

1. Introduction

The Nuclear Energy Standards Coordination Collaborative (NESCC) is a joint initiative established under the sponsorship of the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) in coordination with the National Institute of Standards and Technology (NIST) and the American National Standard Institute (ANSI).

In the approximately 30 years since a new nuclear power reactor was constructed in the United States, material science, inspection and monitoring methods, and construction techniques have changed significantly. To address these changes, the NESCC was established in 2009 as a forum where nuclear energy stakeholders could work together to respond to industry needs for new and revised standards. Stakeholders include standards development organizations (SDOs), reactor vendors, plant construction, plant maintenance, plant owners, plant operators, industry associations, researchers, academia, national/international government organizations, and subject matter experts.

2. Mission, Vision, and Goals

The NESCC has established the following mission, vision, and goals.

2.1. Mission

The mission is to work together to accelerate the development and adoption of significant new and revised standards supporting (1) the design, construction, deployment, and maintenance of new nuclear power plants and other nuclear technologies, including advanced reactor concepts, and (2) continued operation of in-service nuclear power plants. The NESCC does not encourage the development of standards for activities of fuel cycle facilities other than power plants (e.g. mines, fuel fabrication), or for DOE/NNSA nuclear facilities other than test reactors.

2.2. Vision

The vision is to improve existing structures and processes as well as accomplishing coordinated standards development for licensed and new nuclear power plants

2.3. Goals

The NESCC goals are as stated below:

- Work together to identify and describe emerging technical issues and end user applications requiring new/revised standards. This may involve establishing task groups to address particular technical areas, including those used in U.S. licensing processes for nuclear industry activities.
- Identify, coordinate, and recommend priorities for new/revised standards and supporting research.

Nuclear Energy Standards Coordination Collaborative Framework

- Promote collaboration and cooperation among SDOs to address the identified needs in a timely manner, minimize duplication of effort, and promote compatible databases.
- Facilitate development of standards to address significant issues and applications that are not being appropriately addressed through normal standards development processes.
- Promote the reference to voluntary standards, consistent with the National Technology Transfer and Advancement Act, in U.S. regulatory body documents and guidance.
- Assist with the development of an NRC database of standards relevant to commercial nuclear power plants.
- Assist in accelerating the NRC's adoption of NESCC-identified highest priority standards used in the U.S. licensing process.

2.4. Evaluation of NESCC

In an attempt to ensure that the NESCC is effective in accomplishing its goals, two methods of evaluation are in place:

- At least every two years, a survey of the NESCC membership is conducted to solicit feedback on the perceived value of the NESCC's work and receive input into areas that the NESCC should pursue.
- At least every two years, the Steering Committee (described in Section 3.3) evaluates the purpose, need, and continued value contributed by the NESCC to the nuclear energy industry and revisits the current relevance of the Framework document.

3. Leadership**3.1. Sponsors**

DOE and NRC are the sponsoring agencies for the NESCC and provide financial support for the NESCC's operation and approved activities, provide guidance and recommendations on nuclear energy issues, and serve as a conduit for federal assistance in addressing industry needs.

3.2. NESCC Co-Chairs

As a collaborative partnership, the NESCC is led by two co-chairs representing the public and private sectors.

- **Public Sector Co-chair:** A representative from the NIST Standards Coordination Office serves in this role.

- Private Sector Co-chair: This individual serving in this role is determined via nomination by NESCC members and subsequent selection by the Steering Committee.

The NESCC co-chair roles are described below:

- Act in a neutral capacity and build consensus, giving due consideration to the expressed views of all parties.
- Develop meeting agendas and plans in coordination with other Steering Committee members.
- Convene and facilitate meetings of the NESCC.
- Assist in identifying task group chairs and potential members.
- Initiate the development of written publications, both press releases and articles, on the activities of the NESCC.
- Review draft meeting reports, recommendations, and publications in coordination with other Steering Committee members.
- Serve as spokespersons to the external community regarding NESCC activities and interface with the NESCC Secretariat and communications team, as appropriate.
- As appropriate and in consultation with other Steering Committee members, coordinate activities of the NESCC with external initiatives, including other national, regional, and international efforts addressing nuclear energy standards in order to avoid conflict and duplication and to enhance global compatibility.

3.3. Steering Committee

The Steering Committee is a standing committee of the NESCC for the purpose of providing overall planning and strategic direction for the NESCC, its activities, and its deliverables.

3.3.1. Responsibilities

The Steering Committee is responsible for reviewing, providing input to, and approving NESCC meeting reports, task group proposals, and task group reports, assisting the NESCC with implementation of recommendations, and recruiting NESCC participants.

The Steering Committee meets as needed and at least once per quarter. It is the intent that any decisions of the Steering Committee will be made by consensus.

