

**ORDER**

**DOE O 452.8**

**Approved: 7-21-2011**

# **CONTROL OF NUCLEAR WEAPON DATA**

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**U.S. DEPARTMENT OF ENERGY  
National Nuclear Security Administration  
Office of Nuclear Weapon Surety and Quality**



## CONTROL OF NUCLEAR WEAPON DATA

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1. PURPOSE.

This Department of Energy (DOE) Order establishes the policy, process and procedures for control of nuclear weapon data (NWD) to ensure that dissemination of the information is restricted to individuals with appropriate clearances, approved authorization and valid need-to-know in keeping with the Atomic Energy Act (as amended) stipulation of ensuring common defense and security.

2. CANCELLATION.

This Order cancels DOE O 5610.2, *Control of Weapon Data*, dated 8-1-80 with Chg 1 dated 9-2-86. 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contract unless and until the contract or regulatory commitment is modified to either eliminate requirements that are no longer applicable or substitute a new set of requirements.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 NWD (e.g., 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 NWD. DOE site office managers, in coordination with the cognizant site Contracting Officer, may tailor portions of the CRD in the contract as needed.

c. Equivalencies and Exemptions for DOE O 452.8.

- (1) Requests for equivalencies and exemptions to this Order must be in memorandum form and sent to the NNSA Office of Nuclear Weapon Surety and Quality, Office of Stockpile Management, Defense Programs.
  - (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 do not require access to NWD and are exempted: 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 Human Capital Management, Office of Management, 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 (E.O.) 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. Because of the sensitivity, access to NWD must be limited to those who have the appropriate clearance and a valid need-to-know to perform or assist in a lawful and authorized government function.

A violation of the provisions of this Order relating to the safeguarding or security of Restricted Data or Formerly Restricted Data may result in a civil penalty pursuant to 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."

The DOE (including NNSA) is responsible for establishing policy concerning the control and dissemination of Restricted Data (RD) and, jointly with the Department of Defense (DoD), Formerly Restricted Data (FRD) to ensure the common defense and security. This Order pertains to the access, control and dissemination of RD and FRD only in the atomic weapons program herein referred to as NWD.

- a. This Order uses DOE M 470.4-1, Chg 2, *Safeguards and Security Program Planning and Management*, dated 10-20-10; DOE O 471.6, *Information Security*, dated 6-20-11; and NNSA Policy Letter NAP 70.4, *Information Security*, dated 7-2-10, as baseline requirements for the protection of classified information. This Order specifies additional requirements for the protection and security of NWD. Notify NNSA Office of Nuclear Weapon Surety and Quality of any conflicts between this Order and the DOE Manuals or the NNSA NAPs. The Office of Nuclear Weapon Surety and Quality will continue to work closely with the DOE Office of Health, Safety, and Security (DOE/HSS) and the NNSA Office of Defense Nuclear Security in the establishment of policies and procedures that protect and control NWD.
- b. NWD Sigma categories were established to provide additional need-to-know protection of specific types of NWD. This Order provides for:
  - (1) Disestablishment of obsolete NWD categories formerly known as Sigmas 1-5 and Sigmas 9-13.
    - (a) Appendix A, *Control of Nuclear Weapon Data*, provides the framework for the protection of NWD.
    - (b) Appendix C, *Obsolete NWD Categories*, provides historical information on the NWD Sigma categories disestablished by this Order.
  - (2) Establishment of a new NWD category known as Sigma 18, *Control of Complete Designs*, that provides protection of past and present U.S. nuclear weapons, nuclear devices and weapon designs. Appendix B, *Control of Complete Designs*, provides details for the protection of Sigma 18 NWD.
  - (3) Sustainment of Sigma 14 and Sigma 15, *Protection of Use Control Vulnerabilities and Designs* and Sigma 20, *Improvised Nuclear Device Information*.
    - (a) Specific details on the management of Sigma 14 and Sigma 15 NWD are found in DOE O 452.7, *Protection of Use Control Vulnerabilities and Designs*, dated 5-14-10.
    - (b) Specific details on the management of Sigma 20 NWD are found in DOE O 457.1, *Nuclear Counterterrorism*, dated 2-7-06, and DOE M 457.1-1, *Control of Improvised Nuclear Device Information*, dated 8-10-06.
- c. All newly created NWD or existing NWD that has had the content modified must be reviewed and appropriately marked.

- d. Unmodified legacy NWD created under previous DOE Directives does not require review or remarking when accessed. NWD must be reviewed and brought up to current marking standards whenever it is released. If the NWD is determined to contain Sigma 14, Sigma 15, Sigma 18 and/or Sigma 20, it must be appropriately remarked with applicable Sigma markings prior to transmission or distribution.
- e. Government and non-Government personnel of other nations may be granted access to United States Government NWD only as permitted under agreements for cooperation and authorized by statutory determinations pursuant to Sections 123, 141 and 144 of the Atomic Energy Act of 1954 (as amended).
- f. All documents containing NWD that were/are originated in the DOE or NNSA and transmitted to the DoD, must also be marked Critical Nuclear Weapon Design Information (CNWDI), if appropriate, using criteria established by the joint DOE/DoD classification guides.
- g. Only individuals who have appropriate clearance and valid need-to-know are permitted access to NWD.
  - (1) Authorization for personnel to access any Sigma 14, Sigma 15 or Sigma 20 information will only be granted to individuals, not to organizations, functional groups, or position assignments (e.g., access is not granted to all members of “XYZ Division” or to all “engineers”).
  - (2) Authorization for Q-cleared personnel within the NSE to access Sigma 18 NWD is presumed with their association to the NSE and a need-to-know. Within the NSE, Sigma 18 is not a managed program. NNSA Headquarters (HQ) manages access to Sigma 18 for Non-NSE, DoD and OGA personnel.
  - (3) Authorization for non-NSE personnel to access Sigma 18 NWD will be granted in accordance with requirements of this Order and documented in the Weapon Data Access Control System (WDACS) within 5 working days after authorization is granted. Visits outside the NSE will not be documented in WDACS.
  - (4) Only visits to NSE sites by non-NSE personnel will be documented in WDACS.
  - (5) Authorization for non-DOE personnel to access NWD category information will be granted in accordance with the requirements of this Order.

## 5. RESPONSIBILITIES.

- a. Administrator, NNSA.

- (1) Administers all policies and procedures concerning the protection and control of that portion of Restricted Data or Formerly Restricted Data known as NWD, in accordance with the requirements in Sections 123, 141 and 144 of the Atomic Energy Act of 1954, as amended,
  - (2) Administers the exchange of NWD with other nations as permitted under agreements for cooperation and as authorized by statutory determinations pursuant to Sections 123, 141 and 144 of the Atomic Energy Act of 1954, as amended.
  - (3) May verbally grant access to Sigma 18 NWD, as needed, ensuring that the NNSA NWD Program Coordinator completes follow-up actions. For details on verbally granting access to Sigma 14 and Sigma 15, refer to DOE O 452.7.
- b. Deputy Administrator for Defense Programs, NNSA.
- (1) Protects and controls access to that portion of Restricted Data or Formerly Restricted Data known as NWD, and ensures that the information is protected and access is controlled in accordance with the requirements in Sections 123, 141 and 144 of the Atomic Energy Act of 1954, as amended.
  - (2) May verbally grant access to Sigma 18 NWD, as needed, ensuring that the NNSA NWD Program Coordinator completes follow-up actions. For details on verbally granting access to Sigma 14 and Sigma 15, refer to DOE O 452.7.
  - (3) Ensures strict adherence to all policies and procedures concerning the exchange of NWD with other nations, as permitted under agreements for cooperation and as authorized by statutory determinations pursuant to Sections 123, 123 and 144 of the Atomic Energy Act of 1954, as amended.
- c. Deputy Under Secretary for Counterterrorism. Provides policy and guidance on Departmental activities related to nuclear counterterrorism, including Improvised Nuclear Device (IND) information control policy within DOE/NNSA and OGAs.
- d. Associate Administrator for Emergency Operations.
- (1) Oversees all IND design-related work.
  - (2) Manages DOE/NNSA oversight of IND information.
  - (3) Directs nuclear design-related research and development activities so that the full range of weapons physics knowledge, engineering, analysis, information and nuclear weapon technologies are applied adequately and correctly to provide the best possible technical solutions to IND-related issues.

e. Associate Administrator for Defense Nuclear Security.

- (1) Oversees policies regarding security and protection of all Restricted Data and Formerly Restricted Data information and matter across NNSA.
- (2) Ensures that the control of classified matter across the enterprise is in accordance with this Order and other established policies.
- (3) Manages the Classified and Controlled Information program for NNSA, ensuring that classified information is properly protected and proper classification guidance is available, distributed and properly coordinated across the NNSA.
- (4) Manages the Incidents of Security Concern Program within NNSA ensuring that organizations properly report and investigate incidents of security concern involving all Restricted Data and Formerly Restricted Data.
- (5) Manages the Classified Matter Protection and Control Program for NNSA HQ.
- (6) Develops and conducts programs to train NNSA HQ employees on their NWD responsibilities.

f. Assistant Deputy Administrator for Stockpile Management.

