U.S. Department of Energy
Office of Nuclear Safety, Quality Assurance and Environment
Technical Standards Program
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(http://www.hss.energy.gov/nuclearsafety/techstds/)

The Standards Forum And Standards Actions

Office of Health, Safety and Security

Inside This Issue

Technical Standards Program Manager's Note

As of this issue, our publication has a new look and focus. This is part of our effort to continuously improve the Technical Standards Program (TSP) processes and products. We have updated the TSP newsletter to make it more organized and user friendly. We have also increased the focus on the Department of Energy (DOE) and national consensus standards activities most relevant to DOE mission areas and operations, while also maintaining an awareness of broader national and international activities. In the coming issues you can look for news on more TSP improvements. Because we are a service organization committed to our customers, we welcome your comments and feedback.

We are continuing to make improvements and add features to the TSP RevCom system. We are about to incorporate a new module that will make dealing with complex draft standards a much smoother process. Drafts that include mathematical formulas and tables have usually been a source of trouble for reviewers. With this new module, we have upgraded the TSP RevCom system so that it handles virtually all types of images and equations. We have also added tools to automate the process for parsing a document into sections. As always, we encourage and solicit your feedback.

Finally, our efforts to obtain standards access are beginning to pay off. The TSP is moving forward with plans to provide a DOE headquarters-based system that has the capability to search for and obtain various non-government standards. I would encourage all Technical Standards Managers (TSM) to take advantage of this too once it becomes available. Standards access will significantly improve our capability to meet federal requirements to use non-government standards and to identify national standards that facilitate implementation of DOE requirements and operations, where appropriate and applicable. For further information on accessing this system please contact me at 301-903-0471, or email me at: (jeffrey.feit@hq.doe.gov).

The Articles

Dr. Richard Englehart, Office of Nuclear Safety Policy and Assistance, has contributed our first article entitled, *Safety-in-Design Strategy in the DOE Standard* DOE-STD-1189-2008. On March 31, 2008, DOE approved DOE-STD-1189-2008, *Integration of Safety Into the Design Process*. Dr. Englehart's article discusses some of the key elements of this standard.

Our second article is entitled, *Highlights of ASME NQA-1 Revision 2008*, was written by Merritt Gene Langston, Science Applications International Corporation (SAIC). The American Society of Mechanical Engineers' NQA-1 standard has been receiving much attention lately with the design, construction, and operation of a new generation of nuclear power plants. This "question and answer" type article provides excellent insight into one of the most recognized QA standards ever written.

A new addition this quarter is a report on U.S. domestic nuclear standards activities. Calvin Hopper, Oak Ridge National Laboratory, will be providing detailed insights into committee activities and standards development in the coming issues of the *Standards Forum and Standards Actions*. This first report is an overview.

Our fourth article, *An Overview of the International Organization for Standardization*, comes from ANSI's Standardization Activities. The International Organization for Standards (ISO) is a worldwide federation of national standards bodies from more than 145 countries, and this article provides some insight into ISO's mission and organizational structure.

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Finally, I would like to thank David L. Gray, West Valley Demonstration Project, for his contribution to the Technical Standards Manager Spotlight. Please take the time to read about one of our valued members of the TSP community.

That's it for this edition of the Standards Forum and Standards Actions. □

DOE Technical Standards Program Activities Summary

Technical Standards Activities Summary as of May 22, 2008

Document Status	Description of Status	Number of Documents
In Conversion	Conversion of a DOE technical standard to a national consensus standard is a beneficial process that provides exposure for that document to other public and private sector interests. When a DOE standard is converted, a voluntary-consensus, non-DOE standards developing organization assumes responsibility for it. DOE has no further responsibility for the maintenance of the standard when this occurs.	**4**
In Preparation	Includes draft DOE technical standards being developed but not yet out for review and comment.	23
Out for Comment	Includes draft DOE technical standards that have been posted for review and comment in the Technical Standards Program (TSP) RevCom system.	22
Published in May	Includes DOE technical standards that have completed the TSP review/comment and approval process. These approved standards are posted on the TSP webpage for use.	1

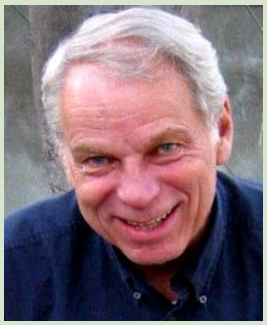
Five Year Review Status

Document Status	Description of Status	Proposed / In Progress
Revision	A revision occurs when a DOE technical standard requires technical changes, or editorial changes in excess of 25% of its content.	5 / 6
Reaffirmation	A reaffirmation occurs when making no changes to a DOE technical standard at its 5-year review.	1 / 21
Cancellations	Cancellation occurs when a DOE technical standard no longer serves a purpose to DOE as determined by the Office of Primary Interest (OPI) and subsequent TSP RevCom review.	9 / 0

Safety-in-Design Strategy in the DOE Standard DOE-STD-1189-2008

By Dr. Richard Englehart, Office of Nuclear Safety Policy and Assistance (HS-21)

Richard Englehart



The U.S. Department of Energy (DOE), on March 31, 2008, approved DOE-STD-1189-2008, *Integration of Safety into the Design Process*, for use by DOE and its contractors.

