

Guide to the Management of Scientific and Technical Information

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**U.S. Department of Energy
Office of Scientific and Technical Information**

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PART I

Management Overview of DOE's Scientific and Technical Information Program

1.0 Introduction

This *Guide to the Management of Scientific and Technical Information* provides non-mandatory guidelines for implementing the objective, requirements, and responsibilities of Department of Energy (DOE) Order 241.1, *Scientific and Technical Information Management*. Because scientific and technical information (STI) is a key outcome of many of the Department's funded activities, STI has an important role in accomplishing Departmental initiatives, missions, goals, and objectives. Providing effective management, protection, and access to unclassified (unlimited or sensitive) and classified STI is vital. The Office of Scientific and Technical Information (OSTI), within the Office of Energy Research, is the DOE office charged with the responsibility of coordinating the Department's Scientific and Technical Information Program (STIP) activities and ensuring that policies and practices are promulgated within the Department for managing STI resulting from DOE's research and development (R&D) and related scientific, technological, and environmental activities.

The Department is undergoing a transition to a decentralized, electronic STI management environment. The "Concept Paper on Electronic STI Management" (see Attachment 1) provides a summary of the decentralized activities as envisioned in FY 1998 and lays the framework for that environment. This Guide reflects a number of procedural changes to begin the implementation of this transition.

Additional information about the Department's STI activities is located on OSTI's Home Page at <http://www.osti.gov> and also on the STIP Home Page at <http://www.doe.gov/stip>.

2.0 Purpose of This Guide

This Guide is based on best business practices as defined by DOE and contractor STIP participants from across the DOE complex. The purpose of the Guide is to assist individuals who are involved in STI—whether it is unclassified (unlimited or sensitive) or classified—to meet Departmental expectations for ensuring access to STI and for managing STI throughout the various phases of the information life-cycle: planning, creation, publication, dissemination, and preservation. Information management policies, principles, and practices are evolving as new electronic technologies are being utilized. This Guide is one of the primary STIP mechanisms for sharing "best-in-class" practices, and it will be modified and updated as changes are identified by the STI community.

2.1 Updating/Modifying This Guide

Because of the rapid changes in information technologies within and external to DOE, the usefulness of this Guide requires that it be kept up-to-date. Proposed changes to the Guide may be identified by anyone involved in STI and referred to a STIP participant (an STI point of contact). Normally, items are discussed during regularly scheduled STIP meetings and are referred to one of the STIP working groups to make a recommendation to the entire STIP community. Agreed-upon changes will then be incorporated into this Guide.

2.2 Source of Guide and Contact

An electronic version of this Guide is available through the Directives Home Page at <http://www.explorer.doe.gov/> and also on the STIP Home Page at <http://www.doe.gov/stip>. Questions concerning provisions of the Guide or recommended changes may be referred to the STI point of contact at the respective site or organization or to OSTI. To send suggestions or questions to OSTI, use the comment form on the STIP Home Page (<http://www.doe.gov/stip.htm>) or call OSTI's Office of Program Direction and Information Access at (423) 576-1035.

3.0 STI Policy

An overarching requirement of the Department is to make STI broadly available, within applicable laws and Departmental requirements, to—

- accomplish mission objectives and strategic goals,
- promote scientific advancement,
- satisfy statutory dissemination requirements, and
- ensure a fair return on Departmental and taxpayer investment.

Requirements and responsibilities for STI are provided in DOE O 241.1. The objective of the Order is to ensure that STI is identified, processed, disseminated, and preserved in a manner that enables the scientific community and the public to locate and use the unclassified and unlimited STI resulting from DOE's research and related endeavors. Attachment 2 provides a listing of relevant authorities and other guidance.

4.0 Definition of STI

STI is information in any format or medium that is derived from scientific and technical studies, work, or investigations that relate to research, development, demonstration, and other specialized areas such as environmental and health protection and waste management. Scientific and technical information may be unclassified unlimited, unclassified sensitive, classified, or declassified. DOE-funded STI originates primarily from research and other activities performed by contractors for management, operation, or integration of DOE-owned/leased facilities, direct DOE-executed prime procurements, DOE-operated research activities, and financial assistance recipients, in addition to DOE employees.

Definitions are provided in Attachment 3 for other terms used in the management of STI.

5.0 Scientific and Technical Information Program (STIP)

STIP is comprised of the Department's program managers, researchers, and STI professionals who all work collaboratively for the timely collection and broad dissemination of the Department's STI.

Strategic goals of STIP are to—

- provide access to DOE's STI,
- promote collaboration as a means of doing business,
- use best business practices for the life-cycle management of STI, and

- be customer-focused in providing STI products and services

As a component of the Department's STIP activities, the Scientific and Technical Information Coordinating Group (STICG) is made up primarily of representatives from Headquarters elements that either fund research or set policies or practices affecting STI. The group, which is chaired by the Director of OSTI, is cognizant of Departmental STI activities and serves as an advisory body on crosscutting STI issues and initiatives.

Although OSTI has the responsibility to coordinate STIP, the success of the Program depends on the active participation and involvement of each of the STI representatives from the various DOE programs, field offices, and contractors. Activities are coordinated through DOE Technical Information Officers, who are the designated STI points of contact at DOE Operations and Field Offices, to STI managers and STI points of contact at major contractor-operated facilities and the national laboratories.

6.0 STI Program Review/Assessment

Paramount among the recent management reforms within the Federal government is the *Government Performance and Results Act of 1993*, which requires agencies to focus on program outcomes, establish measurable annual objectives that link to long-term goals, develop budgets that are based on planned performance, and report results.

DOE has initiated a number of management changes as part of that reform. Those relevant to STI include the following:

- Review and oversight of laboratory performance under performance-based management contracts, primarily through performance measures and self-assessments. Other influences on the annual laboratory evaluation include peer reviews, program office evaluations, external reviews (e.g., Office of Inspector General, Government Accounting Office), and day-to-day operational experience.
- The Business Management Oversight Program, where STI management/administration was identified as a specific functional area. Performance objectives were established for the FY 1998 Headquarters review of Field Federal Activities (agreements were negotiated between OSTI and each Operations Office). Some of those agreements have begun to be referenced in Operations Offices oversight of contractor activities.
- The most recently issued *DOE Strategic Plan* (of September 1997) included strategies for improving the management, dissemination, sharing, and use of STI across DOE, and for delivering and expanding access to DOE's technical information. These strategies appear in the Science and Technology business line.
- With STI being recognized as a key outcome of R&D and related activities, initiatives have begun for placing STI as a component of technical program reviews and of the laboratory appraisal process.
- The Department's first *Scientific and Technical Information Program (STIP) Strategic Plan* was issued in September 1997 (see Part I, Section 5), thereby establishing goals and

strategies for the DOE's STI community and its activities. The overarching goal is the Departmental initiative to transition STI activities to an electronic environment.

Those who either sponsor activities that produce STI or who conduct or manage activities that are within the STI life-cycle should consider the points listed above as well as the information below for review or assessment of STI.

6.1 STI Performance Objectives

The following four STI performance objectives have been established for use in the Headquarters Review of Field Federal Activities Business Management Oversight Program. They are intended to complement and help assess progress in accomplishing the STIP strategic goals. Specific measures and expectations for each objective are to be developed by the appropriate program manager when being applied to program reviews, or by the operations office for contractor assessments on a case-by-case basis.

Objective 1: Provide access to STI by making it available to OSTI.

- Direct procurement STI deliverables are made available to OSTI in a timely manner.
- Useful M&O- or M&I-generated STI products are made available to OSTI in a timely manner.

Objective 2: Transition is being made to a decentralized electronic environment.

- Direct procurement STI deliverables are increasingly provided to OSTI in appropriate electronic formats (i.e., increasing numbers of contracts are changed to require electronic formats).
- M&O/M&I contractor announcement records and full-text STI documents are increasingly made available to OSTI in agreed-upon electronic formats.

Objective 3: STI policies and procedures are collaboratively developed.

- STI points of contact actively participate in scheduled and ad hoc teleconferences, semi-annual meetings, topical meetings, and STIP Goal Team activities to determine STI procedures based on best business practices.
- Leadership and innovation are demonstrated by STI POC both locally and DOE-wide.

Objective 4: STI performance objectives are implemented with performing R&D contractors.

- Performance expectations based on adopted performance objectives are negotiated with each performing R&D contractor.
- Periodic reviews of performing R&D contractor self assessments are conducted and operational awareness of each one is maintained.
- Provide assistance and data to contracting officers on status of direct-procurement type technical information policies and deliverables.

The contribution of the overall STIP activities to meeting Departmental goals and objectives, such as those mentioned in the DOE Strategic Plan and individual program plans, is also an important assessment.

6.2 Program Reviews

In evaluating the quality of the science and technology performed by the laboratory and its relevance to their programmatic goals, DOE Program Managers may carry out periodic reviews of the programs they fund. One aspect of the effectiveness and efficiency of research program management is the effectiveness with which technical results are communicated to maximize the value of the research results and to gain appropriate recognition for DOE and the Laboratory. Therefore, Headquarters programs funding activities that result in STI may want to consider criteria such as the following in their program reviews:

- Effectiveness of making STI results available to maximize value of the research. (Are useful STI products or identified technical reporting deliverables made available to OSTI so that DOE reporting and public release can be completed as appropriate? What other means are used to announce the STI?)
- Implementation of electronic reporting and access as a Departmental initiative. (Are researchers beginning to use electronic reporting? Are laboratories and other major facilities modifying their information infrastructure, such as hosting more full-text STI documents on web sites?)
- Incorporation of STI into projects and plans. (Is STI recognized as a key outcome of R&D that is planned for during the activity? Are activities coordinated with STI counterparts?)

7.0 Management and Access Tools

Several information systems or databases operated and maintained by OSTI provide information to assist in various aspects of managing the Department's STI. Some of the tools helpful in managing and providing access are described below:

- **Energy Files** (<http://www.doe.gov/EnergyFiles>) provides the umbrella for the other web-based OSTI and STIP community information systems. It is an ever-expanding virtual collection of information sources, tools, and technologies that support the finding and use of energy-related information and the conduct of energy research. Energy Files serves as a central locator for various DOE and laboratory resources. It includes subject pathways comparable to technical literature subject areas of interest to DOE and end-users.
- **DOE Information Bridge** (<http://www.doe.gov/bridge>) is the web-based central collection of DOE's full-text technical reports provided by STIP partners throughout the DOE complex. It can be used to access, locate, search, and download full-text and/or bibliographic information electronically. Public access is provided through an agreement between DOE and the Government Printing Office (GPO), located on the GPO Access system. A DOE version, which additionally includes bibliographic citations (full text when available) of energy-related scientific and technical information obtained from a variety of

domestic and international sources, is available to DOE and DOE contractors who obtain access from OSTI.

- **R&D Project Summaries Web Database** (<http://www.doe.gov/rnd/dbhome.html>) contains the publicly accessible subset of the Department's research projects beginning in FY 1995. Over 75 percent of the total Department's R&D project summaries are available through this web-based application.
- **R&D Tracking System** (<http://www.doe.gov/rd/>) provides DOE a centrally managed database of project summaries of active R&D projects. It contains summaries collected annually starting in FY 1995, with a cumulative total of over 18,000 projects performed by the national laboratories and other DOE facilities. The system is sponsored by the Office of the Chief Financial Officer and is maintained and operated by OSTI.
- **Technical Information Monitoring System (TIMS)** is a tracking system developed in conjunction with DOE's Office of Procurement and Assistance Management (HR-50). It assists contracting officers, program managers, and technical information officers in monitoring the delivery of required technical information from direct contracts and other procurements and financial assistance instruments. It is particularly useful for contract closeout. Access to the system is provided by OSTI to authorized DOE representatives.
- **Reports Holdings File (RHF)** contains data from the announcement records and other information as STI products are processed at OSTI. The data include information to help identify the STI products and their access and distribution status. Retrieval of data can assist in reporting items such as number of records issued by a certain research organization, prevalent types and formats of STI products, funding organizations, and other reporting helpful to STI or program managers. Contact OSTI for more information about this database and other information resources.

PART II

Announcement and Dissemination of Scientific and Technical Information Products

1.0 Introduction

This part of the Guide describes the procedures for accomplishing the broadest possible availability through appropriate review, access determination, and central announcement. It also defines STI products, electronic full-text formats and transfer procedures, announcement record submission, and some other activities carried out by DOE and DOE contractor elements as well as those carried out by OSTI. General information is provided on the agreed-upon STIP practices and procedures, but the Guide does not attempt to provide all details necessary for the complete life-cycle management of STI. If further information is needed, contact OSTI or consult with the STI point of contact at the respective site or organization. A central locator to DOE's STI is maintained by OSTI through the DOE Information Bridge. Additionally, OSTI fulfills Departmental mandates for broad public dissemination by administering various agreements with intermediaries for public access to include the National Technical Information Service (NTIS), GPO, and international exchanges.

NOTE: This Guide emphasizes management, announcement, and dissemination of unclassified and unlimited STI. References are provided to other DOE Orders, Manuals, etc., for specific guidance on the management of unclassified sensitive, classified, and declassified STI. Users of this Guide should always refer to these specific references when determining the most up-to-date and appropriate treatment of unclassified sensitive, classified, and declassified STI. For specific references, see Attachments 2 and 7.

2.0 Non-Management, -Operation, and -Integration Contractors and Financial Assistance Recipients (Direct Procurements)

Procurement Request originators within the Department are required to stipulate in the contract or in the Federal Assistance Reporting Checklist (DOE F 4600.2, see Attachment 5) the type, frequency, and content of any scientific and technical reports to be produced under each procurement and financial assistance action. Based on this stipulation, the Contracting Officer (CO) incorporates the applicable provisions of DOE O 241.1 to ensure that the reports are actually received and incorporated into DOE's STI collection and increasingly will direct contractors to deliver STI products in a preferred electronic format. (Acceptable electronic formats are included in Part II, Section 6.3 of this Guide.)

OSTI obtains information concerning the expected STI deliverables from the awarding office's Procurement and Assistance Data System (PADS) entry and monitors the receipt of the specified deliverables at OSTI. The automated system that tracks these deliverables is the Technical Information Monitoring System (TIMS). Awarding offices can request on-line remote access to TIMS to assist in their efforts to ensure that STI deliverables have been provided to OSTI. At the completion of the award and after all deliverables have been received, receipt of the technical reporting deliverables into TIMS is then provided back to PADS for certification. As directed in Financial Assistance Letter 98-02, COs are to ensure that technical information deliverables are received by the Department prior to closing the award. To accomplish this, certification can be obtained by querying PADS for standard report number R040634 for a particular award. PADS is accessible online at www.pr.doe.gov/pads.html.

Periodically OSTI prepares summary information for each Technical Information Officer (TIO) about the status of technical reporting deliverables. Final performance reports for financial assistance reporting are due by regulation 90 calendar days after the expiration or termination of the award (see 10 CFR 600.151 (b) and 600.240 (b)). Contract deliverables are due in accordance with the date stated in the contract. Accordingly, a report is considered delinquent if it is not submitted by the date shown in the contract. All technical reports would be due not later than the expiration of the contract. Deliverables received, delinquent deliverables, and other information are available through on-line TIMS access, which OSTI provides to COs and TIOs so that the awarding offices can monitor the status of technical reporting deliverables and identify any overdue STI deliverables.

Because scientific and technical information deliverables from direct procurements represent a return to the Department and taxpayer, the practice of waiving the receipt of deliverables is discouraged. However, in cases where the waiver is determined to be in the best interests of the Government, written notification should be sent to OSTI. The notice should give the reason for the waiver and be signed by the respective CO for the award. Upon receipt of the waiver notice, OSTI will clear the deliverable(s) in PADS in the normal manner.

An additional service provided by OSTI for this type of contractor or financial assistance recipient is related to the Department's R&D Tracking System. OSTI maintains and operates the system for the Office of the Chief Financial Officer (CFO). Guidance for data submission is provided annually by the CFO for electronic record submission from R&D contractors, primarily the laboratories. For the direct procurement contractors (non-management, operating, and integration contractors) or financial assistance recipients, OSTI will process and input into the system information provided on the "Notice of Energy RD&D" form (see Attachment 6, DOE F 241.2). Offices that do not have electronic submission processes in place for submitting R&D project summaries may choose to use that form.

3.0 Appropriate Review Process To Release STI Products for Announcement

Each site originating STI determines which reviews are appropriate for that site in accordance with funding agency policies; Departmental guidelines; and other applicable statutes, laws, and regulations. The DOE Information Security Program (DOE O 471.2A) requires owners of data to determine the sensitivity of information before it is used, processed, or stored on information systems. (See Attachment 2 for additional statutes that relate to STI.) STI products should be reviewed for restrictions on both the announcement and availability of the full-text information. Section 4 describes criteria to consider when determining the submission of STI products to OSTI. Reviews to be performed by the site to determine announcement and availability of STI products may include, but are not limited to, the following:

- classification/declassification,
- copyrighted materials, and
- sensitive content (such as Export Control, Intellectual Property, Unclassified Controlled Nuclear Information, etc., which limit access. See descriptions in Attachment 7).

4.0 STI Products Appropriate for Announcement

Contractors and DOE determine which STI products are announced to OSTI based on the criteria outlined in Section 4.1 and provide announcement and availability instructions to OSTI through the metadata elements contained in the announcement record (DOE F 241.1, see Attachment 4).

Any limitations dictated by content or contract and collaborative agreement terms restrict the announcement and availability to the appropriate audience and prescribe what method the sites will use to report the product to OSTI.

4.1 STI Products

Any STI product is appropriate for announcement to OSTI which (1) is considered useful to others outside the originating organization, or (2) is a contract deliverable. The originator of the product may be DOE or a DOE-funded contractor or grantee. The completeness, accuracy, and quality of such products are ensured by the originating site prior to announcement to OSTI.