3.3.2. Members and Roles

The Steering Committee is composed of the following members with roles as defined below:

- (1) DOE and NRC Sponsors: The role of the Sponsors is to provide funding to support the

- activities of the NESCC, coordinate federal efforts related to the production of nuclear energy, inform the NESCC of their agencies' needs, and receive input from the NESCC.
- (2) Federal Co-chair: The role of the Federal Co-chair is to coordinate with Sponsors to address needs and establish consistent processes for the NESCC and its task groups; engage with individual NESCC members to address issues, concerns, and recommendations; provide support to task group leads and assist in progressing toward end goals; and fund task groups and invitational travel as appropriate. The Federal Co-chair will also serve as the conduit for communications between the Steering Committee and the NESCC membership.
 - (3) Private-sector Co-chair: The role of the Private-sector Co-chair is to engage industry contacts to support the NESCC mission and task group initiatives; help to increase participation of industry representatives, especially end users (e.g., utilities, operators, vendors); and serve as a conduit through which industry can raise sensitive issues.
 - (4) ANSI: The role of ANSI is to assist in the engagement of the private sector to support the NESCC through its broad membership of SDOs, companies, academic institutions, international bodies, individuals as well as government agencies.

The Steering Committee members fulfill their individual roles while coordinating efforts and working together to support the NESCC.

3.3.3. Advisors

The Steering Committee relies upon Advisors from Industry Associations or Institutes (see Section 4.2) representing a broad group of stakeholders and/or the collective needs of the nuclear energy enterprise. Advisors serve in the following ways:

- Participate in meetings of the Steering Committee.
- Assist in identifying members for task groups.
- Help to facilitate the development and publication of NESCC articles in relevant magazines and newsletters.
- Review and provide input to task group reports.
- Act as an information conduit between his/her association or institute and the NESCC.

The initial Advisors to the Steering Committee are identified below with their memberships:

- (1) Electric Power Research Institute (EPRI). EPRI conducts research, development and demonstration relating to the generation, delivery, and use of electricity for the benefit of the public¹. Membership is composed of electric utilities, government agencies, corporations, or public or private entities engaged in some aspect of the generation,

¹ Our Business. (2013). Retrieved May 22, 2013, from <http://www.epri.com/About-Us/Pages/Our-Business.aspx>

delivery or use of electricity².

- (2) Nuclear Energy Institute (NEI). NEI is the policy organization of the nuclear energy and technologies industry and participates in both the national and global policy-making process. Membership is composed of companies that operate nuclear power plants, design and engineering firms, fuel suppliers and service companies, companies involved in nuclear medicine and nuclear industrial applications, radionuclide and radiopharmaceutical companies, universities and research laboratories, and labor unions³.

There is no limit to the number of Advisors, and an Industry Association or Institute may nominate an Advisor at any time. The Steering Committee will review and approve each nomination to assess whether the nominated organization represents a diverse group of stakeholders and adds value/insight to the NESCC. The term of service will be decided on an individual basis.

4. NESCC Membership

Membership in the NESCC is open to any materially affected organizations involved in the development or application of nuclear energy standards. Any individual that attends an NESCC meeting is accepted as a member of the NESCC. Every member of the NESCC has an equal voice in identifying issues or concerns and recommending actions.

4.1. Benefits of Participation

Participation in the NESCC provides the ability to:

- Actively contribute to a public-private partnership focused on supporting the construction and operation of nuclear power plants.
- Influence the standardization strategies that impact the nuclear energy industry.
- Inform strategic policy discussions within standards and conformance bodies at the national, regional, and international levels.
- Leverage cross-stakeholder and global networking opportunities and collaborations.
- Access early information on key initiatives and technologies.

4.2. Membership Categories

NESCC membership is categorized as follows, and Appendix A contains a list of stakeholders for whom representation is sought.

² Our Members. (2013). Retrieved May 22, 2013, from <http://www.epri.com/About-Us/Pages/Our-Members.aspx>

³ About NEI. (2013). Retrieved May 22, 2013, from <http://www.nei.org/aboutnei>

- Standards Development Organization (SDO): Professional society, industry and trade association, or membership organization that develops standards within their area of expertise and related to the construction and operation of nuclear power plants.
- Private Industry: A corporation, partnership, or other entity that is engaged in commercial activity related to the construction and operation of nuclear power plants.
- Industry Association and Institute: Other than an SDO, not-for-profit scientific, technical, professional, or other organizations having a specific technology or industry focus.
- Government : A department or agency of the United States government or of any state, tribal, interstate, or regional authority or agency, or any local or county subdivision of such entities interested in the work of the NESCC.
- Educational: A domestic not-for-profit institution of higher learning not otherwise eligible for membership.

4.3. Membership Status

Members are classified as either active or inactive depending on their participation in NESCC meetings.

- **Active members:** A member is considered to be active if he/she participates in at least one meeting per year. A list of active members is maintained and used for distribution of information. Active members who miss all meetings in one year will be contacted to determine their interest in continuing as an active member.
- **Inactive members:** A member is considered to be inactive if he/she does not participate in at least one meeting per year.

5. Task Groups

Task groups are formed with specific scopes and objectives to address identified technical issues. Any NESCC member may propose a new task group by submitting a completed task group proposal to the Steering Committee. If the Steering Committee concurs with the proposed task group, the proposal is then presented to the NESCC for their review and approval.

