

**ORDER**

**DOE O 452.7**

Approved: 5-14-2010

# **Protection of Use Control Vulnerabilities and Designs**

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**U.S. DEPARTMENT OF ENERGY**  
**National Nuclear Security Administration**



## **PROTECTION OF USE CONTROL VULNERABILITIES AND DESIGNS**

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1. **PURPOSE.**

This Department of Energy (DOE) Order establishes the policy, process and procedures for control of sensitive use control information in nuclear weapon data (NWD) categories Sigma 14 and Sigma 15 to ensure that dissemination of the information is restricted to individuals with valid need-to-know.

2. **CANCELLATION.** DOE M 452.4-1A, *Protection of Use Control Vulnerabilities and Designs*, dated 3-11-04. Cancellation of a directive does not, by itself, modify or otherwise affect any contractual or regulatory obligation to comply with the directive. Contractor requirements documents (CRDs) that have been incorporated into a contract remain in effect throughout the term of the contract unless and until the contract is modified to either eliminate requirements that are no longer applicable or substitute a new set of requirements.

3. **APPLICABILITY.**

a. **Departmental Applicability.**

- (1) This Order applies to Departmental elements with access to Sigma 14 and/or Sigma 15 NWD (for example: documents, materials, and hardware).
- (2) The Administrator of the National Nuclear Security Administration (NNSA) must assure that NNSA employees comply with their responsibilities under this directive. Nothing in this directive will be construed to interfere with the NNSA Administrator's authority under section 3212(d) of Public Law (P.L.) 106-65 to establish Administration-specific policies, unless disapproved by the Secretary.

b. **DOE Contractors.**

- (1) The CRD, Attachment 1, sets forth requirements of this Order that will apply to contracts that include the CRD.
- (2) The CRD must be included in site/facility management contracts involving access to Sigma 14 and/or Sigma 15 NWD. DOE site office managers may tailor portions of the CRD in the contract as needed.

c. **Equivalencies and Exemptions for DOE O 452.7.**

- (1) Requests for equivalencies and exemptions to this Order must be in memorandum form and sent to the Nuclear Weapon Surety and Quality Division, Office of Military Application and Stockpile Operations.

- (a) The memorandum must briefly justify the reasons for the Equivalencies/Exemptions.
  - (b) The memorandum must reference the offices, or localities, and requirements for which the equivalency/exemption is sought.
- (2) Exemptions. The following Departmental elements are exempted: Office of Civilian Radioactive Waste Management, Office of Economic Impact and Diversity, Energy Information Administration, Office of Electricity Delivery and Energy Reliability, Office of Energy Efficiency and Renewable Energy, Office of Fossil Energy, Office of Hearings and Appeals, Office of Human Capital Management, Office of Legacy Management, Office of Management, Office of Public Affairs, Bonneville Power Administration, Southeastern Power Administration, Southwestern Power Administration, Western Area Power Administration.
- (3) Equivalency. In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at Title 50 United States Code (U.S.C.) sections 2406 and 2511 and to ensure consistency through the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Directive for activities under the Director's cognizance, as deemed appropriate.
4. REQUIREMENTS. Use control information that can significantly enhance an adversary's ability to obtain an unauthorized nuclear detonation or to deny the authorized use of nuclear weapons, explosives, or devices has been designated as Sigma 14 or Sigma 15 NWD. Because of sensitivity, access to Sigma 14 and Sigma 15 NWD must be strictly limited to those who have a verified need-to-know to accomplish their jobs safely and effectively. This fact is recognized by both the Department of Defense (DoD) and DOE and is reflected in the joint agreement *DOE/DoD Procedures for Assessments of Use Control Effectiveness*, dated January 1981 (updated copies of the joint agreement are available from the Nuclear Weapon Surety and Quality Division).

A violation of the provisions of this Order relating to the safeguarding or security of Restricted Data or other classified information may result in a civil penalty pursuant to subsection a. of section 234B of the Atomic Energy Act of 1954 (42 U.S.C. 2282b). The procedures for the assessment of civil penalties are set forth in Title 10, *Code of Federal Regulations* (CFR), Part 824, "Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations."

NOTE: Specific Operating Principles for Sigma 14 and 15 NWD can be found in Appendix A, *Control Process for Sigma 14 and Sigma 15 Nuclear Weapon Data* and Appendix B, *Procedures for Restricting Access and Limiting Distribution of Sigma 14 and Sigma 15 Nuclear Weapon Data*.

- a. Access to Sigma 14 and Sigma 15 NWD may be granted to individuals with valid need-to-know and DOE "Q" clearance or the equivalent, based on the appropriate, current background investigation. The NNSA Use Control Program Coordinator (UCPC) will provide guidance to Use Control Site Coordinators (UCSCs) on specific investigation criteria.
- b. The number of documents and items of hardware containing Sigma 14 or Sigma 15 NWD must be kept to the minimum necessary for operational requirements.
- c. All Sigma 14 and Sigma 15 NWD are categorized as either Restricted Data (RD) or Formerly Restricted Data (FRD) and classified as either Top Secret or Secret. For specific classification guidance, see the Joint DOE/DoD Topical Classification Guide for Nuclear Weapon Use Control (TCG – UC-3), or its successor.
- d. Dissemination of any Sigma 14 NWD outside DOE must be approved by the NNSA UCPC. Dissemination of Sigma 14 and Sigma 15 NWD outside DOE must be limited to what is absolutely essential to accomplish required tasks.

5. RESPONSIBILITIES.

- a. Administrator, National Nuclear Security Administration. May verbally grant access to Sigma 14 and Sigma 15 NWD, as needed. Ensures that follow-up actions are completed by the NNSA UCPC.
- b. Deputy Administrator for Defense Programs. May verbally grant access to Sigma 14 and Sigma 15 NWD, as needed. Ensures that follow-up actions are completed by the NNSA UCPC.
- c. Assistant Deputy Administrator for Science, Engineering and Production Programs. May verbally grant access to Sigma 14 and Sigma 15 NWD, as needed. Ensures that follow-up actions are completed by the NNSA UCPC.
- d. Director, Office of Military Application and Stockpile Operations.
  - (1) May verbally grant access to Sigma 14 and Sigma 15 NWD, as needed. Ensures that follow-up actions are completed by the NNSA UCPC.
  - (2) Appoints the NNSA UCPC and Alternate NNSA UCPC.
  - (3) Confirms, in writing, nominees for UCSCs, and their alternates and ensures that their names are given to the NNSA UCPC.
  - (4) Directs, in writing, establishment and disestablishment of sites authorized to maintain Sigma 14 and Sigma 15 NWD.

- e. Director, Nuclear Weapon Surety and Quality Division. May verbally grant access to Sigma 14 and Sigma 15 NWD, as needed. Ensures that follow-up actions are completed by the NNSA UCPC.
- f. National Nuclear Security Administration Use Control Program Coordinator.
  - (1) Serves as the UCSC for Headquarters organizations and sites without UCSCs.
  - (2) Serves as a backup point of contact for Sigma 14 actions at other sites, as needed.
  - (3) Serves as a program coordinator for the overall implementation of this Order.
  - (4) Serves as point of contact, including providing access approvals, for agencies outside DOE for interactions involving Sigma 14 or Sigma 15 NWD.
  - (5) Ensures that individuals outside of DOE, with the exception of DoD personnel and members of Congress, complete Sigma 14 and Sigma 15 training prior to initial access being granted and annually thereafter if access continues.
  - (6) Maintains current lists of non-DOE personnel with access to Sigma 14 and Sigma 15 NWD.
  - (7) Develops policy and procedures in coordination with appropriate organizations to identify, categorize, and protect Sigma 14 and Sigma 15 NWD consistently.
  - (8) Approves all transfers of Sigma 14 and Sigma 15 NWD hardware to outside agencies, with the exception of items controlled by directive schedule.
  - (9) Maintains a current list of UCSCs and periodically distributes it to the site UCSCs.
  - (10) Updates and maintains this Order.
  - (11) Serves as final arbiter, in the event of a site's inability to resolve an inadvertent disclosure of Sigma 14 or Sigma 15 NWD to a "Q-cleared" (or DoD equivalent) individual who has not been formally authorized for access to that information.
  - (12) On receipt of notice, informs the site's UCSC of an individual's refusal or denial to complete a Counterintelligence (CI) evaluation, including a

polygraph examination, or on receipt of a CI recommendation that access be denied.

