

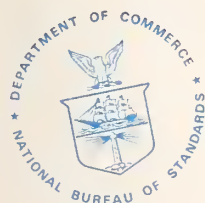
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Standards Committee Activities of the National Bureau of Standards

1980 HIGHLIGHTS

NBS Special Publication 605

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1981

NATIONAL BUREAU OF STANDARDS

The National Bureau of Standards¹ was established by an act of Congress on March 3, 1901. The Bureau's overall goal is to strengthen and advance the Nation's science and technology and facilitate their effective application for public benefit. To this end, the Bureau conducts research and provides: (1) a basis for the Nation's physical measurement system, (2) scientific and technological services for industry and government, (3) a technical basis for equity in trade, and (4) technical services to promote public safety. The Bureau's technical work is performed by the National Measurement Laboratory, the National Engineering Laboratory, and the Institute for Computer Sciences and Technology.

THE NATIONAL MEASUREMENT LABORATORY provides the national system of physical and chemical and materials measurement; coordinates the system with measurement systems of other nations and furnishes essential services leading to accurate and uniform physical and chemical measurement throughout the Nation's scientific community, industry, and commerce; conducts materials research leading to improved methods of measurement, standards, and data on the properties of materials needed by industry, commerce, educational institutions, and Government; provides advisory and research services to other Government agencies; develops, produces, and distributes Standard Reference Materials; and provides calibration services. The Laboratory consists of the following centers:

Absolute Physical Quantities² — Radiation Research — Thermodynamics and Molecular Science — Analytical Chemistry — Materials Science.

THE NATIONAL ENGINEERING LABORATORY provides technology and technical services to the public and private sectors to address national needs and to solve national problems; conducts research in engineering and applied science in support of these efforts; builds and maintains competence in the necessary disciplines required to carry out this research and technical service; develops engineering data and measurement capabilities; provides engineering measurement traceability services; develops test methods and proposes engineering standards and code changes; develops and proposes new engineering practices; and develops and improves mechanisms to transfer results of its research to the ultimate user. The Laboratory consists of the following centers:

Applied Mathematics — Electronics and Electrical Engineering — Mechanical Engineering and Process Technology — Building Technology — Fire Research — Consumer Product Technology — Field Methods.

THE INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY conducts research and provides scientific and technical services to aid Federal agencies in the selection, acquisition, application, and use of computer technology to improve effectiveness and economy in Government operations in accordance with Public Law 89-306 (40 U.S.C. 759), relevant Executive Orders, and other directives; carries out this mission by managing the Federal Information Processing Standards Program, developing Federal ADP standards guidelines, and managing Federal participation in ADP voluntary standardization activities; provides scientific and technological advisory services and assistance to Federal agencies; and provides the technical foundation for computer-related policies of the Federal Government. The Institute consists of the following centers:

Programming Science and Technology — Computer Systems Engineering.

¹Headquarters and Laboratories at Gaithersburg, MD, unless otherwise noted; mailing address Washington, DC 20234.

²Some divisions within the center are located at Boulder, CO 80303.

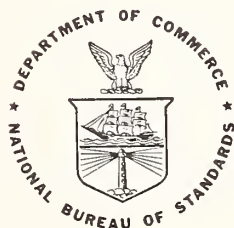
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Standards Committee Activities of the National Bureau of Standards, 1980 Highlights*

JoAnne R. Debelius

Office of Standards Information, Analysis,
and Development
Office of Engineering Standards
National Engineering Laboratory
National Bureau of Standards
Washington, DC 20234

*Supersedes NBS Special Publication 573, issued March 1980.



U.S. DEPARTMENT OF COMMERCE, Malcolm Baldrige, Secretary
NATIONAL BUREAU OF STANDARDS, Ernest Ambler, Director

Issued May 1981

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FOREWORD

This is the second annual report on NBS staff participation on the standards development activities of other Government agencies and private sector organizations. The report contains only highlights of the Bureau's participation but it does, I feel, suggest the great depth and variety of NBS' contributions to national and international standardization efforts.

Since becoming Director of the NBS Office of Engineering Standards last summer, I have gained a greater appreciation for the dedication and skill which NBS staff bring to the difficult and sometimes thankless task of developing the Nation's and the world's standards. My predecessor, Dr. Lawrence D. Eicher, who is now Assistant Secretary-General of the International Organization for Standardization, had a great deal of respect for the U. S. standards system and the individuals who make up the system. I look forward to playing a part in that system and working toward greater cooperation between the Government and the private sector.

One of the purposes of this report is to encourage cooperation. On the one hand, I hope NBS staff will learn more about the standards activities of their colleagues and will consult with them on standards problems of mutual interest. On the other hand, I hope that outside groups will recognize the wealth of expertise available at NBS to assist in standards development.

It is only through cooperative effort, I believe, that we can successfully deal with the challenges facing the U.S. standards system, including the development of a clearer definition of the roles of Government and the private sector in standards development and the implementation by the U. S. Government of the Multilateral Trade Negotiations Agreement on technical barriers to trade.

Stanley I. Warshaw
Director
Office of Engineering Standards

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ABSTRACT

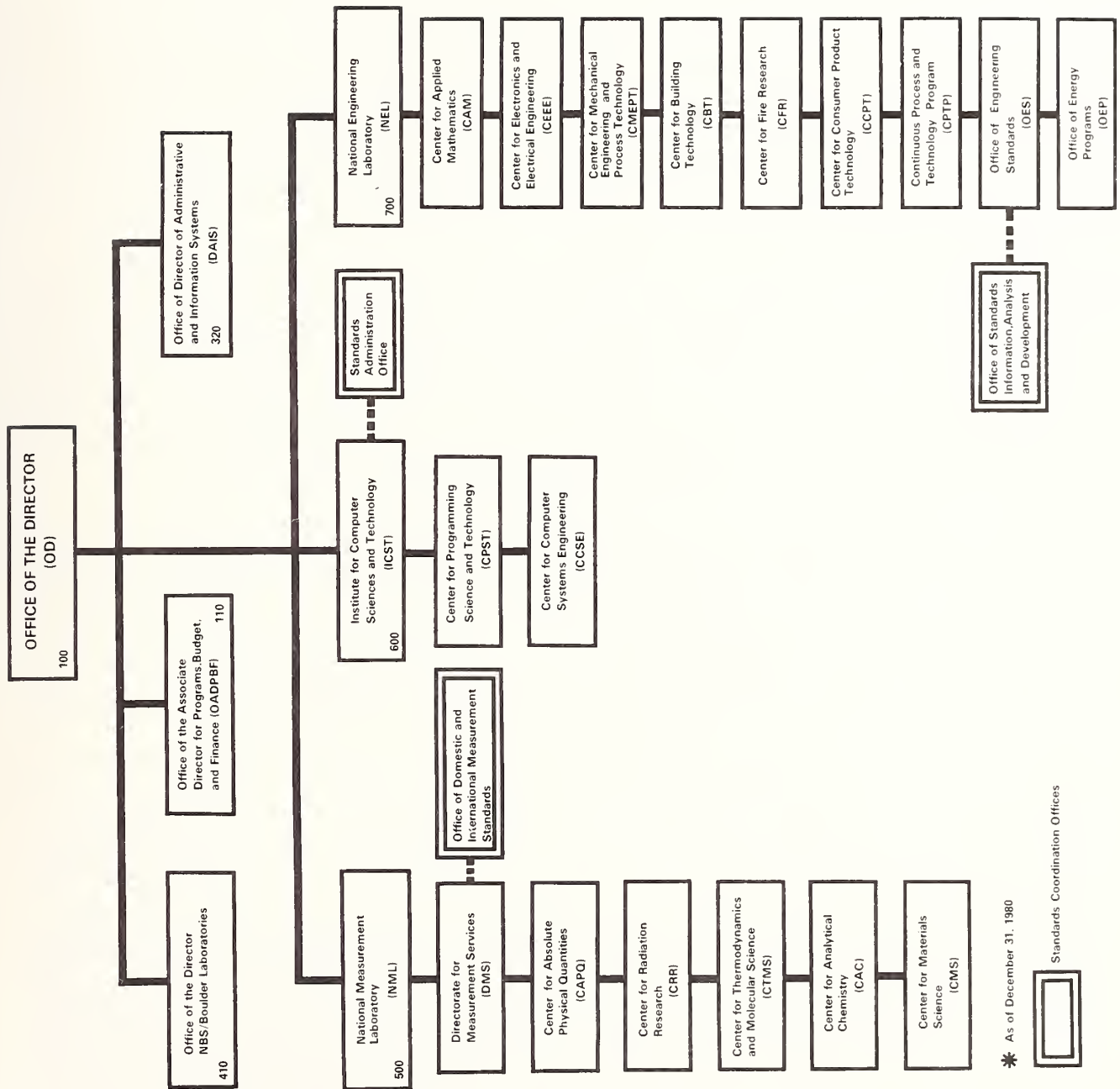
NBS uses a decentralized system for managing the participation of NBS representatives in outside standards committee activities. This type of management is governed by NBS policy; coordinated through standards offices in each NBS Major Operational Unit; and monitored and supported by the Office of Standards Information, Analysis, and Development (OSIAD).

This report summarizes NBS standards committee activities during calendar year 1980. It contains highlights of significant technical and individual contributions made by NBS staff, a description of NBS standards management and information activities, and a directory of standards committees on which NBS staff serve. (Supersedes NBS Special Publication 573 (March 1980)).

For further information on NBS standards activities, contact OSIAD, National Bureau of Standards, Technology Building, Room B166, Washington, D.C. 20234, (301) 921-2092.

Key words: annual report; committee participation; standards committees.

NBS Organization *



* As of December 31, 1980

Standards Coordination Offices

INTRODUCTION

The National Bureau of Standards (NBS) commitment to assisting other Government agencies and private sector groups in the development of standards for products, processes, and materials was stronger than ever in 1980. Both the number of staff members participating on outside standards committees (521) and the number of total memberships on those committees (1,710) showed an increase over the 1979 figures. Participation in standards development activities is important to NBS because it provides an opportunity to disseminate the results of the research NBS carries out in its role as the Nation's central reference laboratory for measurements in the physical sciences and engineering. Standards committee activities, in turn, provide NBS with feedback on the Nation's measurement needs in such areas of concern as energy conservation, environmental protection, and public health and safety.

This report summarizes NBS staff participation in outside standards activities during calendar year 1980. It contains statistics on NBS staff participation on standards committees, highlights of significant technical and individual standards contributions made by NBS staff, a description of NBS standards management and information activities, and a directory of committee activities in which NBS staff participate.

NBS STANDARDS MANAGEMENT AND INFORMATION ACTIVITIES

NBS uses a decentralized system for managing the participation of NBS representatives in outside standards committees activities. This type of management is governed by NBS policy (Chapter 3.02, NBS Administrative Manual); coordinated through standards offices in each NBS Major Operational Unit (MOU); and monitored and supported by the Office of Standards Information, Analysis, and Development. Questions relating to NBS policy interpretation or development and standards activities coordination are reviewed by the NBS Standardization Advisory and Coordination Committee (SACC).

During 1980, SACC activities fell into three major categories: (1) those related to internal programs and structure/organization for participation in standards activities; (2) external relations with private sector standards organizations; and (3) relations with other Government agencies. Significant recommendations and accomplishments in these areas are described in Appendix I.

Members of the SACC committee are selected by the NBS Director. During 1980, the committee consisted of four NBS voting members: Dr. Edward L. Brady, Chairman, Associate Director for International Affairs, Office of the Director (OD); Dr. Arthur O. McCoubrey, Associate Director for Measurement Services, National Measurement Laboratory (NML); Dr. Stanley I. Warshaw, Director of the Office of Engineering Standards, National Engineering Laboratory (NEL); and M. Zane Thornton, Deputy Director of the Institute for Computer Sciences and Technology (ICST). James E. French, Special Assistant to the Director of the Office of Engineering Standards, served as Executive Secretary in a non-voting capacity. David Edgerly, Chief of NML's Office of Domestic and International Measurement Standards, served as alternate Secretary.

Information Activities

NBS technical work is carried out in three Major Operational Units. Each of these units has a standards coordination office which monitors its parent units standards activities: NML - Office of Domestic and International Measurement Standards; ICST - Standards Administration Office; and NEL - Office of Standards Information, Analysis, and Development (OSIAD). (See NBS organization chart pg. vii)

NEL's OSIAD has the further responsibility for collecting and disseminating information on all NBS staff participation in outside standards-writing activities. The Standards Assistance and Management Information (SAMI) project of OSIAD collects and disseminates information through a computerized data system to promote efficient participation by NBS staff members in standardization activities and to assist Bureau managers in making decisions about the allocation of NBS resources for these activities. During 1980, activities of the SAMI project staff included publishing three directories of NBS staff memberships on outside standards committees; preparing quarterly summary reports on standards-related travel; preparing annual reports on NBS and NEL standards committee activities; and administering the American Society for Testing and Materials (ASTM)/NBS contract for membership fees for 1981.

The Standards Impact Analysis (SIA) project of OSIAD stimulates and conducts research into the workings of the national and international standards system and the economic, social, legal, and other impacts of standardization. This program:

- o identifies research needs in standardization and makes them known to the academic, economic, and standards communities;
- o conducts or contracts for standards impact assessment and related research of specific interest to NBS programs and disseminates the findings to the NBS staff and others; and
- o maintains close liaison with other NBS and outside groups involved in studies of standards systems worldwide and the impacts of standards. A reference collection of studies in this area is maintained.

During 1980, under an interagency agreement with the Bureau of Medical Devices (BMD) of the Food and Drug Administration, SIA staff conducted a study on consumer representation in medical device standards development. Four reports were published under contract to and with technical assistance from SIA staff: Standardization in France; The Economics of the Product Certification Industry; Some Research Needs; Economics Applied to Standards: A Guide to the Literature; and Performance vs. Design Standards. SIA staff wrote and published Need for Economic Information on Standards Used in Regulatory Programs: Problems and Recommendations, and provided technical assistance to a contractor (of the NBS Planning Office) developing a report on benefit-cost analysis of an engineering standard which NBS staff helped to develop.

Other NBS units involved in assessing impact of standards include:

- o The Institute for Computer Sciences and Technology (ICST), which is responsible for developing Federal automatic data processing (ADP) standards for Federal agency use. A long-range plan adopted by ICST establishes priorities for the development of needed ADP standards and guidelines, and provides for studies of standards' impact and for forecasts of computer technology trends. ICST's Program Development Office works with Federal agency ADP and computer industry officials to identify the need for standards, set priorities based on needs, collect and evaluate data on standards usage by Federal agencies, and study the impact of standards on agencies and the computer industry. The information developed is used in preparing timely and technically sound future standards, and to also assess existing standards for their continued usefulness;
- o NBS' Planning Office, Office of the Associate Director for Programs, Budget and Finance, which sponsors research and analyses to identify the broad economic impacts of standardization. An early focus has been the impacts of standardization on industrial innovation and productivity growth. The Planning Office staff works closely with NBS staff and outside individuals to provide information which can be used to assist in determining the allocation of funds among competing programs within the Bureau; and
- o The Applied Economics Group, Center for Building Technology (CBT), which conducts research and provides technical assistance on economic problems, with an emphasis on the building and construction industry. This group developed a guide for the building community which describes how to estimate benefits and costs of building code changes. Many building requirements are based on voluntary standards. This group is studying the impacts of standards and certification on innovation in solar heating and cooling systems in buildings. CBT economists interact with SIA staff and other NBS units to develop various research reports in these and other areas.

The Standards Information Service (SIS) of OSIAD provides up-to-date information on published standards and standardization activities. During 1980, SIS responded to 7,750 inquiries from U.S. business and industrial organizations, all levels of government, foreign and international organizations, and the general public.

SIS has the capability to answer questions dealing with existing U.S. standards by means of a computer-produced Key-Word-In-Context Index. SIS maintains a reference collection of engineering and related standards, which includes over 240,000 standards, specifications, test methods, codes, and recommended practices issued by U.S. technical societies, professional organizations, and trade associations; State purchasing offices; U.S. Government agencies; and foreign national and international standardizing bodies. The collection also contains over 300 reference books; articles, pamphlets, reports, and handbooks on standardization; 150 periodicals and newsletters; and the Visual Search Microfilm Files on selected national and international standards.

As a signatory to the Multilateral Trade Negotiations Agreement on Technical Barriers to Trade (MTN/TBT), the United States is required to maintain an inquiry point where information on proposed and existing standards may be obtained. The SIS was designated as the U.S. inquiry point by the Department of Commerce which was given responsibility for this function in the Trade Agreements Act of 1979. The Act authorizes the implementation of the MTN/TBT in the United States. SIS is responsible for notifying the General Agreement on Tariffs and Trade (GATT) Secretariat of proposed Federal agency standards-related activities that affect agricultural and non-agricultural products imported to the United States. The GATT secretariat sends notifications from the United States and other countries to all MTN signatory countries. This enables countries which import products to the United States to comment on proposed regulations that may affect them and similarly gives U.S. exporters an opportunity to comment on foreign regulations that may affect them.

SIS answers all inquiries, both domestic and foreign, on GATT notifications and provides information on published standards of the United States and foreign signatory countries, as well as on international standards.

Standards Committees Participation and Travel

Memberships in standards-writing activities totaled 1,710 (1,528 U.S. and 182 international) during 1980. NBS staff participate in such organizations as the American National Standards Institute (ANSI), the American Society for Testing and Materials (ASTM), the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE), and the International Organization for Standardization (ISO). The most memberships are held in ASTM. Committee members traveled 3,232 days in 1980 to attend committee meetings and/or conferences. Specific details on participation and travel are discussed on page 29.

INDIVIDUAL HIGHLIGHTS

In 1980, a number of NBS staff received awards for significant contributions to standards development. In addition, staff served as delegates to important international standards activities and were appointed or elected to leadership positions on standards committees. Highlights of some of these individual accomplishments are described below. Individuals are listed alphabetically by Major Operational Unit.

OFFICE OF THE DIRECTOR

Dr. Ernest Ambler, NBS Director, served as the U.S. member of the International Committee for Weights and Measures (CIPM) and participated in a meeting of this committee at the International Bureau for Weights and Measures (BIPM) in Paris, October 6-10, 1980. Issues which were of importance to NBS discussed at this meeting included: a) work by the International Bureau of Time (BIH) on the International Atomic Time Scale, b) possible purchase by BIPM of a 14 MeV neutron generator, and c) the upcoming joint meeting of the Consultative Committee for Units and the Consultative Committee on the Definition of the Meter to consider the precise wording for a proposed new definition of the meter.

NATIONAL MEASUREMENT LABORATORY

John Barnes, CMS, was selected to chair ASTM Subcommittee F02.93 on Statistical Matters under ASTM F02, Flexible Barrier Materials.

Dr. Brian Belanger, DMS, was awarded the first "Andy Woodington Best Session Award" at the annual National Conference of Standards Laboratories. Belanger shared the award with three other participants for their workshop session, which dealt with traceability and measurement assurance programs. Belanger was also named to chair the Interface Subcommittee (E46.91) of ASTM Committee E46 on Quality Systems.

Louis Costrell, CRR, chaired an interlaboratory Nuclear Instrumentation Module (NIM) committee and NIM committee writing group that produced in July 1980 the tentative specification, "FASTBUS Modular High-Speed Data Acquisition System for High-Energy Physics and Other Applications."

Dr. John Cuthill, CMS, was awarded the ASTM Award of Merit "for distinguished and dedicated service in advancing voluntary standards for methods of surface analysis by leading the formation and dynamic growth of Committee E42 (Surface Analysis) from its establishment to its internationally recognized position in the surface science community." Cuthill was also named a Fellow of ASTM.

Dr. James Early, CMS, was reelected secretary of ASTM Committee E38, Resource Recovery. Early was also appointed vice chair of ASTM Subcommittee E38.02 on Ferrous Metals.

Dr. Ron Eby, CMS, received the ASTM Award of Appreciation for his contributions as chair of Committee D20, Plastics, the second largest committee in ASTM.

Joseph Fine, CTMS, was appointed chair of ASTM Subcommittee E42.09 on Standard Reference Materials.

Dr. W. F. Gerhold, CMS, was reelected to chair ASTM Committee E05 on Metallic-Coated Iron and Steel Products.

William P. Harris, CMS, was presented with an Award of Appreciation from ASTM for his contributions as chair of Committee D09 on Electrical Insulating Materials.

Dr. Arthur McCoubrey, DMS, was elected for a 6-year term as vice president of the International Committee of Legal Metrology (CML). CML is part of the International Organization of Legal Metrology (OIML), which was established for the purpose of reaching international agreements on International Recommendations (standards) for measuring instruments and methods of measurement, thus facilitating free commerce between countries. NBS is responsible for managing U.S. participation in OIML.

Dr. Robert Mehrabian, CMS, was elected to serve as chair of ASTM Committee B06, Die Cast Metals and Alloys. This committee serves the die-casting industry by promotion of knowledge in the field, stimulation of research, development of specifications and methods of test, and recommendation of practices relating to the different alloys used in die-casting.

Dr. Leonard Mordfin, ONDE, was appointed secretary of ASTM Subcommittee E07.08 on Leak Testing.

Dr. Cedric J. Powell, CTMS, was elected chair of ASTM Committee E42 on Surface Analysis.

Edward Pugh, CMS, was appointed vice chair of ASTM Subcommittee G01.06 on Stress Corrosion Cracking and Corrosion Fatigue.

Dr. John Tesk, CMS, was awarded a silver certificate from the American Society for Metals for his "valuable service to the society for the past 25 years." Tesk was also appointed chair of American National Standards (ANS) Committee MD 156, Dental Materials Instruments and Equipment.

Jacquelyn A. Wise, CAPQ, received the Robert D. Thompson Memorial Award from ASTM for her outstanding performance within ASTM Committee E20 on Temperature Measurement. Wise was cited for her "many years of outstanding service and active participation in the work of Committee E20."

INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY

Dr. Donald Deutsch, CPST, was appointed chair of ANS Subcommittee X3H2, Data Definition Language, which is preparing a national standard for a data definition language.

Dr. W. Terry Hardgrave, CPST, was appointed chair of the Data Base System Study Group under ANS Committee X3, Computers and Information Processing.

Belkis Leong-Hong, CPST, served as secretary of the newly formed ANS Subcommittee X3H4 on Information Resource Dictionary System, at the request of the convenor.

NATIONAL ENGINEERING LABORATORY

Dr. Gerald Berman, OES, was elected chair of ASTM Committee E36 on Criteria for the Evaluation of Testing and Inspection Agencies. Berman heads the 214-member committee concerned with the development of standards which will serve as criteria for the evaluation of testing and inspection agencies.

Roscoe Bloss, CCPT, received the ASTM Award of Merit in recognition of his "innovative leadership as chair of Subcommittee E28.01 on Calibration of Mechanical Testing Machines and Apparatus and his outstanding scientific contributions in force and strain measurement." Bloss was also named a Fellow in the Society.

Dr. W. Murray Bullis, CEEE, was presented the ASTM Award of Merit for "distinguished and exceptional contributions, particularly as Committee secretary, both to the operation of committee F01 on Electronics and to the technical and editorial quality of the standards developed by the Committee " Bullis also was named a Fellow of the Society.

Alan F. Clark, CEEE, was selected chair of ASTM Subcommittee B01.08 on Superconductors.

Myron Crawford, CEEE, received a Certificate of Achievement from IEEE's Electromagnetic Compatibility Society for his development of the tranverse electromagnetic (TEM) cell as an electromagnetic compatibility test device.

William Cullen, OES, was selected to receive Honorary Membership in ASTM for "long and distinguished service to the Society in promoting its aims, both domestically and internationally, and for outstanding leadership in, and significant contribution to, voluntary standardization leading to improved standards in the field of building materials."

Dr. Ray Dils, CPTP, was selected by ASTM Committee C16.23, Thermal Conduction Measurements, to head a task force to develop an ASTM Standard line source method for measuring thermal insulation.

John Dise, OES, was awarded the Delmar L. Bloem Distinguished Service Award of the American Concrete Institute for his effectiveness as chair of ACI Committee 116, Nomenclature, from 1972-1979.

Donald Etzen, CMEPT, was appointed vice chair of ASTM Work Group E07.04.02 on Acoustic Emission Sensors, under Committee E07, Nondestructive Testing.

James E. French, OES, was reelected vice chair of the ANSI Audit and Accreditation Board, which reports directly to the ANSI Board of Directors.

Martin Greenspan, CMEPT, received the IEEE's 1980 Harry Diamond Award for his contributions in the fields of acoustics and elasticity.

Dr. James A. Lechner, CAM, was appointed chair of ASTM Subcommittee C26.06 on Statistical Applications, under C26, Nuclear Fuel Cycle.

Dr. Preston McNall, CBT, was appointed vice chair of ASHRAE's Standards Committee.

Clinton Phillips, CPTP, was reelected vice president of the ASHRAE for a second term.

Dr. Alexander F. Robertson, CFR, received the Meritorious Public Service Award from the Coast Guard in recognition of his extraordinary service as a member of the U.S. SOLAS Advisory Working Group on Fire Protection and the Inter-governmental Maritime Consultative Organization (IMCO) Subcommittee on Fire Protection, Working Group on Fire Test Procedure. Robertson contributed to the development of several IMCO Resolutions on test procedures.

Robert Scace, CEEE, was elected first vice chair of ASTM Committee F01, Electronics. As vice chair, Scace will be responsible for liaison with other groups, standard reference material activity, and document management. Scace also received an Award of Merit from ASTM for "his leadership in the development of standards for the electron device industry" and was named a Fellow of the Society.

Harry Schaft, CEEE, led a Task Group on Planning for ASTM Subcommittee E44.09 on Photo Voltaics.

Dr. Myroslav R. Serbyn, CMEPT, was appointed chair of ANSI's Technical Advisory Group ISO/TC108/SC3 for Use and Calibration of Vibration and Shock Measuring Instruments.

Dr. James R. Wright, OD/NEL, was reelected for a third 5-year term (1980-1985) as RILEM Delegate for the United States. As RILEM vice president, Wright headed a RILEM delegation to the International Laboratory Accreditation Conference in Paris. Wright completed his appointment to the ASTM Board of Directors and as chair of the Committee on Society Development in 1980. Under Wright's leadership, the Committee developed a draft long-range plan for the eighties which outlines specific goals and objectives for the Society and presents a generic long-range planning process for use in future planning activities.

DEPARTMENT OF COMMERCE/NATIONAL BUREAU OF STANDARDS AWARDS

Bronze Medal Award - This award is given for significant contribution to science, technology, or administration; for demonstration of unusual initiative or creative ability in the development and improvement of methods, procedures, or devices; or for highly competent performance of assigned tasks for at least 5 years. The awards listed below were given specifically for contributions to standards-related programs and research.

David E. Edgerly, ODIM (NML), for displaying outstanding ability in organizing the U.S. Advisory Committee for Legal Metrology and managing its Secretariat. Through the operations of this broad-based advisory committee, the United States is able to bring a high level of leadership to the development of standards of practice in measurements by the Internal Organization for Legal Metrology.

Joan A. Koenig, OES (NEL), for her significant contributions to the NBS Standards Assistance and Management Information (SAMI) program and her leadership of the Standards Impact Analysis (SIA) program of the Office of Engineering Standards.

Edward Bennett Rosa Award

The Rosa Award recognizes outstanding achievements in the development of meaningful and significant standards of practice in the measurement field. The award is named after Dr. Edward B. Rosa, a physicist, who set the pace for the high level of achievement in the early years of the Bureau.

In 1980, the Rosa Award was presented to Dr. W. Murray Bullis, Center for Electronics and Electrical Engineering, National Engineering Laboratory. He was cited for making significant contributions to the development of electronics standards. In particular, the work of Dr. Bullis on ASTM Committee F01 on Electronics was recognized as advancing the state-of-the-art of measurement in his field with corresponding benefit to the semiconductor electronics industry as a whole.

TECHNICAL HIGHLIGHTS

These significant highlights of NBS technical contributions to standards activities were selected by NBS Divisions as representative of their various research areas and do not reflect all of NBS' standards activities.

OFFICE OF THE DIRECTOR

The 16th General Conference on Weights and Measures established an ad hoc working group to review proposals made by the member states for changes in the Convention of the Meter and in some of the working regulations of the organization. The U.S. Delegation to this group, which met in Paris, October 14-16, consisted of Dr. Edward L. Brady, Associate Director for International Affairs, and Frank Lancetti, Department of State.

NATIONAL MEASUREMENT LABORATORY

Office of the Director (OD)

NBS hosted the 1980 Workshop and Symposium of the National Conference of Standards Laboratories (NCSL), September 22-25, 1980. Nearly 300 attendees, 11 from outside the United States, participated. NBS Director Dr. Ernest Ambler welcomed the delegates and Loren Walsh, editor and publisher of Quality magazine, presented the keynote address on "Management's Role in Measurement Quality." Papers were presented by NBS staff on several NBS programs: Standard Reference Materials--Stan Rasberry, Office of Standard Reference Materials; Nondestructive Evaluation--Harold Berger, Office of Nondestructive Evaluation; Electromagnetic Interference, Dr. Howard Clark, Office of the Director, NML; and International Standards/OIML--David Edgerly, Office of Domestic and International Measurement Standards.

Directorate for Measurement Services (DMS)

ASTM and NBS have cooperated in a number of areas for many years. In 1980, several additional areas of cooperation were agreed upon: calibration services, Measurement Assurance Program (MAP) services and legal metrology. In April, Drs. Arthur McCoubrey, Associate Director for Measurement and Services, and Brian Belanger, Office of Measurement Services, met with ASTM staff to discuss specific actions that could be taken to implement the agreement. In support of this agreement, Belanger met with ASTM Committee E28, Mechanical Testing, to brief them on NBS work to investigate the feasibility of developing a MAP for force measurements with load cells and to solicit input for NBS planning in this area from industry and government laboratories that require accurate force measurements.

DMS manages the participation of all U.S. individuals and organizations in all International Organization of Legal Metrology (OIML) activities. DMS distributes draft recommendations for comment and vote, determines possible interests in U.S. participation in secretariats, and serves as a focal point for communications both within the United States and with the International

Bureau of Legal Metrology (BIML), Secretariat for OIML. DMS also provides policy guidance to those secretariats for which the U.S. has taken responsibility. The Associate Director of Measurement Services, Dr. Arthur McCoubrey, serves as the U.S. member of the International Committee of Legal Metrology (CIML).

In 1980, NBS participated in several OIML standards activities. The 6th International Conference of Legal Metrology was held at the Department of State, June 16-20, 1980. This conference is held every 4 years to give formal approval on recommended standards drafted by OIML technical secretariats and to decide upon the OIML budget for the ensuing 4-year period. NBS Director Dr. Ernest Ambler presented a statement to the conference which set the framework for the forthcoming discussions, pointed out the significance of the organization's activities, and formally opened the conference. Dr. Edward L. Brady, Associate Director for International Affairs, served as head of the U.S. delegation and was elected chair of the Conference. He presided over plenary sessions of the conference and gave brief opening and closing statements on its work. In addition to Brady, other NBS staff on the U.S. delegation were Dr. Arthur McCoubrey, DMS/NML, and David Edgerly, Office of Domestic and International Measurement Standards/NML.

A draft International Document dealing with the application of measurement assurance principles to legal metrology was developed during 1980 for Reporting Secretariat (RS) 6 of Pilot Secretariat (PS) 22 of OIML. NBS holds the secretariat for Pilot Secretariat 22, which is chaired by Bascom Birmingham, Chief, Office of the Director, Boulder Laboratories. Dr. Brian Belanger, Chief of the Office of Measurement Services and chair of the U.S. National Working Group for OIML PS22, RS6, served as drafter and editor for the document. Other NBS staff contributing to the draft included Otto K. Warnlof and David Edgerly. NBS coordinated this document with the concerned parties in industry and other Government agencies through the U.S. National Working Group. Having obtained a consensus within the United States, NBS submitted the draft document to the collaborating countries and discussed it with them at a meeting in Paris, France in April 1980. While suggested revisions were proposed by the other countries during this meeting, there is every reason to believe that a final document can be developed with an international consensus.

A second draft International Recommendation on load cells was developed by the U.S. National Working Group responsible for the PS7/RS8 secretariat on load cells within OIML. The U.S. National Working Group for load cells is a committee of approximately 20 persons representing manufacturers, users, and government officials interested in the developing load cell technology. David Edgerly, Chief of the Office of Domestic and International Measurement Standards, is the Committee secretary. The draft was circulated in early 1980 to the 21 OIML member nations who are members of the International Working Group. An international meeting was held in October 1980, at the Physikalisch-Technische Bundesanstalt (PTB) in Braunschweig, Federal Republic of Germany, at which the second draft was reviewed and major changes were adopted. A third draft will be prepared in early 1981 and it appears likely

that this draft will be considered final and can be processed for balloting as a final International Recommendation of OIML. The draft is important because it establishes uniform international performance requirements and test methods for load cells used as primary measuring components for electronic weighing systems. The United States has the technological lead in load cells and this OIML International Recommendation is fully compatible with our interests in increasing the sales of these devices abroad.

First pre-draft International Recommendations on general specifications for materials testing were distributed for comment in August 1980 to the members of the International Working Group of PS19/RS2 of OIML. These draft Recommendations were developed by a U.S. National Working Group of which David Edgerly is secretary. At the present time, ASTM Committee E28, Mechanical Testing, is engaged in preparing standard test methods for various types of materials (steel, concrete, etc.). A similar activity is going on within the International Organization for Standardization (ISO)/Technical Committee 164 on mechanical testing. Neither ASTM nor ISO are, however, involved in developing standards for the testing machine itself which prescribe necessary technical specifications and performance requirements. These draft OIML Recommendations are intended to apply to the fields of technology and industry where the control or surveillance of the performance of testing machines used to determine mechanical properties of materials is a government function. An example in the U.S. is the Nuclear Regulatory Commission's insistence that testing machines used to determine mechanical properties of materials for reactors be verified as to their performance. These proposed OIML Recommendations will provide uniform performance requirements and test methods for such purposes.

Based upon a proposal from the Physikalisch-Technische Bundesanstalt, representatives of the OIML, the ISO, and the International Electrotechnical Commission (IEC), met in Geneva, Switzerland, in April 1980, and decided to jointly undertake the preparation of an International Vocabulary of basic and general terms of metrology. A Joint Working Group composed of from three - five members each from ISO, IEC, and OIML has been established to oversee the activity. Dr. Hal Altschuler, Office of Domestic and International Measurement, will be the U.S. member of the OIML contingent to the Joint Working Group. A list of terms (proposed without definitions) has been recommended for the new International Vocabulary and was circulated during June 1980 for comment to the members of the Joint Working Group. Beginning early in 1981, work will commence on proposing definitions for the terms (some 200 or so) that have been accepted by the respective organizations.

A first draft International Recommendation on electronic weighing devices was developed by the U.S. National Working Group responsible for the PS7/RS2 secretariat on electronic weighing devices within OIML. Otto Warnlof, Office of Weights and Measures is the secretary of the USNWG. The first draft Recommendation was developed within a relatively short time (8 months) in order to take advantage of the opportunity presented by the inability of the Common Market (EEC) to resolve differences of opinion regarding the need for requirements pertaining to the "self checking" aspects of electronic devices.

It is hoped that the draft OIML Recommendation will be successful in resolving international differences of opinion on performance requirements and test methods for electronic weighing devices and that the draft will eventually be adopted by OIML and accepted by the EEC as the basis for a Technical Directive within the European Community.

Center for Absolute Physical Quantities (CAPQ)

The Temperature and Pressure Measurements and Standards Division performed tests and conducted a measurement round robin during 1980 in support of ASTM Test Method for Compacted Thermocouple Materials. George W. Burns was primarily responsible for this activity, which was carried out under ASTM Subcommittee E20.04, Thermocouples, part of E20, Temperature Measurement.

Center for Radiation Research (CRR)

During 1980, members of the Nuclear Radiation Division contributed significantly to two procedural standards for the calibration of radioactivity assay instruments which were approved by ANS Subcommittee N42.2, Procedural Standards for Calibration of Detectors for Radioactive Measurements.

Dr. J. M. Robin Hutchison served as secretary for N42.2. The two standards are: Calibration and Usage of Sodium Iodide Detector Systems; and Performance Verification of Liquid-Scintillation Counting Systems. The purpose of the first standard is to provide a standardized basis for the calibration and usage of sodium iodide detector systems for the measurement of gamma-ray emission rates of radionuclides. Typical applications include radionuclide identification and assay in industrial, environmental, and medical applications. Dr. Hutchison served on the working group for this standard. The second standard is intended for use in verification of performance of commercial liquid-scintillation counting systems which are used in biology and life sciences for assay of radionuclidic tracers, and also for environmental monitoring for tritium and carbon-14. Dr. Bert M. Coursey served on the working group for this standard.

Dale McGarry and Dr. James Grundl, Nuclear Radiation Division, participated in the drafting of ASTM Standard E706-80, Master Matrix for Light-Water-Reactor (LWR) Pressure Vessel Surveillance, which describes the content and relationship of 16 ASTM standards in various stages of completion. The standard was developed under ASTM Subcommittee E10.05, Nuclear Radiation Metrology. NBS is a primary participant in the Light-Water-Reactor Pressure Vessel Dosimetry Improvement program. In this role, NBS is helping prepare a set of ASTM standards to be adopted by industry in order to improve and standardize the procedures for dosimetry and metal damage correlation associated with the operational neutron exposure for U.S. power reactor pressure vessels.

The Radiation Physics Division supplied the materials for the round robin testing that was conducted prior to the adoption on June 1980, of ASTM E746-80, Standard Method for Determining the Relative Image Quality Response of Industrial Radiographic Film. Daniel Polansky and Dr. Robert C. Placious coordinated all the tests. NBS is expected to fabricate the test device for this standard and make it available to users through NBS' Office of Standard Reference Materials.

ASTM Subcommittee E10.07, Radiation Effects on Electronic Materials and Components, developed and had adopted in 1980 three standards addressing testing of electronic components for hardness after neutron radiation exposure. Jimmy C. Humphreys, Center for Radiation Research, was the principal editor of these standards, which will be cited by Department of Defense agencies in procurement of electronic components in appropriate contracts. Subcommittee E10.07 was chaired by Samuel Chappell, Office of Domestic and International Measurement Services.