Each task group has an assigned chair responsible for identifying needed participants; guiding the task group in its strategy, goals, and deliverables; facilitating their work; compiling the task group report; and developing an article summarizing report for submission to a relevant publication. The chair also provides status reports at NESCC meetings and upon request to the Steering Committee.

The goal for each task group is to identify and document for a specific technology area (1) gaps between needed standards and NRC-endorsed standards, (2) current industry issues, (3) recommendations for addressing identified gaps and industry issues, and (4) end users and/or stakeholders that could benefit from or implement the recommendations. The task group's report

should also include supporting research and development that may be required. It is anticipated that task groups will complete and document their work in a report within 18 months.

6. NESCC Operating Guidelines

The NESCC has agreed to operate per the following guidelines:

- **Openness and Transparency:** The NESCC operating process is open and transparent to all interested parties, and information and documentation is publicly available via the ANSI-hosted NESCC document library located at:

<http://publicaa.ansi.org/sites/apdl/NESCCDocs/Forms/AllItems.aspx>

The NESCC typically holds three meetings per year in the Washington DC metro area. Meetings are open to all materially affected parties involved in the development or application of standards related to the operation of licensed power plants or the construction of new power plants and are publicly announced by the NESCC Secretariat at least four weeks in advance of the meeting. Ad hoc meetings may be convened throughout the year to receive periodic updates on the NESCC activities. Meetings may be supported either in-person or electronically via telephone or web conferencing. Meeting space and support are provided, and members are responsible for their individual travel expenses.

Active members will receive from the NESCC Secretariat notifications of meetings, opportunities, and posted documents.

Decision making: It is intended that the NESCC will reach its conclusions through a consensus process. It is not expected that a formal balloting process is required for approvals. The NESCC is given opportunity to review and provide input to task group proposals, task group reports, and the NESCC framework.

7. Roles of NESCC Secretariat⁴

The NESCC Secretariat performs the following roles:

- Development of draft NESCC meeting minutes.
- Oversight of the planning, preparation, coordination, and logistical support of all NESCC meetings, and communications.
- Maintenance of the NESCC website and document registers for both the NESCC and task groups.
- Dissemination of information and notification of meetings, opportunities, and published documents.

⁴ The NESCC Secretariat role is currently being performed by ANSI.

Approved

Appendix A

- The SDOs listed below publish standards that are used extensively in the nuclear energy industry.
 - American Concrete Institute (ACI)
 - American Institute of Chemical Engineers (AIChE)
 - American Institute of Steel Construction (AISC)
 - American Nuclear Society (ANS)
 - American Society Mechanical Engineers (ASME)
 - ASTM International
 - American Welding Society (AWS)
 - Institute for Electrical and Electronics Engineers (IEEE)
 - Institute of Nuclear Materials Management (INMM)
 - Manufacturers Standardization Society (MSS)
 - National Fire Protection Association (NFPA)

- In addition to the SDOs previously identified, the following SDOs publish nuclear energy-related standards that are referenced in NRC documentation.
 - American Association of Physicists in Medicine (AAPM)
 - American Petroleum Institute (API)
 - American Society of Civil Engineers (ASCE)
 - American Society of Heating, Refrigeration, Air Conditioning Engineers (ASHRAE)
 - American Society for Non-destructive Testing (ASNT)
 - American Society for Quality (ASQ)
 - Compressed Gas Association (CGA)
 - Health Physics Society (HPS)
 - Instrument Society of America (ISA)
 - International Commission on Radiological Protection (ICRP)
 - International Commission on Radiological Units and Measurement (ICRU)
 - International Electrotechnical Commission (IEC)
 - International Organization for Standardization (ISO)⁵
 - NACE International, The Corrosion Society (NACE)
 - National Council on Radiation Protection and Measurements (NCRP)
 - National Electrical Manufacturer Association (NEMA)
 - National Institute of Standards and Technology (NIST)
 - Pressure Sensitive Tape Council (PSTC)
 - Underwriters Laboratory (UL)

⁵ ISO technical committees of interest:

- U.S. Nuclear Technical Advisory Group (NTAG) of the International Organization for Standardization Technical Committee 85 (ISO/TC 85, Nuclear Energy).
- IEC/TC 45, Nuclear Instrumentation – IEC/TC 45A, Instrumentation and Control of Nuclear Facilities – IEC/TC 45B, Radiation Protection Instrumentation.

- Industry associations and institutes
 - Electric Power Research Institute (EPRI)
 - Edison Welding Institute (EWI)
 - Gas Technology Institute (GTI)
 - Institute for Nuclear Power Operations (INPO)
 - National Conference of Standards Laboratories International (NCSL International)
 - Nuclear Energy Institute (NEI)

- The following government agencies are stakeholders in the nuclear energy industry.
 - International Atomic Energy Agency (IAEA)
 - National Institute of Standards Technology (NIST)
 - UK Atomic Energy Authority
 - U.S. Department of Energy (DOE)
 - U.S. DOE National Laboratories
 - U.S. Nuclear Regulatory Commission (NRC)

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