NW/NW systems technical guidance and procedures to ensure safety;

(c) Develop and coordinate NWSSP policies for CNO N4 that will assist in maintaining the highest practicable levels of NW safety consistent with operational requirements;

(d) Perform as secretary for the DON NWSSG SSSs and OSRs for NW systems, under their cognizance, as discussed in enclosure (4);

(e) Analyze safety trends and advise the NW community as appropriate and, when warranted, propose changes or recommend an SSS on DON NW and NW systems associated equipment to CNO N4;

(f) Implement program for NW incident prevention, system monitoring, incident event identification, incident event investigation, and incident event correction, or recommend corrections for all problems affecting NW safety and per references (r), (s), and (t). Report to CNO N4 any situation that degrades or could degrade NW safety;

(g) Monitor and report significant safety deficiencies and trends identified during NW inspections and assessments. Review and ensure the immediate correction of all inspection discrepancies and ensure trend and root cause analysis are conducted and recommendations are implemented in a timely manner and reported to CNO N4;

(h) Coordinate the CNO N4 annual NW safety and schedule review, monthly NWSSP teleconference, and ensure the integrated master schedule is current;

(i) Ensure that all commanders who have an NW capability to store or maintain NW or NW systems adhere to the NW safety requirements incorporated by DIRSSP or PEO (U&W).

(j) Be responsible for oversight of DON PRP execution per references (d) and (j);

(k) Through a MOU with CNO N1, establish and implement a program to select, train, and certify personnel who conduct nuclear operations to perform these operations consistent with approved procedures. Training will include all pertinent technical, safety, and security practices and procedures;

(l) Coordinate Navy inputs to the JNWPS and DON SWOPs consistent with established DoD and DON policy, and provide status to CNO N4;

(m) As the technical authority, develop standards and procedures for enforcement of the day-to-day NW operations and maintenance activities for safety, security, NW incidents, and radiation health;

(n) Provide guidance for NW safety and security within the waterfront restricted areas for submarines; and

(o) Determine appropriate NW training requirements and performance standards.

(2) Perform as the PM for the TRIDENT (D5) strategic weapons system and strategic weapons facilities (SWFs):

(a) Provide for the conduct of completion inspections (CI) per the CI Guide and reference (u);

(b) Ensure that independent analyses are conducted on weapon systems data and operating procedures as defined by the appropriate PMs. These analyses will be performed against the system safety design criteria and provide the basis for recommendations on nuclear safety design certification. Certification will be documented in PM publications;

(c) Ensure only authorized and certified equipment, materials, facilities, supporting services, procedures, and software are used in operations involving NW and NW systems, and comply with the DON NWSSP;

(d) Process, collect, and maintain safety reports;

(e) Prepare the safety data package to be studied or reviewed by an NWSSG;

(f) Ensure implementation of and compliance with NW systems safety rules;

(g) Develop and provide checklists, procedural guides, and similar directives to implement safety rules;

(h) Implement the non-nuclear assurance program (NNAP) requirements for all test assemblies and unmated delivery vehicles under their cognizance;

(i) Analyze operational safety performance and prepare and issue information to CNO on NW safety matters and on NW incidents prevention;

(j) Comply with the safety rules and approved technical and operational procedures during all NW operations throughout the STS;

(k) Ensure that the acquisition strategy implements the DON NW safety design criteria for safety evaluation and safety certification;

(l) Ensure the SWFs appoint a knowledgeable and qualified individual as the NSO to perform nuclear safety duties:

1. The NSO may be assigned other duties, but these duties will not prevent the NSO from fully performing all duties connected with the NWSSP;

2. The NSO's rank should be commensurate with the scope, complexity, and span of the duties assigned;

3. The NSO shall have a broad working knowledge of each weapon system under their cognizance, but does not need to be technically qualified in specific areas of weapon maintenance, storage, and handling;

4. The NSO must be thoroughly knowledgeable of the OPNAV NW systems safety rules and must be familiar with appropriate security measures, systems operational procedures, and applicable restraints; and

5. The NSO shall complete all prescribed formal training courses for the NW systems involved.

(m) Ensure personnel maintain proficiency to conduct NW operations;

(n) Screen personnel who will perform nuclear related duties and certify them under the PRP in their specific areas of responsibility; and

(o) Using a safety design certification process and reference (v), certify the safety of the design of their NW

systems and associated support equipment. Maintain a list of their NW systems safety certified equipment and software. Safety certification is required to ensure that the safety design criteria specified in this instruction are incorporated in the following areas:

1. NW systems;
2. Combat and non-combat delivery vehicles and support equipment; and
3. Shore based NW facilities. Accomplish this certification per reference (u).

e. PEO(U&W). PEO (U&W) will:

(1) Perform as the PM for the TLAM-N air vehicle and Nuclear Tomahawk Weapons System (NTWS) and will:

(a) Ensure that independent analyses are conducted on weapon systems data and operating procedures as defined by the appropriate PMs. These analyses will be performed against the system safety design criteria and provide the basis for recommendations on nuclear safety design certification. Certification will be documented in PM publications;

(b) Ensure that the equipment, materials, facilities, and supporting services that are required to provide logistic support comply with the DON NWSSP;

(c) Process, collect, and maintain safety reports;

(d) Prepare the safety data package to be studied or reviewed by an NWSSG;

(e) Ensure implementation of and compliance with NW systems safety rules;

(f) Develop and provide checklists, procedural guides, and similar directives to implement safety rules;

(g) Implement the NNAP requirements for all test assemblies and unmated delivery vehicles under their cognizance;

(h) Analyze operational safety performance and prepare and issue information to the DON on NW safety matters;

(i) Comply with the safety rules and approved technical and operational procedures during all NW operations;

(j) Ensure that the acquisition strategy implements the DON NW safety design criteria for safety evaluation and safety certification; and

(k) Analyze the NTWS and recommend convening an SSS to CNO N4 and DIRSSP if system changes warrant an NWSSG review.

