

6-30-94

## SUBJECT: SCIENTIFIC AND TECHNICAL INFORMATION MANAGEMENT

1. PURPOSE. To establish Department of Energy (DOE) policy and requirements to ensure the integration of scientific and technical information management into applicable Departmental programs and activities.
2. CANCELLATIONS. DOE 1430.1C, MANAGEMENT OF SCIENTIFIC AND TECHNICAL INFORMATION, of 2-27-92; DOE 1430.2B, SCIENTIFIC AND TECHNICAL INFORMATION MANAGEMENT PROGRAM, of 2-25-93; DOE 1430.3A, POLICY FOR THE DISSEMINATION OF AND ACCESS TO DEPARTMENTAL UNCLASSIFIED SCIENTIFIC AND TECHNICAL INFORMATION, of 2-27-92; and DOE 1360.4B, SCIENTIFIC AND TECHNICAL COMPUTER SOFTWARE, of 12-31-91.
3. APPLICABILITY.
  - a. DOE Elements. This Directive is applicable to all DOE elements.
  - b. Contractors. Attachment II sets forth requirements that are to be applied by the cognizant DOE element to the universe of contractors awarded DOE procurement contracts, financial assistance, and subawards thereunder which involve the generation of scientific and technical information. This includes Work for Others unless specifically excluded in the agreement under which the work is performed.
4. AUTHORITY/BACKGROUND. The Atomic Energy Act of 1954, as amended, requires DOE to disseminate its scientific and technical information to promote scientific progress and public understanding. Public Law 95-91 of 1977, Department of Energy Organization Act, requires dissemination of information resulting from DOE's research and development programs. Other laws including the Energy Policy Act of 1992 and the Stevenson-Wydler Technology Innovation Act of 1980, and intra-governmental, domestic, and international information exchange agreements, also require the Department to make its information available. The laws listed above including the Freedom of Information Act of 1974, the National Competitiveness Technology Transfer Act of 1989, and others also place some limits on the dissemination of scientific and technical information for which the unauthorized release would be detrimental to national interests. This directive provides the overall DOE policy and requirements within which these mandates will be met.

5. POLICY AND OBJECTIVES.

- a. Policy. In order to achieve DOE missions, scientific and technical information generated and acquired by the Department will be made broadly available to all appropriate customers, within applicable law and Departmental requirements, using the most cost-effective and easily accessible mechanisms.
- b. Objectives.
  - (1) To facilitate the creation and use of scientific and technical information products and services that further the Department's program objectives while promoting a more productive and competitive economy, improved environmental quality, a secure national defense, and enhanced education and scientific research.
  - (2) To optimize the availability of the Department's scientific and technical information to all appropriate customers including U.S. industry and the general public.
  - (3) To optimize the use and benefit of new and existing scientific and technical information resources through integration with Departmental program activities.
  - (4) To maximize the sharing of scientific and technical information among DOE elements and contractors to help ensure maximum program advancement and optimal use of resources.

6. REQUIREMENTS. The following are requirements imposed by this directive:

- a. Departmental programs funding the creation of scientific and technical information must follow life-cycle information management practices to ensure that the information is planned for, budgeted, produced, processed, disseminated, and stored in cost-effective ways to ensure its maximum utilization by all customer segments including U.S. industry and the general public.
- b. Scientific and technical information must be made broadly available within and outside the Department consistent with technology transfer, national security, statutory, and other Departmental requirements. Under these authorities, information access review and control mechanisms shall be provided for scientific and technical information requiring a delayed or restricted availability.
- c. Each major DOE element covered under this directive shall have a formal scientific and technical information point of contact, e.g.,

- a Technical Information Officer, to participate in the development and implementation of DOE's scientific and technical information program.
- d. The Headquarters' Scientific and Technical Information Coordinating Group (STICG) shall serve as an advisory body concerning cross-cutting scientific and technical information issues. Unless otherwise indicated, Headquarters programs' STICG representatives will also serve as their scientific and technical information points of contact.
  - e. Formal scientific and technical information performance assessments shall be conducted as appropriate as part of Program Reviews sponsored by DOE Programs.
  - f. A central Departmental scientific and technical information coordinating function shall be maintained with program implementation becoming more decentralized as technologies, standards, and procedures permit. The Discretionary Implementation Guide reflects the increased focus on managing information at the point of origin and utilizing cost-effective mechanisms for dissemination.
  - g. All DOE elements shall report the results of completed scientific and technical endeavors/projects to DOE's central point of coordination in useful forms including recommended announcement and availability instructions.
  - h. Established national and international information management standards and Federal Information Processing Standards (FIPS) shall be used to process DOE's scientific and technical information to facilitate its cost-effective management and availability.
  - i. An international scientific and technical information exchange activity shall be managed by the central coordinating function to ensure U.S. access to international scientific and technical advances and market information.
  - j. Scientific and technical computer software shall be managed to optimize cost-effective Departmental, intra-governmental, and public availability including mechanisms for the review of sensitive foreign country requests for the software.
  - k. Scientific and technical information sharing among Departmental Elements shall be optimized to ensure minimal costly duplication and maximum program advancement.
  - l. Scientific and technical information shall be produced or used in a "best business practices" manner that optimizes availability of useful information, encourages sharing of information resources within the Department, minimizes unnecessary duplication of scientific and technical information available elsewhere, and is consistent with the value and useful life of the information.

## 7. RESPONSIBILITIES.

- a. Director, Office of Science Education and Technical Information, through the Office of Scientific and Technical Information (OSTI), is responsible for coordinating with stakeholders and establishing scientific and technical information policy which ensures optimum

availability of Departmental scientific and technical information to the varied customer segments within applicable law and Departmental requirements.

- b. Heads of Departmental Elements are responsible for ensuring that the policy, objectives, and requirements of this directive are incorporated into their program planning, management, contract administration, and performance evaluation activities.
  - c. Heads of Field Elements are responsible for ensuring the policy and objectives of this directive will be included in strategic plans, institutional plans, and program guidance, and performance measures are identified for contracts, grants, cooperative agreements, and Cooperative Research and Development Agreements under their purview. Additionally, field elements are responsible for cross-program institutional management to ensure scientific and technical information products and services funded through their office are optimally available based on an assessment of the needs of their various customer audiences.
  - d. Initiators of Procurement Requests are responsible for identifying in procurement requests if the requirements in the contractor requirements document for this directive are to be applied to the award or subawards resulting from the procurement request.
8. IMPLEMENTATION GUIDANCE. This directive contains a minimum number of requirements with guidelines being contained in a Discretionary Implementation Guide. Because the Department has an existing technical information program in place, the directive will be effective immediately upon formal issuance.
  9. ASSISTANCE. Questions concerning this directive may be referred to the Office of Scientific and Technical Information in Oak Ridge, Tennessee, on (615) 576-1194.
  10. DEFINITIONS AND REFERENCES. See Attachment 1.

BY ORDER OF THE SECRETARY OF ENERGY:

ARCHER L. DURHAM  
Assistant Secretary for  
Human Resources and Administration

#### DEFINITIONS

1. Scientific and Technical Information - Information in any format or medium which is derived from scientific and technical studies, work, or investigations which relate to research, development, demonstration, and other specialized areas such as environmental and health protection and waste management. Classified, declassified, and sensitive information is included in the scope of the definition. The primary points of origination of DOE-funded scientific and technical information are management and operating contractors, direct DOE executed prime procurements, and DOE operated research activities.
2. Office of Scientific and Technical Information (OSTI) - The DOE Office of Scientific and Technical Information provides the central point of coordination for the Department's scientific and technical information program. While scientific and technical information is primarily generated and managed at DOE field and contractor sites, the OSTI facility has traditionally served as the central point of customer access to DOE's scientific and technical information resource.

3. Departmental Elements - First tier organizations at Headquarters and in the field. Field elements include operations offices, field support offices, energy technology centers, and power marketing administrations.
4. Life-Cycle Information Management - Life-cycle information management indicates that information resources need to be managed as long as they are useful. The activities involved include planning, coordinating, budgeting, organizing, protecting, delivering, storing, and disposition.

#### REFERENCES

1. Department of Energy Organization Act of 1977 (P.L. 95-91) - Title I, Section 102, requires DOE to disseminate the information resulting from its research and development programs.
2. Atomic Energy Act of 1954, as amended, 42 United States Code (U.S.C.) 2161 - Establishes the overall requirement that DOE disseminate its scientific and technical information to promote scientific and industrial progress and public understanding.
3. Energy Policy Act of 1992 (P.L. 102-486) - Requires the accelerated transition of technologies and protection of information resulting from research, development, demonstration, and commercial application activities.

4. Stevenson-Wydler Technology Innovation Act of 1980 (P.L. 96-480) - Establishes technology transfer as a mission of the Federal Government and requires dissemination of information to state and local governments and industry.
5. Scientific and Technical Information Discretionary Implementation Guide - An Implementation Guide, Guide to the Management of Scientific and Technical Information, provides guidelines for implementing the requirements of this directive. Included in the Guide are the procedures related to submitting and ordering scientific and technical computer software and the procedures for managing scientific and technical information contained in other medium. The Guide is developed and revised in coordination with DOE and contractor stakeholders and partners. The Guide is available by writing the Office of Scientific and Technical Information, P.O. Box 62, Oak Ridge, Tennessee 37831, or by calling (615) 576-1301; fax number (615) 576-2865.
6. OMB Circular A-130, Management of Federal Information Resources of June 1993 - Requires agencies to plan in an integrated manner for managing information throughout its life cycle. The Circular recognizes that the open and efficient exchange of scientific and technical government information fosters excellence in scientific research and effective use of Federal research and development funds, and that the free flow of information between the government and the public is essential to a democratic society.
7. Freedom of Information Act of 1974 (P.L. 93-502) Title V United States Code (U.S.C.), as amended - Establishes guidelines and regulations for exempting from public disclosure certain categories of information.
8. National Competitiveness Technology Transfer Act of 1989 (P.L. 101-189) Title 15 United States Code (U.S.C.) 3701 - Promotes technology transfer between government-owned, contractor-operated laboratories and the private sector, and establishes the authority for cooperative research and development agreements.

CONTRACTOR REQUIREMENTS DOCUMENT

DOE 1430.1D, SCIENTIFIC AND TECHNICAL INFORMATION MANAGEMENT, of 6-30-94, requires that the following requirements be applied to the universe of contractors awarded DOE procurement contracts, financial assistance, and subawards thereunder which involve the generation of scientific and technical information. This includes Work for Others as defined in the directive.

1. Scientific and technical information is both an input to and output from DOE-funded work. Because the information is often the only product of the DOE and taxpayer investment, efforts related to the management and broad availability to all customer segments shall be viewed as a direct and integral part of the work.
2. Accordingly, all contractors expending DOE resources to create scientific and technical information have an obligation to ensure that the information is managed in a manner consistent with the Department's policy and objectives as defined in this directive.
3. Management and operating contractors shall manage the scientific and technical information they produce or use in a "best business practices" manner that optimizes availability of useful information, encourages sharing of information resources within the Department, minimizes unnecessary duplication of scientific and technical information available elsewhere, and is consistent with the value and useful life of the information. Additionally, the management of scientific and technical information shall be consistent with technology transfer, national security, statutory, and other Departmental requirements, and under these authorities, shall include information access review and control mechanisms for information requiring a delayed or restricted availability.
4. Non-management and operating contractors creating scientific and technical information with DOE funds shall deliver the information to the Department's central point of coordination so it may be used to promote scientific advancement and public well-being. No contract shall be considered complete or closed until the Head of the cognizant Departmental Element has ensured that the scientific and technical information deliverables have been received and managed in accordance with the policy and requirements of this directive.

5. Management and operating contractor requirements imposed by this directive include the appointment of a scientific and technical information point of contact, and reporting to DOE's central point of coordination the results of completed scientific and technical endeavors in useful forms including recommended announcement and availability instructions. This includes Work for Others unless specifically excluded in the agreement under which the work is performed.
6. Scientific and technical computer software shall be managed to optimize Departmental, intra-governmental, and public availability including mechanisms for the review of sensitive foreign country requests for the software.
7. National and international information management standards and Federal Information Processing Standards (FIPS) shall be used to process DOE's scientific and technical information to facilitate its cost-effective management and availability.
8. A Discretionary Implementation Guide provides guidelines for implementing the requirements of this directive. The guidelines are developed and revised in coordination with DOE and contractor stakeholders and partners.



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# 1 Introduction

Numerous issues and activities impact the value of the scientific and technical information developed with Departmental funding. Consideration of these issues is vital in meeting many of the strategic and operational goals and objectives of the Department, including the Contract Reform Initiative, which stresses performance measurement based on results and "best-in-class" modeling. If the availability, use, and reuse of this information are to be optimized, an integrated Department-wide approach is necessary.

This Guide provides a summary of the policy and objectives contained in DOE Order 1430.1D, a procedure for the timely updating of Guides, recommended management practices, and a summary of various applicable management tools and services. If we at the Office of Scientific and Technical Information (ET-20) can assist you in implementing Departmental policy, in meeting [DOE Order 1430.1D](#) objectives/requirements, or with other information management needs, you are invited to contact us at (423) 576-8401 or by electronic mail on the Internet at [programs@adonis.osti.gov](mailto:programs@adonis.osti.gov).

## 2 STI Management Policy and Objectives

### 2.1 Policy

In order to achieve Departmental missions, scientific and technical information generated and acquired by the Department will be made broadly available to all customers, within applicable laws and limitations, using the most cost-effective and easily accessible mechanisms.

### 2.2 Objectives

1. To facilitate the creation and use of scientific and technical information products and services that further the Department's program objectives while promoting a more productive and competitive economy, improved environmental quality, a secure national defense, and enhanced education and scientific research.
2. To optimize the availability of the Department's scientific and technical information to all appropriate customers, including U.S. industry and the general public.
3. To optimize the use and benefit of new and existing scientific and technical information resources through integration with Departmental program activities.
4. To maximize the sharing of scientific and technical information among DOE Elements and contractors to help ensure maximum program advancement and

optimal use of resources.

### **3 Procedure for Modifying Guide (Rev. 1, 4/30/95)**

A Guide Review Board with no more than eight members has been established to represent stakeholders and to facilitate the timely updating of the Guide. The first board was appointed by ET-20 and was selected from among those stakeholders participating in the [Order](#) revision. Terms for each representative will vary from one to three years to ensure continuity. The initial board members are listed in [Attachment I-A](#) along with the terms to be served and a description of the stakeholder group each represents. Board replacements will be selected during the Fall Technical Information Meeting and will assume responsibility at the Spring Technical Information Meeting. This board will review and comment on modification to the Guide. Changes approved by ET-20 will be announced on the Internet immediately and scientific and technical information contacts will be notified of the change. Changes will also be distributed through normal directives channels annually.

### **4 Recommended Management Practices**

Information in any format or medium that is derived from scientific and technical studies, work, or investigations that relate to research, development, demonstration, and nontraditional areas (such as environment and health protection and waste management), including unclassified, classified, declassified, and sensitive information, is considered scientific and technical information.

The following recommendations provide a starting point for developing, coordinating, integrating, designing, managing, and evaluating a best-in-class program. Partnerships are necessary among Headquarters Offices and Field Elements to plan, budget, and deliver required information and to ensure that program goals are met in a best practices manner.

