

INMM Accredited Standards Committee N15
Annual Report to the INMM
July 2017 – July 2018

Status of Accredited Standards Committee (ASC) N15 Standards

ASC N15 has four active standards:

- N15.8-2009 (R2015) – Methods of Nuclear Material Control, Special Nuclear Material (SNM) Control and Accounting Systems for Nuclear Power Plants;
- N15.36-2010 – Measurement Control Program, Nondestructive Assay Measurement Control and Assurance;
- N15.51-2017 – Measurement Control Program, Nuclear Materials Analytical Chemistry Laboratory; and
- N15.56-2014 – Nondestructive Assay Program, Non-Destructive Assay Measurements of Nuclear Material Holdup: General Provisions.

All four active standards were published by ANSI and are available for purchase online at <http://webstore.ansi.org/>.

ASC N15 has several standards under review or development, including:

- N15.19-1989 – Volume Calibration Techniques (not active). An N15 writing team has reviewed International Organization for Standardization (ISO) Standard 18213, “Tank Calibration and Volume Determination for Nuclear Materials Accountancy,” Parts 1 through 6, as part of the ANSI process for adopting the ISO standard as an American National Standard. The final round of comments on a consolidated draft is being compiled. When this task is complete, the standard will be edited and submitted for approval by the N15 consensus body ballot roster.
- N15.28-1991 – Guide for Qualification and Certification of Safeguards Personnel (not active). The original writing team was reinvigorated to perform a final review of the draft revised standard, and new members were added so as to have a balanced representation. A comprehensive review was performed, resulting in multiple comments. Webinars are being held to finalize the draft. Following writing team approval, it will be submitted to the N15 Board for technical editing and INMM ASC N15 consensus body ballot vote.
- N15.36-2010 – Nondestructive Assay Measurement Control and Assurance (active). This active standard is undergoing its 5 year review cycle as part of periodic maintenance under ANSI requirements. A writing team was formed to review and revise the standard. Several webinars and conference calls have been held. As a team they had to take a brief hiatus at the end of 2017 due to their regular work commitments, but they are now continuing work on the standard. The writing team has made significant progress and have nearly completed the first four “tasks”

of the project, which has included review of all the required Administrative Elements for a quality nondestructive assay program. The team hopes to have the completed N15.36 revision draft ready for review by the summer of 2019.

- N15.41-1994 – Measurement Control, General Principles (not active). A reinvigorated writing team under the leadership of Phillip Gibbs (new Chair) and Jackie Shipwash (N15 Writing Team Liaison), are working to review and complete the revision of N15.41 standard. Conference calls are being held to identify and discuss needed changes. Subsets of the writing team are currently revisiting multiple areas of the technical content. For example, the approach used to discuss systematic error in the measurement process is currently not sufficient. The Jaech text from 1973 and a Los Alamos National Laboratory (LANL) report by R.R. Picard 1989 address the subject much better. Areas of focus include controls charts, measurement models (per Jaech’s book), method selection and qualification, hold-up measurements, and the measurement system’s role in loss detection. The N15.41 writing team has achieved agreement on and are working to expand/clarify the discussion on several key aspects of measurement control as it relates to nuclear security. Those areas are the role that measurement control plays with respect to inventory difference (ID) evaluation and the management of measurement uncertainty (random and systematic error) with respect to the ID evaluation process. Future conference calls/webinars are being planned. The group hopes to complete work before fall 2018 now that agreement on major concepts has been achieved and key additional references identified.
- N15.51-2017 – Measurement Control Program, Nuclear Materials Analytical Laboratory (active). An N15.51 writing team lead by B. Chino Srinivasan revised the N15.51-2007 standard in response to suggestions submitted by N15 members during the period 2012-2015. It was approved by the ASC N15 ballot roster on October 10, 2017 and completed public review on October 16. No negative votes were received. Comments received with affirmation votes during ASC N15 consensus body balloting were discussed via writing team webinars and conference calls. A BSR-9 form was submitted and ANSI granted approval of N15.51-2017 on October 27, 2017. It was edited and published by ANSI. It can be purchased at <https://webstore.ansi.org/>.

Outreach and Collaboration.