- (1) Serves as senior technical advisor on NWD policy for the Administrator, NNSA.
- (2) May verbally grant access to Sigma 18 NWD, as needed, ensuring that the NNSA NWD Program Coordinator completes follow-up actions. For details on verbally granting access to Sigma 14 and Sigma 15, refer to DOE O 452.7.
- (3) Approves or denies requests for foreign national access to NWD, in accordance with agreements for cooperation (Atomic Energy Act of 1954, as amended, Sections 123, 141 and 144).
- (4) Serves as the final adjudication authority for all Sigma NWD not related to Sigma 20.
- (5) Oversees management of the DOE/NNSA NWD program as delegated by the Deputy Administrator for Defense Programs.
- (6) Appoints the DOE/NNSA NWD Program Coordinator and Alternate Program Coordinator.



- (7) Approves DOE/NNSA HQ requests for NWD from the Defense Technical Information Center (DTIC).
- (8) Approves OGA and DTIC requests for NWD from DOE/NNSA.(except classification guides, which are distributed via DOE Office of Classification).
- (9) Oversees the NNSA HQ Statement of Security Assurance (SSA) (formerly known as mail channel) program for CNWDI, Sigma 14, Sigma 15, Sigma 18 and Sigma 20 as delegated by the Deputy Administrator for Defense Programs.

g. Director, Office of Nuclear Counterterrorism.

- (1) Implements all aspects of IND information control as defined in DOE Order 457.1, including administration of the Sigma 20 category.
- (2) Designates locations within DOE or the NSE where IND design-related work may be performed.
- (3) Ensures that all Work-for-Others (WFO) projects at the national laboratories that use IND design information are reviewed, approved, and comply with this directive and DOE M 457.1-1, *Control of Improvised Nuclear Device Information*, dated 8-10-06.
- (4) Serves as the final adjudication authority for all Sigma 20 NWD.

h. Director, Office of Nuclear Weapon Surety and Quality.

- (1) Supervises management of the DOE/NNSA NWD program as delegated by the Assistant Deputy Administrator for Stockpile Management.
- (2) May verbally grant access to Sigma 18 NWD, as needed, ensuring that the NNSA NWD Program Coordinator completes follow-up actions. For details on verbally granting access to Sigma 14 and Sigma 15, refer to DOE O 452.7.

i. DOE/NNSA NWD Program Coordinator.

- (1) Manages the NNSA NWD program as delegated by the Assistant Deputy Administrator for Stockpile Management.
- (2) May verbally grant access to Sigma 18 NWD, as needed, ensuring that the required follow-up actions are completed. For details on verbally granting access to Sigma 14 and Sigma 15, refer to DOE O 452.7.
- (3) Ensures consistent, supporting security policies and procedures for authorizing access to NWD for:

- (a) DOE employees and contractors outside the NSE,
  - (b) employees and contractors of DoD and OGAs,
  - (c) members of Congress and their staffs,
  - (d) members of the Federal Courts and their staffs,
  - (e) members of state governments and their employees,
  - (f) local and tribal governments, and
  - (g) foreign nationals.
- (4) Coordinates with the DOE and NNSA Offices of Congressional and Intergovernmental Affairs and DOE Office of Health, Safety and Security for access to NWD by members of Congress and congressional staff.
- (5) Coordinates with the DOE and NNSA Offices of Congressional and Intergovernmental Affairs to ensure that any required approvals are in place before NWD is transferred to Congress.
- (6) Enters in WDACS authorization to access Sigma 14, Sigma 15 and Sigma 20 NWD for representatives of OGAs and their contractors, members of Congress and their staffs, and other non-DOE requesters not otherwise addressed in this Order. Only visits to NSE sites by non-NSE personnel will be entered in WDACS.
- (7) Grants and enters in WDACS, authorization to access Sigma 18 NWD for representatives of OGAs and their contractors, members of Congress and their staffs, and other non-DOE requesters not otherwise addressed in this Order. Only visits to NSE sites by non-NSE personnel will be documented in WDACS.
- (8) Manages the NNSA HQ SSA program for Sigma NWD.
- (a) Coordinates SSAs with the appropriate coordinators at DOE/NNSA HQ, all NSE and non-NSE facilities to ensure NWD activities are properly protected.
  - (b) Ensures that all facilities that submit a SSA have the appropriate facility clearance, storage capability, valid justification and need-to-know before authorizing the facility to receive and store NWD.
  - (c) Coordinates, approves, and disapproves SSAs submitted by NSE and non-NSE facilities for NWD for OGAs and OGA contractors

that request authorization to receive and store CNWDI, Sigma 14, Sigma 15, Sigma 18 and Sigma 20 NWD.

- j. Director, Office of Security Assistance. Maintains the Safeguards and Security Information Management System (SSIMS), which designates the facilities and agencies authorized to receive, store, and conduct NWD work that is not CNWDI or in a NWD Sigma category.
  - k. Director, Office of Classification. Manages the Government-wide program to classify and declassify nuclear weapon-related technologies.
  - l. Director, Office of Scientific and Technical Information (OSTI), Oak Ridge.
    - (1) Collects and maintains a repository for scientific and technical NWD information originated by DOE/NNSA offices and their contractors and by DoD offices and their contractors (if the DoD information is pertinent to DOE/NNSA national defense missions). (Reference DOE O 241.1A or its successors and DTIC exchange agreements)
    - (2) Provides abstracting and indexing services for scientific and technical NWD reports.
    - (3) Maintains computerized NWD databases, which are available to authorized users through approved and accredited remote telecommunications links. [e.g., Enterprise Secure Network (ESN)].
    - (4) Implements the DOE/DoD technical information exchange agreement under the auspices of the Joint Coordinating Committee.
    - (5) Coordinates requests for NWD from DTIC for authorized DOE personnel.
    - (6) With approval from the Assistant Deputy Administrator for Stockpile Management, or authorized designees, grants access to NWD and transmits NWD documents from OSTI's custody to Departmental offices and their contractors and to organizations outside the DOE in accordance with requirements of this Order.
    - (7) Assist NNSA Headquarters, Site Offices, and National Laboratories in implementing their policies and procedures for the management of DOE-sponsored scientific and technical information containing NWD.
- NOTE: Policy for the OSTI/DTIC database management agreement falls under the auspices of the Joint Coordinating Committee.
- m. Directors of Headquarters Offices.

- (1) Confirm that HQ personnel under their cognizance who have been granted access to NWD including Sigma 14, Sigma 15, Sigma 18 (for non-NSE employees and contractors) and/or Sigma 20 have:
    - (a) appropriate clearance and
    - (b) valid need-to-know for each NWD category they have been granted access.
  - (2) Ensure that DOE/NNSA employees and contractors under their jurisdiction follow the requirements of this Order and the CRD.
  - (3) Ensure that NWD in their custody is transmitted to other DOE or NNSA entities only after it is verified that the recipient has:
    - (a) appropriate security clearance,
    - (b) valid need-to-know,
    - (c) access authorization for the appropriate NWD category, and
    - (d) appropriate site clearance, storage capability and authorization recorded in the SSIMS.
  - (4) Assure that Sigma NWD to be transmitted to DoD or OGAs is reviewed for classification content and prescribed markings, and determine that recipients are authorized to have access by contacting the DOE/NNSA NWD Program Coordinator.
  - (5) Assure the disposition of NWD upon completion of work requiring access or termination of a contract.
- n. Heads of Site/Field Elements.
- (1) Ensure that NWD is disseminated only to personnel under their cognizance with:
    - (a) appropriate clearance,
    - (b) Sigma access authorization and
    - (c) valid need-to-know.
  - (2) Ensure that site office/field element personnel including support contractors who are authorized access to NWD have sufficient training, awareness and knowledge of procedures for protecting NWD.

- (3) Ensure that DOE personnel including support contractors follow the requirements of this Order and the CRD.
  - (4) Notify contracting officers to incorporate the CRD of this Order into the affected contracts via the laws, regulations, and DOE directives clause of the contracts.
  - (5) Coordinate with OSTI to provide appropriate life-cycle management of scientific and technical NWD produced under their jurisdiction in accordance with the requirements found in DOE O 241.1A.
  - (6) Assure the disposition of NWD upon completion of work requiring access or termination of a contract.
  - (7) Approve and transmit to the Manager, Office of Scientific and Technical Information (OSTI), any requests for weapon data reports from Defense Technical Information Center (DTIC).
- o. Contracting Officers. Once notified, must incorporate the CRD of this Order into the affected contracts.

6. DEFINITIONS.

- a. Complete Design. In the context of this Order, complete design is the compilation of design information revealing materials, masses, dimensions, contours and specifications in sufficient detail to enable a nuclear weapon to be copied or constructed and includes:
- (1) Classified graphical depictions with accompanying technical details regarding dimensions, materials and mass data that would enable reconstruction of the engineering drawings.
  - (2) Design drawings for Nuclear Explosive-Like Assemblies (NELAs) that identify the specific material difference for the corresponding design.

**Note 1:** Complete design applies equally to a single stage device and the individual devices (primary or secondary) of a thermonuclear device.

**Note 2:** While visual access alone to classified displays, 3-D trainers, weapon components or NELAs would be of value to a proliferant, it neither constitutes nor requires access to Sigma 18.

**Note 3:** Only the compilation of documents that meet the criteria of Sigma 18 need to be marked Sigma 18. When separated, the individual documents are not Sigma 18 and do not need to be marked Sigma 18, but do need to be protected at the appropriate level of classification of the original information.