Typical STI products produced by DOE or its contractors which are sent or announced to OSTI include the following (see Attachment 3 for definitions):

- all Direct-Procurement STI deliverables;
- commercially published books (an announcement record only may be submitted if copyright restrictions are imposed on product.);
- conference papers;
- conference proceedings;
- cooperative research and development agreement (CRADA) deliverables;
- environmental impact statements (product may be provided to OSTI if not being provided to DOE's Center for Environmental Management Information, CEMI; if full-text document is provided to CEMI, an announcement record submitted to OSTI would show CEMI as the availability);
- laboratory-directed R&D (LDRD) STI deliverables;
- journal article preprints and postprints (an announcement record only may be submitted if making full product available is not feasible. Because of copyright restrictions for reprints, an announcement record only may be submitted for reprints of journal articles);
- non-commercially published books;
- OpenNet Documents (that are STI);
- patent applications;
- software;
- scientific and technical (S&T) accomplishment reports;
- technical reports (topical, progress, final, etc.);
- theses/dissertations;
- translations; and
- Work for Others deliverables (unless excluded in WFO agreement).

The following other information products are also submitted to OSTI for central processing and announcement at the direction of Headquarters Program Offices. These do not follow the STI product submission process and do not require an announcement record (DOE F 241.1):

- Foreign trip reports,
- OpenNet Documents (those other than STI products),
- R&D Project Summaries,
- Technical Standards.

Products that may contain some STI but are not submitted to OSTI for announcement and availability, regardless of medium, include the following:

- administrative materials,
- brochures,
- catalogs,
- correspondence,
- databases,
- draft documents,
- empirical data,
- engineering drawings,
- field work proposals,
- financial information,
- future conferences,
- memoranda,
- monthly reports,
- newsletters,
- policies,
- procedures,
- proposals/predecisional information,
- public communications (except S&T accomplishments),
- report sections (when full report is STI),
- weekly reports, and
- WWW Pages (except those applicable as a URL for an STI product).

An STI product can be in one or more media, including—

- audiocassettes,
- compact disks,
- diskettes,
- film,
- magnetic cartridges,
- magnetic tapes,
- microform,
- paper,
- videocassettes,
- videodiscs, and
- web-based files.

4.2 Announcement/Availability Categories for STI Products

STI products are announced and made available based on the contractor's or DOE's review. (See Part II, Section 3.0.) When the announcement record for the STI product is submitted to OSTI, it identifies the appropriate announcement category. The definitions of the specific sensitive information categories and any special procedures are listed in Attachment 7. The four announcement and availability categories are shown in Table 1.

Table 1. Announcement/Availability Categories for STI Products	
Category	Where OSTI Announces or Makes Product Available
Unclassified Unlimited Information (publicly releasable)	DOE Information Bridge, Energy-Files, NTIS, GPO, Energy Technology Data Exchange (ETDE), and other U.S. and international outlets
Unclassified Sensitive or Other Protectable Information: Copyrighted Material Export Controlled Information Official Use Only Information Program-Directed Handling (e.g., Applied Technology, Naval Nuclear Propulsion Information) Proprietary Data/Trade Secrets Protected Data (e.g., CRADA) Small Business Innovation Research (SBIR) Small Business Technology Transfer Research (STTR) Unclassified Controlled Nuclear Information (UCNI)	Controlled Access File, Special Program-Sponsored Databases with Access Limitations
Classified Information	Classified Energy Online (CLEO)
Declassified Publicly Releasable Information	OpenNet

5.0 The Content of STI Products

5.1 Introduction

This section contains information on the recommended attributes of STI products. Additional details are available in *Scientific and Technical Reports—Elements, Organization, and Design* (ANSI/NISO Z39.18-1995).

Information on identifying and issuing classified and declassified information, documents, and materials is located in DOE M 475.1-1, *Identifying Classified Information*. This includes an organizational requirement to submit bibliographic information and availability information to OSTI for every document that is declassified and determined to be publicly releasable.

5.2 Recommended Attributes of STI Products

Recommended attributes of STI products, and their traditional location in paper-based, stand-alone technical reports, are shown in Table 2. Attachment 10 shows a typical published technical report cover and title page.

Table 2. Recommended Attributes of STI Products	
Attributes	Typical Placement on STI Product
Abstract	First text page
Author	Cover or title page, or first page of text
Award/Contract/Financial Number	Cover, inside front cover, title page
Date	Cover or title page
Disclaimer	Inside front or back cover
Distribution Statement	Cover or title page (Statement A can be placed on inside front cover)
Funding Offices	Cover, inside front cover, title page
Performing Organization	Cover, title page, outside back cover
Report Number	Cover, title page or outside back cover
Report Type	Included in title on cover or title page and first page of text
Reporting Period (period of coverage)	Included in title on cover or title page and first page of text
Title	Cover or title page and first page of text

5.2.1 Abstract

An abstract is a concise statement of the purpose, scope, and major findings of the information product. The abstract is intended to be stand-alone text, independent of the full product. The abstract is especially important in nonprint information products. For more information, see *Guidelines for Abstracts* (ANSI/NISO Z39.14-1997).

5.2.2 Author

Author(s) and their employers are typically identified on the information product. Editors and compilers also may be identified.

5.2.3 Award/Contract/Financial Number

Any of the following numbers that apply are usually included on the cover/title page: DOE award or contract number(s), Budget and Reporting number (B&R), unique project identifier or technical plan number under which the work was funded.

5.2.4 Date

A publication date and the basis for it are recommended to be provided on the information product. Examples of dates are below:

Table 3: Publication Date	
Type of Date	Sample Text
Date published	August 4, 1998 July 1998
Manuscript date	June 13, 1998
Date compiled	January - March 1998

5.2.5 Legal Disclaimer

In accordance with Federal law and the guidance of appropriate legal counsel, disclaimer(s) are to be included where appropriate. See Attachment 9 for typical disclaimer statements.

5.2.6 Distribution Statement

A distribution statement may be required on some STI products. Unclassified STI products that contain sensitive/limited information require special, unique controls in conformance with applicable statutes, laws, regulations, Executive Orders, international agreements, directives, and Departmental policy. Such markings are to be consistent with the access limitations indicated on DOE F 241.1. The appropriate notices, restrictive legends, distribution statements, and restrictive markings are provided in Attachments 7 and 8.

5.2.7 Funding Office

The funding office(s), or sponsoring organization(s), may be identified by name, symbol/logo, or B&R code of the Department office providing the support or funding.

5.2.8 Performing Organization

The name and address of the performing or research organization and/or site of origin are typically identified. Subcontract work is normally submitted through the performing R&D contractor or laboratory.

5.2.9 STI Product/Report Number

To assist in retrievability, it is recommended that every product published by the origination organization be assigned a standard product/report number that contains some unique identifier that can be traced to the site of origin. The report number formats typically used within the Department are based upon the American National Standards Institute *Standard Technical Report Number (STRN)—Format and Creation* (ANSI/NISO Z39.23-1997). Examples are shown in Table 4.

Special numbering may be used for a report series or sequence and translations. Existing series or numbering guidelines used within the Department are available from OSTI.

Table 4. Standard Report Number	
Description	Standard Report Prefix
DOE Program Office	DOE/XX—nnn, where XX is 2-letter office code, followed by numerical sequence
DOE Field Element	DOE/ZZ—nnn, where ZZ is 2-letter field code, followed by numerical sequence
Major Project Office	DOE/XX—nnn, where XX is 2- or 3-letter office code, followed by numerical sequence
Energy Technology Centers	Example: DOE/FETC/C—nn/nnnn
Major Labs/Contractors	Most laboratories have approved report series prefixes; e.g., ANL/TN—nnn. May also use DOE/XXX— nnn, where XXX represents approved site codes.
Other Contractors	DOE/XX/nnnnn—where letters and numbers are extracted from contract number.

Additional information may be added to the product number, such as the following types of suffixes:

Table 5. Additional Identifying Information	
Description	Standard Suffix
Abstract	Abs.
Addendum	Add.
Edition	Ed.
Executive Summary	Ex. Summ
Part	Pt.
Revision	Rev.
Supplement	Suppl.
Volume	Vol.

For multimedia products, it is recommended that the characters in Table 6 be used at the end of the number to indicate the medium:

Table 6. Multimedia Identifiers	
Description	Standard Suffix
Audiocassette	AC
CD ROM	CD
Diskette	DK
16-millimeter film	FM
Magnetic cartridge	MC
Magnetic tape	MT
Slide	SL
Videocassette	VC
Videodisc	VD
Viewgraph	VG

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5.2.10 Title

A brief title is recommended that describes the subject matter covered. A subtitle may be used for further clarification. Additional guidelines are provided below:

- When an STI product has more than one volume, repeat the primary title on each volume. Use a subtitle to identify the specific subject of the individual volume.
- If the report is other than topical, provide the report type and the period covered, if appropriate, as part of the title or subtitle. For direct procurement reports, the report type and period covered are critical for acknowledging receipt of specified deliverables.
- Unclassified Controlled Nuclear Information (UCNI) and classified information products are given unclassified, unlimited titles and subtitles whenever possible. The classification level and category must be part of the title of all classified documents (see DOE M 475.1-1).

5.3 Miscellaneous Information

5.3.1 Company Names and Logos

Per the Joint Committee on Printing's *Government Printing and Binding Regulations*, S. Pub 101-9, Title III, Paragraph 13, company names, logos, and similar material may not appear on the internal text pages of Federal publications or on photographs therein.

5.3.2 Measurement System

On the basis of direction contained in Executive Order 12770, *Metric Usage in Federal Government Programs*, of 07-25-91; 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 units of measure in scientific and technical products is recommended. (English may be included in parentheses after the metric unit if necessary.)

5.3.3 Reproduction

When information is reproduced by the originating institution, such reproduction must be in accordance with the Joint Committee on Printing's *Government Printing and Binding Regulations*, and with DOE directives.

5.3.4 Report Documentation Page

The Report Documentation Page, used by some Federal agencies in announcing and cataloging reports, is not used by DOE; the DOE announcement record contains similar information. DOE laboratories and facilities that conduct work for others may need to obtain the Report Documentation Page (Standard Form 298) from the agency sponsoring the work.

5.3.5 Copyrighted Material

Items produced by U.S. Government employees as a part of their official duties cannot be copyrighted (17 U.S.C. 105). If an item produced by one or more Government employees is copyrighted as part of a larger work, and the fact of Government employment is not noted in the STI product, a notice affirming the status of the author(s) as a Government employee(s) must accompany the product.

If the STI product, or parts thereof, is copyrighted, a letter obtained by the STI product originator and signed by the copyright owner or authorized representative is to be maintained by the originating site. The letter must state the scope of the release or permission to reproduce, distribute, prepare derivative works, display or perform publicly so that access and availability can be accurately provided in the announcement record (DOE F 241.1) for STI products made available to OSTI.

If the U.S. Government has been granted authority to reproduce, sell, distribute, or otherwise make the STI product available by virtue of contract language or otherwise, the following statement must appear on the cover or title page:

The U.S. Government is authorized to reproduce, sell, distribute, or otherwise make available this copyrighted work. Permission for exercise by the recipient of any of the exclusive rights mentioned in 17 U.S.C. 106 must be obtained from the copyright owner.

A translation of a copyrighted work is itself a derivative work, and permission from the copyright owner of the original work must be secured before the translation is performed and the translation is sent to OSTI. Translations made from text published in a country signatory to the Geneva Copyright Convention must contain one of the following signed statements:

The U.S. Government has been authorized to reproduce, distribute, and sell this copyrighted work. Permission for further reproduction or distribution must be obtained from the copyright owner.

or

The original text is not copyrighted.

6.0 Making Scientific and Technical Information Available

To centrally announce the availability of DOE's STI products, each DOE and DOE contractor element that originates an STI product is required by DOE O 241.1 to provide an announcement record (DOE F 241.1) to OSTI. The preference is electronic submission to OSTI, which will process the record and announce the product's availability to the appropriate audience (DOE, other Government agencies, the public, etc.).

6.1 Announcement Record

In FY 1997, the Department of Energy and contractor STIP partners adopted the Dublin Core metadata elements as the basis for creating the new DOE announcement record. Effective October 1, 1998, the metadata-based announcement record (DOE F 241.1) replaces the DOE F 1332.15, "Announcement and Distribution of Department of Energy (DOE) Scientific and Technical Information (STI)."

The metadata-based announcement record generated and supplied by the DOE and DOE contractor STI producers includes the basic Dublin Core metadata elements, supplemented by a few DOE data elements, and a minimal number of sub-elements necessary to further identify the announcement/availability of the STI product (see Section 6.1.1).

The announcement record is for all types of STI products. Electronic submission of that record to OSTI is preferred. However, for Unclassified Sensitive Information, Classified, and Declassified STI products, the announcement record must contain only unclassified, unlimited data if it is transmitted over open system networks. Likewise, an STI product determined to be unclassified/sensitive or classified itself must not be transmitted over open system networks (see Part II, Section 6.4). This determination is noted by the originating site's Releasing Official, who indicates on DOE F 241.1 the authorized announcement of STI products. Each site has an STI point of contact who may serve as or designate others to serve as Releasing Official(s).

6.1.1. List of Metadata Elements

Table 7 lists the metadata and other data elements contained in the announcement record, with descriptions and indications for mandatory (M) and optional (O) fields. Sub-elements are noted in italics.

Table 7. DOE STI METADATA ELEMENTS			
METADATA ELEMENT	M	O	DESCRIPTION
Record Status	X		Identifies the announcement record or the STI product as new or revised.
STI Product Type	X		Identifies the type of STI product (e.g., technical report, conference, software manual, journal article, S&T accomplishment reports, etc.).
<i>Report Type</i>		X	<i>Optional for laboratory; required for Direct Procurement.</i>
<i>Reporting Period</i>		X	<i>Required for laboratory if Report Type is completed; required for Direct Procurement.</i>
<i>Conference Information</i>		X	<i>Conference title, location and date.</i>
<i>Journal Information</i>		X	<i>Journal name, volume, issue, serial identifier.</i>
<i>Patent Application</i>		X	<i>Date filed, date priority, Patent Assignee</i>
STI Product Title	X		The title of the STI product.

Table 7. DOE STI METADATA ELEMENTS (continued)

METADATA ELEMENT	M	O	DESCRIPTION
Author(s)	X		Unlimited number is acceptable; the primary author should be listed first. Allows for "NONE" as an option for few cases where necessary.
E-mail Address(es)		X	Provide in same order as author names. Will not be available to the end-user. This data is used by OSTI to automate author notification.
STI Product Identifiers	X		
Report Number(s)	X		Required for all; Allows for "NONE" as an option for few cases where necessary.
Contract Number	X		Required for all (can be "NONE").
R&D Project I.D.		X	A unique and permanent ID assigned to identify a particular research project or funding source.
Other Identifying Number(s)			If appropriate, includes CRADA number, LDRD number, B&R code, etc.
Originating Research Organization(s)	X		The organization/site conducting the research.
Date of Publication	X		Identifies the publication date. Standard format to be followed (e.g., follow rules of inputting), but requires standard 4-digit year.
Language (non-English)		X	Required if language of the STI product is non-English.
Sponsoring Organization		X	The sponsoring or funding office of the work reported in the STI product.
Publisher Name and Location		X	Required if different from Originating Research Organization. The name and location of the organization/publisher that issued the document for dissemination.
Availability (Refer requests to)		X	Required if applicable.
Subject Categories		X	Identifies the subject matter of the STI product. Multiples accepted; list primary category first.
Keywords		X	Sites may provide free-form keywords, multiples accepted. Keywords are not validated, but may be compared with valid thesaurus terms in the automated indexing process at OSTI.

Table 7. DOE STI METADATA ELEMENTS (continued)			
METADATA ELEMENT	M	O	DESCRIPTION
Description/Abstract		X	Defined as the abstract for technical reports. Provide if available. Text should be spell-checked, limited in length to 5000 characters, and follow input standards for special characters. If not provided, OSTI may computer-generate a description.
Resource Identification	X		STI Product Media/Format and Location/Transmission.
Medium	X		Identifies the medium of the item. One selection is required. Multiple selections are possible.
Size		X	If applicable.
File Format		X	Required if STI Product is electronic.
Quantity/type		X	Required if Computer Medium or Audiovisual Material.
Machine Compatibility		X	Required if Computer Medium or Audiovisual Material.
Sound		X	If applicable.
Color		X	If applicable.
Tables/Graphics		X	If applicable.
Other Information About Product		X	If applicable.
Format			
Unique STI Product URL		X	If selection is web-posted, this field is required.
Transmission of the STI Product		X	If STI Product is electronic and is being transmitted to OSTI. One selection is required.
Information Product Filename		X	If STI Product is electronic and is being transmitted to OSTI, this field is required.
Additional Information		X	Additional information concerning media/format or location/transmission. If applicable.

Table 7. DOE STI METADATA ELEMENTS (continued)			
METADATA ELEMENT	M	O	DESCRIPTION
Access Limitation	X		<p>One selection is required. Non-conflicting multiples are allowed. Includes minimum supporting fields (e.g., release dates):</p> <ul style="list-style-type: none"> • Unlimited Announcement • OpenNet • U.S. Dissemination Only • Copyrighted Material • SBIR • STTR • Proprietary/Trade Secret • Patent Pending • Protected data • OUO • Program Directed Special Handling • Export Control/ITAR/EAR • UCNI • Classified • Other information relevant to access
Other		X	To be used for other useful information related to the STI product that may not be suited for any other field (e.g. relationship of one STI product to another, etc.). Will be included in the published announcement record.
Contact and Releasing Official	X		
<i>Contact</i>	X		<i>Site contact (other than authors) as determined appropriate by the site, who will receive any external questions about the content of the STI product. Will be included in the published announcement record.</i>
<i>Releasing Official</i>	X		<i>Site's designated official(s) who ensure that all appropriate sensitivity reviews are completed of the STI product (Patent, UCNI, ECI, Copyright, etc.)</i>

6.1.2. Forms Available

The paper version of the announcement record form (DOE F 241.1) is in Attachment 4. There are also two options for sending the announcement record electronically: a web-based form or a Tagged Document Instance (based on a Document Type Definition as a means of tagging the data elements to identify the content of the announcement record). Additional instructions are available at <http://www.doe.gov/html/osti/eei/eei.html>, in "Guidelines for Preparing and Transmitting the DOE F 241.1" [supercedes "Guidelines for Preparing and Transmitting the DOE F 1332.15—Working Copy" (DOE/OSTI—11689)].