(2) Use a safety design certification process and reference (v) to certify the safety of the design of their NW systems and associated support equipment. Maintain a list of their NW systems safety certified equipment and software. Safety certification is required to ensure that the safety design criteria specified in this instruction are incorporated in the following areas:

(a) NW systems; and

(b) Combat and non-combat delivery vehicles and support equipment.

f. Chief, Bureau of Medicine and Surgery (BUMED). Chief, BUMED, will provide technical guidance and assistance in the implementation and execution of the PRP and radiation health aspects of the DON NWSSP.

5. NW Safety Training. Personnel must receive periodic refresher training and event-specific NW safety training before working with NW or NW systems. Personnel should also receive NW safety training in conjunction with explosives safety or missile safety training under the NW safety training program.

6. NWTI. NWTIs will be administered to all nuclear capable commands per references (f), (h), and (i).

7. NWSC. An NWSC must be established at appropriate command levels. The NWSC will examine and resolve problems affecting

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the successful execution of an activity's NW program and will act as a review board to assist the commander in ensuring that all facets of the NWSSP function in an effective manner.

**PROCEDURES FOR NAVY NUCLEAR WEAPONS SYSTEM SAFETY STUDIES AND
OPERATIONAL SAFETY REVIEWS**

1. Purpose. Safety studies and OSRs evaluate the safety of NW and NW systems and may propose new NW systems safety rules or changes to NW systems safety rules for the NW or NW systems. Studies and reviews will be conducted for all DON NW and NW systems and for NW systems of allied forces employing DON NW.

2. Goals. The goal of the DON NWSSP is to achieve maximum safety consistent with operational requirements. Safety studies and reviews support the safety program by providing an on-going comprehensive evaluation of DON NW and NW systems which verify whether design safety features and procedural safeguards are adequate to meet the four DoD NWSSS. Safety studies and reviews ensure NW and NW systems are designed, produced, transported, installed, stored, operated, maintained, retrofitted, and modified to incorporate maximum nuclear safety and security while fully considering the system's operational requirements. The burden of proof rests with the weapon systems program office to show compliance with the four DoD NWSSS.

3. Types

a. There are seven types of safety studies or OSRs defined in reference (f):

- (1) Initial safety study;
- (2) Preliminary safety study;
- (3) Interim safety study;
- (4) Pre-operational safety study (POSS);
- (5) OSR;
- (6) SSS; and
- (7) Transportation safety study (TSS).

b. With the exception of the TSS, the purpose, timing, and scope of the safety studies and OSRs are detailed in reference (f).

c. The scope of safety studies and OSRs may include, in addition to the areas specified in reference (f), evaluation of planned changes to system design or procedures.

d. The purpose and scope of a TSS is specified in reference (f). However, Navy TSSs will normally only be conducted as part of a POSS, OSR, or SSS.

4. Responsibilities

a. CNO N4 will:

(1) Consider recommendations from DIRSSP and PEO (U&W) to determine the requirement and the scope for each NW systems safety study and OSRs for which the DON has an operational, custodial, or developmental responsibility;

(2) Establish a schedule for safety studies and OSRs for a 3-fiscal year window. This 3-year study and review schedule will be updated and issued annually no later than 1 July for the 3 fiscal years beginning the following October. This schedule authorizes all participants of the NWSSG to plan and budget for the safety studies and reviews in their areas of responsibilities;

(3) Issue the convening letter and appoint the NWSSG chair in writing for each safety study or OSR. The convening letter for the safety study/OSR scope (i.e., CONOPS, agenda, and authorization for convening the safety study or OSR) will be issued to DIRSSP and NWSSG members 90 days prior to study/review commencement; and

(4) Submit the nuclear weapons systems safety report (NWSSR) to ATSD (NCB).

b. DIRSSP will:

(1) Coordinate a schedule for safety studies and OSRs for the next 3 fiscal years annually no later than 1 June and submit to CNO N4; and

(2) Coordinate with the appropriate fleet and PMs on the recommended scope, agenda, CONOPS, and operational environment for each safety study and OSR 120 days prior to the scheduled convening date.

c. CSL/CSP will:

(1) Provide a draft CONOPS for those NW systems under their responsibility to DIRSSP 120 days prior to the scheduled safety study or OSR convening date;

(2) Coordinate with DIRSSP on the extent that the NW and or NW systems shall be reviewed in the operational environment 120 days prior to the scheduled convening date;

(3) Conduct briefings, ship visits, and facility site visits under their cognizance per the CNO provided scope and agenda; and

(4) Provide NWSSGs with applicable operations orders (OPORDs), operations plans (OPLANS), directives, and related materials.

d. PMS will:

(1) Coordinate with DIRSSP a 3-fiscal year schedule for safety studies and OSRs under their responsibility;

(2) Coordinate with DIRSSP the detailed schedule, scope, agenda, and chair for each NW systems safety study and OSR that pertains to their systems in coordination with USFLTFORCOM/COMPACFLT;

(3) Draft the recommended scope, agenda, and chair nomination by name and provide this information to DIRSSP 180 days prior to the scheduled safety study or OSR;

(4) Provide a safety data package per this enclosure to NWSSG members at least 30 days before the start of the study or review; and

(5) Conduct briefings and facility site visits under their cognizance per the CNO N4 provided scope and agenda.

