

U.S. Department of Energy
Washington, D.C.

ORDER

DOE O 452.7A

Approved: 08-05-2026

SUBJECT: PROTECTION OF USE CONTROL VULNERABILITIES AND DESIGNS

1. PURPOSE. This Order establishes the United States (U.S.) Department of Energy (DOE) requirements to protect use control (UC) information, specifically, Sigma 14 and Sigma 15 nuclear weapon data (NWD), from unauthorized access, disclosure, or compromise, including controls for access authorization, handling, marking, transmission, storage, destruction, and oversight.
2. CANCELLATION. This Order cancels DOE O 452.7, Chg. 1, *Protection of Use Control Vulnerabilities and Designs*, dated May 29, 2020. Cancellation of a directive does not, by itself, modify or otherwise affect any contractual or regulatory obligation to comply with the directive.
3. APPLICABILITY.
 - a. Departmental Applicability.
 - (1) This Order applies to all DOE elements that create, access, use, store, transmit, or transfer Sigma 14 or Sigma 15 NWD matter, including documents, materials, and hardware.
 - (2) The Administrator of the National Nuclear Security Administration (NNSA) must ensure that NNSA employees comply with this Order. Nothing in this Order must be construed to interfere with the NNSA Administrator's authority under section 3212(d) of Public Law 106-65, National Defense Authorization Act for Fiscal Year 2000, to establish Administration-specific policies, unless disapproved by the Secretary.
 - b. DOE Contractors.
 - (1) This Order applies to DOE contractors performing work that creates, accesses, uses, stores, transmits, or transfers Sigma 14 or Sigma 15 NWD matter.

- (2) The requirements of this Order shall be incorporated into applicable contracts, including Management and Operating contracts. The contractor is responsible for flowing down the requirements of this Contractor Requirements Document, if applicable. Contractors shall comply with the requirements of applicable federal, state, and local laws and regulations in carrying out the requirements of this Order unless relief has been granted in writing. Omission of any applicable law or regulation from the Order does not affect the obligation of the contractor to comply with such law or regulation. Contractors must comply with the requirements of this Order, except to the extent modified by the equivalencies or exemptions identified herein or issued to the contractor in writing by DOE utilizing the process outlined in DOE Order (O) 251.1E, *Departmental Directives Program*, including as amended or updated.
 - c. Equivalencies and Exemptions. Equivalencies and exemptions to this Order must be processed in accordance with DOE O 251.1, current version, and directed to the Use Control Program Coordinator (UCPC). In accordance with the responsibilities and authorities assigned by Executive Order 12344, Naval Nuclear Propulsion Program, codified at 50 U.S.C. §§ 2406, Deputy Administrator for Naval Reactors, and 2511, Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Order for activities under the Director's cognizance, as deemed appropriate.
4. REQUIREMENTS. Baseline NWD requirements are defined in DOE O 452.8, *Control of Nuclear Weapon Data*, current version. All requirements must be executed in accordance with policies including, but not limited to U.S. Codes, Codes of Federal Regulation (CFRs), Presidential directives, DOE policies, this Order, NNSA policies, memos, UCPC-issued directives, local Use Control Site Coordinator (UCSC)-issued, policies, directives, and procedures, and approved local security plans.
- a. Access Authorization. Access to Sigma 14 or Sigma 15 NWD must be restricted to individuals who have a general need to know for Sigma 14 or Sigma 15 NWD to accomplish their duties. Individuals must follow local policies and procedures to obtain a Sigma 14 or Sigma 15 access authorization to document that their access has been approved by the proper authorities.
 - b. Technical Discussion/Distribution. Technical discussion or distribution of Sigma 14 or Sigma 15 NWD must be restricted to individuals who have an active Sigma 14 or Sigma 15 access authorization and specific need to know for the information being discussed or accessed.
 - c. Marking.
 - (1) Marking requirements in this section must apply to all documents and hardware containing Sigma 14 or Sigma 15 NWD.

