



## Committee E10 on NUCLEAR TECHNOLOGY and APPLICATIONS

### *An Invitation from Committee E10*

If you are involved with the nuclear industry, consider becoming actively engaged in nuclear standards development and join ASTM Committee E10.

#### *What is ASTM International?*

Organized in 1898, ASTM International has become a preeminent source of international consensus standards. As of 2008, approximately 30,000 members participate on 138 technical committees. The organization currently publishes more than 11,500 standards on materials, products, systems and services ranging from metals and alloys, plastics, paint, and construction, to textiles, energy, biotechnology, electronics, and robotics. ASTM publishes their standards and procedures annually in several electronic and hard-copy formats. Approximately 30% of all ASTM publications are sold outside the United States, and 16% of ASTM members are from outside the USA.

#### *What is Committee E10?*

*Committee E10 on Nuclear Technology and Applications* is an international group of about 200 members from industry, government and academia. It is responsible for the development of nuclear standards, and for the organization of technical symposia and workshops intended to promote the advancement of nuclear science and technology and the safe application of nuclear energy in all forms. About 25% of the E10 membership is from outside the USA, demonstrating a high degree of international participation.

Committee E10 has created and maintains published standards covering a large range of nuclear procedures. Publication of standards follows a rigorous consensus approval process unique to ASTM. All standards are required to successfully complete this process which includes ballots at the subcommittee, main committee, and Society levels. Any negative votes or comments must be satisfactorily resolved so all concerned parties have a voice in the process.

Committee E10 sponsors scientific and technical symposia and promotes publication in its fields of expertise. For the past 30 years, one or more symposia and workshops have been conducted each year. Of these, three have attained particular international prominence: the Symposium on the Effects of Radiation on Materials, the International Symposium on Reactor Dosimetry, and the International Workshop on Dosimetry for Radiation Processing. Formal papers presented at these symposia may subsequently be published in the *Journal of ASTM International*. All published papers are subjected to a stringent peer review process.

While ASTM provides a forum for effective standards development, E10 Committee work scope is defined and all activities are initiated by the members themselves. Committee E10 activities encompass nearly all civilian applications of nuclear technology except those related to the nuclear fuel cycle which are the responsibility of ASTM Committee C26.

#### *Why Join Committee E10?*

- *Help develop consensus standards for the nuclear industry*
- *Interact with worldwide technical specialists*
- *Increase awareness of developments in the field*
- *Contribute to international symposia, workshops and conferences*
- *Develop interpersonal and writing skills by actively participating in standards development*

#### *Committee Structure*

Subcommittees of Committee E10 meet the specific technical and administrative needs of the Committee to enable the development of standards covered by the E10 scope. The Executive Subcommittee consists of the main committee officers and the technical subcommittee chairmen.

A subcommittee may establish individual task groups to accomplish specific activities. Subcommittees and task groups are typically designated as:

Main Committee:	E10
Subcommittee:	E10.01
Task Group:	E10.01.01

Current E10 Technical Subcommittees and a description of their work scope are listed below:

#### [E10.01 on Radiation Processing: Dosimetry & Applications](#)

*Scope:* To establish and maintain standard practices, methods, and guides for ionizing radiation processing and dosimetry for applications including medical products, pharmaceuticals, foods, polymers, and other consumer products.

To develop standard methods for characterizing and operating gamma ray, x-ray, and electron beam irradiators, and encourages use of these standards in radiation processing through meetings, workshops, and symposia.

The subcommittee also provides consultation in the application of dosimetry systems and may identify areas for additional research.

Liaison is maintained with other ASTM committees, other national and international standards setting organizations, the community of users, and other interested groups in order to be responsive to needs, avoid duplication of efforts and promote new techniques and technologies.

#### [E10.02 on Behavior and Use of Nuclear Structural Materials](#)

*Scope:* To develop and maintain standards for determining the performance of structural materials during application in nuclear reactors To investigate, promote, and advise on testing methods and standards for measuring changes in properties and constitution of metallic structural materials during application in a nuclear system.

To identify research and development needs for obtaining the information necessary for meeting the subcommittee's standardization goals.

To maintain liaison within and outside of ASTM to promote knowledge on the use of engineering materials for nuclear applications, with emphasis on coordinated efforts aimed at supplying information needed by the nuclear power industry.

#### [E10.03 on Radiological Protection for Decontamination and Decommissioning of Nuclear Facilities and Components](#)

*Scope:* To develop and revise standards associated with repairing, renovating, dismantling, decommissioning, and extending the lifetime of facilities, structures, systems, and equipment which have become radioactive.