#### **4.1 STI Management Single Point of Contact**

Managing technical information is a crosscutting activity involving nearly every function in an organization at one time or another. In order to have a single integrated program, a central coordinating role is appropriate. This position is responsible for internal coordination, for coordination with peer organizations, for direction to DOE and contractor organizations (for DOE), reporting to DOE (for contractors), and for participation in Departmental policy and other related issues.

For each organization, one person needs to be identified as the point of contact for scientific and technical information management. At a minimum, ET-20 should be provided with the name of the point of contact and of an alternate. In addition, as a courtesy, each organization needs to notify other points of contact of its appointee. Each responsible DOE and contractor organization needs to document the point of contact's duties in the position description and level of individual performance standards which

parallel the objectives identified as part of the Department's scientific and technical information management objectives. The person appointed needs to be knowledgeable about his/her organization and its goals, objectives, and reporting systems and should be in the management communication chain. This knowledge and access will enable the person to be involved during the project planning stage to ensure that information access/delivery is planned, that sufficient resources are available to ensure effective management, that new systems/projects are integrated with those throughout the Department, and that program success measures are in place and used for evaluation. The appointee should be sufficiently knowledgeable, up-to-date, and empowered to speak and act for his/her organization on a wide range of topics at any organizational level. To have an integrated approach to the management of and access to the Department's technical information, the Program Office's single points of contact need to work together to ensure that DOE's resources are optimized and integrated.

Program Offices that are landlords for Operations Offices will need to work with their counterpart(s) at their Operations or Field Offices to integrate their programs. In turn, the point of contact at an Operations Office will need to work with his/her counterparts at the sponsoring Program Offices. Both Program and Operations Offices' single points of contact also serve as members of an intra-Departmental Scientific and Technical Information Coordinating Group (STICG), which serves as the framework for policy development and advises ET on policy, information management, and dissemination issues.

In addition to the roles described above, the Operations Office contact needs to take a leadership, integrator role with contractor organizations. Contractor organizations will also need a single point of contact to coordinate all aspects involved in ensuring that technical information generated by or collected by each organization is managed (planned, budgeted, monitored, and evaluated) and to represent the point of contact's company with the Department and with contractors on STI management policy, procedures, issues, and performance measurement.

Program Office contacts will be expected to provide training for their staff and to provide training/mentoring for Operations Office contacts reporting to them. Operations Office contacts need to provide training for their staff and need to provide both training and mentoring for contractor points of contact. The contractor points of contact need to train contractor staff and, as performing organizations, will also need to become involved in reporting progress/results. ET-20 provides training, mentoring, assistance, and facilitation to all STI Management contacts, as needed.

#### **4.2 Program and Project Information Management**

Scientific and technical information products are often the only demonstrable results of DOE-funded work. The value of these products is not only in the quality of the work but also in their timely availability to the various interested audiences (such as scientific and technical peer groups, U.S. industry, international information exchange partners, state

regulators, and environmental public interest groups). Technology is rapidly improving the ability to provide targeted information products to diverse audiences at low cost. However, unless availability is identified as a management goal and planned during the generation, transfer, and storage phases, the potential provided by technological innovation will not be realized.

Program/project officials should specify information outputs that can be measured. In addition, the scope of work should require that information deliverables be developed according to best practices which include planning for the generation, transfer, access, packaging and repackaging, and storage for retrieval of technical information (life cycle). Performance evaluations for life-cycle information management have both program and institutional elements and thus should include coordinated Program Office and Operations Office input.

The principal topics that need to be considered in optimizing the value of the Department's scientific and technical information are as follows:

- 1. Development of a planning process that addresses the model for information products, including, as appropriate, identification of delivery mechanisms, information management costs and budgets at the program/project level, outputs, and dissemination goals as part of program/project strategic plans.**
- 2. Development of deliverables in a form that optimizes availability, avoids duplication, and minimizes the costs of information transfer (regardless of media, including a method for public access). Considerations include**
  - a. What information must be generated?**
  - b. Who will be the audience(s)?**
  - c. What is the best configuration/format/media?**
  - d. What is the best delivery mechanism to meet customer needs?**
  - e. What dissemination systems are available?**
  - f. Should it be announced and available on DOE's central system?**
  - g. Will handling be minimized and system duplication avoided?**
  - h. Have industry standards for data organization and administration been used to optimize**



availability?

**i. Is the material sensitive?**

**j. Are there laws, executive orders, or Departmental policies that restrict dissemination?**

**3. Development of budgets for creation of, access to, and storage for retrieval of information products, including requirements to leverage and share existing information resources.**

**a. Tracking direct costing for information generation, transfer, access, and retention.**

**b. Providing cost-effective support systems and services.**

4. Establishment of criteria for records retention with content-based retrievability to ensure full historical access to program and project results, with attention to

**a. Early development and coordination of records retention schedules.**

**b. Provision of adequate resources to capture and manage valuable information during program/project transfers or closeouts.**

#### **4.3 Field Support to Program Accomplishment**

Operations Offices can perform crosscutting contract administration, institutional planning, information integration, performance evaluation, and information stewardship functions that support both programmatic and Departmental goals for information integration and accessibility. These management activities contribute directly to the value of scientific and technical information and need to be important factors in contractor performance criteria. The principal areas where Operations Offices can enhance the value of Departmental information resources follow. Activities in these areas should be evaluated and implemented as appropriate.

**1. Establishment of a contract administration function that identifies specific anticipated information deliverables, monitors progress, and bases evaluations upon demonstrated performance, working in collaboration with program/project managers and the scientific and technical information single point of contact. Consider**

**a. Deliverables that are easily accessible to both contract and program staff.**

**b. A system that identifies missing deliverables on a timely basis.**

**c. A system that ensures deliverables are received and acceptable prior to payment or**

**contract closeout.**

2. Establishment of crosscutting strategic and institutional plan elements that support the necessary technology infrastructure capabilities and organizational relationships to manage technical information as integrated Departmental output.
3. Establishment of an information program that results, as a minimum, in access to departmental technical information products through the central availability system, manages duplication or overlap among contractor organizations, and identifies gaps or needs.
4. Development of an information ombudsman/stewardship capability that serves as a resource to all Operations Office staff to

**a. Proactively support life-cycle information management through a program of awareness and training.**

**b. Provide a single point of contact for policy development and program planning activities.**

**c. Inform local decision makers about the availability of technical information.**

**d. Evaluate success of meeting Departmental and public customer expectations for access to information.**

**e. Form and lead a Technical Information Council or other formal mechanism that routinely shares information about related management issues.**

5. Evaluation of the STI management program plans developed by contractors as this Order is adopted into contract provisions.

The contractor bases conformance with STI management requirements on a "best practice" model, including specific plans and practices that optimize multiple uses of the information and availability to the customers, minimize duplication and restricted access, leverage/share information resources internally and with other Departmental organizations, and store information for easy retrieval.

#### **4.4 Balancing Access with Control**

There is an inherent tension in the activities of the Government between the right to know of the public whose taxes pay for the activities and the need of the Government to protect the privacy of the public, to protect the legal rights of industry, and to safeguard the national security. The Department is involved in the defense of our country through the nuclear weapon stockpile stewardship activities. We are also focused on increasing posture of the United States in the arena of economic competitiveness. It is the policy of the Department, as reflected by its authorizing legislation, "to make available, freely, openly, and to the extent possible, unclassified scientific and technical information

generated by, or under arrangement with, DOE." In particular cases, however, even in this post-Cold War era, it is necessary to place controls on the availability of certain scientific and technical information. Such controls, and the responsibility for ensuring the implementation of such controls, reside both with the contractor and the sponsoring organization and must be in conformance with applicable statutes, laws, regulations, Executive Orders, international agreements, directives, and Departmental policy. These controls include the classification of certain information, which commonly includes weapon data design, production of special nuclear materials, naval nuclear propulsion information, foreign intelligence information, and other information of a military or national security significance.

They also include the protection of certain unclassified types of information, which may fall under the provisions of the Freedom of Information Act or other statutes and Departmental policies. These include Unclassified Controlled Nuclear Information, Export Controlled Information, Small Business Innovation Research, Naval Nuclear Propulsion Information, Patent Sensitivity, Proprietary Data, Protected CRADA Information, and Applied Technology.

#### **4.5 Project/Program Closeouts or Transfers**

The Departmental Program Office Manager and respective Records Officer are responsible for preparing a plan for major records closeout/close down or transfer. Many project/program staffs are matrixed and may involve more than one contractor or location. Should the record file be collected and maintained at the lead location or should each location maintain and schedule the portion it generated? If each place schedules and stores its portion, reference to other storage location(s) is made and the records retention schedule coordinated. (An example of frequently referenced information on a closed-out reactor project is unpublished experimental data on brittleness and/or strength of various metals for use in reactors. This information could be applicable for other ongoing reactor projects.)

Once a records retention schedule is established, if the records are in electronic media, maintain the software/hardware used or convert them to a flat ASCII file and document process so that the records can be read by most hardware systems. If the electronic files are to be transferred, determination of compatible software/hardware should be made before converting the information to a flat ASCII file. The National Archives will only accept permanent records in electronic form in an ASCII or an EBCDIC file.

Often during the closeout or transfer activity, it is discovered that certain scientific and technical information products were not submitted to ET-20. The following guidance is provided to correct the oversight. Because each location has different yet similar records-keeping policies and practices, specific guidance will need to be provided on a case-by-case basis. This is not to say that if a project file record schedule has been prepared and approved, and if the normal project file life has been reached, that normal retirement of records cannot be followed. A number of issues need to be considered.

1. Has the sponsoring Program Office provided the organization with a closeout plan? If so, get a copy to use as guidance.
2. Does the organization maintain a comprehensive project/case/program file? Or, is the file location of different record series decentralized?

Examples: The organization may provide for central file record copy collection of all STI products it has disseminated through ET-20 or possibly all STI generated. The organization may allow the generating office to maintain the record copy. The same is true for official correspondence, purchase orders, interagency agreements, contracts, subcontracts, memorandums of understanding, etc. Each of the centralized separate record series will have varying retention schedules. However, all records in a project /case/program file will have the same retention.

3. Does the closeout team include the Operations Office's/contractor's records and technical information representative and the project/program manager and designated staff?
4. Will the file be comprehensive/all inclusive, or will it exclude, but refer to, centralized records collections (i.e., reports collections, laboratory notebooks, purchase orders, procurement data, gauge and machinery data, specifications, design data, etc.)? The makeup of the project file should be determined regardless of record copy media.
5. Is nonrecord material contained in the file?
6. Has a comprehensive index of all scientific and technical reports/products that have been disseminated or are appropriate for sharing been prepared? Include record series stored in central collections regardless of whether they are included as part of the project file or excluded and a reference list substituted in the file for the documents/items with their location. One method for identifying information products not transferred to ET-20 is to verify the comprehensive index/listing by comparing it with a comprehensive listing from ET-20.
7. Will scientific and technical information products, both classified and unclassified, that have been identified as being appropriate for sharing and that have not already been received by ET-20 be submitted through normal procedures [forward with a completed [DOE F 1332.15, "Recommendations for the Announcement and Distribution of Department of Energy \(DOE\) Scientific and Technical Information \(STI\),"](#) discussed in Part II of this Guide]?

8. Has the project file been scheduled? The retention can vary from 15 years after close of project to permanent (dependent on the subject matter and retention justification). Permanent retention may be approved for project files necessary for reinitiation of manufacture.
9. After the record schedule is approved, has a determination been made to maintain it locally in a record storage facility, transfer it to another organization (in the case of a project being transferred), or transfer it to a Federal record center? If it is anticipated that the file may be referred to frequently, it may be stored locally. Otherwise it should be transferred to the regional Federal record center.

## **5 Performance Measures**

Program Offices need to develop a methodology for identifying and sharing best practices in STI management and establish criteria that identify thresholds where best practice data administration processes are required in program performance.

Information management issues crosscut contractor organizations internally and externally. Successful performance contributes directly to the Departmental mission of optimizing the transfer of and access to developed knowledge. Best practices for life-cycle information management should be based on a model(s) developed through participation with other Departmental stakeholders. This model(s) should contain management processes that result in the following outputs:

- 1. Technical information is developed and transferred within the Department and to the public in usable forms that require a minimum of extra handling:**
  - a. The contractor has developed user needs analyses and feedback mechanisms to ensure that information products are developed in a manner that optimizes access and use by customer groups.**
  - b. The information is available through the Department's central information availability system.**
2. Internal information management processes result in cost-effective, integrated access to each organization's technical knowledge base.
  - a. External audiences are aware of the information resources resulting from performance of organizational mission.**
  - b. Information resources are developed or procured through "make/buy/share" analysis that optimizes leveraging and sharing with other Departmental organizations.**

**c. Technical information resources are adequately identified and recorded in each organization's records management program.**

**d. The organization benchmarks organizational performance for technical information management on comparisons with other organizations performing similar functions.**

## **6 Management Tools**

### **6.1 Integrated Technical Information System (ITIS)**

The Department has an online system that provides access to a number of unclassified databases and systems that monitor, announce, or track various technical information products centrally managed by ET-20. The system is called the Integrated Technical Information System. Information regarding access to this system is available through the online hotline at (423) 576-1222 or by sending electronic mail on the Internet to [usertalk@adonis.osti.gov](mailto:usertalk@adonis.osti.gov).

#### **6.1.1 Energy Science and Technology Database (EDB)**

The Energy Science and Technology Database contains all unlimited, unclassified scientific and technical information processed by ET-20. The information is acquired from, but is not limited to, DOE and its contractors, interagency agreements with the National Technical Information Service, the Department of Commerce, the NASA Scientific and Technical Information Division, the National Library of Medicine, the National Institutes of Health, the Patent and Trademark Office, and the Defense Technical Information Center. International information sources are the International Energy Agency's Energy Technology Data Exchange program, the International Atomic Energy Agency's International Nuclear Information System, and nation-to-nation agreements.

The Energy Science and Technology Database contains a complete bibliographic record, including abstract and subject descriptors, of all documents that contain significant fulfillment of contract requirements. The database can be used by contractors to monitor reports prepared by their organizations. The database is indexed by subject area as well as by report number. The database includes journals, books, patents and patent applications, audiovisuals, computer media, engineering drawings, and generic serials. For additional information, call (615) 576-1222 or send electronic mail on the Internet to [usertalk@adonis.osti.gov](mailto:usertalk@adonis.osti.gov).

#### **6.1.2 Report Holdings File (RHF)**

The Report Holdings File contains partial bibliographic records on all items received and held by ET-20. Other than title and author, the records consist mostly of alphanumeric information to identify documents, including report number, contract number, order number, DOE sponsoring office, Program Office distribution category, and date the record was published or entered into the database. The abbreviated record format allows the

retrieval of such information as what reports were issued under a particular contract number, which DOE office sponsored which research, which organization performed which research, whether a report can be reproduced legibly, and where a copy of a report can be obtained. For additional information, call (423) 576-1222 or send electronic mail on the Internet to [usertalk@adonis.osti.gov](mailto:usertalk@adonis.osti.gov).