In a memorandum to DOE elements, dated December 5, 2005, on integration of Safety-in-Design, the Deputy Secretary of Energy stated, "I expect safety to be fully integrated into design early in the project. Specifically, by the start of the preliminary design, I expect a hazard analysis of alternatives to be complete and the safety requirements for the design to be established. I expect both the project management and safety directives to lead projects on the right path so that safety issues are identified and addressed adequately early in the project design."

DOE Standard 1189 has been developed to show how project management, engineering, design, and safety analyses can interact to successfully implement the Deputy Secretary's expectations. These interactions are a fundamental element necessary in the integration of safety throughout the DOE Acquisition Management System. They are key to the timely identification, evaluation, and adjudication of Safety-in-Design issues early in project life.

This Standard provides the Department's expectations for incorporating safety into the design process for new or major modifications to DOE Hazard Category 1, 2, and 3 nuclear facilities, the intended purpose of which involves the

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handling of hazardous materials, both radiological and chemical, in a way that provides adequate protection for the public, workers, and the environment. The Standard describes the Safety-in-Design philosophies to be used with the project management requirements of DOE Order (O) 413.3A, Change (Chg) 1, *Program and Project Management for the Acquisition of Capital Assets*[1] and incorporates the facility safety criteria in DOE O 420.1B, *Facility Safety*, as a key foundation for Safety-in-Design determinations.

Some of the key concepts that are included in the Standard are the following:

1. The importance of the Integrated Project Teams (IPT), federal and contractor, including a contractor Safety Design Integration Team (SDIT), and effective coordination among these teams. The SDIT comprises both safety and design subject matter experts and is the heart of the safety and design integration effort;

2. The development of a Safety Design Strategy (SDS) that provides a roadmap for strategizing how important safety issues will be addressed in the design and in the tailoring in the development of key safety documentation. The SDS should be initiated based on a statement of DOE expectations for Safety-in-Design developed during the pre-conceptual stage and should be submitted during the conceptual design stage and updated and refined through the design process;

3. The development, in the conceptual design stage, of facility-level design basis accidents (DBA) that provide the necessary input to the identification and classification of important safety functions. These classifications (i.e., safety class, safety significant, seismic design basis) provide design expectations for safety structures, systems, and components (SSC);

4. The development of objective radiological criteria for safety and design classification of SSCs. These criteria relate to public and collocated worker-safety design considerations;

5. The identification and application of nuclear safety design criteria as provided by DOE O 420.1B and its associated guides;

6. The development of guidance for the preparation of a Conceptual Safety Design Report (CSDR), a Preliminary Safety Design Report (PSDR), and the Preliminary Documented Safety Analysis (PDSA). These reports are required by DOE O 413.3A, Chg 1, for Hazard Category 1, 2, and 3 nuclear facilities, and they must be approved by DOE as part of the project approvals to proceed to the next design or construction phase. The intent of these reports and their approval is to ensure that the directions and decisions made regarding project safety are explicitly identified and dealt with in early stages of design. The objective is to reduce the likelihood of late and potentially costly changes of design decisions involving safety; and

7. The definition, as needed, of a Risk and Opportunities Assessment that recognizes the risks of proceeding at early stages of design (especially conceptual design) on the basis of incomplete knowledge or assumptions regarding safety issues and the opportunities that may arise during preliminary and final design to reduce costs through alternative or refined design concepts or better knowledge regarding the uncertainties. This assessment is intended to be input to the Risk Management Plan assessments for a project.

In a letter to the DNFSB dated July 12, 2007, DOE made a commitment regarding implementation of the Standard at the time it is issued, based on the design stage of ongoing projects:

- For projects in the Mission Need Stage, DOE-STD-1189 will be implemented;

- For projects in the Conceptual Design Stage, DOE-STD-1189 will be implemented based on a specific evaluation of each project;

- For projects in the Preliminary Design Stage, DOE-STD-1189 will be used for the format and content for preparation of the Preliminary Safety Design Report; and

- For projects in the Final Design Stage, DOE-STD-1189 will be used for the format and content for preparation of the Preliminary Documented Safety Analysis.

Several existing directives and standards will require revisions to be consistent with DOE-STD-1189. The directives and standards in this category are as follows:

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- DOE O 420.1B, *Facility Safety;*
- DOE G 420.1-1, *Nonreactor Nuclear Safety Design Criteria and Explosive Safety Guide* for use with DOE O 420.1 Facility Safety;
- DOE G 420.1-2, *Guide for the Mitigation of Natural Phenomena Hazards for DOE Nuclear Facilities and Nonnuclear Facilities* and associated NPH standards;
- DOE G 421-1-2, *Implementation Guide for Use in Developing Documented Safety Analyses* to Meet Subpart B of 10 CFR 830;
- DOE-STD-3009-94, Change Notice (CN) 3, *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Safety Analysis*; and
- DOE-STD-1104-96, *Review and Approval of Nuclear Facility Safety Basis Documents.*

Work on revisions to these directives and standards has begun. However, final approval of all of the revisions through the Department's consensus process will take some time. In the meantime, projects implementing DOE-STD-1189 should follow the Standard when there are overlaps or differences.

