TECHNICAL STANDARDS PROGRAM GUIDE

ASSISTANT SECRETARY FOR
ENVIRONMENT, SAFETY, AND HEALTH

FOREWORD

This Department of Energy (DOE) Program Guide is approved for use by the Office of Environment, Safety and Health (EH), Office of Nuclear Safety Policy and Standards, and is available to all DOE elements and their contractors.

Comments (recommendations, additions, deletions, and any pertinent data) for improving this document should be sent to the following address:

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DOE Guides are part of the DOE Directives System and are issued to provide non-mandatory, supplemental information about acceptable methods for implementing requirements, lessons learned, suggested practices, instructions, and suggested performance measures. Guides do not impose requirements, nor are they used in place of technical standards.

This Guide provides information about the DOE Technical Standards Program (TSP) processes and services you can use to conduct technical standards activities for your organization. The Guide also describes the routine practices and instructions used in the day-to-day operations of the TSP, and can be used to help you find DOE and contractor personnel who can assist you. The Guide cites standards, references, and resources you can use to support your efforts.

The major chapters in this Guide describe the TSP program and how it is managed, and provide "how to" sections that correspond to the TSP procedures used to conduct specific TSP activities. The activities discussed include determining the need for technical standards, searching for suitable existing technical standards, and developing, approving, and maintaining technical standards. The Guide also contains information about working with others who have similar interests in technical standards within DOE, as well as in standards development organizations, industry, and other Federal agencies. This Guide does not document a new program—the TSP described here has been in existence for the past several years.

ACRONYMS

ANSI	American National Standards Institute
DNFSB	Defense Nuclear Facilities Safety Board
DOE	Department of Energy
DOE-HDBK	DOE Handbook
DOE-SPEC	DOE Specification
DOE-STD	DOE Standard
DOE-TSL	DOE Technical Standards List
EH	Office of Environment, Safety and Health
ES&H	Environment, Safety and Health
NIST	National Institute of Standards and Technology
NGS	Non-Government Standard
NGSB	Non-Government Standards Body
NSSN	National Standards System Network
NTTAA	National Technology Transfer and Advancement Act
OMB	Office of Management and Budget
PA	Preparing Activity
PDF	Portable Document Format
PL	Public Law
RA	Reviewing Activity
SDO	Standards Development Organization
S/RIDs	Standards/Requirements Identification Documents
TSIS	Technical Standards Information System
TSM	Technical Standards Manager
TSMC	Technical Standards Managers Committee
TSP	Technical Standards Program
TSPP	Technical Standards Program Procedures
TSPO	Technical Standards Program Office
URL	Uniform Resource Locator
VCS	Voluntary Consensus Standard
WSS	Work Smart Standards

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CHAPTER I
INTRODUCTION TO THE DOE TECHNICAL STANDARDS PROGRAM

1. **WHAT IS THE PURPOSE OF THIS GUIDE?**

This Guide describes Technical Standards Program (TSP) management systems and procedures that help the Department of Energy (DOE) comply with Federal law and Federal and DOE policy, which are implemented through requirements in DOE Order 252.1 (DOE O 252.1), TECHNICAL STANDARDS PROGRAM. It also outlines how TSP day-to-day activities involving technical standards are conducted in support of DOE.

Chapter I of the Guide provides general information about the TSP and discusses why we have this program.

Chapter II provides information on TSP organization, management, resources, "drivers" and requirements, and program structure.

Chapter III refers you to TSP processes, procedures, services, references, and other resources that you and your organization's Technical Standards Manager (TSM) can use to conduct activities related to technical standards, such as–

a.   identifying existing voluntary, Government, and DOE Technical Standards for use in DOE programs and activities;

b.   screening proposed technical standards to determine if they are needed;

c.   developing, coordinating, approving, and issuing DOE Technical Standards;

d.   printing, distributing, and providing Internet access to DOE Technical Standards;

e.   converting, modifying, revising, canceling, and reaffirming DOE Technical Standards;

f.   participating with standards development organizations (SDO) on behalf of DOE and reporting such participation;

g.   ensuring that technical standards-type documents are developed within the TSP and that unauthorized documents are controlled;

h.   encouraging and supporting mission-related participation in DOE Technical Standards activities by organizations and individuals;

i.   supporting participation on topical committees by DOE's subject matter experts; and

j.   managing program information and databases.

Chapter III also provides information on documents, such as the *Technical Standards Program Procedures* (TSPP), and the documents listed below, which are unique to the TSP and are referred to collectively in this Guide as "DOE Technical Standards." (See Attachment I in Section IV, "Definitions and Terms," for definitions and descriptions of these terms.)

- DOE Standards (DOE-STDs)
- DOE Specifications (DOE-SPECs)
- DOE Handbooks (DOE-HDBKs)
- DOE Technical Standards Lists (DOE-TSLs)

Note that initial capitals are used with "Technical" and "Standards" when making reference to these specific types of DOE documents (i.e., DOE Technical Standards). Also note that the Guide frequently uses "technical standards" (in the lower case) as a generic term when making general references and not referring specifically to these terms.

Chapter III additionally includes information on how DOE organizations and individuals work with SDOs to develop voluntary consensus standards (VCSs), and how we structure and operate DOE's topical committees.

Chapter IV provides additional general information, definitions (some with acronyms) of the TSP's program-unique documents listed above, and definitions of key terms and other program-related terms. Many World Wide Web sites are also identified in Chapter IV, as well as in other chapters. This information is current as of the date of issuance for this Guide.

You can find all procedures and much of the information referenced in this Guide through the Environment, Safety and Health (ES&H) Portal's "Knowledge Management Tools," at **http://tis.eh.doe.gov/portal/**, or directly on the TSP Home Page located with the ES&H Technical Information Services server at the following URL: **http://tis.eh.doe.gov/techstds**

2.   **HOW DO THE TSP ORDER (DOE O 252.1) AND GUIDE (DOE G 252.1-1) SUPPORT DOE MANAGEMENT GOALS AND COMMITMENTS?**

The Order and Guide, implemented through the DOE TSP, provide the means for DOE to meet the following goals, commitments, and objectives:

a.   Provide the means and responsibilities for DOE to conform with the Federal requirements related to technical standards as established in Public Law (PL) 104-113 [the National Technology Transfer and Advancement Act of 1995, March 7, 1996 (also called the NTTAA)]. This codifies Federal technical standards policy contained in Office of Management and Budget Circular A-119 [(OMB A-119), *Federal Participation In the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, 2/10/98)]. **Note that source requirements and definitions**

iterated in PL 104-113 and OMB A-119 and pertinent to DOE are cited but not duplicated in DOE O 252.1 or DOE G 252.1-1.

b.   Establish the TSP as DOE's management system for conducting its internal technical standards activities, consistent with the Directives System (i.e., DOE P 251.1, DOE O 251.1A, and DOE M-251.1-1A), the Department Standards Program, the Integrated Safety Management System (DOE P 450.4), and commitments made in response to Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 91-1, "Strengthen Nuclear Safety Standards Program."

c.   Establish the formal and structured processes and procedures of the TSP as the means for initiating, screening, developing, coordinating, approving, and maintaining DOE Technical Standards, and for bringing unauthorized documents under the scrutiny of the Directives System to facilitate either their formal incorporation into the Directives System or TSP, or their removal from circulation as DOE-sponsored documents.

d.   Provide DOE interface with the Interagency Committee on Standards Policy, other Federal agencies, and national and international SDOs on broad technical standards issues and activities.

e.   Encourage and support the participation of DOE individuals and organizations with DOE topical committees and national and international standards development organizations in the development of voluntary consensus standards important to DOE interests, functions, and missions.

f.   Establish the TSP as a principal path for the transfer of DOE's new and emerging technologies to U.S. industries, and for making private sector technology available to DOE.

g.   Reorganize and reduce the number of requirements in the TSP by eliminating those requirements that are redundant with existing Public Law and Federal and DOE policy; converting existing requirements to an outcome-oriented format; consolidating essential requirements in a new format; moving many "how to" details from DOE 1300.2A to the program guide and TSP procedures; and revising and updating DOE organizations and responsibilities to reflect current DOE structure and functions.

3.   WHAT IS THE VALUE OF THE TSP TO DOE?

In addition to providing the means to comply with Public Law and Federal policy, the TSP provides the means for DOE organizations to develop technical standards they may need to use for their operations, facilities, contracts, standards/requirements identification documents (S/RIDs), work smart standards (WSS) sets, safety analyses, and other authorization and safety analysis documents. The "technical" in technical standards covers the full range of ES&H

activities, as well as those that are engineering/technical in nature. The TSP provides a means for DOE's organizations to develop their ES&H technologies, services, management systems, and products as technical standards and technical specifications. As a preferred first step, the TSP can also help organizations search for VCSs suitable for use in lieu of developing a DOE Technical Standard.

DOE needs its own technical standards development infrastructure, as provided by the TSP, to support the needs of unique DOE activities in areas such as environmental site remediation, mixed waste disposal, scientific research, nuclear energy, energy research, and weapons maintenance and dismantlement. We must often develop our own internal technical standards since suitable VCSs often do not exist or cannot be readily developed by an SDO to meet DOE mission milestones and schedules.

Virtually all major DOE organizations are routinely involved in technical standards activities and devote resources to these activities to meet their business needs. The lack of a DOE-wide TSP would necessitate that each DOE and contractor element develop and maintain individual programs or efforts to fulfill operational and technical needs. The existence of multiple programs can certainly result in diverse and sometimes incompatible processes for developing and approving technical standards within DOE. This can create the potential for developing technical standards that lack credibility and technical acceptance by oversight organizations, industry, SDOs, and other DOE organizations. Such proliferation, diversity, and inconsistency would also contribute to greatly increased management costs accompanied by decreased efficiency and effectiveness in the management and coordination of various DOE missions as well as technical standards activities. Other difficulties may result when a contractor uses inappropriately developed technical standards or when a DOE program office mandates their use.

Additionally, with technical standards activities and functions embedded among many physically separate and separately managed Federal and contractor organizations, DOE would still lack a central venue for assessing and verifying conformance with existing and newly formulated public law and Federal policy, reporting overall DOE activities in accordance with law and policy, and dealing with DOE-wide technical standards issues. The TSP provides a centralized, yet cross-cutting program that can efficiently manage these matters in a manner acceptable to and agreed upon by the entire Department.

The TSP's arrangement of topical committees also provides a venue for DOE's subject matter experts to communicate and coordinate technical standards activities independent of the organization of DOE's elements or the assignment of missions and functions. This provides a cost effective and easily coordinated way to maintain a pool of expertise across DOE and retain a DOE "corporate memory" for many of our technical areas.