### **6.1.3 Technical Information Monitoring System (TIMS)**

The Technical Information Monitoring System is a computer-based tracking system developed in conjunction with DOE's Office for Procurement and Assistance Management (HR). This system assists contracting officials, program managers, and technical information managers in monitoring the delivery of required technical information by non-Management and Operating contracts (including grants, financial assistance, etc.). The system is available to authorized Departmental representatives. Missing or late technical information deliverables are identified by comparing the information in the Procurement and Assistance Data System (PADS) managed by HR with ET-20's Report Holdings File (which contains a list of what has been received). Information available from the Technical Information Monitoring System is as follows:

1. Technical deliverables outstanding.
2. Awards that reach completion date within 60 days.
3. Awards for which no [DOE F 1332.1, "Reporting Requirements Checklist,"](#) or [DOE F 4600.2, "Federal Assistance Reporting Checklist,"](#) has been received by OSTI.
4. Awards for which no [DOE F 1430.22, "Notice of Energy RD&D Project,"](#) has been received by OSTI.
5. Awards that were retired before OSTI received all report deliverables.
6. Awards that have passed completion date but OSTI has not received all report deliverables.

TIMS training is available. If you have questions regarding TIMS, call (423) 576-1222 or send electronic mail on the Internet to [contracts@adonis.osti.gov](mailto:contracts@adonis.osti.gov).

### **6.1.4 CRADA Information Management System (CIMS)**

The Office of Scientific and Technical Information maintains a centralized Cooperative Research and Development Agreement (CRADA) database to provide information on the status of CRADA activity within the Department, to provide management information in support of congressional reporting requirements established in P.L. 101-189, and to ensure a central base of information on Departmental CRADAs to respond to Departmental and external requests for information.

The database includes factual data and abstracts on Department of Energy CRADAs as authorized by P.L. 95-502 and P.L. 101-189. The file includes customized reporting

capabilities and is available to authorized Departmental representatives.

Information specified on the Notice of JWS/CRADA Action Checklist and an abstract suitable for public release are reported to ET-20 by the Operations Offices, Energy Technology Centers, or Area Offices for each approved CRADA and Joint Work Statement (JWS). Cognizant Departmental Elements ensure that CRADAs sponsored by the respective Program Offices are appropriately represented in the system. For additional information, call (615) 576-1222 or send electronic mail on the Internet to [techtransfer@adonis.osti.gov](mailto:techtransfer@adonis.osti.gov).

### **6.1.5 Research in Progress (RIP) Database**

The Research in Progress Database contains records summarizing current research sponsored by the Department. In addition, summaries of non-Departmental domestic and foreign energy-related research efforts are available through information exchange arrangements.

A user of this database can identify ongoing DOE activities by subject area, discipline, technology, funding office, performing organization(s), or location. The database serves as a source for:

1. Improving Departmental planning processes by identifying research gaps and overlaps.
2. Generating research summaries and mailing addresses by computer.
3. Accessing a number of Department-wide database authorities.
4. Identifying technology transfer and partnership opportunities.

Information about research in progress is available to Departmental components through the Department's Integrated Technical Information System and is publicly available through the FEDRIP file of the commercial vendor DIALOG. For additional information, call (615) 576-1222 or send electronic mail on the Internet to [techtransfer@adonis.osti.gov](mailto:techtransfer@adonis.osti.gov).

### **6.2 Classified Energy Online (CLEO)**

The Department of Energy has established a secure online network to announce and make available to qualified users references to the Department's classified scientific and technical information. CLEO is accessible via dial-in procedures to individuals having certified need to know, appropriate encryption and security capabilities, and programmatic approval. CLEO is authorized to transmit data up to the SECRET/RESTRICTED DATA, Sigma 1 level. For more information on access or contents, call (423) 576-1222 or send electronic mail on the Internet to [cleo@adonis.osti.gov](mailto:cleo@adonis.osti.gov).



### **6.2.1 Classified Database (CDB)**

The Classified Database contains references to all classified scientific and technical information received by ET-20. It also contains references to classified scientific and technical information produced by the Department of Defense and maintained by the Defense Technical Information Center. The Defense references are available as the result of an interagency information exchange agreement between the Departments of Energy and Defense.

The Classified Database references include complete bibliographic citations, with the addition of appropriate classification and weapon data information. Access to the database and to the information represented by the database is strictly controlled on a need-to-know basis and must be approved in writing by the cognizant Program Office or sponsoring organization and by the Office of Security Affairs (NN-50).

Much of the information represented on this database is generated by the Department's "weapons complex." This information, in general, pertains to the design, manufacture, or utilization of nuclear weapons or related weapons effects and engineering issues. Other classified information deals with fissionable materials production, defense-related propulsion and power reactor technology, fusion energy, safeguards and security, arms control, etc. For additional information, call (423) 576-1222 or send electronic mail on the Internet to cleo@adonis.osti.gov.

## **7 Central Announcement and Dissemination/Access Services**

### **7.1 Announcement Services**

Unclassified and unrestricted information received by ET-20 is cited in the Energy Science and Technology Database and includes international information acquired through exchange agreements administered by ET-20. Reports are announced in the monthly DOE publication, "Energy Research Abstracts" (ERA), which is available to DOE and DOE contractors through ET-20 and to the public through the Government Printing Office. Reports are also announced to the public by the Department of Commerce's National Technical Information Service (NTIS) through the NTIS Database and the publication, "Government Research Abstracts and Indexes" (GRA&I). In addition, many libraries receive microfiche copies of DOE reports through the Government Printing Office's Depository Library Program. The Energy Science and Technology Database and the Nuclear Science Abstracts Database are available through numerous online commercial vendors. In addition, recently received unclassified and unrestricted information is announced through the Department's Integrated Technical Information System (ITIS), which is managed by ET-20 and available to both the Department and its contractors.

Classified and sensitive information received by ET-20 is cited in the Classified Database and Controlled Access File (CAF), respectively. Classified reports are announced in the quarterly DOE publication, "Defense Information: Weapon Data Reports" (WDR). The

Controlled Access File is available to DOE and DOE contractors through ITIS; the Classified Database is available to qualified organizations with a demonstrated need to know and the appropriate programmatic and security qualifications.

## **7.2 Dissemination/Access Services**

Department of Energy Program Offices, in conjunction with ET-20, establish distribution categories, category numbers, and scope notes for scientific and technical information to be submitted for central announcement/dissemination. Distribution category numbers are assigned by the producer along with other recommendations for announcement and dissemination when completing the information product transmittal form [DOE F 1332.15, "Recommendations for the Announcement and Distribution of Department of Energy \(DOE\) Scientific and Technical Information \(STI\),"](#) as discussed in Part II of this Guide. DOE/OSTI--4500, "Program Distribution for Unclassified Scientific and Technical Reports," and DOE/OSTI--3679 (Formerly M-3679), "Standard Distribution for Classified Scientific and Technical Reports," are available from ET-20 and contain the distribution categories, scope notes, and a list of the number of copies required to make specific types of distributions for unclassified and classified information, respectively. All the types of distribution services listed in the following three sections require programmatic funding.

### **7.2.1 Standard Distribution**

Both the recipients and the number of additional copies are defined by DOE/OSTI--4500 or DOE/OSTI--3679 (Formerly M-3679) and the mailing process is computer based.

### **7.2.2 Profile Distribution**

Recipients are targeted by special interest categories that parallel subject categories within the Energy Science and Technology Database. These computer-based mailings can often reduce the number of copies required and thus cost less than standard distribution.

### **7.2.3 Special Distribution**

ET-20 has the capability to handle any special one-time or recurring dissemination needs. Departmental elements and contractors may find that these services provide a cost-effective method for meeting their programmatic and organizational goals and objectives.

### **7.2.4 Information Request Services**

On occasion, DOE and its contractors may need copies of information available through ET-20 or may need to provide access to specific information products for certain customers. These services are available from ET-20 on a cost-recovery basis.

### **7.2.5 Long-Term Availability of Information**

Often, the collection maintained by ET-20 is the only place historic or crosscut technical information can be accessed. Because the collection is managed for long-term retrieval, the flexibility for organizing and packaging information can assist in meeting one-time initiatives, responding to customer interests, or other needs. A wide variety of capabilities and services are available on a cost-recovery basis to assist Program Offices and other Departmental Elements (including contractors) in meeting Departmental priorities and ongoing missions.

The National Archives and Records Administration (NARA) has approved the collection maintained by ET-20 for permanent retention (unclassified, unlimited and limited access, and classified). Classified and unclassified collections are stored in separate vaults that meet dual storage requirements of Title 36 Code of Federal Regulations (CFR) 1228.200, Subpart K, "Agency Record Centers," and ANSI/ASME NQA-1, "Requirements for Quality Assurance Records." A record silver master microfiche copy of each document filmed is stored in a microfilm vault that meets all single-storage requirements.

**Scientific and Technical Information Management  
Guide (DOE G 1430.1D-1) Review Board**

The members of the board will serve staggered terms which will ensure continuous knowledgeable partner/stakeholder representation. The members are listed below with a description of the stakeholder group each represents and the term each will serve.

<b>Member /Affiliation</b>	<b>Partner/Stakeholder Group Represented</b>	<b>Term</b>
Sharon Root Environment, Safety and Health	Headquarters Crosscutting Programs (Environment, Safety and Health; Economic Impact and Diversity; Human Resources and Administration; etc.)	1 year
Nancy Dowicki Nonproliferation and National Security	Headquarters Program Offices (Nonproliferation and National Security; Defense Programs; Energy Programs; Environmental Restoration and Waste Management; etc.)	1 year
Carol Duncan Lawrence Livermore National Laboratory	Multiple Program Laboratories	1 year
Jeanne Sellers Westinghouse Savannah River Company	Single Program Laboratories	1 year
Stephanie Janicek Lockheed Martin Services, Inc.	M&I Laboratories	2 years
Gwen Schreiner Albuquerque Operations Office	Operations Office	1 year
Dennis Gound Oak Ridge Operations Office	Operations Office	1 year
Kathy Waldrop, Coordinator, Office of Scientific and Technical Information	Office of Primary Interest	Indefinite

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# 1 Introduction

To encourage scientific and technical progress throughout the Nation and to meet its goals, initiatives, and obligations, the Department of Energy has established a central collection of certain scientific and technical information. This collection is managed on behalf of the Department by the Office of Scientific and Technical Information (ET-20), an organization within the Office of Science Education and Technical Information (ET-1). ET-20 is responsible for making this information available within the Department; for meeting certain Departmental obligations for public access through such channels as the National Technical Information Service (NTIS) of the Department of Commerce, the Government Printing Office through the Superintendent of Documents and the Depository Libraries, and commercial online services; and for meeting Departmental requirements for information exchange with other Federal agencies and the international community. In accordance with the American Technology Preeminence Act, Public Law 102-245, February 14, 1992:

"The head of each Federal executive department or agency shall transfer in a timely manner to the National Technical Information Service unclassified scientific, technical, and engineering information which results from federally funded research and development activities for dissemination to the private sector, academia, State and local governments, and Federal agencies."

To achieve the results discussed above and to most efficiently and effectively manage the process, the following guidelines identify what is appropriate for transfer and how to transfer scientific and technical information products to ET-20. This part of the Guide describes the "what" and "how to" of preparing scientific and technical information products and processing them for centralized announcement and dissemination. Several standards, orders, and publications are referenced with only the relevant information mentioned. This part of the Guide consists of several sections. The first major section is a description of what is appropriate for centralized announcement and dissemination with discussion of categories of scientific and technical information products. The next section describes research in progress, how it is used, and what descriptive information is needed to announce it. The next section discusses the information needed to announce, disseminate, and protect scientific and technical information, and how to submit the information products. This section parallels the information collected with [DOE F 1332.15, "Recommendations for the Announcement and Distribution of Department of Energy \(DOE\) Scientific and Technical Information \(STI\)" \(Attachment II-A\)](#). Next are descriptions of electronic documents and records management issues. If you have problems acquiring anything that is referenced in this Guide, contact ET-20's Request Services at (423) 576-8401 or send electronic mail on the Internet to [programs@adonis.osti.gov](mailto:programs@adonis.osti.gov).

## 2 What Is Appropriate for Transfer?

### 2.1 Unclassified Unlimited Scientific and Technical Information Products

Scientific and technical information products which you consider to be useful to others outside the originating organization or are identified as contract-required deliverables are appropriate to be transferred to ET-20. To assist you in



determining what should be sent, ask yourself:

1. Is this material a "contract-required deliverable"?
2. Is there a benefit in sharing this information with others outside your organization?
3. Is the information complete, accurate, and of acceptable quality?

If your answer is yes to any of the above three, the material may be eligible to send to ET-20.

4. Is the material primarily preliminary, financial, administrative, company private, or proprietary? If so, it normally would not be sent to ET-20.

Scientific and technical information may be reported in a variety of forms, including technical reports, journal articles, books, computer media, scientific/technical audiovisual or multimedia, and presentations at professional or scientific/technical conferences. Publication of articles in professional or technical society journals is encouraged. It is requested that all products comply with established standards referred to throughout these guidelines. In general, to facilitate processing by ET-20, two copies of the products are requested. Below are examples of the types of products appropriate for transfer.

### **2.1.1 Technical Reports**

For specific guidelines on how to organize and design technical reports, refer to "ANSI Scientific and Technical Reports--Organization, Preparation, and Production," ANSI Z39.18-1987. By following the guidelines, technical literature will be presented uniformly. To order, contact the American National Standards Institute (ANSI), at 11 West 42nd St., New York, New York 10036. Cost for ANSI reports is \$25.00 plus \$5.00 handling charge. If you have any problems with this, contact ET-20 at (423) 576-8401.

There are three types of technical reports.

1. Progress reports (or interim reports) are reports that summarize ongoing work performed during a specific reporting period. A progress report is required on most projects at least once during the fiscal year and may be required more frequently.
2. Topical reports are comprehensive statements of the technical results of work performed on a specific task or phase of a contract. They can also be detailed descriptions of scientific or technological advances.

3. Final reports are required for all completed research and development contracts, agreements, or financial assistance awards. These reports are technical accountings of the total work performed under the contract. They are comprehensive descriptions of the results achieved, which can include tabulations of data, figures, photographs, and bibliographic citations in support of the investigations undertaken. Where applicable, they summarize all previous topical and progress reports. In some instances (e.g., university research), a summary of work covering the entire contract or grant period with open literature publications resulting from it identified as products may be accepted as a final report.

### **2.1.2 Open Literature**

It is requested that any scientific and technical information rejected for publication be treated as a technical report and be assigned a DOE report number or a number assigned by the issuing installation and sent to ET-20. See section 4 for detailed instructions on transferring technical reports.

Bibliographic citations from other DOE-sponsored published literature will be acquired by ET-20 by other means.

### **2.1.3 Technical Conference Reporting**

Published proceedings, papers, or any other publications resulting from DOE-sponsored scientific or technical conferences, domestic or foreign, should be submitted for inclusion in the Department's databases at the earliest possible date. Preprints are requested to be submitted whenever possible. All submissions should be accompanied by [DOE F 1332.15, "Recommendations for the Announcement and Distribution of Department of Energy \(DOE\) Scientific and Technical Information \(STI\)."](#)

Recognizing the importance of conferences to scientific research, ET-20 publishes DOE/OSTI--4645, "Energy Conferences and Symposia," a monthly listing of upcoming conferences of interest to the DOE community. Those DOE personnel, contractors, and financial assistance recipients who are aware of or involved in organizing conferences or any such technical meeting are requested to complete and submit [DOE F 1430.14, "Information To Be Announced in Energy Conferences and Symposia" \(Attachment II-B\)](#), which will be included in the publication.

### **2.1.4 Engineering Materials**

Engineering materials that have a utility beyond a specific site or that have been or will be disseminated beyond a specific site are requested to be submitted to ET-20.

### **2.1.5 Patent Applications**

Patent applications are received from the DOE Office of General Counsel (GC-42) for processing at ET-20.