5. NWSSG Chair will:

a. Assume responsibility for all aspects of the safety study or review, including its preparation, conduct, and reporting;

b. Ensure the efficient management and timely conduct of the assigned safety study or OSR and provide complete coverage of safety related issues;

c. Guide the discussion of issues, encourage an open exchange of ideas and comments, and attempt to reach a consensus on each issue;

d. Ensure that all opinions are recorded in the NWSSG report; and

e. Provide the CNO Nuclear Weapon System Safety Report (CNWSSR) to CNO N4.

6. CNO N4 NWSSGs. The NWSSG periodically conducts detailed NW systems safety studies and reviews throughout the DoD life cycle of an NW system. CNO N4 will convene an NWSSG to support a particular study or review which provides an additional means of assessment of NW systems safety. Based on evaluations, the NWSSG may also recommend draft safety rules for operations of the NW systems to enhance compliance with the four DoD NWSSS. Vulnerabilities may be identified and the NWSSG may draft interim safety rules that permit continued operations that ensure maximum safety is maintained consistent with operational requirements. When convened by CNO N4, an NWSSG evaluates NW and NW systems to ensure that design safety features and procedural safeguards are adequate to meet the four DoD NWSSS. The NWSSG shall perform the following:

a. Evaluate the CONOPS and recommend necessary changes;

b. Conduct safety studies and OSRs;

c. Prepare an NWSSR for each safety study or OSR with any safety findings, recommendations, and recommended NW systems safety rules;

d. Develop NW safety rules for new NW or review existing NW systems safety rules and modify them as required. Submit recommended or revised NW systems safety rules in a finding to CNO N4; and

e. The NWSSG is disbanded when the NWSSR is issued by CNO N4 to ATSD (NCB).

7. Safety Data Package Preparation

a. DIRSSP will ensure the following technical data is provided to all the NWSSG members and agencies 30 days prior to the convening date.

(1) The NW systems safety data package provides NWSSG members with information on the system in advance of the study or review, which will enable them to be more effective during formal proceedings. The NW systems safety data package will contain all available pertinent data, including:

(a) Part A: Technical description and CONOPS for the NW systems;

(b) Part B: Description of the safety features incorporated into the NW systems;

(c) Part C: Current draft safety rules or draft changes to current safety rules as proposed by the Navy; and

(d) When modified systems or portions of systems are involved, the safety data package only need contain that material related to the modification or portion of the system being studied or reviewed.

(2) The following information will be reviewed and made available to the NWSSG:

(a) JNWPS technical publications, DON SWOPs, and technical manuals;

(b) Pertinent material from previous CNO N4 NWSSRs on the specific NW systems, including approved findings and recommendations and their status;

(c) The most recent project officers group, design review and acceptance group reports;

(d) A summary of NW incidents, NWTI results, and relevant unsatisfactory reports;

(e) Technical nuclear safety analyses, as available, that address system features, interfaces, operations such as implementation of transportation policy per reference (k), and applicable risk assessments; and

(f) Applicable OPORDs, OPLANS, directives, and related materials.

b. CNO N4 will request, through the ATSD (NCB), that DOE provide the following information:

(1) Final weapons development report (FWDR), to include a history of alterations, modifications, status of the major assembly release (MAR), and operating modes. The warhead description will be included with the FWDR as well as safety design information and should correlate with the MAR;

(2) A summary of the warhead design safety features, including use control which supports the weapon safety; and

(3) An assessment of how the design safety features support the military characteristics (MC) and the DoD NWSSS, including a summary of environments in which weapon design characteristics alone are inadequate to meet the MC.

8. Composition of the NWSSG. An individual assigned as an NWSSG member will participate in all phases of the safety study or OSR. NWSSG members should be of sufficient rank or stature to represent their command and be supported by technical personnel. All NWSSG members will be qualified through operational or system experience and or technical background to move rapidly into a thorough discussion of the safety aspects of the system under study. Commands or activities having NWSSG membership responsibility on NW systems safety studies and OSRs may designate sub-activities or subordinate commands to provide their NWSSG member when deemed appropriate. Parent commands are responsible for funding their NWSSG member's participation in safety studies and OSRs.

a. Assignment of Members. The NWSSG is composed of military and civilian professionals per reference (e). Members include representatives from: CSL/CSP, USFLTFORCOM/COMPACFLT, appropriate PMs, U.S. Strategic Command, DTRA, JCS, and DOE. Representatives from additional commands and agencies with responsibility for NW systems safety may be included when appropriate. Members will be assigned for the duration of the study or review. An NWSSG member will:

(1) Serve as the focal point for the exchange of information between their commands and the NWSSG; and

(2) Review background material provided in the safety data package prior to the convening date.

b. Responsibilities of Members

(1) Be knowledgeable of the DON NWSSP, policy, and procedures.

(2) Identify, analyze, and provide assessments of pertinent NW systems safety related information and operations.

(3) Be able to convey to the NWSSG the unique operational requirements of their organization, parent command, and the DoD.

(4) Independently formulate judgments when assessing whether the system meets the DoD NW systems safety policy and standards.

(5) Remain impartial and objective and consider the operational needs of the DON together with the need for maximum safety when developing NW systems safety findings/recommendations. While assigned to the NWSSG, members will be responsible to the NWSSG chair.

(6) Inform the NWSSG chair prior to the start of the study of any issues or concerns identified in preparing for the study and reviewing the data package or the study scope and agenda.

(7) Represent their command's interests and responsibilities.