6.1.2.1 Web Form

A web-based version of the DOE announcement record input form, based on HTML, is available from the OSTI Home Page at <http://www.osti.gov/html/f241-1/f241-1.html>. The web input form provides a number of features such as distinguishing mandatory from optional fields, choosing from pick-lists of values, and indicating appropriate sub-elements. Certain data elements and sub-elements are then checked prior to submission of the form to OSTI via validation built into the web form. Submission of the web form is managed by the originating site's designated Releasing Official(s), whose submission of the form is password-validated.

6.1.2.2 Tagged Document Instance (Based on DTD)

The Tagged Document Instance is based on an SGML Document Type Definition (DTD) for the DOE announcement record and is available for those sites who choose to export their data directly from an existing bibliographic database. The DTD may be obtained at URL: <http://www.doe.gov/html/osti/eei/eei.html>. By validating data elements and sub-elements within the batch process before submitting the file, sites will facilitate parsing and processing of the data at OSTI.

6.2 Submission of the Announcement Record

Once an announcement record has been compiled, it may be submitted to OSTI electronically. A site may submit multiple announcement records in one electronic file submission. Methods for transmitting the announcement records or electronic file, and standard media storage specifications, are listed in Table 8.

Once an announcement record or file has been received, OSTI will verify acceptability of the information (i.e., verify that the file is machine-readable, required elements are provided, and no conflicting data are present) and complete the process of announcing/distributing the information, as well as archiving the announcement records. The originating site will receive a communication stating that the record or file has been received and is acceptable for processing. If the record or file is unusable, OSTI will notify the originator of the problem and request resubmission of the electronic record or file or use of another acceptable file format. Questions regarding specific acceptance of electronic announcement record submissions should be directed to OSTI.

Table 8. Submission of Announcement Record			
Electronic Form	Transmission Media	Additional Specifications	Category
Tagged Document Instance (based on SGML DTD)	File Transfer Protocol (FTP)	OSTI will provide an FTP site.	Unclassified, unlimited form information
	Diskette	1.44-megabyte, 3.5-inch diskette (magnetic storage media)	All
	CD ROM		All
	Tape	8-mm DAT magnetic media	All
Web	Web Browser	http://www.osti.gov/html/f241-1/f241-1.html	Unclassified, unlimited form information

6.3 Acceptable Electronic Formats for Full-Text STI Products

DOE complex sites and facilities are transitioning to electronic exchange of full-text STI, with the transition to be initiated for newly generated STI to electronic format by October 1, 1998; the goal is to take progressive steps and complete the transition by 2004. The acceptable electronic formats were adopted by the STIP community to encourage this transition.

Acceptable electronic formats are determined by the level of search capability, accessibility and file integrity, and file management capability. The listing of acceptable electronic formats below is divided between the current set of interim and final formats. The interim-to-final period is 1998 to 2004. As technologies evolve, this list of formats will be revised and updated. The interim formats are acceptable to accommodate a range of current needs within the DOE information environment to ease the transition from a paper-based system to an electronic delivery system.

Interim Acceptable Electronic Formats (in order of preference)

- Standard Generalized Markup Language (SGML)
- Extensible Markup Language (XML)
- Hypertext Markup Language (HTML)
- Corel WordPerfect (Versions 5.0 or greater)
- MicroSoft Word (Versions 5.0 or greater)
- Portable Document Format (PDF) (normal)
- Portable Document Format (PDF) (image)
- Postscript
- TIFF Group 4

Final Acceptable Electronic Formats

- Standard Generalized Markup Language (SGML)
- Extensible Markup Language (XML)
- Hypertext Markup Language (HTML)

6.4 Submission of Full-Text STI Products to OSTI

Sites may submit STI products to OSTI electronically. The table below shows the acceptable media and transmission method for categories (see Part II, Section 4.2) of STI.

Table 9. Acceptable Media and Transmission Method for Categories		
Transmission Media	Additional Specifications	Category
File Transfer Protocol (FTP)	OSTI will provide an FTP site	Unclassified, Unlimited
Diskette	1.44-megabyte, 3.5-inch diskette (magnetic storage media)	All
CD ROM		All
Tape	8 mm DAT magnetic media	All

Electronic submission of the STI product is preferred. Same-day transmission of both the metadata announcement record and the STI product is preferred so that receipt of the two items at OSTI is more likely to occur during the same timeframe. If different methods of transmitting the record and the product are used, coordinate the transmittal. For example, if a site uses the web-based announcement record but mails an STI product (paper copy, CD, videocassettes, etc.), OSTI prefers receipt of both items to coincide as closely as possible.

While not recommended, paper (hard copy) will continue to be an acceptable information exchange medium during an interim/transition period, although it does require additional time for processing once received by OSTI. If paper is sent, OSTI requests two copies; only one copy is needed for classified information.

For STI products sent to OSTI in nonprint media (i.e., videocassettes, slides, CDs, etc., not electronic documents), two copies are preferred, accompanied by an announcement record containing a descriptive abstract and specific information about the medium (e.g., speed, machine compatibility, quantity/type of medium, physical description, color, playing time, and sound).

Through this interim period (1998 to 2004), OSTI will digitize paper inputs, using scanning technology, to output either TIFF Group 4 or PDF images for storage, conversion, and posting on the Internet (i.e., DOE Information Bridge).

6.5 Announcing STI Products in a Distributed Environment

Working closely with STI partners across the Department, OSTI envisions leveraging the opportunities provided by the Internet to facilitate access to and use of the unclassified, unlimited STI generated by the Departmental R&D programs. Already many contractor sites, along with OSTI, are developing Internet home pages that provide access to both metadata and full-text STI. The Department would like to capitalize on that site investment and develop a system that ultimately would provide electronic access to the entire Departmental STI collection distributed at sites across the complex in a variety of formats.

Conceptually, in this distributed system, the Internet-accessible STI at each local site would be linked to a DOE-wide STI locator system, which in turn would provide user access to electronic STI residing at the individual sites. A distributed system offers the following benefits:

- Removes the requirement for sites to submit full-text STI to OSTI. Sites would submit metadata that would indicate where the corresponding full text resides on the local Internet home pages. In turn, OSTI would remotely access the electronic full text and fulfill its STI responsibilities.
- Levies no additional workload on sites already utilizing the Internet technology to distribute STI.
- Eliminates duplication of effort where both the local site and OSTI are loading the same document on the Internet.
- Encourages sites to plan for electronic life-cycle STI management.
- Facilitates user access to the DOE STI collection.

For various reasons, some Internet-proficient sites do not make their entire STI collections accessible via the Internet; further, some sites are not yet able to utilize the Internet technologies. OSTI will negotiate special arrangements with these sites to acquire their electronic full-text STI for subsequent processing at OSTI. These exceptions to processing requirements will require adherence to mutually agreed-upon electronic formats and standards, which are further described in Part II, Section 6.5.3.

6.5.1 Distributed Announcement and Availability

OSTI will support distributed access and dissemination of STI beginning in October 1998. At that time, site-posted STI (via an electronic repository or web site) will be accessed by OSTI when sites are able to participate in the distributed environment. Distributed announcement and availability will be supported by site-supplied metadata in the announcement record. Metadata elements will include the location of the document through provision of a Uniform Resource Locator (URL). Table 10 shows the relationship between site-posted or site-submitted STI in agreed upon formats and OSTI-supported processes.

Table 10. Electronic Formats in a Distributed Environment			
Full-Text Document Format	Site Function	OSTI Function if Site Post	OSTI Function if Site Submits*
SGML XML HTML	Post at site and provide URL in DOE F 241.1 (alternatively post as HTML); or submit to OSTI	Index and link	Convert to HTML, index, and post
Corel Word Perfect (5.0+)	Convert to PDFN, post, and provide URL in DOE F 241.1; or submit to OSTI	Index and link	Convert to PDFN, index, and post
MicroSoft Word (5.0+)	Convert to PDFN, post, and provide URL in DOE F 241.1; or submit to OSTI	Index and link	Convert to PDFN, index, and post
PDFN (PDF Normal)	Post as PDFN and provide URL in DOE F 241.1; or submit to OSTI	Index and link	Index and post
PDFI (PDF Image)	Submit to OSTI		OCR, index, and post
PostScript	Submit to OSTI		Convert to PDFN, index, and post
TIFF G4	Submit to OSTI		OCR, index, convert to PDFI, and post
Paper	Submit to OSTI		Scan, OCR, index, convert to PDFI, and post; convert to TIFF G4 for archival ⁺

* Output Products for the DOE Information Bridge (InfoBridge) will be in native (original) format in addition to HTML, PDF (Normal), or PDF (Image). Because electronic format conversion processes and scanning may not provide an exact representation of the original electronic document, users of InfoBridge will be advised of availability of the native format.

+ In OSTI's capacity as the ultimate DOE repository for DOE's STI, OSTI has an agreement with NARA that establishes OSTI's collection as a working file that exempts OSTI from providing its records to NARA. Provisions specify that OSTI will maintain the electronic STI in its native format and migrate the STI, as required, to a NARA-acceptable format as the technology evolves to do so.

6.5.2 STI Product Available from Originator

If a contractor or other DOE STI originator chooses to make its unclassified, unlimited STI products available through a site-hosted server rather than submitting them to OSTI, the following steps will enable OSTI to link to the STI product for subsequent indexing and user accessibility:

- Post STI products on publicly available server (outside any site-imposed “firewall”).
- Provide to OSTI the metadata announcement record for the product, which will include the unique URL “pointer” to the full-text of the STI product. Approved methods to transfer metadata announcement records are described in Part II, Section 5.2.
- Keep the STI product posted at the specified URL.
- Notify OSTI of changes.

If a contractor or other DOE STI originator decides to change or remove its site-hosted STI product, the process to notify OSTI is dependent upon whether the action is considered unscheduled or scheduled.

Unscheduled: A contractor or other originator must take action because an STI product requires immediate removal or change. Reasons for this immediate action may include sensitivity issues, errors, etc. To avoid a broken link when removing the STI product, a contractor or other originator may choose to replace the STI product with a statement that would inform the user that the STI product is no longer available and that gives contact information for help. In a timely manner, the contractor or other originator would also provide to OSTI a revised announcement record describing the change.

Scheduled: A contractor or other originator has decided to stop hosting specific STI products (i.e., STI products are being permanently removed from a site-hosted server); therefore the site intends to transfer the STI product to OSTI for public access. OSTI recommends that contractors and other originators notify OSTI of its intent a minimum of 30 days in advance of removing the STI product from the contractor’s or other originator’s server. The contractor or other originator would also provide to OSTI a revised announcement record to describe the change.

6.5.3 Transferring STI Product Availability from Originator to OSTI

As required in DOE O 241.1, the contractor must notify OSTI when permanently removing STI products from site-hosted servers. This notification allows OSTI to ensure continued availability of STI product after its removal from the site-hosted server. When OSTI receives the notice of intent, OSTI will obtain the STI product and include it in the central collection.

6.6 Archiving the STI Product

Whether submitted directly to OSTI or obtained by OSTI after local site public availability has expired, DOE STI R&D reports in the OSTI holdings will be scheduled and provided to the National Archives and Records Administration (NARA) consistent with that schedule.

OSTI serves as the ultimate repository for DOE’s STI and will manage the collection for long-term retrieval. Often the collection maintained at OSTI is the only place that historic or specific technical information (such as for closed out projects) can be accessed. OSTI will address NARA requirements and make recommendations for archiving and storage of DOE STI electronic records.

The DOE Research and Development Records Retention Schedule, Section 4, Research and Development Technical Reports, provides disposition instructions for closed-out projects. (This schedule can be obtained from the site records manager or at <<http://www-it.hr.doe.gov/records/>>).

7.0 Requests for Printed Version of Electronic Products

The preferred method for providing document information to requesters is through electronic delivery, primarily through the base product, the DOE Information Bridge. Unclassified, unlimited DOE STI products requested by DOE and DOE contractors in paper form will be available from OSTI, provided that such products have been made available to OSTI (through either submission to OSTI of the STI product or electronic linkage using acceptable formats). As DOE's NTIS affiliate, OSTI also will coordinate with NTIS to ensure that paper copies of unclassified, unlimited STI products are available to the public. Table 11 includes agreed-upon STI submission formats; associated access formats for web view and download via the DOE Information Bridge; and interim archival formats.

Table 11. STI Submission, Access, and Archival Formats			
Submission Formats for Full-Text STI	Access Formats on InfoBridge* (Web/View)	Access Formats on InfoBridge (Download)	Archival⁺ Formats
HTML	HTML	HTML	HTML
XML	HTML	XML & HTML	XML
SGML	HTML	SGML & HTML	SGML
Corel WordPerfect (5.0+)	PDFN	WordPerfect (5.0+) & PDFN	WordPerfect (5.0+)
MicroSoft Word (5.0+)	PDFN	Word (5.0+) & PDFN	Word (5.0+)
PDFN (PDF Normal)	PDFN	PDFN	PDFN
Postscript	PDFN	Postscript & PDFN	Postscript
PDFI (PDF Image)	PDFI	PDFI	PDFI
TIFF Group 4	PDFI	TIFF Group 4 & PDFI	TIFF Group 4
Paper	PDFI	PDFI	TIFF Group 4

* Output Products for the DOE Information Bridge (InfoBridge) will be in native (original) format in addition to HTML, PDF (Normal), or PDF (Image). Because electronic format conversion processes and scanning may not provide an exact representation of the original electronic document, users of InfoBridge will be advised of availability of the native format.

+ In OSTI's capacity as the ultimate DOE repository for DOE's STI, OSTI has an agreement with NARA that establishes OSTI's collection as a working file that exempts OSTI from providing its records to NARA. Provisions specify that OSTI will maintain the electronic STI in its native format and migrate the STI, as required, to a NARA-acceptable format as the technology evolves to do so.

PART III

Processing Software for Announcement/Dissemination Through the Energy Science and Technology Software Center

1.0 Introduction

1.1 Departmental Requirements

DOE O 241.1 requires that STI (including scientific and technical computer software) be made broadly available, within applicable laws and Departmental requirements, to accomplish mission objectives and strategic goals, promote scientific advancement, satisfy statutory protection and public dissemination requirements, and ensure a fair return on Departmental and taxpayer investment. The Department also has an ongoing arrangement with the U.S. Nuclear Regulatory Commission (NRC) to make NRC software publicly available. In addition, a cooperative arrangement with the Nuclear Energy Agency (NEA) of the Organization for Economic Cooperation and Development (OECD) provides for the exchange of nuclear-related scientific and technical software.

1.2 Electronic Software Management

The Department's STI program is currently transitioning from a centralized paper-based activity to a decentralized electronic activity. Software management will necessarily remain primarily a centralized paper-based activity until the steps to decentralize the other forms of STI are in place. It is anticipated that a STIP workgroup will be established during calendar year 1998 to begin developing the procedures necessary to transition scientific and technical computer software to an electronically-based environment. This Guide will be revised to reflect the new procedures as they are coordinated and implemented.

1.3 Content

Procedures for submitting software for central announcement and dissemination are detailed in this document. The procedures for transfer of software to the central facility are organized to parallel information needed to complete the transfer forms. Requests from sensitive countries for software are sent to the Energy Science and Technology Software Center (ESTSC) at OSTI, which coordinates approval with the Office of Arms Control and Nonproliferation (NN-43).

1.4 Data Rights

Software in which the developing contractor has asserted copyright (for purposes of commercialization) is required by the terms and conditions of the M&O contract to be submitted to ESTSC for dissemination to Federal Government organizations and their contractors within the specific terms of the rights granted by DOE. Software for which the contractor has not asserted such rights is readily available to the public.

2.0 Responsibilities

The Energy Science and Technology Software Center (ESTSC), located in Oak Ridge, Tennessee, is DOE's centralized software management facility. Operated by the DOE Office of Scientific and Technical Information (ER-30), ESTSC is authorized to license and distribute Federally funded software developed by national laboratories and other facilities and contractors of DOE and the U.S. Nuclear Regulatory Commission (NRC). The software contributed to ESTSC represents the latest in Federal technology in energy, science, environment, administration, mathematics, and computing and has become available for transfer to new applications. The collection also contains selected software obtained from the Nuclear Energy Agency (NEA) of the Organization for Economic Cooperation and Development (OECD).

As the centralized software management facility for DOE- and NRC-sponsored software, ESTSC—

- serves as the focal point for collecting, processing, announcing, and distributing software developed and/or modified during work supported by DOE or during work performed for others at DOE facilities subject to the exceptions listed in Paragraph 2.3.1;
- acts as the operating agent to implement the “NRC Software Exchange and Information Activity Agreement” between DOE and NRC to serve as NRC's centralized software management facility for collecting, processing, announcing, and distributing software developed and/or modified during work supported by NRC or during work performed for others at NRC facilities;
- implements a portion of the “Cooperative Arrangement between the U.S. Department of Energy and the Nuclear Energy Agency of the Organization for Economic Cooperation and Development in the Field of Nuclear Data and Computer Programs” international agreement; and
- works with Specialized Information Analysis Centers (SIACs), which are organizations sponsored by DOE to perform data analysis, including the collection, evaluation, announcement, and dissemination of computer software in specialized subject areas. ESTSC works with SIACs to maximize their effectiveness, avoid duplication of efforts, and ensure that requesters are referred to the appropriate SIAC when advice is needed in an SIACs respective area of expertise, such as—
 - radiation transport and safety;
 - nuclear cross sections;
 - carbon dioxide-climate research;
 - enhanced oil recovery, advanced extraction and process technology research, and more.