## **2.2 Unclassified Sensitive Scientific and Technical Information Products**

When scientific and technical information is transferred to ET-20, it should be accompanied by an indication of the appropriate category of sensitivity. Details of how to indicate the category of sensitivity can be found in [section 4.1.13](#). Types of sensitive information products and their procedures are described below.

### **2.2.1 Patent Sensitivity**

For all scientific and technical information products provided to ET-20 with a patent caution, it is requested that ET-20 be notified as soon as a patent has been granted or denied. It is requested that a new transmittal document be submitted if the patent caution may be removed and the information reannounced as appropriate.

### **2.2.2 Protected CRADA Information**

It is requested that scientific and technical information products containing protected Cooperative Research and Development Agreement (CRADA) information be submitted to ET-20 for centralized Departmental management. This Office will maintain the information for authorized Departmental use in coordination with all appropriate parties. At the end of the withholding period, the information will be announced for availability as authorized by Public Law 101-189. Proprietary data or protected CRADA data should not be included in the abstract. The abstract should be suitable for publication.

### **2.2.3 Unclassified Controlled Nuclear Information**

Scientific and technical information that contains Unclassified Controlled Nuclear Information (UCNI) should be transferred to ET-20. This category of information is defined in DOE Order 5650.3A, "Identification of Unclassified Controlled Nuclear Information," as "certain unclassified Government information whose unauthorized dissemination is prohibited under section 148 of the Atomic Energy Act of 1954, as amended." In addition, access to UCNI is controlled as directed in DOE Order 5635.4, "Protection of Unclassified Controlled Nuclear Information," and Title 10 of the Code of Federal Regulations (CFR) Part 1017, "Identification and Protection of Unclassified Controlled Nuclear Information."

### **2.2.4 Export Controlled Information**

Export Controlled Information is information containing "technical data," as defined in and controlled by U.S. export control statutes. Appropriate laws and regulations include the following:

1. The Nuclear Nonproliferation Act.
2. The Atomic Energy Act of 1954, as amended, and its implementation by Chapter 10, sections 110 and 810 of the Code of Federal Regulations.
3. The Export Administration Act and its implementation by the Export Administration Regulations (15 CFR 730-799).
4. The Arms Export Control Act and its implementation by the International Traffic in Arms Regulations.

### **2.2.5 Small Business Innovation Research (SBIR)**

The Small Business Innovation Development Act provides for contractor retention of rights in data generated in performance of a contract under the SBIR authority. In accordance with implementing regulations, the technical data generated under SBIR funding agreements may be protected for a period of two years from the completion of the project, unless written permission to disclose such data earlier is obtained from the contractor or grantee.

### **2.2.6 Naval Nuclear Propulsion Information**

Naval Nuclear Propulsion Information is described in Public Law 98-525 (42 U.S.C. 7158).

### **2.2.7 Proprietary Data**

Proprietary data are defined as technical data which embodies trade secrets developed at private expense.

### **2.2.8 Official Use Only Information**

Contact policy and planning group at (423) 576-1222 or send electronic mail on the Internet to [programs@adonis.osti.gov](mailto:programs@adonis.osti.gov).

### **2.2.9 Applied Technology Information**

Information products containing data related to engineering, development, design, construction, operation, or other activities pertaining to technology advances, in particular projects or facilities on which major funding emphasis has been placed

by the Office of Nuclear Energy may be designated as "Applied Technology."

### **2.2.10 Protected Battery Information**

Per Public Law 102-381, Protected Battery Information is information that results from activities conducted by the United States Advanced Battery Consortium or its contractors or by participants in the hybrid vehicle propulsion development program and their contractors. This is a specific CRADA with longer protection times than other CRADAs. Protected Battery Information would be a trade secret or commercial information that is privileged or confidential if the information had been obtained from and first produced by a non-Federal party participating in the United States Advanced Battery Consortium or in the hybrid vehicle propulsion development program.

## **2.3 Classified Scientific and Technical Information Products**

The Atomic Energy Act of 1954, as amended, and Executive Order 12356 serve as the basis for identifying classified information generated by the Department. Classified scientific and technical information products should be transmitted to ET-20 with the appropriate announcement and/or distribution instructions. Procedures for the proper identification of classified information and subsequent marking of classified information products can be found in DOE Order 5650.2B, "Identification of Classified Information."

## **2.4 Declassified Scientific and Technical Information Products**

To allow access to the widest audience possible, ET-20 would like to receive a classification change notice and a copy of the declassified document whenever a formerly classified document held by ET-20 is declassified by the originating site or higher authority. It is requested that notices of declassification be accompanied by instructions/authority to publicly release or to further control access to the document, including the basis for further control. If ET-20 never received the original classified document, they would still like to receive the declassified document and its classification change notice.

## **2.5 Software**

See [Part III, "Processing Software for Announcement/Dissemination Through the Energy Science and Technology Software Center,"](#) of this Guide.

## **2.6 Research in Progress**

ET-20 would like to receive information of research work in progress and of ongoing development projects. This will serve as a means to keep DOE researchers and program managers informed of ongoing research, to avoid

duplication of effort, to ensure effectiveness of DOE's research and development investment, to assist program activities, to meet Departmental objectives for technology transfer, and to meet Departmental obligations on the transfer of research in progress information. The Federal Register, Vol. 59, No. 1, from Monday, January 3, 1994, Rules and Regulations, Part 1180--Transfer by Federal Agencies of Scientific, Technical and Engineering Information to the National Technical Information Service says ". . . each Federal agency shall, within the time period specified in this regulation, transfer to NTIS . . . a summary of the agency's new and ongoing research that is likely to result in a final STEI (scientific, technical and engineering information) product if such final product or summary is unclassified and is intended by the agency for public dissemination."

### **3 Transmitting Research In Progress**

#### **3.1 Management and Operating (M&O) Contracts**

The following information is requested for research in progress.

1. Organization Control Number/Project Number--The identifying number assigned to a project by the performing organization.
2. Date Information Prepared--The date that information about the research project was prepared or last updated.
3. Project Title--The distinguishing or identifying name of the project.
4. Sponsoring Office Acronym/Code or Name--The identification of the organization (e.g., ER-14, EM, etc.) which funded the project.
5. DOE Contract Number(s)--The contract number(s) under which the project is being performed.
6. Corporate Source/Laboratory Name--The organization name(s) performing the project, including the division name.
7. Abstract/Project Summary--A descriptive text summary of the project; may include the objectives and progress or other technical information about the project.
8. B&R Code(s)--Budget and Reporting numbers relating to project funding.
9. Total Award Amount--Total funding for the course of the project.
10. Current Funding--Amount of current fiscal year funding allocated to

project.

11. Technical Monitor--Name of DOE contact responsible for project.
12. FTE Level--Number of full-time equivalents conducting project work.
13. Project Start Date--The starting date for the project.
14. Project Completion Date--The scheduled completion date for the project.
15. Principal Investigator Name and Address--The person primarily responsible for conducting the project.
16. Other Source(s)/Joint Participants--The organization name(s) which have served as collaborators or partners in performing the project.

Most of these fields can be found on DOE F 5120.1, "Field Work Proposal," and are discussed in DOE Order 5700.7C, "Work Authorization System."

## **3.2 Non-Management and Operating Contracts**

### **3.2.1 New Awards**

When funding offices and contracting officials require scientific or technical information products that could be of use to the Department, its contractors, or the public, such useful products should be included as deliverables. If the award is a contract, use [DOE F 1332.1, "Reporting Requirements Checklist" \(Attachment II-C\)](#). If the award is a financial assistance instrument, use [DOE F 4600.2, "Federal Assistance Reporting Checklist" \(Attachment II-D\)](#). This requirement is addressed in DOE Order 1332.1A, "Uniform Reporting System," and DOE Order 1332.2, "Uniform Reporting System for Federal Assistance (Grants and Cooperative Agreements)." If the award includes research and development, submission of [DOE F 1430.22, "Notice of Energy RD&D Project" \(Attachment II-E\)](#) is requested. This will enable the deliverables to be tracked and the scientific and technical information to be shared as described in the next section.

### **3.2.2 Contract Closeout or Termination**

1. Before a procurement action with specified scientific and technical information deliverables can be closed out, ET-20 or Departmental Elements authorized by ET-20 certify that all reporting requirements, as established by the cognizant Departmental Element, have been satisfactorily met. When required deliverables have not been received, ET-20 will request the awarding office to secure the

deliverable(s) or to document with a copy to ET-20 why it is not in the best interest of the Government to secure the deliverable(s). If there are any deviations in the reporting requirements, the Departmental Element is requested to notify ET-20.

2. Awarding offices should obtain ET-20 certification using the automated certification procedures developed by ET-20 in conjunction with HR-523.2. To receive the certification, offices should query the Procurement Assistance Data System (PADS) database for a particular record. If ET-20 certification date is present, request the PADS Standard Report No. R0420634 for that award. The report provides documentation of ET-20 certification and should be made a permanent part of the procurement action file.

## **4 Transferring Scientific and Technical Information Products**

### **4.1 Describing the Products**

Many attributes are used to accurately describe scientific and technical information funded by the Department of Energy or performed in its facilities. These attributes are used to locate, announce, and disseminate the information to the widest audience possible. When scientific and technical information products are transferred, descriptions of these attributes for those products are also requested. These descriptions can be transferred electronically or on [DOE F 1332.15, "Recommendations for the Announcement and Distribution of Department of Energy \(DOE\) Scientific and Technical Information \(STI\)" \(Attachment II-A\)](#), or on [SF 298, "Report Documentation Page" \(Attachment II-F\)](#). The following are the fields requested and descriptions about them. The characteristics in sections [4.1.9 through 4.1.15](#) would not be expected from Financial Assistance Recipients, only from DOE and DOE Contractors.

#### **4.1.1 Award/Contract/Financial Number**

This includes the DOE award or contract number(s), B&R (Budget and Reporting) number, and/or the Technical Plan number under which the work was funded.

#### **4.1.2 Title**

A brief title that clearly describes the subject matter covered is recommended. A subtitle can be used if necessary to further clarify the title. Guidelines for titles can be found in ANSI Z39.18-1987.

In addition to the guidelines in the standard, the following guidelines also apply to the title and subtitle:

1. When a report has more than one volume, repeat the primary title on



each volume and use the subtitle to identify the specific subject of each volume.

2. Show the type of report, if other than a topical report (e.g., annual report, progress report, final report, thesis), and the period covered, if appropriate, as part of the title or subtitle.

3. For Unclassified Controlled Nuclear Information (UCNI) use a non-UCNI title and subtitle when possible. Indicate whether the title does or does not contain UCNI.

4. Use an unclassified title and subtitle for a classified report if the subject matter can be indicated clearly. The classification level and category, including "unclassified," must be indicated on all titles for classified documents.

#### **4.1.3 Author(s)**

Authors, editors, compilers, and any other contributors help uniquely identify an information product. In addition, if the organizational affiliations of the contributors are with organizations other than the performing organization, that information is also requested. Editors and compilers may be identified as such preceding their names. In order that all contributors to a composite product receive credit, each contractor should be identified by name and contract number. Further details for this field can be found in ANSI Z39.18-1987.

#### **4.1.4 Abstract**

An abstract is a concise statement (200 words or less) of the purpose, scope, and major findings of the information product. Because abstracts are also published in databases and by abstract services to assist potential customers in determining whether they may be interested in the information product, an abstract should be able to stand alone independently from the product. The abstract is especially important in nonprint information products. The abstract, along with other bibliographic information, is used in cataloging and announcing information products.

#### **4.1.5 Subject Terms**

The subject terms include keywords and phrases identifying major subjects in the information product. This information would serve some of the same purposes as the abstract in letting potential customers know more about the information product.

#### **4.1.6 Type of Product**

If the product is a report, it can usually be described as a progress report covering a specified time period (such as quarterly, semiannual, or annual), a final report, a topical report, or a thesis.

If the product is from a conference, meeting, or presentation, it should include the conference title, location, dates, and sponsor(s).

#### **4.1.7 Dates Covered**

It is suggested that this include the basis for dating along with the date. Reporting instructions conveyed to performing organizations, either by their contract administrators or by Headquarters Element, may specify a basis for dating. If no instructions were given, performing organizations are encouraged to use the publication date.

Examples are:

**May 4, 1992**

**Date Compiled**

**October 6, 1992**

**Date Published**

#### **4.1.8 Patent Information**

If applicable, identify the page numbers in technical reports addressing new equipment, processes or material; identify the invention disclosure number and to whom it was submitted; and identify patent-related objections to the release of the product.

#### **4.1.9 Legal Disclaimers**

A disclaimer may or may not be appropriate for Department of Energy-generated information. It is the responsibility of each Department of Energy organization to determine the appropriate notice for publications it generates. Such decisions should be coordinated with the appropriate legal counsel. The following is an example of a disclaimer that would appear on the inside front cover of each report prepared under DOE sponsorship.

"DISCLAIMER

This product was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or

assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof."

The use of the standard disclaimer would be inappropriate for environmental technical reports and documents submitted to State and Federal agencies in compliance with regulations, consent orders, compliance agreements, permit applications, etc.

#### **4.1.10 Product/Report Number**

Every product should be assigned a standard report number composed of an approved report series (i.e., report code or report prefix), a group separator, and a report sequence number (i.e., report suffix).

##### **4.1.10.1 Technical Reports**

The Department of Energy uses a standard report numbering system that is based on American National Standards Institute ANSI/NISO Z39.23-1990, "Standard Technical Report Number (STRN)--Format and Creation."

#### **1. Department of Energy Program Office Reports**

Department of Energy organizations number their information products as follows:

- a. Use "DOE/" at the beginning of the report number.
- b. Add the two-letter code used to identify the Assistant Secretary under whose authority the Program Office operates.
- c. Complete the number with a double hyphen (--) or a single en dash and a report sequence number. Master lists of these report sequence numbers are maintained by the Printing Operations Branch, HR-841. Examples are DOE/NE--193 or DOE/FE--71.

#### **2. Department of Energy Field Element Reports**

Department of Energy Field Elements number their information products as

follows:

- a. Use "DOE/" at the beginning of the report number.
- b. Add the two letters that identify the field element responsible for the report.
- c. Complete the number with a double hyphen (--) or a single en dash and a report sequence number assigned by the Technical Information Officer (TIO) at the field element. An example is DOE/OR--756.

### 3. Major Project Office Reports

Department of Energy major Project Offices number their information products as follows:

- a. Use "DOE/" at the beginning of the report number.
- b. Add the two- or three-character identifier that is unique to the project office. These identifiers will be assigned if requested by ET-20.
- c. Complete the number with a double hyphen (--) or a single en dash and a report sequence number that is maintained at the project office. An example is DOE/LLW--176.

### 4. Contractor Reports

Major Department of Energy laboratories and contractors that have been assigned codes shall use these approved codes. For contractors that do not have approved codes, contracting officers must provide instructions ensuring that contractors number information products as follows:

- a. Use "DOE/" at the beginning of the report number.
- b. Add the final seven characters (two letters and five digits) from the applicable contract or grant number and separate the letters from the digits with a virgule (/). The two alphabetic characters and the succeeding five-digit number must be extracted from the contract number.
- c. Complete the number with a double hyphen (--) or a single en dash followed by a sequential number for each report generated under the contract (do not use leading zeros). For new contracts,

begin the sequential number with the single digit "1." For existing contracts, continue the sequence already established for the life of the contract. Contract renewals or extensions do not change the two alphabetic characters or the five-digit number. Example of a report number generated from the contract number DE-AC03-92NE01834 would be DOE/NE/01834--1.

d. Contract modification numbers normally shown as .M001, .M002, and so forth, if any, that follow the basic five-digit number are not used in the report number.