4.   **WHAT DO WE MEAN BY "TECHNICAL STANDARDS" AND "VOLUNTARY CONSENSUS STANDARDS"?**

As defined in PL 104-113, technical standards are "performance-based or design-specific technical specifications and related management system practices" that are developed and adopted by voluntary consensus standards bodies. OMB A-119 expands the PL 104-113 definition of standards ("standards" is synonymous with "technical standards" in the OMB A-119 definitions) to include (1) common and repeated use of rules, conditions, guidelines, or characteristics for products or related processes and production methods, and related management systems practices; and (2) the definition of terms; classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services, or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength. [Note: The DOE definition of "standards" is even broader than the OMB definition (see Attachment 1); however, we use "VCS" and "DOE Technical Standard" throughout the Guide to avoid confusing the issue.]

DOE describes technical standards in a manner similar to OMB A-119; that is, as a prescribed set of criteria concerned with classification of components; delineation of procedures; specification of materials, products, performance, design, or operations; and definitions of terms or measurements of quality and quantity in describing materials, products, systems, services, or practices. It should be noted that the PL 104-113 definition is consistent with and inclusive of the TSP use and definition of technical standards.

The most common topics for DOE Technical Standards are related to nuclear technology and environment, safety, and health aspects of nuclear technology, such as design, construction, maintenance, operational standards, performance, management systems, component and facility classification, common practices, and technical specifications. Still others include decommissioning, information management, training, standardized procedures, project management, services, and product specifications.

Two categories of technical standards are used by DOE: non-Government standards (NGSs), which we will refer to as voluntary consensus standards, or sometimes "VCSs," throughout this Guide, and Government technical standards, which we interpret as Federal, agency, and military, but which can be extended to State and lower level entities. Government standards are generally those written and maintained by Government agencies like DOE and the Department of Defense.

<u>Voluntary consensus standards are technical standards</u> that are developed by experts recognized by national and international professional and technical societies, using a structured and formal consensus process,. Their technical adequacy is established through expert review and, in many cases, has been proven through years of use. These standards extend through technical, management, and procurement areas. Examples include standards developed by SDOs such as

the American Nuclear Society (ANS), the American Society of Mechanical Engineers (ASME), the American Society for Testing and Materials (ASTM), and the Institute of Electrical and Electronics Engineers (IEEE). Consistent with the policy in OMB A-119, voluntary consensus standards are the technical standards of choice for DOE facilities, projects, and programs.

You can find voluntary consensus standards at the following Internet locations:

- Technical Information Services, Commercial and Industry Standards, at **http://tis-nt.eh.doe.gov/standards** (for DOE HQ Federal use only)

- NSSN: A National Resource for Global Standards at **http://www.nssn.org/**

- DOE Home Page, Technical Standards Organizations, Standards Links, at **http://tis.eh.doe.gov/techstds/**

5. WHAT ARE PROCEDURES, AND HOW ARE THEY RELATED TO THE TSP AND THE DIRECTIVES SYSTEM?

Procedures are not treated as a formal part of either the DOE Directives System or the TSP. However, they are very important to operations in DOE. This section provides information on how procedures are used and how and why they are different from DOE Guides and DOE Technical Standards.

Procedures are a primary means to enable "workers" to perform work safely and effectively. Procedures prescribe how an organization performs the specific tasks of its business. They can also represent how, in part, organizations document compliance with externally and internally imposed requirements; how management's philosophy and commitments are codified and communicated; and how productivity, safety, and quality of operations are ensured. Procedures are developed for internal use by a single organization (or program or function), using "local" internal processes. In contrast, directives are developed to apply requirements, guidance, and standards to multiple DOE organizations (both Federal and contractor), using DOE-wide approved processes that include the Directives System and the TSP.

Procedures translate into action technical, management control, and ES&H requirements that apply to facilities, equipment, or people. Procedures also incorporate and reflect the results and findings of task analyses (job task analyses), reflecting efficiencies, safety needs, and human factors. They are designed so that work can be done in a consistent and safe manner (not as impediments to work!). Where risks or hazards are significant, as in some nuclear operations, users are expected to follow very detailed and prescriptive procedures absolutely. Therefore, procedure writers are obligated to ensure that users can complete the specific process safely and efficiently without difficulty and without undue reliance on other procedures and documents. In other cases, where there are few or no risks or hazards, less detail with more range of choice, perhaps coupled with "skill of the craft," may be appropriate. In all cases, it is procedures management that is critical to working safely and efficiently and managing risk.

a.   **What kinds of things do procedures address?**

Procedures provide levels of detail not usually found in Directives and technical standards. Procedures often address the following:

- What materials, equipment and facilities are to be used?
- What tasks are to be accomplished?
- What hazards are involved with the tasks?
- Why must the tasks be accomplished?
- What are the risks?
- What requirements are to be met?
- Who, other than the user, must be involved?
- When are the tasks to be accomplished?
- Where are the tasks to be accomplished?
- How are the tasks to be performed?

b.   **How do procedures differ from technical standards?**

Procedures generally apply to a specific task or activity for a particular site, facility, or program. They provide a level of detail that supports the actual performance of work (tasks). They provide the means for an organization, program, or contractor to conduct business, perform work safely and effectively, and meet requirements when necessary at the working level. Procedures are not a formal part of the DOE Directives System. They are managed and developed "locally," usually by a Federal or contractor user's group for use with a specific program, task, or activity. They can be changed, usually through local change control procedures, to suit the needs of business and to match available resources and technology. "Procedures" intended for broad use, standardization purposes, or for conformance with requirements at more than one DOE facility or site would best be processed through the TSP as a DOE Standard. Procedures are an intrinsic component of the effective management of a facility, site, or program.

Technical standards are usually more general than procedures and are used to standardize processes or activities for several sites, facilities, or programs (see the discussion in Section 4 above, and the definitions in Chapter IV). DOE Technical Standards are a part of the DOE Directives System. They are developed and approved through a DOE-wide process (the TSP) for broad application across DOE. DOE Technical Standards can only be changed through designated TSP processes, such as full coordination, change notices, and reaffirmation.

The proposed conversion of approved DOE Technical Standards to procedures (e.g., a DOE Handbook to an operating procedure for a Headquarters program) or from procedures to DOE Technical Standard is subject to coordination, review, and comment under the TSP.

Technical standards often serve as the "source documents" for preparing (i.e., developing and writing) procedures. For instance, the ANS N 323 standard for calibration of radiation protection instruments is used widely in industry and DOE to write calibration procedures for "local" use.

c. Where can I find more information?

There are many voluntary consensus standards on the topic of procedures, and you can find them through a commercial standards service, or the National Standards System Network (NSSN), sponsored by the American National Standards Institute (ANSI). DOE has some procedures documents in the development stage that may be available at some DOE sites. These, and commercial standards sites, are listed below:

(1) DOE-STD-1029-92(CH-1), *Writer's Guide for Technical Procedures,* December 1998;

(2) HFAC-0007, *Principles for Excellence in Procedure Writing*, Project Discontinued 1/31/97, draft (not posted with TSP)

(3) HFAC-0010, *The Basics of Procedure Writing*/*Principles for Excellence in Procedure*s *Systems*, Project Discontinued 2/20/97, draft (not posted with TSP)

(4) Technical Information Services, Commercial and Industry Standards, at **http://tis-nt.eh.doe.gov/standards/** (for DOE HQ Federal use only)

(5) NSSN: A National Resource for Global Standards at **http://www.nssn.org/**

(6) DOE Home Page, Technical Standards Organizations, Standards Links, at **http://tis.eh.doe.gov/techstds/**

6. DOES TSP GUIDANCE APPLY TO BOTH FEDERAL AND CONTRACTOR ORGANIZATIONS AND ACTIVITIES?

Yes, this Guide applies to all technical standards activities carried out on behalf of DOE or in support of DOE missions and functions (See DOE O 252.1). The TSP reflects PL 104-113 and OMB A-119 requirements that are mandatory for DOE's Federal technical standards activities. Further, the TSP and the Guide apply to DOE contractors, where their technical standards activities are conducted on behalf of DOE.

a.   **Are there circumstances where it might not be necessary for contractors to operate under the TSP?**

Yes, the TSP (and Guide) may not apply to DOE contractors' internal standards development processes, particularly where these purely serve contractor needs or are independent of DOE missions and functions. TSP processes are used to support technical standards affecting more than one DOE organization and (usually) implementing DOE requirements or commitments. TSP processes are not used in lieu of internal corporate standards development processes used to directly manage work (e.g., engineering guides), particularly if they are not related to requirements implementation. It is also recognized that some technical standards activities with SDOs are conducted solely on behalf of contractor organizations. Yet others are conducted solely on behalf of individuals, and not related to their employment by DOE or contractor support to DOE. Where participation with SDOs does not involve expenditure of DOE resources (time, money, effort), they are not covered by this Guide.

Remember, if you are a contractor developing procedures or guidance for your specific facility or operation, these are not "DOE-wide" applications, so you don't process them under the TSP. If you need a technical standard for a particular technical area, however, first try to find a VCS or other existing and acceptable technical standard that is suitable to your needs before trying to develop a new company standard or trying to develop a new DOE Technical Standard. Whichever DOE Technical Standards or VCSs you use probably need to be compatible with your safety documentation and safety commitments from S/RIDs, WSS sets, safety analysis reports, safety evaluation reports, or other operating basis documentation.

b.   **Why do we need a common technical standards process for DOE and its contractors?**

The intent of the TSP in standards development is to ensure that all DOE Technical Standards are technically valid and acceptable to the community of subject matter experts, and programmatically acceptable to DOE and the contractor managers who use them. This is ensured by developing them through a DOE-approved process. Procedures ensure that openness, balance of interest, and due process are an integral part of the standards development process, and DOE-wide coordination is the rule. DOE Directives and standards policy require the participation of all key stakeholders in technical standards development. It is not acceptable for individual DOE organizations to develop and impose standards that receive only very limited participation or outside technical review from other Federal and contractor organizations.

    c.   **Are there problems with developing standards for DOE without using the TSP?**

Yes, nominal "technical standards" developed outside of approved DOE TSP processes (often called "rogue standards") may present inherent technical and legal vulnerabilities for their sponsors and users. Nuclear safety standards may be subject to challenge from the DNSFB and intervention under the Price-Anderson Act if technical inadequacies create safety problems. It is important that all DOE standards be subject to broad technical and programmatic review to help ensure that they do not lack essential safety elements, they appropriately address risk, they are cost-effective, and they are useable.

[Note: Some documents that are developed under DOE's technical documents system and intended as technical or analytical data are also sometimes mistakenly construed as technical standards. The criteria for technical documents are outlined in DOE 1340.1B, MANAGEMENT OF PUBLIC COMMUNICATIONS PUBLICATIONS AND SCIENTIFIC, TECHNICAL, AND ENGINEERING PUBLICATIONS (1/7/93), and exclude Directives System requirements and guidance.]

7.   **WHAT ARE SOME OF THE WAYS TECHNICAL STANDARDS ARE USED IN DOE?**

Technical standards are used in a variety of ways within DOE, whether they originate from SDOs or from the DOE TSP. They are used by DOE organizations in their operations, facilities, contracts, procurements, S/RIDs, WSS sets, safety analyses, and other authorization basis and ES&H evaluation documents. (See Chapter IV, Section 4 for how we accept them for use.) Technical standards are perhaps most commonly used as source documents for developing and writing operating and administrative procedures that directly govern the conduct of work at our facilities. They are also used to standardize operations at different DOE facilities and to establish common modes of communications and information exchange between DOE organizations and facilities.

