

Technical Information Management

Program Mission

The mission of the Technical Information Management program (TIM) is to provide timely, accurate technical information to DOE's researchers and the public by collecting, preserving, and disseminating scientific and technical information, the principal product resulting from the multi-billion dollar Department of Energy research and development (R&D) program. The TIM program also provides worldwide energy scientific and technical information to the Department of Energy (DOE), the United States (U.S.) industry, academia, and the public through interagency and international scientific and technical information exchange agreements and coordinates technical information-related activities across DOE and its laboratories.

The Department of Energy makes a multi-billion dollar annual investment in energy- and environment-related R&D activities. The primary and immediate product of this investment is information that will lead to advances in basic science and technology; more efficient uses and conservation of our nation's energy resources; more advanced technologies for environmental protection and remediation; cleaner-burning fuels and better transportation sources.

As part of the Office of Science, the TIM program serves the U.S. research community by collecting and disseminating R&D information, increasingly in electronic, full-text form through the Internet. The program is continuing the radical transition to a new reality of reduced budget and staffing by using state-of-the-art information technology and skills. Working in partnership with other agencies, the TIM program provides the free, publicly-available Information Bridge (<http://www.doe.gov/bridge>) – one of the world's largest digital compilations of energy-related R&D information, containing nearly 30,000 (and growing) full-text technical reports. In addition, energy-related science journals are abstracted and indexed, resulting annually in 40,000 to 60,000 records of DOE and other domestic research being searchable with a single inquiry.

Other industrialized nations are also investing in energy R&D, and the resulting technical information is globally recognized as a valuable commodity that can be exchanged in order to save taxpayer dollars and avoid duplicative research. Representing DOE and the United States in international exchange agreements, the TIM program acquires an additional 80,000 foreign research records annually for use by the domestic science community. A large part of this foreign information acquisition comes through TIM's representation in the International Atomic Energy Agency's (IAEA) International Nuclear Information System (INIS). Under this agreement, TIM acquires foreign non-defense nuclear-related research information and fulfills the U.S. obligation to exchange its information as a member of the United Nations, to which IAEA reports.

Requirements for technical information management and dissemination are delineated in the American Technology Preeminence Act; the Paperwork Reduction Act (and implementing guidelines); Department of Energy enabling legislation; and international treaties/agreements with the International Atomic Energy Agency and the International Energy Agency.

Program Goal

To increase the payback and productivity of energy R&D by making the resulting information more easily accessible and widely available than ever before — at a lower cost per person served.

Specific GOALS include:

- Lead the Department in the collection, organization, preservation, and dissemination of scientific and technical information resulting from the Department's R&D programs; and
- Provide worldwide scientific and technical energy information to the Department, U.S. industry, academia, and the public.

Program Objectives

- Increase the number of researchers and citizens served with scientific and technical information at a lower cost per person served;
- Lead/advance the institutionalization of an electronic, decentralized technical information collection that contributes to the future development of a National Library of Energy Science and Technology;
- Negotiate and implement agreements for DOE's widespread, electronic access to U.S. science journals; and
- Provide more effective mechanisms for public access to global energy-related information.

Performance Measures

- Number of persons served with scientific and technical information and reduction in cost per person served;
- Percent of Departmental technical information exchanged electronically;
- Age and timeliness of information acquired and disseminated;
- Percent and amount of foreign energy-related information acquired to augment the U.S. collection and promote national competitiveness;
- Number of leading science journals available electronically to the DOE research community;
- Percent of DOE sites' distributed information collections linked and searchable with a single inquiry; and
- Customer satisfaction with Departmental scientific and technical information products and services.
- Continue to make available electronic journals at the desktop, and implement tools to facilitate electronic access to DOE's scientific and technical information.

Significant Accomplishments and Program Shifts

Program Support

The Technical Information Management program continues to make progress toward strategic priorities, known collectively as "Bringing Science Information to the Desktop."