- b. Control Stations. Control stations maintain records, accountability systems, access lists (when required), and control classified matter (including facsimiles) received by and/or dispatched from facilities. Control station operators must maintain accountability systems for accountable matter described in DOE O 471.6, *Information Security* or NNSA Policy Letter (NAP) 70.4, *Information Security* (or successor directives).
- c. Critical Nuclear Weapon Design Information (CNWDI). A DoD category of weapon data designating that Top Secret/Restricted Data or Secret/Restricted Data revealing the theory of operation or design of the components of a thermonuclear or implosion-type fission bomb, warhead, demolition munitions, or test device. Specifically excluded from designation as CNWDI is information concerning:
  - (1) Arming, fuzing, and firing systems.
  - (2) Limited-life components.
  - (3) Total contained quantities of fissionable, fusionable, and high explosive materials by type.
  - (4) Components which military personnel set, maintain, operate, test, or replace.
- d. Defense Technical Information Center (DTIC). The central facility, sponsored by the DoD, for secondary distribution of technical reports generated by research, development, test, and evaluation efforts.
- e. Documents. Written, printed information; charts; maps; paintings; drawings; engravings; sketches; photographic prints; exposed or developed film; working notes and papers; reproductions by any means or process (i.e., documents in electronic format); and sound and video recordings by magnetic, optical, or any other electronic means.
- f. Formerly Restricted Data (FRD). Classified information jointly determined by the DOE or its predecessor agencies and the DoD to be (1) related primarily to the military utilization of atomic weapons and (2) protected as National Security Information. It is subject to the restrictions on transmission to other countries and regional defense organizations that apply to Restricted Data.
- g. 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.
- h. Matter. Any combination of documents or material, regardless of physical form or characteristics.

- i. Media (Automated Information System). A device-related physical component used for storage of electromagnetic data (e.g., tapes, floppy disks, compact discs, memory cards, etc.).
- j. Need-to-Know. A determination that a prospective recipient requires access to specific classified information in order to perform or assist in a lawful and authorized government function.
- k. Non-Sigma NWD. The body of NWD that does not require the additional protection and control of a Sigma category beyond what is required by classification and RD/FRD protections.
- l. Nuclear Security Enterprise (NSE). The NNSA organizations that manage NWD and/or design, manufacture, or test nuclear weapons or nuclear weapon components. Included in the NSE are:
  - (1) NNSA Headquarters and Site Offices,
  - (2) Lawrence Livermore National Laboratory,
  - (3) Los Alamos National Laboratory,
  - (4) Sandia National Laboratories,
  - (5) Pantex Plant,
  - (6) Kansas City Plant,
  - (7) Y-12 National Security Complex,
  - (8) NNSA operations at the Savannah River Site, and
  - (9) Nevada National Security Site.
- m. Nuclear Weapon. (From Section 11.d. of the Atomic Energy Act of 1954, as amended) Any device utilizing atomic energy, exclusive of the means for transporting or propelling the device (where such means is a separable and divisible part of the device), the principal purpose of which is for use as, or for development of, a weapon, weapon prototype, or a weapon test device.
- n. 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. NWD is matter in any combination of documents or material, regardless of physical form or characteristics.

- o. NWD Categories. Subsets of Secret and Top Secret NWD relating to Restricted Data and/or Formerly Restricted Data concerning nuclear weapons, nuclear components, or nuclear explosive devices or materials. This information has been determined to require additional protection. The categories of NWD are:
- (1) Sigma 14
  - (2) Sigma 15
  - (3) Sigma 18
  - (4) Sigma 20
- Note 1:** Not all NWD requires the additional protection of a Sigma category. NWD that is not in a Sigma category is referred to as Non-Sigma NWD. See Appendix A for details.
- Note 2:** Secret or Top Secret Restricted Data or Formerly Restricted Data in one of the Sigma Categories that is reviewed, downgraded or redacted to Confidential may retain the Restricted Data or Formerly Restricted Data designation but loses the Sigma Category designation.
- p. Nuclear Weapon Display Area (WDA). Established secure areas where mock-ups, cut-a-ways, diagrams, and pictures of nuclear weapons are stored to provide tours, information and training to appropriately cleared personnel that have a valid need-to-know. WDA access is granted using procedures established at each location and is controlled in a manner consistent with the classification and NWD category contained in the area and the information revealed.
- q. Other Government Agency (OGA). In the context of this Order, an OGA is a permanent or semi-permanent Federal organization (including support contractors) established by the executive or legislative branches of the government responsible for oversight and administration of a specific government function. In special situations, OGA can also include gubernatorial and legislative offices from state governments, local governments and tribal governments. Examples of OGAs include the Department of Homeland Security, the Central Intelligence Agency, the Federal Bureau of Investigation, State Governor Office and appropriately cleared OGA support contractors.
- r. Restricted Data (RD). All data concerning design, manufacture, or utilization of atomic weapons; production of special nuclear material; or use of special nuclear material in the production of energy, but excluding data declassified or removed from the Restricted Data category pursuant to 42 U.S.C. 2162 [Section 142, as amended, of the Atomic Energy Act of 1954].
- s. Restricted Data Access (RD Access). For the purposes of classified visits by individuals from OGAs (other than DoD, NASA, and NRC), RD Access



Authorization accords an individual access to Restricted Data or special nuclear material based upon completion of the following actions by an authorized DOE official: (i) verification through DOE and national-level personnel security electronic databases of the individual's OGA security clearance, and a need-to-know determination; and (ii) the individual's written acknowledgement of receipt of a briefing on the safeguarding of RD and SNM.

- t. Sigma 1. Obsolete. See Appendix C.
- u. Sigma 2. Obsolete. See Appendix C.
- v. Sigma 3. Obsolete. See Appendix C.
- w. Sigma 4. Obsolete. See Appendix C.
- x. Sigma 5. Obsolete. See Appendix C.
- y. Sigma 6, 7, 8. Not used.
- z. Sigma 9. Obsolete. See Appendix C.
- aa. Sigma 10. Obsolete. See Appendix C.
- bb. Sigma 11. Obsolete. See Appendix C.
- cc. Sigma 12. Obsolete. See Appendix C.
- dd. Sigma 13. Obsolete. See Appendix C.
- ee. 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.
- ff. 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).
- gg. Sigma 16 and 17. Not used.
- hh. Sigma 18. A category of NWD that includes information that would allow or significantly facilitate a proliferant nation or entity to fabricate a credible nuclear weapon or nuclear explosive based on a proven, certified, or endorsed U.S. nuclear weapon or device. This information would enable the establishment or improvement of nuclear capability without nuclear testing or with minimal research and development. The NNSA or successor organization determines

which information is placed in the Sigma 18 category. The following is the list of Sigma 18 information.

- (1) Complete design of a gun-assembled weapon.
  - (2) Complete design of a primary or single stage implosion-assembled weapon.
  - (3) Complete design of an interstage or secondary.
  - (4) Weapon design codes with one-dimensional (1D) hydrodynamics and radiation transport with fission and/or thermonuclear burn.
  - (5) Weapon design codes with two-dimensional (2D) and three-dimensional (3D) capabilities.
- ii. Sigma 19. Not used.
- jj. Sigma 20. A specific category of nuclear weapon data that pertains to “crude, simple or innovative” improvised nuclear device designs, concepts, and related manufacturing or processing pathways. Not all INDs are Sigma 20.
- kk. Use Control. The application of systems, devices, or procedures that allow timely authorized use of a nuclear explosive while precluding or delaying unauthorized nuclear detonation.

## 7. ACRONYMS.

**TABLE 1: List of Acronyms Used in this Order**

C	Confidential
C-FRD	Confidential-Formerly Restricted Data
C-RD	Confidential-Restricted Data
CFR	Code of Federal Regulations
CNWDI	Critical Nuclear Weapon Design Information
CRD	Contractor Requirements Document
DoD	Department of Defense
DOE	Department of Energy
DTIC	Defense Technical Information Center
DUA	Deliberate Unauthorized Act
DUU	Deliberate Unauthorized Use
EO	Executive Order
ESN	Enterprise Secure Network
FRD	Formerly Restricted Data
HQ	Headquarters
HSS	DOE Office of Health, Safety and Security
IND	Improvised Nuclear Device
NAP	NNSA Policy Letter

NASA	National Aeronautics and Space Administration
NISP	National Industrial Security Program
NNSA	National Nuclear Security Administration
NRC	Nuclear Regulatory Commission
NSE	Nuclear Security Enterprise
NSI	National Security Information
NWD	Nuclear Weapon Data
OGA	Other Government Agency
OSTI	Office of Scientific and Technical Information
OUO	Official Use Only
P.L.	Public Law
RD	Restricted Data
S	Secret
S-FRD	Secret-Formerly Restricted Data
S-RD	Secret-Restricted Data
SIPRNET	Secret Internet Protocol Router Network
SNM	Special Nuclear Material
SSA	Statement of Security Assurance
SSIMS	Safeguards and Security Information Management System
TS	Top Secret
TS-FRD	Top Secret-Formerly Restricted Data
TS-RD	Top Secret-Restricted Data
U.S.C.	United States Code
UC	Use Control
WDA	Weapon Display Area
WDACS	Weapons Data Access Control System
WFO	Work-for-Others

8. REFERENCES.

- a. 10 CFR Part 712, *Human Reliability Program*, 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. P.L. 83-703, Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.).
- c. National Security Presidential Directive 28, dated 6-20-03.
- d. E.O. 13526, *Classified National Security Information*, dated 12-29-09, prescribes a uniform system for classifying, safeguarding, and declassifying national security information, including information relating to defense against transnational terrorism.