Center for Thermodynamics and Molecular Science (CTMS)

A workshop on quantitative surface analysis was organized by Dr. Cedric J. Powell, Surface Science Division, during a symposium sponsored by ASTM Committee F42 on Surface Analysis. The symposium was part of the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy held in Atlantic City, in March 1980. The workshop addressed key questions which affect the accuracy of practical surface analyses (e.g., specific practical problems with particular analysis techniques, problems with the associated methodology, needs for additional reference data and materials, extent of sample damage during analysis, and sources of errors and mistakes).

Center for Materials Science (CMS)

In May 1980, an ASTM standard, Recommended Practice for Thermal Neutron Radiography of Materials (E748), Part II-1981 Book of Standards, was completed and adopted. It is intended as a guide for the production of neutron radiographs which possess consistent quality characteristics as well as to aid the user in considering the applicability of thermal neutron radiography inspection. Donald Garrett, Reactor Radiation Division, and Harry Berger, Office of Nondestructive Evaluation, co-authored the standard. (The standard was published in January 1981.)

David T. Read, Fracture and Deformation Division, coordinated a round robin in support of proposed ASTM Standard Method for Measurement of the J_I -R Curve. Read tested specimens, reduced data, and provided a test report according to proposed standard procedures. NBS provided the necessary machine shop, test apparatus, and computational facilities for this activity. This work was done for a working group on J_I -R curve under ASTM Subcommittee E24.08, Elastic-Plastic and Fully Plastic Mechanics Terminology.

From the inception of ASTM Committee E38, Resource Recovery, NBS has played a role in the development of standards dealing with ferrous scrap separated from municipal solid waste. In January 1980, ASTM Standard E701-80, Standard Method of Testing Municipal Ferrous Scrap, was adopted. Dr. James Early, Fracture and Deformation Division, participated in the test development and provided the test facility. Experiments conducted at NBS provided in part the data base for a method of test for the determination of the combustible content of municipal ferrous scrap.

Dr. Bruce Christ, Fracture and Deformation Division, participated in the development of a precracked charpy fracture toughness test method under ASTM Subcommittee E24.03, Alternative Fracture Test Methods. NBS staff promoted and aided in the development of a new ASTM standard test method, New Standard Method of Test for the Crack Strength of Slow Bend Precracked Charpy Specimens of High Strength Metallic Materials. Dr. Christ also participated in the development and writing of ASTM standard test method, New Standard Practices for Verification of Specimen Alignment Under Tensile Loading, under ASTM Subcommittee E28.04, Tensile Testing.

Dr. John Barnes, Polymer Science and Standards Division, organized and presented a workshop on Interlaboratory Evaluations at an ASTM meeting held in San Diego, California, February, 1980. The major objective of the workshop was to implement the ASTM requirement for an assessment of precision in all ASTM test methods. Approximately 120 representatives of manufacturers, government, and consumer interest groups attended. Dr. John Mandel, Scientific Consultant to the NML Director, was the featured speaker. ASTM Committees D20, Plastics; F02, Flexible Barrier Materials; and F17, Plastic Pipe, sponsored the workshop.

Scientists in the Polymer Science and Standards Division developed in 1980, an improved test for environmental stress-cracking of ethylene plastics. The new test method, which was presented to and favorably received by ASTM Committee D20, Plastics, represents an improvement over existing test methods in three ways: 1) the specimens are held in a state of constant stress in order to minimize the influence on test results caused by stress-relaxation characteristics that may vary among polymeric materials; 2) the difficult step of notching specimens in a specified manner is avoided; and 3) testing time is reduced. This test method will aid the plastics packaging industry in applications ranging from liquid soap bottles to large shipping containers used for hazardous materials transportation.

A draft standard for the solid particle erosion testing of materials was developed in 1980 by the Metallurgy Division for ASTM Committee G02 on Erosion and Wear. NBS staff started the third round of a round robin series on erosion measurements and have supplied materials and specimens for the necessary measurements to six laboratories. Measurement results will be analyzed and reported to the Committee by NBS staff.

A conference was organized and held at NBS on May 1-2, 1980 concerning the retrieval and analysis of synthetic implants cosponsored by ASTM Committee F04 on Medical and Surgical Materials and Devices. The meeting attracted about 100 scientists and physicians from the U.S. and foreign countries concerned with implant device retrieval. NBS staff participated in the conference planning and provided the conference co-chair. The proceedings will be available in early 1981 and will include materials science considerations (metals, polymers, ceramics), as well as biological findings on compatibility and long term success of implants. Also several round robin tests were conducted in 1980 in support of ASTM Committee F04's proposed standard, "Method of Test for Pitting or Crevice Corrosion of Metallic Surgical Implant Materials."

NBS staff contributed significantly to the preparation of the ASTM standard recommended practice entitled Dry Sand/Rubber Wheel Abrasion Test, by conducting several round robin test activities over the past five years. This activity was done for ASTM Committee G02 on Erosion and Wear. This standard was approved in 1980 and has led to an NBS supported project to develop one or more Standard Reference Materials for calibration of the test method.

INSTITUTE FOR COMPUTER SCIENCES AND TECHNOLOGY

The Institute for Computer Sciences and Technology (ICST) manages a major program aimed at improved procurement and utilization of computers within the Federal Government. Under the Brooks Act (P.L. 89-306), ICST is responsible for providing Federal agencies and the Administrator of General Services with scientific and technological advisory services related to automatic data processing (ADP) and related systems; recommending the establishment of uniform Federal ADP standards; and undertaking necessary research in computer science and technology.

ADP standards are developed by ICST, approved by the Secretary of Commerce, and issued as Federal Information Processing Standards (FIPS) for implementation by Federal agencies. The FIPS publication series also includes guidelines which are recommended practices for managing and using ADP. FIPS cover computer system and network interfaces, software, data, and ADP operations.

ICST ties its ADP standards development activities closely to voluntary industry standards development in order to serve both Federal needs and the public interest. Staff members participate in and lead voluntary standards committees and subcommittees, prepare technical reports and analyses related to standards development, and participate in planning and organizing standards efforts. Whenever feasible, standards developed by voluntary groups are issued as FIPS along with specific Federal applicability provisions.

The FIPS publication series includes 83 documents including the following which were issued in 1980:

FIPS PUB 68, Minimal BASIC (September 1980), defines the syntax of the Minimal BASIC programming language and the semantics for its interpretation. This standard adopts ANS X3.60-1978 and is recommended for the solution of small, nonrecurring problems, particularly in a time-sharing environment. It is to be used as the reference authority in developing compilers, interpreters, or other forms of high-level language processors. It is used by computer professionals whose work depends on the precise syntactic and semantic rules adopted by the ANSI for BASIC language. Minimal BASIC is intended to serve both as a core language which could be included in any BASIC implementation, and as a foundation for an expanded language to be specified by subsequent standards.

FIPS PUB 69, Fortran (September 1980), defines the syntax for the programming language Fortran and the semantics for its interpretation. This standard, which adopts ANS X3.9-1978, will be used by implementers as the reference authority for the development of Fortran language processors and by computer professionals whose work demands a detailed knowledge of the syntactic and semantic rules of the language standard. Fortran is recommended for use in solving numeric, scientific, and engineering problems. The standards consist of a full language and a subset language and includes a requirement that processors "flag" or identify all statements in the source program that do not conform to the standard.

Representation of Geographic Point Locations for Information Interchange, FIPS PUB 70 (October 1980), adopts ANS X3.61-1978 with modifications to meet special Federal requirements. The standard specifies uniform formats for representing geographic point locations that are to be used by Federal agencies in the interchange of data. Its implementation in Federal ADP systems will help to avoid unnecessary and costly incompatibilities in the collection, processing and dissemination of data.

FIPS PUB 71 (May 1980), Advanced Data Communication Control Procedures, defines the data link control procedures to be used by automatic data processing (ADP) equipment and services employing bit-oriented synchronous data communications links. The procedures provide: 1) transfer of information across a data link; 2) minimal exposure to errors and to the loss or duplication of information; 3) control functions relating to beginning, suspending, and terminating the flow of information across a link; and 4) operation on any type of synchronous data transmission facility. This FIPS PUB adopts, with three exceptions, the ANS X3.66-1979.

Guidelines for the Measurement of Remote Batch Computer Service, FIPS PUB 72 (May 1980), defines measures and describes methodologies for measuring remote batch computer network services. These guidelines are for use by persons who have the responsibility for the specification, measurement, operation, evaluation, and selection of remote batch computer service (RBS). They should also aid both consumers and providers of RBS in measuring and evaluating the delivery of network services.

FIPS PUB 73, Guidelines for Security of Computer Applications (June 1980), describes the technical and managerial controls needed to protect new and existing computer applications from natural and human-made hazards and to assure that critical functions are performed correctly and with no harmful side effects. The guidelines describe the different security objectives for a computer application, explain the control measures that can be used, and identify the decisions that should be made at each stage in the life cycle of a sensitive computer operation.

FIPS PUB 75, Guideline on Constructing Benchmarks for ADP System Acquisitions (September 1980), describes a step-by-step procedure for constructing benchmarks for use in the acquisition of ADP systems. Ten steps in the benchmark construction process are identified involving such areas as workload analysis and forecasting, construction of the benchmark mix, and documentation and testing of the benchmark package. The guideline should be useful to technical and management staff as well as to those in private industry who are also involved in constructing benchmarks for use in the evaluation of alternative vendor systems.

Guideline for Planning and Using a Data Dictionary System, FIPS PUB 76 (August 1980), provides assistance in planning and using Data Dictionary Systems (DDS's). A DDS is a computer software system that is used to assist in organization-wide data management, without restriction to computer data. This document describes the capabilities of a DDS; addresses selection

consideration; provides guidance for preimplementation planning, including such management issues as DDS policies and budgeting, data standardization and control, and coordination of the DDS contents. The document also presents initiation and operation considerations for using a DDS.

FIPS PUB 77, Guideline for Planning and Management of Database Applications (September 1980), is a technical primer or basic reference for Federal managers and applications analysts who are responsible for computer applications and associated software and project decisions. It explains alternative software capabilities and recommended development practices for database application, with specific advice on applications planning and management, and on software selection.

FIPS PUB 78, Guideline for Implementing Advanced Data Communication Control Procedures (September 1980), assists agencies in implementing the ADCCP standard, FIPS 71 (see preceding page).

FIPS PUB 79, Magnetic Tape Labels and File Structure for Information Interchange (October 1980), adopts ANS X3.27-1978 for four levels of labeling, label formats, blocking structure, and tape mark relationships on magnetically recorded tapes. This standard is expected to reduce the difficulties of interchanging information recorded on magnetic tape between different users and different computing systems.

FIPS PUB 80, Guide for the Implementation of FIPS in Acquisitions and Design of Computer Products and Services (December 1980), will assist agencies in determining which FIPS apply to their computer system acquisition and design projects.

FIPS PUB 81, DES Modes of Operation (December 1980), describes four alternative modes of operation for using the Data Encryption Standard (FIPS PUB 46). This standard specifies how data will be encrypted and decrypted in each mode of operation to facilitate compatibility between connected devices.

FIPS PUB 82, Guideline for Inspection and Quality Control for Alphanumeric Computer Output Microforms (September 1980), adopts a National Micrographic Association (NMA) recommended industry practice that provides basic information on generating microforms by computers and describes test procedures to insure that the output is high quality.

FIPS PUB 83, Guideline on User Authentication Techniques for Computer Network Access Control (September 1980), describes recommended techniques for access control with emphasis on the use of passwords to verify the identity of persons using remote communications terminals.

FIPS PUBS 84 and 85 deal with microfilm readers and optical character recognition (OCR) inks, respectively. Defining the minimum acceptable image quality for microfilm reading devices used for display of computer output microforms, FIPS PUB 84, Microfilm Readers (October 1980), is designed to facilitate information interchange when the information is recorded on the

microforms generated by computer systems. This standard, which adopts ANSI/NMA MS20-1979, sets requirements for heat and noise factors associated with the safe use of such reading devices. FIPS PUB 85, Optical Character Recognition (OCR) Inks (November 1980), addresses the need of OCR systems for a high contrast between the data characters to be read and the paper. The standard, which adopts ANSI 3.86M-1980, defines the spectral band for read inks and provides spectrophotometric curves for red and blue nonread inks. The nonread inks allow the printing of human readable instructions that will not interfere with machine recognition.

Center for Programming Science and Technology (CPST)

The Applications Systems Division sponsored a 3-day workshop on a Family of Database Management Standards, September 8-10, 1980 at NBS. The workshop reviewed the status of national and international projects developing standards for computer database software. Participants represented government, industry and academic contributors in ANSI, CODASYL, ISO, International Federation of Information Processing (IFIP) committees as well as interests of database software users. The workshop proceedings will be published by NBS.

CPST hosted a meeting of the joint ANSI X3J9-IEEE PASCAL Committee on April 14-15, 1980. The principal activity of the meeting was the preparation of recommended revisions to ISO draft proposal 7185 for an international standard for the language PASCAL. PASCAL is a high-level language for numerical application with more powerful structures than available in existing or proposed Federal standard languages.

CPST assisted in organizing ANSI X3T1, Technical Subcommittee on Data Encryption. Michael J. O'Brien and Dennis K. Branstad prepared the initial task development plan for the DES Modes of Operation Standard and prepared several drafts of the standard for committee review.

Center for Computer Systems Engineering (CCSE)

Systems and Network Architecture Division (SNAD) staff hosted a meeting of ANSI Subcommittee X4A12, Word Processing, on October 22-24, 1980 at NBS. Topics discussed at the meeting included changing the committee name from "Word Processing" to "Office Systems" and revision of the Scope and Program of Work for X4A12 which includes user needs in all major areas of office automation. SNAD staff also hosted a meeting of ISO/TC97/SC16, Open Systems Interconnection, on June 2-6, 1980, and a meeting of ANSI Subcommittee X3J6, Computer Language for Processing of Text, on October 20-24, 1980.

SNAD staff submitted NBS draft reports dealing with specifications and features of network protocols to ANSI Subcommittees X3H1, Operating System Command and Response Language; X3S3, Data Communication; X3T5, Open System Interconnection; and ISO/TC97/SC16, Open System Interconnection Technical Committees. The ICST program to develop computer network protocol standards is being coordinated closely with voluntary standards efforts.

System Components Division staff hosted several ANS committee meetings at the Department of Commerce in 1980: ANS Subcommittee X3S34, Task Group on Data Communication Link Control Procedures, June 10-12, 1980; ANS X3T9.3, Work Group on Device Level Interfaces, April 14-15, 1980; and ANS X3T9, I/O Interface Standards, April 18, 1980.

Research and development was performed by the System Components Division staff in support of ANS Subcommittee X3B1, Magnetic Tape, and the ISO Committee TC97/SC11, Flexible Magnetic Media for Digital Data Interchange. This research and development has led to the production and issuance of an NBS Secondary Standard High Density Magnetic Tape-Standard Reference Material (SRM) 6250 (August 1980). This new SRM was endorsed by the U.S. and Japan, and at the October 1980 meeting of ISO/TC97/SC11 in Italy the following resolution was passed unanimously relative to SRM 6250:

"ISO/TC97/S11 endorses the work of the National Bureau of Standards in establishing a Master Standard Reference Tape for signal amplitude at the physical recording density of 356 ft. pmm (9042 ftpi) and recognizes this Master Standard as the unique International Master Standard for the 356 ft. pmm (9042 ftpi) physical recording density."

Sidney Giller and Amory Ericson were responsible for the technical development and construction of the system, and many required documentation activities associated with the issuance of SRM 6250.

In October 1980, the System Components Division completed the development of standards for communications in the common International Civil Aviation Organization (ICAO) data interchange network (CIDIN) for initial implementation. George Clark and Eric Scace prepared numerous technical papers outlining the applications of the developing international architecture for open systems interconnections to the CIDIN, as well as the specific documents on which the final Standards and Recommended Practices and Guidance Material were based.

NATIONAL ENGINEERING LABORATORY

Center for Electronics and Electrical Engineering (CEEE)

Kathryn O. Leedy and Robert I. Scafe of the Electron Devices Division developed three semiconductor device test methods which were adopted by the military for inclusion in Military-Standard (MIL-STD) 883B, Test Methods and Procedures for Microelectronics. The test methods went into effect November 4, 1980.

W. Robert Thurber, Dr. James Ehrstein and Dr. W. Murray Bullis, Electron Devices Division, contributed to the writing of ASTM Recommended Practice for the Conversion of Resistivity to Dopant Density for Boron--and Phosphorus--Doped Silicon being developed by ASTM Committee F01 on Electronics. This document, which was included in the December 1, 1980, Committee Letter Ballot, is the culmination of a major NBS project to reevaluate, at the request of Committee F01, the relationship between resistivity and dopant density for silicon. Thurber and Richard Mattis were responsible for the experimental work needed to obtain the new data which form the basis of the document.

In August 1980, Revision 3 of MIL-STD-883B, Test Methods for Microcircuits, was issued. This standard is based on the nondestructive wire bond pull test developed by George G. Harman, Electron Devices Division and was approved by the Department of Defense as mandatory for integrated circuits and hybrid circuits designated for space use, the highest reliability class. The revised test specifications, based on extensive experience with the original tests, were coordinated with the industry through the Joint Electron Devices Engineering Council Committee JC13, Government Liaison. The revisions related to the pull test apparatus specification and to a simplified table of test force as a function of bonding wire diameter.

Staff members of the Electron Devices Division developed two ASTM standards for preparation and use of an optical microscope for dimensional measurements. The standards are being considered by ASTM Committee F01 on Electronics, Subcommittee F01.08 on Microelectronic Imaging. The first standard, Standard Practice for Preparation of an Optical Microscope for Dimensional Measurements, includes adjusting the microscope for Kohler illumination to provide uniform illumination of the specimen, reduce stray light, and give bright images with good contrast. A draft of this practice was approved by the Subcommittee on February 6, 1980, and is awaiting balloting by Committee F01.

The second standard, Standard Test Method for Calibration of an Optical Microscope for Linewidth Measurement, includes the adjustment and calibration of optical microscopes for measuring line spacings and linewidths in the 0.5 to 12 μm regime on integrated-circuit (IC) hard-surface photomasks. The first draft of this standard was reviewed by F01.08 on June 4, 1980, and a second draft is currently being prepared. NBS Standard Reference Material 474, Optical Linewidth Measurement Standard, and the ASTM standards are

benefiting the microelectronics industry by offering accurate and precise linewidth measurements on IC photomasks which are used for comparison with design values and for determining the quality control of the fabrication processes.

On July 3, 1980, ASTM adopted F614-80, Distortion of Optical Lenses Used in Photomask Fabrication. This test method, used for determining the optical distortion of optical systems used in the fabrication of photomasks for semiconductor device manufacturing, was developed by John Jerke, of the Electron Devices Division.

A round robin evaluation of ASTM Method F583, Photoresist Cleanness-Filterability, was completed on June 3, 1980. Samples of photoresist of unknown cleanness were sent to eight participating industrial laboratories along with test method instructions. The data results were returned to NBS where they were statistically analyzed and reported to ASTM Committee F01 on Electronics. The round robin was conducted by Donald Novotny, Electron Devices Division.

On February 6, 1980, ASTM Committee F01 on Electronics accepted the analysis of a round robin evaluation of ASTM Standard Method F374, Sheet Resistance of Silicon Epitaxial Layers Using a Collinear Four-Probe Array. The analysis of the round robin results were carried out by Dr. James Ehrstein, Electron Devices Division, who conducted the round robin, and John Orban, Statistical Engineering Division. ASTM also adopted F674-80, a Standard Practice for Preparing High-Resistivity n-Type Silicon for Spreading Resistance Measurements, based on work done by Dr. Ehrstein.

Stanley Ruthberg, Electron Devices Division, revised and expanded ASTM Standard F78, Method for Calibration of Helium Leak Detectors by Use of Secondary Standards. The method, developed in cooperation with ASTM Committee F01, Electronics, and published in January 1980, now includes more complete procedures for carrying out the calibration. It was published by ASTM in January 1980.

Dr. Ramon C. Baird, Electromagnetic Fields Division, directed the development of Recommended Practice for the Measurement of Hazardous Electromagnetic Fields--RP and Microwave for ANS Subcommittee C95.I, Techniques, Procedures, and Instrumentation, under Committee C95, Radio Frequency Radiation Hazards. The document was prepared as an aid to the rapidly growing community working with or exposed to non-ionizing electromagnetic radiation. This Recommended Practice provides guidance on both the instruments and techniques to be used in measuring potentially hazardous electromagnetic fields over the frequency range of approximately 1 MHz to 100 GHz for both near- and far-field situations. A final draft was submitted to ANSI for approval in April 1980.

A round robin measurement comparison, started in April 1980, was conducted among several U.S. optical fiber manufacturers by the Electromagnetic Technology Division, acting through the Electronic Industries Association (EIA) Committee P6.6, on fibers and materials. The round robin tested the

ability of participants to measure optical fiber attenuation, bandwidth, and numerical aperture on four graded index fibers. For the attenuation and numerical aperture comparisons, the procedures being tested are those currently pending before EIA Committee P6.6.

A meeting, solely devoted to aspects of optical fiber measurement including standards, was hosted by the Electromagnetic Technology Division in cooperation with the IEEE and the Optical Society of America (OSA). The Symposium on Optical Fiber Measurements was held October 28 and 29, 1980 at NBS Boulder. The general chair was Douglas Franzen and the program chair was Gordon Day. Topics included attenuation, bandwidth, index profile, geometric measurements, single mode fibers, and joint/defect characterization. Representatives of the IEC, International Telephone and Telegraph Consultative Committee (CCITT) and Electronic Industries Association (EIA) reported on standards progress in their respective organizations.

Center for Mechanical Engineering and Process Technology (CMEPT)

In May 1980, ANSI voted to issue the Initial Graphics Exchange Specification (IGES) as the first three parts of a five-part draft standard. The Specification, which was developed under the direction of staff from the Industrial Systems Division, is directed towards the exchange and archiving of data found in computer-aided design and manufacturing systems. With the advent of this specification, a company or organization can now develop codes to translate data between their systems and IGES. Data can then be archived or moved between any two computer systems through the intermediate steps of IGES. The previous lack of a method for the exchange of data was viewed as a major problem in the realization of the full potential of computer technology. The title of the standard will be ANSI Y14.26M, Digital Representation for Communication of Product Definition Data.

In a joint effort during 1980, the Automated Production Technology Division and the Air Force Logistics Command developed a method of data preparation for numerical control machine tools which is more efficient and allows data to be quickly and easily shared among different machines. Numerical control refers to the technology of directing the motions of a machine tool from information prerecorded in digital form, usually a punched tape. The project, under ANS Committee X3JF on Automatically Programmed Tools (APT) programming language, developed a rigorous specification of the APT postprocessor language based upon the new American National Standard for APT and coupled this with a comprehensive definition of the machining functions which result from the use of each APT language statement.

On January 22-23, 1980, the technique was successfully demonstrated in production at Sacramento Air Logistics Center by processing a single APT data package on three different machine tools. The concept produces savings in labor, leadtime, and the cost of part programming. It also allows jobs to be shifted quickly from one machine to another without expensive reprogramming, giving shops greater flexibility in their work schedules. The pilot implementation has shown a 23 percent increase in numerical control process efficiency through application of these guidelines and a \$160,000 per year cost saving is projected after full implementation.

Center for Building Technology (CBT)

Research performed under the direction of Dr. Paul Brown, Structures and Materials Division, has contributed to the development of two new standards for evaluating materials used in contact with heat transfer fluids. The first, Standard Practice for Laboratory Screening of Metallic Containment Materials for Use with Liquids in Solar Heating and Cooling, was accepted by ASTM in 1980 and will be published as ASTM E712-80. The second, Recommended Practice for Simulated Service Testing for Corrosion of Metallic Containment Materials for Use with Heat Transfer Fluids in Solar Heating and Cooling Systems, was approved by ASTM Committee E44, Solar Energy Conversion, in 1980 and forwarded for Society ballot. The two standards will aid in reducing the problems stemming from metallic corrosion in solar energy systems, thereby aiding in the development of systems with improved durability and reliability.

During 1980, Hunter Fanney and John Jenkins, Building Equipment Division, lead several substantial laboratory investigations in support of the development of ASHRAE 95P, Method of Testing to Determine the Thermal Performance of Packaged Solar Domestic Water Heating Systems and the adoption of ASHRAE Standard 96-1980, Methods of Testing to Determine the Thermal Performance of Unglazed Flat-Plate Liquid-Type Solar Collectors. Dr. James Hill, Chief of the Division, serves as chair of Standards Project Committee 95P and as a member of Standards Project Committee 96P, which produced 96-1980. Fanney's laboratory investigations, completed during 1980, are the first and only to date in which the hot water system test procedure has been verified. In controlled experiments conducted in accordance with the proposed test procedure, laboratory results have been compared with actual performance of an operating system. The concept of testing unglazed flat-plate solar collectors outlined in 96-1980 is based substantially on an earlier ASHRAE Standard and proposed NBS procedures. Jenkins' experimental investigations during 1980 involved testing two unglazed solar collectors in accordance with the proposed procedures, as well as alternate procedures currently under consideration in Europe. The recommendations were informally provided to the Committee.

In June 1980, American National Standards Committee A112, Standardization of Plumbing Materials and Equipment, approved NBS recommended test procedures for evaluation of hydraulic parameters for water closets. The standard, ANSI A112.19.2.M-1980, Vitreous China Plumbing Fixtures, was developed under the direction of Dr. Lawrence Galowin and Fred Winter, Building Equipment Division, in conjunction with the Stevens Institute of Technology, Hoboken, New Jersey. Research conducted on the low-flow water closets resulted in the development of test methods for evaluating the performance of these devices. Rational performance requirements, methods of evaluation, and measurement techniques were developed and presented to ANSI.

In August 1980, ASTM approved a standard test method on structures and foundations performance. Louis Cattaneo, Structures and Materials Division, developed the test method that led to the standard ASTM E754-80, Standard Test Method for Pullout Resistance of Ties and Anchors Embedded in Masonry Mortar Joints. This activity was performed under the jurisdiction of ASTM

Subcommittee E06.13 on Structural Performance of Joining and Fastening in Building Construction.

Center for Fire Research (CFR)

In 1980, CFR staff made several contributions to the 1980 Edition of the Life Safety Code (National Fire Protection Administration (NFPA) 101) adopted by NFPA at its November 1980 meeting. The new edition includes the Fire Safety Evaluation System (FSES) for Health Care Facilities, which allows alternative, cost effective methods of providing the level of fire safety required by the Code. It is expected to lead to large savings in the upgrading of existing health care facilities and the construction of new facilities. Inclusion in the widely used Life Safety Code makes the FSES readily available for adoption by authorities in a wide range of jurisdictions. This system was developed under the direction of Harold Nelson, Fire Safety Engineering Division. Other additions made to the Code by CFR were: 1) a new chapter on Detention and Correctional Occupancies, based in part on work carried out for the Department of Justice; and 2) important revisions to the Residential Occupancies chapter made by a subcommittee chaired by Irwin Benjamin, Chief of the Fire Safety Engineering Division. A proposed section on Fire Safety for the Handicapped, based in part on the results of conferences and workshops sponsored by CFR, was returned to Committee for further study.

Center for Consumer Product Technology (CCPT)

Staff members of the Product Safety Technology Division participated during 1980 in a joint effort with the Consumer Product Safety Commission and the Chain Saw Manufacturers Association to develop a voluntary standard for chain saws to address the kickback hazard. A device designed by a manufacturer to simulate the human operator was appraised. Multiple image photography of tests with hand-held saws provided insight into the mechanics of kickback and also revealed significant inadequacies of the simulation. These and other results from chain saw studies produced valuable information for use in NBS research of potential hazards created by loss-of-control of power equipment.

In 1980, the Consumer Product Safety Commission (CPSC) issued a standard based on technical work performed by the Product Performance Engineering Division. The standard, Safety Standard Requiring Oxygen Depletion Safety (ODS) Shut-Off System for Unvented Gas-Fired Space Heaters, was published September 17, 1980, in the Federal Register. NBS' work provided CPSC the basis to determine an alternative to banning unvented heaters.

In 1980, the National Institute of Justice (NIJ) published six standards that were based on test methods and performance requirements developed by NBS' Law Enforcement Standards Laboratory (LESL). The standards were: Riot Helmets and Face Shields; Microphone Cable Assemblies for Mobile FM Transceivers; Continuous Signal-Controlled Selective Signaling; Physical Security of Window Units; Physical Security of Sliding Glass Door Units; and Metallic Window Foil for Intrusion Alarm Systems. These equipment standards assist law enforcement and criminal justice agencies in the selection and procurement of quality equipment.

Continuous Process Technology Program (CPTP)

In 1980, Joseph Richmond, Thermal Processes Division, Fred Nicodemus, Center for Radiation Research, and Lou Barbrow of the Office of Weights and Measures, made significant contributions to the revision of American National Standard 27.1 1967, Nomenclature and Definitions for Illuminating Engineering, which was published in the October Journal of the Illuminating Engineering Society. The revision, issued as ANSI/IEC RP-16-1980, includes about 130 new terms, which reflect advances in the fields of radiometry, photometry, colorimetry, and illuminating engineering since completion of the current standard in 1965.

Office of Engineering Standards (OES)

The 15th Anniversary of the Office of Engineering Standards' AASHTO Materials Reference Laboratory (AMRL) was celebrated at the Annual Meeting of the AASHTO's Operating Subcommittee on Materials in Nashville, Tennessee the week of August 10, 1980. AMRL was commended for its notable contributions to the standardization and advancement of AASHTO methods of test for materials used in constructing U.S. transportation systems.

The Office of Testing Laboratory Evaluation Technology (OTLET) conducted a round robin series of chemical tests on two special portland cements supplied by the Portland Cement Association to develop data by means of which the precision of instrumental determinations of P_2O_5 , TiO_2 , and Mn_2O_3 could be established. This information was needed to support a review of the current chemical requirements for portland cements in ASTM C150-80, Standard Specification for Portland Cement. Harry G. Anderson of the Materials Reference Laboratories prepared and distributed test samples to 110 laboratories. Reports were received from 41 laboratories. The resulting test data was compiled, analyzed statistically, and a special report prepared and submitted to the chair of ASTM Subcommittee C01.10 on Portland Cements.

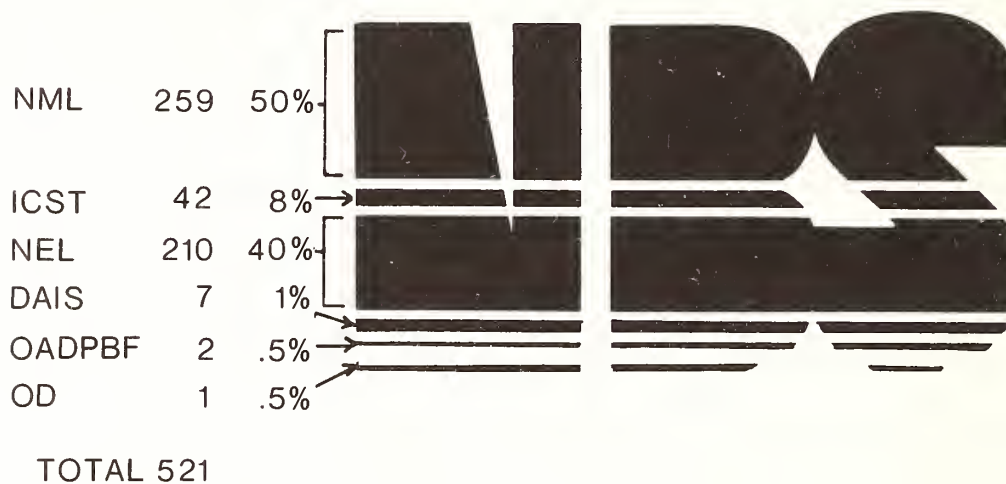
STATISTICS ON STANDARDS COMMITTEE MEMBERSHIPS*

In 1980, 521 (or 30 percent) of NBS' 1,728 professional, scientific and technical staff participated on 1,303 outside standards committees (1,133 national, 170 international). Memberships on these committees totaled 1,710 (1,528 national, 182 international). The most memberships, 861, were held in the American Society for Testing and Materials (ASTM). NBS staff participated in the activities of 125 standards organizations (93 national, 32 international).

The statistics presented here were gathered from responses given on NBS Form 83, Record of Committee Assignment. Each NBS staff member is required under Administrative Manual Subchapter 3.02, Standards and Professional Committees, to fill out this form for each committee activity. This enables NBS to maintain a complete computer record of its standards committee participation.

* As of December 31, 1980.

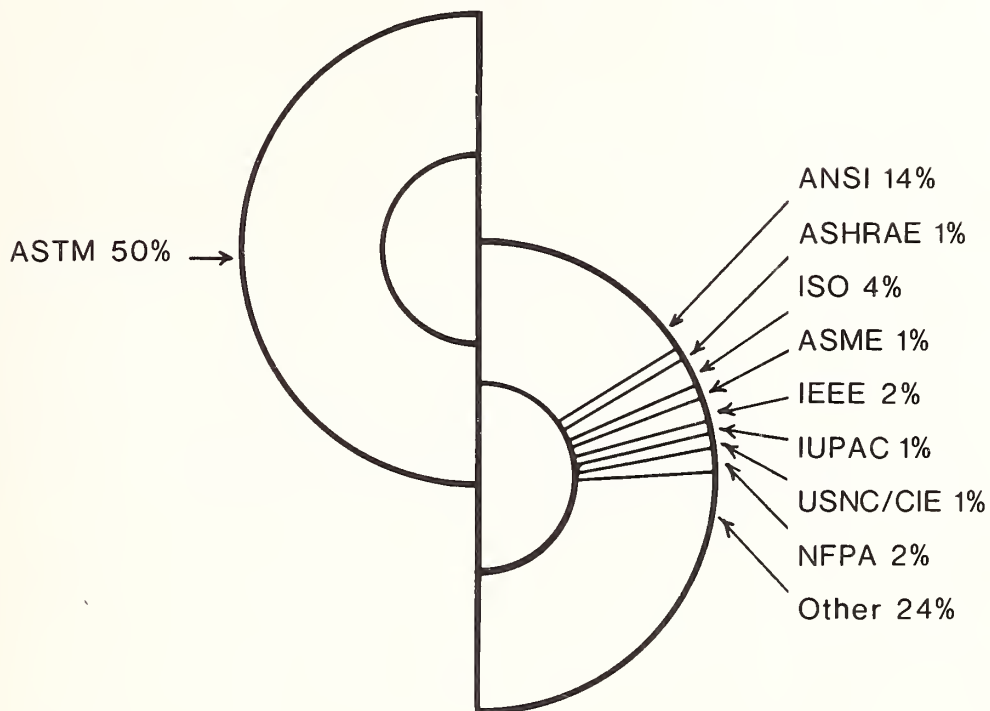
Number of NBS staff participating on standards committees



Number of memberships on national and international committees

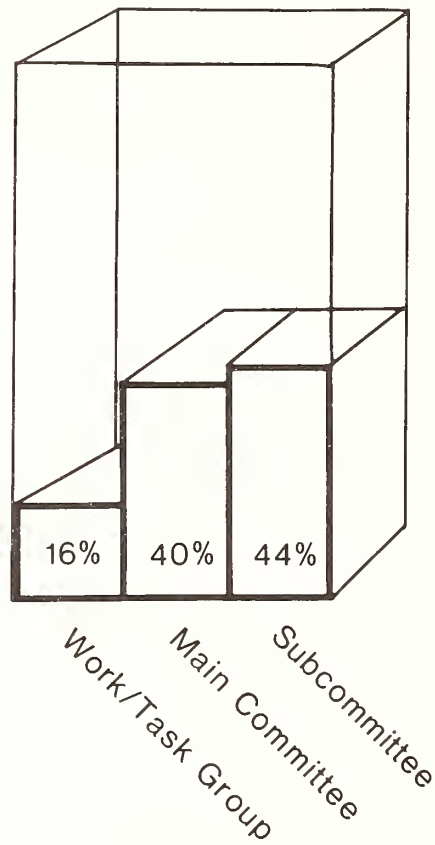
	National	International
OD	1	2
OADPBF	11	0
DAIS	9	0
NML	783	119
ICST	87	13
NEL	637	48
TOTAL	1528	182

Number of memberships in selected organizations
(with 15 or more memberships)



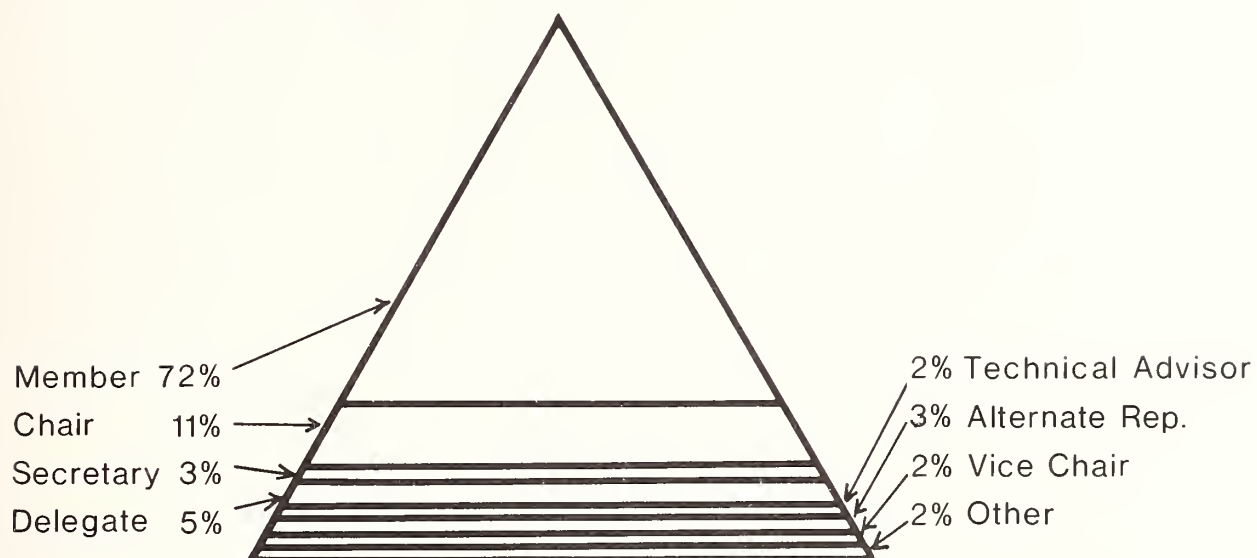
	ASTM	ANSI	ISO	IEEE	NFPA	ASHRAE	ASME	USNC/ CIE	IUPAC	OTHER
OD	0	1	0	0	0	0	0	0	0	2
OADPBF	10	0	0	0	0	0	0	0	0	1
DAIS	0	9	0	0	0	0	0	0	0	0
NML	490	67	31	7	1	0	14	13	15	264
ICST	1	68	12	5	0	0	0	0	0	14
NEL	360	99	33	30	39	31	6	5	0	82
TOTAL	861	244	76	42	40	31	20	18	15	363

Number of memberships by committee levels:



	Main Committee	Subcommittee	Work/Task Group
OD	3	0	0
OADPBF	3	6	2
DAIS	8	1	0
NML	381	388	133
ICST	17	49	34
NEL	281	305	99
TOTAL	693	749	268

Number of memberships by committee position:



	Member	Chair	Vice Chair	Sec.	Tech. Adv.	Alt. Rep.	Delegate	Other*
OD	2	1	0	0	0	0	0	0
OADPBF	10	0	0	0	0	0	0	1
DAIS	5	1	0	0	0	3	0	0
NML	646	104	13	46	18	12	48	15
ICST	48	10	6	4	3	19	9	1
NEL	516	73	10	11	12	21	29	13
TOTAL	1227	189	29	61	33	55	86	30

*Other includes such positions as: manager, consultant, general referee, advisor, editor, coordinator, observer, liaison representative, technical assistant, and convenor.