(8) NWSSG members are not responsible for defending their parent command's policies or positions. Their responsibilities are the identification and evaluation of nuclear safety issues.

c. Member Qualifications

(1) The NWSSG chair should, at a minimum, be a military grade O-5 or civilian equivalent and have the NW experience necessary to meet their responsibilities. The NWSSG chair is responsible for the efficient management and timely conduct of the safety study or review per the CNO N4 provided scope and agenda. The chair will also prepare the NWSSG final report.

(2) NWSSG members will have the following:

(a) Minimum lieutenant commander or civilian equivalent. Exceptions will be rare and shall be approved by the NWSSG chair;

(b) Extensive operational and or technical experience with NW systems and experience or training in evaluation techniques applicable to the DoD NWSSS; and

(c) No direct responsibility for design, development, or production of the specific NW systems under evaluation.

(3) NWSSG members are highly encouraged to complete the NW systems safety training program, as delineated in reference (f), before they participate in safety studies and reviews.

d. NWSSG Advisors

(1) NWSSG members, as approved by the chair, may invite advisors.

(2) Advisors must have relevant technical knowledge of NW systems, specific technical knowledge, or operational experience with the design, development, production, or operation of the NW systems under evaluation.

(3) Advisors are encouraged, but are not required, to have completed the safety training program in reference (f).

(4) Advisors do not have a formal voice in NWSSG proceedings and are encouraged to make contributions to NWSSG briefings, discussions, and deliberations through the member whom they represent and to clarify points of discussion on issues raised by their sponsor or another NWSSG member. Advisors may participate in such discussions, but their input will be limited by their advisor status.

9. Conduct of the Study or Review

a. NWSSG Activities will:

- (1) Review the NW safety data package;
- (2) Review the status of relevant findings, recommendations, and open corrective actions from previous NWSSRs;
- (3) Receive technical and operational briefings on the weapon system under study;
- (4) Determine if the NW systems, as described, may be operated safely per the CONOPS. Observe operations with applicable support equipment in a representative sample of operational environments (and in substantially unique operational environments). The NWSSG will make visits to activities and observe operations and equipment. Where impractical or not possible to observe actual hardware, mockup, or training devices may be used;
- (5) Review technical and operational procedures in SWOPs and compare with observed operations;
- (6) Examine the STS document for storage, maintenance, transportation, and employment operations to ensure that all relevant activities are reviewed;
- (7) Review potential hazards in normal and credible abnormal environments identified in the STS document for impact on safety;
- (8) Review the process for the authentication of nuclear control orders at the delivery unit level;

(9) Review results and recommendations of available inadvertent and unauthorized launch analyses and related software and physical security analyses;

(10) Examine safety-related use control matters in the context of the second safety standard; and

(11) Examine safety-related security matters in the context of the four NWSSS.

b. Deliberations. Upon completion of all presentations and demonstrations, the deliberation phase begins. Deliberations are discussions between NWSSG members which focus on issues identified during the presentations and demonstrations. The objective of the deliberations is to determine findings, which are statements of fact or conclusions of the NWSSG on the nuclear safety of the weapon system. The NWSSG members will vote on each finding with the NWSSG chair providing the deciding vote in the event of a tie vote. The NWSSG will strive to achieve consensus on each issue, but, where this is not possible, individual NWSSG members may submit minority opinions.

c. Determinations. The NWSSG will determine if the NW systems are being operated in a manner that meets the DoD NW systems safety policy and standards.

(1) If the system meets the standards, the NWSSG may draft, if applicable, new safety rules or provide changes to current safety rules or recommend other positive measures to further ensure maximum safety consistent with operational requirements.

(2) If the system cannot be verified to meet DoD NWSSS, the NWSSG will:

(a) Draft safety rules or other positive measures to meet DoD NW systems safety policy and standards; and

(b) Determine operational impacts if the safety rule or other positive measure is not adopted.

(3) If the system does not meet the standards, the NWSSG will do the following:

(a) Determine NW systems limitations and constraints that preclude safe operation of the system;

(b) Draft safety rules that permit continued operations with an identified vulnerability while maximizing NW systems safety consistent with operational requirements; and

(c) Draft safety rules or other positive measures that will allow the system to meet the standards.

(4) When a weapon system does not meet or cannot be verified to meet the standards, the NWSSG will also identify the following:

(a) Affected parts of the STS;

(b) Applicable accident scenarios, credible abnormal environments, or other factors causing nonconformance with the standards to include the following:

1. Plausible sequences of events that may lead to those undesirable situations; and

2. System responses, if known, to the credible abnormal environment or other factors causing nonconformance with the standards. Credible combinations of abnormal environments should be identified where possible;

(c) Procedures and hardware, if any, that are identified as "deficient"; and

(d) Specific limitations imposed on system operations will be identified and justified in the safety rules package.

(5) If the NWSSG majority determines that hazardous conditions exist, the NWSSG chair may recommend immediate constraints or cessation of operations for the NW systems and notify CNO N4 through the fastest means of communications available. Notification will include all opinions. The NWSSG must also recommend the conditions that must be satisfied before operations may resume.

d. Reporting Requirements. The NWSSGs will prepare an NWSSR per the format in this enclosure.

10. NWSSR. An NWSSR of each safety study or OSR provided by the chair to CNO N4 for approval will include the following sections:

a. Executive Summary. The executive summary will summarize the study results. It will include an appraisal statement that assesses whether or not the weapon system, when operated per prescribed technical and operational procedures in the system CONOPS, and with proposed or existing safety rules and other positive measures, meets DoD NW systems safety policy and standards. The executive summary will also include a synopsis of the findings, recommendations, and minority opinions, and will comment on limitations that affected the study.

b. Study Overview

(1) This section will summarize the study's scope, background, and purpose; describe the assessments conducted by the NWSSG; list all assumptions that were necessary to complete the study; include the system's CONOPS, current safety rules, a system functional description, including the safety technologies incorporated in the system; and include the safety feature description provided in the Navy data package. Those documents should be attached as appendices. This section is not intended to be a technical or engineering source document.