■ **Electronic Information Exchange and the Information Bridge**

As technology and common standards advance, it becomes more timely and economical to exchange information in electronic media. While it will be necessary for the Department to maintain a centralized point of coordination for this electronic infrastructure (for policy, standards, archiving, etc.), Departmental elements will realize efficiencies in information technology, management, printing, and publishing as a result of Department-wide electronic exchange. EnergyFiles, a new web-based virtual library (<http://www.doe.gov/EnergyFiles>), puts energy science and technology information at the user's fingertips. It is a suite of Internet tools, which is now accessed over 70,000 times a month and provides one-stop access to approximately 350 different information repositories from across the DOE laboratories and other sites. The Information Bridge, which is the major component of Energy files and provides access to 30,000 full-text, electronic DOE R&D reports, will continue to enable the user to bypass expensive and time-consuming bibliographic searches and requests for paper reports. In FY 2000, the Information Bridge will be kept current with the latest in R&D results and will have at least a 50 percent increase in its user base.

■ **Taking the Labor Out of Learning - Desktop Literature Searching**

Scientific research is a cumulative and synergistic process where continued advances are dependent on previous research findings. The pace of these advances is largely dependent on researchers' and librarians' ability to locate and retrieve information pertinent to their research areas. While scientific journal articles and technical reports always cite references, locating and retrieving the full text of these references has historically been an additional, time-consuming step in the information search and possible only on the premises of major science libraries. The technology is now available to build electronic hyperlinks to the full-text referenced sources, taking a small fraction of the time of traditional searches and taking the labor out of learning. This capability, which is already being capitalized on in the life sciences at the National Library of Medicine, makes hyperlinks between electronic bibliographic systems (which are already maintained by the TIM program) and journal publishers' web sites containing full-text articles. The time is right for DOE to bring the same capability to the physical sciences research community. At the requested funding level, the requirements analysis for this capability will be completed.

■ **Enhanced Access to Electronic Science Journals**

The Technical Information Management program is aggressively pursuing agreements for the availability of electronic science journals for the Departmental research community, thereby saving the Department the cost of multiple paper-based subscriptions. Electronic journal agreements are estimated to save the Department \$8,000,000 annually. In FY 2000, core science journals will be provided electronically to DOE research facilities.

■ **Searching Distributed Collections**

To complete the foundation for a future digital library for energy science and technology, technical information collections residing at DOE sites (20 plus labs and other research entities) must be linked and searchable with a single inquiry. This will be achieved through technology and standards capable of searching across multiple platforms and formats. In FY 2000, at least 5 major sites will be linked and searchable.

■ **Archive of Science and Technology**

The TIM program is the one place in the world where the Department's entire collection of scientific and technical information can be found. With the transition to the electronic information age, the repository function for the nation's energy-related science base must adapt to the new media. Interagency standards and agreements must be developed, adopted, and implemented while conserving resources and promoting information access and retrievability. The TIM program also houses a comprehensive repository of energy- and weapons-related classified and sensitive information—over 100,000 reports. Within national security requirements, the program is laying the groundwork for this collection to be protected and exchanged using new Information Age electronic technology.

■ **Implementing the Transition from Paper to Electronic Information Management**

The Department issued the Scientific and Technical Information Order, DOE O 241.1, and Implementation Guide which define the Department's new system for collecting scientific and technical information to make it searchable and retrievable. The new way of doing business described by the Order and Guide is the single most revolutionary change in the Technical Information Management program since it began in the 1940s. The Department's scientific and technical information program is being converted from a centralized paper-based one to a decentralized electronic environment. As technical information is the principal deliverable stemming from R&D, the web-based electronic TIM program is positioned to help improve the visibility of, and appreciation for, the Department's R&D. The Order and Guide were developed by a collaborative process between Laboratories, Operations Offices, and Headquarters; their development purposefully departed from command and control approaches and will ensure more timely and broadened access to results from taxpayer-supported R&D.

Funding Profile

(dollars in thousands)

	FY 1998 Current Appropriation	FY 1999 Original Appropriation	FY 1999 Adjustments	FY 1999 Current Appropriation	FY 2000 Request
Technical Information Management					
Program Support	1,600	1,600	0	1,600	1,600
Program Direction	7,500	7,000	0	7,000	7,500
Subtotal, Technical Information Management	9,100	8,600	0	8,600	9,100
Construction	1,000	0	0	0	0
Subtotal, Technical Information Management	10,100	8,600	0	8,600	9,100
Use of Prior Year Balances	-68 ^a	-191 ^a	0	-191 ^a	0
Total, Technical Information Management	10,032	8,409	0	8,409	9,100

Public Law Authorization:

Public Law 95-91, "Department of Energy Organization Act"

^aShare of Energy Supply, Research and Development general reduction for use of prior year balances assigned to this program. The total general reduction is applied at the appropriation level.

