

Approved: 10-28-2024

**SUBJECT: SCIENTIFIC AND TECHNICAL INFORMATION MANAGEMENT**

1. **PURPOSE.** Science and technology (S&T) progress is a cornerstone of the U.S. Department of Energy's (DOE's) mission. DOE invests billions of dollars each year on research and development (R&D) and related activities to advance science and innovate technology to support the Nation's security and prosperity.<sup>1</sup> As a result, knowledge is gained and scientific and technical information (STI) is produced.

Since 1947, DOE has been required by law to manage and maintain its STI to enable its mission by ensuring that the STI it generates is made available to the American taxpayer, and public at large, in a timely manner, without unnecessary delays or limits to access.<sup>2</sup>

This Order is critical to ensuring that DOE fulfills its STI management responsibilities for identifying, collecting, reviewing, controlling, preserving, and disseminating its STI. Specifically, this Order:

- a. establishes STI requirements and roles/responsibilities for federal staff and contractors that perform, initiate, manage, and/or execute R&D, regardless of DOE sponsorship or funding instrument within the boundaries of laws, regulations, Executive actions, other federal and DOE requirements, and program needs and resources; and
  - b. provides high-level requirements for safeguarding classified STI, Unclassified Controlled Nuclear Information (UCNI), and Controlled Unclassified Information (CUI) to protect STI when mandated by laws, regulations, Executive orders, and other federal and DOE requirements.
2. **CANCELS/SUPERSEDES.** DOE O 241.1B, *Scientific and Technical Information Management*, dated 4-26-16. Cancellation of an order does not, by itself, modify or otherwise affect any contractual obligation to comply with the order. Contractor Requirements Documents (CRDs) and/or other requirements incorporated into a contract remain in effect throughout the term of the contract unless the contract is modified to either (1) eliminate requirements that are no longer applicable, or (2) substitute a new set of requirements.

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<sup>1</sup> See Attachment 2 for the definition of R&D.

<sup>2</sup> Notable authorities, federal-wide, and DOE policy/guidance include [Atomic Energy Acts of 1946, P. L. 79-585 and 1954](#), as amended P.L. 83-703, [Department of Energy Organization Act of 1977](#), P.L. 95-91, [Energy Policy Act of 2005, P.L. 109-58](#), White House Office of Science and Technology Policy (OSTP) 2022 Memorandum, [Ensuring Free, Immediate, and Equitable Access to Federally Funded Research](#), and the [2023 DOE Public Access Plan](#).

3. APPLICABILITY.

Departmental Applicability. This Order applies to all Departmental Elements that conduct or support R&D activities which generate STI, including the federal DOE professionals that have programmatic and business management responsibilities to implement, execute and administer/monitor the R&D that is funded or supported, e.g., contracts, financial assistance agreements, and/or other transactions, not the direct recipients of these awards. The term "award" will be used throughout this Order to reference any and all types of agreements made by DOE. For the purposes of this Order, the National Nuclear Security Administration (NNSA), a separately organized Agency within the Department answering to the Secretary, is included as a DOE Element.

The Administrator of NNSA must ensure that NNSA employees comply with their responsibilities under this directive. Nothing in this directive will 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.

- a. DOE Contractors. Except for the equivalencies/exemptions in paragraph 3.c., the Contractor Requirements Document (CRD), Attachment 1, sets forth requirements of this Order for DOE contractors.

The CRD must be included in all contracts for the management and operation (M&O) of DOE-owned or -leased facilities and in site/facility management contracts which involve R&D and related activities that generate STI in the performance of DOE-funded projects or in work performed at a DOE-owned or -leased facility.

For all contracts other than M&O or site/facility management contracts, which involve R&D and related activities that generate STI in connection with the performance of DOE-funded projects, the statement of work must include the applicable requirements set forth in the CRD.

- b. Equivalencies/Exemptions for DOE O 241.1C.
  - (1) Equivalency. In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at Title 50 United States Code (U.S.C.) sections 2406 and 2511 and to ensure consistency through the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Directive for activities under the Director's cognizance, as deemed appropriate.
  - (2) Exemption.
    - (a) In accordance with the Delegation of Authority 00-033.00B, Bonneville Power Administration (BPA) is exempt from this Order.

- (b) In accordance with the 2022 White House Office of Science and Technology Policy (OSTP) memo, Ensuring Free, Immediate, and Equitable Access to Federally Funded Research, section 4.b) "...consistent with the law, privacy, and security considerations," federal and contractor employees conducting only classified R&D are not required to have a persistent identifier for themselves.

4. REQUIREMENTS. This Order applies to STI (see Attachment 2) that contain the findings and technical innovations resulting from R&D efforts and the scientific and technical work of scientists, researchers, and engineers, whether Federal employees, contractors, or financial assistance recipients. This Order requires that:

- a. STI resulting from DOE R&D must be identified, collected, reviewed, and preserved to ensure it can be appropriately disseminated.
- b. STI must be made available in a timely manner without unnecessary delays, including STI that may be subject to limitations on public distribution (see d. below). Peer-reviewed scholarly publications must be made available without any embargo or delay after publication.

Types of STI must be identified for collection for all DOE funded and/or supported R&D and related activities. DOE must have sufficient rights to the STI that is identified. These rights, as well as any protections, limitations, and/or restrictions, must be provided as part of the award terms to ensure proper collection, dissemination, and preservation of the STI (See Attachment 3).

- c. STI identified for collection (see c.) and/or the associated metadata records must be provided to DOE's central coordinating office, the Office of Scientific and Technical Information (OSTI) to fulfill DOE responsibilities for collection, dissemination, and preservation of STI (see Attachments 3 and 4, for STI identification and submission requirements).
- d. STI and/or associated metadata submitted to OSTI must be reviewed prior to release to ensure that it is managed and then disseminated or safeguarded using the proper access limitations authorized by the intellectual property (IP) provisions outlined by the award terms. STI must be reviewed for:
  - (1) Controlled Unclassified Information (CUI), which includes, but is not limited to, Protected Personally Identifiable Information (PII)
  - (2) Limited rights data
    - (a) Export Controlled Information
    - (b) Patentable Material/Inventions
  - (3) Classified information

- (4) Unclassified Controlled Nuclear Information (UCNI)
- (5) Nonproliferation and national security information
  - (a) Protected Data covered under a special data statute;
  - (b) Small Business Innovation Research (SBIR) or Small Business Technology Transfer (STTR) Data; or
  - (c) Other information not subject to public release.

As an outcome of these reviews, STI must be released to OSTI with the appropriate access limitation and any full-text STI must include any necessary markings based on the authorized rights notices outlined by the IP provisions of the award.