(2) In the study overview, the members may comment on any limitations that affected the study or review (e.g., scope, implementation, and instructions).

c. Findings and Recommendations

(1) Findings. Findings are statements of fact or conclusions of the NWSSG on the nuclear safety of the weapon system.

(a) The first finding will include an overall appraisal statement that assesses whether the weapon system meets DoD NW systems safety policy and standards when operated per:

- procedures;
1. Prescribed technical and operational
 2. The system CONOPS; and
 3. Proposed or existing safety rules and other positive measures.

(b) Depending upon the results of this assessment, the first finding will include:

1. Satisfactory. If the system meets the DoD NWSSS and there are no recommendations for improvement;

2. Acceptable. If the system meets the standards, but there are recommended actions such as proposed safety rules and other positive measures that will enhance safety consistent with operational requirements; or

3. Not Satisfactory. If the system is not verified to meet the standards and the NWSSG identifies system limitations and constraints that preclude the system from meeting the standards or the system does not meet the standards and the NWSSG identifies system limitations and constraints that do not allow safe operation of the system, or any other factors that preclude conformance with the standards.

(c) Remaining findings will address system specific enhancements or deficiencies related to hardware, firmware, software, and procedures.

(2) Recommendations. Each finding will be followed by a recommendation:

(a) Satisfactory. No recommendations;

(b) Acceptable. Recommend actions such as new safety rules or changes to existing safety rules or other positive measures to further ensure maximum safety consistent with operational requirements;

(c) Not Satisfactory. Recommend positive measures and safety rules in consideration of the requirements specified in this enclosure. Include those positive measures and safety

rules that may permit continued operations while maximizing safety consistent with operational requirements or recommend cessation of operations; or

(d) Remaining Findings. Recommend positive measures that address system specific enhancements or deficiencies regarding hardware, firmware, software, and procedures.

(3) Previous NWSSRs. Reiterate applicable recommendations for the weapon system made during previous studies or reviews for which corrective actions have not been completed.

d. Draft Safety Rules. This section provides a separate listing of the draft safety rules or recommended changes to current safety rules as identified in the findings and recommendations. This section provides the basis for part C of the Navy safety rules package. Members may recommend processing changes as an administrative change, if applicable.

e. Addendum of Minority Opinions. An addendum of minority opinions will be included if agreement is not reached by the NWSSG through discussion and deliberation. Minority opinions will be presented in the same format as the other findings and recommendations of the basic report and will be signed by each member supporting the minority opinion.

f. Observations. Safety items of interest that have been evaluated and have been determined to have no effect on NW safety may be reported as observations. Observations are for CNO N4 action.

g. Dissemination of the Report. The NWSSG chair is responsible for the timely completion of the NWSSR.

(1) All members participating in the safety study or OSR must sign the "record paper copy" of the report. The NWSSR will not be changed following the signature of the NWSSG members other than to correct administrative errors.

(2) The NWSSR will be forwarded to CNO N4 within 2 weeks following completion of the study.

11. CNO N4 NWSSR

a. CNO N4 will distribute copies to NWSSG member organizations and appropriate PM. Member organizations and PM will review the NWSSR and provide comments to DIRSSP within 45 days from the date of completion of the safety study or OSR. DIRSSP will ensure coordinated comments are submitted to CNO N4.

b. CNO N4 will review all comments on the NWSSR. CNO N4 will approve or disapprove NWSSG findings and recommendation and designate the action activity for each NWSSG recommendation within 75 days from the date of the completion of the safety study or OSR. CNO N4 will review and comment on any NWSSG minority opinions.

c. The NWSSR consists of a cover letter for each NWSSG report, which includes a statement of the DON intended action on each CNO N4 approved NWSSG recommendation and establishes the NWSSG report as the CNWSSR. The CNWSSR will be distributed by CNO N4. Copies will be provided to the commands participating as members in the study or review and appropriate PMs. CNO N4 ensures that these reports are provided to the ATSD (NCB); the Director of Operations, Joint Staff; the Director of DTRA; and the Director of Military Application, DOE within 75 days following completion of the study or review, or in time to support coordination of the safety rules package, whichever is sooner.

d. DIRSSP will coordinate with CSL/CSP, USFLTFORCOM/COMPACFLT, and PMs to establish a schedule to comply with each CNO N4 approved NWSSG recommendation, as appropriate, and submit to CNO N4 and the NWSSG members a report of action being taken to implement the NWSSG recommendation. NWSSG recommendation status reports are required until the action is completed. Upon completion of all actions, the action activity will request CNO N4 to close out the recommendation. Due date for the initial report is 105 days after the date of completion of the safety study or review. Follow-up reports providing status of open findings and recommendations will be submitted annually to reach CNO N4 by 1 June.

12. NW System Safety Rules Package. When the NWSSR includes draft safety rules or safety rule changes, DIRSSP and the applicable PM will simultaneously prepare the CNWSSR and a Navy

safety rules package for coordination and approval. The format for the safety rules package coordination and approval process is in enclosure (5) of this instruction.

13. Safety Study Timelines. The chronology of actions required by various commands and agencies prior to a safety study or review is shown in figure 1. The chronology of actions required after a safety study or review is shown in figure 2.