SIACs should provide to ESTSC an announcement record for each software package they receive and make available. As determined by the applicable contract rights and technical data clause, ESTSC may share the right to license and distribute software.

Recognized SIACs as of the date of this guide are the following:

- The Radiation Information Analysis Section (RIAS) of the Oak Ridge National Laboratory (ORNL), which deals with computer programs and data sets pertinent to radiation transport

and safety. The primary center within RIAS is the Radiation Safety Information Computational Center (RSICC).

- The National Nuclear Data Center (NNDC) of Brookhaven National Laboratory (BNL), which deals with computer programs and data sets pertinent to nuclear cross sections.
- The Carbon Dioxide Information Analysis Center (CDIAC), sponsored by the Carbon Dioxide Research Division (CDRD) of the DOE Office of Biological and Environmental Sciences, which is a collaborative effort of two Oak Ridge National Laboratory divisions (Computer Sciences and Mathematics and Environmental Sciences). CDIAC supports the nation's carbon dioxide-climate research effort by providing a focal point for the compilation and distribution of carbon dioxide-related information under systematic quality control.
- The National Petroleum Technology Office (NPTO), which specializes in oil reservoir engineering software designed to assist the petroleum industry maximize the economic production of domestic oil.

2.1 ESTSC

The key responsibility of ESTSC is to serve as a centralized point for the collection, management, and/or announcement of the availability of DOE- and NRC-sponsored software. (See Part III, Section 3.2 for more detail.) As the DOE software management facility, ESTSC—

- screens submitted software for completeness, readability of computer media, and appropriateness for inclusion in ESTSC's collection;
- announces the software using a variety of mechanisms;
- receives and processes requests for software;
- reproduces and disseminates copies of software at cost to requesters;
- provides limited installation assistance;
- provides technical consultations when clients request additional analysis of software purchased from ESTSC (costs are determined on a case-by-case basis);
- coordinates with DOE staff on dissemination to foreign and foreign sensitive countries;
- works with developers of DOE-sponsored software to resolve discrepancies; and
- solicits appropriate software for inclusion in ESTSC's collection.

As the operating agent for implementing the DOE/NRC agreement to provide a centralized software management center for NRC-sponsored software, ESTSC—

- packages, maintains, updates, distributes, and archives a library of NRC NUREG-documented software and data compilations developed by NRC staff and contractors;
- screens submitted NRC-sponsored computer codes for completeness, ensures readability of computer media, and compiles and executes the submitted software and sample test

problems to ensure software can be implemented by individuals in environments other than those in which they were developed;

- produces an annual abstract collection describing the NRC-sponsored software packages available at ESTSC;
- prepares information on the available NRC-sponsored software for NRC/contractor publications and in response to mail and telephone inquiries;
- advises users of NRC-sponsored software of corrections, revisions, and replacements;
- announces the NRC-sponsored software using a variety of mechanisms;
- assists recipients in installing and using NRC-sponsored software;
- archives NRC-sponsored software upon replacement or deletion from the collection or at NRC request;
- coordinates NRC-sponsored software exchange with the NEA;
- coordinates with DOE and NRC staff on dissemination of software to foreign countries; and
- works with developers of NRC-sponsored software to resolve discrepancies.

As the operating agent for implementing portions of the DOE and NRC international exchange agreements with NEA, ESTSC—

- acts as the repository for NEA software except for software in the scope of recognized SIACs;
- receives and processes requests for NEA software from U.S. and non-NEA member requesters;
- requests software from NEA when the requested software resides in the NEA software inventory;
- processes and announces software information obtained as a result of the agreement;
- reproduces and disseminates copies of NEA software at cost to requesters; and
- provides appropriate data and software to NEA to fulfill DOE's commitments.

Software received from NEA is controlled by international agreement and is the only foreign-originated software added to ESTSC's collection.

NOTE: All testing and verification of NEA software is performed by NEA. ESTSC does not provide additional analysis of these computer programs.

2.2 NRC and NRC Contractors

Guidance for NRC and NRC contractors regarding the requirement for submitting software to ESTSC is provided in NRC Bulletin 0904-4, "NRC Computer Software Policy," April 28, 1989, and through the agreements that NRC has established with its contractors. NRC contractors

needing additional information about the eligibility of their software for inclusion in ESTSC's collection should contact NRC at (301) 415-6437 or send inquiries to U.S. Nuclear Regulatory Commission, Office of Nuclear Regulatory Research, Mail Stop: T-10-D5, Washington, DC 20555 or 11555 Rockville Pike, Rockville, MD 20852-2738.

2.3 DOE and DOE Contractors

2.3.1 Submission of Software Developed and/or Modified During Work Supported by DOE

Organizations and individuals who have developed and/or modified software during work supported by DOE or during work carried out for others at DOE facilities send the software with the appropriate submittal forms (see Attachments 11, 12, 13 and 14) to ESTSC or appropriate SIAC if the software meets one or more of the following criteria:

- software is copyrighted;
- software is known or expected to have broad usefulness within or outside the DOE community;
- a stable, useable documented version of the software exists (i.e., it is not developmental software).

Software that meets the above criteria need not be submitted if it falls under one of the following exclusions:

- operational systems software, necessary to ensure the fundamental operability of automated data processing equipment, whether supplied by the manufacturer of the system hardware or others and whether or not proprietary, which is not covered under a commercialization or copyright release request;
- computer software programs developed and/or modified during work carried out for others at DOE facilities specifically excluded in the agreement under which the non-DOE funded work was performed;
- software generated under the auspices of the Energy Information Administration; and
- the specific software used by Power Administrations for the operation, control, planning, and modeling of electric power transmission systems and the interconnected utilities.

However, modification/enhancements to portions of this software which are not an integral part of the whole and have potential application to other DOE programs or outside DOE are not excluded.

2.3.2 Classification of Software

All software should be reviewed for classified and unclassified sensitive information according to approved local procedures before sending to ESTSC or an SIAC and before any distribution outside the organization is made. The software should be clearly labeled if it is classified or contains unclassified sensitive information. See Part II, Section 3, "Appropriate Review Process to Release STI Products for Announcement," for instructions on labeling.

2.3.3 Distribution of Software

After submission to ESTSC, software may be made available by the developing organization. Such distribution should be according to approved local procedures, and only with authorization of the cognizant management. Agreements to prevent further dissemination and to protect intellectual property rights should be obtained when appropriate.

2.3.4 Software Dissemination to Foreign Countries

DOE O 241.1 requires that all scientific and technical information (including scientific and technical computer software) generated by DOE and its contractors be reviewed for sensitivity (including non-proliferation, national security, and export control) and appropriate announcement and availability restrictions applied. Software in the ESTSC collection receives sensitivity reviews. Therefore, copies of software packages that are in the ESTSC collection should not be exported outside the United States without first verifying with ESTSC that there are no restrictions. In most cases, ESTSC should fill foreign requests for the software to ensure that appropriate approvals are obtained and that costs related to providing the software are paid by the requester.

3.0 Software Submission Procedures

New software submitted to ESTSC undergoes three distinct phases of processing: review, announcement, and request fulfillment. All software is reviewed to ensure that it is appropriate for inclusion in ESTSC's collection. When the software has met eligibility and review requirements, it is publicly announced. Until the useful life of the software has expired, ESTSC copies and disseminates available software to requesters at cost.

3.1 Procedures

3.1.1 Eligible Software Submissions

See Part III, Section 2.2, "NRC and NRC Contractors," and Section 2.3, "DOE and DOE Contractors."

3.1.2 Software Package Submission Components

Once the determination has been made to submit software to ESTSC and all appropriate clearances, procedures, etc., within the originating organization have been met, the submitter should submit the following information:

Non-copyrighted Software

- Software submittal form, ESTSC F 1 (see Attachment 11)
- Computer Media Profile (ESTSC F 2) (see Attachment 12)
- Printed copy of abstract (see Attachments 13 and 14)

- A complete set of software media including the electronic submission of source code that is printable and viewable.
- A printed directory of each computer medium submitted
- Two copies of printed user's guide, manual or other relevant documentation
- A transmittal letter listing of all included documentation (packing list)

Copyrighted Software

- Software submittal form (ESTSC F 1) (see Attachment 11)
- Computer Media Profile (ESTSC F 2) (see Attachment 12)
- Printed copy of an expanded abstract (see Attachments 13 and 14)
- A complete set of software media excluding the electronic submission of source code that is machine-readable (printable and viewable)
- A printed directory of each computer medium submitted
- Two copies of printed user's guide, manual or other relevant documentation
- A transmittal letter listing of all included documentation (packing list)
-

3.1.3 Explanation of Software Submittal Form (ESTSC F 1)

Software Submittal Form. Data provided on ESTSC F 1 (see Attachment 11) are crucial to ESTSC for making fundamental decisions such as the extent to which the software will be reviewed, how the software will be announced, who is eligible to receive the software, what price will be charged for the package, and how long ESTSC will retain the package. ESTSC F 1 should be provided when submitting DOE-sponsored software. Software submitted without the properly completed and signed form will be withheld from processing until ESTSC receives the approvals provided by the form. Instructions for completing ESTSC F 1 are provided on the reverse side of the form.

Computer Media Profile. The Computer Media Profile, ESTSC F 2 (see Attachment 12) provides specific information about the physical attributes of the computer media to enable ESTSC to test and reproduce copies.

NOTE: ESTSC can accept software provided on floppy diskettes, compact disk, 4-mm and 8-mm cassettes, and QIC 150 (1/4-inch) cartridges via electronic transfer [call (423) 576-2606 or E-mail to ESTSC@adonis.osti.gov for transfer information]. Software submissions on media not listed above will need to be considered on a case-by-case basis. Please contact the ESTSC for acceptable media submissions. Instructions for completing the form are provided on the reverse side of the form.

Abstract. The abstract (see Attachments 13 and 14) is the mechanism that provides both ESTSC and potential users of the software with key data to describe the software, to explain how it is

used, and to give a basis for judgment about its potential application in other programs and activities. Data included in the abstract are essential to ESTSC for building the database used to record and track the existence and licensing activity of the software and to announce it as descriptively as possible.

ESTSC has no specific form that submitters must complete for abstracts. A copy of the Abstract Format Description is provided as Attachment 13.

- One set of software media: documentation, sample input, electronic inclusion of source code that is machine-readable (printable and viewable), and the executable code.
- A printed directory for each computer medium provided.
- Two copies of each accompanying printed document. Documentation appropriate for each submission will vary depending on the nature of the software; however, types of documentation may include user guides, operating instructions, programmer documentation guide, technical reports, and other background references.
- A listing of each printed document identified by title and function. This list will be used to ensure that all items have been delivered to ESTSC and to provide the basis for determining what documentation will be delivered to requesters of the software.
- Printed source code or an expanded abstract for copyrighted software. For DOE-sponsored software which is being copyrighted for commercialization with prior DOE contractual and legal approvals, an expanded abstract is acceptable in lieu of printed source code. The expanded abstract provides a more detailed description of items 4, 5, 7, 12, and 13 of the Abstract Format Description (Attachment 13). The printed source code or an expanded abstract requirement does not apply to software designated as unlimited.

Software mailed to the ESTSC should be sent to the following address:

Energy Science and Technology Software Center
P.O. Box 1020
Oak Ridge, TN 37831-1020 (Note ZIP code)

Software sent by courier service should be addressed to the following address:

Energy Science and Technology Software Center
175 Oak Ridge Turnpike
Oak Ridge, TN 37830 (Note different ZIP code)

NOTE: Current versions of all forms should be obtained from ESTSC [(423)576-2606 or e-mail ESTSC@adonis.osti.gov] and/or your site software point of contact. Software must be submitted through appropriate channels (i.e., site software point of contact).

3.2 Services Provided by ESTSC

3.2.1 Review

DOE-sponsored software received at ESTSC undergoes the following series of reviews:

- The point of origin is verified as a DOE or DOE contractor organization; access controls are checked; and the scope is reviewed to determine if the software should be included in ESTSC's collection or routed to an SIAC or if the submitter should be notified that the software is inappropriate for the collection.
- Verification is made that all necessary components of the package (e.g., forms, computer media, documentation) have been included. If the package does not include a source code, no further review is performed, and the product is announced as an "AS IS" product. (In the case of copyrighted software, ESTSC will hold the software and contact the author/originating site to obtain the source code.) If a significant part of the package is missing, ESTSC will hold the package and ask the submitter to send the missing items. No further action is taken to process the software until the submitter provides the needed material.
- Tests are conducted to ensure that the software is machine-readable (printable and viewable) and can be processed by ESTSC.
- Checks are made for copyrighted or controlled material.
- Processing through a compiler determines any unresolved external references.

DOE-sponsored software passing this series of reviews is announced as a "SCREENED" product. Routine ESTSC review of DOE software is concluded at this level of review.

NOTE: Software having both DOE and NRC sponsorship is considered an NRC software submission.

NRC-sponsored software received at ESTSC undergoes the following series of reviews:

- The scope is verified to be in accordance with the DOE/NRC joint agreement for ESTSC's activities. Access controls are checked.
- Verification is made that all necessary components of the package (e.g., forms, computer media, documentation) have been included. If any part of the software is missing, ESTSC will hold the package, and the submitter is requested to submit the item(s) needed to complete the package.
- Tests are conducted to ensure that the software is machine-readable (printable and viewable) and can be processed by ESTSC.
- Checks are made for copyrighted or controlled material.
- Compiling and testing ensures that the software performs as described by the submitter. These tests are run with submitter-furnished input/output data. In the event that

discrepancies are found, ESTSC works with the submitter to resolve the situation before the software is announced.

Most NRC-sponsored software passing this series of reviews is announced as a "TESTED" product.

3.2.2 Announcement

ESTSC announces software using a variety of mechanisms.

The software is announced on DOE's Internet web site at www.doe/html/osti/estsc/estsc.html which provides bibliographic and abstract information. This site highlights new and most frequently requested software, which is updated periodically, and provides direct access to the WAIS searchable database.

DOE-sponsored, NRC-sponsored, and NEA software are also announced on the "Energy Science and Technology Database" (available commercially through The Dialog Corporation, 2440 W. El Camino Real, Mountain View, CA 94040) and the "Energy" database (available commercially through STN International, c/o Chemical Abstracts Service, 2540 Olentangy River Road, P.O. Box 3012, Columbus, OH 43210).

In addition to announcing the software using the aforementioned electronic media, ESTSC publishes a compilation of software in its collection entitled "Energy Science and Technology Software Center Software Listing" (ESTSC-2/Rev. 2). New software versions, replacement releases, and a software order form are included in the publication. Each client ordering software from ESTSC receives a copy of the publication. Others wishing to be added to the mailing list should write the Energy Science and Technology Software Center, P.O. Box 1020, Oak Ridge, TN 37831-1020, call (423) 576-2606, or send electronic mail on the Internet to ESTSC@ccmail.osti.gov.

3.2.3 Dissemination

ESTSC receives and processes requests for software in its collection. Distribution of copies of the software is made according to DOE requirements and directives contained in DOE O 241.1 and according to DOE's agreements with NRC and NEA. Recipients of DOE and NRC-sponsored software are notified when modifications and new versions of software are received.

3.2.4 Records Management of Software at ESTSC

DOE-sponsored software is made available for five years from the initial announcement date. After the 5 years, the software is a candidate for withdrawal from the collection if ESTSC determines that its useful life has expired. To assess the useful life of the software, ESTSC considers such factors as the machine for which the software was written, the language in which the program was written, the subject area of the software, the state of the art of the research in the subject area, the frequency of requests for software, and the experience of the users. When the useful life of a software package is judged to have expired, ESTSC will retain the documentation and source code for the software package and then remove it from the collection. When

circumstances warrant (e.g., discovery of a programming error), ESTSC may withdraw software from its collection before 5 years have elapsed. All NRC-sponsored software is retained and archived indefinitely at ESTSC.

For copyrighted software, legal staff acting on behalf of the developer may submit a written request to their DOE Operations Office to extend retention beyond the standard 5-year schedule.

3.3 Disclaimers for Software

Rights-in-technical-data clauses for many DOE contracts require a statement acknowledging DOE sponsorship/data rights for information products. The following distribution statement and disclaimers meet those requirements for software. A disclaimer may or may not be appropriate for DOE-generated software. Based on its review process (Part II, Section 3.0), each DOE site determines the appropriate notice for the software it generates. Such decisions should be coordinated with the appropriate legal counsel. Appropriate additional markings should be affixed and consistent with restrictions indicated on the submittal form and/or all software package elements provided to the ESTSC or an SIAC.

3.3.1 DOE-Sponsored Software Which Is To Be Licensed

Distribution Statement

This computer software has been developed under sponsorship of the U.S. Department of Energy. Any further distribution or use by anyone other than the named licensee of this software package or any data contained therein, unless otherwise specifically provided for, is prohibited without the approval of the Energy Science and Technology Software Center. Requests for DOE-developed computer software shall be referred to the Energy Science and Technology Software Center, P.O. Box 1020, Oak Ridge, TN 37831-1020.

Disclaimer

This material was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor the United States Department of Energy, 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.