To provide consultation and assistance in the

general area of nuclear facility decontamination, decommissioning, and extended life operation applied to other standards developed outside the jurisdiction of the subcommittee.

To identify and assess areas associated with nuclear-facility decontamination, decommissioning, and extended life operation which would benefit from the development of revision of ASTM standards.

#### **E10.05 on Nuclear Radiation Metrology**

*Scope:* To write voluntary consensus standards in the area of nuclear radiation metrology.

To identify and promote research and development in the area of nuclear radiation metrology for validating methods and data recommended for use in applicable standards.

To provide consultation to other standards committees and subcommittees concerning dosimetry measurement and calculation techniques and their application to the characterization of radiation environments.

To promote liaison for nuclear radiation metrology nationally and internationally.

To define, prepare, and update matrix documentation to meet the requirements of standardization for nuclear radiation metrology.

#### **E10.07 on Radiation Dosimetry for Radiation Effects on Materials and Devices**

*Scope:* To develop and maintain radiation dosimetry standards useful in research and development, testing, and industrial applications of high-energy ionizing radiation.

Topics include: primary, secondary and working dosimetry; radiation hardness testing of electronics and effects of radiation on materials for service in ionizing radiation environments.

Basic parameters of interest are absorbed dose, absorbed-dose rate, particle fluence, and particle fluence rate. Radiation sources of interest are x- and gamma rays, electrons, protons, neutrons, or mixtures of these, in either steady-state or pulsed environments.

Liaison is maintained with the community of users and other relevant organizations in order to be responsive to current needs, to avoid duplication of efforts, and to promote new measurement technology.

#### **E10.08 on Procedures for Neutron Radiation Damage Simulation**

*Scope:* To write recommended practices for conducting charged particle irradiations for the purpose of simulating the effect of neutron irradiation on dimensional, microstructural, mechanical, and physical property changes.

To recommend methods for correlating damage produced by charged particle radiation with that caused by neutron radiation.

To write standard recommended practices for conducting neutron irradiations using sources other than reactors for the purpose of measuring dimensional, microstructural, mechanical, and physical property changes.

#### **Join ASTM Committee E10**

To become a member of E10, simply fill out an ASTM Committee E10 application which can be found online at: [www.astm.org](http://www.astm.org). It is important to identify the subcommittee(s) in which you wish to actively participate.

Alternately, provide the following information:

Name:  
Organization:  
Address:  
City: State:  
Country: Postal Code:  
Phone No.:  
Fax No.: Email address:

along with your committee interests and mail to:

Member and Committee Services  
ASTM International  
100 Barr Harbor Drive, PO Box C700  
West Conshohocken, PA, 19428-2959  
USA

All applications to join E10 require approval by the E10 Executive Subcommittee, with the primary criteria being that an applicant have basic knowledge in some area of the committee's activities.

Membership fees are sent to ASTM International itself; there are no fees to the committee nor are there registration charges at any E10 committee meetings.

#### **What are the Membership Benefits?**

The privilege of voting on standards

One free volume of the Annual Book of ASTM Standards. Volume 12.02 contains all the current E10 standards, and is available online, in printed format,

or on cd-rom. It is published annually in September.

An annual subscription to *Standardization News*, ASTM's bimonthly magazine

Reduced member prices on additional volumes of the *Annual Book of ASTM Standards*, *Journal of ASTM International*, and other ASTM publications

#### **Types of ASTM Membership:**

**Individual Membership** entitles you to join an unlimited number of committees and subcommittees (with appropriate committee approvals), to vote, and to receive the membership benefits listed above. Technical committee membership is not transferable.

**Student Membership** Full-time undergraduate and graduate students may obtain membership at no charge.

**Organization Membership**. Organizational members may designate one official representative to join an unlimited number of committees. Organizational members obtain additional membership benefits as discussed on the ASTM website.

ASTM regulations require voting members to return all ballots. Every technical committee member, whether voting or nonvoting, receives all ballots and is obligated to respond. Each negative vote received must be given full consideration by the committee regardless of the voting status of the member.

To learn more about Committee E10 and ASTM International, please visit the ASTM website: [www.astm.org](http://www.astm.org).

#### **ASTM Committee E10 Officers**

**David Vehar** – Chairman  
Sandia National Laboratories

**Ed Walker** – 1<sup>st</sup> Vice-Chairman  
Consultant

**Stan Rosinski** – 2<sup>nd</sup> Vice-Chairman  
Electric Power Research Institute

**Denise Cleghorn** – Secretary  
Boston Scientific