SUMMARY OF STANDARDS-RELATED TRAVEL

NBS committee participants traveled a total of 3,232 days in 1980 to attend standard committee meetings and/or conferences. The total number of trips was 944 and the average domestic trip lasted 3 days, an average foreign trip lasted 6 days. Standards-related travel made up 16 percent of all NBS travel costs and 17 percent of all travel orders issued.

The Standards Assistance and Management Information (SAMI) project staff receive copies of all travel orders processed by the NBS Travel Office. Orders pertaining to standards travel are singled out and statistics on cost, hours, and number of trips are gathered. Quarterly reports are distributed to NBS managers to keep them informed of their unit's travel time and cost. The table below describes this information in detail by MOU.

SUMMARY OF STANDARDS-RELATED TRAVEL

Organizational Unit	Total No. of Trips			Domestic Travel Hours	Foreign Travel Hours	Total Travel Hours	Domestic Travel Costs	Foreign Travel Costs	Total Travel Costs*
	D	F	T						
OD	1	3	4	16	176	192	\$526	\$2,955	\$3,481
OADPBF	5	0	5	88	0	88	1,818	0	1,818
DAIS	1	0	1	24	0	24	430	0	430
NML	302	48	350	7,040	2,400	9,440	111,780	73,089	184,869
ICST	163	7	170	5,216	336	5,552	95,288	10,788	106,076
NEL	378	22	400	9,136	960	10,096	163,491	37,129	200,620
Other	11	3	14	216	248	464	3,136	7,248	10,384
Total	861	83	944	21,736	4,120	25,856	\$376,469	\$131,209	\$507,678

Key:

OD —Office of the Director
 OADPBF —Office of the Associate Director for Programs, Budget, and Finance
 DAIS —Office of the Director of Administrative and Information Systems
 NML —National Measurement Laboratory
 ICST —Institute for Computer Sciences and Technology
 NEL —National Engineering Laboratory
 Other —NBS/STRS funds allocated to the Department of Commerce's Office of Product Standards
 D —Domestic
 F —Foreign
 T —Total

*This cost includes transportation, per diem, and special expenses (excludes labor).

APPENDIX I

Standardization Advisory and Coordination Committee (SACC) Accomplishments and Recommendations During 1980

Significant activities of SACC included:

- o Development of a means of handling "sensitive" or high-impact standards issues by NBS managers;
- o Coordination of the development by the three Major Operational Units of a method for insuring adequate NBS participation in standards activities relevant to microprocessors. NBS managers pledged funding for a specified number of technical meetings for their respective members of the NBS Microprocessor Standards Action Group (MSAG members participate in microprocessor-related standardization activities);
- o Acceptance by the NBS Executive Board of a SACC recommendation that NBS pay service fees to ANSI for domestic and international standards participation as do other organizations involved;
- o Development of NBS comments on three documents dealing with the OMB Circular A-119, "Federal Participation in the Development and Use of the Voluntary Standards,": (1) Draft Procedures for Listing Dispute Resolution; (2) Changes in the Interagency Committee on Standards Policy Charter; (3) and a Model Federal Agency Policy for Implementing A-119; and
- o Monitoring of the development of a model policy dealing with the differences in the way Federal agencies use product certification for either regulatory or procurement purposes. SACC is interested in how this may affect NBS standard reference materials, calibration services, and the Institute of Computer Sciences and Technology certification of interface equipment and software.

SELECTED BIBLIOGRAPHY

These publications may be obtained from one of the following sources, as indicated in the citation: Superintendent of Documents, U.S. Government Printing Office (GPO), Washington, D.C. 20402; National Technical Information Service (NTIS), Springfield, VA 22161; and the SAMI Office, Office of Engineering Standards; NBS, Technology, B-166, Washington, D.C. 20234. When ordering from GPO or NTIS, please use order number.

1. Directory of NBS Staff Memberships on Outside Standards Committees (January 1981) available from SAMI Office.

The Standards Assistance and Management Information (SAMI) project staff collects and disseminates, through a computerized data system, information on all NBS staff participation in outside standards-writing activities. This report contains printouts from that system in two categories: Index of NBS Staff Committee Participants and Index of Committee Auspices and Committee Number. Each index is listed alphabetically.

2. Performance vs. Design Standards, D. Hemenway, NBS GCR 80-287 (October 1980) available from NTIS as PB 81-120362.

This report compares and contrasts performance and design standards from an economic perspective. The research consisted of a careful examination of the literature and interviews with interested NBS personnel. The paper describes the characteristics of performance standards, explains why they are not used more often, and discusses particular areas where they may be appropriate. The report examines the design versus performance issue in automobile regulation and health care. There are suggestions for further NBS action to promote performance standards and a listing of areas for further research. Nine brief cases at the end of the paper illustrate points made in the main text.

3. Need for Economic Information on Standards Used in Regulatory Programs: Problems and Recommendations, M. Breitenberg, NBSIR 80-2123 (September 1980) available from NTIS as PB 81-115784.

A number of government regulatory agencies are increasing their use of standards developed by the private sector. Federal regulators are, however, being required to provide increasing justification for their regulations, especially information on their economic desirability. If regulators are to effectively use voluntary standards in their regulations rather than develop standards in-house, they will need the same types of economic information on the voluntary standards as they would have on their in-house standards. This paper describes the types of requirements and pressures that regulatory agencies are faced with in justifying their actions and provides standards writers with guidelines on the types of economic information that may allow regulators to make greater use of voluntary standards.

4. Economics Applied to Standards: A Guide to the Literature , S. F. Weber and B. C. Cassard, NBSIR 80-2015 (April 1980) available from NTIS as PB 80-186034.

This report provides a guide to the available literature on the application of economics to the analysis of standards and standardization. One hundred eighty-nine relevant articles, reports, and books were found and organized into four major categories of interest: 1) general methods of economic evaluation; 2) economics useful for standards analysis; 3) evaluation of specific developed standards; and 4) economics applied to the development of standards. The significant findings within each of these categories are briefly discussed in the text.

5. The Economics of the Product Certification Industry: Some Research Needs, C. Chapman Rawie, NBSIR 80-2001 (March 1980) available from NTIS as PB 80-160716.

With the increase in safety regulation, product liability suits, and interest in encouraging the use of new technologies through certification, certification is likely to become more and more important as a way to show conformance with voluntary or regulatory standards. There have been a number of State and Federal Government activities related to product certification. However, the potential impact of past and proposed government actions is not clear. One reason may be that there has been insufficient study of the economics of the product certification industry. This paper asserts that such study is needed as a basis for setting government policy and raises issues that should be addressed concerning structure and performance of the product certification industry.

6. Standardization in France, I. M. Martinez, NBSIR 79-1959 (February 1980) available from NTIS as PB 80-162126.

This report provides an overview of the voluntary standards system in France. The author, a former employee of AFNOR--the official French standardization organization, calls on her firsthand experience to discuss the following aspects of the French standards system: 1) organization; 2) French standards; 3) standards development; 4) certification; 5) government use of standards; 6) the role of consumers and labor in standardization; and 7) France's participation in international standards activities.

7. A Guide to Papers Citing Antitrust Cases Involving Standards or Certification, C. Chapman Rawie, NBSIR 79-1921 (December 1979) available from NTIS as PB 80-133960.

Since at least 1912, standards and certifications for products ranging from lumber to milk cans have been at issue in antitrust cases. This paper describes several articles and reports which examine the antitrust history of standards. It is intended as a research tool to help economists and others decide which (if any) antitrust cases they should study to learn more about the economic effects of standards.

8. Publications of the National Bureau of Standards, B. Burris and R. Morehouse, Editors, NBS Special Publication 305 and its supplements (Supplement 11 - 1979) available from GPO as SN 003-003-02194-6.

This 11th supplement to Special Publication 305 of the National Bureau of Standards lists the publications of the Bureau issued between January 1 - December 31, 1979. It includes an abstract of each publication, key-word and author indexes; and general information and instructions about NBS publications.

9. An Index of U.S. Voluntary Engineering Standards, W. Slattery, Editor, NBS Special Publication 329, Supplement 2 (May 1975) available from GPO as SN 003-003-01362-5.

This supplement contains the permuted titles of more than 5,700 voluntary engineering standards; specifications, test methods, codes and recommended practices published by 164 U.S. technical societies, professional organizations and trade associations. Each title can be found under all the significant key words which it contains. These key words are arranged alphabetically down the center of each page together with their surrounding context. The date of publication or last revision, the standard number and an acronym designating the standards-issuing organization appear as part of each entry.

10. Directory of U.S. Standardization Activities, S. Chumas, Editor, NBS Special Publication 417 (November 1975) available from GPO as SN 003-003-01395-1.

This directory serves as a guide to standardization activities in the United States. Included in the directory are summaries of the standardization activities of trade associations, technical and other professional societies representing industry and commerce, and State and Federal Governments. For the first time this directory covers current descriptive summaries of more than 580 organizations. Organizations having standardization activities such as standards-writing, assisting in the development of standards, issuing standards or disseminating standards information are included. The standardization activities summaries are grouped into three sections: associations, States, and agencies. In each section, the summaries are arranged alphabetically by organization. Two types of indexes are included to assist the reader in identifying an activity: 1) a subject index of key words taken from the summaries; and 2) a listing of organizations classified into 24 subject heading areas.

11. Tabulation of Voluntary Standards and Certification Programs for Consumer Products, W. Slattery, NBS Technical Note 948 (June 1977) available from GPO as SN 003-003-01779-5.

The document lists over 1,000 product areas and over 2,000 standards titles covering products found in and around the home. (The major consumer product areas not included are foods, beverages, and drugs.)

The tabulation also indicates the applicable national, industrial, and international standards which deal primarily with either safety or performance or both aspects of the products listed. For some of the product areas there are no applicable standards. Available information on certification programs and standards under development and the Standard Industrial Classification (SIC) numbers for the products are also provided.

12. Index of U.S. Nuclear Standards, W. Slattery, NBS Special Publication 483 (August 1977) available from GPO as SN 003-003-01822-8.

This index contains the permuted titles of more than 1,200 nuclear and nuclear-related standards, specifications, test methods, codes and recommended practices published by 34 U.S. Government agencies, technical societies, professional organizations, and trade associations. Each title can be found under all the significant key words which it contains. These key words are arranged alphabetically down the center of each page together with their surrounding context. Each entry includes the date of publication or last revision, the standard number, an acronym designating the standards-issuing organization, any cross reference standard number, and price.

DIRECTORY OF STANDARDS COMMITTEES ON WHICH
NBS STAFF SERVE

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECURE- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
AACC	-C002	COMMITTEE ON STANDARDS	AACC	NATL	URIANO, GEORGE A.	503	TECHNICAL ADVISOR	3-80
	-SC.01	RADIOLIGAND						
	-WG.01	CORTISOL	AACC	NATL	REEDER, DENNIS J.	552	MEMBER	10-78
	-WG.01	CHOLESTEROL IN SERUM	AACC	NATL	SCHAFER, ROBERT	552	MEMBER	1-76
	-WG.02	ELECTROLYTES IN SERUM	AACC	NATL	SCHAFER, ROBERT	552	MEMBER	1-74
	-WG.03	SERUM IRON	AACC	NATL	SCHAFER, ROBERT	552	MEMBER	1-76
	-WG.04	SERUM GLUCOSE	AACC	NATL	SCHAFER, ROBERT	552	CHAIR	1-74
	-WG.05	SERUM UREA	AACC	NATL	SCHAFER, ROBERT	552	MEMBER	1-76
	-WG.06	URIC ACID IN SERUM	AACC	NATL	SCHAFER, ROBERT	552	MEMBER	1-75
AAMI	-C004	SPHYGMOMETER	AAMI	NATL	HASKO, STEPHEN	511	ALT REP	10-79
AAPM	-C002	RADIATION THERAPY	AAPM	NATL	LOEVINGER, ROBERT	533	CONSULTANT	10-79
	WG.21	HIGH-ENERGY PHOTON AND ELECTRON DOSIMETRY	AAPM	NATL	LOEVINGER, ROBERT	533	MEMBER	1976
	WG.22	BRACHYTHERAPY	AAPM	NATL	LOEVINGER, ROBERT	533	MEMBER	8-79
AATCC	RA045	FINISH ANALYSIS	AATCC	NATL	WHARTON, KATHRYN M.	560	MEMBER	1958
ABA	-C002	BANK CARD STANDARDS	ABA	NATL	JEFFERY, SEYMOUR	640	TECHNICAL ADVISOR	1976
	-WG.01	SECURITY	ABA	NATL	BRANSTAD, DENNIS K.	643	MEMBER	6-78
ACI	116	NOMENCLATURE	ACI	NATL	DISE, JOHN R.	782	MEMBER	1956
	214	EVALUATION OF RESULTS OF TESTS USED TO DETERMINE STRENGTH OF CONCRETE	ACI	NATL				
	216	FIRE RESISTANCE AND FIRE PROTECTION OF STRUCTURES	ACI	NATL	LEW, HAI S.	741	MEMBER	4-76
	318	COMMITTEE ON STANDARD BUILDING CODES	ACI	NATL	ISSEN, LIONEL A.	753	MEMBER	1971
	347	FORMWORK FOR CONCRETE	ACI	NATL	PERANG, EDWARD G.	741	MEMBER	1971
	437	STRENGTH EVALUATION OF EXISTING CONCRETE STRUCTURES	ACI	NATL	LEW, HAI S.	741	MEMBER	3-76
	444	MODELS OF CONCRETE STRUCTURES	ACI	NATL	LEW, HAI S.	741	MEMBER	1-79
	531	CONCRETE MASONRY STRUCTURES	ACI	NATL	LEVENDECKER, EDGAR V.	741	MEMBER	1970
	E902	EDUCATION ACTIVITY CERTIFICATION	ACI	NATL	WOODWARD, KYLE A.	741	MEMBER	9-80
ACI/ ASCE	530	MASONRY STRUCTURES	ACI/ ASCE	NATL	BRYSON, JAMES O.	782	MEMBER	2-90
ACS	-C002	ANALYTICAL REAGENTS COMMITTEE	ACS	NATL	WOODWARD, KYLE A.	741	MEMBER	9-80
	-C006	NOMENCLATURE	ACS*	NATL	MURPHY, THOMAS J.	551	MEMBER	1-80
	-C002	COMPATIBILITY	ADA	NATL	COYLE, THOMAS D.	561	CHAIR	1977
AICHE	-C002	RESEARCH	AICHE	NATL	LIDE, DAVID R., JR.	504	MEMBER	1-73
AIF/ NBS	-C002	STEERING COMMITTEE	AICHE	NATL	TESK, JOHN A.	563	MEMBER	1979
	-C001	ALLOY PHASES	AIF/ NBS	INTL	KLEIN, MAX	544	MEMBER	1-77
AIME	-C001	INTERNATIONAL PRACTICAL PRESSURE SCALE	AIME	NATL	MANN, WILFRID B.	532	MEMBER	1974
AIRAPT	-C002	AD HOC COMMITTEE TO ESTABLISH METEOROLOGICAL STANDARDS	AIRAPT	INTL	BENNETT, LAWRENCE H.	564	MEMBER	1964
AMS	-C002	WEIGHTS AND MEASURES ADVISORY COMMITTEE METRIC PRACTICE	AMS	NATL	BEAN, VERN E.	522	CHAIR	5-79
ANMC	-C004	WEIGHTS AND MEASURES ADVISORY COMMITTEE	ANMC	NATL	HASEGAWA, SABURO	772	MEMBER	3-78
	-C006	BOARD OF DIRECTORS	ANMC	NATL	WOLLIN, HAROLD F.	511	MEMBER	1975
	-C002		ANS	NATL	GOLDMAN, DAVID T.	500	LIAISON MEMBER	11-79
	-C002		ANS	NATL	CARPENTER, B. STEPHEN	551	MEMBER	1979

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECURE- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ANS	-C006	STANDARDS						
	SC.06	RADIATION PROTECTION AND SHIELDING						
	-WG.02	AD HOC COMMITTEE ON SI UNITS	ANS	NATL	HUBBELL, JOHN H.	533	CHAIR	6-74
	SSC.04	SHIELDING MATERIALS						
	WG.03	GAMMA-RAY ATTENUATION DATA	ANS	NATL	EISENHAUER, CHARLES M.	532	MEMBER	7-80
	WG.01	SHIELDING CROSS SECTION	ANS	NATL	HUBBELL, JOHN H.	533	MEMBER	11-71
	WG.05	GLOSSARY OF TERMS IN SHIELDING AND DOSIMETRY	ANS	NATL				
	SC.09	NUCLEAR TERMINOLOGY AND UNITS	DOE	NATL	MCLAUGHLIN, WILLIAM L.	533	MEMBER	7-77
	WG.01	HEALTH PHYSICS AND DOSIMETRY			SPENCER, LEWIS V.	533	MEMBER	1976
	SC.15	OPERATION OF RESEARCH REACTORS	DOE	NATL	GOLDMAN, DAVID T.	500	MEMBER	1-69
	SC.16	ISOTOPE AND RADIATION	ANS	NATL	MCLAUGHLIN, WILLIAM L.	533	MEMBER	2-77
	-WG.01	NEUTRON ACTIVATION ANALYSIS	ANS	NATL	MCLAUGHLIN, WILLIAM L.	533	CHAIR	7-77
	-WG.02	RADIOGRAPHY AND GAUGING	ANS	NATL	RADY, TAWFIK M.	565	MEMBER	1974
	-C002	ACOUSTICAL STANDARDS MANAGEMENT BOARD	ASA	NATL	CARPENTER, B. STEPHEN	551	MEMBER	1973
	-C008	ANSI CONSUMER COUNCIL/EXECUTIVE COMMITTEE	ANS	NATL	CARPENTER, B. STEPHEN	551	MEMBER	1975
	-C012	BOARD OF DIRECTORS	ANS	NATL	HUBBELL, JOHN H.	533	MEMBER	4-76
	-C018	CONSTRUCTION STANDARDS MANAGEMENT BOARD	ANSI	NATL	KRAMER, SAMUEL	700	MEMBER	9-79
	-C020	CONSUMER COUNCIL, CONSUMER EDUCATION AND PUBLIC RELATIONS COMMITTEE	ANSI	NATL	VADELUND, ERIC A.	760	MEMBER	3-78
	-WG.01	STANDARDS SCREENING SEMINARS: CONSUMER SOUNDING BOARDS	ANSI	NATL	AMBLER, ERNEST	100	MEMBER	6-75
	-C024	ELECTRICAL AND ELECTRONICS STANDARDS MANAGEMENT BOARD	ANSI	NATL	PFRANG, EDWARD O.	741	MEMBER	1973
	-C030	EXECUTIVE STANDARDS COUNCIL	ANSI	NATL				
	-C.01	SOLAR ENERGY STANDARDS DEVELOPMENT	ANSI	NATL	VADELUND, ERIC A.	760	MEMBER	2-75
	-SC.01	PHOTOVOLTAICS	ANSI	NATL	FAISON, THOMAS K.	745	MEMBER	5-80
	-C.02	AD HOC JCINT STUDY GROUP FOR STDs MANAGEMENT BOARD - ELECTRICAL/THERMAL INSULATION	ANSI	NATL	WARSHAW, STANLEY I.	760	MEMBER	1-81
	-C038	HEATING, AIR CONDITIONING, AND REFRIGERATION STANDARDS MANAGEMENT BOARD	ANSI	NATL	DIKKERS, ROBERT D.	744	MEMBER	1-76
	-C044	INFORMATION SYSTEMS STANDARDS MANAGEMENT BOARD	ANSI	NATL/I	WAKSMAN, DAVID	744	ALT REP	1-76
	-C054	MEDICAL DEVICES STANDARDS MANAGEMENT BOARD	ANSI	NATL	SCHAFFT, HARRY A.	721	MEMBER	4-79
	-C062	NUCLEAR STANDARDS MANAGEMENT BOARD	ANSI	NATL	GALWIN, LAWRENCE S.	745	CHAIR	12-78
	-C070	SAFETY AND HEALTH STANDARDS MANAGEMENT BOARD	ANSI	NATL/I	MCKALL, PRESTON E.	742	MEMBER	10-77
	-C086	VISUAL ALERTING SYSTEMS (VASCOM) RESEARCH	ANSI	NATL	BURROWS, JAMES H.	600	MEMBER	3-80
	-SC.01	US TAG FOR ISO/TC085, NUCLEAR ENERGY	NBS	NATL	ROUNTREE, ROBERT E., JR.	600	ALT REP	3-80
	-C088	US TAG FOR ISO/TC147, WATER QUALITY	ANSI	NATL	CASSEL, JAMES M.	563	MEMBER	1977
	-C090	US TAG FOR ISO/TC150, IMPLANTS FOR SURGERY	ANSI	NATL	COSTRELL, LOUIS	535	MEMBER	1970
	-C092	US TAG FOR ISO/TC158, ANALYSIS OF GASES	ANSI	NATL	VENTRE, FRANCIS, T.	743	MEMBER	6-79
	-C094		ANSI	NATL/I	GLASS, ROBERT A.	743	CHAIR	12-77
			ANSI	NATL/I	EISENHOWER, ELMER H.	530	MEMBER	12-73
			ANSI	NATL/I	TAYLOR, JOHN K.	550	MEMBER	1970
			ANSI	NATL/I	CASSEL, JAMES M.	563	CHAIR	1977
			ANSI	NATL/I	TAYLOR, JOHN K.	550	MEMBER	1975

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECURE- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ANSI	-C096	US TAG FOR ISO/TC164, MECHANICAL TESTING OF METALS						
	SC.04	TOUGHNESS TESTING	ANSI	NATL/I	INTERRANTE, CHARLES G.	562	MEMBER	1977
	AG.01	TERMINOLOGY AND SYMBOLS	ANSI	NATL/I	INTERRANTE, CHARLES G.	562	MEMBER	1977
	-C098	INTERNATIONAL STANDARDS COUNCIL	ANSI	NATL	DONALDSON, JOHN L.	760	ALT REP	10-80
	-C100	ADVISORY GROUP ON ISO/INFCO AND ISONET	ANSI	NATL/I	WARSHAW, STANLEY I.	760	MEMBER	10-80
	-C102	INTERNATIONAL ADVISORY COMMITTEE ON CONSUMER POLICY	ANSI	NATL/I	DONALDSON, JOHN L.	760	MEMBER	8-80
	-C110	US TAG FOR ISO/TC012, QUANTITIES, UNITS, SYMBOLS, CONVERSION FACTORS AND CONV TABLES	ANSI	NATL/I	VADELUND, ERIC A.	760	ALT REP	8-78
					WARSHAW, STANLEY I.	760	MEMBER	8-78
	-C112	US TAG FOR ISO/TC038, TEXTILES	AATCC/ ASTM	NATL/I	GOLDMAN, DAVID T.	500	MEMBER	6-79
	-C114	AUDIT AND ACCREDITATION BOARD	ANSI	NATL	KWELLER, ESHER R.	762	MEMBER	8-74
	-C118	US TAG FOR ISO/TC173, TECHNICAL AIDS FOR DISABLED OR HANDICAPPED PERSONS	ANSI	NATL/I	WINGER, JAMES H.	753	MEMBER	1-80
					FRENCH, JAMES E.	780	VICE CHAIR	9-78
	-C130	US TAG FOR ISO/TC092, FIRE TESTS	ASTM	NATL/I	PIERMAN, BRIAN C.	743	ALT REP	11-80
	-C132	US TAG FOR ISO/TC061, PLASTICS	ANSI	NATL/I	VENTRE, FRANCIS T.	743	MEMBER	11-80
	A010	SAFETY IN CONSTRUCTION AND DEMOLITION OPERATIONS	ARBA; NSC	NATL	GROSS, DANIEL	750	CHAIR	1975
	A040	SAFETY REQUIREMENTS FOR PLUMBING	ASME	NATL	SMITH, LESLIE E.	563	MEMBER	9-80
	SC.17	PERFORMANCE PLUMBING CODE	ASME	NATL	LEW, HAI S.	741	MEMBER	12-78
	AC41	BUILDING CODE REQUIREMENTS AND GOOD PRACTICE RECOMMENDATIONS FOR MASONRY	NBS	NATL	GALOWIN, LAWRENCE S.	745	MEMBER	1974
	A058	BUILDING CODE REQUIREMENTS FOR MINIMUM DESIGN LOADS IN BUILDINGS	NBS	NATL	GALOWIN, LAWRENCE S.	745	CHAIR	1975
	-SC.01	WIND LOADS	NBS	NATL	YOKEL, FELIX Y.	741	CHAIR	1974
	A108	INSTALLATION OF CERAMIC TILE	TCA	NATL	ELLINGWOOD, BRUCE R.	741	SEC	10-77
	A112	STANDARDIZATION OF PLUMBING MATERIALS AND EQUIPMENT	ASME; ASSE	NATL	MARSHALL, RICHARD D.	741	MEMBER	1-77
	A117	ARCH. FEATURES/SITE DESIGN PUBLIC BLDGS./RESIDENTIAL STRUCTURES FOR HANDICAP	ANSI	NATL	ADLER, SANFORD C.	743	MEMBER	2-80
	SC.01	MAKING BLDGS./FACILITIES ACCESSIBLE TO HANDICAPPED PEOPLE	HUD/ NES	NATL	GALOWIN, LAWRENCE S.	745	MEMBER	1974
	A119	STANDARDS FOR MOBILE HOMES AND TRAVEL TRAILERS			VENTRE, FRANCIS T.	743	MEMBER	11-80
	SC.03	MOBILE HCME INSTALLATIONS	ANSI	NATL	PIERMAN, BRIAN C.	743	ALT REP	11-80
	A137	SPECIFICATIONS FOR CERAMIC TILE	TCA	NATL	VENTRE, FRANCIS T.	743	MEMBER	11-80
	B007	SAFETY REQUIREMENTS FOR THE USE, CARE, AND PROTECTION OF ABRASIVE WHEELS	GWI	NATL				
	B032	STANDARDIZATION OF METAL AND METAL ALLOY WROUGHT MILL PRODUCT NOMINAL SIZES	ASME	NATL	CHUNG, RILEY M.	741	MEMBER	10-80
	B046	CLASSIFICATION AND DESIGNATION OF SURFACE QUALITIES	ASME	NATL	ADLER, SANFORD C.	743	MEMBER	8-78
					GERNER, STANLEY W.	352	CHAIR	1960
					BETTWY, DAVID S.	352	MEMBER	3-78
					TEAGUE, E. CLAYTON	737	ALT REP	5-75

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION	DT. OF APPT.
ANSI	SC-01	PRECISION REFERENCE SPECIMENS	SAE; ASME	NATL	YOUNG, RUSSELL D.	739	MEMBER	5-74
	SC-05	PEAK AND VALLEY ROUGHNESS MEASUREMENT	ASME; SAE	NATL	TEAGUE, E. CLAYTON	737	MEMBER	5-74
	B047	GAGE BLANKS	ASME	NATL	TEAGUE, E. CLAYTON	737	MEMBER	5-74
	B087	DECIMALIZED MEASURES	SME	NATL	BETTWY, DAVID S.	352	MEMBER	3-78
	B109	GAS DISPLACEMENT METERING	AGA	NATL	EDGERLY, DAVID E.	513	MEMBER	9-77
	B175	SAFETY OF PORTABLE, HAND-HELD CHAIN SAWS	CSMA	NATL	HASKO, STEPHEN	511	MEMBER	1-77
	C001	NATIONAL ELECTRICAL CODE		NATL	ROBINSON, DONALD C.	763	MEMBER	11-79
	SC-07	PANEL NO. 7	NFPA	NATL	BEAUSOLIEL, ROBERT W.	745	ALT REP	9-76
	C012	ELECTRICITY METERING	IEEE	NATL	TURGEL, RAYMOND S.	722	CHAIR	2-77
	SC-03	STANDARDS AND STANDARDIZING EQUIPMENT	IEEE	NATL	TURGEL, RAYMOND S.	722	CHAIR	1978
	SC-12	SOLID STATE METERS	IEEE	NATL	TURGEL, RAYMOND S.	722	CHAIR	1980
	C018	SPECIFICATIONS FOR DRY CELLS AND BATTERIES	NEMA	NATL	EICKE, WOODWARD G.	521	MEMBER	1972
	C039	ELECTRICAL MEASURING INSTRUMENTS	ANSI	NATL	SCHOENWETTER, HOWARD K.	722	MEMBER	1972
	SC-02	DIRECT-ACTING ELECTRICAL RECORDING INSTRUMENTS	ANSI	NATL	SCHOENWETTER, HOWARD K.	722	MEMBER	1972
	SC-04	AUTOMATIC NULL-BALANCING ELECTRICAL MEASURING INSTRUMENTS	ANSI	NATL	SCHOENWETTER, HOWARD K.	722	MEMBER	1972
	SC-05	SAFETY REQUIREMENTS FOR ELECTRICAL AND ELECTRONIC CONTROLLING INSTRUMENTATION	ANSI	NATL	SCHOENWETTER, HOWARD K.	722	MEMBER	1977
	SC-06	DIGITAL MEASURING INSTRUMENTS	ANSI	NATL	SCHOENWETTER, HOWARD K.	722	MEMBER	1977
	C039/100	ELECTRICAL STANDARDS, INSTRUMENTATION, AND DEVICES	SAMA	NATL/ NATL/I	BELECKI, NORMAN B.	521	MEMBER	9-72
	-SC-01	REFERENCE VOLTAGE DEVICES	SAMA	NATL	BELECKI, NORMAN B.	521	MEMBER	6-70
	C042	DEFINITIONS OF ELECTRICAL TERMS	ANSI	NATL/I	TAYLOR, BARRY N.	521	MEMBER	4-78
	C063	RADIO - ELECTRICAL COORDINATION	IEEE	NATL	TAGGART, HAROLD E.	723	ALT REP	6-79
	SC-01	EMI MEASUREMENT TECHNIQUES AND DEVELOPMENTS	IEEE	NATL	CRAWFORD, MYRON L.	723	MEMBER	1978
	C068	HIGH VOLTAGE TESTING TECHNIQUES	IEEE	NATL	KOTTER, F. RALPH	722	MEMBER	1962
	C087	ARC WELDING MACHINES	NEMA	NATL	PETERSONS, OSKARS	722	MEMBER	1970
	C096	TEMPERATURE MEASUREMENT THERMOCOUPLES	ISA	NATL	BROWN, HAROLD E.	352	MEMBER	1-78
	F-035	ALUMINUM AND ALUMINUM ALLOYS	AA	NATL	BURNS, GEORGE W.	522	MEMBER	1970
	MC001	PROGRAMMABLE TEST MEASUREMENT SYSTEMS	IEEE	NATL	GERHOLD, WILLIAM F.	561	MEMBER	1972
	MC088	CALIBRATION OF INSTRUMENTS	ASME	NATL	BOYLE, DON R.	713	MEMBER	12-73
	-SC-03	TEMPERATURE	ANSI	NATL	SCHOOLEY, JAMES F.	522	CHAIR	1978
	MC105	MEDICAL ELECTRONICS	HIMA/ SAMA	NATL	HURST, WILBUR S.	522	MEMBER	1959
	MD156	DENTAL MATERIALS, INSTRUMENTS AND EQUIPMENT	ANSI	NATL	WILLIAMS, EDWIN H.	521	MEMBER	1976
	-C-02	PROSTHETIC MATERIALS	ANSI	NATL	BOWEN, RAFAEL	563	MEMBER	1968
	SC-14	BASE METAL ALLOYS	ANSI	NATL	BRAUER, GERHARD M.	563	MEMBER	1969
	SC-38	PORCELAIN-METAL SYSTEMS	ANSI	NATL	RUPP, NELSON W.	563	MEMBER	1970
	-C-03	TERMINOLOGY AND SPECIAL PROJECTS		NATL	TESK, JOHN A.	563	CHAIR	1980
	SC-40	DENTAL IMPLANTS	ANSI	NATL	TESK, JOHN A.	563	SEC	1979
	-SC-01	DENTURE MATERIALS	ANSI	NATL	BRAUER, GERHARD M.	563	CHAIR	1970
	-SC-02	TOXICITY TESTS	ANSI	NATL	BOWEN, RAFAEL	563	SEC	1968

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRET- TARIAT	TYPE	NAME	DIV.	POSITION HELO	DT. OF APPT.
ANSI	SC.01	WORKING GROUP ON RESTORATIVE MATERIALS	ADA	NATL	RUPP, NELSON W.	563	CHAIR	1976
	SSC.01	ALLOY FOR DENTAL AMALGAMS	ADA	NATL	RUPP, NELSON W.	563	CHAIR	1970
	SSC.06	MERCURY FOR AMALGAMS	ADA	NATL	RUPP, NELSON W.	563	CHAIR	1970
	SSC.39	PIT AND FISSURE SEALANTS	ADA	NATL	RUPP, NELSON W.	563	MEMBER	1976
	SSC.43	AMALGAMATORS FOR DENTAL AMALGAMS	ADA	NATL	RUPP, NELSON W.	563	CHAIR	1976
	SSC.45	DISPENSERS FOR MERCURY AND ALLOYS FOR DENTAL AMALGAMS	ADA	NATL	RUPP, NELSON W.	563	CHAIR	1976
	WH005	STANDARDIZATION OF FREIGHT CONTAINERS						
	-SC.01	THEF-MAL CONTAINERS	ANSI	NATL	MULROY, WILLIAM J.	742	ALT REP	1970
	N012	NUCLEAR TERMINOLOGY, UNITS, SYMBOLS, IDENTIFICATION AND SIGNALS	AIF	NATL				
	N013	RADIATION PROTECTION	HPS	NATL	HOBBS, THOMAS G.	354	ALT REP	1972
	N015	METHODS OF NUCLEAR MATERIAL CONTROL	INMM	NATL	MCLAUGHLIN, WILLIAM L.	533	MEMBER	1971
					HOBBS, THOMAS G.	354	ALT REP	1972
					LOFTUS, THOMAS P.	533	MEMBER	1970
					CARPENTER, B. STEPHEN	551	MEMBER	8-76
					REED, WILLIAM P.	503	MEMBER	1974
SC-INMM8		CALIBRATION TECHNIQUES FOR NUCLEAR MATERIAL CONTROL						
WG.04		CALIBRATION TECHNIQUES FOR CALORIMETRIC ASSAY OF PLUTONIUM-BEARING SOLIDS	INMM	NATL	OITMAQS, DAVIO A.	543	ALT REP	4-73
					MANN, WILFRID B.	532	MEMBER	3-72
SC-INMM9		NONDESTRUCTIVE ASSAY	INMM	NATL	CARPENTER, B. STEPHEN	551	MEMBER	8-76
WG.03		STANDARDS FOR NONDESTRUCTIVE ASSAY	INMM	NATL	CARPENTER, B. STEPHEN	551	MEMBER	8-76
					REED, WILLIAM P.	503	MEMBER	1977
N017		RESEARCH REACTORS, REACTOR PHYSICS, AND RADIATION SHIELDING	ANS	NATL	CARTER, ROBERT S.	566	SEC	12-72
					RARY, TAWFIK M.	566	ALT REP	1973
N041		CONTROLS, INSTRUMENTATION, ELECTRICAL SYSTEMS FOR NUCLEAR POWER GENERATING STATIONS	IEEE	NATL	COSTRELL, LOUIS	535	MEMBER	1972
N042		NUCLEAR INSTRUMENTS	IEEE	NATL	COSTRELL, LOUIS	535	CHAIR	1961
SC.02		PROCEOURAL STANDARDS FOR CALIBRATION OF DETECTORS FOR RADIOACTIVE MEASUREMENTS	IEEE	NATL	COURSEY, BEPT M.	532	MEMBER	1975
					HUTCHINSON, J. M. ROBIN	532	SEC	1974
N043		EQUIPMENT FOR NON-MEDICAL RADIATION APPLICATIONS	NBS	NATL	BLOCK, STANLEY	565	MEMBER	1967
					EISENHOWER, ELMER H.	530	CHAIR	4-67
					HEATON, H. THOMPSON, II	530	SEC	1977
SC.01		X-RAY DIFFRACTION AND FLUORESCENCE EQUIPMENT	NBS	NATL	BLOCK, STANLEY	565	CHAIR	1967
					MAUER, FLOYD A.	565	SEC	1-70
SC.02		SELF LUMINOUS PRODUCTS	NBS	NATL	MCSPARRON, DONALD A.	534	MEMBER	1974
SC.03.4		GAMMA IRRADIATORS	AECL	NATL	EISENHOWER, ELMER H.	530	MEMBER	11-73
					HEATON, H. THOMPSON, II	530	MEMBER	1977
N044		EQUIPMENT AND MATERIALS FOR MEDICAL RADIATION APPLICATIONS	IEEE	NATL	EISENHOWER, ELMER H.	530	ALT REP	5-68
					LOEVINGER, ROBERT	533	MEMBER	1972
					LOEVINGER, ROBERT	533	MEMBER	1972
SC.02		THERAPPUTIC RADIOLOGY	IEEE	NATL				
PH001		PHOTOGRAPHIC FILMS, PLATES, AND PAPERS						
SC.03		PHYSICAL CHARACTERISTICS OF PHOTOGRAPHIC FILMS, PLATES, AND PAPERS	NAPM	NATL/I				
					JAGG, THOMAS C.	652	MEMBER	9-76