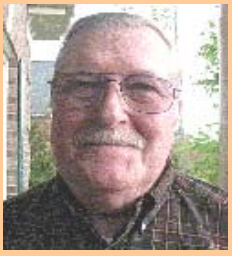
For any questions regarding this article, the author can be reached at phone: 301-903-3718 or e-mail at richard.englehart@hq.doe.gov. □

Footnote: [1]Change 1 to O 413.3A is a page change to the Order that is currently in the RevCom process. The page change makes implementation of DOE-STD-1189 a requirement of the Order and provides additional implementation responsibilities and authorities for the Standard.

Highlights Of American Society of Mechanical Engineers NQA-1 Revision 2008

By Merritt Gene Langston, SAIC, Germantown, MD

(Mr. Langston is a charter member since 1969 of the ASME Nuclear Quality Assurance Committee and its predecessor organizations)



Gene Langston

With the impending rebirth of a new generation of nuclear power plants in the United States, attention of electric utilities has been turning to the American Society of Mechanical Engineers Standard NQA-1 for designing, constructing and operation of new plants. This article presents in condensed Question-and-Answer format basic information on why NQA-1 is being adopted by the utilities, and endorsed by the NRC as well as the DOE, for nuclear facilities.

Q1: What is the origin of NQA-1 and why has the standard continued to evolve?[1,2]

A: By the late 1960s, it became evident to Atomic Energy Commissioners, engineers and utility management that regulations alone were not the most desirable or appropriate avenue to prescribe management and technical practices for designing, constructing and operating the rapidly increasing numbers of nuclear facilities in the U.S. Adopting the American National Standard Institute's national consensus standards development process would permit experts from government, industry, national laboratories and the public to make substantial voluntary contributions to the American National Standards Institute (ANSI) Standards process. With the financial backing and support of the Atomic Energy Commission (AEC) and industry participation, a plan emerged for the development of a whole body of urgently needed quality assurance (QA) national consensus standards for nuclear power plant construction, under ANSI sponsorship. Heading the list was a QA program requirements standard, N45.2. Beginning with the development of the ANSI/ASME N45.2-1971 standard, after eight revisions plus annual addenda and over 37 years of consensus balloting, ASME NQA-1-2008[3] has emerged as the premier U.S. national consensus, national and international, nuclear quality assurance program standard.

Q2: Why did ANSI Nuclear Standards Management Board (NMSB) assign ASME responsibility for QA program standards development, coordination and maintenance?

A: By 1975, various standards-writing organizations, including ASME, the American Nuclear Society and the American Society of Chemical Engineers, were independently developing redundant and conflicting QA program requirements standards. Recognizing the need to minimize overlap and confusion among dissimilar QA program requirements and for

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a clearer definition of responsibilities for QA program standards development and maintenance for nuclear facility applications, the ANSI NSMB issued a policy bulletin stating *"There should be a single Quality Assurance standard for nuclear facilities."*

Consequently, the NSMB assigned to an ASME N45 Subcommittee overall responsibility for development, coordination among other technical societies, and maintenance of QA program standards for nuclear facility applications. This included the N45.2 series of fourteen standards for QA programs and work practices.

Q3: How does NQA-1 define QA?

A: QA is defined broadly as comprising *"All those planned and systematic actions necessary to provide adequate confidence that a structure, system, or component will perform satisfactorily in service as intended."* QA encompasses quality management and quality control.

Q4: How is the NQA Committee structured?

A: The ASME NQA Main Committee and its Executive Committee is comprised of 35 volunteer members from government and industry who are supported by the ASME staff and six subcommittees. This organization meets semiannually to discuss current nuclear QA issues and process NQA-1 standards actions to ensure the needs of government and industry are satisfied.

Q5: How does DOE support the NQA organization?[4]

A: DOE and its predecessor AEC and Energy Research Development Administration (ERDA) organizations, along with industry and Nuclear Regulatory Commission (NRC) staff members, have been involved in the continuing evolution of NQA-1 from the very beginning. About 45 percent of the ASME NQA Main Committee has DOE affiliations or contracts.

Q6: How is NQA-1 recommended by DOE?

A: NQA-1 is cited as an appropriate standard for implementing the DOE Nuclear Safety Management Rule[5] and DOE Order 414.1C[6] , required by contract or QA program direction:

1. DOE national laboratory nuclear facilities and nuclear programs and projects typically apply NQA-1 requirements selectively, using a graded approach.

2. The Defense Nuclear Facilities Safety Board is also supportive of NQA-1 use for DOE applications and has noted that "NQA-1 is the only U.S. national QA standard specifically developed and maintained for nuclear applications."

Q7: Where is NQA-1 applied to DOE locations?

A: NQA-1 is being applied widely to numerous DOE nuclear programs and projects and organizations. Examples include:

a. Mixed Oxide Fuel Fabrication Facility construction, SRS;
b. Pit Disassembly and Conversion, LANL;
c. Waste Solidification Building design, SRS;
d. Advanced Recovery and Integrated Extraction System, LANL;
e. Chemistry Metallurgy Research Replacement construction project, LANL;
f. Waste Treatment Plant, Office of River Protection;
g. Yucca Mountain project, Nevada;
h. Waste Isolation Pilot Plant, New Mexico
i. Oak Ridge National Laboratory and Y-12 Projects;
j. Defense Waste Processing Facility, SRS;
k. Next Generation Nuclear Plant, ID; and
l. Global Nuclear Energy Partnership.

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NQA-1 is also being used at commercial nuclear power plants and other nuclear facilities all over the world.

Q8: How is NQA-1 structured?