Additional information that may help you in determining a report number is that reports which are issued in more than one binding or are reissued as revisions or later editions are identified by adding the following suffixes to the basic number: Rev. (revision); Vol. (volume); Pt. (part); Add. (addendum); Ed. (edition); Ex. Summ. (executive summary); and Suppl. (supplement). Abbreviations for other terms may be requested from ET-20. Some examples of the added suffixes are DOE/NE/01834--1-Rev.1, DOE/NE/01834--1-Pt.1, or DOE/NE/01834--1-Suppl.1.

It would be helpful to ET-20 to be notified of any modification in the report series or to an already established report number.

#### **4.1.10.2 Special Report Series**

##### **1. Conference Proceedings**

A special report series has been established for conference papers and proceedings. Department of Energy organizations and contractors, including those contractors who have their own unique report codes, should request appropriate numbers from ET-20 if they would like them contained in the conference database and other publications which utilize the special number series before issuing conference proceedings. Information that should be provided when requesting a number from ET-20 includes the name of the conference; sponsor(s); the beginning and ending date(s) that the conference was or is to be held; and location, including city, state, and country.

##### **2. Translations**

Many organizations have an approved report series to identify translations.

##### **3. Multimedia**

The following characters should be used at the end of the report numbers

for the multimedia to indicate the type:

tape

- VC videocassette
- MC magnetic cartridge
- MT magnetic
- DK diskette
- FM 16mm file
- VD videodisc
- CD CD-ROM
- AC audiocassette

Example: DOE/XX/12345--123-VC

#### **4.1.10.3 Multiple Report Numbers**

The assignment of more than one report number is encouraged if multiple report numbers would be useful in sequencing reports or showing multiple performers.

#### **4.1.11 Funding Office(s)**

This can be identified by the name, symbol, or B&R code of the DOE office providing support or funding. For projects funded by more than one office, all sources of DOE funding are requested.

#### **4.1.12 Performing Organization Name and Address**

The name of the organization performing the work generating the information product is requested.

#### **4.1.13 Handling and Release of Information Products (Rev. 1, 09/30/97)**

##### **4.1.13.1 Unclassified Unlimited Products**

It is the policy of the Department to the extent possible to make all its unclassified information freely and openly available. See [section 2](#) for a description of the types of scientific and technical information products.

##### **4.1.13.2 Unclassified Products Containing Sensitive Information**

In particular cases where it is necessary to place controls on the availability of certain information, such controls are in conformance with applicable statutes, laws, regulations, Executive Orders, international agreements, directives, and Departmental policy. Departmental Elements are responsible for performing classification, patent, and sensitivity reviews in accordance with funding agency policies; DOE guidelines; and other applicable statutes, laws, and regulations. Such reviews should be

performed prior to any decision being made as to the form the information might take, as any dissemination restrictions might influence the allowable form of the information (e.g., information containing Applied Technology would not be appropriate for submission to a professional journal).

## 1. Types of Sensitive Unclassified Information

### a. Patent Sensitivity

Federal agencies are authorized to withhold from disclosure to the public information disclosing any invention in which the Federal Government may own a right, title, or interest, for a reasonable length of time in order for a patent application to be filed.

(1) The following statement should be clearly provided on the product containing potentially patentable information:

"PATENT CAUTION

This product may contain patentable subject matter protected from unauthorized disclosure under U.S. Patent Law (35 U.S.C. 205). No further dissemination outside of the Government without the approval of the Assistant General Counsel for Intellectual Property, U.S. Department of Energy."

(2) Products containing potentially patentable information should additionally be clearly and prominently marked with Distribution Statement B ([Attachment II-G](#)).

### b. Protected Cooperative Research and Development Agreement (CRADA) Information

Protected CRADA Information is information produced in the performance of a CRADA that is marked as being Protected CRADA Information by a party to the agreement and that would have been proprietary information had it been obtained from a non-Federal entity.

(1) Products containing information that is protectable under the terms of a CRADA should be clearly provided with the following statement to

prevent disclosure of such information:

"PROTECTED CRADA INFORMATION

This product contains Protected CRADA Information which was produced on \_\_\_\_\_[date] under CRADA No. \_\_\_\_\_ and is not to be further disclosed for a period of \_\_\_\_\_ from the date it was produced except as expressly provided for in the CRADA."

(2) Products containing Protected CRADA information should additionally be clearly and prominently marked with Distribution Statement E (Attachment II-G).

c. Unclassified Controlled Nuclear Information

(1) Unclassified Controlled nuclear Information (UCNI) is identified and controlled as directed in DOE Order 471.1, "Identification and Protection of Unclassified Controlled Nuclear Information", and Title 10, Code of Federal Regulations (CFR) Part 1017, "Identification and Protection of Unclassified Controlled Nuclear Information."

(2) Whenever possible, use a non-UCNI title and subtitle for an UCNI document. Indicate whether the title does or does not contain UCNI.

(3) Each product so identified should be clearly marked with Distribution Statement D ([Attachment II-G](#)).

d. Export Controlled Information

(1) Export Controlled Information should be clearly identified to ensure appropriate handling of such information by potential recipients.

Such data, when designated as "Export Controlled Information," are given controlled distribution to prevent their unauthorized release to foreign countries, organizations, or individuals.



(2) Such information to be released should be clearly marked in accordance with the following procedures:

(a) Markings to be affixed to technical information determined to be ECI (Export Controlled Information) may vary depending on the needs and preferences of site or program managers. The following format is preferred:

"EXPORT CONTROLLED  
INFORMATION

Contains technical data whose export is restricted by statute. Violations may result in administrative, civil, or criminal penalties. Limit dissemination to U.S. Department of Energy and major U.S. DOE contractors. The cognizant program manager must approve other dissemination. This notice shall not be separated from the attached document.

\_\_\_\_\_  
"

\_\_\_\_\_  
Reviewer Signature Date

(b) Sites that have developed their own ECI marking formats may retain them as long as they contain at least the information elements of the preferred format.

(3) Products containing export controlled information should be clearly provided with Distribution Statement D ([Attachment II-G](#)).

e. Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR)

The Small Business Innovation Research and Small Business Technology Transfer products should be clearly marked as containing SBIR or STTR proprietary information and carry prominently Distribution Statement B

[\(Attachment II-G\).](#)

f. Naval Nuclear Propulsion Information

Naval Nuclear Propulsion Information is controlled in accordance with Public Law 98-525 (42 U.S.C.7158). Naval Nuclear Propulsion Information, unclassified or classified, may be released publicly or for dissemination to foreign governments, foreign nationals, or any individual or activity not engaged in work for the naval reactors program only with the specific approval of the Director of the Office of Naval Reactors.

g. Proprietary Data

Proprietary data which arise from Department of Energy financial assistance agreements are controlled in accordance with 48 CFR 952.227 and 5 U.S.C.552. Proprietary data which arise from DOE contracts involving "limited rights data" or "restricted computer software" are defined and controlled in accordance with FAR 52.227-14 and 5 U.S.C. 552.

(1) Products containing proprietary data arising from DOE contracts or financial assistance agreements should be clearly provided with the following statement:

"PROPRIETARY DATA

This technical data contains proprietary data furnished under contract no. \_\_\_\_\_ with the U.S. Department of Energy. Disclosure outside the Government is not authorized without prior approval of the originator, or in accordance with provisions of 48 CFR 952.227 and 5 U.S.C.552."

(2) Products containing proprietary data should also be clearly provided with Distribution Statement B [\(Attachment II-G\).](#)

h. Official Use Only Information

For guidance consult your site or field office technical

information office, Freedom of Information Act office, classification office or legal counsel. For additional consultation, contact the OSTI Classification and Control Officer.

(1) Products identified as containing OOU should be marked with Distribution Statement C ([Attachment II-G](#)).

i. Applied Technology Information

Applied Technology Information is initially given controlled distribution in order to limit the information to domestic recipients, thereby retaining the foreign trade value of the information. This information is exchanged, on a quid pro quo basis, with nations having formal exchange agreements with the United States.

(1) Products containing information designated as "Applied Technology" should be clearly provided with the following statement:

"APPLIED TECHNOLOGY

Any further distribution by any holder of this product or data therein to third parties representing foreign interests, foreign governments, foreign companies, and foreign subsidiaries or foreign divisions of U.S. companies shall be approved by the \_\_\_\_\_ [insert appropriate NE Program Office officials], U.S. Department of Energy. Further, foreign party release may require DOE approval pursuant to 10 CFR 810, and/or may be subject to Section 127 of the Atomic Energy Act."

Use the following to fill in the appropriate NE Program Office officials in the blank in the statement above.

(a) For information emanating from the Reactor Systems, Development, and Technology Program, the label should read "Associate Deputy Assistant Secretary for Reactor Systems, Development, and Technology."

(b) For information emanating from the Reactor Deployment Program, the label should read "Associate Deputy Assistant Secretary for Reactor Deployment."

(c) For information emanating from the Space and Defense Power Systems Program, the label should read "Deputy Assistant Secretary for Space and Defense Power Systems."

(d) For information emanating from the Naval Nuclear Propulsion Program, the label should read "Deputy Assistant Secretary for Naval Reactors."

(2) Applied Technology products, as defined by the Director, Office of Nuclear Energy, do not include base technology information. Base technology information is defined as information reporting on a fundamental knowledge of nuclear technology but without any information related to the engineering, design, construction, or operation of particular projects requiring major funding. Base technology is unlimited information and is not subject to distribution controls.

(3) Products identified as containing Applied Technology Information should also be clearly and prominently marked with Distribution Statement F ([Attachment II-G](#)).

j. Protected Battery Information

(1) Products containing Protected Battery Information should be clearly marked with the following statement to prevent disclosure of such information:

"PROTECTED BATTERY INFORMATION

This product contains Protected Battery Information which was produced under Contract/CRADA No.

\_\_\_\_\_ and is not to be further disclosed for a period of up to five years after the completion of the individual project, or not prior to \_\_\_\_\_ [date]."

(2) Products so identified should also be clearly and prominently marked with Distribution Statement E. [\(Attachment II-G\).](#)

#### 4.1.13.3 Classified Information Products

Pursuant to Executive Order 12958 and the Atomic Energy Act of 1954, as amended, classified information is defined as certain information that the United States Government has determined requires protection against unauthorized disclosure for reasons of national security (i.e., RESTRICTED DATA, FORMERLY RESTRICTED DATA, and NATIONAL SECURITY INFORMATION). Specific guidelines are contained in the DOE 5600 series of directives.

##### 1. Distribution Limitation Statements

Classified scientific and technical products generated within the Department of Energy should be clearly and prominently provided with an appropriate distribution limitation statement as follows. This is to ensure that the recipient will subsequently handle and disseminate the products in accordance with Department of Energy and other security requirements.

a. For SECRET Nuclear Weapon Data (Restricted Data or Formerly Restricted Data) Sigmas 1, 2, 11, 12, and 13 products, use Distribution Statement H [\(Attachment II-G\).](#)

b. For SECRET and CONFIDENTIAL Nuclear Weapon Data (Restricted Data and Formerly Restricted Data) Sigma 3, 4, 5, 9, and 10 products; for CONFIDENTIAL Nuclear Weapon Data (Restricted Data and Formerly Restricted Data) Sigma 1, 2, and 11 products; and for all non-Nuclear Weapon Data Restricted Data products use Distribution Statement G [\(Attachment II-G\).](#)

c. For all non-Nuclear Weapon Data Formerly Restricted Data and all National Security Information products use Distribution Statement F [\(Attachment II-G\).](#)

2. Use an unclassified title and subtitle if the subject matter can be indicated clearly. The classification level and category, including "unclassified" must

be indicated on all titles to classified products in accordance with to DOE Order 471.2 and its implementing guidance.

#### **4.1.13.4 Declassified Information Products**

Classification information products that have been properly declassified must also be reviewed by the originating agency for unclassified but sensitive information as outlined in DOE Order 5650.2B, "Identification of Classified Information." Declassified information products must be marked accordingly and distribution statements included prior to release and distribution.

#### **4.1.14 Distribution of Information Products**

##### **4.1.14.1 Distribution Categories**

ET-20 maintains a distribution program in consultation with DOE Program Offices and publishes updated distribution categories as needed. Program Offices are responsible for their categories.

1. The distribution category should be on the title page or self-cover of each printed report, or clearly indicated for other products. The appropriate distribution category for unclassified products can be found in the publication, DOE/OSTI--4500, "Program Distribution for Unclassified Scientific and Technical Reports." The appropriate distribution for classified products can be found in the publication, DOE/OSTI--3679 (Formerly M-3679), "Standard Distribution for Classified Scientific and Technical Reports."
2. Any distribution of classified products that is made by the performing organization is to be indicated on a distribution page printed in the back of the report.

##### **4.1.14.2 Types of Distribution**

1. Unrestricted
  - a. Program Offices request reports be distributed according to appropriate addresses listed in DOE/OSTI--4500 or to special lists.
  - b. DOE and contractor organizations subscribe to microfiche copies of all or selected subsets of the documents, or purchase single documents.

c. GPO subscribes to microfiche copies of the documents for Depository Libraries, all or subsets.

d. NTIS receives a copy for sale to the U.S. and foreign public.

e. Energy Technology Data Exchange member countries receive a subset within the subject scope of the exchange.

f. International Nuclear Information System receives a subset within the scope of the agreement for further distribution to its member countries.

g. Announcement records (bibliographic citation and abstract) are provided in the Energy Science and Technology Database, in Energy Research Abstracts, and to the organizations receiving microfiche.

## 2. Classified

Classified scientific and technical information products will be announced by ET-20 in accordance with DOE/OSTI--3679 (Formerly M-3679).

## 3. Unclassified Controlled/Sensitive

a. Provided or available at the direction of the program/originator.

b. Announced through bibliographic citation in ET-20's Controlled Access Database or programmatic databases.

### **4.1.15 Releasing Information**

Indicate if patent clearance has been submitted for DOE patent clearance and/or if clearance has been granted by whom and when.

## **4.2 Physical Form of the Information Product**

Information products can come in many forms or combinations of forms, including print or nonprint. Print includes paper and microform. Nonprint media includes videocassettes, magnetic cartridges, magnetic tapes, diskettes, audiocassettes, 16mm files, video discs, CD-ROMs or any combination thereof. Processing of multimedia requires that special information as appropriate to each item be provided. Please provide two copies of the medium, a descriptive abstract, playing

speed, machine compatibility, quantity/type of medium, physical description, color, playing time, sound, and the name of a contact person for additional information. These information products should be prepared for transmittal to ET-20 as defined in ["Submitting Your Documents, Computer Products, and Audiovisuals to NTIS" \(Attachment II-H\)](#).