- (13) May verbally grant access to Sigma 14 and Sigma 15 NWD, as needed. Ensures that follow-up actions are completed for any access granted verbally.
- (14) The UCPC may delegate any or all responsibilities to the formally designated Alternate UCPC.

g. Use Control Site Coordinators.

- (1) Approve all Sigma 14 and 15 access authorizations at their respective sites for personnel whose clearance is held at their facility. This authority may be delegated, in writing, as deemed appropriate by the local UCSC. A maximum of two alternates may be designated at each site for Sigma 14 authorization.
- (2) Ensure that current and historical rosters or databases of all site personnel approved for Sigma 14 and Sigma15 accesses at their respective sites are maintained.
- (3) Maintain lists of matter at their respective sites containing Sigma 14 NWD, oversee annual inventories of this matter, and provide summaries of these inventories to the NNSA UCPC annually by November 30 each year.
- (4) Serve as points of contact for issues related to Sigma 14 or Sigma 15 NWD handling at their respective sites.
- (5) Coordinate with the Use Control Effectiveness Committee and knowledgeable classification authorities to identify and categorize Sigma 14 and 15 NWD consistently.
- (6) Coordinate site security plans with local onsite organizations.
- (7) Ensure site compliance with the procedures in this Order.
- (8) Ensure that personnel authorized Sigma 14 or Sigma 15 access have sufficient training and awareness and are knowledgeable of the procedures for protecting such information.
- (9) Report any Sigma 14 NWD that cannot be found or may have been compromised to the NNSA UCPC and local security office within 1 hour of a security incident declaration.
- (10) Coordinate with UCSCs at other sites as required.

- (11) Ensure, in conjunction with shipping organizations, that proper access controls are in force at receiving DoD organizations before hardware containing Sigma 14 or Sigma 15 NWD is transferred to DoD. NNSA UCPC approval must be obtained prior to such transfers with the exception of items controlled by directive schedule.
- (12) Notify UCSCs at sites holding copies of documents not marked but determined to contain Sigma 14 or Sigma 15 NWD.
- (13) Ensure that procedures in Appendix B, paragraph 1.f are followed to resolve inadvertent disclosures of Sigma 14 and Sigma 15 NWD.
- (14) On receipt of notice, inform the NNSA UCPC of an individual's refusal to complete a CI evaluation, including a polygraph examination, or on receipt of a CI recommendation that access be denied.

h. Originating Agencies/Organizations.

- (1) In conjunction with their UCSCs or designees, identify specific design information that would significantly enhance an adversary's ability to accomplish deliberate unauthorized use or deny authorized use of nuclear weapons, explosives, or devices.
- (2) In conjunction with their UCSCs or designees, categorize information as Sigma 14 or Sigma 15 NWD.
- (3) Mark documents (and hardware, as required) containing Sigma 14 or Sigma 15 NWD as described in this Order.

6. DEFINITIONS. For a more complete set of definitions refer to DOE O 452.1D, *Nuclear Explosive and Weapon Surety Program*, dated 4-14-09, and DOE O 452.4A, *Security and Control of Nuclear Explosives and Nuclear Weapons*, dated 12-17-01, or their successor directives.

- a. Documents. Written or printed information; removable automated data processing media (diskettes, tapes, cards, etc.); charts; maps; paintings; drawings; engravings; sketches; photographic prints; exposed or developed film; working notes and papers; reproductions of such things by any means or process; and sound and video recordings by magnetic, optical, or any other electronic means.
- b. Material. Any substance regardless of its physical or chemical form. This includes raw, in-process, or manufactured commodity, equipment, component, accessory, part, assembly, or product of any kind.
- c. Matter. Any combination of documents or materials, regardless of physical form or characteristics.

- d. Nuclear Security Enterprise (NSE). The collection of DOE/NNSA laboratories, Nevada Test Site, production plants, and processing facilities involved in the design, production, and testing of nuclear weapons.
- e. Nuclear Weapon Data (NWD). Restricted Data or Formerly Restricted Data concerning the design, manufacture, or utilization (including theory, development, storage, characteristics, performance, and effects) of nuclear explosives, nuclear weapons or nuclear weapon components, including information incorporated in or related to nuclear explosive devices.
- f. Sensitive Use Control Information (SUCI). Information that significantly enhances an adversary's ability to obtain an unauthorized nuclear detonation from, or to deny authorized use of, a nuclear weapon or device.
- g. Sigma 14. That category of sensitive information (including bypass scenarios) concerning the vulnerability of nuclear weapons to a deliberate unauthorized nuclear detonation or to the denial of authorized use.
- h. Sigma 15. That category of sensitive information concerning the design and function of nuclear weapon use control systems, features, and components. This includes use control for passive and active systems. It may include security verification features or weapon design features not specifically part of a use control system. (Note: Not all use control design information is Sigma 15).
- i. Sigma 14 or 15 Access Authorization. A formal authorization by a DOE element or contractor organization with responsibility for Sigma 14 or Sigma 15 nuclear weapon data for a specific individual to access that specific category of NWD.
- j. Use Control (UC). The application of systems, devices, or procedures that allow timely authorized use of a nuclear explosive while precluding or delaying unauthorized nuclear detonation.

7. REFERENCES.

- a. Human Reliability Program rule, 10 CFR Part 712, the rule that defines a security and safety reliability program designed to ensure that individuals who occupy positions affording access to certain materials, nuclear explosive devices, facilities, and programs meet the highest standards of reliability and physical and mental suitability.
- b. Atomic Energy Act of 1954 (42 U.S.C. 2282b) Section 234B.
- c. National Security Presidential Directive 28, dated 6-20-03.
- d. DOE O 452.1D, *Nuclear Explosive and Weapon Surety Program*, dated 4-14-09, which establishes DOE objectives, standards, criteria, authorities, and responsibilities for the Nuclear Explosive and Weapon Surety Program.

- e. DOE O 452.4B, *Security and Use Control of Nuclear Explosives and Nuclear Weapons*, dated 1-22-10, which establishes requirements to implement the nuclear explosive security and use control (UC) elements of DOE O 452.1D, to ensure authorized use, when directed by proper authority, and protect against deliberate unauthorized acts (DUAs)/deliberate unauthorized use (DUU).
  - f. DOE O 470.3B, *Graded Security Protection Policy*, dated 8-12-08, classified.
  - g. DOE M 470.4-1, Ch. 1, *Safeguards and Security Program Planning and Management*, dated 8-26-05, which establishes a standardized approach for protection program planning that will provide an information baseline for use in integrating Departmental safeguards and security (S&S) considerations, facilitating management evaluation of program elements, determining resources for needed improvements, and establishing cost-benefit bases for analyses and comparisons
  - h. DOE M 470.4-4A, *Information Security Manual*, dated 1-16-09, which establishes security requirements for the protection and control of matter required to be classified or controlled by statutes, regulations, or U.S. Department of Energy Directives.
  - i. DOE M 470.4-5, *Personnel Security Program*, dated 8-26-05, which establishes the overall objectives and requirements for the Personnel Security Program in the U.S. Department of Energy, including the National Nuclear Security Administration.
  - j. DOE O 5610.2 Chg 1, *Control of Weapon Data*, dated 9-2-86, which establishes the procedures for the control of weapon data.
8. CONTACTS. For additional information or technical interpretation of this Order, contact the Nuclear Weapon Surety and Quality Division at 202-586-0377.