A: The ANS/ASME N45.2 standard was developed to be consistent with and amplify the 18 criteria of Title 10, Code of Federal Regulations, Part 50, Appendix B, *Quality Assurance Criteria for Nuclear Power Plants*, issued in 1970. At that time, the AEC did not have a nuclear safety regulation or order; however, the Office of Nuclear Energy had its own QA standard, RDT F2-2, for AEC-owned nuclear facilities and reactor development and technology programs.

ASME NQA-1 has continued to evolve by the consolidation of QA program requirements and guidance, as well as work practices, from three separate but interrelated standards, NQA-1, NQA-2 and NQA-3, into a single standard, *Quality Assurance Requirements for Nuclear Facility Applications*.

NQA-1 reflects industry practices, experiences, lessons learned and current understanding of the QA requirements necessary to achieve safe, reliable and efficient utilization of nuclear energy by:

a. Focusing on the achievement of results;
b. Emphasizing the responsibilities of individuals and line management for achieving quality; and
c. Applying the requirements in a manner consistent with the relative importance to safety and reliable operation.

PART I: Requirements contain 18 basic requirements for QA program development and implementation.

PART II: Applications consist of requirements as subparts for work practices, such as cleaning of fluid systems, Installation and inspection, and testing of structural concrete and structural steel. These requirements evolved from the original list of most urgently needed N45 construction practices.

PART III: Non-Mandatory Guidance comprises acceptable methods for complying with PART I requirements. Non-mandatory appendices provide guidance on QA programs, design control and inspection.

PART IV: Positions and Application Matrices are reserved for guidance such as the graded application of QA for nuclear-related research and development activities. Comparison tables are included to users of multiple standards and regulations, such as NQA-1 and 10 CFR 830 and ISO 9001.

Q9: Why are different editions of NQA-1 being applied at difference facilities?

A: NQA-1 editions from 1983, 1989, 1994, 2000 and 2004 have been approved and applied for a number of reasons, such as:

a. Different editions are referenced in approved nuclear facility QA plans;
b. Contract requirements and licenses are not updated;
c. Regulatory guides and standard review plans reference different editions and have not been updated;
d. Reluctance of regulated nuclear utilities to update their QA plans; and
e. Perception of need to change.

Q10: What is the status of NQA-1-2008?

A: a. Approved by ASME NQA Main Committee;
b. Approved by ASME BNCS;
c. Completed public review period;
d. Incorporates all of 2004 standard and 2005 and 2007 changes; and
e. Issued and distributed on March 14, 2008.

Q11: What, in your view, is the desired DOE position on NQA-1?

A: a. DOE should cite ASME NQA-1-2008 to achieve currency, consistency and efficiency in its application.
b. DOE should consider revision of DOE O 414.1C to meet NQA-1-2008 for new applications.

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Q12: What are the potential benefits to DOE and others of NQA-1-2008 application?

A: a. Improved and updated quality assurance criteria;
b. Implementing processes to support criteria;
c. Standardized approaches for addressing QA requirements for contractors conducting activities, including providing items or services, that may affect nuclear safety of DOE nuclear facilities; and
d. Guidance on QA applications based on mission-critical and programmatically significant risk factors.

Q13: What is the status of NRC endorsement of NQA-1-2008?

A: a. The NRC staff is reviewing NQA-1-2008 for endorsement. Endorsement is expected no later than December 2009.
b. The NQA Main Committee has addressed NRC comments in the NQA-1-2008 Edition. NRC currently has approved the NQA-1-1994 Edition for use at some utilities.
c. NRC Regulatory Guide 1.28, Rev. 3, endorses the NQA-1a-1983 addendum.

Q14: What requirements have been updated in PART I of the NQA-1 2008 Edition?

A: (section and title from NQA-1 are noted below)
1. Organization verification
2. Training and records
3. Software design control
6. Document control
7. Commercial-grade items and services
7. Control of purchased items and services
10. Inspection sampling
11. Test control
12. Calibration and control
17. QA records
18. Audits

Q15: What are recent improvements to non-mandatory guidance in NQA-1 PART III?

A: (section and title from NQA-1 are noted below)
1A-1, Organization
3A-1, Design control
7A-1, Purchased items and services
10A-1, Inspection
16A-1, Corrective action
17A-1, Records
17A-2, Electronic records
18A-1, Audits

Q16: What are the NQA Committee Goals for NQA-1?

A: The desired state is:

1. NQA-1 is the U.S. standard of choice adopted by organizations to achieve safe, reliable and economical performance for nuclear facility applications, while maintaining acceptable regulatory and programmatic

2. Compliance; NRC endorsement and support of the NQA-1-2008 edition.

3. DOE recommendation to use NQA-1-2008 for its nuclear facilities, particularly new construction projects.

4. Industry adoption and implementation of NQA-1:

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a. The Standard shall be invoked by written contract, policies, procedures and specifications or other appropriate documents (e.g., regulatory documents).
b. The organization invoking the Standard shall be responsible for specifying which requirements, or portions thereof, apply, and appropriately relating them to specific items and services and suppliers. □

Editor's Note: For general information on quality assurance policy and assistance within DOE and the role of NQA-1, please contact Colette Broussard in the Office of Quality Assurance Policy and Assistance, HS-23, by phone at 301-903-5452 or by e-mail at colette.broussard@hq.doe.gov