PARFJT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HOLD	DT. OF APPT.
ANSI	PH002 SC.31	PHOTOGRAPHIC SENSITOMETRY SENSITOMETRY OF X-RAY AND RADIATION MONITORING FILM	ANSI	NATL				
	PH005 WG.C10	MICROGRAPHIC REPRODUCTION INSPECTION AND QUALITY CONTROL OF MICROFORMS	NMA	NATL/I	PLACIDUS, ROBERT C. BAGG, THOMAS C.	533 652	MEMBER MEMBER	1-76 1973
	WG.C3	FORMAT AND CODING FOR COMPUTER OUTPUT MICROFILM	NMA	NATL/I	BAGG, THOMAS C.	652	MEMBER	1970
	WG.C4 WG.C8 S001	COMPUTER OUTPUT MICROFILM QUALITY MICROGRAPHIC EQUIPMENT ACOUSTICS	NMA	NATL/I	BAGG, THOMAS C. BAGG, THOMAS C. BAGG, THOMAS C.	652 652 652	MEMBER MEMBER MEMBER	1973 1974 1972
	WG.45 WG.47	SOUND LEVEL METERS AND THEIR CALIBRATION HUMAN RESPONSE TO NOISE: JOINTLY SPONSORED BY S001 AND S003	ASA	NATL	FLYNN, DANIEL R. NEDZELNITSKY, VICTOR	737 743	CHAIR MEMBER	6-79 6-79
	WG.50	MEASUREMENT AND EVALUATION OF STATIONARY NOISE SOURCES	ASA	NATL	YANIV, SIMONE L.	743	MEMBER	1974
	WG.54	STANDARD MICROPHONES AND THEIR CALIBRATION	ASA	NATL	FLYNN, DANIEL R. BURNETT, EDWIN D. NEDZELNITSKY, VICTOR	737 739 739	CHAIR MEMBER CHAIR	1973 1978 6-78
	WG.68	ACOUSTICAL CALIBRATION OF SOUND LEVEL METERS INCLUDING COUPLER TYPE CALIBRATION	ASA	NATL				
	S003	BIOACOUSTICS	ASA	NATL	NEDZELNITSKY, VICTOR	739	MEMBER	8-78
	WG.48 WG.51	HEARING AIDS AUDITORY MAGNITUDES	ASA	NATL	NEDZELNITSKY, VICTOR YANIV, SIMONE L.	739 743	ALT REP MEMBER	10-79 7-79
	WG.57	CRITERIA FOR ROOM NOISE: JOINTLY SPONSORED BY S001 AND S003	ANSI	NATL	BURNETT, EDWIN D. BAJER, JAY W. MOLINO, JOHN A.	739 743 743	MEMBER CHAIR MEMBER	1967 6-79 1972
	WG.66	MEASUREMENT OF WORKPLACE ADDRESSED TO EFFECTIVE HEARING CONSERVATION PROGRAMS	ASA	NATL	BAUER, JAY W. YANIV, SIMONE L.	743 743	MEMBER CHAIR	6-78 1974
	S004 S3/S1 X003	STANDARDIZATION IN SOUND RECORDING COMMITTEE ON NOISE COMPUTERS AND INFORMATION PROCESSING	EIA ANSI CBEMA	NATL NATL NATL/I	NEDZELNITSKY, VICTOR BURNETT, EDWIN D. YANIV, SIMONE L. BURNETT, JAMES H. ROUNTREE, ROBERT E. JR.	739 739 743 600 600	MEMBER MEMBER MEMBER ALT REP MEMBER	11-79 1963 1974 3-80 6-73
	SC.A001 WG.D SC.R001 SC.B005 SC.R008 SC.H001	OPTICAL CHARACTER RECOGNITION OCR PRINT QUALITY MAGNETIC TAPE MAGNETIC TAPE CASSETTES FLEXIBLE DISKS OPERATING SYSTEMS COMMAND AND RESPONSE LANGUAGE	CBEMA CBEMA CBEMA CBEMA CBEMA	NATL/I NATL/I NATL/I NATL/I NATL	BAGG, THOMAS C. BAGG, THOMAS C. HOGAN, MICHAEL D. HOGAN, MICHAEL D. HOGAN, MICHAEL D.	652 652 652 652 652	MEMBER CHAIR MEMBER MEMBER MEMBER	9-73 12-76 3-75 3-75 11-76
	SC.H002	DATA DEFINITION LANGUAGE	CBEMA	NATL	SOCKUT, GARY H. DEUTSCH, DONALD R.	642 642	MEMBER CHAIR	5-78 4-80
	SC.H003 -WG.01	COMPUTER GRAPHICS CONFORMANCE, LANGUAGE BINDINGS AND FORMAL SPECIFICATIONS	CBEMA CBEMA	NATL/I NATL/I	GALLAGHER, LEONARD J. SKALL, MARK W. SKALL, MARK W.	642 641 641	MEMBER MEMBER CHAIR	6-80 9-79 7-79

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRET- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF ADPT.
ANSI	SC.H004	INFORMATION RESOURCE DICTIONARY SYSTEM	CBEMA	NATL	KONIG, PATRICIA A. LEONG-HONG, BELKIS W.	642 642	ALT REP ACTING SECRETARY	7-90 7-90
	SC.J001	PL/I STANDARDIZATION	CBEMA	NATL/I	LYON, GORDON E.	641	OBSERVER	7-79
	SC.J002	PROGRAMMING LANGUAGE BASIC	CBEMA	NATL/I	CUGINI, JOHN V.	641	VICE CHAIR	1979
	SC.J003	FORTRAN PROGRAMMING LANGUAGE	CBEMA	NATL/I	BOUDREAUX, JACK C. HOLBERTON, FRANCES E.	641 640	ALT REP INTL. LIAISON MEMBER	11-80 2-67
	SC.J004	COBOL STANDARDS	CBEMA	NATL/I	BARKLEY, JOHN F. VICKERS, MABEL V.	641 641	ALT REP MEMBER	11-80 4-67
	SC.J006	STANDARD LANGUAGE FOR PROCESSING OF TEXT	CBEMA	NATL/I	HOWERTON, CHARLES P.	713	MEMBER	1975
	SC.J007	APT	CBEMA	NATL	WATKINS, SHIRLEY W.	650	VICE CHAIR	3-78
	SC.J009	PASCAL PROGRAMMING LANGUAGE	CBEMA	NATL/I	SMITH, BRADFORD M.	738	MEMBER	10-77
	-WG.01	EXTENSIONS	CBEMA	NATL/I	BARKMEYER, EDWARD J.	641	MEMBER	4-79
	SC.K005	VOCABULARY	CBEMA	NATL/I	ROSENTHAL, LYNNE S.	641	ALT REP	6-79
	SC.L002	CODES AND CHARACTER SETS	CBEMA	NATL/I	BARKMEYER, EDWARD J. WALKOWICZ, JOSEPHINE L. LITTLE, JOHN L.	641 642 652	MEMBER SEC VICE CHAIR	4-79 1969 4-63
	SC.L005	DATA FORMATS, FILE STRUCTURES, STORED DATA ORGANIZATION, LABELS AND DESCRIPTIONS	CBEMA	NATL	RECICAR, STEVE A.	652	ALT REP	6-78
	SC.L008	REPRESENTATIONS OF DATA ELEMENTS	CBEMA	NATL/I	COLLICA, JOSEPH C. UPPERMAN, JAMES V. SALTMAN, ROY G. TOM, HENRY	642 642 642 642	ALT REP MEMBER MEMBER SEC	11-80 11-80 11-79 8-90
	SC.S003	DATA COMMUNICATIONS	CBEMA	NATL/I	WHITE, HARRY S., JR. CLARK, GEORGE E.	600 652	CHAIR MEMBER	1968 1970
	WG.03	HEADER FORMATS	CBEMA	NATL	SCACE, ERIC L.	652	ALT REP	9-78
	WG.04	CONTROL PROCEDURES	CBEMA	NATL	SCACE, ERIC L.	652	MEMBER	3-79
	WG.05	SYSTEM PERFORMANCE	CBEMA	NATL/I	CLARK, GEORGE E.	652	VICE CHAIR	1970
	WG.07	PUBLIC DATA NETWORKS	CBEMA	NATL/I	SCACE, ERIC L.	652	ALT REP	9-78
	SC.SPARC	STANDARDS PLANNING AND REQUIREMENTS COMMITTEE	CBEMA	NATL	MOORE, RAYMOND T. CLARK, GEORGE E. SCACE, ERIC L. ROUNTREE, ROBERT E., JR.	652 652 652 600	MEMBER ALT REP MEMBER VICE CHAIR	11-62 1974 9-72 6-73
	-SSC.01	DATABASE SYSTEM	ANSI	NATL	WHITE, HARRY S., JR.	600	MEMBER	1968
	-WG.01	DATA DICTIONARY SYSTEMS	CBEMA	NATL	FONG, ELIZABETH N.	651	MEMBER	2-79
	-WG.02	DISTRIBUTED INTERFACE TO DATABASE SYSTEMS	ANSI	NATL	LEONG-HONG, BELKIS W.	642	SEC	4-79
	WG.ENCR	STUDY GROUP ON ENCRYPTION-RELATED STANDARDS	CBEMA	NATL	FONG, ELIZABETH N.	651	VICE CHAIR	2-79
	SC.T001	DATA ENCRYPTION	CBEMA	NATL	BRANSTAD, DENNIS K.	643	MEMBER	8-78
	SC.T004	I/O INTERFACE	CBEMA	NATL	BRANSTAD, DENNIS K.	643	MEMBER	8-80
	WG.02	LOWER LEVEL INTERFACE	CBEMA	NATL/I	SMID, MILES C.	643	ALT REP	8-80
	WG.03	DEVICE LEVEL INTERFACES	CBEMA	NATL/I	CLARK, GEORGE E.	652	MEMBER	1975
	WG.05	FUTURE INTERFACES	CBEMA	NATL	CLARK, GEORGE E.	652	MEMBER	1975
			CBEMA	NATL	CLARK, GEORGE E.	652	ALT REP	1976
			CBEMA	NATL	CLARK, GEORGE F.	652	ALT REP	1977

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECURE-TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ANSI	SEC.X007S SC.S003 WG.08 X004	COMMUNICATIONS DATA COMMUNICATIONS LINK ENCRYPTION STANDING TASK GROUP OFFICE MACHINES AND SUPPLIES	CBEWA CBEWA	NATL NATL/1	BRANSTAD, DENNIS K. PYKE, THOMAS N., JR. FOUNTREE, ROBERT E., JR.	643 650 500	MEMBER ALT REP MEMBER	9-79 3-80 6-73
	SC.A012 X009 SC.A003	WORD PROCESSING FINANCIAL SERVICES SECURITY	ANSI ABA	NATL NATL	KNDERDEL, JOAN BRANSTAD, DENNIS K. SMID, MILES E.	651 643 643	MEMBER CHAIR ALT REP	10-78 6-78 6-79
	SC.X009E WG.08 Y014 SC.26	BANK OPERATIONS FUNDS TRANSFER MESSAGE AUTHENTICATION STANDARDS FOR DRAWING AND DRAFTING PRACTICE COMPUTER AIDED PREPARATION OF PRODUCT DEFINITION DATA	ANSI ASME: ASCE	NATL NATL	SMID, MILES E. WEISSNER, PAUL NATRELLA, MARY G.	643 652 714	MEMBER MEMBER MEMBER	10-79 1970 2-74
	Z001 SC.01 -WG.01 Z026	QUALITY ASSURANCE STATISTICAL METHODS COMPLIANCE TESTING SPECIFICATIONS AND METHODS OF TEST FOR SAFETY GLAZING MATERIAL	ASOC ASOC ASOC	NATL/1 NATL NATL/1	NATRELLA, MARY G. NATRELLA, MARY G. NATRELLA, MARY G.	714 714 714	SEC CHAIR CHAIR	2-74 1979
	SC.01 Z030	SAFETY GLAZING MATERIAL FOR GLAZING MOTOR VEHICLES OPERATING ON LAND HIGHWAYS LIBRARY WORK, DOCUMENTATION, AND RELATED PUBLISHING PRACTICES	ANSI CNLA	NATL NATL/1	CRONIN, DAVID J. TUCKER, JANE C.	565 342	MEMBER MEMBER	7-79 3-80
	-SC.02 SC.K Z055 Z066 Z080 Z089	FINANCIAL MANAGEMENT INDEXING COLORS FOR INDUSTRIAL APPARATUS AND EQUIPMENT PREVENTION OR CONTROL OF HAZARDS TO CHILDREN OPHTHALMIC STANDARDS SAFETY STANDARDS FOR INDUSTRIAL HEAD PROTECTION	ANSI CNLA ANSI ANSI ANSI ANSI	NATL NATL NATL NATL/1 NATL	VIGNONE, MARIA E. BERGER, PATRICIA W. KRUPENIE, PAUL H. HOWETT, GERALD L. CAMPBELL, PAUL G. LETTIERI, THOMAS R.	342 342 760 743 741 737	ALT REP MEMBER MEMBER MEMBER MEMBER MEMBER	3-80 12-79 4-80 8-78 1970 2-80
	Z090 Z091 Z094 SC.08	VEHICULAR HEAD PROTECTION PERFORMANCE AND INSTALLATION STANDARDS FOR OIL-BURNERS AND OIL-BURNING APPLIANCES INDUSTRIAL ENGINEERING TERMINOLOGY APPLIED MATHEMATICS	ANSI NOJC ASME: AIIE	NATL NATL NATL	CALVANO, NICHOLAS J. CALVANO, NICHOLAS J. KELLY, GEORGE E.	763 763 745	TECHNICAL ADVISOR MEMBER MEMBER	2-76 6-72 1-74
	Z097 Z136 SC.01 SC.03	SAFETY REQUIREMENTS FOR ARCHITECTURAL GLAZING MATERIAL SAFE USE OF LASERS HAZARDS AND EVALUATION MEASUREMENTS AND HAZARD EVALUATION OF LASER TG EXPOSURE	ANSI ANSI ANSI	NATL NATL NATL	GOLDMAN, ALAN J. JOEL, LAMBERT S. CRONIN, DAVID J.	712 712 565	MEMBER ALT REP MEMBER	1970 1972 7-79
	Z311	PHOTOBIOLOGICAL SAFETY OF LAMPS AND LIGHTING SYSTEMS	IES	NATL	SANDERS, AARON A. SANDERS, AARON A.	724 724	CHAIR CHAIR	1975 6-76
	Z535	SAFETY SIGNS AND COLORS	ANSI	NATL	KOSTKOWSKI, HENRY J. MCSPARRON, DONALD A. COLLINS, BELINDA L.	534 534 743	ALT REP MEMBER SEC	5-76 9-76 8-78

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECURE- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ANSI								
	SC.01	COLOR	NBS	NATL	GLASS, ROBERT A.	743	MEMBER	8-77
	SC.02	SAFETY SIGNS			HOWETT, GERALD L.	743	MEMBER	9-77
	SC.03	SAFETY SYMBOLS			PIERMAN, BRIAN C.	743	MEMBER	3-79
	SC.04	PRODUCT ALERTING	ANSI	NATL	GLASS, ROBERT A.	743	MEMBER	8-77
ADAC	-C002	ASSOCIATION OF OFFICIAL ANALYTICAL CHEMISTS	ADAC	NATL	COLLINS, BELINDA L.	743	CHAIR	8-78
	-SC.01	REFERENCE MATERIALS AND STANDARD SOLUTIONS	ADAC	NATL	PERSENSKY, JULIUS J.	761	MEMBER	2-79
					ALVAREZ, R.	503	MEMBER	11-77
					ALVAREZ, R.	503	GENERAL REFEREE	11-77
API	-C006	AUTOMATED METHODS	ADAC	NATL	RAINS, THEODORE C.	551	MEMBER	1-80
	-C004	GAGES AND GAGING PRACTICE	U.S.	NATL	ERBER, EDGAR	738	MEMBER	1980
	010	STANDARDIZATION OF OILWELL CEMENTS						
	-WG.01	TASK GROUP ON GEOTHERMAL WELLS	API	NATL	FULLER, EDWIN R., JR.	562	MEMBER	3-78
APS	-C008	PHOTOVOLTAIC SOLAR ENERGY CONVERSION	APS	NATL	KRAUSE, RALPH F., JR.	562	MEMBER	1-79
ASA	-C002	COMMITTEE ON STANDARDS	ASA	NATL	THOMSON, ROBB M.	560	MEMBER	9-77
	-C008	TECHNICAL COMMITTEE ON NOISE	ASA	NATL	FLYNN, DANIEL R.	737	MEMBER	1975
ASCE	-C007	TECHNICAL COUNCIL ON CODES AND STANDARDS	ASCE	NATL	YANIV, SIMONE L.	743	MEMBER	1976
	-C.01	COMMITTEE ON STANDARDS PROCEDURES	ASCE	NATL	WRIGHT, RICHARD N.	740	SEC	10-76
	-C011	FOUNDATION AND EXCAVATION STANDARDS	ASCE	NATL	WRIGHT, RICHARD N.	740	CHAIR	10-79
	-C032	AERODYNAMICS	ASCE	NATL	YOKEL, FELIX Y.	741	CHAIR	3-75
	-SC.02	AERODYNAMIC TESTING	ASCE	NATL	REINHOLD, TIMOTHY A.	741	MEMBER	10-79
	-WG.01	PROPOSED STANDARDS FOR WIND TUNNEL TESTING OF BUILDINGS AND STRUCTURES	ASCE	NATL	REINHOLD, TIMOTHY A.	741	MEMBER	6-80
ASHRAE	-C001	METRIC	ASHRAE	NATL	JONES, ROBERT R.	742	MEMBER	6-78
	-C004	STANDARDS	ASHRAE	NATL	MCNALL, PRESTON E.	742	VICE CHAIR	5-78
	-SC.01	STANDARDS PROJECT COMMITTEE 55-73, COMFORT	ASHRAE	NATL	MCNALL, PRESTON E.	742	CONSULTANT	5-78
	-SC.02	STANDARDS PROJECT COMMITTEE 62-74, VENTILATION	ASHRAE	NATL	MCNALL, PRESTON E.	742	CONSULTANT	5-78
	041.6	STANDARD METHODS OF MEASUREMENT OF MOIST AIR PROPERTIES	ASHRAE	NATL	MCNALL, PRESTON E.	742	CONSULTANT	5-78
	050	STANDARD 50 PROJECT COMMITTEE: ENERGY CONSERVATION IN NEW BUILDING DESIGN	ASHRAE	NATL	HASEGAWA, SABURO	772	MEMBER	1977
	SC.01	PANEL 1, PURPOSE	ASHRAE	NATL	HELDENBRAND, JIM L.	742	MEMBER	3-74
	SC.02	PANEL 2, SCOPE	ASHRAE	NATL	YONEMURA, GARY T.	743	MEMBER	1977
	SC.03	PANEL 3, DEFINITIONS	ASHRAE	NATL	HELDENBRAND, JIM L.	742	CHAIR	1974
	SC.04	PANEL 4, EXTERIOR ENVELOPE	ASHRAE	NATL	HELDENBRAND, JIM L.	742	CHAIR	1974
	SC.07	SERVICE WATER HEATING	ASHRAE	NATL	HELDENBRAND, JIM L.	742	CHAIR	3-74
	SC.12	PANEL 12, ENERGY RESOURCE EVALUATION COMMITTEE	ASHRAE	NATL	POWELL, FRANK J.	790	MEMBER	3-74
	I00	ENERGY CONSERVATION FOR EXISTING BUILDINGS	ASHRAE	NATL	KWELLER, ESHER R.	762	MEMBER	8-74
	SC.2P	HIGH-RISE RESIDENTIAL	ASHRAE	NATL	JONES, ROBERT R.	742	MEMBER	12-75
	I03.1P	EFFICIENCY OF HEAT PUMPS	ASHRAE	NATL	POWELL, FRANK J.	790	MEMBER	1976
	I03.3P	STANDARDS PROJECT COMMITTEE 103.3P, FURNACES	ASHRAE	NATL	FAISON, THOMAS K.	745	MEMBER	3-77
	I06P	METHOD OF TESTING FOR PERFORMANCE RATING OF WOOD BURNING APPLIANCES AND ACCESSORIES	ASHRAE	NATL	DIDION, DAVID A.	745	MEMBER	1978
					KELLY, GEORGE E.	745	MEMBER	6-77
					PEACOCK, RICHARD D.	753	MEMBER	7-80
					WINGER, JAMES H.	753	ALT REP	7-80
					DIDION, DAVID A.	745	CHAIR	1980
	TC01.2	INSTRUMENTS AND MEASUREMENTS	ASHRAE	NATL				

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASHRAE	TC02.1	PHYSIOLOGY AND THE HUMAN ENVIRONMENT	ASHRAE	NATL	RUPIN, ARTHUR I.	743	MEMBER	1-78
	TC04.4	INSULATION AND MOISTURE BARRIERS	ASHRAE	NATL	POWELL, FRANK J.	790	MEMBER	1960
	TC04.5	FENESTRATION	ASHRAE	NATL	TRECHSEL, HEINZ R.	743	MEMBER	6-77
	TC04.7	ENERGY CALCULATION						
	-SC.01	SIMPLIFIED ENERGY CALCULATIONS	ASHRAE	NATL	KUSUDA, TAMAMI	742	MEMBER	1975
	TC05.6	CONTROL OF PIPE AND SMOKE	ASHRAE	NATL	KLOTE, JOHN H.	752	MEMBER	1978
	TC06.4	IN-SPACE CONVECTIVE HEATING	ASHRAE	NATL	KWELLER, ESHER R.	762	MEMBER	6-76
	TC06.7	SOLAR ENERGY UTILIZATION						
	WG.03R	STANDARDS PROJECT COMMITTEE	ASHRAE	NATL	HILL, JAMES E.	745	MEMBER	6-75
	WG.54.2P	STANDARDS PROJECT COMMITTEE	ASHRAE	NATL	HILL, JAMES E.	745	MEMBER	6-75
	WG.05P	STANDARDS PROJECT COMMITTEE	ASHRAE	NATL	HILL, JAMES E.	745	CHAIR	6-77
	TC07.6	UNITARY AIR-CONDITIONERS AND HEAT PUMPS	ASHRAE	NATL	DIDION, DAVID A.	745	MEMBER	1974
	TC10.6	TRANSPORT REFRIGERATION	ASHRAE	NATL	MULROY, WILLIAM J.	742	MEMBER	1974
ASM	-C002	HANDBOOK COMMITTEE ON DEFINITIONS	ASM	NATL	CUTHILL, JOHN R.	564	MEMBER	9-75
ASME	-C006	PRESSURE VESSEL AND PIPING DIVISION						
	-C.01	MATERIALS AND FABRICATION	ASME	NATL	DOBRYN, DONALD C.	564	DELEGATE	1-79
					FONG, JEFFREY T.	711	MEMBER	10-78
					MORDFIN, LEONARD	501	MEMBER	6-78
					SMITH, JOHN H.	562	MEMBER	1979
	-SC.01	FATIGUE	ASME	NATL	SMITH, JOHN H.	562	CHAIR	1-78
	SC.07	INSPECTION PROCEDURE, STANDARDS AND DATA (NDE)	ASME	NATL	MORDFIN, LEONARD	501	CHAIR	1-79
	-C008	MEASUREMENT OF FLUID FLOW IN CLOSED CONDUITS	ASME	NATL/I	MATTINGLY, GEORGE E.	771	MEMBER	1977
	SC.02	PRESSURE DIFFERENTIAL DEVICES	ASME	NATL/I				
	SC.14	FLOW MEASUREMENT BY WEIGHING AND VOLUMETRIC MEASUREMENTS	ASME	NATL/I	MATTINGLY, GEORGE E.	771	MEMBER	1977
	-C014	RESEARCH COMMITTEE ON FLUID METERS	ASME	NATL	MATTINGLY, GEORGE E.	771	MEMBER	1978
	SC.11	TEST METHODS AND CALCULATION PROCEDURES	ASME	NATL	MATTINGLY, GEORGE E.	771	CHAIR	1978
	-C022	PROPERTIES OF STEAM	ASME	NATL/I	SENGERS, JAN V.	544	MEMBER	4-76
					WHITE, HOWARD J., JR.	504	SEC	1-71
	-C024	BOILER CODE						
	SEC.05	NONDESTRUCTIVE TESTING						
	-WG.01	AD HOC WORKING GROUP ON ACOUSTIC EMISSION	ASME	NATL	SIMMONS, JOHN A.	564	MEMBER	1975
	R031	CODE FOR PRESSURE RIPPING						
	-SC.01	TECHNICAL COMMITTEE ON MATERIALS AND STRESSES	ASME	NATL	MCHEERY, HARRY I.	562	MEMBER	9-77
					HEYDEMANN, PETER L. M.	540	MEMBER	1972
	R040	SPECIFICATIONS FOR PRESSURE AND VACUUM GAGES	ASME	NATL				
	K007	HEAT TRANSFER OF ASME/THERMOPHYSICAL PROPERTIES	ASME	NATL	CEZAILIYAN, ARED	544	MEMBER	1970
					SENGERS, JAN V.	544	CHAIR	7-78
	PTC019	PERFORMANCE TEST CODE						
	SC.02	PRESSURE	ASME	NATL	HEYDEMANN, PETER L. M.	540	MEMBER	1974
	SEC. V	PRESSURE VESSEL CODES						
	-WG.01	ACOUSTIC EMISSION	ASME	NATL	BRECKENRIDGE, FRANKLIN P.	737	MEMBER	10-76
	Y010	LETTER SYMBOLS	ASME	NATL	BARBROW, LOUIS E.	511	CHAIR	6-79
ASME-AS								
TM-MPC	-C002	JOINT COMMITTEE ON THE EFFECTS OF TEMPERATURE ON THE PROPERTIES OF METALS	US	NATL				
SNT	-C002	ELECTRICAL AND MAGNETIC METHODS	ASNT	NATL	CHRIST, BRUCE W.	562	MEMBER	1975
					FREE, GEORGE M.	521	MEMBER	9-76

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECURE- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASNT	-C004	PERSONNEL QUALIFICATIONS	ASNT	NATL	GARRETT, DONALD A.	566	MEMBER	6-76
	-C006	PENETRATING RADIATION	ASNT	NATL	GARRETT, DONALD A.	566	MEMBER	6-76
	C001	RESEARCH	ASNT	NATL	FREE, GEORGE M.	521	MEMBER	1-79
ASTM	-C006	BOARD OF DIRECTORS	ASTM	NATL	WRIGHT, JAMES R.	700	MEMBER	7-77
	-C.02	COMMITTEE CN SOCIETY DEVELOPMENT	ASTM	NATL	WRIGHT, JAMES R.	700	CHAIR	1978
	-C036	COMMITTEE CN TERMINOLOGY	ASTM	NATL	INTERRANTE, CHARLES G.	562	MEMBER	1977
	CG-01	FIRE TERMINOLOGY	ASTM	NATL	GROSS, DANIEL	750	MEMBER	1975
	-C100	COMMITTEE CN STANDARDS	ASTM	NATL	CULLEN, WILLIAM C.	780	MEMBER	7-78
	-C102	COMMITTEE ON RESEARCH AND TECHNICAL PLANNING	ASTM	NATL	PFRANG, EDWARD O.	741	MEMBER	1-81
	-C106	COMMITTEE CN PUBLICATIONS	ASTM	NATL	PASSAGLIA, ELIO	563	CHAIR	11-77
	-C220	AWARD OF MERIT	ASTM	NATL	YAKOWITZ, HARVEY	506	MEMBER	1977
					SCHNEIDER, SAMUEL J., JR.	560	MEMBER	9-79
	A001	STEEL, STAINLESS STEEL, AND RELATED ALLOYS						
	SC.18	CASTINGS	ASTM	NATL	PARKER, ROBERT L.	564	MEMBER	4-75
	A005	METALLIC COATED IRON AND STEEL PRODUCTS	ASTM	NATL	GERHOLD, WILLIAM F.	561	CHAIR	1956
	SC.14	SHEET TESTS	ASTM	NATL	GERHOLD, WILLIAM F.	561	MEMBER	1956
	SC.15	WIRE TESTS	ASTM	NATL	GERHOLD, WILLIAM F.	561	MEMBER	1970
	SC.16	HARDWARE TESTS	ASTM	NATL	GERHOLD, WILLIAM F.	561	CHAIR	1965
	B001	WIRES FOR ELECTRICAL CONDUCTORS	ASTM	NATL	CLARK, ALAN F.	724	MEMBER	1977
					FICKETT, FRED R.	724	MEMBER	1-90
	SC.08	SUPERCONDUCTORS	ASTM	NATL	GOODRICH, LOREN F.	724	MEMBER	3-80
					CLARK, ALAN F.	724	CHAIR	9-79
					EKIN, JOHN W.	724	CHAIR	6-79
					FICKETT, FRED R.	724	MEMBER	1-90
	B002	NONFERROUS METALS AND ALLOYS	ASTM	NATL	SOULEN, ROBERT J., JR.	522	MEMBER	8-79
	B005	COPPER AND COPPER ALLOYS	ASTM	NATL	RIDDER, STEPHEN D.	564	MEMBER	11-80
					READ, MICHAEL E.	564	MEMBER	11-80
					SWARTZENDRUBER, LYDON J.	564	MEMBER	1974
	B006	DIE-CAST METALS AND ALLOYS	ASTM	NATL	MEHRABIAN, ROBERT	564	CHAIR	1979
	B007	LIGHT METALS AND ALLOYS	ASTM	NATL	BOETTINGER, WILLIAM J.	564	MEMBER	1-78
					SHULL, ROBERT D.	564	MEMBER	11-80
	B008	ELECTRODEPOSITED METALLIC COATINGS AND RELATED FINISHES	ASTM	NATL	LASHMORE, DAVID S.	561	MEMBER	1978
					OGURN, FIELDING	561	MEMBER	1948
	SC.01	TERMINOLOGY, EDITING, AND PUBLIC RELATIONS	ASTM	NATL	OGURN, FIELDING	561	MEMBER	1950
	WG.05	METRIC SECTION	ASTM	NATL	OGURN, FIELDING	561	CHAIR	1970
	SC.04	ZINC AND CADMIUM COATINGS	ASTM	NATL	OGURN, FIELDING	561	MEMBER	1960
	SC.05	COATINGS OF TIN, LEAD, AND THEIR ALLOYS	ASTM	NATL	OGURN, FIELDING	561	MEMBER	1978
	SC.06	ANODIC AND CHEMICAL CONVERSION COATINGS ON ALUMINUM AND MAGNESIUM ALLOYS	ASTM	NATL	OGURN, FIELDING	561	MEMBER	1978
	SC.08	ENGINEERING (NONDECORATIVE) COATINGS	ASTM	NATL	OGURN, FIELDING	561	MEMBER	1978
	SC.09	PRECIOUS METAL COATINGS	ASTM	NATL	OGURN, FIELDING	561	MEMBER	1978
	SC.10	GENERAL TEST METHODS	ASTM	NATL	OGURN, FIELDING	561	MEMBER	1960
	WG.01	THICKNESS MEASUREMENT	ASTM	NATL	OGURN, FIELDING	561	CHAIR	1960
	SC.11	GOVERNMENT SPECIFICATIONS	ASTM	NATL	OGURN, FIELDING	561	CHAIR	1973
	B009	METAL POWDERS AND METAL POWDER PRODUCTS	ASTM	NATL	MANNING, JOHN R.	564	MEMBER	11-80
	C001	CEMENT	ASTM	NATL	BROWN, PAUL W.	741	MEMBER	1978

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRET- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
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ASTM								
	SC.12	BLENDED CEMENT	ASTM	NATL	DISE, JOHN R.	782	TECHNICAL ASSISTANT	1955
	SC.74	INTERNATIONAL STANDARDS	ASTM	NATL	FROHNSDORFF, GEOFFREY	741	MEMBER	1-75
	SC.95	METHODS OF TEST	ASTM	NATL	DISE, JOHN R.	782	MEMBER	1969
	CC05	MANUFACTURED CARBON AND GRAPHITE PRODUCTS	ASTM	NATL	DISE, JOHN R.	782	CHAIR	1955
	SC.02	NOMENCLATURE, UNITS, AND EDITORIAL MATTERS	ASTM	NATL	HORTON, WILLIAM S.	561	MEMBER	1974
	SC.05	NUCLEAR APPLICATIONS	ASTM	NATL	HORTON, WILLIAM S.	561	CHAIR	1974
	SC.90	EXECUTIVE SUBCOMMITTEE	ASTM	NATL	HORTON, WILLIAM S.	561	MEMBER	1979
	CC08	REFRACTORIES	ASTM	NATL	SCHNEIDER, SAMUEL J., JR.	560	MEMBER	1956
	SC.03	GENERAL TESTS						
	WG.02	CONDITIONS OF TEST	ASTM	NATL	BROWER, WILLIAM S.	565	ALT REP	1975
	WG.03	SLAG TESTING	ASTM	NATL	BROWER, WILLIAM S.	565	ALT REP	1975
	CC09	CONCRETE AND CONCRETE AGGREGATES	ASTM	NATL	CARINO, NICHOLAS J.	741	MEMBER	12-79
					CLIFTON, JAMES R.	741	MEMBER	1974
					DISE, JOHN R.	782	MEMBER	1955
					HAVERFIELD, JOHN W.	782	MEMBER	5-70
					ROBBINS, CARL R.	565	MEMBER	1976
	SC.01	ADMINISTRATION						
	SC.01.05	INTERNATIONAL ACTIVITIES	ASTM	NATL	DISE, JOHN R.	782	MEMBER	1974
	SC.02	RESEARCH						
	SC.02.05	NONDESTRUCTIVE TESTING OF CONCRETE	ASTM	NATL	CARINO, NICHOLAS J.	741	MEMBER	12-79
					PEI, PATRICK T. S.	561	MEMBER	1-90
					CARINO, NICHOLAS J.	741	MEMBER	12-79
	SC.02.09	ACCELERATED STRENGTH TESTING	ASTM	NATL	DISE, JOHN R.	782	MEMBER	1960
	SC.03	SPECIFICATIONS AND TEST METHODS	ASTM	NATL	HAVERFIELD, JOHN W.	782	SEC	1977
	SC.03.01	METHODS OF TESTING CONCRETE FOR STRENGTH	ASTM	NATL	HAVERFIELD, JOHN W.	782	MEMBER	5-70
					DISE, JOHN R.	782	MEMBER	
	SC.03.03	METHODS OF TESTING FRESH CONCRETE	ASTM	NATL	HAVERFIELD, JOHN W.	782	MEMBER	
	SC.03.05	METHODS OF TESTING AND SPECS. FOR PHYSICAL CHARACTERISTICS OF CONCRETE AGGREGATES	ASTM	NATL	HAVERFIELD, JOHN W.	782	MEMBER	
	WG.02	DESCRIPTIVE TESTS (AGGREGATE TESTING)	ASTM	NATL	HAVERFIELD, JOHN W.	782	MEMBER	5-70
	SC.03.16	MANUAL OF CONCRETE TESTING	ASTM	NATL	DISE, JOHN R.	782	MEMBER	1955
	CC11	CEILINGS AND WALLS	ASTM	NATL	LAWSON, JAMES R.	753	MEMBER	3-78
	CC12	MORTARS FOR UNIT MASONRY	ASTM	NATL	HAVERFIELD, JOHN W.	782	MEMBER	1-68
	SC.02	RESEARCH AND METHODS OF TEST	ASTM	NATL	HAVERFIELD, JOHN W.	782	MEMBER	3-68
	SC.91	EDITORIAL	ASTM	NATL	HAVERFIELD, JOHN W.	782	MEMBER	3-79
	CC14	GLASS AND GLASS PRODUCTS	ASTM	NATL	CELLAROSI, MARIO J.	565	VICE CHAIR	1975
					HALLER, WOLFGANG K.	565	MEMBER	8-72
					KIRBY, R. KEITH	503	MEMBER	1980
	SC.01	NOMENCLATURE AND DEFINITIONS	ASTM	NATL	CELLAROSI, MARIO J.	565	CHAIR	1975
	SC.03	CHEMICAL PROPERTIES	ASTM	NATL	HALLER, WOLFGANG K.	565	MEMBER	9-72
	SC.04	PHYSICAL AND MECHANICAL PROPERTIES	ASTM	NATL	CELLAROSI, MARIO J.	565	MEMBER	1975
					CRONIN, DAVID J.	565	MEMBER	6-79
					KIRBY, R. KEITH	503	MEMBER	1980
					KIRBY, R. KEITH	503	MEMBER	11-79
	SC.91	SRM DEVELOPMENT	ASTM	NATL	JONES, ROBERT R.	742	MEMBER	1-80
	CC16	THERMAL AND CRYOGENIC INSULATING MATERIALS	ASTM	NATL	KIRKPATRICK, DIANA M.	782	MEMBER	8-78

[illegible]