3.3.2 NRC-Sponsored Software

Distribution Statement

This computer software has been developed under sponsorship of the U.S. Nuclear Regulatory Commission. Any further distribution by any holder of this software package or any data contained therein outside of NRC offices or other NRC contractors, unless otherwise specifically provided for, is

prohibited without the approval of the DOE Energy Science and Technology Software Center and the NRC. Requests from outside of the NRC for NRC-developed computer software shall be forwarded to the Energy Science and Technology Software Center, P.O. Box 1020, Oak Ridge, TN 37831-1020.

Disclaimer

This material was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor the United States Nuclear Regulatory Commission, 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.

3.4 License Agreements

3.4.1 ESTSC Software License (ESTSC F 17)

Applicable only to DOE-sponsored software, this form establishes conditions and requirements for requesters' use of the software package after purchase from ESTSC. Requesters must return the properly completed and signed form to ESTSC before ESTSC will process an order for software. A copy of the ESTSC Software License is shown in Attachment 15.

3.4.2 ESTSC NRC Computer Software Transmittal Release (ESTSC F 11)

Applicable only to NRC-sponsored software, this form establishes conditions and requirements for requesters' use of the software package after purchase from ESTSC. Requesters must return the properly completed and signed form to ESTSC before ESTSC will process an order for software. A copy of the ESTSC NRC Computer Software Transmittal Release for "Unlimited" packages is shown in Attachment 16. A copy of the ESTSC NRC Computer Software Transmittal Release for "U.S. Sales Only" packages is shown in Attachment 17.

ATTACHMENTS

**Concept Paper on
Electronic STI Management**
Presented at DOE STIP Meeting, Feb. 3, 1998

Background

The Office of Scientific and Technical Information - like the entire Scientific and Technical Information Program (STIP) community - is in a state of transition to electronic STI. OSTI is re-engineering its paper-based processing of incoming scientific and technical information, with accompanying workflow tasks and software designed for paper reports, to a primarily electronic processing environment. With this change, it is redesigning a number of processes using new software, new descriptions of the workflow functions, and generally a new perspective on the requirements.

In 1994, OSTI and its STI partners and stakeholders recognized that the Departmental STI Program was in a changing environment of:

1. Less centralized control;
2. Reduced reliance on compliance; and
3. More focus on outcome than process.

Over the past four years, OSTI and the STI community together have made significant strides in defining agreeable electronic exchange formats; streamlining paper-based processes to the bare essentials; creating collections of digitized STI; and developing the Energy Science and Technology Virtual Library: Energy Files. Energy Files is envisioned as the umbrella system for the STI collections and more. Now, with the STIP Strategic Plan as the blueprint and coupled with the latest information technologies, the Department's STI Program is positioned to define the next generation of STI access and dissemination processing in a decentralized environment. This paper provides a concept of the approach to be taken, envisioned changes, roles and responsibilities of involved parties, and the anticipated benefits.

Future Approach to Electronic STI Processing

Changes at OSTI

OSTI is committed to meeting the paper-to-electronic challenge in FY 1998. Right now, it is in the midst of planning and defining significant changes within OSTI's processing systems which will allow greater flexibility to all those who submit STI. These changes will forever alter the Department's STI Program.

- OSTI is procuring commercial-off-the-shelf software to replace the existing inflexible Report Processing System and affiliated processes. A new database management system, electronic document management system, and other associated hardware/software platforms will be in place by the end of FY 1998 which will make better and easier use of network technology, provide automated workflow, and broaden acceptance of electronic formats.
- The new system configuration and functional requirements will be defined to meet the needs of our primary customers and stakeholders. Considerations include—

- Reduction of bibliographic data requirements to a core set of metadata for DOE's STI collections;
 - Acceptance of a range of native full-text formats;
 - Empowerment of originators in the review, release, and quality-assurance standards for STI; and
 - Providing a final repository for the originating sites or programs which do not intend to host public access to full-text documents permanently.
- The design is largely to expedite electronic full-text and electronic metadata, although the system will accommodate paper STI to a lesser extent when needed.
 - The focus of OSTI staff will be on value-added functions, such as subject analysis or product innovation, proactively supporting the needs of the STI originating sites, providing problem resolution, facilitating life-cycle practices, as well as serving the full-text needs of the end-users. The redesigned process will require fewer resources for routine processing and creation of bibliographic databases.

What remains **unchanged** is OSTI's dedication to meet the needs of its customers and stakeholders who desire access to DOE's STI. OSTI will continue to maintain a central locator to DOE's STI through the DOE Information Bridge, which will be innovatively improved over the next few months. OSTI will continue to fulfill Departmental mandates for broad public dissemination by administering various agreements with intermediaries for public access to include NTIS, GPO, and international exchanges. Agreements with external partners will be modified to reflect the changing environment for electronic STI.

Acknowledging Efforts of Originating Sites

- Sites routinely review the STI product prior to publication for proper clearances—such as patent or intellectual property review, classification review, and other approvals. OSTI has traditionally provided a second review to ensure that markings were consistent and that only appropriate documents were publicly released. Electronic or Web-based publishing through distributed sources makes a second review by OSTI impractical and unwarranted. Therefore, OSTI will be eliminating most of its evaluation function and will accept the release and announcement markings provided by the sites.
- Validation of metadata elements provided to OSTI in the future will be accomplished via automation as much as possible; rules will be relaxed significantly. Some consistency will be built in by having computerized pick-lists for certain metadata elements provided to the sites. Which "authorities" are needed will soon be determined. However, the traditional OSTI process of intervening through manual input or editing of data will be significantly curtailed.
- The advent of site-hosted publicly accessible servers has also changed who accounts for public release. Traditionally, DOE's external stakeholders (OMB, GAO, Congress, and others) have relied on OSTI's publication dates as the official public release record for

DOE's STI. Both credit and accountability will properly rest with the site which publicly releases and makes STI openly available.

- A broader range of electronic full-text formats, such as standard word processing formats, will be accommodated in the redesigned process. OSTI will be able to carry the native format (one of the accepted formats in which the originating site created the STI) for certain uses, as well as making a number of electronic formats available for access in STI products (such as DOE Information Bridge). OSTI currently has scanned over 23,000 DOE technical reports and made them available through the DOE Information Bridge. Significant costs and issues exist in the search/retrieval, user access, and the required hardware/software systems to handle such information. Scanning will continue, on a decreased basis, until hard-copy submittal of information is eventually phased out. This change in practice will allow users to view the STI product in its original version as created by the site, in addition to accessing the product in a standard format (currently TIFF G4 is used, but OSTI is planning for a future standard to be a full-text searchable format, although transition plans are not firm at this time).

Roles & Responsibilities

In this new electronic paradigm, traditional roles and responsibilities of OSTI will change, as will the role of submitting sites. The distributed processing model which is envisioned would include the following:

- A reduced set of metadata would be provided by sites to OSTI in lieu of the current data provided on the DOE F 1332.15. The metadata record would serve as the official notification of the release and announcement of an STI document/product. There will be a number of methods for providing the metadata: (1) via a new Web form similar to the process for using the Web version of the 1332.15; (2) batch processing from site databases that capture the metadata during the site's document preparation; or (3) providing appropriately tagged elements accompanying an electronic full-text document.
- Methods for including electronic full-text documents into the "DOE collection" will also be broadened. Envisioned are: (1) a full-text document may be transmitted to OSTI with the corresponding metadata; (2) the site may post it at a location for OSTI to capture it upon notification via the metadata; or (3) the site may choose to host access to the full-text and provide OSTI the metadata record with a unique URL to link to each full-text document on the site's server.
- OSTI will then process the incoming metadata through automated validations and authorities and create a "metadata repository" as a central locator of DOE's STI.
- Based on STIP stakeholder feedback, OSTI intends to continue to provide subject expertise for search/retrieval purposes and to utilize automated tools to the extent possible to create subject categories, keywords, and abstracts when not provided by the sites. OSTI will potentially maintain controlled vocabularies/thesauri to facilitate subsequent search/retrieval and dissemination.
- Metadata stored in the central repository will provide the locator to all full-text, which will be made available to users through an improved DOE Information Bridge that incorporates

distributed linking and searching features such as those tested in the Federated Collections Pilot project, but with the additional feature of providing a comprehensive full-text index to DOE's STI, which will serve as a key component of Energy Files.

- In the near term, OSTI will maintain the capability to process paper-copy received from sites unable to submit electronic full-text documents in one of the accepted formats, but the priority for processing and access will be lower than for the electronic documents.

Benefits

Several benefits will occur within the DOE STI community as a result of a Departmental redesigned electronic STI management concept:

- Places management of information closer to originator, who best knows the information.
- Recognizes the site which created and made the STI available.
- Imposes less control and compliance.
- Focuses on the outcome (broader access to STI) rather than the process.
- Reduces costs incurred for processing paper documents.
- Improves timely availability of scientific and technical information.
- Establishes the framework for distributed access to scientific and technical information across disparate Departmental sites.
- Reduces processing costs of the sites through the acceptance of more electronic native formats.
- Positions the Department to better respond to changing technologies.
- Eliminates creating and maintaining duplicative data systems (at sites and at OSTI), thus saving costs for STI processes DOE-wide.
- Encourages/facilitates STIP community to identify and implement best business practices associated with electronic STI life-cycle management.
- Promotes integration of the STI Program across the Department.

Summary

Based on the Departmental needs, the changing technology, the growing end-user expectations for full-text at the desktop, and budget restrictions, OSTI is proposing an aggressive timeline for the initial implementation of this concept. To meet that commitment, several factors must be addressed quickly and consensus reached by all parties involved. We will use all available resources in the near-term to identify and define a smooth transition plan. Through the STIP goal working groups, implementation guidelines will be created for the metadata record and electronic formats. STICG and other Headquarters forums will be used to notify the funding programs and

to obtain buy-in on the role of the sites which create STI and the role of OSTI. The order and the guide will then document these agreed-upon changes.

CANCELED

AUTHORITIES AND OTHER GUIDANCE

Dissemination of DOE's STI resulting from DOE's research and development programs to promote scientific progress and public understanding has been a fundamental requirement since the founding of the Department and its predecessor agencies. A number of laws require the Department to make its information available, while others place some limits on the dissemination of scientific and technical information for which the unauthorized release would be detrimental to national interests. DOE O 241.1 provides the overall DOE objective, requirements, and responsibilities within which these mandates are to be met. Following are statutes, executive orders, and directives relevant to the management of STI.

American Technology Preeminence Act of 1991, Public Law 102-245 of 02-14-92.

Arms Export Control Act, Public Law 94-329 (22 U.S.C. 2751 et seq.)

Assistance to Foreign Atomic Energy Activities, Title 10, Code of Federal Regulations, Part 810, effective July 26, 1993.

Atomic Energy Act of 1954, as amended, 42 U.S.C. 2011-2296.

Classified National Security Information, Executive Order 12598, 04-20-95.

Copyrights, 17 U.S.C. 101-601 et seq.

Department of Energy Organization Act of 1977, Public Law 95-91, Title I, Section 102.

DOE Scientific and Technical Information Program Strategic Plan: A Complex-Wide Collaboration to Lead DOE in the Information Age, Office of Scientific and Technical Information, September 17, 1997.

DOE Strategic Plan, September 1997.

Energy Policy Act of 1992, Public Law 102-486 (42 U.S.C., various sections).

Electronic Freedom of Information Act Amendments of 1996, Public Law 104-231 (5 U.S.C. 552).

Energy Conservation, Public Law 102-381, Title II, 106 Stat. 1405 of 10-05-92.

Export Administration Act of 1979, Public Law 96-72, as amended (50 U.S.C. 2401).

Export Administration Regulations, Title 15, Code of Federal Regulations, Parts 730-799.

Export and Import of Nuclear Equipment and Material, Title 10, Code of Federal Regulations, Part 110.

Federal Information Resources Management Regulation, Title 41, Code of Federal Regulations, Chapter 201.

Freedom of Information Act of 1974, Public Law 89-487, as amended by Public Law 93-502 (5 U.S.C. 552, 88 Stat. 1561).

Guidelines on Export Controls and Nonproliferation, issued by the Director of the Office of Nonproliferation and National Security, Feb. 1997.

Identification and Protection of Unclassified Controlled Nuclear Information, Title 10, Code of Federal Regulations, Part 1017.

Identification and Protection of Unclassified Controlled Nuclear Information, DOE O 471.1, of 9-25-95.

Identifying Classified Information, DOE M 475.1-1 of 5-8-78.

Implementation Guide for use with 36 CFR Chapter XII - Subchapter B, Records Management, DOE G 1324.5B of 7/19/96.

Information Management Program, DOE O 200.1, of 9-30-96.

Information Processing—Text and Office Systems—Standard Generalized Markup Language (SGML), ISO-8879, International Standards Organization.

Information Security Program, DOE O 471.2A, of 3/27/97.

International Traffic in Arms Regulations, Title 22, Code of Federal Regulations, Parts 120-128.

Management of Federal Information Resources, Office of Management and Budget (OMB) Circular A-130 of 06-93, as amended 07-15-94. Supersedes OMB Circulars A-3, -71 partial, -90, -108, -114, and -121.

Metric Conversion Act of 1975, Public Law 94-168, as amended by Public Law 100-418.

Metric Conversion Policy for Federal Agencies, Title 15, Code of Federal Regulations, Part 1170.

Metric Usage in Federal Government Programs, Executive Order 12770 of 7-25-91.

National Competitiveness Technology Transfer Act of 1989, Public Law 101-189 (15 U.S.C. 3701).

National Technology Transfer and Advancement Act of 1995, Public Law 104-113.

Naval Reactor and Military Application Programs, Public Law 98-525 (42 U.S.C. 7158).

Nuclear Non-proliferation Act of 1978, Public Law 95-242.

Printing, Title 48, Code of Federal Regulations, Part 952.227, “Provisions and Clauses Related to Patents, Technical Data and Copyrights” [952.227-79 “Limited Rights in Proprietary Data”].

Privacy Act of 1974, Public Law 93-549, as amended (5 U.S.C. 552a).

Rights in Data—General, Federal Acquisition Regulation (FAR) 52.227-14.

Stevenson-Wydler Technology Innovation Act of 1980, Public Law 96-480, 15 U.S.C. 3710a note.

U.S. Patent Law, 35 U.S.C. 205.

CANCELED

DEFINITIONS

Abstract. Concise statement (200 words or less) of the purpose, scope, and major findings of an STI product.

Announcement. Announcing via sending announcement record (DOE F 241.1) or announcement record as well as entire STI product to OSTI. OSTI will control access based upon the needs of the STI product.

Announcement Record. Record containing metadata used to describe an STI product for announcement and availability. The record is based on DOE F 241.1 (see Attachment 4) and transmitted to OSTI for general announcement.

Copyright Statement. Statement that retains the nonexclusive right for the government to copy STI that was funded by a government agency although the copyright may be owned by a non-government entity. (See Attachment 7.)

Deliverables. End-product or outcome of a funded project or program and identified in a contract or work proposal.

Departmental (or DOE) Elements. First-tier organizations at Headquarters and in the Field. First-tier at Headquarters is the Secretary, Deputy Secretary, Under Secretary, and Secretarial Officers (Assistant Secretaries and Staff Office Directors). First-tier in the Field is Managers of the eight Operations Offices, Managers of the three Field Offices, and the Administrators of the Power Marketing Administrations. Headquarters and Field Elements are described as follows: (1) Headquarters Elements are DOE organizations located in the Washington Metropolitan Area; and (2) Field Elements is a general term for all DOE sites (excluding individual duty stations) located outside of the Washington, DC, Metropolitan Area.

Direct Procurements. Non-M&O/M&I procurements that are usually let by DOE Contracting Officers in the form of grants, contracts, awards, cooperative agreements, etc.

Disclaimer. A repudiation or denial of responsibility or connection.

Distribution Statement. Statement needed on an STI product that explains any distribution or access limitation. (See Attachment 8.)

Extensible Markup Language (XML). XML (version 1.0 or above) is a true subset of SGML, designed to make it easy to interchange structured documents over the Internet. XML files always clearly mark where the start and end of each of the logical parts (called elements) of an interchanged document occurs. XML somewhat restricts the use of SGML constructs and defines how Internet Uniform Resource Locators can be used to identify component parts of XML data streams created specifically for use on the World Wide Web. XML is an abbreviated version of SGML, omitting the more complex and less-used parts of SGML in return for the benefits of being easier to write applications and more suited to delivery and interoperability over the Web. XML files may still be parsed and validated the same as any other SGML file. NOTE:

Included graphic files should be either in GIF or JPEG format as they are the standard graphic file types for WWW accessible documents.

File Format(s). The electronic format of an electronic STI Product. Acceptable electronic formats have been identified for the STI products posted on site's web pages and transmitted to OSTI.

Foreign Trip Reports. Foreign trip report information, which is maintained in a secure database accessible to DOE and authorized users. It is sponsored by the Office of Nonproliferation and National Security (NN).

HyperText Markup Language (HTML). HTML is a non-proprietary format for publishing documents on the web. Based upon SGML, HTML can be created and processed in a wide range of tools from simple plain text editors to sophisticated authoring tools. HTML uses tags like to structure text into headings, paragraphs, lists, hypertext links, etc HTML documents that conform to the HTML 3.2 or 4.0 document type definition (DTD) are by definition fully compliant SGML documents for the STI electronic environment. NOTE: Included graphic files should be either in GIF or JPEG format as they are the standard graphic file types for WWW accessible documents.

Laboratory Directed Research and Development (LDRD). Research and development work of a creative and innovative nature which is selected by the laboratory director, or his or her designee, for the purpose of maintaining the scientific and technological vitality of the laboratory and to respond to scientific and technological opportunities in conformance with the requirements of the Laboratory Directed Research and Development (LDRD) Program. The LDRD Program includes all discretionary research and development activities not provided for in a DOE program.

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.