Footnotes

[1]Merritt E. Langston," Continuing Evolution of U.S. Nuclear Quality Assurance Principles, Practices and Requirements", August 2005.
[2]Reviewed by Bud Danielson, Chief of Nuclear Safety Staff, DOE EM-60; Past Chair, ASME NQA Applications Subcommittee.
[3]ASME NQA-1-2008. *Quality Assurance Requirements for Nuclear Facility Applications*, Issued March 14, 2008.
[4]"NQA Committee Presentation to DOE on NQA-1," January 15, 2008.
[5]Department of Energy regulation, 10 CFR Part 830, *Nuclear Safety Management*, Subpart 830.122, *Quality Assurance Criteria*, January 10, 2001.
[6]Department of Energy Order, DOE O 414.1C, *Quality Assurance*, June 17, 2007.

Quarterly Report on National Consensus Standards Activities

By Calvin Hopper, Oak Ridge National Laboratory, Oak Ridge TN

This initial summary report provides an overview of U.S. domestic nuclear standards activities and news relevant to nuclear safety and the operations of nuclear facilities at DOE. Specific in-depth reports that summarize national consensus standards committee activities and standards development will be provided in subsequent quarterly reports. The report is focused on the standards activities within the American Nuclear Society (ANS), a standards development organization (SDO) certified by the American National Standards Institute (ANSI). However, information on non-ANS incidental domestic and international standards development having relevance to nuclear standards is also provided.

- **The hierarchy of detail for activity reports regarding domestic nuclear standards activities and news is as follows:**

1) ANS Standards Board (ASB) actions, policy, and program direction is as follows:

The American Nuclear Society Standards Committee is responsible for the development and maintenance of standards that address the design, analysis, and operation of components, systems, and facilities related to the application of nuclear science and technology. The scope of the Standards Committee includes the development and maintenance of standards on the following subjects and closely related activities:

a) Nuclear criticality safety;
b) Definitions of terminology used in nuclear science and technology;
c) Facilities for handling radioactive isotopes, including the remote handling of radioactive materials;
d) Research reactors and critical facilities;
e) Reactor physics and radiation shielding;
f) Ensuring the integrity of computer programs in the nuclear field;
g) Siting requirements for nuclear facilities;
h) Nuclear facility design, including safety criteria for the facility;
i) Reactor operation, including operator training and selection;

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j) Fuel design, handling, and storage;
k) Radioactive waste management;
l) Remediation and restoration of sites used for nuclear facilities;
m) Fission product behavior; and
n) Probabilistic risk assessment, risk management, and risk criteria.

2) ANS Consensus Committee (CC) actions on standards developments and working groups participation is the next level of detailed information and includes information about:

a) ANS CC N17, *Research Reactors, Reactor Physics, Radiation Shielding, and Computational Methods,* has the Following scope of activities:

To develop standards for the location, design, construction, operation, and maintenance of all nuclear reactors for training and research, both as mechanisms for investigating reactors per se and as sources of radiation, and excluding reactors designed for the production of electrical energy; standards for the location, design, construction, operation, and maintenance of critical facilities; standards for calculational methods and computer codes for use in nuclear-reactor and reactor-physics calculations, including shielding. Inputs into calculations and codes, such as nuclear cross sections, are included in this scope.

b) ANS CC NFSC, *Nuclear Facilities Standards Committee,* has the following scope of activities:

The Nuclear Facilities Standards Committee is responsible for the preparation and maintenance of standards Associated with nuclear facilities, including radioactive waste management activities. The Committee's standards address siting, design, and operation of nuclear facilities as well as remediation and restoration of these sites. Excluded from this scope are standards for nuclear criticality safety, and training and research reactor facilities.

c) ANS CC RISC, *Risk Informed Standards Committee,* has the following scope of activities:

The American Nuclear Society Risk Informed Standards Committee is responsible for the development and maintenance of standards that establish safety and risk criteria and methods for probabilistic analysis, risk assessment, and risk management. These criteria and methods are applicable to design, development, construction, operation, decontamination and decommissioning, waste management, and environmental restoration for nuclear facilities.

3) ANS CC N16, *Criticality Safety* has the following scope of activities:

To develop standards for determining the potential for nuclear criticality of fissile material outside reactors, for the prevention of accidental criticality, and for coping with accidents should they occur.

- **As information becomes available, this quarterly report will also identify activities on:**

4) Other domestic ANSI SDOs having relevance to the nuclear enterprise such as the American Society of Mechanical Engineers (ASME) (e.g., NQA-1-2008, *Quality Assurance Requirements for Nuclear Facility Applications)* and the ASTM International (originally American Society for Testing and Materials e.g., ASTM E1281-89 2005 *Standard Guide for Nuclear Facility Decommissioning)*. The level of detail provided for those SDOs is comparable to information provided for the ASB and/or CCs.