- e. DOE O 142.1, *Classified Visits Involving Foreign Nationals*, dated 1-13-04, which protects classified information by ensuring that all foreign nationals' access to classified information while visiting DOE and NNSA sites/facilities is conducted in accordance with an approved international agreement or treaty.
- f. DOE O 241.1A, *Scientific and Technical Information Management*, dated 4-9-01, with Change 1 dated 10-14-03, which establishes requirements and responsibilities for managing DOE scientific and technical information.
- g. 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.
- h. DOE O 452.4B, *Security and 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).
- i. DOE O 452.7, *Protection of Use Control Vulnerabilities and Designs*, dated 05-14-10, which 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.
- j. DOE O 457.1, *Nuclear Counterterrorism*, dated 2-7-06, establishes DOE responsibilities for identifying, protecting and disseminating sensitive improvised nuclear device information.
- k. DOE M 457.1-1, *Control of Improvised Nuclear Device Information*, dated 8-10-06, establishes direction for controlling and providing access to improvised nuclear device information.
- l. DOE O 470.3B, *Graded Security Protection Policy*, dated 8-12-08, classified.
- m. DOE O 470.4B, *Safeguards and Security Program*, dated, 7-21-11, establishes responsibilities for the U.S. Department of Energy (DOE) Safeguards and Security (S&S) Program, and identifies program planning and management requirements for the S&S Program.
- n. DOE M 470.4-1, Chg 2, *Safeguards and Security Program Planning and Management*, dated 10-20-10, 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.

- o. DOE O 471.6, *Information Security*, dated 6-20-11, 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 (DOE) Directives.
  - p. DOE O 472.2, *Personnel Security*, dated 7-27-11, which establishes the overall objectives and requirements for the Personnel Security Program in the U.S. Department of Energy (DOE), including the National Nuclear Security Administration (NNSA).
  - q. DOE O 471.3, Admin Chg 1, *Identifying and Protecting Official Use Only Information*, dated 4-9-03, which establishes a program to identify certain unclassified controlled information as Official Use Only (OUO) and to identify, mark and protect documents containing such information.
  - r. DOE M 471.3-1, Admin Chg 1, *Manual for Identifying and Protecting Official Use Only Information*, dated 1-13-11, which provides direction for identifying, marking and protecting OUO information.
  - s. DOE O 475.2A, *Identifying Classified Information*, dated 6-29-11, which establishes the program to identify information classified under the Atomic Energy Act or Executive Orders, so that it can be protected against unauthorized dissemination.
  - t. DoD 5220.22-M, *National Industrial Security Program*, dated 2-28-06, which provides baseline standards for the protection of classified information released or disclosed to industry in connection with classified contracts under the National Industrial Security Program (NISP).
  - u. NNSA Policy Letter NAP 70.2, *Physical Protection*, dated 7-2-10, which implements the NNSA security requirements and restrictions of the DOE for the physical protection of interests ranging from facilities, buildings, Government property, and employees to national security interests such as classified information, special nuclear material (SNM), and nuclear weapons.
  - v. NNSA Policy Letter NAP 70.4, *Information Security*, dated 7-2-10, which prescribes the security requirements and restrictions of the DOE NNSA for the protection and control of matter required to be classified by Federal statutes and regulations.
9. CONTACTS. For additional information or technical interpretation of this Order, contact the Office of Nuclear Weapon Surety and Quality at 202-586-0377.

BY ORDER OF THE SECRETARY OF ENERGY:



DANIEL B. PONEMAN  
Deputy Secretary



## **APPENDIX A CONTROL OF NUCLEAR WEAPON DATA**

### **1. IDENTIFICATION OF NUCLEAR WEAPON DATA (NWD).**

- a. NWD is 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. NWD is matter in any combination of documents or material, regardless of physical form or characteristics.
- b. NWD may be categorized as Sigma 14, Sigma 15, Sigma 18 or Sigma 20.
  - (1) Specific details on the management of Sigma 14 and Sigma 15 NWD are found in DOE O 452.7, *Protection of Use Control Vulnerabilities and Designs*, dated 5-14-10.
  - (2) Specific details on the management of Sigma 18 NWD are found in Appendix B, *Control of Complete Designs*.
  - (3) Specific details on the management of Sigma 20 NWD are found in DOE O 457.1, *Nuclear Counterterrorism*, dated 2-7-06, and DOE M 457.1-1, *Control of Improvised Nuclear Device Information*, dated 8-10-06.
- c. Not all NWD requires the additional protection of a Sigma category. NWD that is not in a Sigma category is referred to as Non-Sigma NWD. Specific details on the management of Non-Sigma NWD is found in this Appendix.
- d. Newly created NWD or existing NWD that has had the content modified must be reviewed. If the NWD is determined to contain Sigma 14, Sigma 15, Sigma 18 or Sigma 20, it must be appropriately marked.
- e. Unmodified legacy NWD with obsolete Sigma markings does not require review or remarking when accessed

### **2. ACCESS REQUIREMENTS.**

- a. See Table A-1 below for clearance and access requirements. In addition to the clearance requirements, access to NWD must be restricted to personnel with valid need-to know and confirmed Sigma access authorization as appropriate.
- b. Foreign Nationals may be granted access to NWD only as permitted under the Atomic Energy Act of 1954, as amended (AEA), including agreements for cooperation concluded in accordance with AEA section 123.
- c. The NNSA NWD Program Coordinator will provide guidance on the appropriate background investigation required for each clearance..

- d. Non-Sigma FRD has the same access requirements as NSI.

**TABLE A-1. NWD Access Requirements**

	<b>DOE Q</b>	<b>DOE L</b>	<b>DoD Final Top Secret</b>	<b>DoD Final Secret</b>	<b>DoD Final Secret with CNWDI Brief</b>	<b>OGA Final Top Secret with RD Access</b>	<b>OGA Final Secret with RD Access</b>
Non-Sigma (C-RD)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-Sigma (S-RD)	Yes	No	Yes	No	Yes	Yes	No
CNWDI (S-RD)	Yes	No	Yes	No	Yes	Yes	No
Non-Sigma (TS-RD)	Yes	No	Yes	No	No	Yes	No
Sigma 14 (TS-RD, TS-FRD; S-RD, S-FRD)	Yes*	No	Yes*	No	No	Yes*	No
Sigma 15 (TS-RD, TS-FRD; S-RD, S-FRD)	Yes*	No	Yes*	No	No	Yes*	No
Sigma 18 (TS-RD, S-RD)	Yes	No	Yes*	No	No	Yes*	No
Sigma 20 (TS-RD, S-RD)	Yes*	No	Yes*	No	No	Yes*	No

**Table Key:**

**Yes:** An individual with one of the clearances in the top row may have access to the category of classified information listed in the left column.

**Yes\*:** An individual with one of the clearances in the top row may have access to the category of classified information listed in the left column with the additional requirement of formal access approval by the authority specified in the appropriate directive.

**No:** An individual with one of the clearances in the top row may not have access to the category of classified information listed in the left column.



**Note 1:** Visits involving access to Restricted Data (RD) or special nuclear material (SNM), when the visitor does not hold a DOE access authorization, require specific approval by DOE/NNSA Federal officials authorized to give such approval. Approval must be based upon, among other requirements, an appropriate final security clearance. Specific requirements [or procedures] for granting RD Access are contained in DOE O 470.4B, *Safeguards and Security Program*, dated 7-21-11.

**Note 2:** Prior to being given access, OGA employees and their contractors who are granted RD Access in connection with a classified visit must receive an appropriate briefing concerning the protection of RD and must sign an acknowledgement that they have received the briefing.

3. ACCESS REQUESTS.

- a. Requests for access to NWD category information by non-NSE personnel must be made using DOE F 5631.20, *U.S. Department of Energy Request for Visit or Access Approval*.
  - (1) The National Aeronautics and Space Administration (NASA) may submit Sigma 18 requests on NASA Form 405, *Request for Access Approval*.
  - (2) The Nuclear Regulatory Commission (NRC) may submit Sigma 18 requests on NRC Form 277, *Request for Access*.
- b. 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. Exceptions to the 15 working day requirement can be found in DOE M 470.4-1, Chg 2, *Safeguards and Security Program Planning and Management*, dated 10-20-10.

4. ORAL/VISUAL COMMUNICATION.

- a. Oral/visual communication (e.g., discussions or presentations) must be restricted to those persons with appropriate NWD clearance and valid need-to-know.
- b. Sites having classified nuclear weapon display areas (WDAs) will grant and control access to the WDA using procedures established at each location and controlled in a manner consistent with the classification and NWD category of the information revealed. Access to WDAs will not be entered or tracked in the Weapon Data Access Control System (WDACS).

5. RECEIVING AND TRANSMITTING.

- a. Distribution of NWD within DOE (including NNSA and other locations) will be restricted to individuals with appropriate clearance and valid need-to-know.
- b. Prior to distribution within the NSE, unmodified legacy NWD requires a review for Sigma 14, Sigma 15 and Sigma 20 and must be brought up to current marking standards.