- e. Due to new or updated document classification requirements, legacy documents previously submitted to OSTI may require a secondary review by the originating site, facility, or sponsoring program office if a request is received for dissemination of the document. Updated markings should be applied, and the document should be re-submitted to OSTI with the new markings and the appropriate access limitations.
- f. Departmental Elements that sponsor R&D must delegate a senior official (Technical Information Officer [TIO]) to address STI policy issues and participate in DOE's Scientific and Technical Information Program (STIP). OSTI will maintain a public list of TIOs on the STIP website (<https://www.osti.gov/stip/about/stip-community#TechnicalInformationOfficers>).
- g. Prior to dissemination, STI products must include acknowledgment of Government sponsorship, license rights, and any other notices/disclaimers required by the award terms. STI metadata records must include attribution to the sponsoring program. Language indicating program sponsorship should include DOE, the DOE sponsoring program office, and that sponsoring program office's subprogram(s) (if possible) funding the research.
- h. DOE federal and contractor employees conducting R&D work must obtain a persistent identifier (PID) for themselves that meets the common/core standards specified in the NSPM-33 Implementation Guidance<sup>3</sup> or successor guidance (e.g., ORCID iD). The PID must be used by these employees in published research outputs when available and be provided to OSTI with STI metadata records.
- i. R&D activities funded or supported by DOE must provide a Data Management

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<sup>3</sup> National Science and Technology Council January 2022, [Guidance for Implementing National Security Presidential Memo 33 on National Security Strategy for United States Government-Supported Research and Development](#).

Plan (DMP) or Data Management and Sharing Plan (DMSP) for scientific data generated by the award or any other authorized work (see Attachment 6).

- j. A PID (e.g., digital object identifier [DOI]) must be associated with the following STI records:
  - (1) Accepted Manuscripts/Journal Articles – If a PID is assigned by the publisher, it must be provided to OSTI with the metadata record.
  - (2) Scientific Data that are publicly accessible (i.e., posted on a public website or repository) – If the data has a PID, it must be provided to OSTI with the metadata record. If a PID is not provided, OSTI will assign one.
  - (3) Technical Reports with no distribution limitations – If the report has a PID, it must be provided to OSTI with the metadata record. If a PID is not provided, OSTI will assign one.
  - (4) Scientific Software with no distribution limitations – If the software has a PID, it must be provided to OSTI with the metadata record. If a PID is not provided, OSTI will assign one.
- k. All DOE federal and contractor employees who author, create, manage, or otherwise directly contribute to the production or review of STI, must complete training on appropriate STI management procedures and requirements within twelve months after the STI training becomes available and once every two years thereafter.
- l. New DOE federal and contractor employees who author, create, manage, or otherwise directly contribute to the production or review of STI, including interns and those on short-term details and assignments, must complete training on appropriate STI management procedures and requirements upon initial employment (or within twelve months after the STI training becomes available) and once every two years thereafter. For short-term appointments, repeat training applies if appointments extend beyond two years.

## 5. RESPONSIBILITIES.

### a. Director, Office of Science

- (1) Provides overall leadership and policy direction for DOE STI management as required by Federal laws, regulations, Executive orders, and other Federal and DOE requirements.
- (2) Ensures that DOE's STI Program is implemented consistent with DOE and NNSA mission and legal requirements.

b. Director, Office of Scientific and Technical Information (OSTI), within the Office of Science

- (1) Works to ensure that OSTI provides appropriate access to DOE's STI and preserves a permanent DOE STI repository.
- (2) Leads the Department's STI Program, which includes TIOs representing Departmental Elements (Headquarters and field) and STI Managers at contractor sites/facilities who work collaboratively to fulfill DOE requirements for STI management and to address specific programmatic or cross-cutting STI management issues.
- (3) Ensures that OSTI provides and manages accredited information systems, services, and processes for secure, efficient, and comprehensive submission and collection of STI, encompassing various forms and categories.
- (4) In collaboration with the STI community, establishes requirements and responsibilities to ensure optimal availability of Departmental STI to the varied customer segments, within applicable laws, regulations, Executive orders, and other Federal and Departmental requirements.
- (5) Directs OSTI to make DOE-funded STI accessible and discoverable by maintaining information management systems and providing web search tools and services for publicly releasable STI (see <https://www.osti.gov/>), along with secure search tools for protected categories of STI as appropriate.
- (6) Manages domestic, interagency, and international STI exchanges to ensure DOE access to national and global scientific and technical advances and to enable global access to publicly available DOE STI.
- (7) Supports program-specific STI management efforts by offering special support services upon request to DOE organizations that provide funding to cover incremental costs of the requested service(s).
- (8) Directs OSTI to create and provide basic STI training for DOE federal and contractor employees on appropriate STI management procedures and requirements.

c. Heads of Departmental Elements

- (1) Ensure that the objectives and requirements of this Order are incorporated into policy, procedures, performance, and guidance for programs and projects that generate STI resulting from R&D.

- (2) Instruct program officials and initiators of requisitions for site/facility management contracts to specify whether the CRD for this Order applies in the award resulting from the requisition and any special instructions for applying the CRD.
  - (3) Instruct program officials that direct and authorize R&D to be performed (for site/facility management or other R&D/non-site facility contracts) to specify the CRD in the associated statement of work (SOW). If the entire CRD is not included, program officials must specify the STI product and DMP/DMSP requirements as a clause in Part H of the contract.
  - (4) Instruct program officials and initiators of requisitions for non-site/facility management contracts to specify whether the CRD for this Order applies in the award resulting from the requisition and any special instructions for applying the CRD.
  - (5) Instruct program officials and initiators of requisitions for financial assistance awards to specify the requirements and instructions for submitting STI (see Attachment 3) and data management planning through a DMP/DMSP (see Attachment 6) as part of the award terms and/or reporting requirements.
  - (6) Ensure that DOE federal employees conducting R&D provide a DMP/DMSP for scientific data generated in the course of their work as well as identify and submit STI (see Attachments 3, 4, and 6).
  - (7) Designate a Technical Information Officer (federal employee) that will participate in the Department's STIP.
  - (8) Ensure that DOE federal employees conducting R&D work are instructed to obtain a persistent identifier for themselves that meets the common/core standards specified in the NSPM-33 Implementation Guidance or successor guidance (e.g., ORCID iD).
- d. Senior Procurement Executive (SPE) (non-NNSA and NNSA) ensures that the requirements of this Order are effectively integrated into the procurement processes of DOE where policy, procedures, and guidance are updated to effectively implement and monitor the requirements of this Order for awards, contracts, and/or agreements that DOE funds for R&D.
- e. Heads of Contracting Activity (HCA) and Procurement Directors
- (1) Oversee the procurement functions to ensure that contract management systems, awards, and administration of awards are in accordance with the requirements of this Order.
  - (2) Appoint Grants and Contracting Officers (GOs/COs).