#### **4.2.1 Technical Reports**

ANSI Z39.18-1987, "Scientific and Technical Reports--Organization, Preparation, and Production," is the standard to be followed for the production of technical reports. If the report is intended to be printed by ET-20, the originator of a report should provide an original reproducible master; if the report is to be microfiched, a facsimile for microfiching should also be provided. This does not include the multiple copies provided for standard distribution by ET-20. To expedite the reproduction of these reports and to ensure good quality printing and microfiching, these guidelines should be followed if at all possible. Because technical reports are also produced, stored, and retrieved in electronic formats, the author(s) or other individuals charged with preparing a report should plan to deliver both a paper copy and an electronic version available on diskette, CD-ROM, or through network services. At a minimum, the electronic version of a report should exist as an ASCII (American Standard Code for Information Interchange) file. At best the electronic version should exist as SGML (Standard Generalized Markup Language) coded data. Further guidelines for the standards and practices for electronic exchange of data and information are presented in [section 5](#).

### **4.3 Miscellaneous Information**

#### **4.3.1 Use of the Department of Energy Seal**

Use of the Department of Energy seal, as described in DOE Order 1000.2B, "Department Seal and Flag," is limited as follows: "Official publications or graphics issued by and attributed to DOE, or joint statements of DOE with one or more Federal agencies, State or local governments, or foreign governments."

#### **4.3.2 Company Names and Logos**

Company names, logos, or similar material may not be placed on camera-copy pages of the text and should be removed from photographs as specified in the Joint Committee on Printing's, "Printing and Binding Regulations," Title III, Paragraph 13, S. Pub. 109-9.

#### **4.3.3 Measurement System**

On the basis of direction contained in Executive Order 12770, "Metric Usage in



Federal Government Programs," of 7-25-91; the Metric Conversion Act of 1975 (Public Law 94-168, as amended by Public Law 100-418); and various Title 15, Code of Federal Regulations parts and subparts, use of the metric system for all measurement references is generally required.

#### **4.4   Reproduction**

When it is practical and efficient for technical reports to be reproduced by the originating institution, such reproduction should be in accordance with the Government Printing and Binding Regulations issued by the Joint Committee on Printing and Department of Energy directives and with any predetermined distribution requirements. The originating institution may have the report duplicated or printed and then sent to ET-20 for distribution, or it can send two copies of a report to ET-20 for processing. In some cases, ET-20 will arrange for reproduction or printing at a charge to the funding program. Use the addresses below to send reports, whether printed, reproduced, or reproducible master, to ET-20.

#### **Mail**

**U.S. Department of Energy  
Office of Scientific and  
Technical Information  
P.O. Box 62  
Oak Ridge, TN 37831**

#### **Motor Freight**

**U.S. Department of Energy  
Office of Scientific and  
Technical Information  
Building 1916-T-1  
175 Oak Ridge Turnpike  
Oak Ridge, TN 37830**

**To avoid repetitive  
duplicating and  
printing efforts,**

**performing  
organizations that  
produce copies of a  
report for their own  
use should provide  
sufficient copies to  
ET-20 to meet  
predetermined  
distribution  
requirements.**

Reproduction of classified reports must be done in accordance with guidelines already established for classified reports.

#### **4.5 Reference Publications**

This guideline is written to take advantage of standards already in use in the publishing industry and includes support material in:

ANSI Z39.4-199x, "Library and Information Sciences and Related Publishing Practices--Basic Criteria for Indexes."

ANSI Z39.14-1979(R1986), "Writing Abstracts."

ANSI Z39.18-1987, "Scientific and Technical Reports--Organization, Preparation, and Production" (under revision).

ANSI Z39.23-1983, "Library and Information Sciences and Related Publishing Practices--Standard Technical Report Number (STRN)--Format and Creation."

ANSI Z39.29-199x, "Bibliographic References."

ANSI Z39.59-1988, "Electronic Manuscript Preparation and Markup."

ANSI Z39.72-199x, "Format for Submission of Data for Multimedia CD-ROM Mastering."

ANSI/IEEE 268-1992, "American National Standard for Metric Practice."

ASTM E 380-91, "Standard Practice for the Use of the International System of

Units (SI)," 1991.

"The Chicago Manual of Style," 14th ed., Chicago, IL, University of Chicago Press, 1993.

Rubens, Philip. "Science and Technical Writing: A Manual of Style." New York, NY, Henry Holt, 1992.

Swanson, Ellen, "Mathematics into Type: Copy Editing and Proofreading of Mathematics for Editorial Assistants and Authors." Rev. ed. Providence, RI, American Mathematical Society, 1979.

Weast, Robert c.(ed.) "CRC Handbook of Chemistry and Physics: A Ready-Reference Book of Chemical and Physical Data," 66th ed. Boca Raton, FL: CRC Press, 1985.

"United States Government Printing Office Style Manual." Rev. ed. 1984. Washington, DC: U.S. Government Printing Office.

## 5. Production and Exchange of Electronic Documents Using Standard Generalized Markup Language

### 5.1 Introduction

The initiative to develop standards for the electronic exchange of scientific and technical information began in August 1991 within the Department of Energy Office of Information Resource Management Policy, Plans, and Oversight with the announcement of an initiative to adopt ISO-8879, Standard Generalized Markup Language (SGML), as defined in Federal Information Processing Standard (FIPS) 152, as the standard for the electronic exchange of scientific and technical information. The Office of Scientific and Technical Information (OSTI), which coordinates scientific and technical information management policy within the Department, was given the lead for this initiative.

- In February 1993, **"The Electronic Exchange of Scientific and Technical Information (STI) Strategic Plan"** was issued with a goal of making electronic exchange of full-text scientific and technical information the norm by the year 2001.

The Department of Energy is continuing to migrate to an open systems environment. SGML and supporting standards facilitate the government-wide goal of achieving open systems interoperability in terms of document format and exchange. These standards are being integrated into the existing information architecture for the management and processing of DOE STI.

SGML is recognized as the best business practice for document interchange, and originators and users of information tagged in SGML benefit from increased accessibility, timeliness, and completeness of information as the information is increasingly used and reused in a wide range of applications throughout its life cycle.

## 5.2 Assumptions

The foundational assumptions upon which this initiative rests are as follows:

- Digital technology has matured and we should use it now, based on standards.
- 
- The economic and political climate demands that we cut costs while attempting to meet the increasingly sophisticated information demands of our customers.
- 
- There is universal agreement that the ability to exchange information electronically in a standardized way is the most cost-effective and efficient means available.
- 
- A standardized approach to sharing information facilitates economies and efficiencies; information is created only once.
- 
- Standardizing the exchange of information facilitates the use and reuse of information.
- 
- Standardizing our approach to the electronic exchange of information promotes the conservation of STI a valuable national resource.
- 
- A standardized approach assumes an Open Systems, nonproprietary environment in which international standards play the predominant role for information exchange.
- 
- Standards and Open Systems yield more cost-effective migration paths to new technologies in the future through reduced conversion and data integrity costs.
- 
- This approach assumes system and application neutrality; with a neutral data format, translation is not required between applications or systems.
- 
- Paper-based systems will be the exception, not the norm, by the year 2001.

## 5.3 Standards-Based Implementation

To ensure interoperability at all levels, this implementation is based on standards. To leverage technological advances and support infrastructure in other areas of the Federal Government, the collection of Continuous Acquisition Life-Cycle Support (CALs) standards is the model for the Department of Energy information and systems integration programs. In addition, other standards are identified that facilitate the transition to electronic exchange within the Department ([Attachment I, "Electronic Exchange Standards" DOE G 1430.1D-1-Rev 1](#)). OSTI will continue to review and evaluate emerging standards as they pertain to document interchange and ensure that those standards that represent best business practices and the interests of the Department are considered for adoption.

In order to facilitate the Department's transition to the use of Standard Generalized Markup Language as an exchange standard, OSTI is working with stakeholders to establish the following:

A registry and management process for document type definitions (DTDs) for classes of scientific and technical information products. Classes of documents, which conform to a set of DTDs, are being identified. The Department's SGML Technical Working Group has determined that greater than ninety percent of STI documents fall into a Technical Report class of documents. Other classes of documents include books, Patent applications, engineering materials, theses, and bibliographies. DTDs are being established for these classes of documents as appropriate. The Technical Reports DTD is currently available at <http://www.doe.gov/html/osti/eei/eei.html>. These DTDs provide a minimum standard only.

A registry for SGML elements and attributes that provides the basis for uniform tagging of scientific and technical information products within the Department.

Electronic Exchange Tool Kits. These provide some of the practical, entry-level tools necessary for the transition to electronic document interchange within the Department. A Bibliographic Exchange Tool Kit is now available and may be obtained by calling 423-576-2119 or sending an e-mail to [earl.smith@ccmail.osti.gov](mailto:earl.smith@ccmail.osti.gov). A Full-Text Exchange Tool Kit will be available in FY 1996. Technical advice and consultation for SGML implementation issues are available at OSTI. A list of resources within the Department is currently being developed to assist users in finding training, technical assistance, and consultation.

## **5.4 Transition to Electronic Exchange**

### **5.4.1 Current Exchange Environment**

The current electronic exchange environment is characterized by information-rich, autonomous organizations where, in the absence of a common standard for interchange, the exchange of STI is a labor-intensive, time-consuming, difficult,

expensive, and primarily a paper-based effort. The reliance upon proprietary methodologies presents the greatest obstacle to the electronic exchange within the Department. Enabling electronic exchange means removing these obstacles to communication through the adoption and use of the standards identified in this policy within the Department of Energy.

#### **5.4.2 Managing Transition**

The process of implementing SGML includes a period of transition from the current environment to an interim phase to the electronic exchange systems architecture based on the exchange of SGML-encoded information. Bibliographic data will be addressed first through a series of field tests, in conjunction with DOE and contractor participants, that precede full-text implementation. Full text follows, also, through a series of field tests with DOE and contractor participants. Whereas it is recommended that DOE and contractor participants begin the transition process with a bibliographic exchange to gain knowledge and experience with SGML, this does not preclude beginning with a full-text exchange that addresses both bibliographic and full-text STI. The transition to the routine exchange of SGML-encoded full-text STI is planned to culminate in the year 2001. DOE and contractor participants should be prepared to participate by 1998. The transition is scheduled to meet the following milestones:

- DOE, Office of IRM Policy, Plans and Oversight issued

-  
- Memorandum adopting SGML as DOE standard for electronic document interchange — 1991

- SGML Technical Working Group formed — 1992

- TAG and DTD Registry established — 1994

- Guide for Transmitting Standard Generalized Markup Language (SGML) encoded Bibliographic Records published — 1994

- SGML Bibliographic Tool Kit provided — 1995

- SGML Full-Text Tool Kit provided — 1996

- Guide published for the Exchange of SGML-Encoded Full-Text Scientific and Technical Information — 1995

- SGML-Encoded Bibliographic Information Field Tests conducted — 1995/96

- SGML-Encoded Full-Text Information Field Tests conducted — 1996/97

- Organizational implementation plans developed — 1996

-  
- Routine exchange of SGML-encoded bibliographic data implemented — 1996/97  
-

- Routine exchange of SGML-encoded full-text implemented — 1996/98

- In the transition period from paper and proprietary electronic formats to SGML-encoded information, a limited number of document formats are acceptable for electronic document interchange. These interim formats are (1) Standard Generalized Markup Language (SGML), (2) Hypertext Markup Language (HTML), (3) PostScript, (4) TIFF Group 4 as specified in Attachment I, "Electronic Exchange Standards" DOE G 1430.1D-1-Rev.1, and (5) Portable Document Format (PDF). Widely used word-processor and graphics packages produce documents in at least one of the interim formats.

There is a description of a generic SGML/HTML publishing model and a PostScript production model in Attachment II, DOE G 1430.1D-1-Rev 1. In addition, descriptions and explanations of processing options and suggested application software tools are located on the World-Wide Web at <http://www.doe.gov/html/osti/eei/eei.html>. SGML-encoded full-text information should be parsed and exchanged in accordance with the DOE Technical Reports Document Type Definition. SGML-encoded bibliographic information should be submitted in accordance with the *Guide for Transmitting Standard Generalized Markup Language (SGML) Encoded Bibliographic Records* (DOE/OSTI--11685). HTML-encoded documents should be parsed and exchanged in accordance with the OSTI HTML Document Type Definition (HTML DTD 3.0). Document Type Definitions and guidance are currently available via the Electronic Exchange Home Page (<http://www.doe.gov/html/osti/eei/eei.html>), may be obtained by calling 423-576-1138, or by sending an e-mail to:

charlene.luther@ccmail.osti.gov.

- Though discouraged, paper continues to be an acceptable information exchange medium through the transition period. While it is expected that costs and inefficiencies should provide sufficient incentives to use electronic modes of document creation and transmission, there will be a small number of activities that may continue to use paper-based systems. Through this transition period OSTI will digitize paper inputs, using scanning technology, in order to output TIFF Group 4 images for storage and conversion. Processing parameters standards for conversion to TIFF Group 4 images may be found in Attachment I, "Electronic Exchange Standards" DOE G 1430.1D-1-Rev 1.  
-

### **5.4.3 Interim Document Formats**

The purpose of this listing is to provide a brief overview and discussion of the

document formats that are being accepted for electronic document exchange via file transfer protocol (FTP), magnetic media, or electronic mail.. These interim formats are accepted to accommodate a range of current needs within the DOE information environment.

Please note that only unclassified information that is not subject to statutory or Program Office announcement and/or access limitations can be transmitted on open systems networks such as the Internet.

#### **5.4.3.1 Standard Generalized Markup Language**

Standard Generalized Markup Language (SGML), ISO 8879, is recognized as the best business practice for document interchange. SGML is a flexible and neutral data format, independent of proprietary formats, and universally accessible. SGML facilitates reuse and automation, and it has few limitations in its ability to express complex scientific and technical information. In addition, SGML satisfies all foundational assumptions identified in Paragraph 5.2 and is currently the Department's document format of choice for the electronic exchange of information.

#### **5.4.3.2 Hypertext Markup Language>**

Hypertext Markup Language (HTML) is an application of SGML that has a specific Document Type Definition (DTD) and fixed tag set. Since HTML is a neutral data format and universally accessible, it is an acceptable transition document exchange format. Although HTML does have limitations in terms of its ability to express complex documents, such as STI, it is viewed as a viable interim option.

#### **5.4.3.3 Postscript**

PostScript, a page description language that allows documents to be transmitted electronically with all original formatting and graphics intact, is an established industry standard. OSTI is currently accepting PostScript as an exchange format because, in addition to being an industry standard for document printing, it is a format that is easily converted to other media (e.g., paper, fax, PDF, image formats, etc.). PostScript files can be saved from a standard word processing package such as Microsoft Word or Novell's WordPerfect. Once created, the Postscript files can be delivered electronically to OSTI.

#### **5.4.3.4 TIFF Group 4**

An acceptable interim format for electronic exchange of STI is TIFF Group 4. TIFF Group 4 is currently being used by a number of DOE and DOE



contractor activities. To ensure consistency, a standard for submissions to OSTI is TIFF CCITT Group 4. (See Attachment I, "Electronic Exchange Standards" DOE G 1430.1D-1-Rev 1 for specifications.)

#### **5.4.3.5 Portable Document Format (PDF)**

Portable Document Format (PDF), a proprietary format owned by Adobe Systems Incorporated, can best be described as an enhancement of the PostScript format. The PDF format maintains almost complete fidelity to the original document and is an efficient solution for providing electronic access to documents. Through the use of Adobe's Acrobat™ PDF Writer driver, PDF files can be created by printing to PDF from word processing and other desktop publishing applications. By using a viewing application available on the Internet such as Adobe™ Acrobat™, PDF files can be browsed on-screen or they can be printed to local or remote printers. PDF files can be searched through the viewing application or through proprietary database engines that provide filters for the format. The most current version of PDF supports the addition of hyperlinks to multimedia objects and Internet URLs.