Technical standards can be used to help define the scope and nature of major and minor procurements. Some establish specific technical ranges and limits for maintaining safety or purchasing or operating safety equipment. Others provide specific technical information commonly used by many DOE facilities and activities, or they can provide textbook-like information describing the basis of much of the technology applied at DOE. An important and growing use of technical standards is to provide a means to transfer unique DOE technology (including products and services) to U.S. private industry, and for DOE to readily use industry technology. It may be practical to promote new technology, products, and services as a DOE Technical Standard as a first step to wider use, even considering the additional protocols needed for proprietary applications.

In a DOE, Federal, national, or international venue, the use of voluntary consensus standards enables DOE, the Federal Government, private industry, the international community, and SDOs to establish a common language of measurement, enhance interoperability and ease of communications in commerce, make private sector technology available within DOE, and reduce overall costs for the Government.

Technical standards can be used to optimize safety and efficiency in the design, construction, maintenance, operations, and decommissioning of facilities. Technical standards are a primary means for industry and Government to introduce new technology, products, and services, and perform work more safely and "faster, better, cheaper." They offer the means for the Federal government and U.S. industry to communicate more effectively, and use resources more efficiently. Contractors can incorporate technical standards that reflect technologies and management systems that best fit their technical needs and corporate personality through such means as WSS sets. Technical standards can also offer U.S. industries working in conjunction with Federal agencies an important edge in economic competition in world markets.

8. **HOW DOES THE USE OF VOLUNTARY CONSENSUS STANDARDS REQUIRED BY PL 104-113 AND OMB A-119 AFFECT PROCUREMENT AND RULEMAKING?**

Federal law and policy mandate the use of VCSs in lieu of Government standards in rulemaking and procurement (with notable exceptions) and require special reports when Government standards are used in lieu of VCSs.

a. **What reports and processes are required by OMB A-119?**

OMB A-119 requires the Heads of Federal agencies to provide a report to OMB (via NIST) justifying situations where internally developed Government standards are specified in procurements and rulemaking in lieu of comparable VCSs. Further, for procurements, OMB A-119 requires either "categorical basis reporting" or "transactional basis reporting" (in some cases, both methods can be used) where Government standards are mandated for procurements in lieu of suitable voluntary consensus standards. (See the "Definitions and Terms," #1, #22, in Attachment 1 of the Guide and consult OMB A-119, Sections 9, 10, 11, and 12.) Each Federal agency must also report participation with SDOs on behalf of that agency. The TSP provides the processes and infrastructure (also required by OMB A-119) for meeting these Federal reporting requirements by conducting information searches and consolidating input from each organization's TSM into an annual DOE Report to OMB.

b. **How do I report the use of standards in regulation and procurement?**

If you are a program official or requirements-determining official developing a regulation or conducting a procurement that mandates the use of a government-unique standard (e.g., a DOE Technical Standard or Specification) in a proposed regulation or procurement *in lieu of a comparable VCS*, then OMB A-119 requires that you report this action to OMB. In DOE, the program official notifies the TSP Office of the use of that technical standard and the justification for its use. The information required is specified in OMB A-119, in Sections 9, 10, 11, and 12. Section 11 defines the reporting requirements for rulemaking. Section 12 describes category-based and transaction-based reporting for procurements, allowing the use of either or both under certain conditions. The DOE TSP Office compiles and maintains these records and provides them to OMB as part of DOE's Annual Report to OMB. The reporting process includes the following actions (tentatively planned for incorporation into a new TSPP) on the part of the individual and organization responsible for developing a rule or initiating a procurement, in cooperation with the TSPO and consistent with OMB A-119:

(1) Identify any instances where government-unique standards (e.g., DOE Technical Standards or Specifications) are mandated by that DOE organization in lieu of suitable VCSs for (a) rulemaking or (b) procurement.

(2) Identify each standard and provide a justification/rationale (from a senior manager, since OMB A-119 requires the justification from the Agency Head) for mandating that government-unique standard, consistent with the OMB A-119 requirements.

(3) Consider the use of alternate, suitable VCSs proposed for the regulation or procurement by cementers or offerors in accordance with the conditions specified in OMB A-119. Note that for procurements, DOE intends to use "category-based" reporting, and that "transaction-based" reporting requires certain solicitations related to alternative standards to be conducted in the initial procurement phases (i.e., noticing).

(4) Consult with their organizational TSM or the TSPO and review OMB A-119 reporting requirements to determine the appropriate venue and format for reporting the activity (e.g., category-based or transaction-based for procurement).

(5) Submit the information to the TSP Office as soon as the rulemaking or procurement receives final approval. (The TSPO contacts are listed on the TSP Home Page at URL: **http://tis.eh.doe.gov/techstds/**)

(6) The TSPO consolidates and maintains all such individual reports, incorporates them into the required OMB Annual Report for DOE approval, and submits them to OMB.

There may be instances where government standards are mandated in regulation or procurement by DOE in lieu of voluntary consensus standards. In general, such procurements conducted by DOE can be reported under the "categorical" basis, since DOE primarily conducts large, long-term procurements with major contractors to operate our labs and sites. Much of our procurement of commercial products and services is conducted by means of the Federal commercial-off-the-shelf (COTS) procurement process, which is exempt from reporting. To support category-based reporting, in accordance with OMB A-119, DOE maintains a centralized standards management system (the Technical Standards Program as part of the Directives System) that reviews and manages conversions to VCSs and maintains records on standards use by both group and category. OMB A-119 also establishes certain conditions where those commenting on Federal rules or bidding on procurements can propose appropriate VCSs as alternates to Government standards that may be mandated or specified in those documents. [See the final rule amending the Federal Acquisition Regulation (FAR) referenced below.] Any program officials finding it necessary to mandate a technical standard in regulation or procurement needs to review the OMB A-119 requirements and coordinate with the TSP Office.

c.   Where can I find more information?

(1)   The requirements related to "Management and Reporting of Standards Use" are in OMB A-119 [*Federal Register*, Volume 63, No. 33, page 8554, Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, 2/10/98 (also 15 U.S.C. 272 note)] as listed below:

   9.   *What Is My Agency Required to Report?*
   10.   *How Does My Agency Manage And Report Its Development and Use Of Standards?*
   11.   *What Are The Procedures For Reporting My Agency's Use Of Standards In Regulations?*
   12.   *What Are The Procedures For Reporting My Agency's Use Of Standards In Procurements?*

(2)   Final rule amending the Federal Acquisition Regulation (FAR): Department of Defense, General Services Administration, National Aeronautics and Space Administration; 48 CAR Parts 11 and 52 (FACE 97-14; FAR Case 98-004; Item V); RUN 9000-A; Federal Acquisition Regulation; OMB Circular A-119.

(3)   DEAR 48 CFR 970.0470, Directives System (62 FR 34842, June 27, 1997).

(4)   Check the online TSPPs for a future TSPP on the topic of reports on mandating technical standards in DOE regulations and procurement.

The URL for additional information on these OMB A-119 requirements is
http://www.whitehouse.gov/WH/EOP/OMB/html/circulars/a119/a119.html

9.   HOW DOES THIS GUIDE SUPPORT TAILORING (GRADED APPROACH)?

This Guide identifies primary resources and key processes available for DOE sites, facilities, and
activities to select technical standards appropriate to their needs (a "graded approach"). You can
use TSP services and functions to research, select, and even develop technical standards that
meet your specific needs for planning and conducting work and for addressing the hazards
associated with that work. By finding or developing such technical standards, you can support
work at any level, whether it is the actual conduct of work, or involves project planning, facility
design, or development of a safety basis, WSS set, or S/RIDs.

The TSP supports access to the use of private sector technology through the selection and use of
appropriate existing VCSs. DOE and its contractors can tailor the selection of technical
standards (or even selected parts of technical standards) to match identified work and hazards,
rather than be restricted to DOE-only sources.

When there are no existing, technically adequate VCSs to meet specific needs, DOE can work
through the TSP to initiate a new standard or to supplement an existing technical standard. As a
TSP option, existing Government standards can sometimes be used in preference to developing a
redundant DOE Technical Standard.

10.   HOW DO I PROVIDE FEEDBACK ON THIS GUIDE?

Users of this Guide should provide feedback to the Technical Standards Program Office (TSPO)
or to their organization's designated Technical Standards Manager (TSM) on recommendations
for improvement and on the successes or difficulties encountered in the application of this Guide
(see Chapter IV contact information). The TSP Home Page also has features for forwarding your
comments to us. The URL for the TSP Home Page is:

http://tis.eh.doe.gov/techstds/

CHAPTER II
TECHNICAL STANDARDS PROGRAM MANAGEMENT AND STRUCTURE

1.   HOW IS THE TECHNICAL STANDARDS PROGRAM MANAGED?

The TSP is managed by the DOE TSP Manager supported by a central TSP Office (TSPO) and coordinated with designated Technical Standards Managers (TSMs) who participate as part of a DOE-wide Technical Standards Managers' Committee (TSMC). The TSPO and TSMC develop and approve Technical Standards Program Procedures (TSPPs) that provide the details for implementing requirements from PL 104-113, OMB A-119, and DOE O 252.1, and for conducting general standards management processes.

a.   What is the general structure of the TSP?

The DOE TSP is centrally organized as the TSPO (that's the Technical Standards Program Office) and managed by the DOE TSP Manager within EH. Individual TSMs are designated for each major DOE and contractor organizational element involved in technical standards activities on behalf of DOE. The TSP is coordinated with the Directives System and Department Standards Committee through EH management, and with Federal activities through the DOE Standards Executive. Program management and information management are directed through three main areas: policy and program management; technical services; and communications/outreach activities. The TSP functions to (1) provide the basic services and infrastructure necessary to DOE and its contractors in the areas of technical standards management, and (2) provide basic processes for developing or identifying technical standards for use by DOE elements in operations, facilities, contracts, S/RIDs, WSS sets, safety analyses, and other authorization and safety analysis documents.

b.   What are the key management positions and structures that support the TSP?

(1)   <u>DOE Standards Executive</u>. OMB A-119 requires Federal agencies to appoint a Standards Executive (representing their Secretarial Officer), who provides a focus for standards activities and represents that agency on the Interagency Committee on Standards Policy (ICSP). The DOE Standards Executive is currently appointed by the Assistant Secretary for Environment, Safety and Health, and supports the TSP and Department Standards Committee in the conduct of their standards-related programs.

(2)   <u>Technical Standards Program Manager</u>. The TSP Manager is selected by the Assistant Secretary for Environment, Safety and Health to directly manage the TSP for DOE. The DOE TSP Manager is assigned responsibility for the overall conduct of the program and coordinates with appointed Headquarters, field, and contractor TSMs.

(3)   Technical Standards Program Office. The TSPO, consisting of the DOE TSP
       Manager, EH support staff, and support contractor staff (Oak Ridge National
       Laboratory), provides the resources for the overall management of the TSP for DOE
       through EH.