- (3) Ensure that local policy, procedural, and guidance documentation address the requirements of this Order and any additional guidance and direction from the SPE.
  - (4) Ensure that performance measures for STI management are included in performance-based awards, as appropriate.
- f. Grants Officers/Contracting Officers (GO/CO)
- (1) After notification by the appropriate program official or initiator of the requisition, incorporate the CRD of this Order into affected existing site/facility management contracts via the laws, regulations, and DOE Directives clauses of the contracts.
  - (2) Assist program officials and initiators of requisitions with incorporating the CRD in new non-site/non-facility management contracts, as appropriate.
  - (3) Ensure that the required STI products, instructions for submission, and timing for those submissions, are identified as part of the terms and/or reporting requirements for the award.
  - (4) Ensure that data management planning requirements (see Attachment 6) are included as part of the award terms.
  - (5) Ensure that a Releasing Official is designated for the award, contract, and/or agreement as described in Attachment 2.
  - (6) Serve as a contact for guidance and interpretation of the award terms.
  - (7) Ensure that the award is in compliance with the STI reporting requirements for the award.
- g. Program Managers (PM) ensure that requisitions for the projects under their purview are implemented and administered to meet the requirements outlined in this Order.
- h. Technical Information Officers
- (1) Represent the Departmental Element in STIP to ensure that the STI objectives and requirements of this Order are integrated as part of policy, procedures, and guidance for the program to ensure that STI is identified, reported as required, reviewed as needed, and monitored for performance.
  - (2) Coordinate with program managers/officials, site/facility management contractors, GO/COs, and acquisitions/procurement staff associated with the projects/work authorized or awarded to ensure the following:

- (a) Program staff have adequate familiarity with the STI requirements of this Order.
    - (b) STI is identified and submitted for the R&D that the program funds or supports.
    - (c) Releasing Officials are designated and there is official notification to OSTI to ensure that the STI and metadata, identified for the award, are appropriately reviewed prior to release to OSTI (see Attachment 2).
  - (3) Through STIP, participate in policy development and implementation, ensure that local implementation procedures put in place by DOE to ensure that awards are managed and executed are consistent with requirements herein, and are knowledgeable of STIP best practices (see <https://www.osti.gov/stip>) in order to implement appropriate local procedures.
6. DEFINITIONS. See Attachment 2.
7. REFERENCES. The following references provide authority for the Department's scientific and technical information management program.
- a. Atomic Energy Act of 1954, as Amended, Public Law (P.L.) 83-703, establishes a program for the dissemination of unclassified scientific and technical information and for the control, dissemination, and declassification of Restricted Data, subject to appropriate safeguards, so as to encourage scientific and industrial progress (42 U.S.C. Sec. 2013, 2051, and 2161).
  - b. Freedom of Information Act, P.L. 89-487, provides for public access to Federal agency records, which would include records containing scientific and technical information created with Federal funding (5 U.S.C. 552 et seq.).
  - c. Energy Reorganization Act of 1974, P.L. 93-438, provides responsibilities for developing, collecting, distributing, and making scientific and technical information available for distribution (42 U.S.C. Sec. 2161, 5813, 5817).
  - d. Department of Energy Organization Act of 1977, P.L. 95-91, provides for maintaining a central source of information and disseminating information (42 U.S.C. Sec. 5916, 7112).
  - e. Title XXXII, National Nuclear Security Administration Act, as Amended, P.L. 106-65, establishes a separately organized agency within the Department of Energy in 2000 (50 U.S.C. Chap 41).
  - f. Energy Policy Act of 2005, P.L. 109-58, Section 982, "The Secretary, through the Office of Scientific and Technical Information, shall maintain within the Department publicly available collections of scientific and technical information

resulting from research, development, demonstration, and commercial applications activities supported by the Department."

- g. America COMPETES Act of 2007, P.L. 110-69, Section 1009, calls for Federal agencies that conduct scientific research to develop agency specific policies and procedures regarding the public release of data and results of research.
- h. Presidential Memorandum for the Heads of Executive Departments and Agencies, Subject: Transparency and Open Government, January 21, 2009
- i. Presidential Memorandum for the Heads of Executive Departments and Agencies, Subject: Scientific Integrity, March 9, 2009
- j. 2010 Office of Science and Technology Policy (OSTP) Memorandum on Scientific Integrity
- k. 2021 Presidential Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence- Based Policymaking
- l. Presidential Memorandum for the Heads of Executive Departments and Agencies, Subject: Open Government Directive, December 8, 2009
- m. DOE O 142.3B, *Unclassified Foreign National Access Program*, current version
- n. DOE O 200.1A, *Information Technology Management*, current version
- o. DOE O 206.1A, *Department of Energy Privacy Program*, current version
- p. DOE O 412.1A, *Work Authorization System*, current version
- q. DOE O 413.2C, *Laboratory Directed Research and Development*, current version
- r. DOE O 452.7, *Protection of Use Control Vulnerabilities and Designs*, current version
- s. DOE O 457.1A, *Nuclear Counterterrorism*, current version
- t. DOE O 471.1B, *Identification and Protection of Unclassified Controlled Nuclear Information*, current version
- u. DOE O 471.6, *Information Security*, current version
- v. DOE O 471.7, *Controlled Unclassified Information*, current version
- w. DOE O 475.2B, *Identifying Classified Information*, current version
- x. DOE O 484.1, *Reimbursable Work for the Department of Homeland Security*, current version

- y. DOE O 483.1B, *DOE Cooperative Research and Development Agreements*, current version
- z. DOE O 481.1E, *Strategic Partnership Projects [Formerly Known as Work for Others (Non-Department of Energy Funded Work)]*, current version
- aa. DOE O 452.8, *Control of Nuclear Weapon Data*, current version
- bb. DOE Acquisition Guide, current version
- cc. DOE Guide to Financial Assistance, current version
- dd. Department of Energy Research and Development Records Schedules, N1-434-96-9, N1-434-07-01, and N1-434-08-02, current versions
- ee. Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 CFR Part 200 (Oct. 23, 2023)
- ff. Department of Energy Acquisitions Regulations, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 CFR Part 910 (Oct. 23, 2023)
- gg. Department of Energy Acquisitions Regulations, 48 CFR Part 935
- hh. Department of Energy Acquisitions Regulations, Federal Acquisitions Regulations, 48 CFR Chapter 9
- ii. Federal Acquisition Regulations, 48 CFR 52.227-14
- jj. Research and Development (R&D) Technical Report Files (Scientific and Technical Information), N1-434-06-1
- kk. DOE Open Government Plan, current version
- ll. DOE Science and Technology (S&T) Risk Matrix
- mm. Identification and Protection of Unclassified Controlled Nuclear Information (10 CFR Part 1017), which establishes policies and procedures for the identification and protection of UCNI.
- nn. Classified National Security Information, Executive Order 13526 (32 CFR Part 2001)
- oo. Executive Office of the President, Office of Science and Technology Policy, memorandum for the Heads of Executive Departments and Agencies, Subject: Increasing Access to the Results of Federally Funded Scientific Research, February 22, 2013
- pp. Secretarial Memo from Ernest J. Moniz for Heads of Departmental Elements,