M&I Contractors. Management and integration contractors.

M&O Contractors. Management and operating contractors.

Metadata. Data that describes the attributes of a document or other type of STI product and is used for announcement and retrieval.

Office of Scientific and Technical Information (OSTI). The DOE office within the Office of Energy Research which is 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 is the central point of coordination for customer access to DOE's scientific and technical information resource.

OpenNet. A web-based database of all Departmental documents that have been declassified and determined to be publicly releasible (<http://www.doe.gov/html/osti/opennet/opennet1.html>).

OpenNet supports the DOE openness initiative and contains not only STI products but other records as well. It is sponsored by the Headquarters Office of Declassification, NN-52.

Originating Site. Term used in this Guide to denote the organization that prepares and makes available an STI product. In some cases, it is the same as the originating research organization (either DOE or DOE contractor). For direct procurement STI products, the DOE awarding office may fulfill or delegate this role.

Postscript. A page description language that allows documents to be transmitted electronically with all original formatting and graphics intact, it 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 standard word processing packages such as MicroSoft Word or Corel's WordPerfect.

Postprint. A document in post-publication status, particularly an author's article or paper, after it has been published in a journal.

Preprint. A document in pre-publication status, particularly an article submitted to a journal for consideration for publication.

Presentation Formats. Formats that capture the "Presentation" form of a document (e.g. the form that the document looks like when printed). Presentation formats may or may not be full-text searchable. OSTI prefers to receive full-text searchable versions of documents.

Proprietary Data. Information which embodies trade secrets developed at private expense outside of a Cooperative Research and Development Agreement and commercial or financial information which is privileged or confidential under the Freedom of Information Act, 5 U.S.C. (B)(4) and which is marked as Proprietary Information. Information which contains trade secrets or commercial or financial information which is privileged or confidential, and may only include such information which: (a) Has been held in confidence by its owner; (b) Is of a type which is customarily held in confidence by its owner; (c) Has not been transmitted to other entities except on the basis that it be held in confidence; and (d) Is not otherwise available to the receiving party from another source without restriction on its further dissemination.

Portable Document Format (PDF). PDF is 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 a PDF file from multiple word processing and other desktop publishing applications. By using a viewing application freely available via the Internet such as Adobe Acrobat Reader, 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.

R&D Project I.D. The R&D Project Identification (ID) Number is a unique and permanent project identifier that is assigned to a R&D project by either the DOE Operations Office, DOE Program Office, DOE Laboratory, or other DOE organization. The project ID should be included as a reference on the STI deliverable or accompanying transmittal document in order to relate the deliverable to the appropriate R&D funding source.

Reprint. A copy of a journal article or similar document obtained from the publisher in the form in which it was published and may be copyrighted by the publisher.

Scientific and Technical Information (STI). 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. STI may be unclassified, unclassified sensitive, declassified, or classified.

Sensitive Unclassified Information. Information for which disclosure, loss, misuse, alternation, or destruction could adversely affect national security or government interests. National security interests are those unclassified matters that relate to the national defense or foreign relations of the Federal Government. Governmental interests are those related, but not limited to, the wide range of government or government-derived economic, human financial, industrial, agricultural, technological, and law enforcement information, as well as the privacy or confidentiality of personal or commercial proprietary information provided the Federal Government by its citizens.

Site. See definition for "Originating Site."

S&T Accomplishment Report. An S&T accomplishment report describes an outcome of R&D which has achieved significant impact to commerce or standard of living or is recognized as a major scientific or technical advancement. It reports scientific or technical results, as opposed to a research highlight, which describes a noteworthy current R&D project or field of investigation that, if successful, could lead to an S&T accomplishment.

Standard. A generic, all-encompassing term used to describe documents that provide a specified set of mandatory or discretionary rules, requirements or conditions concerned with performance, design, operation, or measurements of quality to accomplish a specific task. Standards may include Federal laws, regulations, State laws, Federal agency directives, national and international technical standards, codes of conduct, or even organizational "internal use only" documents. A specified set of discretionary rules or conditions concerned with the classification of components; delineation of procedures; definition of terms; specifications of materials, performance, design, or operations; or measurements of quality in describing materials, products, systems, services or practices.

Standard Generalized Markup Language (SGML). SGML is an international standard (ISO-8879) for defining document structures for the application of mark-up schemes. It provides a consistent and precise manner of applying mark-up for describing the component parts of a document, enabling the exchange of revisable documents between different computer systems. Use of SGML for electronic exchange is an agreed-upon long-term goal for DOE's STI. Two additional SGML-based formats are also acceptable for STI: the Extensible

Markup Language (XML) and the Hypertext Markup Language(HTML). NOTE: Included graphic files should be either in GIF or JPEG format as they are the standard graphic file types for WWW accessible documents.

Sponsoring Organization. Also known as the funding office, the sponsoring organization is typically a DOE Headquarters Program Office, which funds/sponsors the research activities.

Technical Report. Technical reports describe the results and findings of research and development projects and other DOE-funded activities. For direct-procurement type awards, these are formal documents usually identified as required reporting deliverables and may cover a specified timeframe referred to as the reporting period. For M&O/M&I contractors, in addition to formal reports, these may be any technical document that contains technical information useful to others, including the results of research determined not appropriate or rejected for open literature publication.

Technical Standards. DOE Technical Standards include standards, specifications, and handbooks developed through the Technical Standards Program, managed by the Headquarters Office of Environment, Safety and Health (EH). They are accessible to the Department and the public on a searchable web-based database at <http://www.doe.gov/html/techstds/standard/standfrm.html>.

TIFFG4. 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.

Word Processing Formats (e.g., Corel WordPerfect and MicroSoft Word). Word processing documents are those documents that are created through proprietary document creation applications. OSTI will accept electronic documents in WordPerfect 5.0 and above or MicroSoft Word 5.0 or above. WordPerfect and Word were chosen because they are the two most heavily used Word Processing applications in the DOE complex.

Part II: STI PRODUCT MEDIA/FORMAT and LOCATION/TRANSMISSION**A. MEDIA/FORMAT INFORMATION**

1. Medium of STI product is: ☐ Paper ☐ Electronic document ☐ Computer medium ☐ Audiovisual material
2. Size of STI product _____
3. File format:
 - a. If electronic document is posted at site, indicate: ☐ SGML ☐ HTML ☐ XML ☐ PDF Normal
 - b. If electronic document is transmitted to OSTI, indicate: ☐ SGML ☐ HTML ☐ XML ☐ PDF Normal ☐ PDF Image
☐ TIFFG4 ☐ WP—indicate Version (5.0 or greater) _____ platform/operating system _____
☐ MS Word—indicate Version (5.0 or greater) _____ platform/operating system _____ ☐ Postscript
4. If computer medium or audiovisual material:
 - a. Quantity/type (specify) _____
 - b. Machine compatibility (specify) _____ c. Sound: ☐ (yes) d. Color: ☐ (yes) e. Tables/Graphics ☐ (yes)
 - f. Other information about product format a user needs to know: _____

B. LOCATION/TRANSMISSION INFORMATION

1. STI Product is available at site: Unique URL (of specific STI Product) _____
2. STI Product is being transmitted to OSTI:
 - a. ☐ Electronically via FTP
 - b. ☐ Via mail or shipment (e.g., Federal Express) (Paper products, electronic documents on CD-ROM, diskettes, videocassettes, etc.)
3. Information Product Filename (of transmitted electronic format) _____

C. ADDITIONAL INFORMATION (concerning media/format or location/transmission; for OSTI internal use only): _____

(Grantees and Awardees: Skip to Contact section at the end of Part III)

Part III: STI PRODUCT REVIEW/RELEASE INFORMATION**A. ACCESS LIMITATION**

- ☐ 1. **Unlimited Announcement** (available to U.S. and non-U.S. public)
- ☐ 2. **OpenNet** (use OpenNet guidance for below):
 - a. If additional source other than making it available through NTIS:
 - (1) Accession Number _____
 - (2) Document Location _____
 - b. Field Office Acronym _____
 - c. Declassification date (mm/dd/yyyy) ____ / ____ / ____
 - d. Declassification Status: _____
☐ Declassified ☐ Sanitized ☐ Never classified
 - e. OpenNet Document Categories _____
 - f. OpenNet Addressee _____
- ☐ 3. **U.S. Dissemination Only**
- ☐ 4. **Copyrighted material**; Are there any restrictions based on copyright? ☐ yes ☐ no. If yes, list the restrictions _____
- ☐ 5. **Small Business Innovation Research (SBIR)** Release date (mm/dd/yyyy) ____ / ____ / ____
- ☐ 6. **Small Business Technology Transfer (STTR)** Release date (mm/dd/yyyy) ____ / ____ / ____
- ☐ 7. **Proprietary/Trade Secret**
- ☐ 8. **Patent Pending**
- ☐ 9. **Protected data** ☐ CRADA ☐ Other (specify) _____ Release date (mm/dd/yyyy) ____ / ____ / ____
- ☐ 10. **Official Use Only (OUO)**
- ☐ 11. **Program-Directed Special Handling** (specify) _____
- ☐ 12. **Export Control/ITAR/EAR**
- ☐ 13. **Unclassified Controlled Nuclear Information (UCNI)**
- ☐ 14. **Classified** Classification Level/Category of:
 - a. This form _____
 - b. The STI Product _____
- ☐ 15. **Other information relevant to access** (specify; for OSTI internal use only) _____

B. OTHER (information useful to include in published announcement record which is not suited for any other field on this form) _____**C. CONTACT AND RELEASING OFFICIAL**

1. Contact (if appropriate, the organization or site contact to include in published citations who would receive any external questions about the content of the STI Product or the research information contained therein)

Name and/or Position _____

E-mail _____ Phone _____

Organization _____
2. Releasing Official ☐ I verify that all necessary reviews have been completed (e.g. Patent, Copyright, ECI, UCNI, etc.)

Released by (name) _____ Date (mm/dd/yyyy) ____ / ____ / ____

E-mail _____ Phone _____

Purpose: Form 241.1 provides the Office of Scientific and Technical Information (OSTI) information required to appropriately identify, process, and/or announce and disseminate the results of work funded by the U.S. Department of Energy (DOE) or performed in DOE facilities. For general information or assistance with this form, contact OSTI at (423) 576-1191, or at the following e-mail address: evaluation@adonis.osti.gov.

When to use: Submit this form with each scientific and technical information (STI) Product. Electronic format is the preferred method for submitting the announcement record and STI Product. When submitting electronically, use the electronic version of the form or Document Type Definitions (DTD). When submitting in paper, input should be typed or printed, not handwritten.

Describing the data fields: Descriptions of the various DOE F 241.1 data fields, STI Products, format, etc., can be found in ATTACHMENT 3 and other sections of the DOE Guide 241.1-1, *Guide to the Management of Scientific and Technical Information*.

1. DOE and DOE Contractors: DOE, DOE Management and Operating (M&O) contractors, DOE Management and Integrating (M&I) contractors, multiprogram laboratories, single program laboratories, and other DOE facilities should complete the entire form. Submit it either with the URL for the site-maintained copy of the STI product or as a package with the STI product to OSTI for processing in accordance with the requirements of DOE Order 241.1, *Scientific and Technical Information Management*. Reporting that may be required under the terms of the contract but which is not appropriate for transmittal to OSTI includes contract proposals, funding status, routine construction or inventory reports, and similar products. Submit the package to:

For Mail:
U.S. Department of Energy
Office of Scientific and Technical
Information (OSTI)
P.O. Box 62
Oak Ridge, TN 37831 USA

For Shipments:
U.S. Department of Energy
Office of Scientific and Technical
Information (OSTI)
175 Oak Ridge Turnpike
Oak Ridge, TN 37830 USA

2. Financial Assistance Recipients and Awardees (*Direct Procurement Recipients*): Grantees and Awardees should complete the entire form, except as noted. Forward the form along with the STI product to the DOE Contracting Officer who will complete the rest of the form and submit the package to OSTI. Note: The DOE Contracting Officer may require the Grantee or Awardee to complete other parts of the form and also may require the awardee to submit the package directly to OSTI. Check the specific award requirements. Electronic submission of the form/STI product should be coordinated with the Contracting Officer.

NOTE: Sensitive, proprietary, or other STI Products for which access is restricted by statute or regulation shall not be transmitted via open systems networks (e.g., the Internet) unless authorization and/or encryption has been coordinated with OSTI in advance. This form, unless it in itself is classified, can be transmitted via open systems networks (e.g., the Internet).

RECORD STATUS – *This is a required field.* The record status identifies the announcement record or the STI Product as new or revised. If the record status is not provided, the record is considered "New".

Part I: STI PRODUCT DESCRIPTION

A. STI PRODUCT TYPE – *This is a required field.*

1. Technical Report

1.a. **Type.** *This is a required field for a Direct Procurement.* Identify the type of technical report provided.

1.b. **Reporting Period.** *This is a required field for a Direct Procurement.* Specify the beginning and ending dates of the period covered by the STI Product.

2. **Conference.** Provide all available conference information. An agenda alone is not sufficient for announcement.

3. **Software Manual.** The Software Manual that accompanies the STI or copyrighted software. To obtain required forms and instructions for submitting the software (*including copyrighted software*), contact the Energy Science and Technology Software Center (ESTSC) at (423) 576-2606.

4. **Journal Article.** Provide all available Journal Article information.

5. **S&T Accomplishment Report.** The S&T Accomplishment report describes an outcome of R&D which has achieved significant impact to commerce or standard of living or is recognized as a major scientific or technical advancement.

6-8. No special instructions.

B. STI PRODUCT TITLE – *This is a required field.* Provide the title exactly as given on the product itself, including part, volume, edition, and similar information.

C. AUTHOR(s) – *This is a required field.* Provide the name of the author (last name first) of the STI product. More than one author may be provided; separate multiple entries with a semicolon and a space. If an author does not exist, the word "NONE" should be entered.

Examples: Jones, T.M.; Markay, Arthur R. III
Fields, J.M., ed.

Author(s) E-mail Address(es). Provide the e-mail address for each author. Multiples may be provided; they should be listed in the same order as the authors and should be separated by a semicolon and a space.

D. STI PRODUCT IDENTIFIERS.

1. **Report Number(s).** *This is a required field.* The unique primary report or product number assigned to the STI product. If a report number is not provided, the word "NONE" should be entered.

Following are examples of report number formats for multiple volumes, parts, or revisions:

DOE/LLW-nnn-Vol.1
DOE/NE/01834—1-Pt.1
ANL/TM—123-Rev.1

More than one report may be provided. Multiple numbers are separated with a semicolon and a space. When more than one number is entered, the first number, considered the primary number, should identify the submitting organization. All other numbers are considered secondary numbers.

For work performed for another agency, the funding agency may assign that agency's product/report number. If so, provide this number.

2. **DOE Contract/Grant Numbers.** *This is a required field.* Enter the DOE contract/grant number under which the work was funded. Additional DOE contract/grant numbers related to the product may be entered. Multiple numbers are separated with a semicolon and a space. When more than one number is entered, the first number is considered the primary number. If no DOE Contract/Grant Number is provided, the word "NONE" should be entered.

3. **R&D Project ID(s).** Enter the unique and permanent Project ID assigned to the project itself by the Operations Office, DOE Program Office, laboratory, or other installation to identify a particular research project. Multiples may be provided; separate multiple entries with a semicolon and a space.

Sample formats: P/ORNL—2533; TTP/RL439005

4. **Other Identifying Number(s).** An additional unique identifying number assigned to the STI product. (e.g., CRADA numbers, Non-DOE contract numbers).

More than one other identifying number may be provided. Multiple numbers are separated with a semicolon and a space.

E. ORIGINATING RESEARCH ORGANIZATION – *This is a required field.* Provide the name and location of the organization that performed the research or issued the STI product. More than one organization may be provided; separate multiples with a semicolon and a space.

Example: Los Alamos National Laboratory, Los Alamos, NM

F. DATE OF PUBLICATION – *This is a required field.* Provide the date when the information product was published or issued.

G. LANGUAGE – *This is a required field.* Provide the name of the language in which the information product is written if the language is not English. If language is not provided by the originating organization, the word “English” will be entered.

[Grantees and Awardees: Skip to Description/Abstract section at the end of Part I]

H. SPONSORING ORGANIZATION - Enter the name or acronym of the DOE Program Office (e.g. Energy Research or ER) providing the funding for the work described in the STI product. For projects funded by more than one Program Office, indicate all sources of the DOE funding in descending order of dollar amount of funding appropriated. Also indicate the funding office for work for others. Separate multiple program offices with a semicolon and a space. If no sponsoring organization is provided, “DOE” will be the sponsor.

I. PUBLISHER NAME AND LOCATION – *This is a required field* if different than the Originating Research Organization that issued the document for dissemination.

Availability Refer requests to [if applicable] – *This is a required field* if the Publisher is the source of availability.

J. SUBJECT CATEGORIES - Select one or more categories from the list provided. List the primary one first. If no subject category is provided by the originating organization, the Office of Scientific and Technical Information will generate one.

A list of subject categories is available at
<http://www.doe.gov/html/osti/eei/eei.html>.

Keywords. Provide terms which describe the content of the publication. More than one term may be entered; separate multiple terms with a semicolon and a space. If keywords are not provided by the originating organization, the Office of Scientific and Technical Information will generate them.

A list of OpenNet subject terms is available at URL
<http://www.doe.gov/html/osti/opennet/lists/sterms.html> for information products which will be included in the OpenNet Database.

K. DESCRIPTION/ABSTRACT – Provide a clear and concise English language summary of the information content of the STI product. The abstract length should be no more than 5,000 characters. If no description/abstract is provided by the originating organization, the Office of Scientific and Technical Information will generate one.