(4)   Technical Standards Managers. TSMs provide the field implementation network and
       the communication network for the DOE TSP, enabling the transfer of relevant
       program information to and from all DOE elements and contractors. TSMs are
       designated by their senior organizational manager.

       Each major DOE element and DOE contractor organization can (and should) be
       represented in the TSP by a designated TSM and alternate. It is recommended that
       the TSM (and the designated alternate) be a senior staff member experienced in the
       application, use and development of standards. It is important that the TSM have a
       working knowledge of the pertinent activities conducted within DOE and its contractor
       organizations (and of the pertinent disciplines required to conduct those activities), and
       have a proven ability to communicate effectively.

       In addition to a designated TSM, other modest resources are needed to properly
       satisfy the responsibilities of the TSM functions. Within budgetary and mission
       constraints, active participation by the TSM in all appropriate DOE TSP activities is
       encouraged. Many organizations have consolidated their Directives System activities,
       technical standards activities, and requirements development activities in a single point
       of contact. Selecting an effective TSM is one of the most important actions that can be
       taken to meet the requirements of DOE O 252.1 and provide effective support for an
       organization's technical standards activities.

(5)   Technical Standards Managers Committee (TSMC). The TSMC serves as a *de facto*
       DOE-wide process action team for conducting and improving the TSP. It consists of
       80 to 90 designated TSMs and alternates representing all major DOE and contractor
       elements. The TSMC meets routinely to discuss technical standards issues, conduct
       strategic and program planning, analyze program performance and identify and resolve
       technical standards issues. Through the TSMC, TSMs also participate in developing,
       approving, and implementing TSPPs and general TSP processes and services.
       Participation in and ownership of the DOE TSP for DOE and its contractors are
       achieved through TSM involvement in the TSP and TSMC.

(6)   Topical Committees. DOE Topical Committees are groups of DOE and contractor
       subject matter experts recognized and chartered under the TSP. Groups from such
       diverse areas as metrology, fire protection, quality assurance, construction safety, and
       laboratory accreditation have organized under the TSP's Topical Committee
       provisions. The Topical Committees enable subject matter experts to cooperate on

technical standards activities on a DOE-wide basis. They also provide a focus for technical interaction. The Topical Committees function independently, but in support of line organizations, under the aegis of the TSP. These groups may be formed *ad hoc* or from existing DOE and contractor working groups, such as the TRADE Special Interest Groups (SIG). They typically focus on technically related standards activities (e.g., standards reviews) within DOE and from national and international venues. The groups are generally organized under a chairperson in conjunction with a steering committee, and are open to qualified DOE and contractor technical personnel (see Section III.11).

(7) Technical Standards Program Procedures. The TSPPs provide the specific procedures used by the TSPO and TSMs to conduct routine business within DOE. The TSPPs are initiated, developed, and approved by the TSPO and TSMs to serve DOE needs. Because the TSPPs reflect the way the TSP, TSPO, and TSMC need to do business, and must also reflect the latest changes in policy and requirements, they are often subject to revision during each year. As internal operating procedures, they give the TSP the flexibility to adjust its operations and services, yet maintain consistency with policy and requirements.

(8) Technical Standards Program Strategic Plan. The TSP Manager and the TSMC maintain a TSP Strategic Plan that reflects Federal, DOE, EH, and office strategic planning. This Strategic Plan provides the focus for goal setting, performance measurement, and commitment of resources via the TSP's annual Program Plan.

(9) Technical Standards Information System (TSIS) and TSP Home Page. A broad range of data and information related to technical standards is compiled and maintained in the TSIS data base (accessible only to the TSPO) and on the TSP Home page (generally accessible via the Internet). The TSP Home Page includes all current and draft DOE Technical Standards, technical standard project information, SDO participation data, topical committee information, TSPPs, *The Standards Forum* and *The Standards Actions* newsletters, links and references, organizational TSMs, and other contact information. Much of the data from TSIS is also available on the TSP Home Page at: **http://tis.eh.doe.gov/techstds**

c. **Where can I find more information?**

(1) DOE-TSPP-1, *DOE Technical Standards Program Responsibilities*.
(2) DOE-TSPP-11, *DOE Topical Committees*.
(3) **http://tis.eh.doe.gov/techstds**/

2.   WHAT ARE THE "DRIVERS"—THE REQUIREMENTS—FOR THE TSP?

The requirements and policy that "drive" the TSP are contained in PL 104-113/NTTAA and
OMB A-119 at the Federal level, and in DOE P 251.1, DOE O 251.1A, and DOE M 251.1-1A
within DOE. DOE nuclear safety policy, backed by commitments to the DNFSB, also provides
for a rigorous DOE TSP. Related Federal requirements and policy are implemented through the
DOE O 252.1, which is supported by this Guide.

Federal law and policy establish objectives and requirements for Federal agency use of technical
standards and involvement in technical standards activities. Their intent is to establish common
standards for Government and industry, promote interoperability, and enhance U.S.
competitiveness in world markets. Use of voluntary consensus standards also serves to eliminate
Federal standards development costs, serve broader national needs versus limited agency needs,
promote efficiency and competition through harmonization, and encourage Government reliance
on the private sector for goods and services.

   **a.   How do the requirements in Public Law 104-113 and OMB A-119 influence the
           TSP?**

       (1) <u>PL 104-113</u>. PL 104-113, approved on March 7, 1996, codifies the policy
            provisions of OMB A-119. It also imposes requirements and conditions mandating
            the use of voluntary consensus standards by Federal agencies. It directs Federal
            technical standards development efforts towards working with SDOs to develop or
            adopt voluntary consensus standards and away from internal development of technical
            standards. It encompasses technical, management, and procurement areas of
            standards use and development.

            The processes and procedures described in this Guide establish the means by which
            DOE can uniformly meet the requirements in PL 104-113 related to screening and
            using technical standards, tracking and reporting participation with SDOs, and
            justifying the use of internal standards to OMB.

       (2) <u>OMB A-119</u>. OMB A-119 sets the policy codified in PL 104-113 for all Federal
            agencies, including DOE, that must be implemented by these agencies. For DOE, this
            includes such specific matters as–

            (1) establishing a preference for using VCSs (non-Government standards) in lieu of
                 DOE Technical Standards when such VCSs are adequate and appropriate for
                 the intended application;

            (2) actively soliciting and working with SDOs to develop VCSs that will meet DOE
                 needs when such standards do not exist;

(3)   actively working with appropriate SDOs to convert DOE Technical Standards into VCSs, and

(4)   reporting DOE participation in SDO activities and explaining (essentially justifying) the use of technical standards developed internally by DOE to OMB.

DOE contractors who need to use VCSs or develop DOE Technical Standards to conduct DOE missions and functions are included under the TSP. The TSP, as the common means of managing DOE Technical Standards activities, enables us to meet the requirements of OMB A-119 and to effectively manage our diverse technical standards functions.

b.   How do DOE policies and requirements influence the TSP?

(1)   <u>Directives System</u>. DOE's Directives System establishes the hierarchy of requirements and guidance within DOE, and Directives System Policy and the "FAR" Manual (DOE M 411.1-1A, SAFETY MANAGEMENT FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL) recognize that technical standards activities are managed under the TSP. DOE Nuclear Safety Policy and ES&H Policy also require the consideration and use of voluntary consensus standards in the design, construction, testing, modification, operation, decommissioning, decontamination, and remediation of DOE's facilities and activities, referencing hundreds of voluntary consensus standards and DOE Technical Standards in their technical and safety guidance. (See DOE P 251.1, DOE O 251.1A, DOE M 251.1-1A, DOE P 410.1A, Nuclear Safety Orders from the 400 Series, and DOE M 411-1.1A.)

(2)   <u>DOE O 252.1</u>. Revised DOE O 252.1 (described in detail above) establishes the DOE TSP as the central DOE function for managing technical standards activities within the Directives System. It replaces DOE O 1300.2A and its many detailed requirements with a few general performance-based requirements. The accompanying Guide describes the TSP from a broader national and Federal perspective, describes overall TSP management and processes (including information management), and provides a link to the TSPPs.

c.   Where can I find more information?

(1)   Public Law 104-113, *National Technology Transfer and Advancement Act of 1995*, March 7, 1996.

(2)   OMB A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities,* 2/10/98.

(3)   DOE O 252.1, TECHNICAL STANDARDS PROGRAM.

(4)   DOE TSPP-1 through DOE TSPP-11, *DOE Technical Standards Program Procedures*, Revision 4, 6/98.

(5)   DOE M 411.1-1A, SAFETY MANAGEMENT FUNCTIONS, RESPONSIBILITIES, AND AUTHORITIES MANUAL, Section 9.2.2.2, 10/18/99.

3.   HOW IS THE DOE INFORMATION TECHNOLOGY (IT) STANDARDS PROGRAM RELATED TO THE TSP?

The DOE IT Standards Program coordinates IT standards activities DOE-wide. This includes the identification, adoption, implementation, and retirement of non-government and government IT technical standards in support of the DOE Information Architecture. IT technical standards development activities are closely coordinated with the DOE TSP. The DOE IT Standards Program is managed by staff from the Office of the Chief Information Officer (CIO) with assistance from over 70 designated DOE and contractor program and site IT Standards Points-of-Contact.

The IT Standards Program normally selects and uses existing national, international, and government standards for the DOE Information Architecture (consistent with PL 104-113 and OMB A-119). If it is necessary for IT to develop a unique technical standard for DOE use, it is coordinated through the DOE TSP. More information on the DOE IT Standards Program and related publications, standards repository, and other activities may be found at the following URL:
http://cio.doe.gov (click on "Standards" on the left menu).

CHAPTER III

SELECTING, DEVELOPING, AND MAINTAINING TECHNICAL STANDARDS, OR, HOW DO I DO THINGS UNDER THE TSP?

This chapter helps you find the right people and processes for selecting and developing technical standards (or voluntary consensus standards), maintaining DOE Technical Standards, and working with SDOs and DOE topical committees. Each section in Chapter III corresponds to a TSPP (i.e., a Technical Standards Program Procedure) on a like topic and provides you with general information and guidance on that topic. We refer you to the specific TSPP that you can use and also provide other references that may be useful.