ACTIONS BEFORE START OF SAFETY STUDY

180 Days	120 Days	90 Days	30 Days	0 Days
Pms	DIRSSP	CNO N4	Pms	NWSSG
1. Draft scope 2. Draft agenda 3. Submit NWSSG chair Recommendation to CNO N4	1. Coordinate CONOPS 2. Draft scope and agenda 3. Review ability to do study in operational environment	1. Issue convening letter appointing NWSSG chair and specifying scope and agenda	1. Provide data package to NWSSG	1. Begin study

Figure 1

ACTIONS AFTER COMPLETION OF SAFETY STUDY

14 Days	45 Days	75 Days	105 Days
NWSSG	DIRSSP	CNO N4	DIRSSP
1. Provide report to CNO N4	1. Coordinate comments on NWSSG report to CNO N4	1. Review findings and recommendations 2. Approve or disapprove 3. Assign action 4. Submit CNO N4 NWSSR to ATSD (NCB) 5. Proposed safety rules to JCS 6. Request interim safety rule approval	1. Coordinate initial response to CNO N4 actions on findings and recommendations

Figure 2

**POLICY GUIDANCE AND REQUIREMENTS FOR NAVY NUCLEAR
WEAPONS SYSTEM SAFETY RULES AND SAFETY RULES CHANGES**

1. NW System Safety Rules. NW systems safety rules provide the procedural safeguards that, together with the weapon systems design features and technical and operational procedures, ensure maximum safety consistent with operational requirements during NW and NW systems STS operations.

a. Approved NW safety rules are required for all operations in the STS for each NW and NW systems combination. NW safety rules will govern the operations. However, they do not abrogate or abridge the authority or responsibility of a commander to deviate from NW safety rules in an emergency. This authority to take emergency action does not apply to the requirement for maintaining U.S. custody of NW. U.S. custodians of NW will retain custody of war reserve weapons until receipt and authentication of a nuclear control order that conveys proper U.S. release authority and permits transfer of U.S. NW to non-U.S. (Allied) delivery forces.

b. In no event will war reserve weapons be expended until a properly authenticated nuclear control order conveying proper release authority is received and correctly authenticated.

c. NW safety rules include general provisions applicable to all NW operations in the stages defined in the applicable STS. These general provisions, which have been in force for NW operations in the STS of all U.S. Navy NW and delivery system combinations, are described in reference (e).

d. NW safety rules include specific provisions to provide adequate safety for NW operations with each specific NW system including unique NW systems operations (e.g., alerts, operational posturing, generated exercises, and training). NW safety rules governing operations of each specific NW systems are developed by DON, coordinated with DTRA, and forwarded to the CJCS for approval prior to submission to SECDEF. The JCS will disseminate the NW safety rules to the cognizant Service chiefs, commanders of appropriate unified or specified commands, and DTRA per JCS procedures. CNO N4 issues approved NW safety rules to the operating forces and PMs for implementation of DoD directives, as appropriate.

2. Timing. Draft NW systems safety rules will be forwarded to SECDEF in sufficient time to allow for consideration and approval before the expected initial operational capability date of the weapon system. Draft revisions to approved NW safety rules should be processed promptly but should take no more than 6 months from time of submission.

3. Source. Draft NW systems safety rules and draft changes to approved safety rules will be based upon the NW systems safety findings and recommendations of a safety study or OSR and other pertinent considerations.

4. Safety Rules Package. The NW safety rules package will be submitted in the format specified in appendix C of reference (e).

5. NW System Safety Rules Processing and Approval

a. Interim and final approval of all NW systems safety rules by SECDEF will be contingent upon the data in parts A and B of the NW safety rules document remaining substantially unchanged.

b. Draft NW systems safety rules will be provided to CNO N4 by the NWSSG as part of the NWSSG report within 14 days after completion of the NW safety rules. Review and approval will follow the below process:

(1) Upon receiving the NW safety rules package, CNO N4 presents the NW safety rules package to the appropriate OPNAV action officers for discussion and questions. CNO N4 approves, modifies, or rejects the draft NW safety rules within 75 days of completion of the safety study or review.

(2) CNO N4 coordinates draft NW safety rules with DTRA and PMs, as necessary.

(3) CNO N4 forwards draft NW safety rules by CNO memorandum to SECNAV, JCS, and ATSD (NCB) for their approval. CNO N4 shall request interim approval to permit NW systems operations under the draft safety rules, until the draft NW safety rules are approved and promulgated. Interim approval will be effective for a maximum of 6 months and will not negate the requirement for final processing of the NW safety rules

package. If the final processing of safety rules is not completed in the 6-month period, CNO N4 must request an extension.

(4) JCS will coordinate the draft NW safety rules with the other Services. ATSD (NCB) coordinates with DOE. If reviewers require any clarifications of the draft NW safety rules, CNO N4 will coordinate with the appropriate PMs for verification of technical content.

(5) CJCS and ATSD (NCB) will recommend approval of the draft NW safety rules and submit to the SECDEF for approval.

(6) CJCS distributes the NW safety rules. Unless otherwise specified, NW safety rules and revisions to NW safety rules will be implemented within 30 days of SECDEF approval.

(7) NW safety rules will remain in effect until rescinded by the CJCS.

c. Draft changes to NW safety rules will be processed in the same manner shown above and accompanied by a memorandum that describes briefly the draft changes and the rationale for each.

d. CNO N4 will monitor the NW safety rules package throughout the approval process per reference (f). CNO N4 will resolve any questions concerning the rules package and will coordinate with the appropriate PMs.