National Laboratory Directors, DOE Technology Center Directors, Subject: Public Access to the Results of DOE-Funded Scientific Research, September 4, 2014

- qq. Executive Office of the President, Office of Science and Technology Policy, memorandum for the Heads of Executive Departments and Agencies, Subject: Ensuring Free, Immediate, and Equitable Access to Federally Funded Research, August 25, 2022
  - rr. DOE Public Access Plan, July 24, 2014
  - ss. DOE Public Access Plan, June 2023
  - tt. National Security Presidential Memorandum (NSPM)-33, January 14, 2021
  - uu. Guidance for Implementing National Security Presidential Memorandum 33 on National Security Strategy for United States Government- Supported Research and Development, January 2022
  - vv. National Science and Technology Council, Desirable Characteristics of Data Repositories for Federally Funded Research, May 2022
  - ww. OMB Circular A-11, Preparation, Submission, and Execution of the Budget
  - xx. OMB Circular A-110, Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations
8. CONTACT. Questions concerning this Order should be addressed to the Office of Scientific and Technical Information at [stip@osti.gov](mailto:stip@osti.gov).

BY ORDER OF THE SECRETARY OF ENERGY:



DAVID M. TURK  
Secretary of Energy

**ATTACHMENT 1**  
**CONTRACTOR REQUIREMENTS DOCUMENT (CRD) DOE O 241.1C,**  
**SCIENTIFIC AND TECHNICAL INFORMATION MANAGEMENT**

Regardless of the performer of the work, the Contractor is responsible for complying with the requirements of this CRD. The Contractor is responsible for sharing the requirements of this CRD with its employees and subcontractors at any tier to the extent necessary to ensure the compliance with the requirements. In addition to the requirements set forth in this CRD, contractors are responsible for complying with Attachments 2, 3, 4, 5, and 6 to DOE O 241.1C.

In the performance of Department of Energy (DOE) contracted obligations, each contractor is required to manage scientific and technical information (STI) produced under the contract as a direct and integral part of the work and to ensure its broad availability to the appropriate customer segments by submitting STI and/or associated metadata records to DOE's central STI coordinating office, the Office of Scientific and Technical Information (OSTI).

Attachment 2 includes a definition of STI and other terms used in this CRD. Such STI products include STI funded by DOE, resulting from work performed from DOE funding, or developed under Strategic Partnership Projects (formerly Work for Others) (unless specifically excluded in the agreement under which the work is done) or Cooperative Research and Development Agreements. STI produced at DOE scientific user facilities, but not funded by DOE, may be made available to OSTI, consistent with user agreements. Submissions of such STI products are made at the discretion of the user facility.

Equivalencies/Exemptions for DOE O 241.1C.

1. Equivalency. In accordance with the responsibilities and authorities assigned by Executive Order 12344, codified at Title 50 United States Code (U.S.C.) sections 2406 and 2511 and to ensure consistency through the joint Navy/DOE Naval Nuclear Propulsion Program, the Deputy Administrator for Naval Reactors (Director) will implement and oversee requirements and practices pertaining to this Directive for activities under the Director's cognizance, as deemed appropriate.
2. Exemption.
  - a. In accordance with the Delegation of Authority 00-033.00B, Bonneville Power Administration (BPA) is exempt from this Order.
  - b. In accordance with the 2022 White House Office of Science and Technology Policy (OSTP) memo *Ensuring Free, Immediate, and Equitable Access to Federally Funded Research*, section 4.b) "...consistent with the law, privacy, and security considerations", federal and contractor employees conducting only classified R&D are not required to have a persistent identifier for themselves.

The Contractor must:

1. Appoint and officially inform OSTI of the STI Manager who will serve as a primary representative for the contractor/site in the Department’s STI Program (STIP) to ensure that the requirements set forth in this CRD are coordinated and implemented at their respective contractor site/facility.
2. Designate a Releasing Official(s) who will ensure that all STI and metadata records are appropriately reviewed and marked for any access limitations prior to submission/release to OSTI (see Attachment 2).
3. Implement a site program to identify, prioritize, and submit STI products and metadata records resulting from DOE supported R&D and related activities to DOE OSTI. After appropriate review in accordance with statutory, regulatory, Executive order, and/or federal or Departmental requirements, the STI may be identified as publicly releasable (unclassified/unlimited), controlled unclassified information (CUI), or classified.

Specifically, this site program must:

- a. Identify STI products and/or associated metadata records for work authorized to be performed at the lab.
- b. Submit identified STI and/or metadata records, including the required metadata elements, to OSTI to fulfill DOE responsibilities for collection, dissemination, and preservation of STI (see Attachments 3 and 4, for STI identification and submission requirements, and Attachment 5 for required metadata element requirements). STI must be made available in a timely manner without unnecessary delays, including STI that may be subject to limitations on public distribution. Peer-reviewed scholarly publications must be made available without any embargo or delay after publication.
- c. Ensure that each STI product is in an electronic format suitable for automated indexing systems. Refer to <https://www.osti.gov/stip> for electronic format options.
  - (1) Ensure that a persistent identifier (PID) (e.g., digital object identifier [DOI]) is associated with the following STI records.
  - (2) Accepted Manuscripts/Journal Articles – If a PID is assigned by the publisher, it must be provided to OSTI with the metadata record.
  - (3) Scientific Data that are publicly accessible (i.e., posted on a public website or repository) – If the data has a PID, it must be provided to OSTI with the metadata record. If a PID is not provided, OSTI will assign one.

- (4) Technical Reports with no distribution limitations – If the report has a PID, it must be provided to OSTI with the metadata record. If a PID is not provided, OSTI will assign one.
  - (5) Scientific Software with no distribution limitations – If the software has a PID, it must be provided to OSTI with the metadata record. If a PID is not provided, OSTI will assign one.
3. Review STI and/or associated metadata, as appropriate, for release and handling:
- a. Controlled Unclassified Information (CUI), which includes, but is not limited to:
    - (1) Protected Personally Identifiable Information (PII);
    - (2) Limited rights data;
    - (3) Export Controlled Information; and
    - (4) Patentable Material/Innovations.
      - (a) Classified information;
      - (b) Unclassified Controlled Nuclear Information (UCNI);
  - b. Nonproliferation and national security information;
  - c. Protected Data covered under a special data statute;
  - d. Small Business Innovation Research (SBIR) or Small Business Technology Transfer (STTR) Data; or
  - e. Other information not subject to public release.