- c. Prior to distribution outside the NSE Q-cleared population, to DoD or OGAs, NWD must be reviewed for Sigma content and brought up to current marking standards.
- d. Organizations outside the NSE (i.e., DOE sites) must review legacy NWD for Sigma 14, Sigma 15, Sigma 18 and Sigma 20 when accessed.
- e. Before transmitting Sigma information outside the NSE Q-cleared population, to the DoD or OGAs, the recipient's access must be validated by the Office of Nuclear Weapon Surety and Quality.

**Note:** Sigma 14 and Sigma 20 NWD have additional requirements prior to transmission. See paragraph 1.b. above for details.

- f. Matter (e.g., documents, hardware or electronic media).
  - (1) There are no additional requirements for handling and transmission of Non-Sigma NWD beyond the procedures outlined in DOE O 471.6, *Information Security*, dated 6-20-11 or NNSA Policy Letter (NAP) 70.4, *Information Security*, dated 7-2-10 (or successor directives).
  - (2) Statement of Security Assurance (SSA) (formerly known as mail channel) must be established for receipt and storage of all classified NWD and specifically for CNWDI, Sigma 14, Sigma 15, Sigma 18, and Sigma 20 NWD for receiving DoD, OGAs 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 matter. The SSIMS Coordinator will confirm the site is authorized to receive NWD through SSIMS. If a SSA is not in place, one must be initiated and processed using the procedures outlined in DOE M 470.4-1, Chg. 1.
    - (a) For SSAs not based on a contract, an unclassified justification must be provided detailing the facility's need to receive and store NWD.
    - (b) Each SSA must be submitted to the Office of Nuclear Weapon Surety and Quality 30-days prior to the required establishment or renewal date.
    - (c) Each SSA must be properly certified.
      - 1 DoD SSAs must be properly certified by an authorized official from the most recent Enclosure 5 of the DoD Directive 5210.2. A copy can be obtained directly from the Office of the Deputy Assistant to the Secretary of Defense (Nuclear Matters).

- 2 SSAs from OGAs must be properly certified by their Cognizant Security Official.
- (d) Approved SSA's will be authorized for three years or for the length of the contract, whichever is less.
- (e) The Designated Responsible Office (DRO) will be responsible for renewal submissions. Sigma authorizations must be immediately removed from SSIMS for expired SSAs that did not have renewals submitted 30-days prior to expiration.
- g. Electronic Transmission.
- (1) Non-Sigma NWD may be sent electronically only over approved classified networks if need-to-know for that information is assured.
- (a) Non-Sigma Secret/RD NWD may be sent to the DoD and OGAs on SIPRNET without secondary encryption.
- (b) Non-Sigma Secret/RD NWD may be sent via ESN.
- (2) Secure Telecommunication Transmission of Non-Sigma NWD using point-to-point secure communication via appropriately certified secure telecommunication systems 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.
6. MARKING. In addition to the marking requirements outlined in DOE O 471.6 or NAP 70.4 the following marking requirements apply to documents and hardware containing NWD:
- a. All newly created NWD or existing NWD that has had the content modified must be reviewed for Sigma content and appropriately marked.
- b. Unmodified Sigma NWD with obsolete Sigma markings does not require review or remarking when accessed. Classified matter must be reviewed and brought up to current marking standards whenever it is released or distributed.
- c. Documents.
- (1) Non-Sigma NWD does not require additional marking beyond what is required for Restricted Data. For example:

RESTRICTED DATA

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

- (2) Prior to distribution, all historical documents must be reviewed for Sigma content and brought up to current marking standards. When possible, the site technical information offices or equivalent and OSTI will be notified of the marking change.
7. STORAGE REQUIREMENTS. Storage of Non-Sigma NWD will be consistent with National Standards for protection of classified information.
8. ACCOUNTABILITY. All Top Secret NWD is accountable as outlined in DOE O 471.6 and NAP 70.4.
9. DESTRUCTION. Multiple copies, obsolete matter and classified waste must be kept to a minimum. Classified matter must be destroyed in accordance with records disposition schedules, including the National Archives Records Administration General Records Schedules, DOE records schedule and as outlined in DOE O 471.6 or NAP 70.4.
10. INFORMATION TECHNOLOGY SYSTEMS. Non-Sigma NWD residing on computer systems does not require additional protection beyond what is required for Restricted Data. Specific baseline requirements contained in DOE M 205.1-4, *National Security System*, dated 3-8-07, (or its successor) must be followed.

**APPENDIX B  
CONTROL OF COMPLETE DESIGNS**

1. IDENTIFICATION OF SIGMA 18 NUCLEAR WEAPON DATA (NWD).
  - a. Complete Designs are the compilation of design information revealing materials, masses, dimensions, contours and specifications in sufficient detail to enable a nuclear weapon to be copied or constructed.
  - b. Sigma 18 information would allow or significantly facilitate a proliferant nation or entity to fabricate a credible nuclear weapon or nuclear explosive based on a proven, certified, or endorsed U.S. nuclear weapon or device. The information would enable the establishment or improvement of nuclear capability without nuclear testing or with minimal research and development. Based on this description, NNSA has determined that Complete Designs are Sigma 18.
  - c. Newly created NWD or existing NWD that has had the content modified must be reviewed. If the NWD is determined to contain Sigma 18, it must be appropriately marked.
  
2. ACCESS REQUIREMENTS.
  - a. See Table B-1 below for clearance and access requirements for Sigma 18. In addition to the clearance requirements, access to Sigma 18 must be restricted to personnel with a valid need-to-know.
  - b. The NNSA NWD Program Coordinator will provide guidance on the appropriate background investigation required for each clearance, which must include review of DOE and national-level personnel security electronic databases.
  - c. Foreign Nationals may be granted access to NWD only as permitted under agreements for cooperation concluded in accordance with section 123 of the Atomic Energy Act of 1954, as amended (AEA), and statutory determinations under applicable provisions of the AEA.

**TABLE B-1: Sigma 18 NWD Access Requirements**

	<b>DOE Q</b>	<b>DOE L</b>	<b>DoD Final Top Secret</b>	<b>DoD Final Secret</b>	<b>DoD Final Secret with CNWDI Brief</b>	<b>OGA Final Top Secret with RD Access</b>	<b>OGA Final Secret with RD Access</b>
Sigma 18 (TS-RD, S-RD)	Yes	No	Yes*	No	No	Yes*	No

Table Key:

Yes: An individual with one of the clearances in the top row may have access to the category of classified information listed in the left column.

Yes\*: An individual with one of the clearances in the top row may have access to the category of classified information listed in the left column, with the additional requirement of formal access approval by the authorized DOE official specified in the appropriate directive.

No: An individual with one of the clearances in the top row may not have access to the category of classified information listed in the left column.

**Note 1:** Visits involving access to Restricted Data (RD) or special nuclear material (SNM), when the visitor does not hold a DOE access authorization, require specific approval by DOE/NNSA Federal officials authorized to give such approval. Approval must be based upon, among other requirements, an appropriate final security clearance. Specific procedures for granting RD Access are contained in DOE O 470.4B, *Safeguards and Security Program*, dated 7-21-11.

**Note 2:** Prior to being given access, OGA employees and their contractors who are granted RD access in connection with a classified visit must receive an appropriate briefing concerning the protection of RD and must sign an acknowledgement that they have received the briefing.

### 3. ACCESS REQUESTS.

- a. Requests for access to Sigma 18 NWD by non-NSE, DoD and OGA personnel 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. Exceptions to the 15 working day requirement can be found in DOE M 470.4-1, Chg. 2, *Safeguards and Security Program Planning and Management*, dated 10-20-10.
  - (1) The National Aeronautics and Space Administration (NASA) may submit Sigma 18 requests on NASA Form 405, *Request for Access Approval*.
  - (2) The Nuclear Regulatory Commission (NRC) may submit Sigma 18 requests on NRC Form 277, *Request for Access*.
- b. Non-NSE authorizations for access to Sigma 18 NWD may not exceed one year, although reauthorization is allowed.
- c. Non-NSE contractor authorizations will expire after one year or on the final day of the contract, whichever is less.
- d. Authorization for Q-cleared personnel within the NSE to access Sigma 18 NWD is presumed with their association to the NSE, need-to-know still applies. Within the NSE, Sigma 18 is not a managed program. NNSA HQ manages access to Sigma 18 for non-NSE, DoD and OGA personnel.

4. ORAL/VISUAL COMMUNICATION.

- a. Oral/visual communication of Sigma 18 information (e.g., discussions or presentations) must be restricted to those persons with appropriate Sigma access authorization, valid need-to-know, and DOE Q-clearance or the equivalent based on the appropriate current background investigation. The NNSA NWD Program Coordinator will provide guidance on the appropriate background investigation.
- b. Distribution of Sigma 18 NWD presentations within DOE (including NNSA and other locations) will be restricted to authorized individuals as prescribed in Table B-1 above.