BY ORDER OF THE SECRETARY OF ENERGY:



DANIEL B. PONEMAN  
Deputy Secretary

**APPENDIX A**  
**CONTROL PROCESS FOR SIGMA 14 AND SIGMA 15 NUCLEAR WEAPON DATA.**

1. IDENTIFICATION OF SIGMA 14 AND SIGMA 15 NUCLEAR WEAPON DATA (NWD).
  - a. For use control subsystems or weapon systems, the specific information which would significantly enhance an adversary's ability to achieve a deliberate unauthorized nuclear detonation or deny authorized use must be identified.
  - b. Documents containing information so identified must be categorized as Sigma 14 or Sigma 15 NWD.
2. ORAL/VISUAL COMMUNICATION.
  - a. Oral/visual communication (for example: discussions or presentations) including Sigma 14 and Sigma 15 NWD must be restricted to those persons with appropriate Sigma 14 or Sigma 15 access authorization, valid need-to-know, and DOE "Q" clearance or the equivalent, based on the appropriate, current background investigation. The NNSA UCPC will provide guidance to UCSCs on specific investigation criteria.
  - b. NNSA Use Control Program Coordinator (UCPC) approval must be obtained prior to any oral/visual dissemination of Sigma 14 NWD outside of DOE.
  - c. Distribution of Sigma 14 or Sigma 15 NWD presentations within DOE (including NNSA and other locations) will be restricted to individuals with access authorization as prescribed in paragraph 2.a.
3. RECEIPT AND TRANSMISSION. The receipt and transmission requirements found in DOE M 470.4-4A, *Information Security Manual*, dated 1-16-09 (or its successor), must be followed for Sigma 14 and Sigma 15 NWD. Additionally, only personnel that have appropriate Sigma access authorizations may be designated as agents for addressees.
  - a. Distribution of Sigma 14 or Sigma 15 NWD within DOE (including NNSA and other locations) will be restricted to individuals with appropriate Sigma 14 or Sigma 15 access authorization, valid need-to-know, and DOE "Q" clearance or the equivalent, based on the appropriate, current background investigation. The NNSA UCPC will provide guidance to UCSCs on specific investigation criteria.
  - b. Matter (for example, documents, hardware or electronic media).
    - (1) Sigma 14. Both Secret and Top Secret [Restricted Data/Formerly Restricted Data (RD/FRD)] Sigma 14 matter may only be sent via Defense Courier Service, the Department of State Courier System, transmitted over approved communications networks, facsimile, Secure Terminal Equipment (STE) equipment, or hand-carried. The NNSA UCPC must

approve the transfer of all Sigma 14 matter outside of DOE. The site UCSC must approve the hand-carry authority.

- (2) Sigma 15. Secret RD and FRD Sigma 15 matter may be sent via the U.S. Postal Service Registered Mail system or overnight service when it is critical that it be there the next day. Procedures for use of overnight services as outlined in DOE M 470.4-4A, must be adhered to. Transmission can also be accomplished by facsimile machine or hand carried. Top Secret RD and FRD Sigma 15 must be sent via the Defense Courier Service, the Department of State Courier System, transmitted over approved communications networks, or hand-carried. The site UCSC must approve the hand-carry authority.
- (3) Sigma 14 and Sigma 15 Statement of Security Assurance (formerly known as mail channel). A Statement of Security Assurance (SSA) must be established for receipt and storage of Sigma 14 and Sigma 15 matter for all Other Government Agencies (OGA) and OGA contractor facilities. It is the sender's responsibility to contact their Safeguards and Security Information Management System (SSIMS) Coordinator to ensure that one is initiated or already in place prior to sending the material. The SSIMS Coordinator will confirm the site is authorized to receive Sigma 14 or Sigma 15 matter through SSIMS. If an SSA is not in place, one must be initiated and processed using the procedures outlined in DOE M 470.4-1, *Safeguards and Security Program Planning and Management*.

- c. Electronic Transmission. Information may be sent electronically only over approved classified networks if need-to-know for that information is protected by government-approved encryption or other approved technical means, and is subject to strict transmission controls:
  - (1) Electronic Transmission of Sigma 14 Nuclear Weapon Data. Sigma 14 cannot be transmitted either inter- or intra-site electronically unless the network has been explicitly accredited for this purpose by NNSA. The following networks are not approved for Sigma 14 NWD transmittal: Enterprise Secure Network (ESN), SecureNet (SNET), or SIPRNET.
  - (2) Electronic Transmission of Sigma 15 Nuclear Weapon Data. Secret Sigma 15 NWD may be sent via ESN or SecureNet provided that Entrust [or an equivalent Designated Approving Authority (DAA) authorized method of need-to-know protection] is used, consistent with approved site security plans. This applies to both inter- and intra-site transmission. Need-to-know and access authorization of the recipient must be verified prior to transmission. Top Secret information is prohibited from being sent intra-site or inter-site via ESN or SecureNet. The use of SIPRNET is prohibited for Sigma 15 transmission.

- (3) Facsimile and Secure Terminal Equipment (STE) Transmission of Sigma 14 and Sigma 15 Nuclear Weapon Data (NWD). The use of a classified facsimile machine or point-to-point secure messages via a STE connected to an appropriately classified computer system is permitted at both Secret and Top Secret levels, provided they are consistent with approved site security plans. Access authorization and need-to-know must be verified prior to transmission.

4. HARDWARE.

- a. Classification of use control components, subcomponents and parts will be derived from an analysis of the sensitivity of the use control information revealed by the design of each component, subcomponent or part. Efforts will be made to keep to a minimum the number of components, subcomponents or parts which are classified as Sigma 15 NWD.
- b. Hardware must be designed to prevent DoD personnel from having visual access to Sigma 15 NWD during normal handling and maintenance operations.
- c. All transfers of Sigma 14 or Sigma 15 hardware outside DOE must be approved by the NNSA UCPC, with the exception of items controlled by directive schedule. These items include, but are not limited to, nuclear weapons, nuclear components, nuclear explosive-like assemblies, weapon trainers, flight test units, alteration/modification/retrofit components and kits, repair components, and tester and handling gear.
  - (1) Interface simulators or trainer hardware permanently transferred to DoD will not reveal Sigma 14 NWD and only contain that Sigma 15 NWD that is absolutely essential to support DoD operations.
  - (2) Proper access controls must be in place at receiving DoD organizations before hardware containing Sigma 15 NWD is transferred to DoD (even on a temporary basis).

5. MARKING. The following marking requirements apply to all documents and hardware containing Sigma 14 and/or Sigma 15 NWD.