#### **5.4.3.6 Other Formats**

The preceding formats have been identified as best business practices by members of DOE's STI Partnership. All DOE and contractor sites are urged to use these formats for electronic submission to OSTI, with the ultimate goal being SGML. In the interim, OSTI is prepared to work with sites on a case-by-case basis to facilitate a workable transition.

### **5.4.4 Future Exchange Technologies**

OSTI continues to evaluate new technologies for their applicability to electronic document exchange. If these technologies provide a better, more efficient format for electronic document exchange, OSTI and its STI Partners are open to adopting them as a better business model and, if adopted, providing a transition strategy from the current to the new format.

## **5.5 References**

ISO-8879, *Information Processing — Text and Office Systems — Standard Generalized Markup Language (SGML)*

Federal Information Processing Standard 152, *Standard Generalized Markup Language*

OMB Circular A-130, *Management of Federal Information Resources*, June 1993

- *Office of IRM Policy, Plans and Oversight, Memorandum, Subject: Electronic Exchange of Scientific and Technical Documents, August 28, 1991*
- 
- ***Electronic Exchange of Scientific and Technical Information (STI) Strategic Plan, January 1993***
- 
- *Guide for Transmitting Standard Generalized Markup Language (SGML) Encoded Bibliographic Records, September 1994*
- 
- Information Architecture, Volume I: The Foundations; March, 1995 (DOE/HR-0141)

## **6. Records Management--Program, Project, Task, or Study Record File**

A program, project, task, or study record file is developed and maintained to ensure adequate record copy documentation of a research and development (R&D) or administrative program, project, task, or study; to provide sufficient information to facilitate efficient and timely follow-up on the activity if and when it becomes necessary; and to provide an adequate historical record of the activity conducted.

### **6.1 Defining a Program, Project, Task, or Study Record File**

There are two major types of program, project, task, or study record files: research and development (R&D) and administrative. An R&D record file is defined by its approved Field Task Proposal Authorization (FTPAs) or any other approved budget document. The retention of each R&D file is scheduled based on the value of that file. An administrative program, project, task, or study file is defined by its charter. The retention of administrative files is also based on the value of each file.

### **6.2 Contents of a Program, Project, Task, or Study Record File**

An R&D or administrative file should be a well-organized collection of records rich in content but small in volume. Centralization of the file will enable others working on the program/project/task/study to feed pertinent and appropriate items into the file, enabling the individual researcher/team member to retain his/her material for reference purposes only. This file should be located in the office of the Principal Investigator (R&D record files), Task or Study Team Leader (administrative record files), or an appointed responsible individual. The following are among the appropriate materials to include in such record files:

1. Copies of all relevant FTPAs or any other approved budget documents.
2. Program, project, task, or study personnel lists.
3. Program, project, task, or study organizational charts.

4. Correspondence written or received by program, project, task, or study personnel that contains significant information about the program, project, task, or study or its relationship to another ongoing program, project, task, or study.
5. Minutes/notes of meetings that affect the course of the program, project, task, or study.
6. Indexes to record information about the location of the following materials when such materials are a part of a larger centralized record file series. (These indexes allow you to avoid creating voluminous files.)
  - a. Program-, project-, task-, or study-related drawings (indexed by identification number and subject).
  - b. Program-, project-, task-, or study-related photographs (indexed by identification number and subject).
  - c. Program, project, task, or study reports (indexed by report number and title).
  - d. Research and technical (laboratory) notebooks (indexed by notebook number and subject).
7. Copies of material that the project researchers think will add significantly to the documentation of the project (e.g., special memos to file discussing incidents and photographs or sketches not indexed in item 6).

### **6.3 Retention Guides**

When applicable, use the records retention schedules given in the following sources: DOE Order 1324.2A, "Records Disposition," which pertains to records unique to the Department of Energy (DOE), and National Archives and Records Administration (NARA), "General Record Schedules," which applies to all Federal agencies. If schedules found in either document are not applicable, then the Records Manager at the site will evaluate the record file series and submit a recommendation for retention of the record file to DOE Headquarters using DOE F 1324.5, "Request for Records Disposition Authorization." Headquarters' Records Manager will submit the proposed schedule to NARA for approval. When approval is received, the submitting organization has disposition authority for the record files.

## **Distribution Statements for Use on Scientific and Technical Information Documents**

The distribution statement assigned to a Department of Energy document shall appear on each front cover and title page and shall be displayed conspicuously so as to be readily recognized by recipients, with the following exception: Distribution Statement A or its equivalent statement may, at the discretion of the originating facility, appear elsewhere on the document. See following page for crosswalk between distribution statements and applicable information types.

A: Approved for public release; further dissemination unlimited.

(Unlimited)

B: Further dissemination authorized to U.S. Government agencies only; other requests shall be approved by the originating facility or higher DOE programmatic authority.

(Patent Caution; Proprietary; SBIR; STTR)

C: Further dissemination authorized to U.S. Government agencies and their contractors; other requests shall be approved by the originating facility or higher DOE programmatic authority.

(OUO)

D: Further dissemination authorized to the Department of Energy and DOE contractors only; other requests shall be approved by the originating facility or higher DOE programmatic authority.

(UCNI; ECI)

E: Further dissemination authorized to the Department of Energy only; other requests shall be approved by the originating facility or higher DOE programmatic authority.

(Protected CRADA; Protected Battery Information)

F: Further dissemination only as authorized by the originating facility or higher DOE programmatic authority; requester must possess appropriate security clearance, need-to-know, and facility approval for receipt and storage of classified documents by the DOE Office of Security Affairs.

(Non-weapon data FRD; NSI; Applied Technology)

G: Further dissemination only as authorized by the originating facility or higher DOE programmatic authority; requester must possess appropriate security clearance, Restricted Data access authorization, need-to-know, and facility approval for receipt and storage of classified documents by the DOE Office of Security Affairs.

(Confidential, Sigmas 1,2,11; all Sigmas 3,4,5,9,10; all other non-weapon data RD)

H: Further dissemination only as authorized by the Director of Military Application or directed by the DOE Weapon Data Control Officer (DP-45); requester must possess DOE Q clearance or equivalent, Restricted Data access authorization, need-to-know, and facility approval for receipt and storage of classified documents by the DOE Office of Security Affairs.

(SRD, Sigmas 1,2,11,12,13)

<b>Distribution Statement</b>	<b>Applicable Information Type</b>
A	Unlimited
B	Patent Caution; Proprietary Data; SBIR; STTR
C	Official Use Only

D	Unclassified Controlled Nuclear Information; Export Controlled Information
E	Protected CRADA; Protected Battery Information
F	Non-weapon Data FRD; NSI, Applied Technology
G	CRD Sigmas 1,2,11; All other non-Sigma RD
H	SRD Sigmas 1,2,11,12,13

## Energy Science and Technology Software Center Software Submittal Form

### Required Submittal Package Contents

- |   |   |
|---|---|
| <input type="checkbox"/> Software Submittal Form ( <i>this form</i> )                     | <input type="checkbox"/> Two copies of each printed document provided |
| <input type="checkbox"/> Abstracts ( <i>see abstract format description for content</i> ) | <input type="checkbox"/> A listing of printed documents provided      |
| <input type="checkbox"/> Computer Media Provided Form ( <i>ESTSC F 2</i> )                | <input type="checkbox"/> Directory of Computer Media provided         |
| <input type="checkbox"/> One complete set of the computer media                           |   |

*Printed data provided as part of the submittal package **MUST** be of reproducible quality.*

### 1. Type of Submittal: DOE NRC

- a. This is new software and no previous version/revision for any machine has been submitted.
- b. This is a revised version of a package currently part of ESTSC's software collection as indicated below.
- Different computer version     Major revision     Minor modifications     Replacement
- c. This is additional material for a previously submitted software package.

*If type **b** or **c** is indicated above, please provide ESTSC/NEWSC or other Software Identification Number:*

### 2. Applicable Access Controls/(DOE software only) Yes ("X" all that apply.) No

*If the **NO** box is marked above, unlimited distribution may be made.*

- |   |   |                                      |
|---|---|--------------------------------------|
| <input type="checkbox"/> Copyright Release                                | <input type="checkbox"/> SBIR                                     | <input type="checkbox"/> Patent Hold |
| <input type="checkbox"/> ECI/ITAR/EAR ( <i>Complete section 3 below</i> ) | <input type="checkbox"/> UCNI ( <i>Complete section 3 below</i> ) | <input type="checkbox"/> CRADA       |
| <input type="checkbox"/> Proprietary                                      | <input type="checkbox"/> Other ( <i>Explain</i> ):                |                                      |

### 3. Appropriate Audience if UCNI or ECI indicated above (DOE software only)

- |  |  |
|--|--|
| <input type="checkbox"/> DOE offices only                      | <input type="checkbox"/> Federal agencies only                     |
| <input type="checkbox"/> DOE offices and DOE contractors       | <input type="checkbox"/> Federal agencies and their contractors    |
| <input type="checkbox"/> DOE offices and DOE major contractors | <input type="checkbox"/> Government agencies only                  |
|  | <input type="checkbox"/> Government agencies and their contractors |
|  | <input type="checkbox"/> Other ( <i>Specify</i> ):                 |

### 4. Sponsoring Organization

Office and Agency name of the organization funding the development of the submitted software package:

DOE Contract Number (*if applicable*):

NRC Contract Number (*if applicable*):

### 5. Technical Contact

Name:

Telephone:

### 6. Submitted By:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_

State: \_\_\_ Country: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone: \_\_\_\_\_

Fax: \_\_\_\_\_

Internet: \_\_\_\_\_

Authorization is granted to the Energy Science and Technology Software Center (ESTSC) to reproduce and distribute all or any part of this software and package material in accordance with existing laws, regulations, DOE orders, DOE/NRC agreement and/or written program office guidance. This material has been reviewed for sensitivities and access should be controlled as indicated in sections 2 and 3. ESTSC is authorized to distribute DOE software as is without further testing.

Submitter's Signature: \_\_\_\_\_

Date Submitted: \_\_\_\_\_

Software Acronym (*as indicated on the Abstract Format Description*): \_\_\_\_\_

Administrative use (*to be completed by (ESTSC)*): \_\_\_\_\_

Software Package Number: \_\_\_\_\_

## Energy Science and Technology Software Center Computer Media Provided Form

Software Acronym

Date: **May 20, 1997**

Please indicate the following--

Make and model of computer from which files were extracted:

Operating system from which files were extracted:

Type(s) of file(s) on the media provided:

- |   |   |   |   |
|---|---|---|---|
| <input type="checkbox"/> Source Code    | <input type="checkbox"/> Executable Module(s)     | <input type="checkbox"/> Object Module(s)     | <input type="checkbox"/> Sample Problem Input Data  |
| <input type="checkbox"/> Text Library   | <input type="checkbox"/> Auxiliary Material       | <input type="checkbox"/> Control Information  | <input type="checkbox"/> Sample Problem Output Data |
| <input type="checkbox"/> Object Library | <input type="checkbox"/> Compilation Instructions | <input type="checkbox"/> Program Flow Diagram | <input type="checkbox"/> Programmer Documentation   |
| <input type="checkbox"/> User guide     | <input type="checkbox"/> Linking Instructions     | <input type="checkbox"/> Program Flow Data    | <input type="checkbox"/> Other ( explain)           |

If documentation is included on the magnetic media, please indicate in the space provided below which editor or software package was used to produce the documentation data files (s), as well as any special printing requirements (i.e., Postscript format or other specific non-standard hardware/software requirements for printing documentation):

*Attach a directory of each computer medium, compilation instructions, and linking instructions.*

### Diskette(s)

Number of Diskettes:

Total Number of Files:

Type:  Personal Computer MacIntosh ComputerSize:  5.25" 360KB  5.25" 1.2MB  3.5" 720KB  3.5" 1.44MB 400KB 

800KB

### 8MM Cassette Tape(s)

Number of Cassettes:

Total Number of Files:

Type:  300MB 600MB 2.5GB 5GBSize:  ASCII ANSI Unix tar VMS Back-up

### QIC 150 (1/4" Cartridge) Tape(s)

Number of Tapes:

Total Number of Files:

Length:  140'  185' 205' 405' 2.5GB 5GBFormat:  ASCII ANSI Unix tar VMS Back-up

### QIC 150 (1/4" Cartridge) Tape(s)

Number of Tapes:

Total Number of Files:

Density:  1600bpi 6250bpiLabels:  No label ANSI Std IBM StdCharacter Set:  EBCDIC ASCII

Software Package Number:

(Assigned by ESTSC)



## Energy Science and Technology Software Center

**Abstract Format Description**

Note: Due to the difference in size and complexity of software packages and the corresponding differences in their respective documentation requirements, a specific form for the required abstract information has not been provided. Instead, this Abstract Format Description lists the data elements required for the Abstract and a brief description of each data element. This questionnaire is computerized in *MS Word 6.0* and *WordPerfect for Windows* and there is a completed sample following after the software code type list. Please note that information for all 18 Abstract data elements is required. Use text only; no diagrams or flowcharts. Character limit for any one data element is 2,000. The character limit for all information: 9,000. Thank you for your prompt reply.

1. **Identification.** *Provide the following four information elements to be used to uniquely identify the software.*
  - (a) **Software Acronym:** *This name, given to the main or major segment of module packaged, usually becomes the name of the code package. If an appropriate name is not obvious, invent one related to the contents. (Limit 20 characters.)*
  - (b) **Short or KWIC Title:** *This title should tell something of the nature of the code system; e.g., calculation method, geometry, distinguishing features of the code package, etc. It should be telegraphic in style with no extraneous descriptors, but rather a string of keywords and phases. The words "code" and "program" do not belong in a description of a code "package." (Limit 80 characters.)*
  - (c) **Subject Classification Code(s):** *Choose 1 through 4 letter(s) representing appropriate software code types from the following "Subject Classification Codes' Definitions and Key Words".*
  - (d) **Keywords:** *Choose appropriate descriptive words (no more than 12) from the following "Subject Codes' Definitions and Key Words".*
2. **Author Name(s) and Affiliations:** *List software code author(s) or contributor(s) names followed by the organizational affiliation. If more than one affiliation is represented, pair authors with their affiliations.*
3. **Software Completion Date:** *List approximate date(s) that the version of the executable module(s), which will be created by the submitted program modules, was first used in an applications environment.*
4. **Brief Description:** *Briefly describe the purpose of the computer program, state the problem being solved, and summarize the program functions and capabilities. This will be the primary field used for announcement purposes.*
5. **Method of Solution:** *Provide a short summary of the mathematical methods, engineering principles, numerical algorithms, and procedures incorporated into the software.*
6. **Computer(s) for which software is written:** *List the computer(s), i.e., IBM3033, VAX6220, VAX, IBM PC, on which this software package will run.*
7. **Operating System:** *Indicate the operation system used, release number, and any deviations or exceptions; i.e., is the operating system "off the shelf" with no modifications, or has it been modified/customized? If modified, note modification in field 11.*
8. **Programming Language(s) Used:** *Indicate the operation system used, release number, and any deviations or exceptions; i.e., is the operating system "off the shelf" with no modifications, or has it been modified/customized? If modified, note modification in field 11.*

9. **Software Limitations:** *Provide a short paragraph on any restrictions implied by the storage allocation (such as the maximum number of energy groups and mesh points) as well as those due to the approximations used (such as implied argument-range limitations). Also to be used to indicate the maximum numbers of user, etc., or other limitations.*
10. **Unique Features of the Software:** *Highlight the advantages, distinguishing features, or special capabilities which may influence the user to select this package over similar packages.*
11. **Related and Auxiliary Software:** *If the software supersedes or is an extension of earlier software, identify the original. Identify any programs not considered an integral part of this software but used in conjunction with it (e.g., for preparing input data, plotting results, or coupled through use of external data files). Note similar library software, when known.*
12. **Other Programming or Operating Information or Restrictions:** *If the software supersedes or is an extension of earlier software, identify the original. Identify any programs not considered an integral part of this software but used in conjunction with it (e.g., for preparing input data, plotting results, or coupled through use of external data files). Note similar library software, when known.*
13. **Hardware Requirements:** *List hardware and installation environment requirements necessary for full utilization of the software. Include memory and RAM requirements in addition to any nonstandard features.*
14. **Time Requirements:** *Include any timing requirement estimations (wall clock and computer clock) necessary to execute the package. Give enough detail for the potential user to estimate the execution time for given program parameters (e.g., 5-10 min.).*
15. **References:** *List citations of pertinent publications by author, title, report number, bar code, or order number if available, and date. References are to be broken down in two groupings: (a) reference documents provided with the submittal package; and (b) additional background reference materials generally available.*

# Sample ESTSC Abstract Submittal

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Attachment III-D  
DOE G 1430.1D-1

## Energy Science and Technology Software Center

### Abstract Format Description

Note: Due to the difference in size and complexity of software packages and the corresponding differences in their respective documentation requirements, a specific form for the required abstract information has not been provided. Instead, this Abstract Format Description lists the data elements required for the Abstract and a brief description of each data element. This questionnaire is computerized in MS Word 6.0 and WordPerfect for Windows and there is a completed sample following after the software code type list. Please note that information for all 18 Abstract data elements is required. Use text only; no diagrams or flowcharts. Character limit for any one data element is 2,000. The character limit for all information: 9,000. Thank you for your prompt reply.