5) The International Organization for Standardization (ISO) Technical Committee 85, *Nuclear Energy* (ISO TC85) and interactions of the U.S. ANSI Nuclear Technical Advisory Group (NTAG) that has ISO standards proposal, review, and approval authority for the U.S. the ISO TC85 has the following scope of activities:

Standardization in the field of peaceful applications of nuclear energy and of the protection of individuals against all sources of ionizing radiations, specific to topical areas for three Subcommittees (SC) and two working *groups (WG) as follows:*

a) ISO TC85/SC2, *Radiation protection;*
b) ISO TC85/SC5, *Nuclear fuel technology;*

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c) ISO TC85/SC6, *Reactor technology;*
d) ISO TC85/WG1, *Terminology, definitions, units and symbols; and*
e) ISO TC85/WG3, *Dosimetry for radiation processing.*

6) Technical developments from the Organization for Economic Cooperative Development (OECD), Nuclear Energy Agency (NEA), Nuclear Science Committee (NSC) and Working Party on Nuclear Criticality Safety (WPNCS) that provide value for ISO TC85/SC5/WG8 standards development. The scope of the OECD/NEA/NSC/WPNCS covers investigations of static and transient configurations encountered in the nuclear fuel cycle. These include fuel fabrication, transport and storage objectives to:

a) exchange information on national programs in the area of criticality safety;
b) guide, promote and co-ordinate high priority activities of common interest to the international criticality safe community, and establish cooperation;
c) monitor the progress of all activities and report to the NSC;
d) publish databases, handbooks, and reports;
e) facilitate communications within the international criticality safety community through relevant websites;
f) coordinate the ongoing series of International Conferences on Nuclear Criticality Safety (ICNC), to be held every four years;
g) coordinate WPNCS activities with other working groups within the NEA and in other international frameworks to avoid duplication of activities; and
h) provide a technical basis for other international activities (e.g. ISO, IAEA).

Future TSP Newsletter reports will provide in-depth information on specific committee activities and standards development. Information of an "immediate issue/development" will take precedence over progressive descriptions of working group and committee activities. Where possible, the report will include contact information regarding standards issues and developments.

Any questions on the contents of this article may be directed to the author by phone: 865-576-8617 or e-mail: hoppercm@ornl.gov. □

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An Overview of the International Organization for Standardization

Reprinted from the ANSI web-site "Standards Activities," ISO Programs–Overview @http://ansi.org/standards_activities/iso_programs/overview.aspx?menuid=3

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies from more than 145 countries, one from each country. ISO is a non-governmental organization established in 1947 and based in Geneva, Switzerland. Its mission is to promote the development of standardization and related activities in the world with a view to facilitating the international exchange of goods and services, and to developing cooperation in the spheres of intellectual, scientific, technological and economic activity. ISO's work results in international agreements which are published as International Standards and other types of ISO documents.

ANSI is the sole U.S. representative and dues-paying member of the International Organization for Standardization (ISO), and as a founding member of the ISO, ANSI plays an active role in its governance.

Organizational Structure

The three primary governance groups of ISO are:

The ISO General Assembly, which is the annual meeting of all ISO members, and its agenda typically includes actions relating to the review of the ISO annual report, approval of ISO's multi-year strategic plan, and ISO's finances.

The ISO Council, which meets twice a year and is responsible for the development of ISO's multi-year strategic plan, the development of the ISO annual budget, ISO's relations with other external organizations, and other political /strategic decisions and the general operations of ISO. The ISO Council consists of the principal officers of ISO and eighteen elected member bodies, including ANSI for the USA. ANSI is one of five permanent members to the ISO Council.

The ISO Technical Management Board (ISO/TMB), which meets three times each year and reports to and advises the ISO Council on all matters concerning the organization, coordination, strategic planning, and programming of the technical work of ISO. The ISO/TMB consists of the ISO Vice President for Technical Management and twelve elected member bodies, including ANSI for the USA. ANSI is one of four permanent members of the ISO TMB.

ISO Technical Committees (TC) and Subcommittees (SC). ISO standards are developed by technical committees comprising experts from the industrial, technical and business sectors which have asked for the standards, and which subsequently put them to use. These experts may be joined by others with relevant knowledge, such as representatives of government agencies, testing laboratories, consumer associations, environmentalists, academic circles and so on. The experts participate as national delegations, chosen by the ISO national member institute for the country concerned. These delegations are required to represent not just the views of the organizations in which their participating experts work, but of other stakeholders too. According to ISO rules, the member institute is expected to take account of the views of the range of parties interested in the standard under development and to present a consolidated, national consensus position to the technical committee.

Through ANSI, the USA has immediate access to the ISO standards development processes. ANSI participates in almost the entire technical program of the ISO (nearly 80%), and administers many key committees and subgroups (nearly 20% of all ISO TCs and SCs).

Part of ANSI's responsibilities as the U.S. member body to the ISO includes accrediting U.S. Technical Advisory Groups (U.S. TAGs). The primary purpose of these TAGs is to develop and transmit, via ANSI, U.S. positions on activities and ballots of the international technical Committee.

Reference Documents

- ISO/IEC Directives: Part 1: 2004, 5th Edition. (Procedures for the technical work)

Continued on next page

- ISO/IEC Directives Part 2: 2004, 5th Edition. (Rules for the structure and drafting of International Standards and related documents)
- ISO Supplement

For additional procedures, guides and forms, please visit the ISO Document Library.