- a. Documents. Basic marking requirements found in DOE M 470.4-4A, *Information Security Manual*, dated 1-16-09, must be followed for Sigma 14 and Sigma 15 NWD, with the following additions.
  - (1) Consistent with DOE M 470.4-4A, the caveat marking (for example: Sigma 14) must be placed above the category marking on the first page (whether cover page, title page, or the first page of text). For example:

### Sigma 14

**RESTRICTED DATA**

This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Unauthorized disclosure is subjected to Administrative and Criminal Sanctions.

- (2) Individual pages of a Sigma 14 and/or Sigma 15 document may be marked with the words Sigma 14 and/or Sigma 15 as appropriate. All Sigma category caveats are required to be marked per DOE M 470.4-4A.
- (3) Documents containing both Sigma 14 and Sigma 15 NWD must be marked with both Sigma 14 and Sigma 15 category caveats as prescribed in DOE M 470.4-4A. Historical documents must be properly marked as they are accessed for any reason.
- (4) Documents containing Sigma 14 NWD will carry the following additional handling instruction:

This document may not be reproduced or disseminated beyond original distribution without approval of the originator, the originating agency Use Control Site Coordinator, or the National Nuclear Security Administration Use Control Program Coordinator.

- (5) Sigma 14 and Sigma 15 documents must have unique and distinctive cover sheets specifying that appropriate Sigma 14 or Sigma 15 access authorization is required before viewing the contents.
  - (a) When a Sigma 14 or Sigma 15 document is removed from a security container, a standard form cover sheet must be applied to each document by placing it over the distinctive Sigma 14 or Sigma 15 cover sheet.
  - (b) In lieu of the two cover sheets, a locally created cover sheet or identifying label on a standard form cover sheet may be used if approved by the responsible security office.
- (6) Sigma 14 and Sigma 15 documents that also contain Sigma 1-5, 9-13, or 20 information, must be identified and marked as required in DOE O 5610.2 Chg 1, *Control of Weapon Data*, dated 9-2-86, and DOE M 457.1-1, *Control of Improvised Nuclear Device Information*, dated 8-10-06 (or their successors). Historical documents must be properly marked as they are accessed for any reason.

- b. Classified documents and materials previously marked as Sensitive Use Control Information (SUCI) must be reviewed as they are accessed, their classifications upgraded if appropriate, and documents and materials properly marked as they are accessed. Other known holders of these documents must be notified of the result of the review through the UCSC coordination process as defined in Responsibilities paragraphs 5.g.(10) and (12).
  - c. Documents and materials created before July 1, 1999, that contain Sigma 14 and/or Sigma 15 NWD must be properly marked with Sigma 14 or Sigma 15 caveats, as appropriate, as they are accessed. Other known holders of unmarked documents determined to contain Sigma 14 or Sigma 15 NWD must be notified through the UCSC coordination process as defined in Responsibilities paragraphs 5.g.(10) and (12).
  - d. A document from which Sigma 14 and/or 15 has been redacted must clearly indicate that it is a redacted version. The individual redacting the Sigma 14 and/or 15 must line through the Sigma markings, indicate that the document “No longer contains Sigma 14 and/or 15,” and annotate the document with his or her name, position title, and date. If the redaction has the potential to lower the classification level or category of the document, the individual must obtain the required classification review(s).
  - e. Marking Hardware. In lieu of marking, design laboratories and production agencies will establish instructions for handling hardware designated Sigma 14 or Sigma 15 NWD. These instructions may be tailored for special situations and programs, but in developing them, the design laboratories and production agencies must consider the cost of implementation. All shipments of Sigma 15 material will include a label or marking reading “Sigma 15” on the inner package in addition to all other required markings. No other site-specific markings may be used.
6. IN USE.
- a. Sigma 14 documents, hardware or material must be constantly attended by, or under the control of a person with the proper access authorization and need-to-know, or secured within an approved security container, vault/VTR.
  - b. The in-use requirements found in DOE M 470.4-4A must be followed for Sigma 15 NWD.
7. STORAGE REQUIREMENTS. Storage requirements found in DOE M 470.4-4A must be followed for Sigma 14 and Sigma 15 matter, with the following additions.
- a. Top Secret and Secret Sigma 14 matter may be stored in an approved security container or vault/VTR with non-Sigma 14 matter; however, Sigma 14 matter must be segregated (for example, by folder, envelope or dividers).

- b. Segregation by separate storage of Sigma 15 matter is not necessary unless required by local procedures.
  - c. Only personnel authorized Sigma 14 access may have access to approved security containers, vault/VTR and their combinations that have Sigma 14 content.
  - d. Only personnel authorized Sigma 15 access may have access to security containers, vault/VTR and their combinations that have Sigma 15 content.
8. ACCOUNTABILITY. For Sigma 14 matter, the accountability requirements found in DOE M 470.4-4A must be followed, with the following additions.
- a. Inventory. An annual inventory of Sigma 14 matter will be performed as of September 30, to support scheduled NNSA reporting requirements.
  - b. Report. A summary of the annual inventory will be provided to the NNSA UCPC for each site holding Sigma 14 matter no later than November 30. The report will consist of the following:
    - (1) name and location of the site,
    - (2) number of Sigma 14 documents and materials at the site at the end of the reporting period,
    - (3) number of Sigma 14 documents and materials entered into accountability (created or transferred in) during the reporting period, and
    - (4) number of Sigma 14 documents and materials removed from accountability (destroyed or transferred out) during the reporting period.
  - c. Permanent hardware or hardware configurations containing Sigma 14 NWD will be placed in accountability and subjected to the same access restrictions as those described in the preceding paragraphs.
  - d. For temporary hardware configurations containing Sigma 14 NWD (for example: those used during black-hat or field exercises), accountability may be waived by the site UCSC if satisfied with the compensatory security measures in place. Such temporary Sigma 14 hardware configurations must be dismantled as soon as possible after the activity is ended.
  - e. Accountable Classified Removable Electronic Media (ACREM). The ACREM requirements found in DOE M 470.4-4A must be followed for Sigma 14 and Sigma 15 matter.
9. DESTRUCTION. Sigma 14 and Sigma 15 matter must be kept to the minimum necessary. Multiple copies, obsolete matter, and classified waste must be destroyed as soon as practical. Classified matter must be destroyed in accordance with records disposition schedules, including the National Archives and Records Administration

(NARA) general records schedules, and DOE records schedule. For more detail on destruction, see requirements found in DOE M 470.4-4A.

10. INFORMATION TECHNOLOGY SYSTEMS.

- a. Sigma 14 and Sigma 15 data residing on computer systems will be protected from unauthorized access, in a manner equivalent to the controls in place for the protection of Sigma 14 and Sigma 15 matter.
- b. NNSA must explicitly accredit any computer network on which Sigma 14 NWD is stored, processed or transmitted. Servers and workstations associated with computer networks accredited by NNSA for Sigma 14 NWD must reside within vault-type rooms (VTR) or alarmed, GSA-approved repositories. The VTR or repository must be approved for the appropriate classification level (Secret or Top Secret), and access to the VTR or repository must be limited to personnel with Sigma 14 access authorization.
- c. It is acceptable to maintain Sigma 15 access control information on classified network computer systems in a manner where the member names may be visible to other authorized users of the network, provided this does not result in revealing any other information identified as personally identifiable information to the general users of that network.
- d. Controls will be enacted, where required, to be consistent with those in place for paper documents. Removable electronic media containing Sigma 14 or Sigma 15 NWD must be externally marked to indicate that they contain Sigma 14 or Sigma 15 NWD, or in a large array where it is not physically practical to externally mark electronic media, electronic accountability controls are acceptable provided removal media is externally marked as containing Sigma 14 or Sigma 15 when removed from the device for destruction or storage.
- e. Specific baseline requirements contained in DOE M 205.1-4, *National Security System*, dated 3-8-07, (or its successor) must be followed for Sigma 14 and Sigma 15 NWD.