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APT.
ASTM	-C.01 D023/D02P	ADVISORY COMMITTEE JOINT COMMITTEE ON BASE STOCK CHARACTERIZATION	ASTM ASTM	NATL NATL	WEEKS, STEPHAN J. ZAPAS, LOUIS J. COMEFORD, J. J.	561 563 561	MEMBER MEMBER MEMBER	10-79 1971 6-78
	SC.02	JOINT API-ASTM COMMITTEE ON STATIC PETROLEUM MEASUREMENT			HSU, STEPHEN M.	561	SEC	12-78
	SC.02.0C SC.02B	WATER AND SEDIMENT AUTOMOTIVE LUBRICANTS	ASTM ASTM	NATL NATL	CUMMINGS, ARTHUR L. BECKER, DONALD A. HSU, STEPHEN M.	561 506 561	MEMBER MEMBER MEMBER	3-80 12-76 12-78
	SC.02B.0 2	HEAVY DUTY ENGINE OILS	ASTM	NATL	HSU, STEPHEN M.	561	MEMBER	12-78
	SC.02C SC.02E	TURBINE OILS BURNER, DIESEL, AND GAS TURBINE FUEL OILS	ASTM ASTM	NATL NATL	BECKER, DONALD A. BECKER, DONALD A. COMEFORD, J. J.	506 506 561	MEMBER MEMBER MEMBER	12-76 12-76 12-77
	SC.02L	INDUSTRIAL LUBRICANTS	ASTM	NATL	BECKER, DONALD A.	506	MEMBER	12-76
	SC.02N SC.02P	HYDRAULIC FLUIDS RECYCLED PETROLEUM PRODUCTS	ASTM ASTM	NATL NATL	GATES, RICHARD S. BECKER, DONALD A. COMEFORD, J. J.	561 506 561	MEMBER MEMBER VICE CHAIR	12-79 12-76 12-77
	SC.02P.2 SC.02P.3	USED OILS AND BASE STOCKS FUEL OILS	ASTM ASTM	NATL NATL	HSU, STEPHEN M. WEEKS, STEPHAN J.	561 561	MEMBER MEMBER	12-78 10-79
	SC.03	ELEMENTAL ANALYSIS	ASTM	NATL	HSU, STEPHEN M.	561	MEMBER	12-78
	SC.03.0A	CHEMICAL METHODS	ASTM	NATL	PEI, PATRICK T. S.	561	MEMBER	1-80
	SC.03.0C SC.04	ELECTROMETRIC METHODS HYDROCARBON ANALYSIS	ASTM ASTM	NATL NATL	WEEKS, STEPHAN J. CUMMINGS, ARTHUR L. PEI, PATRICK T. S.	561 561 561	MEMBER MEMBER MEMBER	10-79 1-80 1-80
	SC.05	PHYSICAL ANALYSIS OF FUELS AND LIGHT DISTILLATES	ASTM	NATL	CUMMINGS, ARTHUR L.	561	MEMBER	1-80
	SC.05.0B SC.06	CALORIMETRY ANALYSIS OF LUBRICANTS	ASTM ASTM	NATL NATL	PEI, PATRICK T. S.	561	MEMBER	1-80
	SC.06.0A	CHEMICAL ANALYSIS	ASTM	NATL	CUMMINGS, ARTHUR L.	561	MEMBER	1-80
	SC.07	FLOW PROPERTIES	ASTM	NATL	HSU, STEPHEN M.	561	MEMBER	12-78
	SC.07.0A SC.09	NEWTONIAN VISCOMETRY OXIDATION	ASTM ASTM	NATL NATL	WEEKS, STEPHAN J. ZAPAS, LOUIS J.	561 563	MEMBER MEMBER	10-79 1971
	D003	GASEOUS FUELS	ASTM	NATL	BECKER, DONALD A.	506	MEMBER	12-76
	-SC.01 D004 SC.42	THERMOPHYSICAL PROPERTIES ROAD AND PAVING MATERIALS EMULSIFIED ASPHALT TESTS	ASTM ASTM ASTM	NATL NATL NATL	HSU, STEPHEN M. ARMSTRONG, GEORGE T. DILLER, DWAIN E. WAN, CHIAAN A.	561 543 773 762	MEMBER MEMBER MEMBER MEMBER	12-78 1961 12-79 5-77
					DILLER, DWAIN E.	773	MEMBER	12-79
					DICKSON, ROBERT W.	782	MEMBER	6-76
					DICKSON, ROBERT W.	782	MEMBER	6-76

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASTM	SC.44	RHEOLOGICAL TESTS	ASTM	NATL	DICKSON, ROBERT W.	782	MEMBER	6-76
	SC.51	AGGREGATE TESTS	ASTM	NATL	DICKSON, ROBERT W.	782	MEMBER	6-76
	SC.95	LABORATORY EVALUATION	AI	NATL	DICKSON, ROBERT W.	782	MEMBER	6-76
	D005	COAL AND COKE	ASTM	NATL	ARMSTRONG, GEORGE T.	543	MEMBER	1961
	SC.02	NOMENCLATURE, DEFINITIONS, AND EDITORIAL	ASTM	NATL	ARMSTRONG, GEORGE T.	543	MEMBER	1978
	SC.21	METHODS OF ANALYSIS	ASTM	NATL	ARMSTRONG, GEORGE T.	543	MEMBER	1961
	SC.21.03	MISCELLANEOUS ANALYSIS	ASTM	NATL	ARMSTRONG, GEORGE T.	543	MEMBER	1961
	D008	ROOFING, WATERPROOFING, AND BITUMINOUS MATERIALS	ASTM	NATL	CULLEN, WILLIAM C.	780	MEMBER	1957
					MATHEY, ROBERT G.	741	MEMBER	1973
	SC.02	PREPARED ROOFINGS, SHINGLES, AND SIDING MATERIALS	ASTM	NATL	CULLEN, WILLIAM C.	780	MEMBER	1957
	SC.03	SURFACING AND BITUMINOUS MATERIALS FOR MEMBRANE WATERPROOFING AND BUILTUP POOFING	ASTM	NATL	CULLEN, WILLIAM C.	780	MEMBER	1957
	SC.04	FABRICS FOR BITUMINOUS ROOFING AND WATERPROOFING	ASTM	NATL	CULLEN, WILLIAM C.	780	MEMBER	1975
					MATHEY, ROBERT G.	741	MEMBER	1973
	SC.18	NONBITUMINOUS ORGANIC ROOF COVERINGS	ASTM	NATL	CULLEN, WILLIAM C.	780	MEMBER	1957
	SC.20	NONSTRUCTURAL ROOF SYSTEMS	ASTM	NATL	CULLEN, WILLIAM C.	780	MEMBER	1965
					MATHEY, ROBERT G.	741	MEMBER	1973
	D009	ELECTRICAL INSULATING MATERIALS	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	1963
	SC.05	CERAMIC PRODUCTS	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	1963
	SC.12	ELECTRICAL TESTS	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	1963
	SC.16	HOOKUP WIRE INSULATION	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	1970
	SC.17	THERMAL CAPABILITIES	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	1970
	SC.90	EXECUTIVE COMMITTEE	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	6-74
	SC.93	EDUCATION, RESEARCH AND SYMPOSIA	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	1975
	SC.94	NOMENCLATURE, SIGNIFICANCE, AND STATISTICS	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	1963
	SC.95	LIAISON	ASTM	NATL	HARRIS, WILLIAM P.	563	MEMBER	1976
	D010	PACKAGING	ASTM	NATL	CALVANO, NICHOLAS J.	763	MEMBER	1-78
	D011	RUBBER AND RUBBER-LIKE MATERIALS	ASTM	NATL	KEARSLEY, ELLIOT A.	563	MEMBER	11-79
					MCKENNA, GREGORY B.	563	MEMBER	1976
					STIEHLER, ROBERT D.	741	HONORARY MEMBER	1947
	SC.08	TERMINOLOGY	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1963
	SC.10	PHYSICAL TESTING	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1947
	SC.11	CHEMICAL ANALYSIS	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1947
	SC.12	PROCESSABILITY TESTS	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1961
	SC.14	VISCO-ELASTIC PROPERTIES	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1961
	SC.15	DEGRADATION TESTS	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1961
	SC.16.	STATISTICAL QUALITY CONTROL	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1956

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASTM	SC.17	FLAMMABILITY	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1972
	SC.20	COMPOUNDING MATERIALS AND PROCEDURES	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1949
	SC.21	RUBBER LATTICES	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1960
	SC.22	NATURAL RUBBER	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1950
	SC.23	SYNTHETIC RUBBERS	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1950
	SC.24	SOLID URETHANES	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1967
	SC.31	RUBBER HOSE	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1977
	SC.33	FLEXIBLE CELLULAR MATERIALS	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1960
	SC.36	SEALS	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1963
	SC.37	COATED FABRICS AND RUBBER THREAD	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1968
	SC.40	CONSUMER RUBBER PRODUCTS	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1973
	SC.45	USA COMMITTEE FOR INTERNATIONAL STANDARDS ON RUBBER	ASTM	NATL/I	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1951
	SC.57	ISO/TC157, MECHANICAL CONTRACEPTIVES	ASTM	NATL/I	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1977
	D013	TEXTILES	ASTM	NATL	STIEHLER, ROBERT D.	741	HONORARY MEMBER	1973
	SC.21	PILE FLOOR COVERINGS	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	SC.52	FLAMMABILITY	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	SC.52.01	APPAREL	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	SC.52.04	DRAPERIES AND CURTAINS	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	SC.52.05	UPHOLSTERED FURNITURE	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	SC.52.06	TRANSPORTATION FABRICS	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	SC.52.07	TENTS, TARPS, AND OUTDOOR FABRICS	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	SC.52.08	PROTECTIVE CLOTHING	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	D018	SOIL AND ROCK FOR ENGINEERING PURPOSES	ASTM	NATL	WINGER, JAMES H.	753	MEMBER	4-73
	SC.02	SAMPLING AND RELATED FIELD TESTING FOR SOIL INVESTIGATIONS	ASTM	NATL	MCINTOSH, OAKLEY W.	782	MEMBER	9-80
	SSC.04	AUGER SAMPLING	ASTM	NATL	KOVACS, WILLIAM D.	741	MEMBER	1979
	SC.03	TEXTURE, PLASTICITY AND DENSITY	ASTM	NATL	MCINTOSH, OAKLEY W.	782	MEMBER	9-80
	SC.05	CHARACTERISTICS OF SOILS	ASTM	NATL	MCINTOSH, OAKLEY W.	792	MEMBER	9-80
	SC.09	STRUCTURAL PROPERTIES OF SOILS	ASTM	NATL	CHUNG, RILEY M.	741	MEMBER	1-90
		DYNAMIC PROPERTIES OF SOILS	ASTM	NATL	CHUNG, RILEY M.	741	MEMBER	1973
	SC.12	ROCK MECHANICS	ASTM	NATL	KOVACS, WILLIAM D.	741	MEMBER	1-90
	SC.94	EDUCATION AND TRAINING	ASTM	NATL	CHUNG, RILEY M.	741	MEMBER	1-80
	D019	WATER	ASTM	NATL	DIAMONDSTONE, BARRY I.	551	MEMBER	1-80

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRET- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASTM	-SC.01	EXECUTIVE SUBCOMMITTEE	ASTM	NATL	EBY, RONALD K.	563	MEMBER	1-80
	SC.12	OLEFIN PLASTICS	ASTM	NATL	BARNES, JOHN D.	563	MEMBER	3-76
	SC.18	REINFORCED THERMOSETTING PLASTICS	ASTM	NATL	WORDFIN, LEONARD	501	MEMBER	1973
	WG.02	REINFORCED PLASTICS PULTRUDED SHAPES	ASTM	NATL	MORDFIN, LEONARD	501	MEMBER	1972
	SC.19	SPEETING	ASTM	NATL	BARNES, JOHN D.	563	MEMBER	3-76
	SC.30	THERMAL PROPERTIES	ASTM	NATL	GUTTMAN, CHARLES M.	500	MEMBER	1974
	SC.61	US TECHNICAL ADVISORY GROUP FOR ISO/TC61 ON PLASTICS	ASTM	NATL/I				
	SC.70	ANALYTICAL METHODS	ASTM	NATL	SMITH, LESLIE E.	563	MEMBER	10-80
	WG.04	GEL PERMEATION CHROMATOGRAPHY	ASTM	NATL	BARNES, JOHN D.	563	MEMBER	3-76
	WG.05	MOLECULAR SIZE PARAMETERS	ASTM	NATL	WAGNER, HERMAN L.	563	MEMBER	1968
	WG.07	GAS PERMEABILITY	ASTM	NATL	WAGNER, HERMAN L.	563	CHAIR	1968
	D022	METHODS OF SAMPLING AND ANALYSIS OF ATMOSPHERES	ASTM	NATL	BARNES, JOHN D.	563	MEMBER	3-76
	SC.02	METHODS OF SAMPLING AND ANALYSIS	ASTM	NATL	ETZ, EDGAR S.	553	MEMBER	4-77
	SC.03	MONITORING INSTRUMENTATION	ASTM	NATL	HODGESON, JIMMIE A.	553	MEMBER	6-76
	SC.04	ANALYSIS OF WORK SPACE ATMOSPHERES	ASTM	NATL	MCKENZIE, RAYMOND L.	553	MEMBER	1980
	SC.05	CALIBRATION	ASTM	NATL	MEASE, NORMAN E.	771	MEMBER	1-78
	SC.07	PRECISION AND ACCURACY OF METHODS	ASTM	NATL	MEASE, NORMAN E.	553	MEMBER	2-79
	SC.09	ISO TAG FOR ISO/TC146 (AIR QUALITY)	ASTM	NATL/I	ROOK, HARRY L.	553	MEMBER	1970
	SC.10	RADIATION	ASTM	NATL	TAYLOR, JOHN K.	532	MEMBER	7-76
	SC.11	METEOROLOGICAL MEASUREMENTS	ASTM	NATL	WHITTAKER, JULIAN K.	535	MEMBER	3-78
	D024	CARBON BLACK	ASTM	NATL	BASS, ARNOLD M.	553	MEMBER	1-78
	D027	ELECTRICAL INSULATING LIQUIDS AND GASES	ASTM	NATL	ETZ, EDGAR S.	553	MEMBER	6-76
	D030	HIGH MODULUS FIBERS AND THEIR COMPOSITES	ASTM	NATL	HODGESON, JIMMIE A.	553	MEMBER	1-78
	SC.05	ORGANIC MATRIX ORIENTED FIBROUS COMPOSITES	ASTM	NATL	MEASE, NORMAN E.	771	MEMBER	1-78
	D032	CATALYSTS	ASTM	NATL	BASS, ARNOLD M.	553	MEMBER	6-76
					TAYLOR, JOHN K.	550	MEMBER	1974
					MEASE, NORMAN E.	553	MEMBER	1-78
					ROOK, HARRY L.	553	MEMBER	2-79
					TAYLOR, JOHN K.	550	MEMBER	1974
					TAYLOR, JOHN K.	550	MEMBER	1972
					COURSEY, BERT M.	532	ALT REP	3-76
					HASEGAWA, SABURO	772	MEMBER	1-77
					MEASE, NORMAN E.	771	TECHNICAL ADVISOR	1978
					STIEHLER, ROBERT D.	741	HONORARY MEMBER	1956
					HARRIS, WILLIAM P.	563	MEMBER	1965
					KASEN, MAURICE B.	562	MEMBER	1974
					HAINES, RUTH A.	111	MEMBER	1977
					KELLEY, RICHARD D.	541	MEMBER	1-75
					MCALISTER, ARCHIE J.	564	MEMBER	1975

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
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ASTM								
	SC.01	PHYSICAL CHEMICAL PROPERTIES	ASTM	NATL	YATES, JOHN T., JR.	541	TECHNICAL	1974
	WG.03	METAL DISPERSION	ASTM	NATL	HAINES, RUTH A.	111	MEMBER	1977
	SC.03	CHEMICAL ANALYSIS	ASTM	NATL	HAINES, RUTH A.	111	MEMBER	1977
	SC.92	NOMENCLATURE AND DEFINITIONS	ASTM	NATL	KELLEY, RICHARD D.	541	CHAIR	10-77
	D034	WASTE DISPOSAL	ASTM	NATL	HAINES, RUTH A.	111	MEMBER	1978
					DIAMONDSTONE, BARRY I.	551	MEMBER	12-79
					HAGAN, LUCY B.	550	MEMBER	6-80
	SC.02	EXTRACTION AND LEACHATE TESTING	ASTM	NATL	DIAMONDSTONE, BARRY I.	551	MEMBER	1-80
	E002	EMISSION SPECTROSCOPY	ASTM	NATL	ALVAREZ, R.	503	MEMBER	1954
					MICHAELIS, ROBERT E.	503	HONORARY	1953
	SC.02	STATISTICS, CALIBRATION, AND	ASTM	NATL	NORRIS, JOHN A.	551	SEC	6-66
		STANDARDIZATION			PELLA, PETER A.	553	MEMBER	1976
	SC.04	STANDARD REFERENCE MATERIALS, SAMPLING,	ASTM	NATL	RASBERRY, STANLEY D.	503	MEMBER	4-80
		ELECTRODES & OTHER SPECTROCHEMICAL			URIANO, GEORGE A.	503	MEMBER	5-77
		MATERIALS			MICHAELIS, ROBERT E.	503	HONORARY	1977
	SC.05	COPPER, NICKEL, AND HIGH TEMPERATURE ALLOYS	ASTM	NATL				
					MICHAELIS, ROBERT E.	503	HONORARY	1956
	SC.06	LEAD, TIN, ZINC, AND PRECIOUS METALS	ASTM	NATL	MYKLEBUST, ROBERT L.	553	MEMBER	7-76
	SC.07	ALUMINUM, MAGNESIUM, AND THEIR ALLOYS	ASTM	NATL	RASBERRY, STANLEY D.	503	MEMBER	11-80
	SC.08	REFRACTORY METALS, BERYLLIUM, AND THEIR	ASTM	NATL	ALVAREZ, R.	503	MEMBER	1954
		ALLOYS			MICHAELIS, ROBERT E.	503	HONORARY	1956
	SC.09	FERROUS ALLOYS	ASTM	NATL	MICHAELIS, ROBERT E.	503	HONORARY	1956
	SC.10	MISCELLANEOUS NON-METALLIC MATERIALS	ASTM	NATL	MICHAELIS, ROBERT E.	503	HONORARY	1956
					MICHAELIS, ROBERT E.	503	MEMBER-AT-L	ARGE
	SC.13	NOMENCLATURE	ASTM	NATL	RAINS, THEODORE C.	551	MEMBER	1965
	SC.90	EXECUTIVE COMMITTEE	ASTM	NATL	RAINS, THEODORE C.	551	MEMBER	1970
	E003	CHEMICAL ANALYSIS OF METALS	ASTM	NATL	MICHAELIS, ROBERT E.	503	HONORARY	1956
					BURKE, ROBERT W.	551	MEMBER	10-78
					DIAMONDSTONE, BARRY I.	551	MEMBER	1-80
					MAIENTHAL, E. JUNE	551	MEMBER	1972
					MICHAELIS, ROBERT E.	503	LIAISON	1974
							(S17)	
	SC.01	FERROUS METALS	ASTM	NATL	MAIENTHAL, E. JUNE	551	MEMBER	1972
	SC.02	GENERAL ANALYTICAL PRACTICES	ASTM	NATL	MAIENTHAL, E. JUNE	551	MEMBER	1972
	SC.05	NONFERROUS METALS	ASTM	NATL	MAIENTHAL, E. JUNE	551	MEMBER	1972
	E004	METALLOGRAPHY	ASTM	NATL	BALLARD, DAVID	564	MEMBER	6-66
					BLAU, PETER J.	564	MEMBER	11-79
					SWARTZENDRUBER, LYDON	564	MEMBER	1974
					J.			
	SC.09	INCLUSIONS	ASTM	NATL	FIELDS, RICHARD J.	562	MEMBER	6-79
	SC.11	ELECTRON METALLOGRAPHY	ASTM	NATL	BALLARD, DAVID	564	MEMBER	6-66
					JENSEN, STEPHEN	737	MEMBER	1980
	WG.07	SCANNING ELECTRON MICROSCOPE STANDARDS	ASTM	NATL	BALLARD, DAVID R.	564	CHAIR	6-66

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ASTM	WG.09	SCANNING ELECTRON MICROSCOPE - RESOLUTION AND MAGNIFICATION	ASTM	NATL	BALLARD, DAVID	564	CHAIR	10-71
	SC.14	QUANTITATIVE METALLOGRAPHY	ASTM	NATL	FIELDS, RICHARD J.	562	MEMBER	6-79
E005		FIRE STANDARDS	ASTM	NATL	BENJAMIN, IRWIN A.	752	ALT REP	1969
					CLARKE, FREDERIC B.	750	MEMBER	7-78
					DAVIS, SANFORD	753	MEMBER	6-75
					GROSS, DANIEL	750	ALT REP	1970
					ROBERTSON, ALEXANDER F.	750	MEMBER	1953
	SC.11	BUILDING CONSTRUCTION	ASTM	NATL	BENJAMIN, IRWIN A.	752	MEMBER	1975
	SC.12	OPENINGS	ASTM	NATL	BENJAMIN, IRWIN A.	752	MEMBER	1975
	SC.13	LARGE SCALE TESTS	ASTM	NATL	BENJAMIN, IRWIN A.	752	MEMBER	1975
	-WG.01	STANDARD FIRE TEST	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	SC.14	ROOFING	ASTM	NATL	GROSS, DANIEL	750	MEMBER	1975
	SC.15	BUILDING CONTENT	ASTM	NATL	BABRAUSKAS, VYTENIS	753	ALT REP	2-77
					DAVIS, SANFORD	753	MEMBER	6-75
	WG-D	FLOOR COVERINGS	ASTM	NATL	DAVIS, SANFORD	753	MEMBER	6-75
	WG-F	UPHOLSTERED FURNITURE	ASTM	NATL	DAVIS, SANFORD	753	MEMBER	6-75
	SC.16	APPLICATION - EQUIPMENT	ASTM	NATL	GANN, RICHARD G.	750	TECHNICAL ADVISOR	3-78
					WINGER, JAMES H.	753	MEMBER	5-78
	SC.17	TRANSPORT	ASTM	NATL	DAVIS, SANFORD	753	MEMBER	7-76
	WG.01	FIRE RISK ASSESSMENT	ASTM	NATL	DAVIS, SANFORD	753	MEMBER	12-78
	WG.02	LARGE SCALE TEST PROCEDURES	ASTM	NATL	DAVIS, SANFORD	753	CHAIR	12-78
	SC.21	SMOKE/TOXICOLOGY	ASTM	NATL	BIRKY, MERRITT M.	752	MEMBER	10-80
					ROBERTSON, ALEXANDER F.	750	MEMBER	1970
	-WG.01	REVISION OF SMOKE TEST METHOD	ASTM	NATL	ROBERTSON, ALEXANDER F.	750	MEMBER	1976
	-WG.02	RELEASE RATE TEST METHODS	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	7-75
	WG.01	STATE-OF-THE-ART ON SMOKE TEST METHODS	ASTM	NATL	GROSS, DANIEL	750	MEMBER	1975
	WG.E622	SMOKE DENSITY CHAMBER	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	SC.22	SURFACE FLAMMABILITY	ASTM	NATL	ROBERTSON, ALEXANDER F.	750	MEMBER	1953
	-WG.02	NEW CONCEPTS FOR E84	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	WG.01A	TEST	ASTM	NATL	PARKER, WILLIAM J.	753	CHAIR	1-78
					DAVIS, SANFORD	753	CHAIR	6-80
	WG.09	RADIANT PANEL FLOOR COVERING TEST METHOD	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	WG.E162	E162	ASTM	NATL	GROSS, DANIEL	750	MEMBER	1975
	SC.23	COMBUSTION	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	-WG.01	IGNITION SOURCES	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	-WG.02	EASE OF IGNITION	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	SC.31	TERMINOLOGY	ASTM	NATL	GROSS, DANIEL	750	MEMBER	1975
	SC.32	RESEARCH	ASTM	NATL	ROBERTSON, ALEXANDER F.	750	MEMBER	1960
	-WG.01	CRITERIA FOR TEST METHODS	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	-WG.02	EVALUATION OF TEST METHODS	ASTM	NATL	PARKER, WILLIAM J.	753	MEMBER	1977
	SC.34	INTERNATIONAL STANDARDS	ASTM	NATL	GROSS, DANIEL	750	CHAIR	1975
	SC.35	GUIDE CRITERIA	ASTM	NATL	BENJAMIN, IRWIN A.	752	MEMBER	1975
	SC.91	PLANNING AND REVIEW	ASTM	NATL	GROSS, DANIEL	750	MEMBER	1974
E006		PERFORMANCE OF BUILDING CONSTRUCTIONS	ASTM	NATL	CATTANEO, LOUIS E.	741	MEMBER	11-73
					GROSS, JAMES G.	744	MEMBER	1975
					HASTINGS, S. ROBERT	743	MEMBER	1978
					MARTIN, JONATHAN W.	741	MEMBER	3-79
					MASTERS, LARRY W.	741	MEMBER	6-74

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRET- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASTM	SC.11	STRUCTURAL PERFORMANCE OF HORIZONTAL STRUCTURES	ASTM	NATL	MATHEY, ROBERT G.	741	MEMBER	1966
	SC.12	STRUCTURAL PERFORMANCE OF VERTICAL STRUCTURES	ASTM	NATL	PFRANG, EDWARD O.	741	MEMBER	1966
	SC.13	STRUCTURAL PERFORMANCE OF JOINING AND FASTENING IN BUILDING CONSTRUCTION	ASTM	NATL	TRECHSEL, HEINZ R.	743	MEMBER	1962
	SC.21	SERVICEABILITY	ASTM	NATL	YANCEY, CHARLES	741	MEMBER	7-73
	SC.22	DURABILITY PERFORMANCE OF BUILDING CONSTRUCTION	ASTM	NATL	YANCEY, CHARLES	741	SEC	7-73
	-WG.01	METHODOLOGIES FOR DURABILITY PREDICTION	US		CATTANEO, LOUIS E.	741	MEMBER	11-73
	SC.23	DURABILITY OF HONEYCOMB SANDWICH PANELS FOR TACTICAL SHELTERS	ASTM	NATL	MATHEY, ROBERT G.	741	MEMBER	1972
					FROHNSDORFF, GEOFFREY	741	MEMBER	6-74
					MARTIN, JONATHAN W.	741	MEMBER	3-79
					MASTERS, LARRY W.	741	MEMBER	6-74
					MASTERS, LARRY W.	741	CHAIR	6-74
					MARTIN, JONATHAN W.	741	TECHNICAL ADVISOR	3-79
	SC.41	INFILTRATION PERFORMANCE	ASTM	NATL	TRECHSEL, HEINZ R.	743	CHAIR	1975
	SC.51	COMPONENT PERFORMANCE OF WINDOWS, CURTAIN WALLS, AND DOORS	ASTM	NATL	HASTINGS, S. ROBERT	743	MEMBER	1978
					TRECHSEL, HEINZ R.	743	MEMBER	1962
	SC.51.05	SPECIAL COMMITTEE ON SEALED INSULATING GLSS	ASTM	NATL	HAHN, MAHN HEE	742	MEMBER	3-80
	WG.04	AIR LEAKAGE	ASTM	NATL	TRECHSEL, HEINZ R.	743	MEMBER	1968
	WG.08	THERMAL PERFORMANCE	ASTM	NATL	TRECHSEL, HEINZ R.	743	MEMBER	1970
	WG.10	INSTALLATION PRACTICES	ASTM	NATL	TRECHSEL, HEINZ R.	743	CHAIR	1978
	WG.11	FIELD TESTING	ASTM	NATL	TRECHSEL, HEINZ R.	743	MEMBER	1978
	SC.62	COORDINATION OF DIMENSIONS FOR BUILDING MATERIALS AND SYSTEMS	ASTM	NATL	TRECHSEL, HEINZ R.	743	MEMBER	1978
	SC.81	BUILDING ECONOMICS	ASTM	NATL	GROSS, JAMES G.	744	MEMBER	1975
					MARSHALL, HAROLD E.	744	CHAIR	4-79
					PETERSEN, STEPHEN R.	744	MEMBER	1979
					RUEGG, ROSALIE T.	744	MEMBER	4-79
	SC.91	PLANNING	ASTM	NATL	TRECHSEL, HEINZ R.	743	MEMBER	1965
	SC.94	NOMENCLATURE AND DEFINITIONS	ASTM	NATL	CATTANEO, LOUIS E.	741	MEMBER	11-73
					STROIK, JOHN S.	743	MEMBER	1975
	E007	NONDESTRUCTIVE TESTING	ASTM	NATL	BENNETT, LAWRENCE H.	564	MEMBER	1974
					BERGER, HAROLD	501	MEMBER	1974
					EITZEN, DONALD G.	737	MEMBER	1974
					FREE, GEORGE M.	521	MEMBER	1-77
					MORFIN, LEONARD	501	MEMBER	1977
					POLANSKY, DANIEL	533	MEMBER	1-90
					SWARTZENDRUBER, LYDON J.	564	MEMBER	1978
	SC.01	RADIOGRAPHIC PRACTICE AND PENETRATORS	ASTM	NATL	BERGER, HAROLD	501	MEMBER	1974
	WG.08	RADIOGRAPHIC FILM CLASSIFICATION	ASTM	NATL	POLANSKY, DANIEL	533	MEMBER	1953
	SC.02	REFERENCE RADIOGRAPHS	ASTM	NATL	PLACIOUS, ROBERT C.	533	CHAIR	1-77
	SC.03	MAGNETIC PARTICLE AND PENETRANT TESTING	ASTM	NATL	POLANSKY, DANIEL	533	MEMBER	1953
					HOWELL, BARBARA F.	552	MEMBER	1-79
					MORFIN, LEONARD	501	MEMBER	1977

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASTM	WG.02	PENETRANT	ASTM	NATL	HOWELL, BARBARA F.	552	MEMBER	1-79
	WG.03	E-270 GLOSSARY REVISION	ASTM	NATL	VELAPOLDI, RANCE A.	550	WORKING ADVISOR	1-78
	WG.05	MAGNETIC PARTICLE AND PENETRANT TESTING	ASTM	NATL	HOWELL, BARBARA F.	552	MEMBER	1-79
	WG.06	MAGNETIC PARTICLE METHODS	ASTM	NATL	HOWELL, BARBARA F.	552	MEMBER	1-79
	WG.07	MAGNETIC GLOSSARY	ASTM	NATL	HOWELL, BARBARA F.	552	MEMBER	1-79
	SC.04	ACOUSTIC EMISSION	ASTM	NATL	BRECKENRIDGE, FRANKLIN R.	737	MEMBER	10-76
					CLOUGH, ROGER B.	564	MEMBER	1979
					FEDERMAN, CHARLES	737	MEMBER	1977
					HSU, NELSON N.	737	MEMBER	1977
					SIMMONS, JOHN A.	564	VICE CHAIR	1-76
	-WG.01	ASTM/ASME JOINT WORKING GROUP ON ACOUSTIC EMISSION SYSTEM CALIBRATION	ASME	NATL	BRECKENRIDGE, FRANKLIN R.	737	MEMBER	10-76
	WG.02	ACOUSTIC EMISSION SENSORS	ASTM	NATL	SIMMONS, JOHN A.	564	CHAIR	5-76
	SC.05	NEUTRON RADIOGRAPHY	ASTM	NATL	EITZEN, DONALD G.	737	VICE CHAIR	1974
					BERGER, HAROLD	501	MEMBER	1974
	SC.06	ULTRASONICS TESTING PROCEDURES	ASTM	NATL	GARRETT, DONALD A.	566	SEC	6-76
	SSC.09	ULTRASONIC NDE INSTRUMENT CHARACTERIZATION (TRANSDUCER CHARACTERIZATION)	ASTM	NATL	BLESSING, GERALD V.	737	MEMBER	10-80
	WG.02	ALUMINUM REFERENCE BLOCKS	ASTM	NATL	FREDERICK, NOLAN V.	724	MEMBER	1-80
	SC.07	ELECTROMAGNETIC METHODS	ASTM	NATL	EITZEN, DONALD G.	737	SFC	1974
	SC.08	LEAKAGE TESTING	ASTM	NATL	FREE, GEORGE M.	521	MEMBER	1977
	SC.09	MATERIALS INSPECTION AND TESTING LABORATORIES	ASTM	NATL	MORDFIN, LEONARD	501	SEC	1980
	SC.91	USA COMMITTEE FOR ISO/TC135 (NONDESTRUCTIVE TESTING)	ASTM	NATL/I	FREE, GEORGE M.	521	MEMBER	1977
	SC.92	EDITORIAL REVIEW	ASTM	NATL	BERGER, HAROLD	501	CHAIR	1974
	SC.98	NEW METHODS REVIEW	ASTM	NATL	BERGER, HAROLD	501	MEMBER	1974
	EC09	FATIGUE	ASTM	NATL	FONG, JEFFREY T.	711	MEMBER	12-73
					MCKENNA, GREGORY B.	563	MEMBER	1977
	SC.01	RESEARCH	ASTM	NATL	MORDFIN, LEONARD	501	MEMBER	1962
					DORRYN, RONALD C.	564	MEMBER	9-79
	SC.02	RESIDUAL STRESS EFFECTS IN FATIGUE	ASTM	NATL	FONG, JEFFREY T.	711	MEMBER	12-73
	SC.03	FATIGUE OF COMPOSITES	ASTM	NATL	MORDFIN, LEONARD	501	MEMBER	1977
					KASEN, MAURICE R.	562	MEMBER	1974
	WG.03	RESIDUAL STRESS EFFECTS IN FATIGUE	ASTM	NATL	MORDFIN, LEONARD	501	MEMBER	1970
	SC.06	STATISTICAL ASPECTS OF FATIGUE	ASTM	NATL	SIMMONS, JOHN A.	564	MEMBER	5-78
					ELLINGWOOD, BRUCE R.	741	MEMBER	5-73
	EC10	NUCLEAR TECHNOLOGY AND APPLICATIONS	ASTM	NATL	FONG, JEFFREY T.	711	MEMBER	12-75
	SC.01	IRRADIATED NUCLEAR FUEL METROLOGY	ASTM	NATL	NOYCE, JAMES R.	532	MEMBER	3-76
	SC.02	BEHAVIOR AND USE OF METALLIC MATERIALS IN NUCLEAR SYSTEMS	ASTM	NATL	NOYCE, JAMES R.	532	MEMBER	3-76
	WG.02D	INTERPRETATION OF CHARPY SURVEILLANCE DATA	ASTM	NATL				
	SC.05	NUCLEAR RADIATION METROLOGY	ASTM	NATL	INTERANTE, CHARLES G.	562	MEMBER	1974
					GRUNDL, JAMES A.	532	MEMBER	1975

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ASTM	SC.07	RADIATION EFFECTS ON ELECTRONIC MATERIALS AND DEVICES	ASTM	NATL	MCGARRY, EMMERT D. NOYCE, JAMES R.	532 532	SEC MEMBER	7-78 3-76
	SC.92	EXECUTIVE COORDINATING COMMITTEE FOR NUCLEAR STANDARDS	ASTM	NATL	BULLIS, W. MURRAY CHAPPELL, SAMUEL E. HUMPHREYS, JIMMY C. MCLAUGHLIN, WILLIAM L. PLACIOUS, ROBERT C.	721 513 533 533 533	MEMBER CHAIR VICE CHAIR MEMBER MEMBER	1971 1-72 1975 10-74 6-71
	E011	STATISTICAL METHODS	ASTM	NATL	CHAPPELL, SAMUEL E. EISENHART, CHURCHILL	513 710	MEMBER AFFILIATE MEMBER	1974 10-76
	SC.02	SAMPLING AND ESTIMATION	ASTM	NATL	FONG, JEFFREY T. MANDEL, JOHN	711 500	MEMBER MEMBER	12-76 1958
	SC.03	STATISTICAL ANALYSIS AND CONTROL TECHNIQUES	ASTM	NATL	NATRELLA, MARY G. PAULE, ROBERT C.	714 500	MEMBER MEMBER	11-74 3-80
	SC.04	DEVELOPMENT AND EVALUATION OF TEST METHODS	ASTM	NATL	NATRELLA, MARY G. KU, HARRY H. NATRELLA, MARY G. KU, HARRY H.	714 714 714 714	MEMBER CHAIR MEMBER TECHNICAL ADVISOR	1965 4-76 1965 1965
	E012	APPEARANCE OF MATERIALS	ASTM	NATL	MANDEL, JOHN	500	CHAIR	1968
	SC.01	EDITORIAL AND TERMINOLOGY	ASTM	NATL	HSIA, JACK J.	534	MEMBER	8-74
	SC.02	SPECTROPHOTOMETRY AND COLORIMETRY	ASTM	NATL	HSIA, JACK J.	534	MEMBER	1974
	SC.03	GEOMETRIC PROPERTIES	ASTM	NATL	HSIA, JACK J.	534	MEMBER	1974
	E013	MOLECULAR SPECTROSCOPY	ASTM	NATL	JOHANNESSEN, ROLF B. MIELENZ, KLAUS D. SEWARD, RICHARD W.	561 500 503	MEMBER MEMBER MEMBER	1970 7-78 11-79
	SC.01	ULTRAVIOLET AND VISIBLE SPECTROSCOPY	ASTM	NATL	VELAPOLDI, RANCE A.	550	MEMBER	1974
	SC.06	MOLECULAR LUMINESCENCE	ASTM	NATL	SEWARD, RICHARD W. MIELENZ, KLAUS D. SEWARD, RICHARD W.	500 500 503	MEMBER MEMBER MEMBER	11-79 7-78 11-79
	WG.01	PRESENTATION OF CORRECTED FLUORESCENCE SPECTRA	ASTM	NATL	VELAPOLDI, RANCE A.	550	MEMBER	1974
	WG.02	RECOMMENDED PRACTICES ON MOLECULAR FLUORESCENCE SPECTROSCOPY	ASTM	NATL	VELAPOLDI, RANCE A.	550	MEMBER	1974
	SC.07	NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY	ASTM	NATL	COXON, BRUCE JOHANNESSEN, ROLF B.	552 561	SEC CHAIR	2-75 1970
	E016	SAMPLING AND ANALYSIS OF METAL BEARING ORES AND RELATED MATERIALS	ASTM	NATL	MICHAELIS, ROBERT E.	503	LIAISON (S17)	1974
	E018	SENSORY EVALUATION OF MATERIALS AND PRODUCTS	ASTM	NATL	MOLINO, JOHN A.	743	MEMBER	11-73
	E020	TEMPERATURE MEASUREMENT	ASTM	NATL	FURUKAWA, GEORGE T. GALLAGHER, WILLIAM H. SCHNEIDER, SAMUEL J., JR.	522 738 560	MEMBER MEMBER MEMBER	1974 1969 1970
					SCHOOLEY, JAMES F. SPARKS, LARRY L.	522 773	MEMBER MEMBER	1974 1964