Part II: STI PRODUCT MEDIA/FORMAT and LOCATION/TRANSMISSION

A. MEDIA/FORMAT INFORMATION

1. **Medium.** *This is a required field.* Select one of the medium options provided (except when announcement record only is submitted).
2. **Size of STI Product.** Provide the total number of pages or other designation which gives an indication of the size of the information product (e.g., 200 pages; 20 images; 3500 kilobytes; 3-3 1/2 inch diskettes).
3. **File Format.** *This is a required field* if the STI Product is electronic full-text. Select one of the options provided.
4. **If Computer Medium or Audiovisual Material** (do not include software packages)
 - a. Indicate the quantity and type of medium, e.g., 2 videocassettes, 1 magnetic tape.
 - b. Indicate the machine with which the medium is compatible, i.e., with which it can be used (e.g., VHS; IBM PC-compatible, hard disk, 8 Megs.)
 - c. Enter ‘Y’ if the product has sound.
 - d. Enter ‘Y’ if the product is in color.
 - e. Enter ‘Y’ if the product has tables/graphics.
 - f. Enter any other information which would be helpful to the user of the STI product (e.g., programming language, etc.)

B. LOCATION/TRANSMISSION INFORMATION

1. **Product available at site:** *This is a required field* if electronic full-text STI Product retained at site. Provide a complete unique URL (Uniform Resource Locator) address sufficient to access a complete copy of the specific STI product.
2. **Product being transmitted to OSTI:** *This is a required field* if electronic full-text STI Product is being transmitted to OSTI. Indicate the method of transmission.
3. **Information Product Filename:** *This is a required field* if an electronic copy of the STI product is being transmitted to OSTI electronically via an open systems network or other computer-generated medium. Provide the name of the file that contains the STI product itself.

C. ADDITIONAL INFORMATION (concerning media/format or location/transmission; for OSTI internal use only): Specify file format if the file is not a full-text STI product (e.g., a data file), or if special arrangements have been made with OSTI to send full-text in a non-standard format.

[Grantees and Awardees: Skip to Contact section at the end of Part III]

Part III: STI PRODUCT REVIEW/RELEASE INFORMATION

A. ACCESS LIMITATION – *This is a required field.* Recommendations to restrict access to STI products must have a legal basis or be accompanied by written programmatic guidance. Questions concerning current laws and guidance may be referred to in Part II or ATTACHMENT 7 of the DOE Guide 241.1-1, *Guide to the Management of Scientific and Technical Information*, or by contacting OSTI at (423) 576-1035.

1. **Unlimited Announcement.** The unrestricted, unlimited distribution of the product.

2. **OpenNet.** STI products declassified and made available for public release will be announced on the Department's OpenNet Database in accordance with the Department's Openness Initiative.

When records for declassified STI products are submitted to OSTI electronically, an authoritative classification change notice (*paper only*), in accordance with DOE M 475.1-1, *Identifying Classified Information*, must accompany that submission.

2.a.1. **Accession Number:** For use in indicating additional sources of a document. This number may be used by OpenNet users when requesting a document. The Accession Number is a unique identifier of up to 13 alphanumeric characters only (A-Z, a-z, or 0-9). The transmitting field or program office is responsible for assuring that the number is unique within its jurisdiction. OSTI will add a two-character prefix to assure the number's uniqueness across DOE for a maximum size of 15 characters.

2.a.2. **Document Location:** This should identify additional sources where the public may go to obtain a copy of the document. At a minimum, this entry must contain a point of contact and enough additional information to enable a user to order a document (e.g., address, phone number, fax number, e-mail address, etc.). Multiple location entries may be provided; separate multiple locations with a semicolon and a space. Note: If a standard location will be used (e.g., a public documents reading room), OSTI can provide an availability code which can be entered instead of the location text.

2.b. **Field Office Acronym:** Use the appropriate acronym provided in *OpenNet DeClassified Information Database Data Input Specifications*, revised December 15, 1994.

2.c. **Declassification Date:** Provide the declassification date for any document that has been declassified and publicly released.

2.d. **Declassification Status:** *Required* for all documents being entered into OpenNet. Check “Sanitized” for documents with portions deleted for privacy or security reasons and enter a declassification date if the sanitized document is also a declassified document. Check “Never classified” for documents that have never been classified and are being made publicly available.

2.e. **OpenNet Document Categories.** For information products which will be included in the OpenNet Database, provide the appropriate two-level subject categories based on the list in *OpenNet DeClassified Information Database Data Input Specifications*, revised December 15, 1994. The list of OpenNet document categories is also available at URL <http://www.doe.gov/html/osti/opennet/opencats.html>.

FORM 241.1 INSTRUCTIONS

(p. 3 of 3)

2.f. **OpenNet Addressee.** Provide the name and address of the recipient of the information product if it is a memo, letter, or similar type of product.

3. **U.S. Dissemination Only.** STI products suitable for this designation are those which otherwise are not protectable under FOIA, but whose content falls under the subject areas described in the sensitive subjects attachment of DOE Order 1240.2B, Unclassified Visits and Assignments by Foreign Nationals.

4-13. Refer to ATTACHMENT 7 of the DOE Guide 241.1-1, *Guide to the Management of Scientific and Technical Information*.

4. **Copyrighted material.** A copyright restriction on part or all of the contents of the STI product may affect the reproduction and distribution of the product by OSTI. Any restriction must be specified.

11. **Program-Directed Special Handling.** Provide a reference to specific guidance or attach a copy of the specific guidance.

14. **Classified.** STI products will be announced by OSTI in accordance with DOE/OSTI—3679- Rev.75.

15. **Other information relevant to access** (*specify; for OSTI internal use only*). Indicate the type of access limitation. Provide a reference to specific guidance or attach a copy of the specific guidance.

B. **OTHER.** Include other useful information which should be included in the published announcement record, but does not fit elsewhere on the form.

C. CONTACT AND RELEASING OFFICIAL

1. **Contact.** Provide the organization or individual(s) name with corresponding contact information who will be included in the published citation as the point of contact and will respond to external questions about the content of the STI product.

2. **Releasing Official.** *This is a required field.* Provide the name and additional information of the site's individual(s) responsible for the appropriate review and release of the STI product. Do not forward this form or the STI product until after it has been reviewed and released for announcement.

OMB BURDEN DISCLOSURE STATEMENT

Public reporting burden for this collection of information is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Information, Records, and Resource Management, HR-41, GTN, Paperwork Reduction Project (1910-1400), U.S. Department of Energy, Washington, DC 20874-1290; or to the Office of Management and Budget (OMB)

CANCELED

DOE F 4600.2
(03-94)
Replaces EIA-459A
All Other Editions Are Obsolete

U. S. Department of Energy
FEDERAL ASSISTANCE REPORTING CHECKLIST

1. Identification Number:		Program/Project Title:		
3. Recipient:				
4. Reporting Requirements: PROGRAM/PROJECT MANAGEMENT REPORTING G DOE 4600.3, "Federal Assistance Milestone Plan" G DOE 4600.3a, "Milestone Log" G DOE 4600.4, "Federal Assistance Budget Information" G DOE 4600.5, "Federal Assistance Management Summary Report" G DOE 4600.6, "Federal Assistance Program/Project Status Report" G SF-269 or SF 269a, "Financial Status Report" TECHNICAL INFORMATION REPORTING G DOE F 1430.22 Notice of Energy RD&D Project G Technical Progress Report G Topical Report G Final Technical Report		Frequency	No. Of Copies	Addres s
FREQUENCY CODES AND DUE DATES: A - As Necessary; within 5 calendar days after events. F - Final; 90 calendar days after the performance of the effort ends. Q - Quarterly; within 30 days after end of calendar quarter or portion thereof. O - One time after project starts; within 30 days after award. X - Required with proposals or the application or with significant planning changes. Y - Yearly; 30 days after the end of program year. (Financial Status Reports 90 days). S - Semiannually; within 30 days after end of program fiscal half year.				
5. Special Instructions:				
6. Prepared by: (Signature and Date)		7. Reviewed by (Signature and Date)		

FEDERAL ASSISTANCE REPORTING CHECKLIST

PURPOSE

This form serves to identify plans and reports selected by the U.S. Department of Energy (DOE) as reporting requirements for the Federal Assistance Program/Project.

INSTRUCTIONS

- Item 1 - Enter the program/project identification number as it appears in the official award.
- Item 2 - Enter the program/project description as it appears in the official award.
- Item 3 - Enter the name of the recipient.
- Item 4 - Check spaces to indicate plans and reports selected. For each report checked, indicate frequency of delivery in column provided using one of the frequency of delivery codes as shown, as well as the number of copies requested and to whom they should be sent.

DOE F 4600.3, "Federal Assistance Milestone Plan" - presents, with the accompanying DOE F 4600.3A, "Milestone Log," a schedule of the planned activity.

DOE F 4600.4, "Federal Assistance Budget Information" - presents the planned costs.

DOE 4600.5, "Federal Assistance Management Summary Report" - registers planned progress and costs to actual progress and costs in a capsulized format.

DOE F 4600.6, "Federal Assistance Program/Project Status Report" - periodically reports project status, explains variances and problems, and discusses any other areas of concern or achievements.

SF-269 and SF-269A, "Financial Status Report," presents the status of funds committed to the project.

DOE F 1430.22, "Notice of Energy RD&D Project" - provides information on unclassified DOE RD&D Project for dissemination to the scientific, technical, and industrial communities and to the public. Also provides information to the Smithsonian Information Exchange and to the DOE Office of Scientific and Technical Information.

Technical Progress Report - periodically reports progress and/or results of DOE supported RD&D and scientific projects covering a specific reporting period.

Topical Report - presents the technical results of work performed on a specific phase of a project.

Final Technical Report - presents a technical accounting of the total work performed on a project.

Frequency Codes - Each code represents a specific reporting frequency (such as Quarterly). These time periods are suggested in the program announcement and negotiated at the time of the award.

- Item 5 - Identify any special reporting requirements or instructions not identified in Item 4. (Use additional sheets as necessary.)
- Item 6 - Signature of person preparing the checklist and the date prepared. Preparation is by person responsible for program solicitation.
- Item 7 - Signature of the person reviewing the checklist and date reviewed.

1. DOE CONTRACT OR GRANT NUMBER _____
☐ New contract ☐ Continuation/Revision
2. BUDGET & REPORTING (B&R) CODE _____
3. PRINCIPAL INVESTIGATOR _____
 A. Last _____ First _____ MI _____
 B. Affiliation _____
 C. Address _____ Zip _____
 D. Phone: Commercial _____ FAX _____
 E. E-mail Address _____
4. DOE SPONSORING OFFICE (e.g., ER-34) _____
5. PROJECT TITLE _____
6. PROJECT DESCRIPTION _____
7. ASSOCIATED REFERENCE NUMBER _____
8. OUT YEAR COST ESTIMATE (in whole dollars) _____
9. NON-DOE CONTRIBUTION (percentage whole number) _____
10. PUBLICATION _____
11. DATE _____

INSTRUCTIONS NOTICE OF ENERGY RD&D PROJECT

Notice

Complete all data elements on this form and send to the U.S. Department of Energy, Office of Scientific and Technical Information, Post Office Box 62, Oak Ridge, TN 37831. The information provided is used to report ongoing DOE-sponsored research to the DOE, U.S. Government, and public sectors.

1. **DOE CONTRACT OR GRANT NUMBER.** The DOE Contract or Grant number under which the work is being performed. Check the correct block for new contract or continuation/revision of a prior contract.
2. **BUDGET & REPORTING (B&R) CODE.** Alphanumeric code(s) which is used for tracking costs.
3. **PRINCIPAL INVESTIGATOR.**
 - A. Name of person chiefly responsible for the performance of the project.
 - B. Provide a company or institution name of the organization performing the work.
 - C. Provide the street address and zip code.
 - D. Give telephone number, including area code, and if you have a FAX number, please include it.
 - E. If you have an Internet electronic mail address, please include it.
4. **DOE SPONSORING OFFICE.** List the DOE organization that is funding the work. (Example: ER-34)
5. **PROJECT TITLE.** Be as specific as possible. Use words that are descriptive of the work done.
6. **PROJECT DESCRIPTION.** Include objectives, approach, and expected results. Quantify where possible.
7. **ASSOCIATED REFERENCE NUMBER.** Provide other related numbers, if any, pertaining to the project.
8. **OUT YEAR COST ESTIMATE.** Provide next Fiscal Year estimated costs for the project and out year requests in whole dollars; Example: FYXXXX-50000.
9. **NON-DOE CONTRIBUTION.** Provide non-DOE cost share amount over the life of the project as a percentage whole number.
10. **PUBLICATIONS.** Provide citations to published articles, if any, about the project.
11. **DATE.** Record the date this form was completed or updated.

OMB Disclosure Statement

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Office of Information Resources Management Policy, Plans, and Oversight, HR-422 - GTN, Paperwork Reduction Project, (1910-1400), U.S. Department of Energy, 1000 Independence Avenue) S.W., Washington, DC 20585; and to the Office of Management and Budget (OMB), Paperwork Reduction Project, (1910-1400), Washington DC 20503.

NOTICES AND RESTRICTIVE LEGENDS

Before an STI product is released for announcement and availability, it is marked with any appropriate notices, restrictive legends, and distribution statements. Selection of the necessary markings is based on the DOE or contractor review of the STI, as described in Part II, Section 3.0. The various types of markings follow.

1.0 NOTICES [pertaining to availability of information]

Applied Technology Correspondence Notice

The attachment contains applied technology information requiring conformance to U.S. Department of Energy program policy and the Applied Technology legend.

Copyright License

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Thesis (or Dissertation)

This document was prepared in partial fulfillment of the requirements for a Master of Science degree in Chemical Engineering from the University of Washington, Seattle, Washington. (fill in appropriate information)

UCNI Correspondence Notice

Not for Public Dissemination. The document transmitted herewith contains unclassified controlled nuclear information (UCNI). The bearer shall maintain physical control of the document or material while in use in a manner that prevents its unauthorized access. When not in use, any document or material marked as "contains UCNI" shall be stored in a locked drawer of a desk or repository or in a locked room. Further reproduction of the document or information to authorized individuals shall be permitted only to the extent necessary to carry out official duties. Any reproduced copies must bear all protection notices shown on the original.

2.0 DEFINITIONS AND RESTRICTIVE LEGENDS [limits the use of information]

Applied Technology

Applied Technology Information is 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.”

Applied Technology Information initially shall be given controlled distribution 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.

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 engineering, design, construction, or operation of particular projects requiring major funding. Base technology is unlimited information and is not subject to distribution controls.

Products containing information designated as Applied Technology shall clearly display the Applied Technology Restrictive Legend noted below and shall be prominently marked with Distribution Statement F.

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.

- 1.01 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.”
- 1.02 For information emanating from the Reactor Deployment Program, the label should read, “Associate Deputy Assistant Secretary for Reactor Deployment.”
- 1.03 For information emanating from the Space and Defense Power Systems Program, the label should read, “Deputy Assistant Secretary for Space and Defense Power Systems.”

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

Classified Scientific and Technical Information Products

The Atomic Energy Act of 1954, as amended, and Executive Order 12958 serve as the basis for identifying classified information generated by the Department. 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).

Procedures for the proper identification of classified information and subsequent marking of classified information products can be found in DOE M 475.1-1, "*Identifying Classified Information*." An unclassified title and subtitle should be used if the subject matter can be indicated clearly. The classification level and category, including "unclassified," must be indicated on all titles and abstracts to classified products, in accordance with DOE M 475.1-1. Classified STI products generated within DOE should be clearly and prominently provided with an appropriate distribution limitation statement to ensure that recipients will subsequently handle the STI product appropriately (see also Attachment 8).

- Secret/Restricted Data Sigma 1, 2, 11, 12, and 13 products, use distribution statement H.
- Confidential/Restricted Data Sigma 1, 2, and 11 and all other non-Sigma Restricted Data products, use distribution statement G.
- Non-weapon data Formerly Restricted Data and National Security Information products, use distribution statement F.

Classified STI products transmitted to OSTI are to be properly marked with the appropriate announcement and/or access limitations on the accompanying DOE F 241.1. The approved format for classified nuclear weapons information exchange with OSTI can be accessed via the Nuclear Weapons Information Group (NWIG) Internet home page.

Copyrighted Material

Material that is copyrighted may be subject to restrictions on—

1. reproduction (copying, either in paper or electronically);
2. distribution, by sale or otherwise, in paper or electronically;
3. the preparation of derivative works, including translations;
4. public display of the material; and
5. public performance of the material.

As described in Part II, Section 5.3.5, the originating site of the STI product needs to contact any copyright holders of earlier works that have been incorporated into the present material, to get permission to engage in any of the above five practices. If the use of the earlier works would be

exempted by the fair use provisions of the copyright law, then no permission from the copyright holder would be required.

If necessary permission is granted, OSTI needs to know whether the permission is for unlimited use, covers all possibilities, or whether it is limited. An example of limited use would be a situation where the copyright holder will allow distribution and reproduction, but only for paper copies, not electronic distribution. Any restrictions on the above-listed five restrictions should be described on DOE F 241.1.

If the U.S. Government has been granted authority to reproduce, sell, distribute, or otherwise make the STI product available by virtue of contract language or otherwise, the following statement must appear on the cover or title page:

The U.S. Government is authorized to reproduce, sell, distribute, or otherwise make available this copyrighted work. Permission for further exercise by the recipient of any of the exclusive rights mentioned in 17 U.S.C. 106 must be obtained from the copyright owner.

A translation of a copyrighted work is itself a derivative work, and permission from the copyright owner of the original work must be secured before the translation is done and the translation is sent to OSTI.

Translations made from text published in a country signatory to the Geneva Copyright Convention must contain a signed statement, either:

The U.S. Government has been authorized to reproduce, distribute, and sell this copyrighted work. Permission for further reproduction or distribution must be obtained from the copyright owner.

or

The original text is not copyrighted.