5. RECEIVING AND TRANSMITTING.

- a. Distribution of Sigma 18 NWD within the NSE will be restricted to individuals with valid need-to-know and DOE Q-clearance or the equivalent, based on the appropriate current background investigation. The NNSA NWD Program Coordinator will provide guidance on appropriate background investigation.
- b. Distribution of Sigma 18 NWD outside the NSE will be restricted to individuals with appropriate Sigma 18 access authorization, valid need-to-know, and DOE Q-clearance or the equivalent, based on the appropriate current background investigation. The NNSA NWD Program Coordinator will provide guidance on appropriate background investigation.
- c. Prior to distribution outside the NSE Q-cleared population, to DoD or OGAs, NWD must be reviewed for Sigma 18 content and brought up to current marking standards.
- d. Before transmitting Sigma 18 information outside the NSE Q-cleared population, to the DoD or OGAs, the recipient's access must be validated by the NNSA NWD Program Coordinator.
- e. Organizations outside the NSE (i.e., DOE sites) must review legacy NWD for Sigma 18 when accessed.
- f. Matter (e.g., documents or electronic media).
  - (1) Secret/RD Sigma 18 NWD may be hand-carried, sent via the U.S. Postal Service Registered Mail system or overnight service approved for classified when it is critical that it be there the next day. Procedures for use of overnight services as outlined in DOE O 471.6, *Information Security*, dated 6-20-11, or NNSA Policy Letter (NAP) 70.4, *Information Security*, dated 7-2-10, must be followed.
  - (2) Top Secret RD Sigma 18 NWD must be sent via the Defense Courier Service, the Department of State Courier System, or hand-carried using

procedures outlined in DOE ) 471.6, *Information Security*, dated 6-20-11, or NNSA Policy Letter (NAP) 70.4, *Information Security*, dated 7-2-10.

- (3) A Statement of Security Assurance (SSA) (formerly known as mail channel) must be established for receipt and storage of all classified NWD and specifically for Sigma 18 matter for receiving DoD, OGAs 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 matter. The SSIMS Coordinator will confirm the site is authorized to receive Sigma 18 matter through SSIMS. If a SSA is not in place, one must be initiated and processed using the procedures outlined in DOE M 470.4-1, Chg. 1.
  - (a) For SSAs not based on a contract, an unclassified justification must be provided detailing the facility's need to receive and store NWD.
  - (b) Each SSA must be submitted to the Office of Nuclear Weapon Surety and Quality 30-days prior to the required establishment or renewal date.
  - (c) Each SSA must be properly certified.
    - 1 DoD SSAs must be properly certified by an authorized official from the most recent Enclosure 5 of the DoD Directive 5210.2. A copy can be obtained directly from the Office of the Deputy Assistant to the Secretary of Defense (Nuclear Matters).
    - 2 SSAs from OGAs must be properly certified by their Cognizant Security Official.
  - (d) Approved SSA's will be authorized for three years or for the length of the contract, whichever is less.
  - (e) The Designated Responsible Office (DRO) will be responsible for renewal submissions. Sigma 18 authorizations must be immediately removed from SSIMS for expired SSAs that did not have renewals submitted 30-days prior to expiration.

g. Electronic Transmission.

- (1) Secret/RD Sigma 18 NWD may be sent via the Enterprise Secure Network (ESN). Need-to-know must be verified prior to transmission. Top Secret information is prohibited from being sent intra-site or inter-site via ESN. The use of SIPRNET for transmission of SRD Sigma 18 is prohibited.



- (2) Secure Telecommunication Transmission of Sigma 18 NWD using point-to-point secure messages via appropriately certified secure telecommunication systems 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.
6. MARKING. In addition to the marking requirements outlined in DOE O 471.6 or NAP 70.4 the following marking requirements apply to documents and media containing Sigma 18 NWD:
- a. All newly created NWD or existing NWD that has had the content modified must be reviewed for Sigma 18 content and appropriately marked.
  - b. Unmodified Sigma NWD with obsolete Sigma markings does not require review or remarking when accessed. Classified matter must be reviewed for Sigma 18 content and brought up to current marking standards whenever it is released or distributed.
  - c. Media containing Sigma 18 information within a Site's approved classified network does not need to be marked Sigma 18. When the media files are printed or transmitted outside the Site's classified network, the printed or transmitted media must be marked according to current marking standards.
  - d. As defined, there is currently no Sigma 18 hardware.
  - e. Documents.
    - (1) Sigma marking (e.g., Sigma 18 or Σ18) must be placed above the admonishment box on the first page (whether cover page, title page, or the first page of text). For example:

Sigma 18

<p><b>RESTRICTED DATA</b></p> <p>This document contains Restricted Data as defined in the Atomic Energy Act of 1954. Unauthorized disclosure is subject to Administrative and Criminal Sanctions.</p>
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- (2) Documents containing Sigma 18 NWD must be marked with Sigma 18 NWD category as prescribed in DOE O 471.6 or NNSA NAP 70.4.
- (3) Individual pages of a Sigma 18 NWD document may be marked with the words Sigma 18 as appropriate. All NWD categories are required to be marked per DOE O 471.6 or NNSA NAP 70.4.

- (4) Prior to distribution, all historical documents must be reviewed for Sigma content and brought up to current marking standards. When possible, the site technical information offices or equivalent and OSTI will be notified of the marking change.
    - (5) Sigma 18 documents may use a locally produced cover sheet specifying that appropriate Sigma 18 access is required before viewing the contents.
      - (a) When a Sigma 18 document is removed from a security container, a standard form cover sheet must be applied to each document by placing it over the locally produced Sigma 18 cover sheet if used.
      - (b) In lieu of the two cover sheets, a locally produced cover sheet or identifying label on a standard form cover sheet may be used if approved by the responsible security office.
7. STORAGE REQUIREMENTS. Storage of Sigma 18 NWD will be consistent with National Standards for protection of classified information.
8. ACCOUNTABILITY. Top Secret Sigma 18 matter is accountable as outlined in DOE O 471.6 and NAP 70.4.
9. DESTRUCTION. Multiple copies, obsolete matter and classified waste must be kept to a minimum. Classified matter must be destroyed in accordance with records disposition schedules, including the National Archives Records Administration General Records Schedules, DOE records schedule and DOE O 471.6 or NAP 70.4.
10. INFORMATION TECHNOLOGY (IT) SYSTEMS.
  - a. Sigma 18 data residing on computer systems will be protected from unauthorized access, in a manner equivalent to the controls in place for the protection of equivalent level Sigma 18 matter. Sigma 18 information on IT systems must be protected while in storage, use, and transmission from unauthorized disclosure to persons without valid need-to-know and DOE Q-clearance or the equivalent.
  - b. 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 18 NWD.

## APPENDIX C OBSOLETE NWD CATEGORIES

1. This Order disestablishes certain NWD categories that have been used for many years and may remain marked on legacy matter. The following policies and procedures apply to the review and marking of legacy matter.
  - a. Unmodified Sigma NWD with obsolete Sigma markings does not require review or remarking when accessed. Classified matter must be reviewed and brought up to current marking standards whenever it is released outside of the NSE Q-cleared population, to DoD or OGAs.
  - b. When required, basic marking requirements found in DOE O 471.6, *Information Security*, dated 6-20-11, *Information Security Manual*, dated 10-12-10, or NNSA Policy Letter (NAP) 70.4, *Information Security*, dated 7-2-10, must be followed.
2. The following NWD categories are obsolete:
  - a. Sigma 1. An obsolete category of NWD that previously contained information relating to the theory of operation (hydrodynamic and nuclear) or complete design of thermonuclear weapons or their unique components.
  - b. Sigma 2. An obsolete category of NWD that previously contained information relating to the theory of operation or complete design of fission weapons or their unique components. It included the high explosive system with its detonators and firing unit, pit system, and nuclear initiation system as it pertained to weapon design theory.
  - c. Sigma 3. An obsolete category of NWD that previously contained manufacturing and utilization information not comprehensively revealing the theory of operation or design of the physics package. It included complete design and operation of nonnuclear components but only information as prescribed below for nuclear components and utilization information necessary to support the stockpile-to-target sequence. Information previously included:
    - (1) General external weapon configuration, including size, weight, and shape.
    - (2) Environmental behavior, fuzing, ballistics, yields, and effects.
    - (3) Nuclear components or subassemblies which do not reveal theory of operation or significant design features.
    - (4) Production and manufacturing techniques relating to nuclear components or subassemblies.
    - (5) Anticipated and actual strike operations.

- d. Sigma 4. An obsolete category of NWD that previously contained information inherent in pre-shot and post-shot activities necessary in the testing of atomic weapons or devices. Specifically excluded were the theory of operation and the design of such items. Information previously included:
  - (1) Logistics, administration, other agency participation.
  - (2) Special construction and equipment.
  - (3) Effects, safety.
  - (4) Purpose of tests, general nature of nuclear explosive tested including expected or actual yields and conclusions derived from tests not to include design features.
- e. Sigma 5. An obsolete category of NWD that previously contained production rate and/or stockpile quantities of nuclear weapons and their components.
- f. Sigma 9. An obsolete category of NWD that previously included general studies not directly related to the design or performance of specific weapons or weapon systems, e.g., reliability studies, fuzing studies, damage studies, aerodynamic studies, etc.
- g. Sigma 10. An obsolete category of NWD that previously included information relating to the chemistry, metallurgy, and processing of materials peculiar to the field of atomic weapons or nuclear explosive devices.
- h. Sigma 11. An obsolete category of NWD that previously included information concerning initial confinement fusion which reveals or is indicative of weapon data.
- i. Sigma 12. An obsolete category of NWD that previously contained complete theory of operation, complete design, or partial design information revealing either sensitive design features or how the energy conversion takes place for the nuclear energy converter, energy director or other nuclear directed energy weapon systems or components outside the envelope of the nuclear source but within the envelope of the nuclear directed energy weapon.
- j. Sigma 13. An obsolete category of NWD that previously included manufacturing and utilization information and output characteristics for nuclear energy converters, directors or other nuclear directed energy weapon systems or components outside the envelope of the nuclear source, not comprehensively revealing the theory of operation, sensitive design features of the nuclear directed energy weapon or how the energy conversation takes place. Information previously included:
  - (1) General, external weapon configuration and weapon environmental behavior characteristics, yields, and effects.