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
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ASTM					STIEHLER, ROBERT D.	741	HONORARY MEMBER	1962
	SC.01	EDITORIAL AND NOMENCLATURE	ASTM	NATL	WISE, JACQUELYN A.	522	MEMBER	1-78
	SC.03	RESISTANCE THERMOMETERS	ASTM	NATL	FURUKAWA, GEORGE T.	522	MEMBER	1974
					MANGUM, B. W.	522	MEMBER	11-76
	SC.04	THERMOCOUPLES	ASTM	NATL	BURNS, GEORGE W.	522	MEMBER	1960
					FURUKAWA, GEORGE T.	522	MEMBER	1974
					SPARKS, LARRY L.	773	MEMBER	1964
	SC.05	LIQUID-IN-GLASS THERMOMETERS AND HYDROMETERS	ASTM	NATL	GALLAGHER, WILLIAM H.	734	MEMBER	1969
					WISE, JACQUELYN A.	522	SEC	1-78
	SC.06	NEW THERMOMETERS	ASTM	NATL	FURUKAWA, GEORGE T.	522	SEC	1974
					MANGUM, B. W.	522	CHAIR	1974
	SC.07	FUNDAMENTALS IN THERMOMETRY	ASTM	NATL	FURUKAWA, GEORGE T.	522	MEMBER	1974
					MANGUM, B. W.	522	MEMBER	11-78
	SC.08	MEDICAL THERMOMETRY	ASTM	NATL	MANGUM, B. W.	522	MEMBER	1974
	WG.02	FEVER THERMOMETERS	ASTM	NATL	MANGUM, B. W.	522	MEMBER	1974
	WG.02A	ELECTRONIC FEVER THERMOMETERS	ASTM	NATL	MANGUM, B. W.	522	MEMBER	1974
	WG.02B	MERCURY-IN-GLASS FEVER THERMOMETERS	ASTM	NATL	MANGUM, B. W.	522	MEMBER	1974
	WG.02C	DISPOSABLE FEVER THERMOMETERS	ASTM	NATL	MANGUM, B. W.	522	MEMBER	1974
	WG.03	CONTINUOUS CLINICAL TEMPERATURE MONITORING SYSTEMS	ASTM	NATL	MANGUM, B. W.	522	MEMBER	1974
	WG.04	CLINICAL LABORATORY TEMPERATURE MEASUREMENT	ASTM	NATL	MANGUM, B. W.	522	MEMBER	1974
	SC.09	ADVISORY COMMITTEE	ASTM	NATL	MANGUM, B. W.	522	MEMBER	1974
	E021	SPACE SIMULATION AND APPLICATIONS OF SPACE TECHNOLOGY	ASTM	NATL	MANGUM, B. W.	522	MEMBER	6-78
	SC.04	SPACE SIMULATION TEST METHODS			RUTHBERG, STANLEY	721	MEMBER	1964
	-WG.01	REVISION OF STANDARDS E296-70 AND E297-70	ASTM	NATL	TILFORD, CHARLES R.	522	TECHNICAL ADVISOR	5-80
	SC.09	SOLAR ELECTRIC AND POWER APPLICATIONS	ASTM	NATL	CELLAROSI, MARIO J.	565	MEMBER	1977
	E024	FRACTURE TESTING	ASTM	NATL	DEWIT, ROLAND	562	MEMBER	1-75
					FREIMAN, STEPHEN W.	562	MEMBER	12-76
					FULLER, EDWIN R., JR.	562	MEMBER	10-77
					INTERRANTE, CHARLES G.	562	MEMBER	1972
					SMITH, JOHN H.	562	MEMBER	7-72
					TORLER, RALPH L.	562	MEMBER	1975
	SC.01	FRACTURE MECHANICS TEST METHODS	ASTM	NATL	DEWIT, ROLAND	562	MEMBER	1975
					HICHO, GEORGE E.	562	MEMBER	5-73
					SMITH, JOHN H.	562	MEMBER	1-75
	SC.02	FRACTOGRAPHY AND ASSOCIATED MICROSTRUCTURES	ASTM	NATL	DEWIT, ROLAND	562	MEMBER	1975
					HICHO, GEORGE E.	562	MEMBER	9-70
	SC.03	ALTERNATIVE FRACTURE TEST METHODS	ASTM	NATL	CHRIST, BRUCE W.	562	VICE CHAIR	8-78
					DEWIT, ROLAND	562	CHAIR	1975
					LOW, SAMUEL R. III	562	MEMBER	7-90
					SMITH, JOHN H.	562	MEMBER	3-78
	WG.03	PRECRACKED CHARPY TESTING METHODS	ASTM	NATL	INTERRANTE, CHARLES G.	562	MEMBER	1973
	SC.04	SUBCRITICAL CRACK GROWTH	ASTM	NATL	DEWIT, ROLAND	562	MEMBER	1975
					SMITH, JOHN H.	562	MEMBER	1-74
	SC.05	TERMINOLOGY	ASTM	NATL	DEWIT, ROLAND	562	MEMBER	1975

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ASTM	SC.06	FRACTURE MECHANICS APPLICATIONS	ASTM	NATL	INTERANTE, CHARLES G.	562	CHAIR	1974
					DEWIT, ROLAND	562	MEMBER	1975
	SC.07	FRACTURE TOUGHNESS OF BRITTLE NONMETALLIC MATERIALS	ASTM	NATL	SMITH, JOHN H.	562	MEMBER	1-74
					DEWIT, ROLAND	562	MEMBER	1977
					FREIMAN, STEPHEN W.	562	CHAIR	12-76
	WG.02	DOUBLE-TENSION TECHNIQUE	ASTM	NATL	FULLER, EDWIN R., JR.	562	MEMBER	10-77
	WG.03	PREDICTIONS OF STRUCTURAL RELIABILITY	ASTM	NATL	FULLER, EDWIN R., JR.	562	MEMBER	10-77
	WG.04	METHODS FOR ROCKS AND CONCRETE	ASTM	NATL	WIEDERHORN, SHELDON M.	562	MEMBER	9-77
	WG.05	DOUBLE CONTILEVEL BEAM TESTS	ASTM	NATL	FULLER, EDWIN R., JR.	562	MEMBER	10-77
	SC.08	ELASTIC/PLASTIC FRACTURE MECHANICS TERMINOLOGY	ASTM	NATL	FREIMAN, STEPHEN W.	562	MEMBER	10-77
					DEWIT, ROLAND	562	MEMBER	1978
					HICHO, GEORGE E.	562	MEMBER	6-78
	E027	HAZARD POTENTIAL OF CHEMICALS	ASTM	NATL	SMITH, JOHN H.	562	MEMBER	3-78
	SC.02	THERMAL STABILITY	ASTM	NATL	DOMALSKI, EUGENE S.	543	MEMBER	4-75
	SC.04	FLAMMABILITY AND IGNITABILITY OF LIQUID CHEMICALS	NRS	NATL	CHURNEY, KENNETH L.	543	MEMBER	1975
	E028	MECHANICAL TESTING	ASTM	NATL	LOFTUS, JOSEPH J.	753	MEMBER	4-79
					DISE, JOHN R.	782	MEMBER	1968
	SC.01	CALIBRATION OF MECHANICAL TESTING MACHINES AND APPARATUS	ASTM	NATL	MORDFIN, LEONARD	501	MEMBER	1963
	SC.04	TENSION TESTING	ASTM	NATL	PROCTOR, THOMAS M.	737	MEMBER	5-79
	WG.03	VERIFICATION OF ALIGNMENT UNDER TENSILE LOAD	ASTM	NATL	DISE, JOHN R.	782	MEMBER	1968
	SC.05	COMPRESSION TESTING	ASTM	NATL	CHRIST, BRUCE W.	562	CHAIR	1977
	SC.10	BEND AND FLEXURE TESTING	ASTM	NATL	DISE, JOHN R.	782	CHAIR	1963
	SC.11	STRESS RELAXATION	ASTM	NATL	MORDFIN, LEONARD	501	MEMBER	1973
	SC.13	RESIDUAL STRESS MEASUREMENT	ASTM	NATL	MORDFIN, LEONARD	501	CHAIR	1964
					PROCTOR, THOMAS M.	737	CHAIR	4-79
	SC.90	EXECUTIVE	ASTM	NATL	DISE, JOHN R.	782	MEMBER	5-79
	E029	PARTICLE SIZE MEASUREMENT	ASTM	NATL	KIRBY, R. KEITH	503	MEMBER	1973
					MCKENZIE, RAYMOND L.	553	MEMBER	1976
	SC.02	SUBSIEVE TESTING	ASTM	NATL	SWYT, DENNIS A.	737	MEMBER	1980
	SC.03	INTERNATIONAL COOPERATION ON TERMINOLOGY, STANDARDS, AND METHODS	ASTM	NATL	YOUNG, RUSSELL D.	739	MEMBER	2-79
					SWYT, DENNIS A.	737	MEMBER	4-79
	SC.04	LIQUID PARTICLE MEASUREMENT	ASTM	NATL	SWYT, DENNIS A.	737	MEMBER	2-79
					SWYT, DENNIS A.	737	MEMBER	2-79
	SC.05	REFERENCE MATERIALS	ASTM	NATL	BRIGHT, DAVID S.	553	DELEGATE	5-77
	E030	FORENSIC SCIENCES	ASTM	NATL	SWYT, DENNIS A.	737	MEMBER	2-79
					KIRBY, R. KEITH	503	MEMBER	10-79
					MILLS, ROBERT	760	MEMBER	1975
	E031	COMPUTERIZED LABORATORY SYSTEMS	ASTM	NATL	THOMAS, DOUGLAS B.	782	MEMBER	8-78
	E032	CRITERIA FOR EVALUATING AGENCIES CONCERNED WITH SYSTEM ANALYSIS, TESTING AND/OR COMP	ASTM	NATL	CROSSON, ROBERT J.	713	MEMBER	12-78
	SC.60	SYSTEMS ANALYSIS	ASTM	NATL	PIELERT, JAMES H.	744	MEMBER	7-76
					PIELERT, JAMES H.	744	MEMBER	7-76

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ASTM	SC.70	COMPLIANCE ASSURANCE	ASTM	NATL	PIELERT, JAMES H.	744	MEMBER	7-76
	SC.91	DEFINITIONS AND NOMENCLATURE	ASTM	NATL	PIELERT, JAMES H.	744	MEMBER	7-76
	E033	ENVIRONMENTAL ACOUSTICS	ASTM	NATL	BARTHEL, THOMAS W.	743	MEMBER	2-80
					FOWELL, ANDREW J.	762	MEMBER	1973
					YANIV, SIMONE L.	743	MEMBER	1977
	SC.01	SOUND ABSORPTION	ASTM	NATL	BARTHEL, THOMAS W.	743	MEMBER	2-80
					YANIV, SIMONE L.	743	MEMBER	1977
	SC.03	SOUND TRANSMISSION	ASTM	NATL	BARTHEL, THOMAS W.	743	MEMBER	2-80
					HUANG, PETER H.	743	MEMBER	1979
					YANIV, SIMONE L.	743	MEMBER	1977
	WG.03J	STEADY STATE METHODS (ABSORPTION)	ASTM	NATL	BARTHEL, THOMAS W.	743	CHAIR	2-80
	SC.05	RESEARCH	ASTM	NATL	YANIV, SIMONE L.	743	MEMBER	1977
	SC.06	INTERNATIONAL STANDARDS	ASTM	NATL	FOWELL, ANDREW J.	762	MEMBER	1973
					YANIV, SIMONE L.	743	VICE CHAIR	7-79
	SC.07	DEFINITIONS AND EDITORIAL	ASTM	NATL	YANIV, SIMONE L.	743	MEMBER	1977
	SC.08	MECHANICAL AND ELECTRICAL SYSTEM NOISE	ASTM	NATL	YANIV, SIMONE L.	743	MEMBER	1977
	WG.08B	PLUMBING NOISE	ASTM	NATL	FOWELL, ANDREW J.	762	MEMBER	1973
	E034	OCCUPATIONAL HEALTH AND SAFETY	ASTM	NATL	BRINCKMAN, F. E.	561	MEMBER	1975
					TAYLOR, JOHN K.	550	MEMBER	1976
	SC.10	DEFINITIONS AND NOMENCLATURE	ASTM	NATL	BRINCKMAN, F. E.	561	MEMBER	1975
	E035	PESTICIDES						
	SC.21	SAFETY TO MAN AND ENVIRONMENT	ASTM	NATL	HERRON, JOHN T.	542	CHAIR	3-79
	WG.02	ENVIRONMENTAL CHEMISTRY-FATE MODELING	ASTM	NATL				
	E036	CRITERIA FOR THE EVALUATION OF TESTING AND/OR INSPECTION AGENCIES	ASTM	NATL				
					BERMAN, GERALD A.	782	CHAIR	9-78
					MILLS, ROBERT	760	MEMBER	1975
					PIELERT, JAMES H.	744	MEMBER	5-77
					ARMSTRONG, GEORGE T.	543	MEMBER	1974
					CHURNEY, KENNETH L.	543	MEMBER	1973
					GUTTMAN, CHARLES M.	500	MEMBER	1975
					HAHN, THOMAS A.	565	MEMBER	1976
					HSIA, JACK J.	534	MEMBER	2-77
					KIRBY, R. KEITH	503	MEMBER	1976
					CHANG, SHU-SING	563	MEMBER	1977
					CHURNEY, KENNETH L.	543	MEMBER	1973
					GUTTMAN, CHARLES M.	500	MEMBER	1975
					GUTTMAN, CHARLES M.	500	CHAIR	1975
					HUST, JEROME G.	773	MEMBER	1975
					KIRBY, R. KEITH	503	MEMBER	1974
					FLYNN, JOSEPH H.	563	CHAIR	9-76
					ARMSTRONG, GEORGE T.	543	MEMBER	6-76
					CEZAIIRLIYAN, ARED	544	MEMBER	1976
					CHANG, SHU-SING	563	MEMBER	1977
					HAHN, THOMAS A.	565	MEMBER	1976
					HUST, JEROME G.	773	MEMBER	1976
					KIRBY, R. KEITH	503	CHAIR	1976
					ARMSTRONG, GEORGE T.	543	CHAIR	7-75
					DITMARS, DAVID A.	543	MEMBER	4-76
					HAHN, THOMAS A.	565	MEMBER	1978

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASTM					PHILLIPS, WILLIE E.	721	MEMBER	11-67
					SCACE, ROBERT I.	721	FIRST VICE-CHAIR	1959
	SC.02	LASEKS	ASTM	NATL	SCHAFFT, HARRY A.	721	MEMBER	1-75
	WG.06	LASER POWER AND ENERGY			THURBER, W. ROBERT	721	MEMBER	6-67
	SC.03	METALLIC MATERIALS	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER	1965
	SC.04	SEMICONDUCTOR PHYSICAL PROPERTIES	ASTM	NATL	FELDMAN, ALBERT	565	EDITOR	1972
					SANDERS, AARON A.	724	MEMBER	8-74
					BULLIS, W. MURRAY	721	MEMBER	1965
					BAGHDADI, ASLAN	721	MEMBER	1980
					BULLIS, W. MURRAY	721	EDITOR	1965
					EHRSTEIN, JAMES R.	721	MEMBER	1969
					PHILLIPS, WILLIE E.	721	MEMBER	6-71
					THURBER, W. ROBERT	721	MEMBER	6-67
	SC.05	ENCAPSULANTS	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER	1965
	SC.06	ELECTRICAL AND OPTICAL MEASUREMENT	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER	1965
					EHRSTEIN, JAMES R.	721	VICE CHAIR	1969
					PHILLIPS, WILLIE E.	721	MEMBER	2-70
	SC.07	INTERCONNECTION BONDING	ASTM	NATL	THURBER, W. ROBERT	721	MEMBER	6-67
	SC.08	MICROELECTRONIC IMAGING	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER	1965
					BULLIS, W. MURRAY	721	MEMBER	1965
					CELLAROSI, MARIO J.	565	MEMBER	1975
					JERKE, JOHN M.	721	MEMBER	1974
					NOVOTNY, DONALD B.	721	EDITOR	1973
	SC.09	ENCLOSURES, SUBSTRATES AND FILMS	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER	1978
	WG.04	HERMETICITY	ASTM	NATL	RUTHBERG, STANLEY	721	CHAIR	1973
	SC.10	PROCESS CHEMICALS	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER	1978
	SC.11	QUALITY AND HARDNESS ASSURANCE	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER	1965
					HUMPHREYS, JIMMY C.	533	MEMBER	1975
	SC.90	EXECUTIVE	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER-AT-L	1971
							ARGE	
	SC.91	EDITORIAL SUBCOMMITTEE	ASTM	NATL	MAYO-WELLS, JOHN F.	720	CHAIR	6-74
	SC.92	TERMINOLOGY	ASTM	NATL	BULLIS, W. MURRAY	721	MEMBER	1975
					MAYO-WELLS, JOHN F.	720	CHAIR	6-75
	F002	FLEXIBLE BARRIER MATERIALS	ASTM	NATL	BARNES, JOHN D.	563	MEMBER	11-75
	SC.30	TEST METHODS	ASTM	NATL	BARNES, JOHN D.	563	CHAIR	11-75
	SC.93	STATISTICAL MATTERS	ASTM	NATL	BARNES, JOHN D.	563	CHAIR	1-79
	F004	MEDICAL AND SURGICAL MATERIALS AND DEVICES	ASTM	NATL	BRAUER, GERHARD M.	563	MEMBER	1972
					EBY, RONALD K.	563	MEMBER	1973
					MCKENNA, GREGORY B.	563	MEMBER	1976
					RUFF, ARTHUR W.	564	MEMBER	5-74
	SC.20	RESOURCES	ASTM	NATL	BRAUER, GERHARD M.	563	MEMBER	1972
	SC.20.01	POLYMERIC MATERIALS	ASTM	NATL	CASSEL, JAMES M.	563	MEMBER	1974
	SC.20.02	METALLURGICAL MATERIALS	ASTM	NATL	BRAUER, GERHARD M.	563	CHAIR	1-76
	SC.20.05	TEST METHODS	ASTM	NATL	RUFF, ARTHUR W.	564	MEMBER	5-74
	WG.17	WEAR TESTS						
	WG.09	CORROSION OF IMPLANT MATERIALS	ASTM	NATL	FRAKER, ANNA C.	564	CHAIR	5-77
					RUFF, ARTHUR W.	564	MEMBER	5-74
					FRAKER, ANNA C.	564	MEMBER	5-77

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRET- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASTM	F 007	AEROSPACE INDUSTRY METHODS						
	SC.01	CONTAMINATION	ASTM	NATL	SWYT, DENNIS A.	737	MEMBER	2-79
	WG.05	AUTOMATIC PARTICLE COUNTERS	ASTM	NATL	DAVIS, SANFORD	753	MEMBER	7-90
	SC.06	FLAMMABILITY	ASTM	NATL	CALVANO, NICHOLAS J.	763	SEC	9-72
	F 008	SPORTS EQUIPMENT AND FACILITIES	ASTM	NATL	BERGER, ROBERT E.	763	MEMBER	5-76
	SC.53	HEADGEAR			CALVANO, NICHOLAS J.	763	MEMBER	9-72
	F 012	SECURITY SYSTEMS AND EQUIPMENT	ASTM	NATL	MCORE, RAYMOND T.	652	MEMBER	8-73
	SC.07	ELECTRONIC SECURITY FOR VOICE AND SIGNAL TRANSMISSION	ASTM	NATL	TREADO, MARSHALL J.	760	MEMBER	9-72
	SC.50	LOCKING DEVICES	ASTM	NATL	STOIK, JOHN S.	743	MEMBER	1975
	SC.60	FIRE AND SAFETY ASPECTS	ASTM	NATL	FRANK, DANIEL E.	760	MEMBER	9-80
	F 013	SAFETY AND TRACTION FOR FOOTWEAR	ASTM	NATL	PLACIOUS, ROBERT C.	533	MEMBER	7-80
	SC.91	DEFINITIONS AND NOMENCLATURE	ASTM	NATL	TONEK, SAMUEL D.	763	MEMBER	1-73
	F 015	CONSUMER PRODUCTS	ASTM	NATL	TONEK, SAMUEL D.	763	CHAIR	2-73
					BLOSS, ROSCOE L.	763	MEMBER	5-79
					LEIGHT, WALTER G.	763	MEMBER	10-75
					STIEHLER, ROBERT D.	741	HONORARY MEMBER	1973
	-SC.01	EXECUTIVE SUBCOMMITTEE	ASTM	NATL	LEIGHT, WALTER G.	763	MEMBER	10-75
	F 023	CHEMICAL PROTECTIVE CLOTHING	ASTM	NATL	KRASNY, JOHN F.	753	MEMBER	1977
	G 001	CORROSION OF METALS	ASTM	NATL	BERTOCCI, UGO	561	MEMBER	1975
					CLIFTON, JAMES R.	741	MEMBER	1977
					ESCALANTE, EDWARD	561	MEMBER	1970
					GERHOLD, WILLIAM F.	561	MEMBER	1-64
					IVERSON, WARREN P.	561	MEMBER	1969
					KRUGER, JEROME	561	MEMBER	1-66
					UGIANSKY, GILBERT	500	MEMBER	1976
					WAN, CHIAAN A.	762	MEMBER	12-77
					GERHOLD, WILLIAM F.	561	MEMBER	1963
					KRUGER, JEROME	561	MEMBER	1967
					GERHOLD, WILLIAM F.	561	MEMBER	1963
					GERHOLD, WILLIAM F.	561	MEMBER	1963
					GERHOLD, WILLIAM F.	561	MEMBER	1963
					GERHOLD, WILLIAM F.	561	VICE CHAIR	1963
					PUGH, EDISON N.	561	MEMBER	11-79
					UGIANSKY, GILBERT	500	CHAIR	1978
					ESCALANTE, EDWARD	561	CHAIR	1972
					IVERSON, WARREN P.	561	MEMBER	1969
	SC.10	CORROSION IN SOILS	ASTM	NATL	IVERSON, WARREN P.	561	CHAIR	1976
	-WG.02	ELECTROCHEMICAL POLARIZATION TECHNIQUE FOR MEASUREMENT OF CORROSION RATES IN SOIL	ASTM	NATL	BERTOCCI, UGO	561	MEMBER	1976
	SC.11	ELECTROCHEMICAL MEASUREMENTS IN CORROSION TESTING	ASTM	NATL	KRUGER, JEROME	561	MEMBER	1977
	SC.90	EXECUTIVE COMMITTEE	ASTM	NATL	GERHOLD, WILLIAM F.	561	CHAIR	1963
	SC.98	ADVISORY COMMITTEE ON EXPOSURE TESTING FACILITIES	ASTM	NATL	KRUGER, JEROME	561	CHAIR	1977
	SC.99	STANDING COMMITTEE ON LIAISON	ASTM	NATL	BHANSALI, KIRIT J.	564	MEMBER	7-80
	G 002	EROSION AND WEAR	ASTM	NATL	BLAU, PETER J.	564	MEMBER	11-79

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRET- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
ASTM	SC.20 WG.01 SC.30	EROSION BY SOLID PARTICLE IMPACT SOLID PARTICLE IMPINGEMENT TEST METHODS WEAR	ASTM ASTM ASTM	NATL NATL NATL	IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. BLAU, PETER J. IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 564 564 564 564 564 564 564 564 564 564 564 564 741 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 11-79 1974 1978 1976 1977 4-77 1976 1977 1-78 7-76 1-78 1-78 1-78 1975 2-75
	WG.02 SC.90	DRY SAND/RUBBER WHEEL EXECUTIVE COMMITTEE	ASTM ASTM	NATL NATL	IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 564 564 564 564 564 564 741 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 11-79 1974 1978 1976 1977 4-77 1976 1977 1-78 7-76 1-78 1-78 1975 2-75
	SC.91 SC.93 G003	TERMINOLOGY AND DEFINITIONS EDITORIAL DURABILITY OF NONMETALLIC MATERIALS	ASTM ASTM ASTM	NATL NATL NATL	IVES, LEWIS K. RUFF, ARTHUR W. IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 564 564 741 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 11-79 1974 1978 1976 1977 4-77 1976 1977 1-78 7-76 1-78 1-78 1975 2-75
	SC.02 SC.03	NATURAL ENVIRONMENTAL TESTING SIMULATED AND CONTROLLED ENVIRONMENTAL TESTS	ASTM ASTM	NATL NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
	G004	COMPATIBILITY/SENSITIVITY OF MATERIALS IN OXYGEN ENRICHED ATMOSPHERES	ASTM	NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
ASTM: SAE	-C004	COORDINATING COMM FOR SRM'S FOR METALS, METAL ASTM BEARING ORES, AND RELATED MATERIALS	ASTM	NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
AVS	-C004	COORDINATING COMMITTEE FOR STANDARD REFERENCE ASTM MATERIALS FOR PARTICLE METROLOGY	AVS	NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
	-SC.01	UNIFIED NUMBERING SYSTEM FOR METALS AND ALLOYS	ASTM	NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
	-C006	STANDARDS	AVS	NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
	-C002	GAGING	AVS	NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
	-C002	BOARD OF DIRECTORS	AVS	NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
	-WG.01 -WG.02 -WG.03	COMMITTEE ON PRESSURE STANDARDS WORKING GROUP ON HIGH PRESSURES WORKING GROUP ON LOW PRESSURES	BIPM BIPM BIPM	INTL INTL INTL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
CAP CAS CCITT/ IFC	-C002 -C002	WORKING GROUP ON BAROMETRIC PRESSURES NUCLEAR MEDICINE RESOURCE ADVISORY COMMITTEE ON CODEN	BIPM CAP CAS	INTL NATL INTL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
	-C002 WG.0	OPTICAL FIBERS TERMINOLOGY	CCITT/ IEC	INTL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75
CEO	-C002 -SC.01 -WG.01 -C004	ENVIRONMENTAL DATA AND MONITORING AIR POLLUTION DATA AND MONITORING ANTICIPATORY MONITORING CRYOGENIC FLUID FLOW MEASUREMENT MONITORING	CEO CEO CGA CGA	NATL NATL NATL NATL	IVES, LEWIS K. RUFF, ARTHUR W. CLARK, ELIZABETH J. MASTERS, LARRY W. CLARK, ELIZABETH J. CLARK, ALAN F. HUGGETT, CLAYTON	564 564 741 741 741 724 750	MEMBER VICE CHAIR MEMBER MEMBER MEMBER MEMBER MEMBER	1974 7-78 1974 11-76 1-78 1-78 1975 2-75

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
CGPM	CIPM	INTERNATIONAL COMMITTEE FOR WEIGHTS AND MEASURES	FRANCE	INTL	AMBLER, ERNEST	100	MEMBER	6-75
	CCEMRI	CONSULTATIVE COMMITTEE FOR IONIZING RADIATIONS MEASUREMENT STANDARDS	FRANCE	INTL	AMBLER, ERNEST	100	CHAIR	10-74
CIE	TC02.2	DETECTORS	CIE	INTL	GEIST, JON C.	534	MEMBER	1-78
	-SC.01	ABSOLUTE DETECTORS OF OPTICAL RADIATION MATERIALS	US	INTL	MIELENZ, KLAUS D.	500	CHAIR	1976
	TC02.3	GLOSS	CIE	INTL	HSIA, JACK J.	534	DELEGATE	1977
	-SC.01	POLARIZATION	CIE	INTL	SHUMAKER, JOHN B.	534	DELEGATE	2-77
	-SC.02	CONSULTATIVE COMMITTEE FOR THE DEFINITION OF THE METER	BIPM	INTL	HALL, JOHN L.	525	DELEGATE	1970
CIPM	CCDM	CONSULTATIVE COMMITTEE FOR THE DEFINITION OF THE SECOND	BIPM	INTL	KESSLER, KARL G.	520	DELEGATE	1959
	CCDS	CONSULTATIVE COMMITTEE FOR THE DEFINITION OF THE SECOND	BIPM	INTL	BARNES, JAMES A.	524	DELEGATE	5-73
	CCE	CONSULTATIVE COMMITTEE ON ELECTRICITY	CIPM	INTL	TAYLOR, BARRY N.	521	MEMBER	1-75
	-SC.01	HIGH FREQUENCY	BIPM	INTL	ALLRED, C. MCKAY	724	MEMBER	4-78
	CCEMRI	CONSULTATIVE COMMITTEE FOR IONIZING RADIATION MEASUREMENT STANDARDS	BIPM	INTL	CASWELL, RANDALL S.	532	DELEGATE	1969
	SEC.01	X AND GAMMA RAYS AND ELECTRONS	BIPM	INTL	LOEVINGER, ROBERT	533	DELEGATE	1975
	SEC.02	RADIONUCLIDES	BIPM	INTL	MANN, WILFRID B.	532	DELEGATE	1-70
	-WG.01	LIQUID SCINTILLATION COUNTING FOR RADIONUCLIDES WHICH DECAY BY EMITTING LOW ENERGY	BIPM	INTL	COURSEY, BERT M.	532	DELEGATE	12-75
	SEC.03	NEUTRON MEASUREMENTS SECTION	BIPM	INTL	CASWELL, RANDALL S.	532	CHAIR	1969
	CCT	CONSULTATIVE COMMITTEE ON THERMOMETRY	BIPM	INTL	SCHOOLEY, JAMES F.	522	DELEGATE	1978
	SC.01	REPLACEMENT OF IPTS-68	BIPM	INTL	GOLDMAN, DAVID T.	500	DELEGATE	12-77
	CCU	CONSULTATIVE COMMITTEE ON UNITS	BIPM	INTL	LIDE, DAVID R., JR.	504	DELEGATE	1978
CODASYL	-C002	CODASYL EXECUTIVE COMMITTEE	US	NATL	VICKERS, MABEL V.	641	MEMBER	4-67
	-C.01	COBOL	CODASYL	NATL	COLLICA, JOSEPH C.	642	MEMBER	12-79
	-C.02	DATA DESCRIPTION LANGUAGE	CS	INTL	LAFFERTY, WALTER J.	545	MEMBER	11-77
	-C002	SPECTRAL EVALUATION	CS	INTL	SCACE, ROBERT I.	721	MEMBER	12-76
	-SC.01	SPECIFICATIONS FOR INFRARED VAPOR PHASE SPECTRA	GERMANY	INTL	MCLAUGHLIN, WILLIAM L.	533	CHAIR	1975
DIN	A221	TESTING INORGANIC SEMICONDUCTOR MATERIALS	DOC	NATL	SCACE, ROBERT I.	721	MEMBER	9-75
DOC	-C008	RADIATION PRESERVATION OF FOOD	DOC	NATL	FRENCH, JAMES E.	780	ALT REP	10-80
	-C010	SEMICONDUCTOR TECHNICAL ADVISORY COMMITTEE	DOC	NATL	WARSHAW, STANLEY I.	760	EX-OFFICIO MEMBER	10-80
	PS020	AMERICAN LUMBER STANDARDS COMMITTEE	NAVY	NATL	VOGT, JACKIE L.	512	MEMBER	12-78
	-C008	GIDEP GOVERNMENT ADVISORY GROUP	NAVY	NATL	EDINGER, KENNETH W.	512	MEMBER	4-80
	-C010	GIDEP METROLOGY COMMITTEE	NAVY	NATL				
	-C012	JOINT TECHNICAL COORDINATION GROUP ON AIRCRAFT SURVIVABILITY	DOD	NATL	NICODEMUS, FRED E.	534	TECHNICAL ADVISOR	8-79
	-SC.01	COUNTERMEASURES	DOD	NATL				
	-WG.01	JOINT INFRARED STANDARDS (JIRS)	DOD	NATL				
	-C014	ADVISORY BOARD FOR THE DARPA/AFML QUANTITATIVE NDE PROGRAM	DOD	NATL	BIRNBAUM, GEORGE	501	MEMBER	1-77
	-C002	CROSS SECTION EVALUATION WORKING GROUP	DOE	NATL/I	CARLSON, ALLAN D.	532	MEMBER	11-72

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECURE- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
DOE	-C.01 -SC.01 -SC.01	EVALUATION DATA STATUS AND REQUESTS STANDARDS	DOE DOE	NATL NATL/I	BEHRENS, JAMES W. BOWMAN, CHARLES D.	532 532	MEMBER TECHNICAL ADVISOR	12-77 10-78
	-SC.02 -C006 -C008 -C010	SHIELDING US NATIONAL INSTRUMENTATION COMMITTEE ATOMIC AND MOLECULAR DATA FOR FUSION RESEARCH HALF-LIFE EVALUATION FOR PU ISOTOPES PHYSICAL US CONSTANTS	NNDC DOE	NATL NATL NATL NATL	CARLSON, ALLAN D. HUBBELL, JOHN H. COSTRELL, LOUIS WEISS, ANDREW W.	532 533 535 531	CHAIR MEMBER CHAIR MEMBER	1972 7-65 1964 2-77
	-C012	NUCLEAR DATA	DOE	NATL	MANN, WILFRID B. BOWMAN, CHARLES D.	532 532	MEMBER TECHNICAL ADVISOR	10-76 8-77
DOE	-C020 005	NEUTRON DOSIMETRY STEERING COMMITTEE CHEMICAL AND PHYSICAL QUALITY OF WATER AND SEDIMENTS	DOE	NATL	CASWELL, RANDALL S.	532	MEMBER	12-80
DOT	WG.G -C004 -C006	AUTOMATIC WATER-QUALITY MONITORS TECHNICAL PIPELINE SAFETY STANDARDS SPECIAL AVIATION FIRE AND EXPLOSION REDUCTION (SAFER) ADVISORY COMMITTEE	DOI DOT FAA	NATL NATL NATL	DURST, RICHARD A. CHRIST, BRUCE W.	552 562	MEMBER MEMBER	1975 1976
EIA	JT006 JT032	TV PICTURE TUBES HEALTH AND SAFETY COMMITTEE FOR ELECTRON TUBES	JEDEC JEDEC	NATL NATL	HUGGETT, CLAYTON CELLAROSI, MARIO J.	750 565	MEMBER MEMBER	11-78 1976
	P006 SC.06 WG.01 -C006	FIBER OPTICS WORKING GROUP ON FIBERS AND MATERIALS TASK GROUP ON ROUND ROBIN TESTING FEDERAL GUIDANCE FOR OCCUPATIONAL EXPOSURES TO IONIZING RADIATION	EIA EIA EPA	NATL NATL NATL	FRANZEN, DOUGLAS L. FRANZEN, DOUGLAS L.	724 724	MEMBER CHAIR	5-78 10-79
ETPC	-C002 -SC.01	EUROPEAN THERMOPHYSICAL PROPERTIES COMMISSION ON STANDARDIZATION OF THERMOPHYSICAL MEASUREMENT METHODS	ETPC	INTL	SPENCER, LEWIS V.	533	MEMBER	1977
FDA FFMA	-C002 -C002	TECHNICAL ELECTRONIC PRODUCT RADIATION SAFETY INTERAGENCY COMMITTEE ON SEISMIC SAFETY IN CONSTRUCTION	FDA FDA	NATL	CEZARLIYAN, ARED EISENHOWER, ELMER H.	544 530	MEMBER MEMBER	1978 9-77
FPA	SC.02 -C004 -C002	BUILDING STANDARDS INTERAGENCY COMMITTEE ON DAM SAFETY FEDERAL RESPONSE PLAN FOR PEACETIME NUCLEAR EMERGENCIES	FEMA FEMA FPA	NATL NATL NATL	LEYENDECKER, EDGAR V. ALSPACH, WALLACE J.	741 723	CHAIR MEMBER	10-78 10-80
GSA	-C002	FEDERAL TELECOMMUNICATIONS STANDARDS COMMITTEE			SPENCER, LEWIS V.	533	MEMBER	1974
HEW/ FDA	-SC.02	DIGITAL COMMUNICATIONS PERFORMANCE PARAMETERS	NCA	NATL	GRUBB, DANA S.	652	MEMBER	1974
HPS	-C004 -C002 WG.01.4	CHEMISTRY TASK FORCE OF THE NATIONAL SHELLFISH SANITATION PROGRAM HEALTH PHYSICS SOCIETY STANDARDS COMMITTEE CRITERIA FOR PERSONNEL DOSIMETRY PERFORMANCE	HEW/ FDA HPS	NATL NATL NATL	BARNES, I. L.	551	MEMBER	8-75
IAAHWGN DE	-C002	INTERGOVERNMENT AGENCY AD HOC WORKING GROUP ON NDE	IAAHWGN DE	NATL	EHRLICH, MARGARETE BIRNBAUM, GEORGE	533 501	CHAIR MEMBER	7-75 5-78