6. Administrative Changes. An administrative change is a non-substantive change to the NW safety rules that meet the requirements specified in reference (f). When CNO N4 determines that approved NW systems safety rules for existing NW systems apply to a similar or modified NW systems and that only an administrative change to the safety rules is required to incorporate the additional system, the change may be accomplished by memorandum. The administrative change will be originated by CNO N4, coordinated with DTRA and the Joint Staff, made available to DOE, and approved by the ATSD (NCB) before release.

**CONCEPT OF OPERATIONS FOR EMPLOYMENT OF
NAVY NUCLEAR WEAPONS SYSTEMS**

1. Purpose. The CONOPS for employment of U.S. Navy NW systems are used by the OPNAV NWSSG for development of NW safety rules for all NW systems assigned or programmed for assignment to combatant commanders. The CONOPS is a description of the weapon systems and an explanation of the systems operational concept for weapon systems included in the pertinent OPLAN. The NWSSG will evaluate the system under study with these operational constraints, considerations, and requirements. CSL and CSP (in coordination with USFLTFORCOM/COMPACFLT, respectively) are required to provide CNO N4 via DIRSSP with coordinated CONOPS prior to any scheduled safety study or review. CNO N4 approves the CONOPS for use in the safety study or review. The CONOPS is included in the NW safety data package and, subsequently, becomes "Part A" of the Navy NW safety rules package. SECDEF grants final approval of NW systems safety rules and CJCS directs implementation. This approval is valid only if the system description, CONOPS, and design features remain substantially unchanged.

2. Discussion

a. The MC and the STS, all the materials, manuals, procedures, and CONOPS will be reviewed during the conduct of an NW systems safety study or OSR. This requirement recognizes that technical information cannot always provide the basis for a realistic evaluation of NW safety unless it is presented and considered against the background of intended operational employment of the system in the STS. An NW systems safety study or OSR evaluates an NW system that is in use or intended for use. The description of the salient features of this use is the function of the CONOPS. The success of an NW systems safety study or OSR in achieving a realistic balance between safety and operational readiness in its findings and recommendations will depend in large part upon the adequacy and accuracy of the CONOPS.

b. In view of the importance of the CONOPS to the safety study and OSR process, this enclosure provides guidance for the preparation of the CONOPS.

c. An approved CONOPS for a specific NW system will remain valid for all safety studies and OSRs of that NW system until new or modified CONOPS are approved by CNO N4. When approving new or modified CONOPS, CNO N4 will specify whether the new or modified CONOPS supersede the CONOPS applicable to existing, approved NWS safety rules.

3. Guide for the Preparation of the CONOPS

a. Introduction. Provides a brief introductory statement to identify the NW system and describe the operational forces which will employ it.

b. Operational Employment

(1) States those forces that are, or will be, the operational users of the NW system.

(2) Includes details of the operational chain of command.

(3) Describes that part of the mission that is concerned with the delivery of NW.

(4) Discusses the operations of readiness to which the NW system will be raised by the operating units.

(5) Discusses any operational constraints that may be placed on the system.

c. Tactics and Employment

(1) Briefly describes NW delivery tactics envisioned for the NW system.

(2) Cites appropriate documents or describes restrictions pertaining to the tactical use of the NW system.

d. Command and Control

(1) Describes the administrative procedures by which employment of the NW system would be authorized.

(2) Identifies the commanders authorized to approve employment of the NW system.

(3) Discusses and describes the command and control provisions incorporated in the NW system, such as separable components. The specific measures that allow the authorized use and prevent or delay unauthorized use of NW are "use control."

(4) Describes the combination of weapon systems design features, operational procedures, security, and system safety rules which constitute the use control measures for the weapon systems.

(5) Identifies the specific warhead and system features, including where and by whom coded inputs are originated, set, and entered to enable the weapon or weapon systems.

(6) Specifies differences in use control measures for operational and logistic activities.

e. NW Safety

(1) Describes safety precautions or administrative procedures to be employed for the enhancement of safety for the NW or NW system. In general, a statement that the provisions of a cited document will govern a specific safety aspect will suffice.

(2) Describes all emergency plans, including jettison procedures that may be peculiar to the NW or NW system, and describes the manner of reporting NW incidents.

f. Security. Ensures NW physical security requirements of references (g) and (k) are implemented. Also describes the security measures to be afforded to the NW or NW system throughout the STS to include a description of physical security measures and administrative procedures, in both the logistic and operational environments.

g. Logistics

(1) Indicates where the NW will physically come into the custody of USFLTFORCOM/COMPACFLT and the type activities involved.

(2) Indicates those commands that may become responsible for logistic movements and defines their chain of command to USFLTFORCOM/COMPACFLT.

(3) Describes the vehicles or mechanisms that will be used to transport or transfer NW. Details of handling equipment or procedures are not desired since they may be obtained from other sources. Where circumstances require that the NW be transported in other than the stockpile configuration, the configuration required and the circumstances should be described.

h. NW Storage, Configuration, and Handling

(1) Provides a general statement that storage, handling, and maintenance will be per appropriate SWOP and ordnance publications. If there are special circumstances or equipment which will make adherence to these procedures difficult, the nature of the difficulty should be detailed.

(2) Describes plans for weapon and component storage throughout the STS.

(3) Describes the levels of maintenance to be performed by activities having physical custody of the NW.

i. Training, Testing, and Inspections. Briefly describes the training programs and special equipment to be utilized for training and inspections. Describes any unique NW system safety related operational requirements pertaining to weapon system testing.

NAVY NUCLEAR WEAPONS SYSTEM SAFETY DESIGN CERTIFICATION

A safety design certification process shall be established and maintained to ensure that full consideration is given to NW safety criteria in the design and technical documentation of NW systems and associated support equipment. NW and support equipment provided by the DOE shall be safety certified per reference (v).