**APPENDIX B**  
**PROCEDURES FOR RESTRICTING ACCESS AND LIMITING DISTRIBUTION OF**  
**SIGMA 14 AND SIGMA 15 NUCLEAR WEAPON DATA**

1. WITHIN THE DEPARTMENT OF ENERGY.

- a. Individuals within DOE/NNSA must have Sigma 14 or Sigma 15 access authorizations before they can be given access to Sigma 14 or Sigma 15 NWD.
- b. Requests for access to Sigma 14 or Sigma 15 NWD by DOE/NNSA HQ personnel and non-NSE sites must be made using DOE F 5631.20, *U.S. Department of Energy Request for Visit or Access Approval*. The visit request must be submitted at least 15 working days before the date of a one-time visit or the first day of a recurring visit. Detail of the requirements can be found in the DOE M 470.4-1, *Safeguards and Security Program Planning and Management*, dated 8-26-05.
- c. Requests for access to Sigma 14 or Sigma 15 NWD within the NSE will be made using procedures established by and between the individual Use Control Site Coordinators.
- d. Each DOE site that handles Sigma 14 or Sigma 15 nuclear weapon data (NWD) must nominate a Use Control Site Coordinator (UCSC) to be responsible for ensuring site compliance with the procedures in this Order; including approving Sigma 14 and Sigma 15 access authorizations at the site. The nominee must have sufficient stature in the organization to ensure that effective methods for implementing these procedures are established for use at the site.
- e. UCSC nominees will be confirmed in writing by NNSA, and a current list of UCSCs will be maintained at Headquarters and periodically distributed to the UCSCs.
- f. The UCSCs must determine whether an inadvertent disclosure of Sigma 14 or Sigma 15 NWD to a "Q-cleared" individual (who has not been formally authorized for access to that information) should be reported using the incident reporting procedures contained in DOE M 470.4-1 Chg 1, *Safeguards and Security Program Planning and Management*, dated 8-26-05.
  - (1) If the UCSC determines that the disclosure is not reportable, then the disclosure will be documented via a memorandum to file. The memorandum will address the basic facts and circumstances. Records shall be maintained for a minimum of two years for Secret information and seven years for Top Secret information.
  - (2) In the event that the UCSC determines the disclosure to be reportable, the UCSC will provide that information to the site's Security office for their evaluation and will participate in any further inquiry into inadvertent

Sigma 14 or Sigma 15 disclosure. Factors to be considered in any decisions to implement such disciplinary action include, but are not limited to:

- (a) need-to-know of individuals to whom inadvertent disclosure was made;
  - (b) status of Sigma 14 or Sigma 15 access authorization of individuals to whom inadvertent disclosure was made;
  - (c) degree of negligence displayed by the individuals responsible for the inadvertent disclosure (willful or intentional, repeated, malicious, etc.); and
  - (d) level of “due diligence” demonstrated by the individual responsible for the inadvertent disclosure.
- g. Each site that handles Sigma 14 and/or Sigma 15 NWD must maintain current and historical lists and/or databases of all site personnel authorized Sigma 14 and/or Sigma 15 access. Disposition of historical records will be specified in the site’s records disposition schedule.
- (1) When site personnel going to other locations require Sigma 14 or Sigma 15 access, the UCSCs of the affected sites will coordinate access approvals.
  - (2) NNSA HQ utilizes the NNSA Weapon Data Access Control System (WDACS) to record an individual’s access at Nuclear Security Enterprise (NSE) locations.
- h. Individuals within DOE must have Sigma 14 or Sigma 15 access authorizations before they can be given access to Sigma 14 or Sigma 15 NWD.
- i. Requests for access to Sigma 14 or Sigma 15 NWD must be made consistent with each site’s policy.
- j. Individuals must complete Sigma 14 and Sigma 15 training prior to initial access being granted and periodically thereafter. The frequency of training will be set by the site UCSC. However, individual refresher training must be completed at least every two years.
- k. Individuals with access to Sigma 14 or Sigma 15 are “covered individuals” under 10 CFR 709 and are subject to a CI evaluation, including a random polygraph examination.
- (1) Individuals must either sign a “Polygraph Notification Form” for Sigma 14 and Sigma 15 access or create an equivalent electronic

acknowledgement. (An example of a Polygraph Form can be obtained through the Nuclear Weapon Surety and Quality Division.) Individuals are required to sign and date the Polygraph Notification Form only once. The form must be maintained as a permanent record at the site.

- (2) Should an individual refuse to complete the CI evaluation, DOE must deny that covered person access to classified information and materials protected under 10 CFR part 709.3 (b) and (c) and may take other actions consistent with the denial of access, including administrative review of access authorization under 10 CFR part 710.
1. Authorization for access to Sigma 14 or Sigma 15 NWD may not exceed 1 year, although reauthorization is allowed.
2. OUTSIDE THE DEPARTMENT OF ENERGY.
    - a. Individuals outside DOE must have Sigma 14 or Sigma 15 access authorizations before they can be given access to Sigma 14 or Sigma 15 NWD.
    - b. Requests for access to Sigma 14 or Sigma 15 NWD must be made using DOE F 5631.20, *U.S. Department of Energy Request for Visit or Access Approval*. The visit request must be submitted at least 15 working days before the date of a one-time visit or the first day of a recurring visit. Detail of the requirements can be found in the DOE M 470.4-1, *Safeguards and Security Program Planning and Management*, dated 8-26-05.
      - (1) The National Aeronautics and Space Administration (NASA) may submit Sigma 14 or 15 requests on NASA Form 405, *Request for Access Approval*.
      - (2) The Nuclear Regulatory Commission (NRC) may submit Sigma 14 or 15 requests on NRC Form 277, *Request for Access*.
    - c. Requests for access to Sigma 14 and/or Sigma 15 NWD from DoD personnel must have prior approval by the Office of the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD/NCB) or its successor organization. Such approval will be provided for specific purposes or projects and will be contingent upon confirmation that the personnel have DOE "Q" clearance or equivalent authorizations based on the appropriate, current background investigation and valid need-to-know. The NNSA UCPC will provide guidance to UCSCs on specific investigation criteria.
    - d. The following provisions also apply to individuals outside DOE.
      - (1) Authorizations for access to Sigma 14 or Sigma 15 NWD may not exceed 1 year, although reauthorization is allowed.

- (a) Continuing (exceeding 30 days) or blanket access to Sigma 14 or Sigma 15 NWD is allowed only in special situations and as justified in writing to the NNSA Use Control Program Coordinator (UCPC). Certain positions (billets) within DoD may be designated for continuing access to Sigma 14 or Sigma 15 upon agreement between the ATSD/NCB and the Deputy Administrator for Defense Programs.
  - (b) Sponsoring organizations are required to inform the NNSA UCPC as access needs change.
- (2) Except for DoD personnel in designated Sigma 14 or Sigma 15 billets, access to Sigma 14 or Sigma 15 NWD by personnel outside DOE will be on a case-by-case basis. Some agencies and/or offices may require special procedures (these will be handled by the NNSA UCPC in concert with the concerned agencies and/or offices).

e. Distribution Limitations.