The following table is a List of the Department of Energy's TSPPs that are used by your TSM to conduct business for the TSP: (The URL is **http://tis.eh.doe.gov/techstds/tspofram.html**)

PROCEDURE	TITLE	REVISION (6/98)
DOE-TSPP-1	Technical Standards Program Responsibilities	3
DOE-TSPP-2	Establishing the Need for a Technical Standard	3
DOE-TSPP-3	Use of Non-Government Standards and Interaction with Non-Government Standards Bodies	3
DOE-TSPP-4	Registering a Technical Standard Project	4
DOE-TSPP-5	Development of a New DOE Technical Standard	3
DOE-TSPP-6	Coordination of Technical Standards	4
DOE-TSPP-7	Technical Standards Comment Resolution	3
DOE-TSPP-8	Approving and Issuing DOE Technical Standards	3
DOE-TSPP-9	Maintenance of DOE Technical Standards	3
DOE-TSPP-10	Conversion of DOE Technical Standards to Non-Government Standards	3
DOE-TSPP-11	Technical Standards Program Topical Committees	1

1.   **WHO IS RESPONSIBLE FOR HELPING INITIATE AND PROCESS A PROPOSED
     TECHNICAL STANDARD?**

The responsibilities of DOE personnel in various technical standards activities are covered in
DOE-TSPP-1. Your organizational TSM (that's the Technical Standards Manager) may be the
best person to help you get started on your project. The organization that proposes initiating a
DOE Technical Standard is called the Preparing Activity, or PA, in our TSPPs. The PA has
responsibility for processing that technical standard, with the help of their TSM. Once a need for
a technical standard has been identified, a person from the PA is designated as responsible for
coordinating and maintaining that technical standard. You can find out who these individuals are
by accessing the TSP home page and looking under TSMs and Projects. Development and
review of DOE Technical Standards is conducted by competent and qualified subject matter
experts and technical reviewers. (See Section 6.c below.)

2.   **HOW DO WE ESTABLISH THE NEED FOR A TECHNICAL STANDARD?**

Before you start to develop a DOE Technical Standard, consult with your TSM, senior managers,
interested line organizations, and perhaps a related DOE Topical Committee or SDO to
determine if there is a clearly identified need for that standard or if an adequate one already exists.
Using existing VCSs in accordance with PL 104-113 and OMB A-119 is our first choice. It is a
very expensive process to develop a DOE Technical Standard (e.g., in the range of $80,000 to
$200,000 or more!)**.** A quick search of SDO inventories may help you find an inexpensive and
easy option among several related VCSs.

   a.   **How do we screen and select technical standards and voluntary consensus
        standards?**

        To meet the intent of law and policy, DOE managers and their organizational TSMs carefully
        screen each proposed technical standard topic before proceeding with a DOE internal
        development effort. The TSPO can help by providing lists of VCSs that apply to a given
        topical area, and by putting staff members in touch with appropriate DOE and SDO topical
        committees. In many cases, DOE organizations and contractors will be able to find a VCS
        that meets their needs. If they can't, DOE Technical Standards may be developed and used
        to address an internal need.

        Consistent with PL 104-113 and the policy in OMB A-119, DOE policy, processes, and
        procedures give preference to using VCSs (or working with SDOs to meet Department
        needs by modifying existing VCSs) instead of developing internal standards. Because VCSs
        represent a consensus of public and private sector interests on acceptable work processes
        and methods, they will usually have a broader acceptance than DOE Technical Standards.

Technical standards are needed and used to fulfill a variety of purposes, including establishing "work smart" (necessary and sufficient) sets of requirements, establishing uniform processes for conducting activities, developing procedures, defining specifications for procurements, and conveying technical knowledge. Technical standards have been developed in a wide range of technical and programmatic areas by SDOs and are readily available for use within DOE. By using them, our contractors can apply the best and most appropriate private-sector technologies to DOE missions and hazards. TSPO services include providing lists and information on many of these standards for DOE users.

Screening is conducted by DOE Federal and contractor subject matter experts who have been determined to be technically competent to select, develop, and review VCSs and DOE Technical Standards, based on their position, education, experience, and training (e.g., via the DOE Technical Qualification Program for Federal technical staff).

b.   Where can I find more information?

(1)   DOE-TSPP-2, *Establishing the Need for a Technical Standard.*

(2)   DOE-TSPP-3, *Use of Non-Government Standards and Interaction with Non-Government Standards Bodies.*

3.   WHAT DO WE MEAN BY "USING" TECHNICAL STANDARDS?

"Using" technical standards has a specific meaning under OMB A-119 and DOE TSPPs.

a.   How do we "use" technical standards (and voluntary consensus standards)?

DOE Technical Standards and VCSs are "used" within DOE when referenced in DOE Directives and safety analysis documents, when mandated in DOE rules, regulations, and Orders, and when mandated in DOE procurements and "products." DOE-TSPP-3 provides information about using VCSs (which it refers to as non-Government standards) and working with SDOs (which it refers to as non-Government standards bodies or NGSBs). Using technical standards in the design, construction, testing, modification, operation, decommissioning, decontamination, and remediation of DOE's facilities, programs, and projects can save time and effort, reduce duplication in work, improve health and safety, provide for standardization, and conserve resources—all of which increase overall Department efficiency. Pitfalls that exist when using existing VCSs include subscribing to "old" or very limited technology and generating a de facto "technology freeze" by using only technology that is reflected in a VCS, but is not leading edge. There may also be a qualitative difference among VCSs, with quality ranges from "fair" or "adequate" to "excellent" or "outstanding." Procurements can be unwisely and unfairly limited by the use of restricting specifications (a form of technical standard). This can result in the "$200.00 hammer" syndrome or new proposals specifying old technology.

(1)   **Where can I find copies of technical standards?**

The DOE Technical Standards developed under the TSP are available through the
TSP Home Page on the Internet in PDF format at **http://tis.eh.doe.gov/techstds**,
where they can be viewed and printed. If the files created may be copied, the
documents can be downloaded to a file. The DOE TSP Home Page and the
Directives System Explorer Home Page are also linked to enable cross searches for
related documents. A limited number of DOE Technical Standards are printed and
available from the ES&H Technical Information Service. Drafts of proposed DOE
Technical Standards (called Projects) are also posted. Archives of older DOE
Technical Standards, such as the NE/RDT series, are also available by contacting the
TSPO staff. Copies of VCSs are generally not available through DOE, except where
DOE organizations have subscriptions services with particular SDOs or commercial
standards information services. DOE and contractor technical libraries, and the
National Institute of Standards Technology (NEST) web site, also maintain files and
direct access to some VCSs. Access to data base lists of SDO VCSs is possible
through the TSP home page list of SDOs, which includes "hot links" to SDO home
pages. The NSSN provides links to many SDO lists of VCSs and can provide access
to many VCSs with an appropriate paid subscription. The ES&H TIS also provides
limited access to its "Commercial and Industry Standards" services for DOE
Headquarters Federal employees at **http://tis.eh.doe.gov/standards/**.

(2)   **Must I use voluntary consensus standards instead of developing a new DOE
       Standard?**

PL 104-113 and OMB A-119 require DOE to give preference to using VCSs over
internally developing Government technical standards, unless their use would adversely
affect performance or cost, reduce competition, or have other significant
disadvantages, such as being inadequate for an agency regulatory role. Technical
standards (DOE or VCSs) are not mandatory unless they are specifically invoked in a
requirements document, such as a DOE Order, or until a contractor commits to use
them in an implementation plan, a contract, S/RIDs, or a WSS set that is mutually
agreed upon with DOE. This provides the contractors with flexibility in determining
how to implement DOE requirements by choosing standards that are suitable for
specific applications.

No matter how carefully conceived and developed they are, technical standards
cannot address all eventualities. Therefore, DOE and its contractors must critically
assess the technical standards in use at DOE facilities to ensure that they remain
consistent with the latest information arising from operational experience and
developments in science and technology.

b.   Are there special considerations for reviewing and adopting a voluntary consensus standard for use at a site, facility, activity, or task?

The TSP has no special requirements for selecting and using VCSs within DOE other than that they should be the product of accredited SDOs and that they be subject to competent review. However, any VCSs or DOE Technical Standards that are used to meet DOE requirements (in the full range from procurement to technical) are subject to review for applicability and technical acceptability by contractors, DOE Program offices, and internal and external review groups through such processes as safety analysis and safety evaluation reports, S/RIDs reviews, the WSS process, and oversight reviews. (See Chapter IV, Section 4, for information on how DOE and its contractors accept standards for use.) These processes help ensure that pertinent standards selected for use are reviewed and accepted by appropriately qualified subject matter experts for applicability, functionality, and technical validity. Furthermore, subject matter experts and technical reviewers assigned to determine the acceptability of VCSs (or any technical standards) need to be technically competent and qualified through position, education, experience, and training. (See Section 6 below.) Not every VCS pertinent to a DOE "use" will be technically adequate or suitable to meet technical, administrative, or programmatic requirements. Verification and validation of a new VCS by subject matter experts with demonstrable competence (e.g., via the DOE Technical Qualification Program for Federal technical staff) is essential before its use.

c.   Does DOE support participation with SDOs?

Yes, participation by DOE and DOE contractor personnel with SDOs (also referred to as NGSBs) can be mutually beneficial to DOE, other elements of the public sector, and private industry. Consistent with PL 104-113 and the policy in OMB A-119, DOE encourages and supports the participation of DOE and DOE contractor employees in SDO activities related to DOE missions and functions. Such participation can help DOE establish a uniform internal position on particular VCSs, and can also help in establishing a uniform interagency position on particular VCSs and standards issues, in accordance with OMB A-119. SDOs can be used to develop VCSs for DOE use. Participation in the standards-related activities of SDOs provides incentives and opportunities to establish VCSs that serve both DOE and national needs, and the use of VCSs eliminates much of the cost to DOE of developing and maintaining its own technical standards. Most SDOs also screen their participants for technical adequacy, based on criteria such as position, education, experience, and training.

DOE's work involves operations, procurements, products, and services that must meet established standards. Many such standards, appropriate or adaptable for DOE's purposes, are available from SDOs as VCSs. DOE participation in the standards-related activities of these SDOs provides incentives and opportunities to establish standards that serve national needs.

Within DOE, various topical interest groups are being recognized under the TSP as topical committees. With modest cooperation and consolidation, these topical committees are expected to provide the forum for linking DOE to SDO topical committees. [See also Sections II.b.(6) and III.11.]

d.   What are the roles and responsibilities of DOE representatives working with SDOs?

It is in the best interest of the DOE to have personnel participating with SDOs when the effort is directly related to DOE missions and functions, and the individuals have appropriate expertise in the development or revision of VCSs of relevance to Department operations. Official DOE representatives who work on SDO Boards are designated and serve as official spokespersons or representatives for the Department. Participation in SDO activities on behalf of DOE is tracked through the DOE TSP.

When questions arise over a perceived conflict of interest over DOE participation with an SDO working group, committee, or board, a senior DOE manager should evaluate the situation and provide guidance. *DOE-TSPP-3* provides the key discussions about working with SDOs.

It is important to recognize that there is a difference between official DOE representation and other participation by DOE employees and contractors in SDO activities. Many DOE employees and contractors, because of personal or professional interests, are members of technical or professional societies and associations. Such participation does not constitute official DOE representation; however, this type of participation is encouraged because it fosters good relationships and interaction between Government and industry.

e.   Where can I find more information?

(1)   OMB A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, 2/10/98.

(2)   DOE-TSPP-3, *Use of Non-Government Standards and Interaction with Non-Government Standards Bodies*.

(3)   *DOE Technical Standards Program Procedures Overview*.

(4)   DOE-TSPP-2, *Establishing the Need for a Technical Standard.*

(5)   DOE-TSPP-3, *Use of Non-Government Standards and Interaction with Non-Government Standards Bodies*.