Due to new or updated document classification requirements, legacy STI previously submitted to OSTI may require a secondary review by the originating site/facility if a request is received for dissemination of the document. Updated markings should be applied, and the document should be re-submitted to OSTI with the new markings and the appropriate access limitation.

4. Following the necessary reviews outlined in 4., apply necessary statutory or program-driven availability protections and/or restrictions following STI reviews identified in 4.:
- a. Apply to the STI product any protection/restrictive markings required.
  - b. Include any required legal disclaimers.
  - c. For STI products resulting from DOE-funded work, identify the sponsor as follows: U.S. Department of Energy, [name of DOE sponsoring program office], [name of DOE subprogram].

- d. For journal articles, per DEAR 970.5227-2, Rights in data-technology transfer, include the Notice: This manuscript has been authored by [insert the name of the Contractor] under Contract No. [insert the contract number] with the U.S. Department of Energy. The United States Government retains and the publisher, by accepting the article for publication, acknowledges that the United States Government retains a non-exclusive, paid-up, irrevocable, world-wide license to publish or reproduce the published form of this manuscript, or allow others to do so, for United States Government purpose.
5. Review processes must include appropriate review and approval steps for restricted Science and Technology topic areas as identified in the most recent version of the DOE Science and Technology (S&T) Risk Matrix. For completed research that is determined to be a Restricted S&T topic, notification to the DOE sponsoring program office and the sponsoring program office providing stewardship over the laboratory must occur prior to public release or publication.
6. Inform OSTI when STI previously submitted to OSTI has been modified, such as changes to access limitations or content corrections (e.g., for software major version control changes, but not minor bug fixes). Also, when permanently removing STI from a website for which a persistent link was provided to OSTI, inform and work with OSTI to ensure appropriate availability and preservation of the resource (e.g., full text or software source code) by DOE.
7. In implementing a site STI program, refer to best practices and National Archives and Records Administration (NARA)-approved DOE programmatic records schedules, such as Department of Energy Research and Development Records Schedule. This schedule includes Appendix A, R&D Technical Reports or Other Forms of STI Submitted to OSTI.
8. Ensure DOE contractor employees conducting R&D work obtain a PID for themselves that meets the common/core standards specified in the NSPM-33 Implementation Guidance<sup>4</sup> or successor guidance (e.g., ORCID iD). Ensure the PID is used by these DOE contractor employees in published research outputs when available and provided to OSTI with STI metadata records.
9. Ensure that for all R&D work that is authorized to be performed, a Data Management Plan (DMP) or Data Management and Sharing Plan (DMSP) must be provided to DOE (see Attachment 6 for detailed instructions).
10. Ensure all DOE contractor employees who author, create, manage, or otherwise directly contribute to the production or review of STI, must complete training on appropriate STI management procedures and requirements within twelve months after the STI training becomes available and once every two years thereafter. All new DOE contractor employees who author, create, manage, or otherwise directly contribute to the production or review of STI, including interns and those on short-term details and assignments, must complete training upon initial employment (or within twelve months after the training becomes available) and once every two years thereafter. For short-term appointments, repeat training applies if appointments extend beyond two years. DOE OSTI will create and provide basic STI training, which can be customized or modified as needed by the DOE contractor.

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<sup>4</sup> Guidance for Implementing National Security Presidential Memorandum 33 on National Security Strategy for United States Government-Supported Research and Development ([NSPM-33 Implementation Guidance](#))

NOTE: The DOE STI Program website (<https://www.osti.gov/stip>) and the DOE Public Access Plan website (<https://www.energy.gov/doe-public-access-plan>) provide more detailed information about implementing the requirements of this Contractor Requirements Document. These websites include instructions, best practices, and examples developed in coordination with the DOE and contractor STI community.



## ATTACHMENT 2 DEFINITIONS

This Attachment provides definitions associated with DOE O 241.1C and applicable to contracts in which the associated CRD (Attachment 1 to DOE O 241.1C) is inserted.

1. Accepted Manuscript. The version of a journal article that has been peer-reviewed and accepted for publication, and includes changes made by the author during the peer-review process. The content is the same as the published article, but it does not have the final formatting and copy-editing done by the publisher in the final published version, and it is not a reproduction copy of what appears or will appear in the journal; it is not a reprint of the published article.
2. Controlled Unclassified Information (CUI). Information the Government creates or possesses, or that an entity creates or possesses for or on behalf of the Government, that a law, regulation, or Government-wide policy (LRGWP) requires or permits an agency to handle using safeguarding or dissemination controls. CUI does not include classified information or information a non-executive branch entity possesses and maintains in its own systems that did not come from, or was not created or possessed by or for, an executive branch agency or an entity acting for an agency. (Ref DOE O 471.7, *Controlled Unclassified Information*, or current version.) Refer to <https://www.osti.gov/stip>, for the most current information related to CUI STI.
3. Contracting Officer/Grants Officer (CO/GO). An official of DOE certified and authorized to execute procurement instruments including acquisitions/contracts, and financial assistance awards on behalf of DOE and who is responsible for the business management and non-program aspects of the agreement.
4. Departmental Element. A first-tier organization at Headquarters and in the field. First-tier at Headquarters encompasses heads of the major Headquarters line programs, e.g., Program Secretarial Officers. First-level field element refers to first-level organizations located outside the Washington Metropolitan area and encompasses Operations Offices, Site Offices, Field Offices, and Regional Offices.
5. Digital Persistent Identifier or Persistent Identifier (PID). A digital identifier that is globally unique, persistent, machine resolvable and processable, and has an associated metadata schema. Generally, a long-lasting, managed, and registered unique digital reference (often in the form of a URL) to a research object that can be represented or described online. PIDs are often associated with people, organizations, funding, and STI. Common PIDs include ORCID iDs (for people), ROR IDs (for organizations), and DOIs (for R&D outputs and awards).