Further Resources

Important sources for more information:

- The official ISO web site
- The ISO Standards Developers Information Site, which provides a comprehensive library of procedural documents, forms, guidance and training materials and other useful information for the development of ISO Standards.
- ISO Technical Committee Business Plans, which provide information on the work programs of ISO standards development committees, as well as market environments, dynamics, and needs that shape the development of these work programs and the resulting ISO standards. These business plans are available to the general public for review and comment. □

Technical Standards Manager Spotlight

David L. Gray, General Engineer, West Valley Demonstration Project
Office of Small Site Projects, Office of Environmental Management

David L. Gray is a General Engineer at the West Valley Demonstration Project in West Valley, New York where he has worked since joining DOE in 1999. He is responsible for administering the WVDP Quality Assurance Program and assures that WVDP participants establish, maintain, and operate in accordance with programs which meet various DOE and federal requirements. He also develops and implements procedures for conducting oversight activities in accordance with those requirements and performs internal and external oversight activities to assess the effectiveness of the Quality Assurance Program. These activities have included audits, surveillances, self-assessments, Conduct of Operations assessments, Integrated Safety Management Reviews, and Line Management Assessments.

Prior to his employment with DOE, David worked at West Valley Nuclear Services Company for six years in the capacities of design engineer, test engineer, shift engineer, and quality engineer. David began his federal career in 1984 at the Norfolk Naval Shipyard as a pipefitter and a nuclear mechanical systems inspector.

David earned a Bachelor of Science in Mechanical Engineering from Old Dominion University (Norfolk, VA) and has attended graduate courses at the State University of New York, Buffalo.

He is a certified ASME NQA-1 lead auditor and is qualified as a DOE/RW-0333P auditor.

If you have any questions, he can be reached by phone at (716) 942-4780 or e-mail at david.gray@wv.doe.gov. □

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Topical Committee Developments

Joint EFCOG / DOE Chemical Safety and Lifecycle Management Workshop

By M. Norman Schwartz
Office of Nuclear Safety Policy & Assistance, HS-21

The Chemical Safety Topical Committee held a successful Tenth Annual Joint Energy Federal Contractors Group (EFCOG)/Department of Energy (DOE) Chemical Management Workshop, March 4-6, 2008, in the DOE Forrestal Building's main auditorium in Washington, DC. This year's theme, "Chemical Safety and Life Cycle Management – 10 Years and Still Learning" focused on chemical inventory systems at DOE sites, 10 CFR 851 Worker Safety and Health Program, cylinder handling and storage, alternative chemical management systems, control banding, Executive Order 13423, and beryllium safety. Over 280 participants registered for the conference, either in person or by telecast from sixteen sites throughout the DOE complex. For the first time, training sessions introduced two days of the conference. The training sessions were replayed in video at the end of the day. Several Environment, Health and Safety EFCOG meetings were also held concurrently.

Mr. Glenn Podonsky, Chief Health, Safety and Security Officer opened the workshop providing the DOE corporate welcome and discussing the still-valid conclusions of the initial study, "Chemical Safety Vulnerability," DOE/EH-0396P, dated September 1994. He envisioned a continuing need to invest in chemical safety throughout the DOE complex. Anthony Umek, Vice President of Fluor Corporation's Government Group, made a presentation entitled, "Looking at the Whole Picture: Chemical Life-Cycle Management." He also provided the EFCOG Sponsor's corporate welcome as Chair of the Environmental Safety and Health Working Group. He stressed that effectively incorporating the DOE Integrated Safety Management (ISM) concept into chemical life cycle management is critical to fostering a zero incident culture. Then, he presented several examples of the consequences of ineffective chemical management.

Dr. Peter S. Winokur, Board Member of the Defense Nuclear Facilities Safety Board (DNFSB), discussed "Safety Culture for Chemical Safety Management." He indicated that the DNFSB focus on ISM has recently been enhanced by the issuance of DOE-STD-1189-2008, Integration of Safety into the Design Process. Safety culture was defined (from a November 2004 Institute of Nuclear Power Operations document) as "an organization's values and behaviors – modeled by its leaders and internalized by its members – that serve to make nuclear safety an overriding priority." Dr. Winokur then discussed the elements of a safety culture: leadership, balanced priorities, the walk (management commitment, support, and resources for safety programs), empowerment (a clear understanding by workers that line management is responsible for creating the safest work environment, but ultimately safety is the worker's responsibility), responsibility, trust, lessons learned, checks and balances, proactivity, and training. Colonel William E. Wright of the U.S. Chemical Safety and Hazard Investigation Board (appointed by the President and confirmed by the U.S. Senate) talked about the investigation of various reactive chemical incidents over the last 5 years primarily at commercial facilities.

Twenty speakers from the federal and private sectors offered insight into the management of chemicals in both an industrial and a research setting during 3 days of presentations and training. Panelists involved with the United Soybean Board (a farmer-led organization) introduced concepts, application, coordination and recognition of bio-based substitutes during the first day's training session. Lee Birch, Luxfer, Inc., gave the last presentation of the day, "Cylinder Storage, Use and Life Cycle Management." He expounded on the storage and handling of cylinders. David Quigley, B&W Technical Services Y-12, led the day two training session entitled, "Chemical Storage: Myths and Realities."

Additional information and presentations from the workshop are found on http://www.hss.energy.gov/HealthSafety/WSHP/chem_safety/ws2008/. General information about the chemical management initiative may be found at the HSS web site at http://www.energy.gov/safetyhealth/chemicalsafety.htm. DVDs of the entire Workshop are available to DOE personnel on request. Requests should be submitted to Donna.Jiggetts@hq.doe.gov. Dan Marsick, HS-11, is the principle author of submitted text that has been edited by Morton Norman Schwartz, TSP Topical Committee Coordinator. □

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Welcome Aboard the TSMC!