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECR- TARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
IAAHWGN	-C.01	AD HOC COMMITTEE ON QUANTITATIVE EDDY CURRENT NDT	IAAHWGN	NATL	BIRNBAUM, GEORGE	501	CHAIR	5-78
DE								
IAEA	-C002	CHEMICAL THERMODYNAMICS OF ACTINIDE ELEMENTS AND COMPOUNDS						
	-WG.01	ACTINIDE HALIDE THERMODYNAMICS	AUSTRIA	NATL/I	PARKER, VIVIAN B.	543	MEMBER	6-75
IAEA/ WHO	-C002	ADVISORY COUNCIL TO NETWORK OF SECONDARY STANDARD DOSIMETRY LABORATORIES	IAEA/ WHO	INTL	LOEVINGER, ROBERT	533	MEMBER	1975
IAPS	-C002	EXECUTIVE COMMITTEE						
	WG.02	TRANSPORT PROPERTIES OF STEAM AND HEAVY WATER	NBS	INTL	SENGERS, JAN V.	544	MEMBER	1974
	001	THERMODYNAMIC PROPERTIES	NBS	INTL	HAAR, LESTER	544	MEMBER	1975
	IAPS	INTERNATIONAL ASSOCIATION FOR THE PROPERTIES OF STEAM	ASME	INTL	SENGERS, JOHANNA M. H.	544	MEMBER	1974
					WHITE, HOWARD J., JR.	504	EXECUTIVE	1-75
IAU	014	FUNDAMENTAL SPECTROSCOPIC DATA	IAU	INTL	CORLISS, CHARLES H.	531	SECRETARY	1964
	031	TIME	IAU	INTL	BARNES, JAMES A.	524	TECHNICAL	1968
ICAO	ACISP	AUTOMATED DATA INTERCHANGE SYSTEMS PANEL	ICAO	INTL	CLARK, GEORGE E.	652	TECHNICAL	1976
ICG	-C002	GLASS						
	SC.08	STANDARD REFERENCE GLASSES	ICG	INTL	HALLER, WOLFGANG K.	565	VICE CHAIR	4-79
	A002	DURABILITY AND ANALYSIS	ICG	INTL	HALLER, WOLFGANG K.	565	MEMBER	8-72
ICNW	-C002	NET WEIGHTS	ICNW	NATL	BRICKENKAMP, CARROLL S.	511	CHAIR	1975
ICRU	-C002	INTERNATIONAL COMMISSION ON RADIATION UNITS AND MEASUREMENTS	ICRU	INTL				
	-C004	MICRODOSIMETRY	US	INTL	MANN, WILFRID B.	532	CONSULTANT	2-70
	002B	RADIATION: X-RAYS, GAMMA-RAYS AND ELECTRONS			COYNE, J. JOSEPH	532	MEMBER	5-77
	-WG.01	RADIATION DOSIMETRY	ICRU	INTL	HURBELL, JOHN H.	533	TECHNICAL	7-65
							ADVISOR	
ICSU	-C002	COMMITTEE ON DATA FOR SCIENCE AND TECHNOLOGY						
	-C.01	INTERNATIONALIZATION AND STANDARDIZATION OF THERMODYNAMICS DATA	CODATA	INTL				
					GARVIN, DAVID	543	SEC	1977
	-C.03	CHEMICAL KINETICS	ICSU	INTL	WHITE, HOWARD J., JR.	504	CHAIR	5-76
	-C.04	EXECUTIVE COMMITTEE OF CODATA	CODATA	INTL	HAMPSON, ROBERT F., JR.	542	SEC	1-77
	-C.05	FUNDAMENTAL CONSTANTS	CODATA	INTL	LIDE, DAVID R., JR.	504	MEMBER	1978
ICUNSA	-C002	INTERNATIONAL COMMISSION FOR UNIFORM METHODS OF SUGAR ANALYSIS			TAYLOR, BARRY N.	521	MEMBER	1-76
	SC.05	100 DEGREE S POINT OF SUGAR SCALE	ICUNSA	INTL				
					COXON, BRUCE	552	ASSOCIATE	1974
	005	POLARIMETRY	GERMANY	INTL	CUMMINGS, ARTHUR L.	561	REFEREE	1-79
	006	QUARTZ CONTROL PLATES	GERMANY	INTL	CUMMINGS, ARTHUR L.	561	ASSOCIATE	1-79
IFC	TC013	ELECTRICAL MEASURING EQUIPMENT	HUNGARY	INTL	TURGEL, RAYMOND S.	722	REFEREE	1971
	SC.138	ELECTRICAL MEASURING INSTRUMENTS	HUNGARY	INTL	TURGEL, RAYMOND S.	722	TECHNICAL	1974
							ADVISOR	

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARIAT	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
IEC	TC025	QUANTITIES AND UNITS, AND THEIR LETTER SYMBOLS	US	INTL	CUTKOSKY, ROBERT D.	521	ASSISTANT SECRETARY	1969
	TC029	ELECTROACOUSTICS						
	SC.29C	MEASURING DEVICES						
	WG.12	CALIBRATION OF HALF-INCH MICROPHONES	SWITZER LAND	INTL	NEDZELNITSKY, VICTOR	739	MEMBER	9-77
	TC042	HIGH VOLTAGE TESTING TECHNIQUES						
	WG.04	IMPULSE OSCILLOSCOPES AND PEAK READING VOLTMETERS	USNC/IEC	INTL	PETERSONS, CSKARS	722	MEMBER	7-75
	TC045	NUCLEAR INSTRUMENTATION	GERMANY	INTL	COSTRELL, LOUIS	535	DELEGATE	1961
	WG.01	CLASSIFICATION AND TERMINOLOGY	GERMANY	INTL	COSTRELL, LOUIS	535	MEMBER	1962
	WG.03	INTERCHANGEABILITY	GERMANY	INTL	COSTRELL, LOUIS	535	MEMBER	1962
	WG.09	RADIATION DETECTORS	GERMANY	INTL	COSTRELL, LOUIS	535	CHAIR	1963
	TC046	CABLES, WIRES, AND WAVEGUIDES FOR TELECOMMUNICATION EQUIPMENT						
	SC.46D	CONNECTORS FOR RF CABLES	GERMANY	INTL	JESCH, RAMON L.	723	DELEGATE	12-73
	WG.01	REVISION OF IEC PUBLICATION 169-1 (PORTIONS ON REFLECTION COEFFICIENT)	UNITED KINGDOM	INTL	JESCH, RAMON L.	723	MEMBER	11-76
	WG.04	REVISION OF IEC PUBLICATION 169-1, EXCEPT SUB-CLAUSES 14.1 AND 14.8	UNITED KINGDOM	INTL	JESCH, RAMON L.	723	MEMBER	9-78
	WG.03	MEASURING METHODS OF POLYETHYLENE ELECTRICAL EQUIPMENT IN MEDICAL PRACTICE	US	INTL	ZAPAS, LOUIS J.	563	MEMBER	1972
	TC062	HIGH-ENERGY RADIATION EQUIPMENT AND EQUIPMENT FOR NUCLEAR MEDICINE						
	SC.62C	PERFORMANCE OF DOSIMETERS						
	WG.03		UNITED KINGDOM	INTL				
IEEE	-C06.8	CRYOELECTRICAL ENGINEERING			LOEVINGER, ROBERT	533	MEMBER	1970
	-SC.01	MEASUREMENTS AND STANDARDS	IEEE	NATL	CLARK, ALAN F.	724	CHAIR	1976
	-C09.2	NETWORK APPLICATIONS AND STANDARDS						
	-SC.01	A/D AND D/A CONVERTERS	IEEE	NATL	SCHOENWETTER, HOWARD K.	722	MEMBER	1-74
	014	STANDARDS COORDINATING COMMITTEE ON QUALITY AND UNITS			SOUDERS, THOMAS M.	722	MEMBER	1-74
	SC.01	METRIC PRACTICE	IEEE	NATL	GOLDMAN, DAVID T.	500	MEMBER	1-80
	-C.01	COMPUTER SOCIETY						
	-SC.01	SOFTWARE ENGINEERING	IEEE	NATL	FIFE, DENNIS W.	640	MEMBER	1977
	-SC.01	SOFTWARE ENGINEERING STANDARDS	IEEE	NATL	CARPENTER, ROBERT J.	652	ALT REP	2-79
	PE96	MICROPROCESSOR STANDARDS	IEEE	NATL	GRUBB, DANA S.	652	MEMBER	11-79
	PE96	BACKPLANE BUS WORKING GROUP	IEEE	NATL	CARPENTER, ROBERT J.	652	ALT REP	10-79
CHMT		SOCIETY ON COMPONENTS, HYBRIDS, AND MANUAL TECHNOLOGY			GRUBB, DANA S.	652	MEMBER	11-79
	TC.03	TECHNICAL COMMITTEE ON HYBRID MICROELECTRONICS	IEEE	NATL	HARMAN, GEORGE G.	721	MEMBER	4-78

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
IEEF	CCM	COMMUNICATIONS SOCIETY	IEEE	NATL	DAY, GORDON W.	724	MEMBER	2-78
	-CCM08	TRANSMISSION SYSTEMS	IEEE	NATL	BUEHLER, MARTIN G.	722	MEMBER	9-78
	-SC.01	FIBER OPTICS	IEEE	NATL	BUEHLER, MARTIN G.	722	MEMBER	9-78
EC		ELECTRON DEVICES SOCIETY	IEEE	NATL	SCHAFFT, HARRY A.	721	MEMBER	1974
	-C.01	STANDARDS						
EI		ELECTRICAL INSULATION SOCIETY	IEEE	NATL	HEBNER, ROBERT E.	722	MEMBER	1978
	-EI01	LIQUID INSULATION	IEEE	NATL	HEBNER, ROBERT E.	722	CHAIR	1979
	SC.01	PERFORMANCE AND RELIABILITY						
	WG.01	GUIDE TO INSULATING FLUID						
EMC		ELECTROMAGNETIC COMPATIBILITY	IEEE	NATL	TAGGART, HAROLD E.	723	CHAIR	6-76
	-C.01	STANDARDS	IEEE	NATL	YEE, KENNETH W.	762	MEMBER	6-77
IAS		INDUSTRY APPLICATIONS SOCIETY	IEEE	NATL	DETTINGER, FRANK F.	721	VICE CHAIR	9-75
	-IAS03	APPLIANCE INDUSTRY	NBS	NATL	BELECKI, NORMAN B.	521	MEMBER	7-78
	-IAS18	POWER SEMICONDUCTOR	IEEE	NATL	BELL, HARRY A.	722	CHAIR	7-76
	-SC.01	STANDARDS	IEEE	NATL	CUTKOSKY, ROBERT D.	521	MEMBER	1968
IM		INSTRUMENTATION AND MEASUREMENT	IEEE	NATL	ALLAN, DAVID W.	524	MEMBER	1-79
	TC-2	DC AND LF STANDARDS	IEEE	NATL	BARNES, JAMES A.	524	MEMBER	1964
					BARNES, JAMES A.	524	MEMBER	1964
TC-3		FREQUENCY AND TIME	IEEE	NATL	ANDREWS, JAMES R.	724	MEMBER	4-73
	-SC.01	FREQUENCY STABILITY	IEEE	NATL	NAHMAN, NORRIS S.	724	MEMBER	1967
	TC-4	HF INSTRUMENTATION AND MEASUREMENTS	IEEE	NATL	COSTRELL, LOUIS	535	SEC	1954
	-SC.03	SAMPLING AND STORAGE OSCILLOSCOPES	IEEE	NATL	KOTTER, F. RALPH	722	MEMBER	1962
	-SC.05	PULSE TECHNIQUES	IEEE	NATL	PETERSONS, OSKARS	722	MEMBER	1977
NPSS		NUCLEAR AND PLASMA SCIENCES	IEEE	NATL	TURDEL, RAYMOND S.	722	MEMBER	2-77
	-NPSS01	NUCLEAR INSTRUMENTS AND DETECTORS	IEEE	NATL	OLDHAM, NILE M.	722	CHAIR	1979
PES		POWER ENGINEERING SOCIETY	IEEE	NATL	TURDEL, RAYMOND S.	722	CHAIR	11-78
	-PES06	POWER SYSTEM INSTRUMENTATION AND MEASUREMENTS	IEEE	NATL	PETERSONS, OSKARS	722	MEMBER	1978
			IEEE	NATL	KOTTER, F. RALPH	722	MEMBER	1962
			IEEE	NATL	PETERSONS, OSKARS	722	MEMBER	1962
			IEEE	NATL	PETERSONS, OSKARS	722	MEMBER	1970
			IEEE	NATL	HEBNER, ROBERT E.	722	MEMBER	1978
			IEEE	NATL	KOTTER, F. RALPH	722	MEMBER	1962
			IEEE	NATL	HILLHOUSE, DAVID L.	722	MEMBER	1975
	-WG.01	LIGHTNING AND SWITCHING IMPULSE TEST	IEEE	NATL				
	-SC.08	TEMPERATURE AND ENVIRONMENTAL EFFECTS	IEEE	NATL				
-PES12		TRANSFORMERS	IEEE	NATL	MISAKIAN, MARTIN	722	MEMBER	1976
	-SC.01	INSTRUMENT TRANSFORMER	IEEE	NATL	MCKNIGHT, RONALD H.	722	MEMBER	5-80
	-PES13	TRANSMISSION AND DISTRIBUTION						
	-SC.01	CORONA AND FIELD EFFECTS						
	-WG.01	AC FIELDS						
	-WG.02	BIOLOGICAL EFFECTS OF POWER FREQUENCY						
		ELECTRIC AND MAGNETIC FIELDS						

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IEEE	-SC.01 -WG.01	PSYCHOACOUSTICS AUDIBLE NOISE	IEEE	NATL	MOLINO, JOHN A.	743	MEMBER	1979
IERI	-C001	RESEARCH EXECUTIVE COMMITTEE ON LIGHT AND VISION	US	NATL/I				
IES	-C004	COLOR COMMITTEE	IES	NATL	RUBIN, ARTHUR I. GLASS, ROBERT A.	743 743	MEMBER MEMBER	9-73 10-80
	-C006	EMERGENCY LIGHTING COMMITTEE	IES	NATL	HOWETT, GERALD L.	743	MEMBER	1-73
	-C008	ENERGY MANAGEMENT	IES	NATL	HOWETT, GERALD L.	743	MEMBER	11-72
	-C010	PHOTO BIOLOGY	IES	NATL	YONEMURA, GARY T. KOSTKOWSKI, HENRY J. SAUNDERS, ROBERT D., JR.	743 534 534	MEMBER MEMBER ALT REP	4-75 5-78 7-78
	-C014	RECOMMENDATIONS FOR QUALITY AND QUANTITY OF ILLUMINATION	IES	NATL	HOWETT, GERALD L.	743	MEMBER	8-75
IFCC	TPC -C002 -SC.01 -C004 -SC.01 -WG.01	TESTING PROCEDURES EXPERT PANEL ON INSTRUMENTATION ATOMIC ABSORPTION SCIENTIFIC ANALYTICAL SECTION EXPERT PANEL ON PH AND BLOOD GASES	IES IES IFCC	NATL NATL INTL	MCSPARRON, DONALD A. EPSTEIN, MICHAEL S.	534 551	MEMBER MEMBER	6-77 4-77
	-C006 -C.01	COMMITTEE ON STANDARDS EXPERT PANEL ON DRUG EFFECTS IN CLINICAL CHEMISTRY	SWITZER LAND UNITED KINGDOM	INTL INTL	DURST, RICHARD A.	552	SEC	1975
IIA	-C002	INTERNATIONAL EDP AUDITING	IIA	NATL	REEDER, DENNIS J. JEFFERY, SEYMOUR	552 640	MEMBER TECHNICAL ADVISOR	8-78 2-78
IIW	015	FUNDAMENTALS OF DESIGN AND FABRICATION FOR WELDING	IIW	INTL	SMITH, JOHN H.	562	DELEGATE	2-78
IMCO	-C002	INTERGOVERNMENTAL MARITIME CONSULTATIVE ORGANIZATION						
	-SC.01 -WG.01	FIRE PROTECTION AD HOC GROUP ON FIRE TEST METHODS	IMCO	INTL	ROBERTSON, ALEXANDER F. GEIST, JON C.	750 534	CHAIR MEMBER	11-78 1-79
IMEKO	T002	PHOTON DETECTORS	HUNGARY	INTL				
ISA	SP071	ENVIRONMENTAL CONDITIONS FOR PROCESS	ISA	NATL	BOYLE, DON R.	713	MEMBER	7-75
ISCC	-C004	MEASUREMENT AND CONTROL SYSTEMS MEMBER BODY DELEGATES TO INTER-SOCIETY COLOR COUNCIL	ISCC	NATL	HOWETT, GERALD L.	743	DELEGATE	8-75
ISO	INF00	STANDING COMMITTEE FOR THE STUDY OF SCIENTIFIC & TECHNICAL INFORMATION ON STANDARDS	ISO	INTL				
	-C.01 T021	ISOGNET MANAGEMENT BOARD EQUIPMENT FOR FIRE PROTECTION AND FIRE FIGHTING	ISO	INTL	DONALDSON, JOHN L. DONALDSON, JOHN L.	760 760	DELEGATE MEMBER	8-80 8-80
	SC.01	TERMINOLOGY, SYMBOLS, SIGNS, AND CLASSIFICATION OF FIRE	FRANCE	INTL	PIERMAN, BRIAN C.	743	DELEGATE	7-78
	SC.03 WG.01	FIRE DETECTION AND ALARM SYSTEMS TEST FIRES	UNITED KINGDOM	INTL				
					BRIGHT, RICHARD G.	751	CONVENER	10-77

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
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ISO	SC.05	FIXED FIRE EXTINGUISHING SYSTEMS	GERMANY	INTL	O'NEILL, JOHN G.	752	DELEGATE	10-78
	WG.01	SPRINKLER SYSTEMS						
	TC022	ROAD VEHICLES	GERMANY	INTL	CRAWFORD, MYRON L.	723	DELEGATE	6-77
	SC.03	ELECTRICAL CONNECTIONS						
	WG.03	ELECTRICAL INTERFERENCES	FRANCE	INTL	CRAWFORD, MYRON L.	723	VICE CHAIR	6-77
	TC028	PETROLEUM PRODUCTS						
	SC.03	STATIC PETROLEUM MEASUREMENT	SWITZER	INTL	HAIGHT, WILLIAM C.	738	DELEGATE	12-78
	WG.01	NON-TRADITIONAL METHODS FOR TANK CALIBRATION						
	TC038	TEXTILES	CANADA	INTL	WINGER, JAMES H.	753	DELEGATE	1973
	SC.19	BURNING BEHAVIOR OF TEXTILES AND TEXTILE PRODUCTS						
	WG.02	APPAREL	AUSTRAL	INTL	WINGER, JAMES H.	753	DELEGATE	1973
	WG.03	FURNISHINGS						
			IA	INTL	WINGER, JAMES H.	753	DELEGATE	1973
			WEST	INTL	WINGER, JAMES H.	753	DELEGATE	1973
			GERMAN	INTL	WINGER, JAMES H.	753	DELEGATE	1973
			Y	INTL	WINGER, JAMES H.	753	DELEGATE	1973
	WG.04	BURNING BEHAVIOR OF INDUSTRIAL TEXTILES	ENGLAND	INTL	WINGER, JAMES H.	753	DELEGATE	9-79
	WG.05	FLOOR AND WALL COVERINGS						
	WG.06	RISK DATA ANALYSIS	FRANCE	INTL	WINGER, JAMES H.	753	DELEGATE	1973
	TC043	ACOUSTICS	US	INTL	WINGER, JAMES H.	753	DELEGATE	1973
	SC.01	NOISE						
	SC.02	BUILDING ACOUSTICS	DENMARK	INTL	YANIV, SIMONE L.	743	DELEGATE	7-79
	WG.05	RATING AND SOUND INSULATION FOR BUILDINGS						
			DIN	INTL	YANIV, SIMONE L.	743	DELEGATE	7-79
	TC048	LABORATORY GLASSWARE AND RELATED APPARATUS	GERMANY	INTL	TAYLOR, JOHN K.	550	DELEGATE	1965
	SC.01	VOLUMETRIC GLASSWARE						
	TC057	METROLOGY AND PROPERTIES OF SURFACES	GERMANY	INTL	TAYLOR, JOHN K.	550	DELEGATE	1965
	SC.02	ROUGHNESS COMPARISON SPECIMENS AND DEVICES						
			FOR CALIBRATION OF INSTRUMENTS	INTL	TAYLOR, JOHN K.	550	DELEGATE	1965
	WG.01	CALIBRATION SPECIMENS	UNITED	INTL	TAYLOR, JOHN K.	550	DELEGATE	1965
			KINGDO	INTL	TAYLOR, JOHN K.	550	DELEGATE	1965
			M	INTL	TAYLOR, JOHN K.	550	DELEGATE	1965
	TC085	NUCLEAR ENERGY	US	INTL	GOLDMAN, DAVID T.	500	DELEGATE	1-69
	SC.01	TERMINOLOGY, DEFINITIONS, UNITS, AND SYMBOLS						
	WG.01	DEFINITIONS	US	INTL	MCLAUGHLIN, WILLIAM L.	533	TECHNICAL ADVISOR	7-68
	SC.02	RADIATION PROTECTION	DIN	INTL	EHRlich, MARGARETE	533	DELEGATE	1-76
	WG.02	PHOTOGRAPHIC DOSIMETERS AND REFERENCE RADIATION						
	WG.03	NEUTRON REFERENCE RADIATIONS	US	INTL	SCHWARTZ, ROBERT B.	532	DELEGATE	9-77
	SC.04	RADIOACTIVE SOURCES						
	TC092	FIRE TESTS ON BUILDING MATERIALS, COMPONENTS AND STRUCTURES	POLAND	INTL	EISENHOWER, ELMER H.	530	DELEGATE	10-74
	SC.01	REACTION TO FIRE	BSI	INTL	BENJAMIN, IRWIN A.	752	DELEGATE	1967
	WG.02	COMBUSTIBILITY AND HEAT RELEASE						
					ROBERTSON, ALEXANDER F.	750	DELEGATE	1976

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRET- TARIAT	TYPE	NAME	DIV.	POSITION	OT. OF APPT.
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ISO	WG.04	IGNITABILITY, FLAME SPREAD AND SMOKE GENERATION	BSI	INTL	BENJAMIN, IRWIN A. ROBERTSON, ALEXANDER F.	752 750	DELEGATE DELEGATE	1967 1976
	SC.02	FIRE RESISTANCE						
	WG.03	FIRE RESISTANCE: DOORS, SHUTTERS AND GLAZED ELEMENTS	BSI	INTL	GROSS, DANIEL	750	DELEGATE	1974
	WG.11	FIRE RESISTANCE: GENERAL REQUIREMENTS	BSI	INTL	GROSS, DANIEL	750	DELEGATE	1974
	WG.14	VENTILLATION DUCTS	SWEDE	INTL	GROSS, DANIEL	750	DELEGATE	1976
	SC.03	TOXIC HAZARDS IN FIRE	GENEVA	INTL	BIRKY, WERRITT M.	752	DELEGATE	1-76
	WG.07	ADVISORY AND LIAISON	BSI	INTL	ROBERTSON, ALEXANDER F.	750	CONVENOR	11-75
	WG.10	MEASURING INSTRUMENTS	BSI	INTL	ROBERTSON, ALEXANDER F.	750	DELEGATE	11-75
	WG.13	EXTERNAL EXPOSURE OF ROOFS	BSI	INTL	ROBERTSON, ALEXANDER F.	750	DELEGATE	4-72
	TC097	COMPUTERS AND INFORMATION PROCESSING	AFNOR	INTL	GROSS, DANIEL	750	DELEGATE	1976
	SC.01	VOCABULARY	ANSI	INTL	WALKOWICZ, JOSEPHINE L.	642	DELEGATE	1968
	SC.02	CHARACTER SETS AND CODING	FRANCE	INTL	LITTLE, JOHN L.	652	DELEGATE	1975
	WG.04	CODED CHARACTER SETS FOR TEXT COMMUNICATION	NETHERL ANDS	INTL	LITTLE, JOHN L.	652	DELEGATE	1978
	WG.05	CODING OF CHARACTER SETS FOR MICR AND OCR	GERMANY	INTL	LITTLE, JOHN L.	652	DELEGATE	1979
	SC.05	PROGRAMMING LANGUAGES						
	-WG.01	INTERNATIONAL COBOL EXPERTS GROUP	US	INTL	VICKERS, MABEL V.	641	DELEGATE	11-77
	SC.14	REPRESENTATIONS OF DATA ELEMENTS	ANSI	INTL	WHITE, HARRY S., JR.	600	CHAIR	1970
	SC.16	OPEN SYSTEMS INTERCONNECTION	US	INTL	HEAFNER, JOHN F.	651	DELEGATE	1979
	WG.05	WORKING GROUP 5	US	INTL	HEAFNER, JOHN F.	651	DELEGATE	1979
	WG.06	WORKING GROUP 6	US	INTL	HEAFNER, JOHN F.	651	DELEGATE	1979
	TC106	DENTISTRY	ANSI	INTL	RUPP, NELSON W.	563	DELEGATE	1970
	-WG.01	COLOR STABILITY TEST	GREAT BRITAI	INTL	TESK, JOHN A.	563	DELEGATE	1980
	TC107	METALLIC AND OTHER NON-ORGANIC COATINGS	N					
	SC.01	TERMINOLOGY	ITALY	INTL	BRAUER, GERHARD M.	563	DELEGATE	1974
	SC.02	METHODS OF INSPECTION AND CO-ORDINATION OF TEST METHODS	SWITZER LAVO	INTL	OGBURN, FIELOING	561	DELEGATE	1973
	SC.03	ELECTRODEPOSITED COATINGS AND RELATED FINISHES	ITALY	INTL	OGBURN, FIELOING	561	DELEGATE	1974
	SC.07	CORROSION TESTS	UNITED KINGDO	INTL	OGBURN, FIELOING	561	DELEGATE	1973
	TC146	AIR QUALITY	M					
	SC.01	STATIONARY SOURCE EMISSIONS	POLAND	INTL	OGBURN, FIELOING	561	DELEGATE	1973
	SC.02	WORK PLACE ATMOSPHERES	GERMANY	INTL	TAYLOR, JOHN K.	550	DELEGATE	1972
	SC.03	AMBIENT ATMOSPHERES	US	INTL	TAYLOR, JOHN K.	550	DELEGATE	1972
	WG.08	DETERMINATION OF THE CONCENTRATION OF OZONE IN AIR	US	INTL	TAYLOR, JOHN K.	550	DELEGATE	1972
	SC.04	GENERAL ASPECTS	SWEDE	INTL	TAYLOR, JOHN K.	550	DELEGATE	1972
	TC147	WATER QUALITY	GERMANY	INTL	HODGESON, JIMMIE A.	553	CHAIR	12-77
	SC.02	PHYSICAL, CHEMICAL, AND BIOCHEMICAL METHODS	US	INTL	TAYLOR, JOHN K.	550	DELEGATE	1972
	TC154	DOCUMENTS AND DATA ELEMENTS IN ADMINISTRATION, COMMERCE, AND INDUSTRY	US SIS	INTL	TAYLOR, JOHN K.	550	DELEGATE	1972
					WHITE, HARRY S., JR.	600	DELEGATE	1974

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ISO	SC.03 TC156 WG.02	DATA ELEMENTS AND INTERCHANGE FORMATS CORROSION OF METALS AND ALLOYS STRESS CORROSION CRACKING	ANSI USSR UNITED KINGDOM	INTL INTL INTL	WHITE, HARRY S., JR. UGIANSKY, GILBERT M.	600 500	CHAIR DELEGATE	1974 1978
	TC158 SC.01	ANALYSIS OF GASES METHODS OF PREPARATION AND DEFINITION OF GAS MIXTURES FOR CALIBRATION	FRANCE FRANCE	INTL INTL	UGIANSKY, GILBERT M. HUGHES, ERNEST E.	500 553	DELEGATE DELEGATE	1978 12-75
	WG.01 WG.02 WG.03	TERMINOLOGY TRANSFER LINES AND SAMPLING EVALUATION OF THE CHARACTERISTICS OF ANALYZERS	ANSI SPAIN FRANCE	INTL INTL INTL	HUGHES, ERNEST E. HUGHES, ERNEST E. HUGHES, ERNEST E.	553 553 553	DELEGATE SEC DELEGATE	12-75 12-75 12-75
	WG.04	ANALYSIS OF NATURAL GASES	NETHERLANDS	INTL	HUGHES, ERNEST E.	553	DELEGATE	12-75
	WG.05 TC163	ANALYTICAL METHODS THERMAL INSULATION	FRANCE SWEDEN	INTL INTL	HUGHES, ERNEST E. HUGHES, ERNEST E.	553 553	DELEGATE DELEGATE	12-75 12-75
	SC.01 WG.06 SC.02 WG.02	TEST AND MEASUREMENT METHODS INTERNATIONAL ROUND ROBIN CALCULATION METHODS NON STEADY STATE	SWEDEN NORWAY GERMANY	INTL INTL INTL	POWELL, FRANK J. POWELL, FRANK J. POWELL, FRANK J.	790 790 790	CHAIR DELEGATE DELEGATE	1976 1976 1976
	TC171 WG.06 -C002	MICROGRAPHICS MICROGRAPHICS EQUIPMENT INTERNATIONAL COMMISSION ON RADIATION UNITS AND MEASUREMENT	ANSI ISR	INTL INTL	BAGG, THOMAS C.	652	CHAIR	10-74
ISR	-C002 -WG.01	CRYSTALLOGRAPHIC APPARATUS X-RAY ABSORPTION COEFFICIENTS	UNITED KINGDOM	INTL	CASWELL, RANDALL S.	532	SEC	1975
IUCR	-C002	INTERDISCIPLINARY COMMITTEE ON NOMENCLATURE AND SYMBOLS	UNITED KINGDOM	INTL	HURBELL, JOHN H.	533	SEC	6-78
IUPAC	001 C.01.1	PHYSICAL CHEMISTRY DIVISION PHYSICO-CHEMICAL SYMBOLS, TERMINOLOGY, AND UNITS	UNITED KINGDOM	INTL	LIDE, DAVID R., JR.	504	ASSOCIATE MEMBER	1976
	C.01.2	COMMISSION ON THERMODYNAMICS	UNITED KINGDOM	INTL	LIDE, DAVID R., JR.	504	CHAIR	1971
	-SC.01	EXPRESSION OF UNCERTAINTIES OF EXPERIMENTAL THERMODYNAMIC DATA	UNITED KINGDOM	INTL	ARMSTRONG, GEORGE T.	543	MEMBER	8-77
	-SC.02	THERMODYNAMIC TABLES	UNITED KINGDOM	INTL	ARMSTRONG, GEORGE T. HAAR, LESTER	543 544	MEMBER MEMBER	11-77 12-69
	C.01.5 -SC.01	MOLECULAR STRUCTURE AND SPECTROSCOPY NOTATIONS AND CONVENTIONS FOR MOLECULAR SPECTROSCOPY	IUPAC	INTL	WHITE, HOWARD J., JR.	504	SEC	9-73
	002	INORGANIC CHEMISTRY DIVISION	ENGLAND	INTL	HOUGEN, JON T. HORTON, WILLIAM S.	545 561	MEMBER MEMBER	11-79 1977

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IUPAC	C.02.1	ATOMIC WEIGHTS	IUPAC	INTL	MURPHY, THOMAS J.	551	MEMBER-TITU LAR	1-80
	-SC.01	ASSESSMENT OF ISOTOPIC ABUNDANCES	IUPAC	INTL	BARNES, I. L.	551	MEMBER	8-75
	C.02.2	NOMENCLATURE OF INORGANIC CHEMISTRY	IUPAC	INTL	COYLE, THOMAS D.	561	SEC	1977
	C.02.3	HIGH TEMPERATURES AND REFRACTORY MATERIALS	ENGLAND	INTL	HORTON, WILLIAM S.	561	MEMBER	1973
	-SC.01	CHARACTERIZATION AND TERMINOLOGY OF CARBON	ENGLAND	INTL	HORTON, WILLIAM S.	561	VICE CHAIR	8-78
	005	ANALYTICAL CHEMISTRY DIVISION	UNITED	INTL				
	C.05.5	ELECTROANALYTICAL CHEMISTRY	KINGDO M					
	C.05.8	SOLUBILITY DATA	UK	INTL	DURST, RICHARD A. GEVANTMAN, LEWIS H.	552 504	MEMBER SEC	1979 1979
IUPAC-I UB-IUP AB	-C002	INTERUNION COMMISSION ON BIOTHERMODYNAMICS	UNITED	INTL				
	-WG.01	KEY VALUES FOR BIOTHERMODYNAMICS	KINGDO M		ARMSTRONG, GEORGE T.	543	MEMBER	1975
	-WG.02	CLASSIFICATION AND CHARACTERIZATION OF CALORIMETERS	UNITED	INTL	ARMSTRONG, GEORGE T.	543	CHAIR	1977
	-WG.03	CLASSIFICATION OF CALORIMETRIC INSTRUMENTS	KINGDO M		ARMSTRONG, GEORGE T.	543	CHAIR	12-78
			UNITED	INTL	ARMSTRONG, GEORGE T.	543	CHAIR	12-78
JCPDS-I CDD	-C002	JCPDS-INTERNATIONAL CENTRE FOR DIFFRACTION DATA	JCPDS	NATL/I	BLOCK, STANLEY HUBBARD, CAMDEN R.	565 565	MEMBER MEMBER	1966 1-74
	-C.01	TECHNICAL COMMITTEE	JCPDS-I CDD	NATL/I	HUBBARD, CAMDEN R.	565	MEMBER	1-76
	-SC.01	EDUCATION SUBCOMMITTEE	JCPDS-I CDD	NATL/I	HUBBARD, CAMDEN R.	565	CHAIR	1-74
	-SC.02	COMPUTER DATA BASE	JCPDS-I CDD	NATL/I	HUBBARD, CAMDEN R.	565	MEMBER	1-74
	-WG.01	DATA BASE (AIDS)	JCPDS-I CDD	NATL/I	HUBBARD, CAMDEN R.	565	CHAIR	7-79
	-WG.02	CHEMICAL INFORMATION SYSTEM	JCPDS-I CDD	NATL/I	HUBBARD, CAMDEN R.	565	MEMBER	10-78
	-C.02	BOARD OF DIRECTORS	JCPDS-I CDD	NATL/I	HUBBARD, CAMDEN R.	565	MEMBER	3-80
	-SC.01	LONG RANGE PLANNING	JCPDS-I CDD	NATL/I	HUBBARD, CAMDEN R.	565	MEMBER	3-90
JEDEC	JC013.1	GOVERNMENT LIAISON FOR DISCRETE SEMICONDUCTOR DEVICES	EIA	NATL	OETTINGER, FRANK F.	721	TECHNICAL ADVISOR	1-75
	JC022	RECTIFIER DIODES AND THYRISTORS	EIA	NATL	OETTINGER, FRANK F.	721	TECHNICAL ADVISOR	11-70
	JC025	LOW FREQUENCY POWER TRANSISTORS	EIA	NATL	BLACKBURN, DAVID L.	721	MEMBER	6-76

PARENT ORG.	ACTIVITY NUMBER	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
JEDFC								
JPL	-C002	HYDROGEN LASER COMPARISON TEST FORMAL REVIEW BOARD	JPL	NATL	OETTINGER, FRANK F.	721	TECHNICAL ADVISOR	11-70
MPC	007	FRACTURE TOUGHNESS	MPC	NATL	BARNES, JAMES A.	524	TECHNICAL ADVISOR	2-80
NACE	-C002	UNDERGROUND CORROSION CONTROL	NACE	NATL	SMITH, JOHN H.	562	MEMBER	1-77
	T003	CORROSION SCIENCE AND TECHNOLOGY	NACE	NATL	ESCALANTE, EDWARD	561	MEMBER	1976
	SC-1	ELECTROCHEMICAL TECHNIQUES FOR CORROSION MEASUREMENT AND CONTROL	NACE	NATL	KRUGER, JEROME	561	MEMBER	1-66
NAS	-C008	ASTRONOMY SURVEY	NAS	NATL	IVERSON, WARREN P.	561	MEMBER	1975
NAS/ NRC	-WG.01	SOLAR PHYSICS	NAS	NATL	LINSKY, JEFFREY L.	525	MEMBER	5-79
	-C014	SPACE SCIENCE BOARD	NAS/ NRC	NATL	BENDER, PETER L.	525	MEMBER	7-77
	-SC.01	EARTH SCIENCES	NAS/ NRC	NATL	BENDER, PETER L.	525	MEMBER	7-77
	-SC.03	SPACE ASTRONOMY AND ASTROPHYSICS	NRC	NATL	LINSKY, JEFFREY L.	525	MEMBER	8-79
	-C018	FUNDAMENTAL CONSTANTS	NAS/ NRC	NATL	HALL, JOHN L.	525	MEMBER	1977
	-C020	US NATIONAL COMMITTEE FOR URSI	NAS/ NRC	NATL/I	ANDREWS, JAMES R.	724	MEMBER	12-74
	-SC.01	COMMISSION A: ELECTROMAGNETIC METROLOGY	NRC		NAHMAN, NORRIS S.	724	MEMBER	1966
NASA	-C008	APPLICATIONS STEERING COMMITTEE	NASA	NATL	MANNING, JOHN R.	564	MEMBER	11-78
	-SC.01	SUPPORTING RESEARCH AND TECHNOLOGY	NASA	NATL	HAMPSON, ROBERT F., JR.	542	MEMBER	10-76
	-C010	LABORATORY MEASUREMENT COMMITTEE OF THE NASA CHLOROFLUOROMETHANE ASSESSMENT PROGRAM	NASA		KURYLO, MICHAEL J., III	542	MEMBER	7-78
	-C012	SPACE AND TERRESTRIAL APPLICATIONS STEERING COMMITTEE	NASA	NATL	CORIELL, SAM R.	564	MEMBER	7-80
	-SC.01	PROPOSAL EVALUATION ADVISORY COMMITTEE	NASA					
NBS	-C008	FEDERAL INFORMATION PROCESSING STANDARDS COORDINATING AND ADVISORY COMMITTEE	NBS	NATL	VICKERS, MABEL V.	641	CHAIR	7-71
	WG.09	COBOL STANDARDS	NBS	NATL	LEONG-HONG, BELKIS W.	642	MEMBER	1-78
	WG.14	DOCUMENTATION FOR INFORMATION PROCESSING	NBS	NATL	LEONG-HONG, BELKIS W.	642	MEMBER	3-76
	WG.17	DATA ELEMENTS DICTIONARY/DIRECTORY	NBS	NATL	ROSENTHAL, ROBERT	650	MEMBER	6-75
	WG.20	USER-TERMINAL PROTOCOLS	NBS	NATL	VICKERS, MABEL V.	641	CHAIR	6-74
	-C018	FEDERAL COBOL INTERPRETATIONS	NBS	NATL/I	BRICKENKAMP, CARROLL S.	511	ALT REP	1976
	-C020	US ADVISORY COMMITTEE FOR OIML (ACILM)	NBS		EDGERLY, DAVID E.	513	SEC	1974
					MCCOUBREY, ARTHUR D.	510	CHAIR	1978
					THOLEN, ALBERT D.	511	MEMBER	1978
					WARNLOF, OTTO K.	511	TECHNICAL ADVISOR	1978
	-C022	INTERAGENCY POLICY COMMITTEE ON PERSONNEL RADIATION MONITORING TESTING	NBS	NATL	WOLLIN, HAROLD F.	511	ALT REP	3-78
					EISENHOWER, ELMER H.	530	CHAIR	4-79