6. E-Link. The DOE corporate STI submission system, developed and maintained by OSTI, and used by those submitting, reviewing, and managing STI for collection, preservation, and dissemination. These communities may include, but are not limited to, DOE federal employees, TIOs, Releasing Officials, procurement staff, e.g., awarding offices, site/facility contractors, e.g, national laboratories, STI Managers, facilities, other contractor employees, financial assistance recipients, programs, and OSTI staff.
7. Financial Assistance. As defined in 2 CFR 200.1. Assistance that non-Federal entities receive or administer in the form of:
  - a. Grants;
  - b. Cooperative agreements;
  - c. Non-cash contributions or donations of property (including donated surplus property);
  - d. Direct appropriations;
  - e. Food commodities;
  - f. Other financial assistance
8. Head of Contracting Activity (HCA). DOE official with senior management authority for the award and administration of procurement instruments including acquisitions/contracts, and financial assistance.
9. Metadata. Information that describes the attributes of a document or other type of Scientific and Technical Information (STI) product. In addition to basic descriptive bibliographic information such as title, author, publication date, research performer or originating site, a minimum set of metadata fields/elements are required to facilitate identification, ensure appropriate submission to OSTI, and to ensure accessibility and discovery. Additional optional metadata fields enhance retrieval via web-based search tools.
10. Metadata Element/Field. A specific piece of information that describes the attribute of the STI. Metadata elements/fields may include bibliographic information such as title, author, or publication date.
11. Metadata Record. (formerly Announcement Notice [AN]). The package of information describing the attributes of the STI product.
12. Originating Research Organization. In E-Link, this metadata element/field refers to the name and location of the organization that performed the research or issued the scientific and technical report/product.

13. Program Manager. An official of a sponsoring program office who has been delegated responsibility for implementation and administration of a specific program which may include one or more projects.
14. Releasing Official. An individual designated by the GO/CO, TIO, and/or Contractor who will coordinate and confirm that the STI submitted to OSTI:
  - a. Complies with all necessary reviews.
  - b. Fulfills the reporting requirements based on the identification of STI for the financial assistance award, contract, and/or work that is authorized under the M&O and site/facility contract.
  - c. Has the correct access controls/distribution limitation consistent with the data rights identified by the terms of the award/agreement.
  - d. Includes the necessary data protection markings consistent with the access controls/distribution limitations in c.
  - e. Is submitted with the accurate release date consistent with the award/agreement, if applicable.
  - f. Includes all required metadata (see Attachment 5).
  - g. Coordinates with the Awardee or author of STI if the STI needs to be updated/corrected; makes those updates in E-Link, as needed.
  - h. Releases the STI in E-Link once the review/release process is complete.
15. Research and development (R&D). For purposes of this Order, R&D is defined based on relevant laws and federal-wide policy and guidance that authorize and govern the management of DOE R&D and scientific and technical (S&T) programs. R&D, at a general level, includes basic research, applied research, and/or development activities where new knowledge is acquired, and additional knowledge is gained.<sup>5</sup>
16. Scientific and Technical Information (STI). STI are the results of knowledge arising from the R&D and/or related activities (see 15., definition for R&D). STI is produced by those funded or supported by DOE, including federal researchers.

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<sup>5</sup> For specific examples of what is meant by basic and applied “research” and “development,” see [2 CFR 200.1](#) and Office of Management and Budget (OMB) Circular [A-110 \(Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations\)](#) for financial assistance awards and 48 CFR 35.001, *Research and Development Contracting* for R&D related contracts. For R&D as it applies to preparation of federal agency budget, see OMB Circular [A-11 \(Preparation, Submission, and Execution of the Budget\)](#). When deciding whether the type of work that is funded or supported by DOE includes or excludes R&D, refer to the R&D definitions identified by the pertinent laws and/or federal-wide policies and guidance for the sponsoring program and/or procurement instrument.

There are different types of STI. The R&D and/or related activities may produce more than one type. STI is communicated through various media (e.g., textual, multimedia, audiovisual, and digital) and include scientific/technical reports; scientific/technical conference papers, presentations, posters, or proceedings; journal articles/accepted manuscripts; scientific data; scientific software; books/monographs; thesis/dissertations; and technical workshop reports. STI does not include information related to the R&D such as preliminary analyses, drafts of scientific papers, plans for future research, peer reviews, communications with colleagues, laboratory samples, performance (management and oversight), or financial monitoring and reporting. (See Attachment 3, Identifying STI).

For purposes of STI identification and collection, the DOE award provides DOE's rights to STI and identifies any necessary markings/controls for submitting the STI to OSTI. The access controls for STI may include unclassified, Controlled Unclassified Information (CUI) (e.g., export controlled, Protected, e.g., special statutes with limited

protections), Unclassified Controlled Nuclear Information (UCNI), or classified. STI will be managed and disseminated based on the access control for the STI (e.g., if a final technical report is submitted as "protected" because its STI is protected for five years based on a special statute, it will not be disseminated publicly before its data protection expires).

17. Senior Procurement Executive. Responsible for management direction and oversight of all processes and operations governing the procurement system (acquisitions and financial assistance) of the Department, including implementation of the unique procurement policies, regulations, and standards of the executive agency. Procurement authority, which flows from the Secretary, is unique within the Department of Energy as it has two Senior Procurement Executives:
  - a. National Nuclear Security Administration (NNSA)
  - b. DOE Office of Management - Responsible for everything outside of the National Nuclear Security Administration (NNSA)

Definitions for other STI management terms and acronyms used in this Order can be found on the STI Program website at <https://www.osti.gov/stip>.

### **ATTACHMENT 3 IDENTIFYING STI**

This Attachment provides information and/or requirements associated with DOE O 241.1C as well as information and/or requirements applicable to contracts in which the associated CRD (Attachment 1 to DOE O 241.1C) is inserted.

The initiator of the requisition, generally the sponsoring program office, in coordination with the grants or contracting officer (GO/CO) is responsible for identifying the STI for the DOE award.

Certain STI products are automatically required for an award because of DOE or federal-wide policy. However, certain STI is identified at the discretion of the sponsoring program office based on the nature of the R&D that has been awarded or authorized to be performed. When identifying STI, it is important to consider the different types of STI that DOE OSTI collects, and the goals of the sponsoring program. STI must be submitted in a timely manner. Peer-reviewed scholarly publications must be made available without any embargo or delay after publication.

In general, STI (see Attachment 2) includes products that contain the results of the R&D funded or supported by DOE. STI does not include information related to the R&D such as preliminary analyses/results, drafts of scientific papers, plans for future research, peer reviews, communications with colleagues, laboratory samples, funding proposals, performance or progress reports (management and oversight), or financial monitoring and reporting.

The following table provides information to assist those who are responsible for identifying STI generated by awards which involve R&D.