Funding by Site

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Oak Ridge Operations Office					
Office of Scientific and Technical Information	10,100	8,600	9,100	+500	+5.8%
Use of Prior Year Balances	-68 ^a	-191 ^a	0	+191 ^a	+100.0%
Total, Technical Information Management . .	10,032	8,409	9,100	+691	+8.2%

Site Description

The Office of Scientific and Technical Information is located on a 5 acre site in Oak Ridge, Tennessee. The mission of the TIM program is to provide timely, accurate technical information to DOE researchers and the public by collecting, preserving, and disseminating scientific and technical information. The TIM program is carried out at this one site.

^a Share of Energy Supply, Research and Development general reduction for use of prior year balances assigned to this program. The total general reduction is applied at the appropriation level.

Program Support

Mission Supporting Goals and Objectives

Scientific and technical information is the principal deliverable from research and development (R&D). Department of Energy researchers, whether with laboratories, universities or contractors, document their research results in two main ways: report literature and journal literature. The TIM program plays a central role in making both types of literature searchable and retrievable.

For report literature, TIM coordinates a Department-wide program involving researchers, librarians, and program managers, which results in reports being collected, preserved, and disseminated. The Information Bridge, TIM's web product for reports, includes 2 million pages in 30,000 reports, all searchable. The Government Printing Office has found this product sufficiently valuable that it has sponsored making this web site available to the public.

For DOE-sponsored R&D that is recorded in journal literature, TIM creates bibliographic records and abstracts that allow the information to be located, searched, and retrieved. TIM makes these bibliographic systems available to the National Technical Information Service which, in turn, markets the database to vendors such as Dialog. Researchers access Dialog in order to do a literature search. Without such a bibliographic database, searches would be impossible.

All of this information is exchanged with foreign partners as part of international exchange agreements, in which the U.S. research community is given access to an additional 80,000 foreign research summaries per year, which would otherwise not be available from any other source.

Two primary laws specify and mandate DOE's technical information responsibilities: (1) Public Law 93-577, "National Energy R&D Policy Act," directs DOE to effectively manage and disseminate information resulting from R&D activities and (2) Public Law 102-245, "American Technology Preeminence Act," requires federal agencies to send technical information to the National Technical Information Service (NTIS) in the Department of Commerce. To most effectively meet these statutory responsibilities; to fulfill international information exchange obligations; and to ensure accountability for its R&D expenditures, DOE has assigned these responsibilities to the TIM program, operated by the Office of Scientific and Technical Information (OSTI) within the Office of Science. NTIS, as it has with a single entity in all federal R&D agencies, signed a Memorandum of Understanding with DOE designating OSTI as an NTIS "affiliate," whose responsibilities are to ". . . transfer to NTIS, within 15 days of the date it is first made available for public dissemination: one copy of each final scientific, technical, and engineering information product resulting from DOE's research and development activities. . ."

The TIM program receives information from over 7,000 research entities in the DOE complex; organizes the information into a searchable and retrievable collection; and, in addition to other dissemination mechanisms, submits the information to NTIS as required by the American Technology Preeminence Act. NTIS databases depend on the TIM program to collect DOE's technical information because (1) the 7,000 submitting entities (from which TIM gathers the information and maintains a coordinated collection infrastructure) would not uniformly send reports to NTIS and (2) NTIS is not equipped with the resources or capabilities to collect and organize this raw information from over 7,000

different sources. The TIM program also manages an active classified information repository of 10,000 reports, which are not exchanged with NTIS. The TIM program works with both the Government Printing Office and NTIS in disseminating the Department's R&D information to the public. These relationships are required by law. Technology is allowing for more streamlined and less redundant exchange of information.

While DOE and NTIS databases contain some of the same information, there is no redundancy between the mission of TIM and NTIS as TIM serves DOE's research community of 30,000 scientists and engineers; manages a 50-year archive of 1.1 million unclassified and 100,000 classified documents; and fulfills U.S. obligations under two international information exchange agreements, resulting in 80,000 foreign R&D summaries being available to the U.S. research community each year, a collection that would not otherwise be available from any other source. One of these exchange agreements involves the International Nuclear Information System (INIS), under the aegis of the International Atomic Energy Agency and the United Nations. Under this agreement, TIM fulfills the U.S. obligation to provide its non-defense nuclear-related R&D information and, in exchange, receives worldwide nuclear research results, which American scientists access, search, and retrieve.