- (1) Documents containing Sigma 15 NWD may be transferred to agencies outside DOE, once it is determined to be absolutely essential to accomplish required tasks. Transfer must be conducted using currently established procedures. These procedures include, but are not limited to, confirming that receiving individuals have the appropriate access authorization via the NNSA WDACS and ensuring use of authorized channels and/or facilities by querying SSIMS. To ensure compliance with the latest procedures, contact the Nuclear Weapon Surety and Quality Division.
- (2) Dissemination of any Sigma 14 NWD outside DOE must be approved by the NNSA UCPC and requires the recipient to maintain accountability, storage, and handling procedures consistent with the requirements set forth in this Order. These requirements preclude further dissemination of NWD without approval from the UCPC and restrict NWD access to those individuals authorized by the UCPC.

**CONTRACTOR REQUIREMENTS DOCUMENT**  
**DOE O 452.7, PROTECTION OF USE CONTROL VULNERABILITIES AND DESIGNS**

This Contractor Requirements Document (CRD) specifies requirements applicable to Department of Energy (DOE) contractors, including National Nuclear Security Administration (NNSA) contractors, whose employees have access to Sigma 14 and/or Sigma 15 nuclear weapon data (NWD).

Regardless of the performer of the work, the contractor is responsible for compliance with the requirements of this CRD. Affected site/facility management contractors are responsible for flowing down the requirements of this CRD to subcontractors at any tier to the extent necessary to ensure compliance with the requirements.

A violation of the provisions of the CRD relating to the safeguarding or security of Restricted Data or other classified information may result in a civil penalty pursuant to subsection a. of section 234B of the Atomic Energy Act of 1954 (42 U.S.C. 2282b). The procedures for the assessment of civil penalties are set forth in Title 10, *Code of Federal Regulations* (CFR), Part 824, "Procedural Rules for the Assessment of Civil Penalties for Classified Information Security Violations."

All contractors with this CRD incorporated in their contracts must comply with the following requirements.

1. **USE CONTROL SITE COORDINATOR.** Contractors that handle Sigma 14 or Sigma 15 nuclear weapon data (NWD) must nominate a Use Control Site Coordinator (UCSC) to be responsible for ensuring site compliance with the procedures in this CRD; including approving Sigma 14 and Sigma 15 access authorizations at the site. The UCSC must have sufficient stature in the organization to ensure that effective methods for implementing these procedures are established and are in use at that contractor site. UCSC nominees will be confirmed in writing by NNSA. The UCSC must:
  - a. Coordinate with the Use Control Effectiveness Committee and knowledgeable classification authorities to identify and categorize Sigma 14 and Sigma 15 NWD consistently.
  - b. Coordinate site security plans with local onsite organizations.
  - c. Ensure that personnel authorized Sigma 14 or Sigma 15 access have sufficient training, awareness and are knowledgeable with respect to the procedures for protecting such information.
  - d. The UCSC may delegate Sigma 14 and Sigma 15 access authorization responsibilities to others at the site. This delegation must be in writing.
    - (1) The UCSC can designate a maximum of two alternates at each site for Sigma 14 authorizations, if required.

- (2) In addition, the NNSA UCPC can serve as a backup point of contact for Sigma 14 actions at contractor sites when needed.

2. IDENTIFICATION OF SIGMA 14 AND SIGMA 15 NUCLEAR WEAPON DATA.

- a. For use control subsystems or weapon systems, the specific information which would significantly enhance an adversary's ability to achieve a deliberate unauthorized nuclear detonation or deny authorized use must be identified.
- b. Documents containing information so identified must be categorized as Sigma 14 or Sigma 15 NWD.

3. ACCESS AND CONTROL.

- a. Access to Sigma 14 and Sigma 15 NWD may be granted to individuals with valid need-to-know and DOE "Q" clearance or the equivalent, based on the appropriate, current background investigation. The NNSA Use Control Program Coordinator (UCPC) will provide guidance to Use Control Site Coordinators (UCSCs) on specific investigation criteria.
- b. All Sigma 14 and Sigma 15 NWD are categorized as either Restricted Data (RD) or Formerly Restricted Data (FRD) and classified as either Top Secret or Secret. For specific classification guidance, see the Joint DOE/DoD Topical Classification Guide for Nuclear Weapon Use Control (TCG – UC-3), or its successor.
  - (1) Classified documents and materials previously marked as Sensitive Use Control Information (SUCI) must be reviewed as they are accessed, their classifications upgraded if appropriate, and documents and materials properly marked as they are accessed. Other known holders of these documents must be notified of the result of the review through the Use Control Site Coordinator (UCSC) coordination process as follows:
    - (a) Coordinate with UCSCs at other sites as required.
    - (b) Notify UCSCs at sites holding copies of documents not marked but determined to contain Sigma 14 or Sigma 15 NWD.
  - (2) Documents and materials created before July 1, 1999, that contain Sigma 14 and/or Sigma 15 NWD must be properly marked with Sigma 14 or Sigma 15 caveats, as appropriate, as they are accessed. Other known holders of unmarked documents determined to contain Sigma 14 or Sigma 15 NWD must be notified through the (UCSC) coordination process as follows:
    - (a) Coordinate with UCSCs at other sites as required.

- (b) Notify UCSCs at sites holding copies of documents not marked but determined to contain Sigma 14 or Sigma 15 NWD.
- c. Technical discussion or distribution of Sigma 14 or Sigma 15 NWD within DOE (including NNSA and other locations) will be restricted to individuals with access authorization as prescribed in paragraph 3.a. of this CRD.
- d. Dissemination of any Sigma 14 NWD outside DOE must be approved by the NNSA UCPC. Dissemination of Sigma 14 and Sigma 15 NWD outside DOE must be limited to what is absolutely essential to accomplish required tasks.
- e. Classification of use control components, subcomponents and parts will be derived from an analysis of the sensitivity of the use control information revealed by the design of each component, subcomponent or part. Efforts will be made to keep to a minimum the number of components, subcomponents or parts which are classified as Sigma 15 NWD.
- f. Hardware should be designed to prevent DoD personnel from having visual access to Sigma 15 NWD during normal handling and maintenance operations.
- g. The contractor must maintain current and historical lists and/or databases of all site personnel authorized Sigma 14 or Sigma 15 access. Disposition of historical records will be specified in the site records disposition schedule.
  - (1) All Sigma 14 or Sigma 15 access authorizations must be approved by the UCSC or designated alternate.
  - (2) When site personnel going to other locations require either Sigma 14 or Sigma 15 access, the UCSCs of the respective sites must coordinate access approvals. A site's UCSC may delegate authority to the site's badge office for verifying Sigma 14 or Sigma 15 access authorization in outgoing classified visit request.
- h. The contractor must deny access to Sigma 14 and/or Sigma 15 NWD to individuals from outside DOE unless access has been requested from and approved by the Nuclear Weapon Surety and Quality Division.
  - (1) Such requests for access to Sigma 14 or Sigma 15 NWD must be made using DOE F 5631.20, *U.S. Department of Energy Request for Visit or Access Approval*.
    - (a) The visit request must be submitted at least 15 working days before the date of a one-time visit or the first day of a recurring visit. Detail of the requirements is found in DOE M 470.4-1, *Safeguards and Security Program Planning and Management*, dated 8-26-05 with change 1 dated 3-7-06.