<u>STI Product</u>		<u>Reporting Requirement</u>
<u>Conference Paper, Presentation, Poster or Proceeding</u>		<p>Required if the "conference" task is part of the work to be performed; in this case, it would be the primary means of reporting the results of the R&amp;D.</p> <p>Required if the conference product is published in a peer-reviewed journal.</p> <p>Required if the conference product delivers key outcomes or knowledge gained from the R&amp;D that do not otherwise duplicate other STI, e.g., if the key outcomes or results are published in a journal article/accepted manuscript that has been submitted and has free/open access, and the conference product is duplicative and does not add to the knowledge shared by the journal article, a conference product may not be required.</p>
<u>Journal Article/Accepted Manuscript</u>	Required if the research results are published in a peer-reviewed journal.	
<u>Scientific Data</u> <sup>[1]</sup>		Required if the scientific data is shared publicly as described in an approved Data Management Plan (DMP) or Data Management and Sharing Plan (DMSP).
<u>Scientific Software</u> <sup>[2]</sup>		<p>Required if the software meets the definition of STI, is a stable, usable, and documented version (i.e. the software is not under initial development) and has undergone all appropriate reviews for sensitivity and export control.</p> <p>Required if the software meets the description above and is required for the scope of work that is sponsored or funded by the DOE program.</p>

<u>Technical Report (Final and Other)</u>	Final: Required for awards involving R&D once the award or authorized work is complete/performed. Other: Required if the sponsoring program identifies a need for a supplemental report, e.g., the sponsoring program identifies that in addition to a protected Final Technical Report, a publicly available version of the report is also required to support public access to the research results. In this case, both versions of the report are required.
<u>Other</u>	
<u>Books/Monograph</u>	Required if a book or monograph is generated as a result of the R&D.
<u>Thesis/Dissertation</u>	Required if a thesis/dissertation is generated as a result of the R&D.
<u>Technical Workshop Report</u>	Required if the workshop communicated primary findings or results of the R&D. Generally, not reported for preliminary findings or duplication of other required STI.

[1] Only Unlimited dataset records are to be submitted. See <https://www.osti.gov/stip/submit/submission-basics/datasets> for additional information.

[2] See <https://www.osti.gov/stip/submit/submission-basics/DOECODE> for additional information.



## ATTACHMENT 4 SUBMISSION OF STI

This Attachment provides information and/or requirements associated with DOE O 241.1C as well as information and/or requirements applicable to contracts in which the associated CRD (Attachment 1 to DOE O 241.1C) is inserted.

Scientific and technical information (STI) consists of different product types which require either a (1) metadata record or (2) product (e.g., the full text document) and metadata record when submitted to DOE’s corporate E-Link system or to DOE OSTI through distributed STI submission systems (e.g., DOE CODE).

DOE OSTI is responsible for the collection, appropriate dissemination, and long-term preservation of STI. The range of STI products for submission to/collection by DOE OSTI are listed in the table below with requirements for submission of metadata records and products. See Attachment 5 for required metadata elements. The access limitation metadata element collected in the submission system will be used to determine appropriate dissemination.

OSTI recognizes that the DOE R&D environment is ever-changing with new forms of STI emerging. As new types of STI emerge, requirements for submission will evolve. For the most up-to-date information on STI product types, which includes instructions, formats, and examples of STI product types, please refer to the STI product type submission page (<https://www.osti.gov/stip/submit/product-types>).

<u>Submit to OSTI</u>	<u>Metadata Record</u>	<u>Product</u>
<u>Conference Paper, Presentation, Poster or Proceeding (with access limitations)</u>	<u>Y</u>	<u>N</u>
<u>Conference paper, Presentation, Poster or Proceeding (without access limitations)</u>	<u>Y</u>	<u>Y</u>
<u>Journal Article/Accepted Manuscript</u>	<u>Y</u>	<u>Y</u>
<u>Scientific Data</u> <sup>[1]</sup>	<u>Y</u>	<u>N</u>
<u>Scientific Software</u> <sup>[2]</sup>	<u>Y</u>	<u>Y</u>
<u>Technical Report</u>	<u>Y</u>	<u>Y</u>
<b><u>Other</u></b>		
<u>Books/Monograph (with access limitations)</u>	<u>Y</u>	<u>N</u>

<u>Books/Monograph (without access limitations)</u>	<u>Y</u>	<u>Y</u>
<u>Program Document</u>	<u>Y</u>	<u>Y</u>
<u>Thesis/Dissertation</u>	<u>Y</u>	<u>Y</u>
<u>Technical/Workshop Report</u>	<u>Y</u>	<u>Y</u>

**Key:**

Y = Yes, N = No

[1] Only Unlimited dataset records are to be submitted. See <https://www.osti.gov/stip/submit/submission-basics/datasets> for additional information.

[2] See <https://www.osti.gov/stip/submit/submission-basics/DOECODE> for additional information. For Open Source software, the Repository URL is the Product. For Limited or Closed Source software, the Source Code is the Product

## ATTACHMENT 5 STI METADATA ELEMENTS

This Attachment provides information and/or requirements associated with DOE O 241.1C as well as information and/or requirements applicable to contracts in which the associated CRD (Attachment 1 to DOE O 241.1C) is inserted.

Metadata records describing the STI are required to ensure proper handling, announcement, and dissemination in accordance with DOE statutory responsibilities.

STI metadata submission instructions are provided on the STIP website at <https://www.osti.gov/stip/submit/submission-basics>.

Several metadata elements are common to all STI, while others are specific to the type of STI. The basic required metadata elements/fields for STI are listed below. For complete metadata element descriptions, options, and information about use of the DOE E-Link, CE-Link, and DOE CODE systems, along with best practices for various types and formats of STI, please reference the STIP website at <https://www.osti.gov/stip>.

<b>Required Metadata Elements</b>	
<ul style="list-style-type: none"> <li>• Report/Product Number (where applicable)</li> <li>• Title</li> <li>• Author(s)/Contributor(s)</li> <li>• PID for each DOE employee and DOE contractor employee Author*</li> <li>• STI Product Type</li> <li>• Abstract/Description**</li> <li>• DOE Contract/Award Number(s)</li> <li>• Originating Research Organization</li> <li>• Sponsoring DOE Program Office***</li> <li>• Issue Date/Date of Publication</li> </ul>	<p><b>Additional metadata unique to S&amp;T software or datasets:</b></p> <p><b>Datasets:</b></p> <ul style="list-style-type: none"> <li>• Publicly Facing Landing Page URL</li> <li>• Contact Information*****</li> </ul> <p><b>Software:</b></p> <ul style="list-style-type: none"> <li>• Project Type</li> <li>• Repository URL, Landing Page, or Contact Email</li> <li>• License Information</li> <li>• Developer(s)</li> <li>• Release Date</li> <li>• Source Code Upload*****</li> </ul>

<ul style="list-style-type: none"><li>• Intellectual Property/Distribution</li></ul> Limitations (i.e., Access Limitations) <ul style="list-style-type: none"><li>• Releasing Official Information</li></ul>	<ul style="list-style-type: none"><li>• Contact Information*****</li></ul>
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- \* The persistent identifier (PID) for each DOE employee and DOE contractor employee author must meet the common/core standards specified in the NSPM-33 Implementation Guidance or successor guidance (e.g., ORCID iD).
- \*\* Required only for financial assistance grantees records and software records.
- \*\*\* For DOE-funded work, identify sponsor at the subprogram level to ensure proper attribution. If funded by work or others (other agencies), agency-level identification is adequate.
- \*\*\*\* Only required when announcing project types: Open Source, No Publicly Available Repository, and Closed Source.
- \*\*\*\*\* This will serve as the point of contact for DOE if there are questions about the STI provided.