Declassified STI Products

Classified information products that have been declassified must also be reviewed by the originating site for unclassified but sensitive information. DOE M 475.1-1, *Identifying Classified Information*, requires organizations to submit bibliographic information and availability information to OSTI for every document that is declassified and determined to be publicly releasable.

To allow access to the widest audience possible, OSTI would like to receive a classification change notice whenever a classified STI product held by OSTI 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 STI product, including the basis for further control. If OSTI has never received the original product, a copy of the declassified document is requested, along with the authorization for public release or control.

Export Controlled Information

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

- The *Nuclear Nonproliferation Act of 1978*
- The *Atomic Energy Act of 1954*, as amended, and its implementation by *Export and Import of Nuclear Material*, Title 10, Code of Federal Regulations, Part 110, and *Assistance to Foreign Atomic Energy Activities*, Title 10, Code of Federal Regulations, Part 810
- The *Export Administration Act of 1979* and its implementation by the *Export Administration Regulations*, Title 15, Code of Federal Regulations, Parts 730-799
- The *Arms Export Control Act* and its implementation by the *International Traffic in Arms Regulations*, Title 22, Code of Federal Regulations, Parts 120-128.

Export Controlled Information shall be clearly identified to ensure appropriate handling of such information by potential recipients. Information designated as Export Controlled Information is given controlled distribution to prevent unauthorized release to foreign countries, organizations, or individuals.

Such information to be released shall be clearly marked in accordance with the following requirements.

- Markings to be affixed to technical information determined to be ECI may vary depending on the needs and preferences of site or program managers. The preferred format is the Export Controlled Information Restrictive Legend noted below.

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

- Products containing Export Controlled Information shall be clearly marked "EXPORT CONTROLLED INFORMATION" at the top and bottom of each page containing ECI.
- Products containing Export Controlled Information shall be clearly marked with Distribution Statement D.

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.

Official Use Only Information

For guidance concerning Official Use Only Information, 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. Products identified as containing Official Use Only Information shall be clearly marked with Distribution Statement C.

Patent Caution

Federal contractors must safeguard information that discloses any invention when patent rights in the invention will belong to the Federal Government. 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 so that a patent application can be filed.

Products containing potentially patentable information shall clearly display the Patent Caution Restrictive Legend below; the document shall be clearly and prominently marked with Distribution Statement B.

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.

Proprietary Data

Proprietary data that arise from DOE financial assistance agreements are controlled in accordance with Title 48, Code of Federal Regulations, Part 952.227, *Printing*, and Title 5, U.S. Code 552, *Freedom of Information Act of 1974*. Proprietary data that arise from DOE contracts involving "limited rights data" or "restricted computer software" are defined and controlled in accordance with FAR 52.227-14 and Title 5, U.S. Code 552, *Freedom of Information Act of 1974*.

Products containing proprietary data arising from DOE contracts or financial assistance agreements shall clearly display the Proprietary Data Restrictive Legend noted below; the document shall be clearly and prominently marked with Distribution Statement B. The restrictive marking, "PROPRIETARY INFORMATION" shall be placed at the top and bottom of each page containing proprietary information.

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.

Proprietary data shall not be included in any abstract prepared and submitted before the information is announced for availability; the abstract shall be suitable for publication.

Protected Battery Information

Per Public Law 102-381, Title II, 106 Stat. 1405, products containing Protected Battery Information shall be clearly marked with the Protected Battery Information Restrictive Legend below to prevent disclosure of such information; products so identified shall be clearly and prominently marked with Distribution Statement E.

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].

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.

Products that contain information that is protectable under the terms of a CRADA shall clearly display the Protected CRADA Information Restrictive Legend noted below to prevent disclosure of such information; the document shall be clearly and prominently marked with Distribution Statement E.

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.

Proprietary data or Protected CRADA data shall not be included in any abstract prepared and submitted before the information is announced for availability; the abstract shall be suitable for publication.

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

In accordance with implementing regulations, SBIR and STTR may be protected for a period of 2 years from the completion of the project, unless written permission to disclose such data earlier is obtained from the contractor or grantee.

The SBIR or STTR products shall be clearly marked as containing SBIR or STTR proprietary information; the document shall be clearly and prominently marked with Distribution Statement B.

Unclassified Controlled Nuclear Information

Dissemination of Unclassified Controlled Nuclear Information (UCNI) is prohibited under Section 148 of the *Atomic Energy Act of 1954*, as amended. UCNI is identified and controlled as directed in DOE Order 471.1, *Identification and Protection of Unclassified Controlled Nuclear Information*, and in Title 10, Code of Federal Regulations, Part 1017, *Identification and Protection of Unclassified Controlled Nuclear Information*.

Products containing information designated as UCNI shall clearly display the markings prescribed in DOE Order 471.1, *Identification and Protection of Unclassified Controlled Nuclear Information*; the document shall be clearly and prominently marked with Distribution Statement D. The marking, "Unclassified Controlled Nuclear Information" or "UCNI" shall be placed on the bottom of the front of the matter and (1) on the bottom of each interior page of the matter or (2) if more convenient, on the bottom of only those interior pages that contain UCNI.

Any information product "that contains UCNI shall be marked so that both a person in physical possession of the matter (e.g., markings on a viewgraph frame, a film reel and its container) and a person with access to the information in or on the matter (e.g., markings on the projected image of a slide, a warning on a film leader) are made aware that it contains UCNI. When space is limited, as on a 35 millimeter slide, the marking, 'UCNI,' will suffice" (from DOE Order 471.1).

A non-UCNI title and subtitle shall be used for an UCNI information product whenever possible. The title shall indicate whether the title does or does not contain UCNI.

DISTRIBUTION STATEMENTS

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. Applicable information categories are noted in parentheses. See Attachment 7 for further guidance on these categories.

A	Approved for public release; further dissemination unlimited. (Unclassified 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); requestor 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)

Distribution Statement	Applicable Information Category
A	Unclassified 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 Sigma 1, 2, 11, 12, 13

DISCLAIMERS

Text of Full Legal Disclaimer:

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Text of Trademark Disclaimer:

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 or its contractors or subcontractors.

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Available to the public from—

*U.S. Department of Commerce
National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(703) 487-4650*

Text of OSTI Availability:

Available electronically at <http://www.doe.gov/bridge>. Available to U.S. Department of Energy and its contractors in paper from—

*U.S. Department of Energy
Office of Scientific and Technical Information
P.O. Box 62
Oak Ridge, TN 37831
(423) 576-8401*

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TYPICAL COVER FOR SEMI-ANNUAL, ANNUAL, FINAL, TOPICAL REPORTS

	Preferred Location
DOE STI Product/Report Number	DOE/FE/12345--1
STI Product Title	FEASIBILITY STUDY FOR ADVANCED TECHNOLOGY IN COAL CONVERSION AND UTILIZATION Phase 1
STI Product Type and Reporting Period	Semi-Annual Report for the Period July-December 1998
Date of Publication	Date Published-- February 1999
Author	John G. Jones
Originating Research Org.	FOSSIL SCIENCES, INC. Waco, Texas 78203
Distribution Statement	Distribution B - Further dissemination authorized to U.S. Government agencies only; other requests shall be approved by the originating facility or higher DOE programmatic authority.

**TYPICAL TITLE PAGE FOR SEMI-ANNUAL, ANNUAL,
FINAL, TOPICAL REPORTS**

DOE STI Product/Report
Number

DOE/FE/12345- -1

STI Product Title

FEASIBILITY STUDY FOR ADVANCED
TECHNOLOGY IN COAL CONVERSION AND
UTILIZATION
Phase 1

STI Product Type and
Reporting Period

Semi-Annual Report for the Period July-December 1998

Date of Publication

Date Published– February 1999

Author

John G. Jones

Sponsoring Organization

PREPARED FOR THE UNITED STATES
DEPARTMENT OF ENERGY/OFFICE OF FOSSIL
ENERGY

Award/Contract/Financial
Number

Work Performed Under Contract No. AC02-98FE12345

ESTSC F 1
(11/94)

Energy Science and Technology Software Center
Software Submittal Form
(See Instructions on Reverse Side)
(Please Print or Type)

Required Submittal Package Contents

- One complete set of the computer media
- Software Submittal Form (This form)
- Abstracts (See Abstract Format Description for content)
- Computer Media Profile (ESTSC F 2)
- Two copies of each printed document provided
- A listing of printed documents provided
- Directory of Computer Media provided

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 collection as indicated below.
- ☐ Different Computer Version ☐ Major Revision ☐ Minor Modification ☐ Replacement
- ☐ c. This is additional material for a previously submitted software package.

If type b or c is indicated above, please provide ESTSC/NESC or other software ID Number _____

2. Applicable Access Controls/(DOE software)

☐ Yes ("X" all that apply.) ☐ No

If No is indicated above, unlimited distribution may be made.

- ☐ Copyright Release ☐ SBIR ☐ Patent Hold ☐ ECI/ITAR/EAR (Complete Section 3 below)
- ☐ CRADA ☐ Proprietary ☐ UCNI (Complete Section 3 below) ☐ Other (Explain): _____

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

- ☐ DOE offices only ☐ DOE office and DOE contractors ☐ DOE offices and major contractors
- ☐ Federal agencies ☐ Federal agencies and their contractors ☐ Government agencies only
- ☐ Government agency contractors ☐ Other (Specify) _____

4. Sponsoring Organization

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

DOE Contract Number : _____

NRC Contract Number : _____

5. Technical Contact

Name : _____

Telephone: (____) _____ - _____

6. Submitted By

Name : _____ Title: _____

Organization: _____

Address: _____

City: _____ State _____ Country _____ Zip _____

Telephone: (____) _____ - _____ Fax: (____) _____ - _____ Internet: _____

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Submitter's Signature: _____ Date Submitted: ____/____/____

Software Acronym (as indicated on the Abstract Format Description): _____

Software Package Number: _____
(Assigned by ESTSC)

ESTSC F 1 (11/94)

SOFTWARE SUBMITTAL FORM

WHO USES THIS FORM

All DOE and NRC offices and contractors.

WHEN TO USE THIS FORM

Include one copy of this completed form with each software package submitted to the Energy Science and Technology Software Center (ESTSC) in accordance with established DOE Orders. Additional information concerning preparation can be found in DOE G 1430.1D-1. Questions may be referred to ESTSC at (423) 576-2606, Fax (423) 576-6436, and/or Internet: ESTSC@CCMAIL.OSTI.GOV.

WHERE TO SEND

Forward the complete software package to:

ESTSC
P.O. Box 1020
Oak Ridge, TN 37831-1020

OR

Federal Express
ESTSC
175 Oak Ridge Turnpike
Oak Ridge, TN 37831

ITEM INSTRUCTIONS

1. **Type of Submittal:** Mark the appropriate type of software being submitted. A complete package should be submitted for each total replacement, revision, or different version (e.g. IBM3033 vs. VAX). If additional material not included in the original submittal package is being sent, the complete package is not required. Provided the ESTSC or other software identification number if this submittal is a revision, replacement, or different version of a previously submitted software package.
2. **Applicable Access Controls:** DOE is obligated to make available the results of its federally funded R&D to the widest extent possible. If YES is selected and applies to one or more of the designations listed, dissemination of the software will be controlled in accordance with existing laws and DOE policies. The designations are explained more thoroughly in DOE Orders.

DO NOT INCLUDE SENSITIVE INFORMATION IN THE ABSTRACT FORMAT DESCRIPTION

Copyright Release: ESTSC is authorized in major contractor data clauses to disseminate copyrighted works developed under DOE funding to Government agencies and their contractors for Government purposes; the copyright holder will disseminate to other requesters.

CRADA: Cooperative Research and Development Agreement.

SBIR: Small Business Innovation Research information protected for delayed release.

Proprietary: Proprietary data not for public disclosure.

Patent Hold: Information withheld pending patent clearance.

UCNI: May or does contain Unclassified Controlled Nuclear Information as defined in Section 148 of the Atomic Energy Act

ECI/TAR/EAR: Export Control Information, International Traffic and Arms Regulations, Export Administration Regulations, and Nuclear Non-Proliferation Act. Violations Non-Proliferation of these laws are subject to severe penalties.

Other: Other special types of information for which access is defined by written DOE or NRC Program Office guidance.

3. **Appropriate Audience:** If UCNI or ECI designations apply: select the most appropriate and widest availability for the software package in accordance with DOE Orders 5635.4 and 5650.3 and the established guidelines above. The term "government" applies to federal, state, and local offices.
4. **Sponsoring Organization:** Provide the name of the organization sponsoring the development of the submittal package. If the work was DOE-funded, provide the DOE program office and contract number.
5. **Technical Contact:** Provide name and telephone number for person who is able to answer technical questions during compiling/testing of the submitted package. If the technical contact is the same as the submitter, please indicate.
6. **Submitted By:** Provide complete information and signature as requested.

ESTSC F 2
(11/97)

Energy Science and Technology Software Center
Computer Media Profile
(Please Print or Type)

Software Acronym _____ **Date** _____

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"/> Sample Problem Input Data | <input type="checkbox"/> Sample Problem Output Data |
| <input type="checkbox"/> Text Library | <input type="checkbox"/> Auxiliary Material | <input type="checkbox"/> Control Information | <input type="checkbox"/> Programmer Documentation |
| <input type="checkbox"/> Object Library | <input type="checkbox"/> Compilation Instructions | <input type="checkbox"/> Program Flow Diagram | <input type="checkbox"/> Installation Instructions |
| <input type="checkbox"/> User Guide | <input type="checkbox"/> Linking Instructions | <input type="checkbox"/> Program Flow Data | <input type="checkbox"/> Other (Explain) |

Identify tool used to produce text file: _____

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

Diskette(s)

Number of Diskettes: _____

Type: ☐ IBM PC ☐ UNIX Workstation (TAR Format) ☐ MacIntosh Computer

Diskette Capacity: _____ (Example 1.44MB)

Electronic Transfer

Call 423/576-2606 or E-mail to ESTSC@adonis.osti.gov for transfer information.

8MM Cassette Tape(s)

Number of Cassettes: _____

Tape Capacity: _____ (Example 1.3GB 2.3GB 10GB)

Format: ☐ ASCII/ANSI ☐ UNIX TAR ☐ VAX VMS Back-up

Compact Disk (CD)

Number of CDs: _____

CD Capacity: _____ (Example 650MB)

4MM Cassette Tape(s)

Number of Tapes: _____

Tape Capacity: _____ (Example 1.3GB 2.3GB 10GB)

Format: ☐ ASCII/ANSI ☐ UNIX TAR ☐ VAX VMS Back-up

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

Number of Tapes: _____

Tape Capacity: _____ (Example 150 MB)

Format: ☐ ASCII/ANSI ☐ UNIX TAR ☐ VAX VMS Back-up

Software Package Number: _____ (Assigned by ESTSC)

Abstract Format Description

(Character limit for any one field: 2,000; Character limit for all information: 9,000)
Text only, no diagrams or flowcharts

Due to the differences 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. The person assembling the submittal package should create the Abstract document using a text editor. Please note that each of the listed data elements is REQUIRED, and a response for each data element MUST be included in the completed Abstract document.

1. **Identification.** Provide the following two fields to be used to uniquely identify the software. The software acronym plus the short or KWIC (keywords in context) title will be combined to identify the software.
Software Acronym (limit 20 characters). 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.
Short or KWIC title (limit 80 characters). This title should tell something of the nature of the code system; e.g., calculational 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."
2. **Author Name(s) and Affiliations.** List 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 application 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 operating 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 programming language(s) in which the software is written along with the approximate percentage (in parenthesis) of each used. For example, FORTRAN IV (95%); Assembler (5%).
9. **Software Limitations.** Provide a short paragraph on any restrictions implied by storage allocation (such as the maximum number of energy groups and mesh points) as well as those due to approximations used (such as implied argument-range limitations). Also to be used to indicate the maximum numbers of users, 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.** Indicate file naming conventions used; e.g., filename.DOC (DOC is a filename extension normally used to indicate a documentation file), additional subroutines, function libraries, installation support software, or special routines required for operation of this package other than the operating system and programming language requirements listed in other fields. Proprietary software required should also be indicated.
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 into two groupings: (a) reference documents provided with the submittal package; and (b) additional background reference materials generally available.

EXPANDED ABSTRACT CRITERIA¹

For copyrighted software, an expanded abstract shall be submitted to the ESTSC as required by the Rights In Technical Data clause in the governing DOE contract. All other guidance remains the same as specified in Section III of the Implementation Guide.

The expanded abstract contains all the elements as the Abstract Format Description, Attachment III, with the following changes.

Expanded abstract descriptions for at least the following items should be provided along with the other submittal items. The expanded abstract should be prepared for public announcement. The abstract items (as a minimum) needing additional description include:

Item 4. Description of Problem or Function. Further describe the problem solved, including input and output required.

Item 5. Method of Solution. Further describe mathematical models used and the computational algorithms and techniques employed.

Item 7. Operating System. Further describe the operating system under which the software will run. Indicate specific requirements if operating system has been modified or customized.

Item 12. Operating Information. Generally describe the software's capabilities and how the user can access and utilize them; data available in the package; how data are represented and structured; organization of the software; and error checking and messages.

Item 13. Hardware Requirements. Describe the hardware computing environment under which this software is designed to run, including processor, memory, storage, and time requirements, if applicable.

¹

Changes indicated in italics.

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(8/94)

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Package Name: _____ Package ID: _____
Restrictions: _____ Quote ID: _____
Authorized to accept and accepted for the licensee:
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(Type or Print)
Phone No: _____
Licensee: _____
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Address: _____
City: _____ State: _____ Zip Code: _____
Signature: _____ Date: _____
(Sign)

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ESTSC F 11
(4/94)

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