- (2) Documents containing Sigma 14 or Sigma 15 NWD must be marked in accordance with applicable DOE information security marking requirements and must clearly identify applicable Sigma NWD categories.
- (3) The applicable caveat marking (e.g., “Sigma 15”) must be placed above the classification category marking on the first page (cover page, title page, or first page of text).
- (4) Historical documents must be properly marked when accessed.
- (5) Sigma 14 or 15 NWD documents must use distinctive cover sheets indicating that appropriate Sigma access authorization is required before viewing the contents.
- (6) A document from which Sigma 14 or Sigma 15 information has been redacted must:
 - (a) Clearly indicate that it is a redacted version; and
 - (b) Annotate the redaction in a manner that preserves an auditable record of the change and supports classification review when a change could affect classification level or category.

d. In-Use Controls.

- (1) Sigma 14 or Sigma 15 documents, hardware, or material must not be left unattended outside an approved security container or vault/vault-type room (VTR). Such items must be:
 - (a) Constantly attended by, or under the control of, an individual with proper access authorization and need to know; or
 - (b) Secured within an approved security container or vault/VTR.

e. Storage Controls.

- (1) Sigma 14 or Sigma 15 matter must be stored consistent with DOE classified matter storage requirements, with Sigma-specific access restrictions required by this Order.
- (2) Top Secret and Secret Sigma 14 or Sigma 15 matter may be stored in an approved security container or vault/VTR with non-Sigma 14 or Sigma 15 matter; however, Sigma 14 or Sigma 15 matter must be segregated (e.g., by folder, envelope, or dividers).
- (3) Only personnel authorized for Sigma 14 or Sigma 15 access must be permitted access to security containers, vault/VTR, and combinations that contain Sigma 14 or Sigma 15 matter.

f. Destruction and Disposition.

- (1) Sigma 14 or Sigma 15 matter must be kept to the minimum necessary to accomplish mission requirements.
- (2) Multiple copies, obsolete matter, and classified waste containing Sigma 14 or Sigma 15 must be destroyed as soon as practical, consistent with applicable records disposition schedules.
- (3) All Top Secret NWD are accountable.
- (4) Classified matter must be destroyed in accordance with applicable records disposition schedules, including National Archives and Records Administration General Records Schedules and DOE records schedules.

g. Sigma 14 and Sigma 15 NWD in the Electronic Environment.

- (1) Sigma 14 or Sigma 15 data residing on computer systems must be protected from unauthorized access using controls equivalent to those required by this Order for Sigma 14 or Sigma 15 matter, consistent with approved site security plans.
- (2) Before transmitting Sigma 14 or Sigma 15 NWD, the sender must verify the recipient's access authorization and need to know for the specific information being transmitted.
- (3) Classified facsimile or point-to-point secure messages via secure terminal equipment connected to an appropriately classified system may be used at Secret and Top Secret levels only when:
 - (a) Consistent with approved site security plans; and
 - (b) Access authorization and need to know for the specific information being transmitted are confirmed prior to transmission.

h. Hardware Transfers and Controls.

- (1) Transfers of Sigma 14 or Sigma 15 hardware outside DOE must be approved by the NNSA UCPC or designated authority in accordance with applicable governing DOE/NNSA authorities and schedules for the item type (e.g., nuclear weapons, components, trainers, kits, testers, and handling gear).