(6)   DOE-TSPP-11, *DOE Topical Committees*.

(7)   **http://tie.eh.doe.gov/techstds**

4.   HOW DO I REGISTER MY TECHNICAL STANDARDS PROJECTS WITH THE TSP?

As soon as you are ready to initiate a DOE Technical Standard or a VCS with an SDO, contact your organizational TSM (or someone at the TSPO if you don't have a TSM). They will help you screen the effort and register the activity as a TSP Project in accordance with DOE-TSPP-4, *Registering a Technical Standards Project*. A special number related to the type of technical activity will be assigned to help identify and track your project from start to finish. A final DOE Technical Standard number can only be assigned after the final approval of the document. The TSM or TSPO may be able to find you some help in the development process by linking you to a DOE Topical Committee or SDO Working Group.

5.   HOW DO WE DEVELOP A DOE TECHNICAL STANDARD?

The procedures used by the TSP to develop DOE Technical Standards define an efficient and effective process that is easy to follow.

a.   Where do we start?

When the need for a technical standard exists within the DOE community, and when an adequate voluntary consensus standard or Government standard does not exist to satisfy that need, then the development of a DOE Technical Standard can be initiated using the DOE TSPPs. Your TSM will refer to DOE-TSPP-5, *Development of a New DOE Technical Standard*.

An individual within DOE who foresees the need for a DOE Technical Standard should consult with his or her organizational TSM, review the TSPPs for information, or contact the TSPO for guidance. The TSPO will provide information on existing VCSs that are available from SDOs in the technical area of interest. The organizational TSM will work with that organization's management to verify the need to develop a DOE Technical Standard. Each organization may also have to justify its effort if existing VCSs are not used (this is necessary to comply with PL 104-113). Each proposed technical standards project is registered and administratively processed through the TSPO. The TSP provides electronic posting and access to draft and final DOE Technical Standards via the Internet. The organization sponsoring and preparing the proposed DOE Technical Standard (the Preparing Activity) is responsible for soliciting comments and conducting an adequate comment resolution. Final approval of DOE Technical Standards comes from senior management within the PA, after all TSP processes have been followed. Appeals on comment resolution or final approvals can be processed through the DOE TSP Manager.

Technical standards that are developed and used by DOE are almost always the product of a recognized standards development process, conducted through a legitimate review and comment resolution process involving recognized subject matter experts. The overall

process involves openness, balance of interest, and due process. DOE Technical Standards developed outside of such a recognized process may not have technical or programmatic credibility or acceptability with the DOE and contractor line organizations, internal and external oversight organizations, or the office of primary interest designated for the technical subject matter within DOE.

Documents developed under another forum (such as a technical report) and intended for use as a technical standard (or any directive) are treated as unauthorized documents (e.g., "rogue" documents) under the Directives System. The DOE TSP establishes a uniform system, based on those of successful Government and industry SDOs, for the development of DOE Technical Standards.

Once a DOE Technical Standard has been developed, it is assigned to an individual designated by the cognizant "Preparing Activity" that developed the standard. This individual is responsible for maintaining the technical and administrative currency of the standard and serves as the point-of-contact for that standard. DOE Technical Standards are automatically subject to review on a 5-year cycle and on an "ad hoc" basis when there are changes in requirements, technology, and applications. A project list of all current and in-development DOE Technical Standards and the point-of-contact for each standard is maintained by the TSPO. DOE Technical Standards can be canceled, reaffirmed, revised, modified, and may be converted to VCSs.

b. **When should a DOE organization consider developing a new DOE Technical Standard?**

(1) To meet needs and requirements: DOE Technical Standards should be developed to satisfy a DOE need or requirement when there is no existing, suitable VCS (or Government standard) that would suit DOE needs, and an SDO is unable or unwilling to develop or tailor a VCS specifically to meet DOE needs.

(2) To help transfer technology: DOE mission processes often result in technical developments and even products that could benefit U.S. industry. Some are licensed for limited applications with private industry. Many can be taken to the next step and converted to a technical standard or VCS. In some instances, a DOE Technical Standard may be the most practical means to document a new technology developed within DOE and disseminate it to U.S. industry.

(3) To update to the latest or best technology: DOE Technical Standards are maintained and periodically reviewed under the TSP to help ensure technical currency and usefulness to the DOE community. A DOE-wide review of each DOE Technical Standard's technical and functional content by DOE's subject matter experts helps ensure that they reflect the latest technology and best practices and that they help meet DOE work and safety requirements.

c.   Can I use the TSP to promote products, services, and technology?

Many of the technologies and many of the products and services currently being developed or used in support of DOE missions and functions are suitable for development as DOE Technical Standards or VCSs. Non-proprietary, proprietary, and patented products, processes, and services can be made available to industry, academia, and Federal interests through the TSP's processes.

d.   Where can I find more information?

(1)   OMB A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, 2/10/98.

(2)   DOE-TSPP-4, *Registering a Technical Standards Project*.

(3)   DOE-TSPP-5, *Development of a New DOE Technical Standard*.

(4)   DOE-TSPP-6, *Coordination of DOE Technical Standards*.

(5)   DOE-TSPP-7, *DOE Technical Standards Comment Resolution*.

(6)   DOE-TSPP-8, *Approving and Issuing DOE Technical Standards*.

(7)   DOE-TSPP-9, *Maintenance of DOE Technical Standards*.

(8)   DOE-TSPP-10, *Conversion of DOE Technical Standards to Non-Government Standards*.

6.   HOW ARE DOE TECHNICAL STANDARDS COORDINATED?

The TSP has structured and formal processes for coordinating the development and maintenance of DOE Technical Standards. Directives, including rules, Orders, and Guides, are coordinated under separate Directives System processes. If the development of DOE Technical Standards is associated with development of a particular directive, then an effort is made to coordinate these documents simultaneously.

a.   What is coordination?

Coordination is the process of submitting a proposed DOE Technical Standard to subject matter experts, and to other appropriate, interested, and affected parties within DOE and among its contractors, to solicit their technical and programmatic comments. Coordination enables a consensus approach to developing standards, rendering the final product useful to many organizations.

b.   **How does the TSP coordination process work?**

Once a PA has developed a suitable draft, the proposed DOE Technical Standard is posted on the TSP web site, and the TSMs are notified that the draft DOE Technical Standard is available for review. TSMs are then responsible for delivering the proposed draft to the appropriate subject matter expert(s) within his or her organization. The subject matter expert has 60 days (to be specified in the coordination letter that accompanies the draft standard) to complete his/her review and return comments to the PA.

c.   **How is the technical competence of DOE subject matter experts assured for the development and coordination processes?**

It is critical to safety that DOE subject matter experts and other technical reviewers are technically competent to review DOE Technical Standards and SDO VCSs. The success of DOE's development, review, and coordination processes (and participation with SDOs) depends on the involvement of qualified DOE reviewers. DOE's TSMs and organizational managers select subject matter experts from their respective organizations and facilities for participation based on those individuals' interests, positions, and qualifications, including education, experience, and training.

DOE technical staff are selected for assignments based on education, experience, and training that are reflected in their position descriptions and performance elements. These incorporate Office of Personnel Management (OPM) requirements for education and experience, and reflect knowledge, skills, and abilities determined to be critical for technical positions. DOE's contractors employ similar criteria originating from their parent organizations to make technical staff assignments. Within DOE, additional programs such as the Technical Qualification Program (TQP) are applied to Federal employees involved in the areas of nuclear safety. The TQP sets standards for technical competence that serve the standards development and review processes. DOE's Topical Committee also supports technical standards reviews. These Topical Committees serve as focus points for DOE's subject matter experts and many support ANS 3.1-type nuclear safety qualifications recommended by the TSP for technical members in nuclear areas of interest.

Furthermore, both Federal and contractor personnel serving on working groups and technical committees in SDO VCS development processes on behalf of DOE are subject to qualifications reviews by those SDOs to verify their technical background and experience.

d.   **Where can I find more information?**

(1)   DOE-TSPP-6, *Coordination of DOE Technical Standards*.

(2)   Technical Qualification Program - Functional Area Qualification Standards Page
       http://cted.inel.gov/cted/qualstd.html

7.   How Does the TSP Solicit and Resolve Comments?

Comments are formally solicited by the PA and organizational TSM through letters and drafts (often via e-mail). The comments are then coordinated, reviewed, and resolved with Reviewing Activities (RAs) by the PA, in accordance with TSP Procedures. A DOE Technical Standard is not submitted for approval until adequate disposition is achieved on all comments. The PA generates a record of comment dispositions that is retained by the organizational TSM.

a.   What is comment resolution?

Comment resolution is the process by which draft review comments are incorporated into a final draft document, making the document acceptable to all commenting organizations.

b.   How does the TSP resolve comments on its technical standards?

There are two main roles in comment resolution, that of the PA and that of the RA. It is the PA's responsibility as the developer to write the draft and prepare it for coordination. The RA provides comments on the proposed DOE Technical Standard and consolidates them through his/her TSM. After the coordination process is completed, and the RA has submitted comments, the PA must resolve those comments to the satisfaction of both the PA and the RA. An appeal may be established through the TSP in cases where comment resolution does not take place effectively.

c.   What types of comments can be made on technical standards?

There are two types of comments, Suggested and Essential. Suggested comments include general observations, questions, and editorial changes. Essential comments are such that if the comment is not taken, the document would be rendered unacceptable by the RA. The TSP appeals process is generally applied only for Essential comment resolution.

d.   Where can I find more information?

DOE-TSPP-7, *Technical Standards Comment Resolution.*

8.   HOW ARE DOE TECHNICAL STANDARDS APPROVED AND ISSUED?

To approve and issue DOE Technical Standards, the TSP follows a set of structured processes and procedures involving the PA, the PA senior manager, the organizational TSM, and the TSPO. Once the RAs, the PA, and the PA senior manager are satisfied with processing and comment resolution associated with a draft DOE Technical Standard, and TSPO processes have been followed, the PA senior manager has the authority to approve that standard.

a.   **What is meant by approving and issuing technical standards?**

Approved DOE Technical Standards have met all TSP program criteria and have been formally approved by the PA senior manager or his/her designee (a manager with budget authority; i.e., an "SESer"). Newly approved DOE Technical Standards are immediately available for use. They are posted and distributed both electronically through the World Wide Web (on the TSP home page) and through printed media. "Hard copy" distributions are made to the PA, selected individuals, DOE libraries, and the public. Eventually, all distributions will be electronic.

b.   **How does the TSP approve and issue technical standards?**

Once comments have been resolved to the satisfaction of the PA and each RA, PA senior management signs off on the document, indicating that all essential comments have been resolved. A cover letter indicating approval and guarantee of comment resolution, is sent by the senior manager to the TSPO, along with a camera ready copy and an electronic file of the approved document. The TSPO makes a visual check of the document and then posts it as a downloadable file on the TSP web site. Concurrently, a hard copy of the document is created, if requested by the PA. The official, authorized version of each DOE Technical Standard is maintained at the TSP Home Page, generally in a Portable Document Format (PDF).

c.   **Where can I find more information?**

DOE-TSPP-8, *Approving and Issuing DOE Technical Standards*

9.   HOW ARE DOE TECHNICAL STANDARDS MAINTAINED AND UPDATED?

There are a number of processes and procedures maintained by the TSP to ensure that DOE Technical Standards are kept current or appropriately terminated**.** These procedures also help ensure that legitimate directives are kept within the TSP and Directives System.

a.   **What is meant by maintenance of technical standards?**

DOE Technical Standards must be revisited periodically to evaluate their benefit and technical suitability to DOE. This occurs at least once every 5 years, or more often when certain types of changes ensue. Depending on the outcome of the review, a number of different actions may result.

b.   **How does the TSP maintain technical standards?**

All DOE Technical Standards are reviewed within 5 years of the date they were issued or last updated, in accordance with DOE-TSPP-9. At the beginning of each fiscal year, the

TSP provides a list of those documents due for review to its TSMs. The TSMs alert appropriate contacts in their PA that those standards are up for review. The PA chooses from the following six types of management processes to be administered: revision; change notice; reaffirmation; reinstatement; inactivation for new design, or cancellation. The correct maintenance action is dependent upon the current role a particular document is playing; that is, whether it–

(1)   is still being used in the implementation of requirements,

(2)   needs to be updated to reflect changed requirements or changed technology,

(3)   needs minor editorial changes,

(4)   needs to be reinstated as a viable working document,

(5)   is not to be used for new design, but only for existing facilities or equipment,

(6)   is no longer needed, or

(7)   has been converted to a VCS.

c.   Where can I find more information?