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Program Support	1,600	1,600	1,600	0	0.0%
Total, Program Support	1,600	1,600	1,600	0	0.0%

Detailed Program Justification

(dollars in thousands)

FY 1998	FY 1999	FY 2000
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Program Support

<ul style="list-style-type: none"> ■ Implement "Bringing Science Information to the Desktop" initiatives, including keeping the Information Bridge current by adding 15,000-20,000 new full text technical reports; providing the DOE research community electronic access to core science journals; and establishing searchable distributed information collections and 5 major DOE research facilities. Streamline collection, management, and dissemination of DOE R&D results by continuing transition from predominately paper-based environment to electronic information exchange and locator technology. Capital equipment funding is included for computer hardware to support electronic information exchange efforts. . . . 	1,200	1,200	1,200
<ul style="list-style-type: none"> ■ Enhance U.S. economic competitiveness by providing access to 80,000 foreign R&D records for domestic research and industrial communities. 	200	200	200
<ul style="list-style-type: none"> ■ Protect national security while enabling simplified electronic exchange of and access to classified technical information by beginning the digitization of 100,000 current and historic reports. 	200	200	200
Total, Program Support	1,600	1,600	1,600

Explanation of Funding Changes from FY 1999 to FY 2000

FY 2000 vs. FY 1999 (\$000)

Program Support

<ul style="list-style-type: none"> ■ There are no changes from FY 1999 to FY 2000 for Program Support. 	0
Total Funding Change, Program Support	0

Program Direction

Mission Supporting Goals and Objectives

Program Direction funding provides staffing and resources to both direct and execute the Technical Information Management (TIM) mission. Federally-staffed functions include policy development and integration; U.S. and DOE representation in interagency and international information exchange agreements; and collecting, preserving, and disseminating information resulting from DOE's R&D investment. Federal employees are used when it is more economical than outsourcing or the functions are inherently governmental in nature.

Program direction is divided into the following categories:

Salaries and Benefits provides for Federal staff involved in the functions described above.

Travel provides for program-related travel to coordinate and implement partnerships within DOE and with other federal agencies to exchange electronic information and provide free access, via the Internet, to taxpayer-sponsored R&D results.

Support Services provides on-site services in such areas as mail operations, local area network support, and analysis of electronic information exchange.

Other Related Expenses represent maintenance and utilities costs for the Office of Scientific and Technical Information facility and equipment for office automation and work requirements.

Funding Schedule

(dollars in thousands, whole FTEs)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Oak Ridge					
Salaries and Benefits	6,610	6,320	6,590	+270	+4.3%
Travel	110	90	110	+20	+22.2%
Support Services	200	100	200	+100	+100.0%
Other Related Expenses	300	200	300	+100	+50.0%
Total, Oak Ridge	7,220	6,710	7,200	+490	+7.3%
Full Time Equivalents	99	95	94	-1	-1.1%
Headquarters					
Salaries and Benefits	270	280	290	+10	+3.6%
Travel	10	10	10	0	0.0%
Support Services	0	0	0	0	0.0%
Other Related Expenses	0	0	0	0	0.0%
Total, Headquarters	280	290	300	+10	+3.4%
Full Time Equivalents	3	3	3	0	0.0%
Total Technical Information Management					
Salaries and Benefits	6,880	6,600	6,880	+280	+4.2%
Travel	120	100	120	+20	+20.0%
Support Services	200	100	200	+100	+100.0%
Other Related Expenses	300	200	300	+100	+50.0%
Total, Program Direction	7,500	7,000	7,500	+500	+7.1%
Full Time Equivalents	102	98	97	-1	-1.0%

Detailed Program Justification

(dollars in thousands)

FY 1998	FY 1999	FY 2000
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Salaries and Benefits

- In the Technical Information Management (TIM) program, OSTI employees are responsible for both program direction and program execution/implementation. As such, OSTI has a percentage of its federal staff serving in an administrative or oversight capacity and the remainder serving as hands-on "implementers" of the program. Federally-staffed functions include policy development and integration; U.S. and DOE representation in interagency and international information exchange agreements; and collecting, preserving, and disseminating information resulting from DOE's R&D investment. Federal employees are used when it is more economical than outsourcing or the functions are inherently governmental in nature. In FY 2000, with 97 employees, the TIM program will continue the transition to bringing electronic science information to the desktop. The functions provided include enhancements to electronic information exchange and the DOE Information Bridge; enhanced access to electronic science journals; representing the U.S. and DOE in foreign information exchange agreements (resulting in 80,000 foreign records available to domestic researchers); electronic archiving of 50 years of DOE's legacy document collections; developing information technology applications for taking the labor out of learning and providing desktop literature searching; and searching distributed collections at DOE sites across the Complex. Achieving these functions will complete the foundation for a future digital library of energy science and technology thereby avoiding costly duplication of information collection, archiving, and dissemination by multiple DOE sites.