- Tracking UF6 cylinders – There is an emerging and growing interest in developing a voluntary consensus standard for the identification, labeling, and tracking of UF6 cylinders. In 2017, a working group of the World Nuclear Transport Institute (WNTI), containing representatives of the UF6 handling industry, reached consensus on a global standard titled: *WNTI Standard for UF6 Cylinder Identification* (www.wnti.co.uk/media-centre/publications/wnti-standards.aspx). This standard was written “to provide a standardized format and application method for a global identifier of uranium hexafluoride (UF6) cylinders most commonly used across the nuclear industry”. Michael Whitaker and Jessica White-Horton are assembling a team of interested parties to begin drafting the scope, purpose and title of a proposed N15 standard for methods of conducting a physical inventory of UF6 cylinders using the new global standard. They are also

working with INMM ASC N14 and the ANSI *N14.1 – Packaging of Uranium Hexafluoride for Transport* writing team for communication and coordination between the standard developers.

- N15.56-2014 - Nondestructive Assay Program, Non-Destructive Assay Measurements of Nuclear Material Holdup: General Provisions (active). The N15.56 writing team chair and a writing team member continue to participate as members of an American Nuclear Society (ANS) writing team preparing a new nuclear criticality safety standard titled: *ANSI/ANS-8.28 - Administrative Practices for the Use of Nondestructive Assay Measurements for Nuclear Criticality Safety*. This new ANS standard is meant to be used in conjunction with N15.56.
- ASC N15/INMM 5.1 Subcommittee (Analytical Chemistry Laboratory Measurement Control) - Communications with nuclear material analytical laboratories, domestic (e.g., DOE and NRC facilities) and international (e.g., ABACC, IAEA, IRMM, ITU, JAEA) are maintained by extending invitations to participate in the annual meetings of INMM ASC N15 and N15/INMM 5.1 Subcommittee and by seeking their input on nuclear measurement methods throughout the year. The INMM 5.1 Subcommittee provides input into the IAEA International Target Values for nuclear safeguards measurements.
- N15 Board Officers participated in the ANSI Joint Member Forum and Annual Business Meeting on October 19, 2017; the ANSI Webinar “2018 ANSI Accredited Standards Developer Compliance Review” on February 15, 2018; and in ASTM C26.10 discussions on a proposed guide for determining Total Measurement Uncertainty (TMU) for NDA methods on January 22, 2018. The N15 Board participated in INMM Executive Committee meetings in December 2017, and March and July 2018. N15 Board of Officers plan to hold annual INMM ASC N15 and N15/INMM 5.1 Subcommittee meetings in July 2018 in conjunction with the INMM 59th Annual Meeting in Baltimore, Maryland, and to attend the INMM Technical Division meetings to speak about N15 activities. These two meetings include domestic and international attendees, professionals, retirees and students. Announcements of the annual N15 meetings are emailed to the N15 general membership and interested parties.
- N15 and N14 (Packaging and Transportation) were invited by the INMM Executive Committee (EC) to submit a joint article for the INMM Journal of Nuclear Materials Management. A first draft of the article has been prepared which is intended to highlight the importance, function, and benefit of the INMM as Secretariat for N15 and N14, two nationally accredited standards development organizations.
- ANSI audit (Regular 5-Year) - ANSI performed a remote (mail-in) audit of INMM ASC N15 activities against the ANSI Essential Requirements for compliance with due process requirements for the development of American National Standards. The audit is required to maintain accreditation under periodic maintenance and is conducted at regular 5-year intervals. ASC N15 was formally notified of the audit in December 2017, submitted required paperwork in January and May 2018, and held pre-audit and post-audit conference calls with the ANSI Audit Director and auditor. The final audit report was received on May 18, and a corrective action plan to address audit findings has been submitted to ANSI. The N15 Board Officers are preparing revised N15 Operating Procedures to address the procedural audit findings. They will be submitted to the INMM EC and to ANSI for approval. The audit will remain open until such

time as N15 submits revised procedures to ANSI and those procedures are subsequently reaccredited by ANSI.

Summary. The N15 Board would like to thank all who contribute to and participate in the development of ASC N15 voluntary consensus standards. We invite all those with a material and stakeholder interest in N15 standards to attend our meetings. Please visit the INMM ASC N15 website at <https://www.inmm.org/Technical-Resources/ANSI-Standards/N15-Standards.aspx> .

Respectfully submitted on behalf of N15 by,

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