1. **Identification.**
  - (a) **Software Acronym:** PUBS
  - (b) **Short Description:** Database publishing system; generates bibliographic publications
  - (c) **Subject Classification Code(s):** M, P, T, Z
  - (d) **Keywords:** bibliographies; batch loading; compilers; database management; data compilation; data processing; data tagging; documentation; information dissemination; information retrieval; topography; VAX computers
2. **Author Name(s) and Affiliations:** Norman E. Smith, David Cobb, Rick Anthony (Science Applications International Corporation, Oak Ridge, TN)  
Joe Edgar (XYZ Corporation, Knoxville, TN)
3. **Software Completion Date:** 9/9/91
4. **Brief Description:** PUBS is a database publishing system that is used to generate bibliographic publications. Data is pulled directly from a BASIS database, processed by PUBS, and output to a laser printer or photo typesetter. The output is formatted and camera ready. Features include automatic handling of special characters including Greek characters and math symbols, automatic generation of abstract numbers, and user specified section headers. The publications are organized by subject.
5. **Method of Solution:** PUBS is table driven using object oriented programming techniques. A software based finite state machine controls much of the processing. All run-time options are specified via an Option File that can be parsed both by DCL and application programs. Functional design was applied in the design phase. The software is constructed in a modular manner.
6. **Computer(s) for which software is written:** VAX
7. **Operating System:** VMS
8. **Programming Language(s) Used:** STOIC (80%); C (4%); FORTRAN (1%); TeX (10%); DCL (5%)
9. **Software Limitations:** Disk space is a limiting factor. The largest single usage is temporary sort work files.
10. **Unique Features of the Software:** PUBS is a batch system with no manual intervention to produce a typeset publication. It translates human readable special character representations directly into TeX tags for proper printing. Special characters are Greek and math symbols, as well as superscripts and subscripts. Nested symbols are allowed. Customization of the document can be done via the option file at run-time. This includes such things as generating "refer also" entries for abstracts. Abstract numbers are generated and maintained by the software. This includes routine publications.

11. **Related and Auxiliary Software:** PUBS relies heavily on two related packages, STOIC and TeX. STOIC is a Forth-like language that is VAX specific and available from DECUS. Most of the preprocessing software is written in STOIC. TeX is a typesetting language that is integrated with the preprocessing software to format the publication.
12. **Other Programming or Operating Information or Restrictions:** In the STOIC source code "." indicates main programs; the extension for modules follow the main program, i.e. main program of ABST would have modules end in ".ABST". File extension of ".RAW" is data extracted and not processed. File extensions of ".SORT" is sorted data. File extensions of ".TEX" is input to TeX. File extensions ".DVI" is TeX output device independent file. File extension of ".COM" is DCL command file. STOIC and TeX are proprietary software.
13. **Hardware Requirements:** DEC VAX running VMS; 60,000-100,000 blocks free disk space depending on the publication size.
14. **Time Requirements:** Run time requirements depend highly on computer load and size of the publication. Rule of thumb is 1 minute per abstract on lightly loaded VAX 11/780. This includes generation of indexes and running TeX.
15. **References:** Brodie, Leo, "Thinking Forth," Prentice-Hall, 1984. Hauck, Roger, "A Detailed Guide to VAX/VMS STOIC," Smithsonian Institution Astrophysical Observatory, June 1980. Knuth, Donald, "The TeXbook," Addison-Wesley, 1987.

## **Subject Classification Codes' Definitions and Key Words**

(For ESTSC's *Abstract Format Description* Questionnaire Items 1c & d)

- A Cross Section and Resonance Integral Calculation:** Computation of reaction cross sections from nuclear theory such as the optical or Hauser-Feshbach models, resonance cross sections by Breit-Wigner or multilevel theory, determination of differential scattering cross sections, cross-section evaluation and compilation programs.  
*Key words:* Hauser-Feshbach Theory, Breit-Wigner Formula, differential cross sections, scattering, computer calculations, mathematical models, nuclear physics, educational tools, computer codes
- B Spectrum Calculations, Generation of Group Constants, Lattice and Cell Problems:** Determination of the slowing-down density or thermal spectrum, weighting and averaging of cross sections and related quantities for the production of group constants, and evaluation of design parameters by lattice and cell calculation.  
*Key words:* neutron spectra, Lattice Field theory, neutron density, slowing down, computer calculations, cross sections, group constants, reactor lattices, educational tools, computer codes
- C Static Design Studies:** Calculation of the reactivity and flux distribution of the reactor system, and adjustment of design parameters to prescribed specifications, i.e., criticality and power distribution search procedures.  
*Key words:* reactors, criticality, computer calculations, power distribution, neutron flux, flux density, reactor kinetics, reactivity, educational tools, computer codes
- D Depletion Fuel Management, Cost Analysis, and Power Plant Economics:** Includes burn-up programs, isotope and fission product buildup and decay computations, and optimization studies.  
*Key words:* fuel management, fuel cycle, cost estimation, cost, nuclear fuels, burnup, fission products, educational tools, computer codes
- E Space-- Independent Kinetics:** Studies of the time-behavior of reactors including delayed-neutron effects and feedback mechanisms, and transfer-function evaluation.  
*Key words:* reactors, reactor kinetics, delayed neutrons, feedback, transfer functions, educational tools, computer codes
- F Space-- Time Kinetics, Coupled Neutronics, Hydrodynamics, Thermodynamics, and Excursion Simulations:** Programs that consider spatial design characteristics and accompanying effects in studying the time-behavior of the reactor.  
*Key words:* reactors, reactor kinetics, computerized simulation, neutron flux, reactor physics, hydrodynamics, thermodynamics, excursions, spatial distributions, time dependence, reactor operation, neutron transport theory, educational tools, computer codes
- G Radiological Safety, Hazard, and Accident Analysis:** Calculation of internal and external dose rates, determination of reactor thermodynamic and hydrodynamic properties following an accident, e.g., release of radioactive materials, coolant system blowdown, steam generator rupture.  
*Key words:* fission product release, radiation doses, radiation hazards, radiation protection, radiology, reactor accidents, educational tools, computer codes
- H Heat Transfer and Fluid Flow:** Steady state and transient heat transfer computations, fluid-flow studies and calculations of thermodynamic properties.

*Key words:* fluid flow, heat transfer, hydraulics, steady state conditions, thermodynamics, transients, educational tools, computer codes

**I Deformation and Stress Distribution Computations, Structural Analysis, and Engineering Design Studies:** Includes fuel-element design evaluations, core-configuration studies, and composite structure analysis.

*Key words:* composite materials, deformation, fuel elements, mechanical structures, reactor cores, stress analysis, stresses, educational tools, computer codes

**J Gamma Heating and Shield Design:** Gamma and photon transport calculations, computation of heat-generation rates, and penetration analysis and leakage calculations for shielding.

*Key words:* photon transport, radiation heating, shielding, educational tools, computer codes

**K Reactor Systems Analysis:** Combinations of programs, designed as systems, for solving correlated problems from several of the categories A through I.

*Key words:* fuel elements, reactor components, reactor operation, reactor physics, reactor safety, educational tools, computer codes

**L Data Preparation:** Generation of program parameters; checking, editing, and formatting of problem input information.

*Key words:* data compilation, data processing, educational tools, computer codes

**M Data Management:** Construction, maintenance, and retrieval of data files, e.g., cross-section libraries; management systems such as payroll, personnel, and financial systems, property and equipment systems, network-oriented project management and indexing and retrieval systems, etc.

*Key words:* compiled data, data base management, information, information systems, data compilation, nuclear data collections, computer networks, educational tools, computer codes

**N Subsidiary Calculations:** Plotting, editing, and display routines which process output data from other programs.

*Key words:* computer calculations, plotters, computer graphics, computer output devices, educational tools, computer codes

**O Experimental Data Processing:** Programs designed to process data directly acquired from an experimental situation or to assist the experimenter in the design of the experiment.

*Key words:* experimental data, data processing, data acquisition, educational tools, computer codes

**P General Mathematical and Computing System Routines:** Calculation of mathematical functions, statistical analysis, special-language routines with general data-processing capabilities, and software systems.

*Key words:* computer calculations, mathematical models, data processing, statistical models, statistics, educational tools, computer codes

**Q Materials:** Measurements and computation of the physical and mechanical properties of materials, simulation of radiation damage processes, corrosion studies, and determination of crystallographic functions.

*Key words:* materials, physical properties, mechanical properties, physical radiation effects, crystallography, educational tools, computer codes

**R Environmental and Earth Sciences:** Environmental impact studies, geology, seismology, geophysics calculations, hydrology and ground water studies, bioenvironmental systems

analyses, meteorological calculations relating to the atmosphere and its phenomena, studies of airborne particulate matter, climatology, etc.

*Key words:* air pollution, contamination, emission, ground water, monitoring, pollutants, pollution control, remedial action, soils, transport, educational tools, computer codes

**S Space Sciences:** Analysis of orbits and trajectories, astronomy and astrophysics computations, wave propagation studies and the calculation of re-entry parameters.

*Key words:* orbits, trajectories, astronomy, astrophysics, wave propagation, reentry, educational tools, computer codes

**T Electronics, Engineering Equipment, and Energy Systems Studies:** Automated design of electronic equipment, computer-aided design (CAD) and manufacturing (CAM), process control programs, systems analysis and engineering computations for numerically controlled machine tools and energy consumption analysis in buildings, industry, and transportation.

*Key words:* electronic equipment, energy systems, computer-aided design, computer-aided manufacturing, process control, computer calculations, systems analysis, educational tools, computer codes

**U Chemistry:** Chemical analysis, mass spectroscopy, radiation chemistry, radiolysis studies, etc.

*Key words:* chemical analysis, mass spectroscopy, radiation chemistry, radiolysis, gas chromatography, radiochemistry, radiochemical analysis, separation processes, chemical reaction kinetics, chemical reactions, educational tools, computer codes

**V Particle Accelerators and High-Voltage Machines:** Programs relating to the design, development, and operation of high-voltage machines and particle accelerators such as Van de Graaff generators, linear accelerators, cyclotrons, synchrotrons, etc.

*Key words:* accelerators, radiation detectors, educational tools, computer codes

**W Physics:** Calculations relating to theory of atomic or molecular structure or properties, charged particle collision studies that involve phenomena such as charge exchange, excitation, ionization, dissociation, etc., elementary particle theories and models, scattering theory, quantum field theory and quantum electrodynamics studies, general relativity and gravitation theory computations.

*Key words:* charge exchange, excitation, ionization, dissociation, scattering, computer calculations, mathematical models, collisions, mechanics, electromagnetism, magnetism, field theories, gravitation, thermodynamics, interactions, elementary particles, nuclei, atoms, molecules, spectroscopy, optics, acoustics, plasma, atomic physics, high energy physics, nuclear physics, educational tools, computer codes

**X Magnetic Fusion Research:** Electric discharge phenomena and plasma physics computations, electrodynamics and magnetic hydrodynamics studies.

*Key words:* Tokamak devices, plasma simulation, magnetic confinement, plasma instability, plasma, magnetohydrodynamics, electrodynamics, educational tools, computer codes

**Y Biology and Medicine:** Biological, medical, radiological studies of the structure, functions, chemistry, biophysics, reproduction, and heredity of bacteria, plants, laboratory animals, and humans.

*Key words:* biological effects, health hazards, dosimetry, radiation doses, neoplasms, animals, plants, humans, organs, tissues, radioisotopes, proteins, enzymes, educational tools, computer codes

**Z** **Data:** Data prepared in specific program formats for program testing and evaluation, benchmark studies, or library use.

*Key words:* data, data acquisition, data acquisition systems, benchmarks, standardization, educational tools, computer codes

WLS January 10 & 29, 1996



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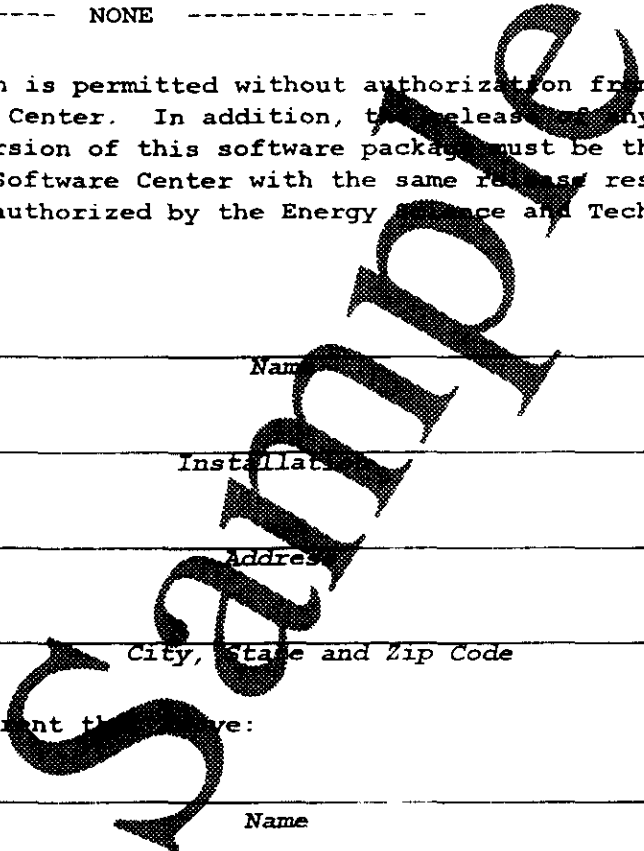
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