- (b) Should an individual refuse to complete the CI evaluation, contractors must deny that covered person access to classified information and materials protected under 10 CFR part 709.3 (b) and (c) and may take other actions consistent with the denial of access, including administrative review of access authorization under 10 CFR part 710.
  - (c) Authorization for access to Sigma 14 or Sigma 15 NWD may not exceed 1 year, although reauthorization is allowed.
- (2) Requests for access to Sigma 14 and/or Sigma 15 NWD from Department of Defense (DoD) personnel must have prior approval by the Office of the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD/NCB) or its successor organization. The DoD requests will only be processed at NNSA HQ, will be for specific purposes or projects, and will be contingent upon confirmation that the personnel have DOE "Q" clearances or comparable authorizations based on the appropriate, current background investigation and valid need-to-know. The NNSA UCPC will provide guidance to UCSCs on specific investigation criteria. The following additional provisions apply.
- (a) Continuing (exceeding 30 days) or blanket access to Sigma 14 or Sigma 15 NWD is allowed only in special situations and as justified in writing to the NNSA UCPC. The sponsoring organization is required to inform the site UCSC as access needs change. Certain positions (billets) within DoD may be designated for continuing access to Sigma 14 or Sigma 15 NWD upon agreement between the Office of the Assistant to the Secretary of Defense for Nuclear and Chemical and Biological Defense Programs (ATSD/NCB) and the Deputy Administrator for Defense Programs.
  - (b) Sigma 14 NWD must not be transmitted to agencies outside DOE without explicit approval of the NNSA UCPC. The special circumstances and time periods for such transfers must be established by the Deputy Administrator for Defense Program.
  - (c) Documents containing Sigma 15 NWD may be transferred to agencies outside DOE by currently established procedures. These procedures include, but are not limited to, confirming that receiving individuals have the appropriate access authorization via the NNSA WDACS and ensuring use of authorized channels and/or facilities by querying SSIMS. To ensure compliance with the latest procedure, contractors will contact the Nuclear Weapon Surety and Quality Division.

- (d) Dissemination of any Sigma 14 NWD outside DOE must be approved by the NNSA UCPC and requires the recipient to maintain accountability, storage, and handling procedures consistent with the requirements set forth in this CRD. These requirements preclude further dissemination of NWD without approval from the NNSA UCPC.
4. DOCUMENTS AND ACCOUNTABILITY. Contractors must maintain a formal accountability system for documents containing Sigma 14 matter. The accountability requirements found in the CRD to DOE M 470.4-4A must be followed, with the following additions.
- a. The number of documents and items of hardware containing Sigma 14 or Sigma 15 NWD must be kept to the minimum necessary for operational requirements.
  - b. An annual inventory of Sigma 14 matter will be performed as of September 30, to support scheduled NNSA reporting requirements.
  - c. An inventory report of the annual inventory will be provided to the NNSA UCPC for each site holding Sigma 14 matter no later than November 30. The report will consist of the following:
    - (1) name and location of the site,
    - (2) number of Sigma 14 documents and materials at the site at the end of the reporting period,
    - (3) number of Sigma 14 documents and materials entered into accountability (created or transferred in) during the reporting period, and
    - (4) number of Sigma 14 documents and materials removed from accountability (destroyed or transferred out) during the reporting period.
  - d. Permanent hardware or hardware configurations containing Sigma 14 NWD will be placed in accountability and subjected to the same access restrictions as those described in the preceding paragraphs.
  - e. For temporary hardware configurations containing Sigma 14 NWD (for example: those used during black-hat or field exercises), accountability may be waived by the site UCSC if satisfied with the compensatory security measures in place. Such temporary Sigma 14 hardware configurations must be dismantled as soon as possible after the activity is ended.
  - f. Accountable Classified Removable Electronic Media (ACREM). The ACREM requirements found in DOE M 470.4-4A must be followed for Sigma 14 and Sigma 15 matter.

5. ORAL AND VISUAL COMMUNICATIONS.

- a. Contractors must ensure oral/visual communications (for example: discussions or presentations) including Sigma 14 and Sigma 15 NWD must be restricted to those persons with appropriate Sigma 14 or Sigma 15 access authorization, valid need-to-know, and DOE "Q" clearance or the equivalent, based on the appropriate, current background investigation. The NNSA UCPC will provide guidance to UCSCs on specific investigation criteria.
- b. NNSA UCPC approval must be obtained prior to any oral/visual dissemination of Sigma 14 NWD outside of DOE/NNSA.

6. RECEIPT AND TRANSMISSION. The receipt and transmission requirements found in the CRD of DOE M 470.4-4A, *Information Security Manual*, dated 1-16-09 (or its successor), must be followed for Sigma 14 and Sigma 15 NWD. Additionally, only personnel that have appropriate Sigma access authorizations may be designated as agents for addressees.

a. Matter (for example, documents, hardware or electronic media).

- (1) Sigma 14. Both Secret and Top Secret [Restricted Data/Formerly Restricted Data (RD/FRD)] Sigma 14 matter may only be sent via Defense Courier Service, the Department of State Courier System, transmitted over approved communications networks, facsimile, Secure Telephone Equipment (STE), or hand-carried. The NNSA UCPC must approve the transfer of all Sigma 14 matter outside of DOE. The site Use Control Site Coordinator (UCSC) must approve the hand-carry authority.
- (2) Sigma 15. Secret RD and FRD Sigma 15 matter may be sent via the U.S. Postal Service Registered Mail system or overnight service when it is critical that it be there the next day. Procedures for use of overnight services as outlined in DOE M 470.4-4A, must be adhered to. Transmission can also be accomplished by facsimile machine or hand-carried. Top Secret RD and FRD Sigma 15 must be sent via the Defense Courier Service, the Department of State Courier System, transmitted over approved communications networks, or hand-carried. The site UCSC must approve the hand-carry authority.
- (3) Sigma 14 and Sigma 15 Statement of Security Assurance (formerly known as mail channel). A Statement of Security Assurance (SSA) must be established for receipt and storage of Sigma 14 and Sigma 15 matter for all Other Government Agencies (OGA) and OGA contractor facilities. It is the sender's responsibility to contact their Safeguards and Security Information Management System (SSIMS) Coordinator to ensure that one is initiated or already in place prior to sending the material. The SSIMS Coordinator will confirm the site is authorized to receive Sigma 14 or Sigma 15 matter through SSIMS. If an SSA is not in place, one must be

initiated and processed using the procedures outlined in DOE M 470.4-1, *Safeguards and Security Program Planning and Management*.

- b. Electronic Transmission. Information may be sent electronically only over approved classified networks if need-to-know for that information is protected by government-approved encryption or other approved technical means, and is subject to strict transmission controls:
- (1) Electronic Transmission of Sigma 14 Nuclear Weapon Data. Sigma 14 cannot be transmitted either inter- or intra- site electronically unless the network has been explicitly accredited for this purpose by NNSA. The following networks are not approved for Sigma 14 NWD transmittal: Enterprise Secure Network (ESN), SecureNet, or SIPRNET.
  - (2) Electronic Transmission of Sigma 15 Nuclear Weapon Data. Secret Sigma 15 NWD may be sent via ESN or SecureNet provided that Entrust [or an equivalent Designated Approving Authority (DAA) authorized method of need-to-know protection] is used, consistent with approved site security plans. This applies to both inter- and intra-site transmission. Need-to-know and access authorization of the recipient must be verified before transmission. Top Secret information must not be sent intra-site or inter-site via ESN or SecureNet. The use of SIPRNET is prohibited for Sigma 15 transmission.
  - (3) Facsimile and Secure Terminal Equipment (STE) Transmission of Sigma 14 and Sigma 15 Nuclear Weapon Data (NWD). The use of a classified facsimile machine or point-to-point secure messages via a STE connected to an appropriately classified computer system is permitted at both Secret and Top Secret levels, provided they are consistent with approved site security plans. Access authorization and need-to-know must be confirmed prior to transmitting NWD.