DOE-TSPP-9, *Maintenance of DOE Technical Standards*

10. CAN WE CONVERT DOE TECHNICAL STANDARDS INTO VOLUNTARY CONSENSUS STANDARDS?

DOE actively seeks to develop needed technical standards through the VCS development processes provided by U.S. (and international) SDOs, and to promote the conversion of existing DOE Technical Standards into VCSs.

a.   What is the value of doing conversions?

There are potential benefits to DOE of having DOE Technical Standards converted to a VCS by an SDO. The first benefit is the reduction of costs associated with the maintenance of DOE Technical Standards. The second, and probably more significant benefit, is that truly excellent VCSs are developed over time, and are continuously improved from feedback provided by those individuals using them. The conversion of a DOE Technical Standard to a VCS provides exposure for that document to other public and private sector interests that would otherwise be unaware of it. Extensive circulation of a VCS encourages valuable feedback, presenting more opportunities to improve it. Once the expense of developing DOE Technical Standards has been incurred, it is in DOE's best interest to have them accepted by an SDO for development, coordination, publication, and maintenance as VCSs. An SDO may express interest in a conversion if there is industry interest in developing a VCS, if there is a potential market after development, and if an appropriate SDO committee will maintain responsibility for updating the document.

b.   **How does a conversion to a voluntary consensus standard work?**

DOE-TSPP-10 was developed by the TSP to guide conversion of DOE Technical Standards to VCSs. The DOE organization responsible for the DOE Technical Standard initiates the process by finding an interested SDO. Several DOE Technical Standards, such as seismic and natural phenomena standards, have been accepted by SDOs for conversion. The TSPO works through the American National Standards Institute (ANSI) to help identify DOE Technical Standards of interest to industry and SDOs willing to sponsor their conversion.

c.   **Where can I find more information?**

(1)   OMB A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, 2/10/98.

(2)   DOE-TSPP-10, *Conversion of DOE Technical Standards to Non-Government Standards*.

11. WHAT ARE DOE TOPICAL COMMITTEES?

The DOE TSP sponsors and recognizes selected topical committees, where such groups can–

•   support technical standard and VCS review and development activities directly related to DOE missions and functions and

•   provide cooperative interaction with counterpart representatives from SDOs and other Federal agencies in the interests of DOE.

Membership is open to DOE and contractor personnel with technical, programmatic, and managerial interests in a given technical area. Each topical committee functions under a TSP-approved charter operating under the principles of openness, balance of interest, and due process.

General information on currently recognized topical committees and contacts for these groups is provided in DOE-TSPP-11. This information is also available on the TSP Home Page. Information on forming a DOE topical committee from an existing interest group or a newly formed interest group is available from the TSPO. A "how-to" manual (pamphlet) is referenced below in Subsection b..

a.   **Why do we have topical committees?**

DOE topical committees serve as a focus for DOE subject matter experts in a variety of technical areas. The topical committees provide a "corporate memory" and a cooperative

venue that can maintain continuity through reorganizations and "right-sizing" efforts. They function in concert with program offices with managerial responsibilities in technical areas and can serve as a ready technical resource for those organizations. They primarily serve as a reviewing entity for DOE Technical Standards and VCSs related to their areas of expertise and can serve as a preparing activity for DOE Technical Standards or VCSs at the behest of a sponsoring DOE organization. DOE topical committees can also serve as a link and contact point with their technical counterparts in SDOs and in other Federal agencies. They also provide a means for DOE subject matter experts to remain abreast of and participate in technical developments in their areas of interest.

b.   Where can I find more information?

(1)   DOE-TSPP-11, *DOE Topical Committees*.

(2)   *Forming a DOE Topical Committee: A How-To Manual*, Sandia National Laboratories, 7/4/97.

(3)   DOE-TSPP-3, *Use of Non-Government Standards and Interaction with Non-Government Standards Bodies*.

CHAPTER IV
ADDITIONAL INFORMATION

1.   WHO CAN I CONTACT IN MY ORGANIZATION FOR HELP?

For specific questions concerning the implementation of DOE O 252.1, contact your TSM. His or her name is provided on an updated list on the TSP Home Page under "Technical Standards Managers."

For additional information about the DOE TSP, contact the TSPO, managed by the Office of Environment, Safety and Health, Office of Nuclear Safety Policy and Standards. The TSP Procedures are also available through the TSP home page. For general questions concerning DOE O 252.1, or for questions concerning the contents of this Program Guide, contact the TSP Manager (301-903-2856) or Assistant Manager (301-903-3927).

2.   WHAT ARE THE MEANINGS OF THE COMMONLY USED TERMS IN THIS GUIDE?

Throughout this Guide, certain terms are used frequently; it is important that these terms convey the same intent all across DOE. Key definitions and terms are found in Attachment 1, *Technical Standards Program Definitions and Terms.* Many of these are derived from PL 104-113 and OMB A-119, and may be subject to change if these "source documents" change. Attachment 1 (and any pertinent text) will be updated in this Guide if such changes occur.

3.   WHO CAN WORK ON DOE TECHNICAL STANDARDS PROJECTS?

Individuals working on DOE Technical Standards and VCS projects include Technical Standards Managers, subject matter experts, and technical experts from many fields. To effectively conduct standards development and reviews, they need knowledge, skills and abilities appropriate to their assigned position—a demonstrable competence—that qualifies them in their areas of expertise. These are derived from formal education, training, and experience at a level sufficient for them to understand and fulfil their technical, safety, and programmatic responsibilities and meet DOE and other relevant requirements. Appropriate qualifications are defined through such means as DOE's Technical Qualification Program (for Federal nuclear technical staff), VCSs such as ANSI/ANS-3.1-1987, *Selection, Qualification and Training of Personnel for Nuclear Power Plants* (suggested for DOE Topical Committees), the WSS process, currently listed DOE Technical Standards, Orders and Guides related to training, and pertinent program procedures (such as the TSPPs). For both technical and safety reasons, it is critical that competent subject matter experts are included in each DOE Technical Standard or VCS development and review activity. (See also Chapter III, Section 6c above.) Definable technical competence is a key facet of Integrated Safety Management (ISM), and standards management is a key part of the ISM infrastructure.

4.   HOW SHOULD A VCS OR TECHNICAL STANDARD BE ACCEPTED AS ADEQUATE FOR A DOE APPLICATION?

New and different technical standards and VCSs are routinely available for DOE organizations, facilities, programs, and tasks to use to support their missions and functions. Headquarters (HQ), Field, and contractor organizations should consider the following basic questions to help ensure that a new or different standard is adequate for a DOE application:

a.   Is the proposed document the product of a recognized standards development process, such as a certified ANSI SDO or the TSP?

b.   Have qualified DOE (HQ, Field, Contractor) subject matter experts (i.e., experienced, trained, and qualified; see Section 3 above) reviewed the document for technical adequacy, currency, and applicability?

c.   Have the DOE subject matter experts determined that there is a need for the proposed document, that it meets the intended application, and that it is the best possible alternative (note that adoption of existing VCSs is preferred)?

d.   Does the document require modification before it can be used and can the modifications be readily made?

e.   How does incorporation of the document affect any related safety basis, such as S/RIDs, Safety Analysis, WSS, hazards analysis, or process safety management?

f.   If adopting the new or different document impacts areas that are critical or important to safety or that constitute an unreviewed safety question (USQ), are further reviews and approvals necessary to keep the safety basis valid?

g.   What management level is necessary to approve incorporation of the document into the DOE application (e.g., considering if it impacts a WSS set, a safety analysis, local procedures, or a specific work task)?

h.   How will the acceptance and adoption (use) of the new standard be documented (e.g., via quality assurance procedures, USQ review, safety analysis and safety evaluation, procedure changes)?

i.   What additional actions, such as new or revised procedures, are needed to complete incorporation of the document into the application?

5.   **WHERE CAN I FIND MORE INFORMATION?**

a.   Public Law 104-113, *National Technology Transfer and Advancement Act of 1995*, 3/7/96.

b.   OMB A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, 2/10/98.

c.   DOE G252.1-1, Attachment 1, *Technical Standards Program Definitions and Terms.*

d.   ANSI/ANS-3.1-1987, *Selection, Qualification and Training of Personnel for Nuclear Power Plants.*

e.   DOE G 450.3-1, *Documentation for Work Smart Standards Applications: Characteristics and Considerations*, February 1997.

f.   DOE 0 360.1, *Training*, 5/31/95, DOE Technical Qualification Program - Technical Qualification Standards.

ATTACHMENT 1
TECHNICAL STANDARDS PROGRAM
DEFINITIONS AND TERMS

The definitions and terms listed below are commonly used with the Technical Standards Program (TSP) and throughout this Guide. The source of the definition or term is cited wherever possible. Primary definitions for many technical standards related terms are contained in Federal law and policy [OMB Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*" (also 15 U.S.C. 272 note)], and Public Law (PL) 104-113 [the National Technology Transfer and Advancement Act of 1995, March 7, 1996 (also called the NTTAA)], and are not repeated here unless so noted.