- (2) Components or subassembly design that does not reveal theory of operation or sensitive design features of nuclear directed energy weapons.
- (3) Production and manufacturing techniques for components or subassemblies of nuclear directed energy weapons.



**CONTRACTOR REQUIREMENTS DOCUMENT**  
**DOE O 452.8, CONTROL OF NUCLEAR WEAPON DATA**

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 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 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. IDENTIFICATION OF NUCLEAR WEAPON DATA (NWD).

- a. All Restricted Data or Formerly Restricted Data containing design, manufacture, or use (including theory, development, storage, characteristics, performance, and effects) of nuclear weapons or nuclear weapon components, including information incorporated in or related to nuclear explosive devices is considered NWD.
- b. NWD may be categorized as Sigma 14, Sigma 15, Sigma 18 and/or Sigma 20.
  - (1) Specific details on the management of Sigma 14 and Sigma 15 NWD is found in the CRD to DOE O 452.7, *Protection of Use Control Vulnerabilities and Designs* dated 5-14-10.
  - (2) Specific details on the management of Sigma 18 NWD is found in this CRD.
  - (3) Specific details on the management of Sigma 20 NWD is found in the CRDs to DOE O 457.1, *Nuclear Counterterrorism*, dated 2-7-06 and DOE M 457.1-1, *Control of Improvised Nuclear Device Information*, dated 8-10-06.
- c. Not all NWD requires the additional protection of a Sigma category. NWD that is not in a Sigma category is referred to as Non-Sigma NWD. Details for the protection of Non-Sigma NWD are contained in this CRD.

- d. Newly created NWD or existing NWD that has had the content modified must be reviewed. If the NWD is determined to contain Sigma 14, Sigma 15, Sigma 18 or Sigma 20, it must be appropriately marked.
  - e. Unmodified legacy NWD with obsolete Sigma markings does not require review or remarking when accessed.
2. GENERAL REQUIREMENTS. Only individuals who have appropriate clearance and valid need-to-know are permitted access to NWD.
- a. Authorization for personnel to access any NWD category will only be granted to individuals, not to organizations, functional groups, or position assignments (e.g., access is not granted to all members of “XYZ Division” or to all “engineers”).
  - b. Authorization for DOE personnel to access Sigma 14, Sigma 15, Sigma 18 and/or Sigma 20, will be granted in accordance with requirements of this CRD.
    - (1) Specific requirements for access to Sigma 14 and Sigma 15 can be found in the CRD to DOE O 452.7.
    - (2) Specific requirements for access to Sigma 18 NWD can be found in this CRD (paragraph 5 below).
    - (3) Specific requirements for access to Sigma 20 can be found in the CRDs to DOE O 457.1 and DOE M 457.1-1.
  - c. Authorization for non-NSE and OGA personnel to access Sigma NWD will be granted at NNSA Headquarters. Only visits to NSE sites will be documented in WDACS.
  - d. Visits by NSE personnel to sites within the NSE will not be documented in WDACS.
  - e. Coordinate with OSTI to provide appropriate life cycle management of scientific and technical NWD produced under their jurisdiction in accordance with the requirements found in the CRD to DOE O 241.1A.
  - f. The site technical information offices (or equivalent) and OSTI will be notified of the marking changes to historical documents.
3. RESPONSIBILITIES OF COGNIZANT SECURITY AUTHORITY.
- a. Confirm that site employees and contractors who have been granted access to NWD including Sigma 14, Sigma 15, Sigma 18 and/or Sigma 20 have:
    - (1) appropriate security clearance and



- (2) valid need-to-know for the NWD and each NWD category they have been granted access.
  - b. Ensure that employees and contractors under their jurisdiction follow the requirements of this CRD.
  - c. Ensure that NWD planned for transmittal is reviewed for classification content and prescribed markings. Prior to transmittal, verify that the recipient has:
    - (1) appropriate security clearance,
    - (2) valid need-to-know,
    - (3) access authorization for the appropriate NWD category,
    - (4) appropriate facility clearance, storage capability and authorization recorded in the SSIMS and
    - (5) contact the NNSA NWD Program Coordinator to verify the clearance of DoD or OGA recipients.
  - d. Assure the disposition of weapon data documents on the completion of work requiring access to NWD or termination of a contract.
- 4. ACCESS REQUIREMENTS.
  - a. See Table 1-1 below for clearance and access requirements. In addition to the clearance requirements, access to NWD must be restricted to personnel with a valid need-to know.
  - b. Foreign Nationals may be granted access to NWD only as permitted under the Atomic Energy Act of 1954, as amended, including agreements for cooperation concluded in accordance with AEA section 123.
  - c. The NNSA NWD Program Coordinator will provide guidance on the appropriate background investigation required for each clearance, which must include review of DOE and national-level personnel security electronic databases.
  - d. Non-Sigma FRD has the same access requirements as National Security Information (NSI).

**Note 1:** Visits involving access to Restricted Data (RD) or special nuclear material (SNM), when the visitor does not hold a DOE access authorization, require specific approval by DOE/NNSA Federal officials authorized to give such approval. Approval must be based upon, among other requirements, an appropriate final security clearance. Specific procedures for granting RD Access are contained in DOE O 470.4B, *Safeguards and Security Program*, dated 7-21-11.

**Note 2**: Prior to being given access, OGA employees (excluding DoD, NASA, and NRC) and their contractors who are granted RD Access in connection with a classified visit must receive an appropriate briefing concerning the protection of RD and must sign an acknowledgement that they have received the briefing.

**TABLE 1-1: NWD Clearance and Access Requirements**

	<b>DOE Q</b>	<b>DOE L</b>	<b>DoD Final Top Secret</b>	<b>DoD Final Secret</b>	<b>DoD Final Secret with CNWDI Brief</b>	<b>OGA Final Top Secret with RD Access</b>	<b>OGA Final Secret with RD Access</b>
Non-Sigma (C-RD)	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Non-Sigma (S-RD)	Yes	No	Yes	No	Yes	Yes	No
CNWDI (S-RD)	Yes	No	Yes	No	Yes	Yes	No
Non-Sigma (TS-RD)	Yes	No	Yes	No	No	Yes	No
Sigma 14 (TS-RD, TS-FRD; S-RD, S-FRD)	Yes*	No	Yes*	No	No	Yes*	No
Sigma 15 (TS-RD, TS-FRD; S-RD, S-FRD)	Yes*	No	Yes*	No	No	Yes*	No
Sigma 18 (TS-RD, S-RD)	Yes	No	Yes*	No	No	Yes*	No
Sigma 20 (TS-RD, S-RD)	Yes*	No	Yes*	No	No	Yes*	No

**Table Key:**

**Yes:** An individual with one of the clearances in the top row may have access to the category of classified information listed in the left column.

**Yes\*:** An individual with one of the clearances in the top row may have access to the category of classified information listed in the left column, with the additional requirement of formal access approval by the authorized DOE official specified in the appropriate directive.

**No:** An individual with one of the clearances in the top row may not have access to the category of classified information listed in the left column.

5. ACCESS REQUESTS.

- a. Requests for access to Sigma 18 NWD by non-NSE personnel will be processed by the Office of Nuclear Weapon Surety and Quality 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. Details of the requirements can be found in the CRD to DOE M 470.4-1, Chg. 2, *Safeguards and Security Program Planning and Management*, dated 10-20-10.
- b. Authorization for Q-cleared personnel within the NSE to access Sigma 18 NWD is presumed with their association to the NSE, need-to-know still applies. Within the NSE, Sigma 18 is not a managed program. NNSA HQ manages access to Sigma 18 for Non-NSE, DoD and OGA personnel.
- c. Requests for access to Sigma 18 from DoD and OGAs can only be granted by the NNSA Office of Nuclear Weapon Surety and Quality.
  - (1) Requests for access to Sigma 18 must be made using DOE F 5631.20, *U.S. Department of Energy Request for Visit or Access Approval*.
  - (2) 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. Exceptions to the 15 working day requirement can be found in the CRD to DOE M 470.4-1.
  - (3) Approval will be provided for specific purposes or projects and will be contingent upon confirmation that the personnel have DOE Q-clearance or equivalent, based on the appropriate, current background investigation and valid need-to-know. The NNSA NWD Program Coordinator will provide guidance on the appropriate background investigation.
  - (4) The National Aeronautics and Space Administration (NASA) may submit Sigma 18 requests on NASA Form 405, *Request for Access Approval*.
  - (5) The Nuclear Regulatory Commission (NRC) may submit Sigma 18 request on NRC Form 277, *Request for Access*.
  - (6) Non-NSE authorizations for access to Sigma 18 NWD may not exceed one year, although reauthorization is allowed.
  - (7) Non-NSE contractor authorizations will expire after one year or on the final day of the contract, whichever is less.