	6,880	6,600	6,880
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(dollars in thousands)

	FY 1998	FY 1999	FY 2000
Travel			
■ Travel funding is required for the partnering and coordination inherent in a nationwide, distributed research and information environment.	120	100	120
Support Services			
■ FY 2000 is at the base level of support services needed primarily for internal and external automatic data processing functions.	200	100	200
Other Related Expenses			
■ Expenses reflect facility maintenance costs, including scheduled replacement of parts, equipment, and supplies. Expenses also reflect a transition to enhanced telecommunications for handling increased information dissemination.	300	200	300
Total, Program Direction	7,500	7,000	7,500

Explanation of Funding Changes from FY 1999 to FY 2000

FY 2000 vs. FY 1999 (\$000)

Salaries and Benefits

- FY 1999 salary costs reflect a lower staffing level following a major reduction in force in FY 1998. FY 2000 reflects a workforce of 1 less FTE but also includes cost of living increase of 4.2 percent, or \$280,000 +280

Travel

- Travel increase of \$20,000 is needed to coordinate with R&D sites in developing and implementing information exchange standards and priorities. +20

FY 2000 vs. FY 1999 (\$000)

Support Services

- Support Services increase of \$100,000 reflects a restoration of basic support to infrastructure services such as PC maintenance and training, scanning of DOE technical reports, and other information services as required of the TIM mission. +100

Other Related Expenses

- Other Related Expenses increase of \$100,000 includes remediation of an underground storage tank and upgrading of telecommunications capacity to manage increased volume of Internet customers. +100

Total Funding Change, Program Direction	+500
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Support Services

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Technical Support Services					
Test and Evaluation Studies	100	50	100	+50	+100.0%
Total, Technical Support Services	100	50	100	+50	+100.0%
Management Support Services					
ADP Support	100	50	100	+50	+100.0%
Total, Management Support Services ..	100	50	100	+50	+100.0%
Total, Support Services	200	100	200	+100	+100.0%

Other Related Expenses

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Training	15	0	15	+15	+100.0%
Rental Spaces/Utilities	200	150	200	+50	+33.3%
Software Procurement/Maintenance Activities/Capital Acquisitions	85	50	85	+35	+70.0%
Total, Other Related Expenses	300	200	300	+100	+50.0%

Construction

Mission Supporting Goals and Objectives

Construction funding was provided to update and renovate general purpose infrastructure in support of the TIM program.

Funding Schedule

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Construction	1,000	0	0	0	0%
Total, Construction	1,000	0	0	0	0%

Detailed Program Justification

(dollars in thousands)

	FY 1998	FY 1999	FY 2000
<ul style="list-style-type: none"> ■ Heating, ventilation and air condition (HVAC) Retrofits of OSTI Facility, Oak Ridge, TN (Project No. 95-A-500) was completed in FY 1998. 	1,000	0	0
Total, Construction	1,000	0	0

Explanation of Funding Changes from FY 1999 to FY 2000

FY 2000 vs. FY 1999 (\$000)

Construction

<ul style="list-style-type: none"> ■ There are no changes from FY 1999 to FY 2000 for Construction. 	0
Total, Funding Change, Construction	0

Capital Operating Expenses & Construction Summary

Capital Operating Expenses

(dollars in thousands)

	FY 1998	FY 1999	FY 2000	\$ Change	% Change
Capital Equipment	0	150	200	+50	+33.3%
Total, Capital Operating Expense	0	150	200	+50	+33.3%

Construction Projects

	Total Estimated Cost (TEC)	Prior Year Approp- riations	FY 1998	FY 1999	FY 2000	Unapprop- riated Balance
95-A-500 Office of Scientific and Technical Information Heating, Ventilation, and Air Conditioning HVAC Retrofits	4,000	3,000	1,000	0	0	0
Total, Construction		3,000	1,000	0	0	0