By M. Norman. Schwartz, Office of Nuclear Safety Policy & Assistance (HS-21)

The Technical Standards Managers (TSMs) are the backbone of the DOE Technical Standards Program! These knowledgeable individuals serve as their organization's standards point of contact and contribute to the coordination of Department-wide TSP activities. A great deal of their work time is spent in assuring that standards activities take place in a manner that will promote safe, economical, and efficient operations locally and across the DOE complex. TSMs share their ideas for TSP improvements and discuss lessons learned through monthly Technical Standards Managers Committee conference calls. With nearly 90 active and mobile people involved in TSM activities, it can be a daunting task just to keep up with the retirements and reassignments affecting the TSM roster. This "Welcome Aboard" feature is designed to introduce you to the new TSMs and help you keep abreast of the rapidly changing make-up of the Technical Standards Managers' Committee (TSMC). A complete list of TSMs can be found at http://www.hss.energy.gov/nuclearsafety/techstds/contact/stdmgrs.html.

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STANDARDS ACTIONS

1.0 DOE STANDARDS ACTIONS

The Department of Energy (DOE) Technical Standards Program (TSP) publishes Standards Actions information on a monthly basis to provide DOE headquarters and field elements with current information on DOE and select non-government standards activities.

The complete list of all DOE Technical Standards projects and their status is available on the Technical Standards Program (TSP) web page at http://www.hss.energy.gov/nuclearsafety/techstds/. To access these standards, go to our web page, click on "DOE Technical Standards," then choose Projects, Approved Standards, Recently Approved Standards, or Drafts for Review, as appropriate, on the left frame of the page.

1.1 New Projects and DOE Technical Standards in Revision

The following entries were received in May 2008:

- *Nuclear Material Control and Accountability*, SANS-0006, May 16, 2008; Point of Contact: Deborah S. Holmer, Phone: 301-903-2247.

1.2 DOE Technical Standards Posted in RevCom for TSP

Your Technical Standards Manager (TSM) will initiate requests for specific reviewers to comment on these drafts. The list of TSMs can be found at: http://www.hss.energy.gov/nuclearsafety/techstds/contact/stdmgrs.html. **The full text of these documents are available for comment at RevCom for TSP (http://standards.doe.gov/login.jsp) accessed from the TSP website.**

The following entries were received in May 2008:

- *Radiological Control* (Including Change Notice 2; April 2005), DOE-HDBK-1098-YR, SAFT-0119, April 15, 2008, Point of Contact: Judith D. Foulke, Phone: 301-903-5865; and

- *Human Performance Handbook: Volume I; Human Performance Improvement Concepts and Principles, and Volume II; Human Performance Tools for Individuals, Work Teams and Management*, HFAC-0017, May 08, 2008, Point of Contact: W. Earl Carnes, Phone: 301-903-5255.

1.3 DOE Technical Standards in Reaffirmation

No entries were received in May 2008.

1.4 DOE Technical Standards Change Notices

No entries were received in May 2008.

1.5 DOE Technical Standards Published

The following entries were received in May 2008:

- *Radiological Safety Training for Uranium Facilities (CH1, December 2002)*, DOE-HDBK-1113-2008 (CH1), 6910-0070, April 18, 2008, Point of Contact: Peter O'Connell, Phone: 301-903-5641.

2.0 NON-GOVERNMENT STANDARDS ACTIONS

2.1 American National Standards Institute

American National Standards Institute (ANSI) publishes coordination activities of non-Government standards (NGS) weekly in ANSI Standards Action. Recent electronic copies are available on the ANSI Web Site at: http://www.ansi.org/news_publications/periodicals/standards_action/standards_action.aspx?menuid=7. Refer to ANSI Standards Action for the complete list of changes and new publications, standards developing organizations, and information about submitting comments. Electronic delivery of selected documents is available through ANSI at: http://webstore.ansi.org/ansidocstore/default.asp.

ANSI also lists standards actions on new and revised American National Standards and International Standards Organization (ISO) Standards.

2.2 American Society of Mechanical Engineers (ASME)

ASME lists recently published standards on the ASME web site at: http://catalog.asme.org/home.cfm?Category=CS. Refer to the ASME web site for the complete list of changes and new publications, standards developing organizations, and information about submitting comments.

ASME maintains monthly updates of drafted new standards as well as revised drafts of current standards, to meet new requirements at: http://cstools.asme.org/csconnect/PublicReviewpage.cfm.

A respective "Comment Period End Date" follows each listed document.

2.3 ASTM International

The listing of approved ASTM Standards Actions during May 2008 is made available through a new "RSS News Feed" feature started by ASTM in January 2008. You can access this feature by clicking on the "RSS" button on the ASTM web site http://www.astm.org/.

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2.4 American Nuclear Society (ANS)

The ANS "What's New" web page at http://www.ans.org/standards/new/ lists recently initiated projects, as well as ANS standards approved in recent years.

2.5 National Fire Protection Association (NFPA)

The May 2008 NFPA News lists NFPA standards available for comment, newly proposed standards, newly issued standards, and the call for members on committees. View it at: http://www.nfpa.org/assets/files//PDF/NFPA%20News/nfpanews0508.pdf. □

THE STANDARDS FORUM & STANDARDS ACTIONS

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