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NBS	PS05 -WG.01	MEASUREMENT OF VOLUMES OF LIQUIDS USNWG FOR OIML/PS5, MEASUREMENT OF VOLUMES OF LIQUIDS	NBS	NATL/I	WARNLOF, OTTO K.	511	MEMBER	1975
	PS07 -WG.01	MEASUREMENT OF MASS USNWG FOR OIML/PS7, MEASUREMENT OF MASS	NBS	NATL/I	OPPERMANN, HENRY V.	511	MEMBER	1977
	FS1 -WG.01	TERMINOLOGY USNWG FOR OIML/PS7/RS1, TERMINOLOGY	NBS	NATL/I	WARNLOF, OTTO K.	511	MEMBER	1977
	RS2 -WG.01	MASS MEASUREMENT GENERAL QUESTIONS USNWG FOR OIML/PS7/RS2, MASS MEASUREMENT GENERAL QUESTIONS	NBS	NATL/I	WARNLOF, OTTO K.	511	MEMBER	1977
	FS7 -WG.01	IN SERVICE CONTROL PROCEDURES USNWG FOR OIML/PS7/RS7, IN SERVICE CONTROL PROCEDURES	NBS	NATL/I	OPPERMANN, HENRY V. WARNLOF, OTTO K.	511	SEC	12-77 1975
	RS8 -WG.01	LOAD CELLS USNWG FOR OIML/PS7/RS8, LOAD CELLS	NBS	NATL/I	EDGERLY, DAVID E. WARNLOF, OTTO K.	513	SEC	1976 1977
	PS12	MEASUREMENT OF TEMPERATURE AND CALORIFIC ENERGY						
	RS4 -WG.01	ELECTRICAL THERMISTOR THERMOMETERS USNWG FOR OIML/PS12/RS4, ELECTRICAL THERMISTOR THERMOMETERS	NBS	NATL/I	MANGUM, B. W.	522	MEMBER	10-75
	PS13	MEASUREMENT OF ELECTRICAL AND MAGNETIC QUANTITIES						
	-WG.01	USNWG FOR OIML/PS13, MEASUREMENT OF ELECTRICAL AND MAGNETIC QUANTITIES	NBS	NATL/I	BELECKI, NORMAN B.	521	MEMBER	11-74
	PS19	MEASUREMENT OF THE CHARACTERISTICS OF MATERIALS						
	RS2 -WG.01	MACHINES FOR TESTING MATERIALS USNWG FOR OIML/PS19/RS2, MACHINES FOR TESTING MATERIALS	NBS	NATL/I	EDGERLY, DAVID E.	513	SEC	1976
	RS5 -WG.01	STRAIN GAUGES USNWG FOR OIML/PS19/RS5, STRAIN GAUGES	NBS	NATL/I	PHUCAS, CHARLES B.	110	MANAGER	1975
	PS22 RS3	PRINCIPLES OF METROLOGICAL CONTROL PRINCIPLES ON WHICH PATTERN EVALUATION WILL BE CONDUCTED						
	-WG.01	USNWG FOR OIML/PS22/RS3, PRINCIPLES ON WHICH PATTERN EVALUATION WILL BE CONDUCTED	NBS	NATL/I	EDGERLY, DAVID E.	513	CHAIR	1976
	FS4	PRINCIPLES FOR INITIAL AND SUBSEQUENT VERIFICATION AND CALIBRATION OF INSTRUMENTS						
	-WG.01	USNWG FOR OIML/PS22/RS4, PRINCIPLES FOR VERIFICATION AND CALIBRATION OF INSTRUMENTS	NBS	NATL/I	EDGERLY, DAVID E.	513	CHAIR	1976
	FS6	PRINCIPLES OF ASSURANCE OF METROLOGICAL CONTROL						
	-WG.01	PRINCIPLES OF ASSURANCE OF METROLOGICAL CONTROL	NBS	NATL/I	BELANGER, BRIAN C.	512	CHAIR	9-77

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NBS	PS27	GENERAL PRINCIPLES FOR THE USE OF REFERENCE MATERIALS IN LEGAL METROLOGY	NBS	NATL/I	URIANO, GEORGE A.	503	CHAIR	1976
	RS2	CLASSIFICATION OF REFERENCE MATERIALS	NCCLS	NATL	SCHAFER, ROBERT	552	MEMBER	1-74
	-WG.01	USNWG FOR OIML/PS27/RS2, CLASSIFICATION OF REFERENCE MATERIALS	NCCLS	NATL	MANGUM, B. W.	522	MEMBER	1976
	-C002	AREA COMMITTEE ON CLINICAL CHEMISTRY	US	NATL	MANDEL, JOHN	500	MEMBER	1974
	-SC.01	ENZYME ASSAY CONDITION	NCCLS	NATL	SCHAFER, ROBERT	552	MEMBER	1-73
	-WG.01	TEMPERATURE MEASUREMENT AND CONTROL	US	NATL	REEDER, DENNIS J.	552	MEMBER	11-75
	-SC.02	CONTROL MATERIALS	NCCLS	NATL	DURST, RICHARD A.	552	MEMBER	1975
	-SC.03	QUANTITIES AND UNITS	NCCLS	NATL	REEDER, DENNIS J.	552	CHAIR	12-78
	-SC.04	TOTAL PROTEIN	NCCLS	NATL	MANGUM, B. W.	522	SEC	1974
	-SC.05	PH AND BLOOD GASES	NCCLS	NATL	DURST, RICHARD A.	552	MEMBER	1979
	-SC.06	SPECIFIC PLASMA PROTEINS	US	NATL	URIANO, GEORGE A.	503	MEMBER	6-78
	-C010	AREA COMMITTEE ON INSTRUMENTATION						
	-SC.01	TEMPERATURE	NCCLS	NATL				
	-SC.02	ELECTROANALYTICAL CHEMISTRY	NCCLS	NATL				
	-C012	NOMENCLATURE AND DEFINITIONS	US	NATL				
	-C014	NATIONAL REFERENCE SYSTEM IN CLINICAL CHEMISTRY						
	-SC.01	NOMENCLATURE AND DEFINITIONS	NCCLS	NATL	SCHAFER, ROBERT	552	MEMBER	3-78
	-C016	NATIONAL COMMITTEE FOR CLINICAL LABORATORY STANDARDS	NCCLS	NATL	HERTZ, HARRY S.	552	MEMBER	9-79
NCRP	-C002	NATIONAL COUNCIL ON RADIATION PROTECTION AND MEASUREMENTS	NCRP	NATL				
	-C.01	BOARD OF DIRECTORS	NCRP	NATL	CASWELL, RANDALL S.	532	MEMBER	1967
	SC.52	CONCEPTUAL BASIS OF CALCULATIONS OF DOSE DISTRIBUTIONS	NCRP	NATL	SPENCER, LEWIS V.	533	MEMBER	1978
	SC.63	RADIATION EXPOSURE CONTROL FOLLOWING A NUCLEAR EMERGENCY	NCRP	NATL	CASWELL, RANDALL S.	532	MEMBER	1976
	-C006	AD HOC COMMITTEE ON SI UNITS	NCRP	NATL	SPENCER, LEWIS V.	533	MEMBER	1980
	018A	STANDARDS AND MEASUREMENT OF RADIOACTIVITY FOR RADIOLOGICAL USE	US	NATL	CASWELL, RANDALL S.	532	CHAIR	1980
NCS	026	HIGH-ENERGY X-RAY DOSIMETRY	NCRP	NATL	MANN, WILFRID B.	532	CHAIR	8-72
	-C002	FEDERAL TELECOMMUNICATION STANDARDS COMMITTEE	NCS	NATL	LOEVINGER, ROBERT	533	MEMBER	1970
	-C002	MEASUREMENT ASSURANCE	NBS	NATL	GRUBB, DANA S.	652	ALT REP	12-79
	-C002	SPECIFICATIONS AND TOLERANCE	NBS	NATL	MOORE, RAYMOND T.	652	MEMBER	12-78
	-C004	LAWS AND REGULATIONS	NBS	NATL	BELANGER, BRIAN C.	512	MEMBER	1977
	-C006	SPECIFICATIONS AND TOLERANCE	NBS	NATL	BELECKI, NORMAN B.	521	MEMBER	1975
	-C006	AIR CONDITIONING	NBS	NATL	WARNLOF, OTTO K.	511	TECHNICAL ADVISOR	1967
	-C018	BUILDING CONSTRUCTION	NBS	NATL	VADELUND, ERIC A.	760	STAFF	3-79
	-SC.01	PLASTICS IN BUILDING CONSTRUCTION	NBS	NATL				
NFPA	-C006	SPECIFICATIONS AND TOLERANCE	NBS	NATL	WOLLIN, HAROLD F.	511	SEC	1967
	-C002	AIR CONDITIONING	NFPA	NATL	WOLLIN, HAROLD F.	511	SEC	1967
	-C006	AUTOMATIC SPRINKLERS	NFPA	NATL	BENJAMIN, IRWIN A.	752	MEMBER	1973
	-C018	BUILDING CONSTRUCTION	NFPA	NATL	CUSTER, RICHARD L. P.	753	ALT REP	6-74
	-SC.01	PLASTICS IN BUILDING CONSTRUCTION	NFPA	NATL	O'NEILL, JOHN G.	752	MEMBER	10-77
	-SC.01	PLASTICS IN BUILDING CONSTRUCTION	NFPA	NATL	NELSON, HAROLD E.	752	CHAIR	1973
	-SC.01	PLASTICS IN BUILDING CONSTRUCTION	NFPA	NATL	DAVIS, SANFORD	753	CHAIR	3-80

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NFPA	-C020	CHIMNEYS AND OTHER HEAT AND VAPOR REMOVAL EQUIPMENT	NFPA	NATL	PEACOCK, RICHARD D.	753	MEMBER	9-78
	-SC.01	CHIMNEYS, FIREPLACES, AND VENTING SYSTEMS FOR HEAT PRODUCING APPLIANCES	NFPA	NATL	BUCHBINDER, BENJAMIN	752	ALT REP	1-80
	-C030	DWELLING FIRE PREVENTION AND PROTECTION	NFPA	NATL	BRIGHT, RICHARD G.	751	MEMBER	1974
	-C048	FIRE DEPARTMENT EQUIPMENT	NFPA	NATL	VOGEL, BERTRAM M.	752	MEMBER	4-77
	-SC.03	FIRE DETECTION EQUIPMENT	NFPA	NATL	BUCHBINDER, BENJAMIN	752	MEMBER	1-75
	-C052	FIRE DOORS AND WINDOWS	NFPA	NATL	GOMBERG, ALAN	752	ALT REP	1-79
	-C064	FIRE REPORTING	NFPA	NATL	BENJAMIN, IRWIN A.	752	MEMBER	1973
	-C080	FIRE TESTS	NFPA	NATL	DAVIS, SANFORD	753	MEMBER	6-75
	-SC.03	INTERIOR FURNISHINGS	NFPA	NATL	ROBERTSON, ALEXANDER F.	750	MEMBER	1974
	-WG.01	SMOKE AND HEAT RELEASE	NFPA	NATL	DAVIS, SANFORD	753	MEMBER	6-76
	-CI42	RAIL RAPID TRANSIT SYSTEMS	NFPA	NATL	NELSON, HAROLD E.	752	MEMBER	1959
	-CI44	RECORD PROTECTION	NFPA	NATL	BENJAMIN, IRWIN A.	752	MEMBER	1973
	-CI46	SAFETY TO LIFE	NFPA	NATL	NELSON, HAROLD E.	752	MEMBER	8-75
	-SC.03	HEALTH CARE OCCUPANCIES	NFPA	NATL	BENJAMIN, IRWIN A.	752	CHAIR	1980
	-SC.04	RESIDENTIAL OCCUPANCIES	NFPA	NATL	VOGEL, BERTRAM M.	752	SEC	11-76
	-SC.05	MEANS OF EGRESS	NFPA	NATL	MORDFIN, LEONARD	501	MEMBER	3-78
			NFPA	NATL	VOGEL, BERTRAM M.	752	MEMBER	10-79
	-C150	SIGNALING SYSTEMS	NFPA	NATL	BUKOWSKI, RICHARD W.	752	MEMBER	4-76
	-SC.02	DETECTION DEVICES	NFPA	NATL	BUKOWSKI, RICHARD W.	752	MEMBER	4-76
	-SC.02.1	SMOKE DETECTORS (CHAPTER 4)	NFPA	NATL	BUKOWSKI, RICHARD W.	752	MEMBER	4-76
	-SC.02.2	GAS DETECTORS (CHAPTER 6)	NFPA	NATL	BRIGHT, RICHARD G.	751	CHAIR	1973
	-SC.03	HOUSEHOLD FIRE WARNING EQUIPMENT	NFPA	NATL	BUKOWSKI, RICHARD W.	752	MEMBER	6-76
	-SC.04	PROTECTIVE SIGNALING SYSTEMS	NFPA	NATL	BRUN, EMIL	753	MEMBER	7-80
	-CI54	STATIC ELECTRICITY	NFPA	NATL	LYONS, JOHN W.	700	MEMBER	5-78
	-CI56	BOARD OF DIRECTORS	NFPA	NATL	HUGGETT, CLAYTON	750	MEMBER	9-79
	-CI60	STANDARDS COUNCIL	NFPA	NATL				
	-CI64	PROTECTION EQUIPMENT FOR FIREFIGHTERS	NFPA	NATL	CALVANO, NICHOLAS J.	763	MEMBER	6-76
	-SC.01	FIREFIGHTER HEAD PROTECTION	NFPA	NATL	WINGER, JAMES H.	753	MEMBER	10-77
	-CI66	MINING FACILITIES	NFPA	NATL	NELSON, HAROLD E.	752	MEMBER	1973
	-CI80	APPLICATION OF SYSTEMS CONCEPTS TO STRUCTURES	NFPA	NATL	LERNER, NEIL D.	743	ALT REP	8-80
	-CI82	FIRE SAFETY SYMBOLS	NFPA	NATL	PIERMAN, BRIAN C.	743	CHAIR	9-78
	-SC.01	VISUAL ALERTING SYMBOLS	NFPA	NATL	COLLINS, BELINDA L.	743	ALT REP	11-79
			NFPA	NATL	LERNER, NEIL D.	743	CHAIR	8-90
	-SC.02	GRAPHIC DISPLAY SYMBOLS	NFPA	NATL	PIERMAN, BRIAN C.	743	CHAIR	9-78
	-CI84	FIRE SAFETY FOR MANUFACTURED BUILDINGS	NFPA	NATL	STAHL, FRED I.	743	CHAIR	11-80
NMAB	-C002	ASSESSMENT OF CURRENT HG CD TE PRODUCTION TECHNOLOGY	NMAB	NATL	KLEIN, DAVID P.	753	MEMBER	8-79
					BULLIS, W. MURRAY	721	LIAISON REPRESENTATIVE	12-79
	-C004	ASSESSMENT OF THE IMPACT OF THE DOD VERY HIGH SPEED INTEGRATED CIRCUITS (VHSIC)	NMAB	NATL	BULLIS, W. MURRAY	721	LIAISON REPRESENTATIVE	4-80

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NMAB	-C006	PREPARATION OF ULTRA-HIGH PURITY, LOW-BORON SILICON	NMAB	NATL	BULLIS, W. MURRAY	721	LIAISON REPRESENTATIVE	8-78
NRAO	-C002	USER'S COMMITTEE	NRAO	NATL	JOHNSON, DONALD R.	500	MEMBER	1975
NRC	-C006	VISION	NRC	NATL	HOWETT, GERALD L.	743	MEMBER	7-73
	RG.41	PROCEDURES FOR TESTING COLOR VISION	NRC	NATL	READER, JOSEPH	531	MEMBER	9-74
	-C008	LINE SPECTRA OF THE ELEMENTS	NAS	NATL/I	TAYLOR, BARRY N.	521	MEMBER	1-69
	-C010	ADVISORY COMMITTEE ON FUNDAMENTAL CONSTANTS OF THE NUMERICAL DATA ADVISORY BOARD	NRC	NATL	BENDER, PETER L.	525	MEMBER	5-78
	-C014	SPACE SCIENCE BOARD	NRC	NATL	THOMSON, ROBB M.	560	SFC	1976
	-SC.02	AD HOC COMMITTEE ON GRAVITATIONAL PHYSICS	BRAB	NATL	FAISON, THOMAS K.	745	MEMBER	6-80
	-C016	SOLID STATE SCIENCES	BRAB	NATL	GLASS, ROBERT A.	743	VICE CHAIR	9-77
	-C018	FEDERAL CONSTRUCTION COUNCIL	BRAB	NATL	O'NEILL, JOHN G.	752	MEMBER	9-77
	-C.01	STANDING COMMITTEE ON ELECTRICAL ENGINEERING	BRAB	NATL	LEYENDECKER, EDGAR V.	741	MEMBER	1978
	-C.02	STANDING COMMITTEE ON SIGNS AND SYMBOLS	NSF	NATL	TAYLOR, BARRY N.	521	MEMBER	11-76
	-C.03	STANDING COMMITTEE ON FIRE PROTECTION AND SAFETY ENGINEERING	BIML	INTL	MCCOURREY, ARTHUR O.	510	DELEGATE	1978
	-C.04	STANDING COMMITTEE ON STRUCTURAL ENGINEERING	US	INTL	WANN, DOUGLAS B.	773	VICE CHAIR	1977
NSF	-C002	ATOMIC AND MOLECULAR PHYSICS GROUP	US	INTL	WARNLOF, OTTO K.	511	TECHNICAL ADVISOR	1977
OML	CIML	INTERNATIONAL COMMITTEE OF LEGAL METROLOGY	WEST	INTL	SCHODLEY, JAMES F.	522	DELEGATE	1976
	PS05	MEASUREMENT OF VOLUMES OF LIQUIDS	Y	INTL	TAYLOR, BARRY N.	521	TECHNICAL ADVISOR	9-77
	RS.15	METERS AND MEASURING SYSTEMS FOR CRYOGENIC LIQUIDS	US	INTL	BELECKI, NORMAN B.	521	DELEGATE	11-74
	PS07	MEASUREMENT OF MASS	US	INTL	TAYLOR, BARRY N.	521	TECHNICAL ADVISOR	11-74
	FS12	MEASUREMENT OF TEMPERATURE AND CALORIFIC ENERGY	WEST	INTL	LOEVINGER, ROBERT	533	MEMBER	1976
	PS13	MEASUREMENT OF ELECTRICAL AND MAGNETIC QUANTITIES	Y	INTL	LOEVINGER, ROBERT	533	MEMBER	1976
	FS.01	INTL COMPATIBILITY OF NATIONAL PRIMARY STANDARDS USED FOR INSTRUMENT VERIFICATION	US	INTL	BRICKENKAMP, CARROLL S.	511	TECHNICAL ADVISOR	1976
	PS16	IONIZING RADIATIONS	SWITZER	INTL	FELDMAN, ALBERT	565	MEMBER	11-80
	RS.01	DOSIMETERS AND PROTECTIVE INSTRUMENTS	LAND	INTL				
	RS.02	SECONDARY STANDARD DOSIMETRY LABORATORIES	HUNGARY	INTL				
	PS18	MEASUREMENT OF CHARACTERISTICS OF FOOD PRODUCTS	FRANCE	INTL				
	RS.01	INSTRUMENTS FOR MEASURING THE MOISTURE CONTENT OF CEREAL GRAINS AND OILSEEDS	OSA	NATL				
OSA	-C004	STANDARDS	OSA	NATL				

PARENT ORG.	ACTIVITY NUMBR	ACTIVITY NAME	SECRETARY	TYPE	NAME	DIV.	POSITION HELD	DT. OF APPT.
USNC/ CIE	-C.01	EXECUTIVE COMMITTEE	USNC/ CIE	NATL/I	MIELENZ, KLAUS D.	500	MEMBER	1976
	TC01.2	PHOTOMETRY AND RADIOMETRY	USNC/ EXEC COMM	NATL/I	NICODEMUS, FRED E.	534	MEMBER-AT-L ARGE SEC	2-78
					TECH, JACK L.	534	SEC	1-76
					TECH, JACK L.	534	SEC	1-76
	TC01.3	COLORIMETRY	USNC/ CIE	NATL/I	KOSTKOWSKI, HENRY J.	534	MEMBER	2-74
					TECH, JACK L.	534	MEMBER	1977
	TC01.4	PHOTOPIC, MESOPIC, AND SCOTOPIC VISION	CIE	NATL/I	HOWETT, GERALD L.	743	MEMBER	6-74
	TC01.6	FUNDAMENTALS OF VISUAL SIGNALLING	CANADA US	NATL/I	BOOKER, ROBERT L.	534	MEMBER	1-78
					BOOKER, ROBERT L.	534	SEC	11-70
					GLASS, ROBERT A.	743	MEMBER	1979
					NICODEMUS, FRED E.	534	MEMBER	1972
	TC02.2	DETECTORS AND PHOTOMETRIC INSTRUMENTS	USNC/ CIE	NATL/I	ZALEWSKI, EDWARD F.	534	CHAIR	1976
	TC02.3	METHODS OF MEASURING PHOTOMETRIC CHARACTERISTICS OF MATERIALS	USNC/ CIE	NATL/I	HSTA, JACK J.	534	MEMBER	1977
					MIELENZ, KLAUS D.	500	MEMBER	1976
	TC03.2	COLOUR RENDERING	USNC/ CIE	NATL/I	SHUMAKER, JOHN B.	534	MEMBER	2-77
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USNC/ ICUMSA	005	HUNDRED DEGREE POINT OF SACCCHARIMETER SCALE	USNC/ ICUMSA	NATL/I	COXON, BRUCE	552	REFEREE	1970
					CUMMINGS, ARTHUR L.	561	ASSOCIATE REFEREE	5-76
USNC/ IEC	006	QUARTZ CCNTRCL PLATES	USNC/ ICUMSA	NATL/I	CUMMINGS, ARTHUR L.	561	REFEREE	1-79
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	CCIR SC.07	CONSULTATIVE COMMITTEE ON INTERNATIONAL RADIO STANDARD FREQUENCIES AND TIME SIGNALS	NASA	NATL/I	ALLAN, DAVID W.	524	MEMBER	1966
					BARNES, JAMES A.	524	MEMBER	1968
					BEEHLER, ROGER E.	524	MEMBER	1970
	WG.04	IMPROVED TIME COORDINATION VIA SATELLITE	NBS	NATL/I	BEEHLER, ROGER E.	524	CHAIR	2-78
USPC	-C002	UNITED STATES PHARMACOPOLITICAL CONVENTION	USPC	NATL	RASBERRY, STANLEY D.	503	DELEGATE	4-80
	-C004	COMMITTEE OF REVISION						
	-SC.01	RADIOPHARMACEUTICALS						
	-WG.01	ADVISORY PANEL ON RADIOPHARMACEUTICALS						
WRC	-C002	PRESSURE VESSEL RESEARCH COMMITTEE	USPC WRC	NATL NATL	AYRES, ROBERT L.	532	MEMBER	9-80
					INTRERRANTE, CHARLES G.	562	MEMBER	1971

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WRC	-C.01	MATERIALS DIVISION	WRC	NATL	INTERRANTE, CHARLES G.	562	MEMBER	1965
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	-SC.01	LINE PIPE STEELS	WRC	NATL	KASEN, MAURICE B.	562	MEMBER	1977
	-WG.01	FIELD WELDING						

Acronyms

AA	Aluminum Association	API	American Petroleum Institute
AAAS	American Association for the Advancement of Science	APS	American Physical Society
AACC	American Association of Clinical Chemistry	ARBA	American Road Builders' Association
AAMA	Architectural Aluminum Manufacturers Association	ARMA	Asphalt Roofing Manufacturers' Association
AAMI	Association for the Advancement of Medical Instrumentation	ARPA	Advanced Research Projects Agency
AAMVA	American Association of Motor Vehicle Administrators	ARTBA	American Road and Transportation Builders Association
AAPM	American Association of Physicists in Medicine	ASA	Acoustical Society of America
AASHTO	American Association of State Highway and Transportation Officials	ASCE	American Society of Civil Engineers
AATCC	American Association of Textile Chemists and Colorists	ASEE	American Society for Engineering Education
ABA	American Bankers Association	ASHRAE	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ACI	American Concrete Institute	ASIS	American Society for Industrial Security
ACIL	American Council of Independent Laboratories	ASLE	American Society of Lubrication Engineers
ACS	American Chemical Society	ASM	American Society for Metals
ADA	American Dental Association	ASME	American Society of Mechanical Engineers
ADISP	Automated Data Interchange Systems Panel	ASNT	American Society for Nondestructive Testing
AECL	Atomic Energy of Canada, Limited	ASQC	American Society for Quality Control
AF	Air Force, U.S.	ASSE	American Society of Sanitary Engineering
AFML	Air Force Materials Laboratory	ASTM	American Society for Testing and Materials
AFNOR	French Association of Standardization	AVS	American Vacuum Society
AFOSR	Air Force Office of Scientific Research	BIML	International Bureau of Legal Metrology
AGA	American Gas Association	BIPM	International Bureau of Weights and Measures
AGS	American Gem Society	BMD	Ballistic Missile Defense
AHEA	American Home Economics Association	BMDATC	Ballistic Missile Defense Advanced Technology Center
AI	Asphalt Institute	BRAB	Building Research Advisory Board
AIA	American Institute of Architects	BRH	Bureau of Radiological Health, FDA
AICHE	American Institute of Chemical Engineers	BRL	Bendix Research Laboratory
AIF	Atomic Industrial Forum	BSI	British Standards Institution
AIIE	American Institute of Industrial Engineers	CAC	Center for Analytical Chemistry, NBS
AIIME	American Institute of Mining, Metallurgical, and Petroleum Engineers	CAP	College of American Pathologists
AIRAPT	International Association for the Advancement of High Pressure Science and Technology	CAPO	Center for Absolute Physical Quantities, NBS
ALSC	American Lumber Standards Committee	CAS	Chemical Abstracts Service
AMS	American Meteorological Society	CBEMA	Computer and Business Equipment Manufacturers Association
ANMC	American National Metric Council	CCIR	International Radio Consultative Committee
ANS	American Nuclear Society	CCITT	International Telephone and Telegraph Consultative Committee
ANSI	American National Standards Institute	CEQ	Council on Environmental Quality
AOAC	Association of Official Analytical Chemists	CGA	Compressed Gas Association
APHA	American Public Health Association	CGPM	General Conference on Weights and Measures
		CIB	International Council for Building Research, Studies and Documentation

CIE	International Commission on Illumination	HIMA	Health Industry Manufacturers Association
CIPM	International Committee on Weights and Measures	HPS	Health Physics Society
CMG	Color Marketing Group	HUD	Department of Housing and Urban Development, U.S.
CMS	Center for Materials Science, NBS	IAAHWGND	Intergovernment Agency Ad Hoc Working Group on Nondestructive Evaluation
CNLIA	Council of National Library and Information Associations	IABSE	International Association for Bridge and Structural Engineering
CODASYL	Conference on Data Systems Languages	IACCD	Interagency Advisory Committee on Center Data
CODATA	Committee on Data for Science and Technology	IAEA	International Atomic Energy Agency
CPSC	Consumer Product Safety Commission	IAHPR	International Association on High Pressure Research
CRR	Center for Radiation Research, NBS	IAPS	International Association for the Properties of Steam
CS	Coblentz Society	IAU	International Astronomical Union
CTMS	Center for Thermodynamics and Molecular Science, NBS	ICAO	International Civil Aviation Organization
CTS	Collaborative Testing Services, Inc.	ICG	International Commission on Glass
DARPA	Defense Advanced Research Projects Agency	ICNW	Interagency Committee on Net Weights
DBMS	Data Base Management System	ICRU	International Commission on Radiological Units and Measurements
DIN	German Institute for Standardization	ICSU	International Council of Scientific Unions
DNA	Defense Nuclear Agency	ICTA	International Confederation for Thermal Analysis
DOC	Department of Commerce, U.S.	ICUMSA	International Commission for Uniform Methods of Sugar Analysis
DOD	Department of Defense, U.S.	IEC	International Electrotechnical Commission
DOE	Department of Energy, U.S.	IEEE	Institute of Electrical and Electronics Engineers
DOI	Department of the Interior, U.S.	IERI	Illuminating Engineering Research Institute
DOJ	Department of Justice, U.S.		Illuminating Engineering Society
DOL	Department of Labor, U.S.	IFCC	International Federation of Clinical Chemistry
DOT	Department of Transportation, U.S.	IIA	Institute of Internal Auditors
EIA	Electronic Industries Association	IIW	International Institute of Welding
EPA	Environmental Protection Agency	IMCO	Inter-Governmental Maritime Consultative Organization
EPRI	Electric Power Research Institute	IMEKO	International Measurement Confederation
ETPC	European Thermophysical Properties Committee	INMM	Institute of Nuclear Materials Management
FAA	Federal Aviation Administration	ISA	Instrument Society of America
FCC	Federal Construction Council	ISCC	Inter-Society Color Council
FCST	Federal Council for Science and Technology	ISO	International Organization for Standardization
FDA	Food and Drug Administration	ISONET	International Organization for Standardization Information Network
FEMA	Federal Emergency Management Agency	ISR	International Society of Radiology
FHWA	Federal Highway Administration	ITU	International Telecommunications Union
FIPS	Federal Information Processing Standards	IUB	International Union of Biochemistry
FPA	Federal Preparedness Agency		
FRA	Federal Railroad Administration		
GIDEP	Government-Industry Data Exchange Program		
GSA	General Services Administration		
GWI	Grinding Wheel Institute		
HHS	Department of Human and Health Services		

IUCR	International Union of Crystallography	NRC	National Research Council
IUPAB	International Union of Pure and Applied Biophysics	NRCA	National Roofing Contractors Association
IUPAC	International Union of Pure and Applied Chemistry	NSC	National Safety Council
JCP	Joint Committee on Printing	NSF	National Science Foundation
JCPCS- ICDD	Joint Committee on Powder Diffraction Standards-International Centre for Diffraction Data	NSRDS	National Standards Reference Data System
JEDEC	Joint Electron Devices Engineering Council	OD	Office of the Director, NBS
JPL	Jet Propulsion Laboratory	OEM	Office of Environmental Measurements, NBS
LEAA	Law Enforcement Assistance Administration	OHMO	Office of Hazardous Materials Operations, DOT
MIT	Massachusetts Institute of Technology	OIML	International Organization of Legal Metrology
MPC	Metal Properties Council	ORSA	Operations Research Society of America
NACE	National Association of Corrosion Engineers	OSA	Optical Society of America
NAPM	National Association of Photographic Manufacturers	OSHA	Occupational Safety and Health Administration
NAS	National Academy of Sciences	OSRM	Office of Standard Reference Materials, NBS
NAS/NRC	National Academy of Sciences/National Research Council	OWM	Office of Weights and Measures, NBS
NASA	National Aeronautics and Space Administration	PCEH	President's Committee on Employment of Handicapped
NBS	National Bureau of Standards	PCI	Prestressed Concrete Institute
NCCLS	National Committee for Clinical Laboratory Standards	PHS	Public Health Service
NCI	National Cancer Institute	PSI	Polish Standards Institute
NCRP	National Council on Radiation Protection and Measurements	RILEM	International Union of Testing and Research Laboratories for Materials and Structures
NCS	National Communications Systems	RTCA	Radio Technical Commission for Aeronautics
NCSL	National Conference of Standards Laboratories	SAE	Society of Automotive Engineers
NCWM	National Conference on Weights and Measures	SAMA	Scientific Apparatus Makers Association
NEMA	National Electrical Manufacturers Association	SAMI	Standards Assistance and Management Information
NES	National Easter Seal	SEMI	Semiconductor Equipment and Materials Institute
NFPA	National Fire Protection Association	SERI	Solar Energy Research Institute
NIH	National Institutes of Health	SESA	Society for Experimental Stress Analysis
NIJ	National Institute of Justice	SFPE	Society of Fire Protection Engineers
NIOSH	National Institute for Occupational Safety and Health (HHS)	SIS	Swedish Standardization Institute
NMA	National Micrographics Association	SME	Society of Manufacturing Engineers
NMAB	National Materials Advisory Board	SNM	Society of Nuclear Medicine
NNDC	National Nuclear Data Center	SPARC	Standards Planning and Requirements Committee
NOJC	National Oil Jobbers Council	SSPC	Steel Structures Painting Council
NPCA	National Paint and Coatings Association	SSS	System Safety Society
NPS	National Park Service	TAPPI	Technical Association of the Pulp and Paper Industry
NRAO	National Radio Astronomy Observatory	TCA	Tile Council of America
		TG	The Telephone Group
		TRB	Transportation Research Board
		UL	Underwriters Laboratories, Inc.

UN	United Nations
URSI	International Union of Radio Science
USCC	U.S. Calorimetry Conference
USCG	U.S. Coast Guard
USFA	U.S. Fire Administration
USFG	U.S. Forest Service
USGS	U.S. Geological Survey
USNC/CIE	U.S. National Committee/International Commission on Illumination
USNC/ ICUMSA	U.S. National Committee/International Commission for Uniform Methods of Sugar Analysis
USNC/IEC	U.S. National Committee/International Electrotechnical Commission
USNC/IIR	U.S. National Committee/International Institute of Refrigeration
USNC/ITU	U.S. National Committee/International Telecommunications Union
USPC	U.S. Pharmacopeial Convention, Inc.
VA	Veterans Administration
WHO	World Health Organization
WRC	Welding Research Council

Abbreviations

A	Annuitant
APPT. DATE	Appointment Date
C	Parent Committee
CC	Committee that is subordinate to a Parent Committee
CHAIR	Chairperson
DIV	Division
EMP. STATUS	Employment Status
ENCR	Encryption
EXPIR. DATE	Expiration Date
FTP	Full-time Permanent employment status
FT TEMP	Full-time Temporary employment status
INTL	Denotes an activity under the auspices of a international organization
NATL	Denotes an activity under the auspices of a U.S. organization
NATL/I	Denotes an activity under the auspices of a U.S. organization which also has major international responsibilities
NBS,OA	Combination of NBS and Other Agency funding
NON-V	Non-voting status
NO.	Number
N/A	Not Applicable
OA	Other Agency
PARNT ORG	Parent Organization
PROF	Professional
PT PERM	Part-time Permanent employment status
RA	Research Associate
SC	Subcommittee
SSC	Subcommittee that is subordinate to another Subcommittee
TC	Technical Committee
USNC	U.S. National Committee
USNWG	U.S. National Work Group
US TAG	U.S. Technical Advisory Group
WG	Work Group
WG2	Work Group of a Parent Committee
WG4	Work Group of a SSC
-C002	Committee number assigned by SAMI office for record purposes
-SC.01	Subcommittee number assigned by SAMI office for record purposes
-WG.01	Working Group number assigned by SAMI office for record purposes
	(All numbers assigned consecutively)

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American Association of Physicists in Medicine	Instrument Society of America
American Association of Textile Chemists and Colorists	Interagency Committee on Net Weights
American Bankers Association	Inter-Society Color Council
American Ceramic Society	Joint Electron Devices Engineering Councils
American Chemical Society	Mail Order Association of America
American Concrete Institute	Massachusetts Institute of Technology
American Institute of Architects	Metals Properties Council
American Institute of Chemical Engineers	National Academy of Sciences
American Institute of Mining, Metallurgical, and Petroleum Engineers	National Aeronautics and Space Administration
American National Metric Council	National Association of Corrosion Engineers
American National Standards Institute	National Committee for Clinical Laboratory Standards
American Nuclear Society	National Conference of Standards Laboratories
American Paper Institute	National Conference on Weights and Measures
American Petroleum Institute	National Council on Radiation Protection and Measurements
American Physical Society	National Fire Prevention & Control Administration
American Society of Civil Engineers	National Fire Protection Association
American Society of Heating, Refrigerating, and Air-Conditioning Engineers	National Institute of Health
American Society of Industrial Security	National Radio Astronomy Observatory
American Society of Mechanical Engineers	National Research Council
American Society for Metals	National Safety Council
American Society for Nondestructive Testing	National Science Foundation
American Society for Testing and Materials	Optical Society of America
American Vacuum Society	Prestressed Concrete Institute
Army, U.S.	Public Health Service
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Atomic Industrial Forum	Society of Automotive Engineers, Inc.
Chemical Abstracts Service	Society of Experimental Stress Analysis
Coblentz Society	Society of Fire Protection Engineers
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Council on Environmental Quality	Underwriters Laboratories, Inc.
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Department of Defense, U.S.	U.S. Geological Survey
Department of Energy, U.S.	U.S. National Committee for the International Commission on Illumination
Department of the Interior, U.S.	U.S. National Committee for the International Committee on Illumination
Department of Transportation, U.S.	U.S. National Committee for the International Electro- technical Commission
Electric Power Research Institute	U.S. National Committee for the International Institute of Refrigeration
Electronic Industries Association	Welding Research Council
Environmental Protection Agency	
Federal Council on Science and Technology	
Federal Preparedness Agency	
Food and Drug Administration	
General Services Administration	
Health Physics Society	
Illuminating Engineering Society	
Illumination Engineering Research Institute	

International and Foreign National

Committee on Data Science and Technology
German Institute for Standardization
International Association for the Properties of Steam
International Astronomical Union
International Atomic Energy Agency
International Civil Aviation Organization
International Commission on Glass
International Commission on Radiation Units and
Measurements
International Committee on Illumination
International Committee on Weights and Measures
International Confederation for Thermal Analysis
International Council of Scientific Unions
International Electrotechnical Commission
International Federation of Clinical Chemists
International Institute of Welding
International Microwave Power Institute
International Organization of Legal Metrology
International Organization for Standardization
International Scientific Radio Union
International Society of Radiology
International Telecommunications Union
International Union of Crystallography
International Union of Pure and Applied Chemistry
United Nations

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11. ABSTRACT (A 200-word or less factual summary of most significant information. If document includes a significant bibliography or literature survey, mention it here) NBS uses a decentralized system for managing the participation of NBS representatives in outside standards committee activities. This type of management is governed by NBS policy; coordinated through standards offices in each NBS Major Operational Unit; and monitored and supported by the Office of Standards Information, Analysis, and Development (OSIAD). This report summarizes NBS standards committee activities during calendar year 1980. It contains highlights of significant technical and individual contributions made by NBS staff, a description of NBS standards management and information activities, and a directory of standards committees on which NBS staff serve. (Supersedes NBS Special Publication 573 (March 1980)). For further information on NBS standards activities, contact OSIAD, National Bureau of Standards, Technology Building, Room B166, Washington, D.C. 20234, (301) 921-2092.			
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