1.   categorical basis reporting: Reporting the use of Government standards in procurement when your agency identifies, manages, and reviews the use of standards by group or category. Category-based reporting is especially useful when your agency either conducts large procurements or large numbers of procurements using Government-unique standards, or is involved in long-term procurement contracts that require replacement parts based on government-unique standards. See OMB A-119 for details. [*Federal Register*, Volume 63, No. 33, page 8554, Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, February 10, 1998, Section 12.a (also 15 U.S.C. 272 note)] URL: **http://www.whitehouse.gov/WH/EOP/OMB/html/circulars/a119/a119.html#11**

2.   DOE Full Coordination Standard: A DOE Technical Standard is developed by a Secretarial Office for application by one or more other Secretarial Officers within DOE and is coordinated with all affected Secretarial Officers. Such a standard may be developed from a DOE Limited Standard when it is determined that the limited standard will apply to more than one Secretarial Office. [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, Section 6.b., 5/19/92]

3.   DOE Handbooks (DOE-HDBKs): DOE Handbooks are technical standards documents developed and maintained in accordance with TSP Procedures to provide general textbook-type information on a variety of subjects (e.g., technical training fundamentals, physical sciences, engineering, management, etc.) to DOE and its contractor organizations. They apply to multiple DOE organizations (both Federal and contractor) and are products of the DOE-wide approved processes of the TSP. [DOE-TSPP-2, Section 2.5.3, Section 2.2.3; DOE-TSPP-5, Section 2.1.b]

4.   DOE Limited Standard: A DOE Technical Standard having limited scope and application, which is prepared by a specific limited-interest group within the Department (i.e., a Program Secretarial Office (PSO) or other Secretarial Office), such as the Office of Environment, Safety and Health, Office of Defense Programs, Office of Environmental Management, or Office of Energy Research, which is subject to approval by that Secretarial Officer after consideration of comments received from within their group, from affected oversight organizations, or from other Secretarial Offices with direct interests, such as the Office of Security Affairs for safeguards and security matters. The term "limited

standard" is used to mean DOE limited standards. [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, Section 6.c., 5/19/92]

5. <u>DOE Representative to an SDO</u>: A DOE employee or authorized contractor designated by the appropriate Senior Executive Level management office (Headquarters or Field) to –

    (a)   work on standards committee assignments by reason of individual professional or technical expertise to further technical programmatic objectives of the Department or

    (b)   to serve as an official spokesperson for the Department on boards of directors governing as policy-developing bodies, including, for example, management boards of SDOs. [DOE O 1300.2A, TECHNICAL STANDARDS PROGRAM, Section 6., 5/19/92]

6. <u>DOE Specifications (DOE-SPECs)</u>: DOE Specifications are technical standards documents developed and maintained in accordance with TSP Procedures specifically to support repetitive acquisitions of products or items. They apply to multiple DOE organizations (both Federal and contractor), and are products of the DOE-wide approved processes of the TSP. They clearly describe essential technical requirements for purchasing material. They can also provide receipt inspection criteria to determine that the material covered by the specification meets the need. [DOE-TSPP-2, Section 2.5.2, Section 2.2; DOE-TSPP-5, Section 2.1.a]

7. <u>DOE Standards (DOE-STDs)</u>: DOE Standards are technical standards documents developed and maintained in accordance with TSP Procedures that are used to provide information on "how to" accomplish a task, develop a plan, format a document, or describe a program. They are coordinated with all DOE Components (through their designated TSMs) and are designed to meet the needs of multiple DOE programs and projects. [DOE-TSPP-2, Section 2.5.1, Section 2.2.3; DOE-TSPP-5, Section 2.1.a]

8. <u>DOE Technical Standards</u>: DOE TSP documents developed, coordinated, approved, and maintained through the DOE TSP, specifically including DOE Standards, DOE Specifications, DOE Handbooks, and DOE Technical Standards Lists (the latter do not require coordination). [DOE-TSPP-2, Section 2.5]

9. <u>DOE Technical Standards Lists (DOE-TSLs)</u>: DOE Technical Standards Lists are special indices or listings of technical standards tailored to a specific family of programs or limited subject matter. [DOE-TSPP-2, Section 2.5.4, Section 2.2.3; DOE-TSPP-5, Section 2.1.c]

10. <u>Government Standards</u>: Federal, military, and other agency standards and specifications developed by Federal agency personnel, outside groups under agency regulations, or by organizations or committees made up solely of Government agency representatives. [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, Section 6.d., 5/19/92]

11. <u>Interagency Committee on Standards Policy (ICSP)</u>: A committee established under the auspices of the Department of Commerce to coordinate and provide policy guidance to the heads of Federal agencies on standards. It is comprised of representatives from the major Federal departments and agencies which have an interest in standards. The Committee is chaired by the Director, Office of Standards Services, National Institute of Standards and Technology. [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, Section 6.e., 5/19/92]

12. <u>Non-Government Standards (NGSs)</u>: Non-Government standards are established generally by national and international private sector bodies and are available for use by any person or organization, private or governmental. NGSs are also referred to as "voluntary consensus standards," "industry standards," "commercial standards," and "consensus standards" (standards developed under due process procedures), but do not include professional standards of personal conduct, private standards of individual firms, standards mandated by law, or standards of individual organizations for their internal use. [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, Section 6., 5/19/92]

13. <u>Non-Government Standards Bodies (NGSBs)</u>: National and international scientific, technical, professional, industry, or other organization, society, or association not organized for profit that conduct standardization activities and develop, establish, or coordinate NGSs. They are also called Standards Development Organizations, or SDOs. [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, Section 6., 5/19/92]

14. <u>Non-Government Standards Body Support (Standard Development Organization Support)</u>: Support given to an SDO in one or more of the following formats:

    (a) direct financial support (e.g., sustaining membership, grants, and contracts);

    (b) technical support (e.g., cooperative testing for standards evaluation and participation of DOE representatives in the activities of standards-developing groups);

    (c) administrative support (e.g., travel costs associated with meetings, hosting of meetings, and secretarial functions);

    (d) planning support (e.g., joint planning with NGSBs to facilitate a coordinated effort); and

    (e) other funding support (e.g., travel funds and per diem costs for qualified consumer participation when such participation will improve the development of a standard).
        [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, SECTION 6., 5/19/92]

15. <u>participation</u>: The activity associated with DOE representation through oral or written communication that influences the development of SDOs or the administration of SDOs. Participation also includes providing support to SDOs. [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, Section 6.f., 5/19/92]

16. <u>procedures</u>: Procedures prescribe how an organization performs the specific tasks of its business. Procedures are developed for internal use by a single organization (or program or function), using "local" internal processes, in contrast to directives, which are developed to apply requirements, guidance, and standards to multiple DOE organizations (both Federal and contractor), using DOE-wide approved processes that include the Directives System and TSP. Procedures provide managers with a critical management tool to communicate detailed expectations for how individual workers are to perform specific tasks. They represent how, in part, organizations document compliance with the externally and internally imposed requirements; how management's philosophy and commitments are codified and communicated; and how productivity, safety, and quality of operations are ensured. They provide a means for conducting work safely and effectively, protecting worker and public health, and protecting the environment. [DOE-STD-1029-92(CH-1), *Writer's Guide for Technical Procedures*, December 1998; HFAC-0010, *The Basics of Procedure Writing*, Project Discontinued 2/20/97; HFAC-0007, *Principles for Excellence in Procedure Writing,* Project Discontinued 1/31/97]

17. <u>standards</u>: The term "standards" (with a lower case "s") are the expressed expectations for performance of work. They may serve as reference points against which to measure excellence or may become enforceable requirements. They include Federal, state, and local laws and regulations; DOE Orders; nationally and internationally recognized standards; and other documents that protect the environment and the safety and health of our workers and the public. [DOE/EH-0416, *Criteria for the Department's Standards Program*, August 1994]

18. <u>standards-developing groups</u>: Committees, subcommittees, boards, or other principal subdivisions of SDOs, established for the purpose of developing, revising, or reviewing technical standards, and which are bound by the procedures of those bodies. [DOE O 1300.2A, DOE TECHNICAL STANDARDS PROGRAM, SECTION 6., 5/19/92]

19. <u>technical standards (generic)</u>: Generic technical standards are performance-based or design-specific technical specifications and related management systems practices that cover classification of components; delineation of procedures; specification of dimensions, materials, performance, designs, or operations; measurement of quality and quantity in describing materials, processes, products, systems, services or practices; test methods and sampling procedures; or descriptions of fit and measurements of size or strength. DOE Technical Standards are developed and maintained for internal DOE use through the DOE Technical Standards Program (TSP), and include DOE Standards (DOE-STD), DOE Specifications (DOE-SPEC), DOE Handbooks (DOE-HDBK), and DOE Technical Standards Lists (DOE-TSL). [*Federal Register*, Volume 63, No. 33, page 8554, Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*," Section 3.a. (also 15 U.S.C. 272 note); DOE 1300.2A, DOE TSP, 5/19/92, Section 6.g]

20. <u>Technical Standards Manager (TSM)</u>: A TSM is a senior individual, experienced in standards activities and familiar with component functions and organizations, who has been designated by the head of a DOE component in accordance with DOE O 252.1 to serve as the organization's point-of-

contact for technical standards activities, provide coordination with the TSP, and conduct and report such activities in accordance with the TSP Procedures. [DOE-TSPP-2, Section 2.6, Section 2.7.b]

21. Technical Standards Program Procedures (TSPPs): TSPPs are the set of procedures developed under the TSP by the TSP managers and TSMs to conduct the day-to-day activities necessary to develop, approve, and maintain DOE Technical Standards, to coordinate with standards development organizations and DOE topical committees, and to conform with PL 104-113, OMB A-119, DOE Policy, DOE O 251.1A, DOE M 251.1-1A, and DOE O 252.1. [new 11/99]

22. transactional basis reporting: Reporting the use of Government standards in procurement when your agency identifies, manages, and reviews the use of standards on a transaction basis rather than a category basis. Transaction-based reporting is especially useful when your agency conducts procurement mostly through commercial products and services, but is occasionally involved in a procurement involving Government-unique standards. See OMB A-119 for details. [*Federal Register*, Volume 63, No. 33, page 8554, Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, February 10, 1998, Section 12.b. (also 15 U.S.C. 272 note)] URL: **http://www.whitehouse.gov/WH/EOP/OMB/html/circulars/a119/a119.html#11**

23. use: "Use of a technical standard means incorporation of a standard in whole, in part, or by reference for procurement purposes, and the inclusion of a standard in whole, in part, or by reference in regulation(s)." (per OMB A-119, February 10, 1998) [*Federal Register*, Volume 63, No. 33, page 8554, Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, Section 6, Section 6.a.(1) (also 15 U.S.C. 272 note)]

24. voluntary consensus standards (VCSs): Voluntary consensus standards are standards developed or adopted by voluntary consensus standards bodies (standards development organizations or SDOs), both domestic and international. (Derived from OMB A-119, February 10, 1998) [*Federal Register*, Volume 63, No. 33, page 8554, Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, Section 4.a. (also 15 U.S.C. 272 note)]

25. voluntary consensus standards bodies: Voluntary consensus standards bodies (or organizations) are national or international SDOs that plan, develop, establish, or coordinate voluntary consensus standards using agreed-upon procedures. (Derived from OMB A-119, February 10, 1998) [*Federal Register*, Volume 63, No. 33, page 8554, Circular No. A-119, *Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities*, Section 4.a.(1) (also 15 U.S.C. 272 note)]