5. RESPONSIBILITIES.

- a. Administrator, National Nuclear Security Administration. The NNSA Administrator must ensure NNSA organizational compliance with this Order, including governance for authorizing access to Sigma 14 or Sigma 15 NWD when such access is required.
- b. Use Control Program Coordinator. The UCPC is the federal subject matter expert for UC information, specifically Sigma 14 and Sigma 15 NWD, and appointed by the appropriate authority to coordinate the UC Program across the federal government.
 - (1) Serve as the main point of contact for the UC Program.
 - (2) Develop policies including but not limited to CFRs, DOE policies, this Order, NNSA policies, and memos to effectively and efficiently execute the UC Program.
 - (3) Ensure that the UC Program is being executed effectively and efficiently across the federal government.
 - (4) Serve as the UCSC for DOE/NNSA headquarters and any DOE laboratories, plants, or sites, or non-DOE entities without an appointed UCSC.
- c. Use Control Site Coordinator. Each DOE laboratory, plant, site, or non-DOE entity that participates in the UC Program will have a UCSC appointed as appropriate to execute the following responsibilities:
 - (1) Serve as the main point of contact for the UC Program at their respective laboratory, plant, site, department, or agency.
 - (2) Develop local policies, processes, and procedures to effectively and efficiently execute the UC Program in accordance with relevant policies.
 - (3) Ensure local compliance with relevant policies, processes, and procedures.
 - (4) Approve Sigma 14 and Sigma 15 access authorizations.
- d. Contracting Officers and Federal Contracting Activities. Contracting activities must:
 - (1) Ensure contractor work scopes involving Sigma 14 or Sigma 15 NWD include enforceable requirements to meet applicable controls in this Order; and

- (2) Coordinate with responsible program and security organizations to verify contractor execution is aligned with this Order for work that creates, uses, stores, transmits, or transfers Sigma 14 or Sigma 15 NWD.
 - e. DOE Contractors Performing Covered Work. DOE contractors performing work within the scope of this Order must:
 - (1) Ensure only individuals with the appropriate Sigma access authorization and need to know access Sigma 14 or Sigma 15 NWD;
 - (2) Implement required marking, in-use controls, storage controls, destruction/disposition controls, and information technology protections for Sigma 14 or Sigma 15 NWD in their custody consistent with this Order and approved site security plans; and
 - (3) Ensure transfer prerequisites are met prior to transferring covered hardware.
 - f. For all applicable contracts and upon notification that a site/facility management contract is affected by this Order, the contracting officer(s) shall incorporate the requirements into the affected contract(s) via the “Laws, Regulations, and DOE Directives” clause of the contract, or through negotiation and modification, as appropriate.
6. DEFINITIONS. Also refer to DOE Order 452.8, current version, for additional relevant definitions.
- a. Documents. A physical medium, regardless of its physical form or characteristic, used to convey information.
 - 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 (including electronic and digital) or characteristics.
 - d. Nuclear Security Enterprise (NSE). Per 50 U.S.C. §2501, National Nuclear Security Administration, the NSE is the physical facilities, technology, and human capital of the national security laboratories and the nuclear weapons production facilities, and any DOE facility that the Secretary of Energy, in consultation with the Administrator of the NNSA and the Congress, designates a part of the NSE.

- e. Nuclear Weapon Data (NWD). A label for 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. Predecessor to Sigma 14 and Sigma 15 NWD categories. 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 NWD. A specific category of NWD concerning the vulnerability of U.S. nuclear weapons to denial of authorized use, or deliberate unauthorized use which could lead to a deliberate unauthorized nuclear detonation.
- h. Sigma 15 NWD. A specific category of NWD concerning the design and function of U.S. nuclear weapon UC systems (both passive and active), features, and components. Security verification or weapon design features not specifically part of a UC system may also be included. NOTE: Not all UC design information is Sigma 15.
- i. Sigma 14 or Sigma 15 Access Authorization. A formal authorization for a specific individual to access Sigma 14 or Sigma 15 NWD.
- j. 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. REFERENCES.

- a. DOE O 251.1, *Departmental Directives Program*, current version.
- b. National Archives and Records Administration, General Records Schedules.
- c. Public Law 106-65, *National Defense Authorization Act for Fiscal Year 2000*, section 3212(d).
- d. 10 CFR § 709, *Counterintelligence Evaluation Program*.
- e. 10 CFR § 1045, *Nuclear Classification and Declassification*.
- f. DOE O 452.8, *Control of Nuclear Weapon Data*, current version.

8. CONTACTS. For questions concerning this Order, contact the UCPC.

BY ORDER OF THE SECRETARY OF ENERGY:



JAMES P. DANLY
Deputy Secretary