1. Safety Design Criteria. Maximum NW systems safety, consistent with operational requirements, will be designed into the system with minimal reliance upon administrative operational procedures. To meet the four DoD NWSSS, each NW system will be designed and operated to control critical functions in the sequence leading to detonation of the weapon. The safety features designed into the nuclear warhead by DOE and the safety features provided by the DON NW systems are some of the measures used to control critical functions in normal and credible abnormal environments. The following safety design criteria will be incorporated into the areas listed in this enclosure.

a. Comply with the four DoD NWSSS as an overarching principle.

b. Design for minimum risk. NW must be protected against the risks and hazards inherent in their environment and must not be subjected to an adverse environment except when such exposure is required by operational requirements. PMs should design to eliminate NW hazards. If an identified hazard cannot be eliminated, the design must reduce the associated risk to an acceptable level through design selections integrated into the total NW system safety theme.

c. Incorporate safety devices. If identified hazards cannot be eliminated or their associated risks adequately reduced through design selection, the risk must be reduced to an acceptable level through the use of safety measures or devices to minimize dependence on administrative procedures.

d. Incorporate special operational or administrative procedural restrictions. When the required degree of safety cannot be assured through design or use of safety devices, special operational or administrative procedures will be developed.

e. Provide for independence from single component malfunction. The malfunction or accidental operation of any single hardware or software component must not, under normal and credible abnormal environments, result in the pre-arming, arming, launching, or releasing of an NW or an NW system.

f. Emphasize human engineering methods. Accepted human engineering methods must be emphasized to minimize the probabilities of human error. Positive measures are to be included to prevent any accidental operation of controls that could degrade NW safety.

g. Provide protection against accidental or unauthorized activation of automated systems software that control critical functions. The design of complex automated systems, intended to minimize or prevent human errors and which control critical functions, must be protected against accidental or unauthorized activation so as not to degrade NW safety.

h. Ensure explosive ordnance disposal procedures incorporate "Render Safe" procedures. NW systems must provide for emergency entry to those components and circuits required to affect "Render Safe" and disposal procedures.

i. Ensure security requirements interface with NW systems safety requirements. Consistent with operational requirements, security equipment and procedures shall have an acceptable interface with NW systems safety requirements.

2. Safety Evaluation Methodology. The following safety evaluation methodology will be applied, as appropriate, in the conduct of evaluations to ensure that full consideration is given to the criteria in this enclosure.

a. System safety analyses. NW hazards are identified by the hazard analyses methodology portion of the system safety program required by references (e) and (w) for all applicable contracts negotiated by DoD managing activities. System safety program planning is included in all phases of DoD system acquisition documentation to systematically eliminate hazards or reduce the risk to an acceptable level. For major systems acquisition or planned acquisition, a system safety program plan

is developed based on system safety program requirements established by the managing activity. A system safety program plan details how the program is organized and implemented.

b. Safety test and demonstration. Specific empirical testing programs are developed to demonstrate the operation of NW safety features and the compliance with NWSSS and requirements. Evaluation criteria may be drawn from user requirements which are specified in formal documents, such as the justification for major new system starts, CONOPS, program management directives, this instruction, and the MC and STS documents. Safety evaluations are to be continuously applied as developmental modifications occur.

ACRONYMS

NW safety related acronyms used in this instruction:

ATSD (NCB)	Assistant to the Secretary of Defense (Nuclear, Chemical and Biological Defense Programs)
CI	completion inspection
CJCS	Chairman of the Joint Chiefs of Staff
CNO	Chief of Naval Operations
CNWSSR	CNO Nuclear Weapon System Safety Report
CONOPS	concept of operations
COMPACFLT	Commander, Pacific Fleet
CSL	Commander, Submarine Atlantic Fleet
CSP	Commander, Submarine Pacific Fleet
DCNO	Deputy Chief of Naval Operations
DIRSS	Director, Strategic Systems Programs
DoD	Department of Defense
DOE	Department of Energy
DON	Department of the Navy
DNS	Director, Navy Staff
DTRA	Defense Threat Reduction Agency
FWDR	final weapons development report
JCS	Joint Chiefs of Staff
JNWPS	Joint Nuclear Weapons Publications System
MAR	Major Assembly Release
MC	military characteristics
MOU	memorandum of understanding
NNAP	non-nuclear assurance program
NOTAL	not to all
NSO	nuclear weapons safety officer
NTWS	Nuclear Tomahawk Weapons System
NW	nuclear weapons
NWSC	nuclear weapons safety council
NWSSG	Nuclear Weapons Systems Safety Group
NWSSP	Nuclear Weapons Systems Safety Program
NWSSS	Nuclear Weapons Systems Safety Standards
NWSSR	nuclear weapons systems safety report
NWTI	Nuclear Weapons Technical Inspection
OPLAN	operations plan
OPORD	operations order
OPNAV	Office of the Chief of Naval Operations
ONWC	OPNAV Nuclear Weapons Council
OSD	Office of the Secretary of Defense
OSR	operational safety review

PEO (U&W)	Program Executive Office, Unmanned Aviation and Strike Weapons
PM	program manager
POSS	pre-operational safety study
PRP	personnel reliability program
SECDEF	Secretary of Defense
SECNAV	Secretary of the Navy
SLOC	Senior Leaders Oversight Council
SSS	special safety study
STS	stockpile-to-target sequence
SWF	strategic weapons facility
SWOPs	Special Weapons Ordnance Publications
TLAM-N	Tomahawk land attack missile-nuclear
TSS	transportation safety study
USFLTFORCOM	U.S. Fleet Forces Command