4. ORAL/VISUAL COMMUNICATION.

- a. Oral/visual communication (e.g., discussions or presentations) must be restricted to those persons with appropriate NWD clearance and valid need-to-know.

- b. Oral/visual communication of Sigma 18 information (e.g., discussions or presentations) must be restricted to those persons with appropriate Sigma access authorization, valid need-to-know, and DOE Q-clearance or the equivalent based on the appropriate current background investigation. The NNSA NWD Program Coordinator will provide guidance on the appropriate background investigation.
  - c. Distribution of Sigma 18 NWD presentations within DOE (including NNSA and other locations) will be restricted to authorized individuals as prescribed in Table 3 above.
  - d. Sites having a classified nuclear weapon display area (WDA) will grant and control access to the WDA using procedures established at each location and controlled in a manner consistent with the classification and NWD category of the information revealed. Access to WDAs will not be entered or tracked in WDACS.
5. RECEIVING AND TRANSMITTING. The receipt and transmission requirements found in the CRD to DOE O 471.6, *Information Security*, dated 6-20-11, or NNSA Policy Letter (NAP) 70.4, *Information Security*, dated 7-2-10 (or successors), must be followed for NWD. Additionally, only personnel that have appropriate Sigma access authorizations may be designated as agents for addressees.
- a. Distribution of NWD within DOE (including NNSA and other locations) will be restricted to individuals with appropriate clearance and valid need-to-know.
  - b. Distribution of Sigma 18 NWD within DOE (including NNSA and other locations) will be restricted to individuals with appropriate Sigma 18 access authorization, valid need-to-know, and DOE Q-clearance or the equivalent, based on the appropriate current background investigation. The NNSA NWD Program Coordinator will provide guidance on appropriate background investigation.
  - c. Prior to distribution within the NSE, unmodified legacy NWD requires a review for Sigma 14, Sigma 15, and Sigma 20 and brought up to current marking standards.
  - d. Prior to distribution outside the NSE Q-cleared population, to DoD or OGAs, NWD must be reviewed for Sigma content and brought up to current marking standards.
  - e. Organizations outside the NSE (i.e., DOE contracted sites) must review legacy NWD for Sigma 14, Sigma 15, Sigma 18 and Sigma 20 when accessed.
  - f. Before transmitting Sigma information outside the NSE Q-cleared population, to the DoD or OGAs, the recipient's access must be validated by the Office of Nuclear Weapon Surety and Quality.

**Note:** Sigma 14 and Sigma 20 NWD have additional requirements prior to transmission.

- g. Matter (e.g., documents, hardware or electronic media).
- (1) Non-Sigma NWD will be handled and transmitted using the procedures outlined in the CRD to DOE O 471.6 or NNSA NAP 70.4 (or successor directives).
  - (2) Secret/RD Sigma 18 NWD may be hand-carried, sent via the U.S. Postal Service Registered Mail system or overnight service approved for classified when it is critical that it be there the next day. Procedures for use of overnight services as outlined in the CRD to DOE O 471.6 or NNSA NAP 70.4, must be followed.
  - (3) Top Secret RD Sigma 18 NWD must be sent via the Defense Courier Service, the Department of State Courier System, or hand-carried using procedures outlined in DOE O 471.6, *Information Security*, dated 6-20-11 or NNSA Policy Letter (NAP) 70.4 *Information Security*, dated 7-2-10.
  - (3) A Sigma 18 Statement of Security Assurance (SSA) (formerly known as mail channel) must be established for receipt and storage of all classified NWD and specifically for CNWDI, Sigma 14, Sigma 15, Sigma 18, and Sigma 20 matter for receiving DoD, OGAs 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 matter. The SSIMS Coordinator will confirm the site is authorized to receive Sigma 18 matter through SSIMS. If an SSA is not in place, one must be initiated and processed using the procedures outlined in the CRD to DOE M 470.4-1 Chg 1.
    - (a) For SSAs not based on a contract, an unclassified justification must be provided detailing the facility's need to receive and store NWD.
    - (b) Each SSA must be submitted to the Office of Nuclear Weapon Surety and Quality 30-days prior to the required establishment or renewal date.
    - (c) Each SSA must be properly certified.
      - 1 DoD SSAs must be properly certified by an authorized official from the most recent Enclosure 5 of the DoD Directive 5210.2. A copy can be obtained directly from the Office of the Deputy Assistant to the Secretary of Defense (Nuclear Matters).
      - 2 SSAs from OGAs must be properly certified by their Cognizant Security Official.

- (d) Approved SSA's will be authorized for three years or for the length of the contract, whichever is less.
- (e) The Designated Responsible Office (DRO) will be responsible for renewal submissions. Sigma authorizations must be immediately removed from SSIMS for expired SSAs that did not have renewals submitted 30-days prior to expiration.

h. Electronic Transmission.

- (1) Non-Sigma NWD may be sent electronically only over approved classified networks if need-to-know for that information is assured.
  - (a) Non-Sigma Secret/RD NWD may be sent to the DoD and OGAs on SIPRNET without secondary encryption.
  - (b) Non-Sigma Secret/RD NWD may be sent via ESN.
- (2) Secret/RD Sigma 18 NWD may be sent via the Enterprise Secure Network (ESN). Need-to-know must be verified prior to transmission. Top Secret information is prohibited from being sent intra-site or inter-site via ESN. The use of SIPRNET for transmission of SRD Sigma 18 is prohibited.
- (3) Secure Telecommunication Transmission of Non-Sigma and Sigma 18 NWD using point-to-point secure messages via appropriately certified secure telecommunication systems 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.

6. MARKING. In addition to the marking requirements outlined in DOE O 471.6 or NAP 70.4 the following marking requirements apply to documents and media containing Sigma 18 NWD:

- a. All newly created NWD or existing NWD that has had the content modified must be reviewed for Sigma 14, Sigma 15, Sigma 18 and/or Sigma 20 content and appropriately marked.
- b. Unmodified legacy NWD with obsolete Sigma markings does not require review or remarking when accessed. Classified matter must be reviewed for Sigma 14, Sigma 15, Sigma 18 and Sigma 20 content prior to transmission and brought up to current marking standards whenever it is released or distributed.
- c. Media containing Sigma 18 information within a Site's approved classified network does not need to be marked Sigma 18. When the media files are printed or transmitted outside the Site's classified network, the printed or transmitted media must be marked according to current marking standards.

- d. As defined, there is currently no Sigma 18 hardware.
- e. Documents. When required, basic marking requirements found in the CRD to DOE O 471.6 or NNSA NAP 70.4 must be followed for Sigma 18 NWD, with the following additions.

- (1) Sigma marking (for example: Sigma 18 or Σ18) must be placed above the admonishment box on the first page (whether cover page, title page, or the first page of text). For example:

Sigma 18

RESTRICTED DATA

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

- (2) Individual pages of a Sigma 18 NWD document may be marked with the words Sigma 18 as appropriate. All NWD categories are required to be marked per the CRD to DOE O 471.6 or NNSA NAP 70.4.
  - (3) Prior to distribution, all historical documents must be reviewed for Sigma content and brought up to current marking standards. When possible, the site technical information offices or equivalent and OSTI will be notified of the marking change.
  - (4) Sigma 18 documents may have locally produced cover sheets specifying that appropriate Sigma 18 access is required before viewing the contents.
    - (a) When a Sigma 18 document is removed from a security container, a standard form cover sheet must be applied to each document by placing it over the locally produced Sigma 18 cover sheet.
    - (b) In lieu of the two cover sheets, a locally produced cover sheet or identifying label on a standard form cover sheet may be used if approved by the responsible security office.
- 7. IN USE. The in-use requirements found in the CRD to DOE O 471.6 or NNSA NAP 70.4 must be followed for Sigma 18 NWD.
  - 8. STORAGE REQUIREMENTS. Storage of Sigma 18 NWD will be consistent with National Standards for protection of classified information.
  - 9. ACCOUNTABILITY. Top Secret Non-Sigma and Top Secret Sigma 18 matter is accountable as outlined in DOE O 471.6 and NAP 70.4.



10. DESTRUCTION. Multiple copies, obsolete matter, and classified waste must be kept to a minimum. Classified matter must be destroyed in accordance with records disposition schedules, including the National Archives Records Administration General Records Schedules, and DOE records schedule. For more detail on destruction, see requirements found in the CRD to DOE O 471.6 or NNSA NAP 70.4.
11. INFORMATION TECHNOLOGY (IT) SYSTEMS.
  - a. Sigma 18 data residing on computer systems will be protected from unauthorized access, in a manner equivalent to the controls in place for the protection of equivalent Sigma 18 matter. Sigma 18 information on IT systems must be protected while in storage, use and transmission from unauthorized disclosure to persons without a valid need-to-know and DOE Q-clearance or the equivalent. Encryption of Sigma 18 at rest is not required.
  - b. Specific baseline requirements contained in the CRD to DOE M 205.1-4, *National Security System*, dated 3-8-07, (or its successor) must be followed for Sigma 18 NWD.