## **ATTACHMENT 6 DATA MANAGEMENT PLANNING AND SUBMITTING DATA AS STI**

This Attachment provides information and/or requirements associated with DOE O 241.1C as well as information and/or requirements applicable to contracts in which the associated CRD (Attachment 1 to DOE O 241.1C) is inserted.

DOE requires data management planning for the R&D that it funds, at least in part, in accordance with:

1. *2013 Office of Science and Technology Policy (OSTP) Memorandum on Increasing Access to the Results of Federally Funded Research*
2. *2014 DOE Public Access Plan*
3. *2014 DOE Secretarial Memorandum on Public Access to the Results of DOE-Funded Scientific Research*
4. *2022 OSTP Memorandum on Ensuring Free, Immediate, and Equitable Access to Federally Funded Scientific Research*
5. *2023 DOE Public Access Plan*

Data management planning requirements apply to R&D that is generated by federal employees, contracts, financial assistance awards, and any other transactions that DOE funds or supports. As a result of data management planning, publicly accessible data must be identified and the data record be submitted to DOE.

Current and future data management planning and associated data record submission requirements are identified below:<sup>6</sup>

### **Requirements effective through September 30, 2025:**<sup>7</sup>

Data Management Plans (DMPs) must be provided for the funded research following DOE and DOE sponsoring office guidelines.<sup>8</sup>

1. DMPs should describe whether and how data generated in the course of the proposed research will be shared and preserved. If the plan is not to share and/or preserve certain data, then the plan must explain the basis of the decision (for example, cost/benefit considerations, other parameters of feasibility, scientific appropriateness, or limitations discussed below). At a minimum, DMPs must describe how data sharing and preservation

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<sup>6</sup> For the most up-to-date guidance, please refer to [the DOE Digital Research Data Management webpage](#).

<sup>7</sup> [2014 DOE Public Access Plan](#)

<sup>8</sup> As part of the implementation of the 2014 DOE Public Access Plan, and the 2014 Secretarial Memo, *Public Access to the Results of DOE-Funded Scientific Research*, DOE policy guidance for data management is accessible via its [Public Access webpage](#).

will enable validation of results, or how results could be validated if data are not shared or preserved.

2. DMPs should provide a plan for making all research data displayed in publications resulting from the proposed research open, machine-readable, and digitally accessible to the public at the time of publication. This includes data that are displayed in charts, figures, images, etc. In addition, the underlying digital research data used to generate the displayed data should be made as accessible as possible to the public in accordance with the principles stated above. This requirement could be met by including the data as supplementary information to the published article, or through other means. The published article should indicate how these data can be accessed.
3. DMPs should consult and reference available information about data management resources to be used in the course of the proposed research. In particular, DMPs that explicitly or implicitly commit data management resources at a facility beyond what is conventionally made available to approved users should be accompanied by written approval from that facility. In determining the resources available for data management at DOE User Facilities, researchers should consult the published description of data management resources and practices at that facility and reference it in the DMP.
4. DMPs must protect confidentiality, personal privacy, Personally Identifiable Information, and U.S. national, homeland, and economic security; recognize proprietary interests, business confidential information, and intellectual property rights; avoid significant negative impact on innovation, and U.S. competitiveness; and otherwise be consistent with all applicable laws, regulations, and DOE orders and policies. There is no requirement to share proprietary data.

**Requirements, effective starting October 1, 2025:**<sup>9</sup>

1. Data Management and Sharing Plans (DMSPs) must be provided for the funded research following DOE and DOE sponsoring office guidelines. If needed, updates to the DMSP, through the course of the R&D, must be provided to DOE for review and approval.<sup>10</sup>
2. Validation and replication of results

The DMSP should describe how scientific data generated in the course of the research project will be publicly shared and preserved in a timely and equitable manner that enables validation and replication of results. If data will not be publicly shared and preserved (see "Data sharing limitations"), the DMSP should describe how results could be validated and replicated.

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<sup>9</sup> [2023 DOE Public Access Plan](#)

<sup>10</sup> As part of the implementation of the 2023 DOE Public Access Plan, updates to DOE policy guidance for data management is accessible via its [Public Access webpage](#).

3. Timely and equitable access

The DMSP should provide a plan for making all scientific data displayed in peer-reviewed scholarly publications resulting from the proposed research open, machine-readable, and digitally accessible to the public at the time of publication. This includes data that are displayed in charts, figures, images, etc. In addition, the underlying digital scientific data used to generate peer-reviewed scholarly publications should be made freely available and publicly accessible at the time of publication, in accordance with the principles stated above. The published article should indicate how these data can be accessed. The DMSP should also provide a timeline for sharing digital scientific data produced under the DOE funded R&D effort not associated with peer-reviewed scholarly publications.

4. Data repository selection

The DMSP should specify the use of digital repositories that align, to the extent practicable, with the National Science and Technology Council document entitled "Desirable Characteristics of Data Repositories for Federally Funded Research," by the Subcommittee on Open Science of the National Science and Technology Council, May 2022. In general, DOE does not endorse or require sharing in any specific repository and encourages researchers to select the repository that is most appropriate for their data type and discipline, though individual sponsoring research offices may provide specific guidance or designate a specific repository.

5. Data management and sharing resources

The DMSP should describe the data management and sharing resources that may be available and used in the course of the proposed research. In particular, a DMSP that explicitly or implicitly commit data management and sharing resources at a facility beyond what is conventionally made available to approved users should be accompanied by written approval from that facility. In determining the resources available for data management and sharing at DOE scientific user facilities, researchers should consult the published description of data management resources and practices at that facility and reference it in the DMSP.

6. Data sharing limitations

The DMSP must address any limitations of scientific data sharing to facilitate the protection of confidentiality, privacy, business confidential information, and/or security; avoid negative impact on intellectual property rights, innovation, program and operational improvements, and U.S. competitiveness; consider maximizing appropriate sharing through risk-mitigated limited access; preserve the balance between the relative value of long-term preservation and access and the associated cost and administrative burden; and otherwise be

consistent with all applicable laws, regulations, and DOE orders and policies. Contractors may have the right to assert copyright to or protect from public release for certain scientific data. When contractors assert copyright of scientific data, the DMSP should address licensing requirements and any limitations for sharing the copyrighted data. When contractors assert data protection, the scientific data will not be shared with the public during the data protection period.

7. Reporting Scientific Data to DOE
8. Scientific data that are shared publicly, as described in an approved DMSP, must be reported as STI to DOE (see Attachments 3 and 4) and through any other applicable reporting requirements.