7. HARDWARE.

- a. Hardware must be designed to prevent DoD personnel from having visual access to Sigma 15 NWD during normal handling and maintenance operations.
- b. All transfers of Sigma 14 or Sigma 15 hardware outside DOE must be approved by the NNSA UCPC, with the exception of items controlled by directive schedule. These items include, but are not limited to, nuclear weapons, nuclear components, nuclear explosive-like assemblies, weapon trainers, flight test units, alteration/modification/retrofit components and kits, repair components, and tester and handling gear.
  - (1) Interface simulators or trainer hardware permanently transferred to DoD will not reveal Sigma 14 NWD and only contain that Sigma 15 NWD that is absolutely essential to support DoD operations.

- (2) Proper access controls must be in place at receiving DoD organizations before hardware containing Sigma 15 NWD is transferred to DoD (even on a temporary basis).

8. **MARKING.** The following marking requirements apply to all documents and hardware containing Sigma 14 and/or Sigma 15 NWD.

- a. **Documents.** Basic marking requirements found in DOE M 470.4-4A, *Information Security Manual*, dated 1-16-09, must be followed for Sigma 14 and Sigma 15 NWD, with the following additions.

- (1) Consistent with DOE M 470.4-4A, the caveat marking (for example: Sigma 14) must be placed above the category marking on the first page (whether cover page, title page, or the first page of text). For example:

Sigma 14

RESTRICTED DATA

This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Unauthorized disclosure is subjected to Administrative and Criminal Sanctions.

- (2) Individual pages of a Sigma 14 and/or Sigma 15 document may be marked with the words Sigma 14 and/or Sigma 15 as appropriate. All Sigma category caveats are required to be marked per DOE M 470.4-4A.
- (3) Documents containing both Sigma 14 and Sigma 15 NWD must be marked with both Sigma 14 and Sigma 15 caveats. All Sigma category caveats are required to be marked per DOE M 470.4-4A. Historical documents must be properly marked as they are accessed for any reason.
- (4) Documents containing Sigma 14 NWD will carry the following additional handling instruction:

This document may not be reproduced or disseminated beyond original distribution without approval of the originator, the originating agency Use Control Site Coordinator, or the National Nuclear Security Administration Use Control Program Coordinator.

- (5) Sigma 14 and Sigma 15 documents must have unique and distinctive cover sheets specifying that appropriate Sigma 14 or Sigma 15 access authorization is required before viewing the contents.
  - (a) When a Sigma 14 or Sigma 15 document is removed from a security container, a standard form cover sheet must be applied to

each document by placing it over the distinctive Sigma 14 or Sigma 15 cover sheet.

- (b) In lieu of the two cover sheets, a locally created cover sheet or identifying label on a standard form cover sheet may be used if approved by the responsible security office.
- (6) Sigma 14 and Sigma 15 documents that also contain Sigma 1-5, 9-13, or 20 information, must be identified and marked as required in DOE O 5610.2 Chg 1, *Control of Weapon Data*, dated 9-2-86, and DOE M 457.1-1, *Control of Improvised Nuclear Device Information*, dated 8-10-06 (or their successors). Historical documents must be properly marked as they are accessed for any reason.
- (7) A document from which Sigma 14 and/or 15 has been redacted must clearly indicate that it is a redacted version. The individual redacting the Sigma 14 and/or 15 must line through the Sigma markings, indicate that the document “No longer contains Sigma 14 and/or 15,” and annotate the document with his or her name, position title, and date. If the redaction has the potential to lower the classification level or category of the document, the individual must obtain the required classification review(s).

b. Hardware.

In lieu of marking, design laboratories and production agencies will establish instructions for handling hardware designated for Sigma 14 or Sigma 15 NWD. These instructions may be tailored for special situations and programs, but in developing them, the design laboratories/production agencies must consider the cost of implementation. All shipments of Sigma 15 material will include a label or marking reading “Sigma 15” on the inner package in addition to all other required markings. No other site-specific markings may be used.

9. IN USE.

- a. Sigma 14 NWD must not be left unattended outside an approved security container or vault/vault-type room (VTR). Sigma 14 documents, hardware or material must be constantly attended by, or under the control of a person with the proper access authorization and need-to-know, or secured within an approved security container, vault/VTR.
- b. The in-use requirements found in DOE M 470.4-4A must be followed for Sigma 15 NWD.

10. STORAGE REQUIREMENTS. Storage requirements found in DOE M 470.4-4A must be followed for Sigma 14 and Sigma 15 matter, with the following additions.

- a. Top Secret and Secret Sigma 14 matter may be stored in an approved security container or vault/VTR with non-Sigma 14 matter; however, Sigma 14 matter must be segregated (for example, by folder, envelope or dividers).
  - b. While restrictions on Sigma 15 NWD are similar to those for Sigma 14 NWD, Sigma 15 NWD may be commingled with other classified matter. Segregation by separate storage of Sigma 15 documents is not necessary unless required by local procedures.
  - c. Only personnel authorized Sigma 14 access may have access to approved security containers, vault/VTR and their combinations that have Sigma 14 content.
  - d. Only personnel authorized Sigma 15 access may have access to security containers, vault/VTR and their combinations that have Sigma 15 content.
  - e. Personnel authorized for Sigma 15 access only must obtain Sigma 14 authorizations as previously described to be granted access to Sigma 14 containers and information
11. DESTRUCTION. Sigma 14 and Sigma 15 matter must be kept to the minimum necessary. Multiple copies, obsolete matter, and classified waste must be destroyed as soon as practical. Classified matter must be destroyed in accordance with records disposition schedules, including the National Archives and Records Administration (NARA) general records schedules, and DOE records schedule. For more detail on destruction, see requirements found in the CRD to DOE M 470.4-4A.
12. INFORMATION TECHNOLOGY SYSTEMS.
- a. Sigma 14 and Sigma 15 data residing on computer systems will be protected from unauthorized access, in a manner equivalent to the controls in place for the protection of Sigma 14 and Sigma 15 matter.
  - b. Sigma 14 cannot be transmitted either inter- or intra- site electronically unless the network has been explicitly accredited for this purpose by NNSA. The following networks are not approved for Sigma 14 NWD transmittal: Enterprise Secure Network (ESN), SecureNet, or SIPRNET.
  - c. Secret Sigma 15 NWD may be sent via ESN or SecureNet provided that Entrust [or an equivalent DAA-authorized method of need-to-know protection] is used, consistent with approved site security plans. This applies to both inter- and intra-site transmission. Need-to-know and access authorization of the recipient must be verified before transmission. Top Secret information must not be sent intra-site or inter-site via ESN or SecureNet. The use of SIPRNET is prohibited for Sigma 15 transmission.
  - d. It is acceptable to maintain a list of persons who have authorized access to Sigma 15 information on classified network computer systems in a manner where

the names may be visible to other authorized users of the network, provided this does not result in revealing any other information personally identifiable information to the general users of that network.

- e. Controls will be enacted, where required, to be consistent with those in place for paper documents. Removable electronic media containing Sigma 14 or Sigma 15 NWD must be externally marked to indicate that they contain Sigma 14 or Sigma 15 NWD, or in a large array where it is not physically practical to externally mark electronic media, electronic accountability controls are acceptable provided removal media is externally marked as containing Sigma 14 or Sigma 15 when removed from the device for destruction or storage.
- f. Specific baseline requirements contained in DOE M 205.1-4, *National Security System*, dated 3-8-07, (or its successor) must be followed for Sigma 14 and Sigma 15 NWD.