

ISO TC85/SC5/WG8
Nuclear criticality safety
report to ISO TC85/SC5 Plenary
(previous meeting – 7 June 2012)

Conveners: C. M. Hopper
S. Tarle

13 June 2013
Atlanta, Georgia US

ISO/TC 85/SC5 /WG8 Attendance

- 15 participating members
- Representing CA, FR, IN, KR, UK, US

Documents distributed

- Draft preliminary proposal for Nuclear criticality safety dimensions
- Draft WG8 glossary for consideration by ISO/WD4 12749-4
- ISO/WD4 12749-4
- Draft preliminary proposal for *Nuclear criticality safety – Waste*
- Proposed concept for *Nuclear criticality safety – Training of fissile material handlers*
- Proposed concept for *Nuclear criticality safety - Soluble Boron Credit for PWR fuel pools*

Documents Discussed

- **ISO 1709**
- **ISO/FDIS 16117**
- **ISO/WD4 12749-4**
- **Proposed standards concepts and preliminary proposals**

Work In Progress since the 6 June 2012 St. Denis, FR meeting

- Prepared third preliminary draft for a NWIP for ISO 1709 revision following the receipt and resolution of comments (Neil HARRIS – UK)
- ISO/DIS 16117, *Estimation of the number of fissions of a postulated criticality accident* ballot comments resolved and submitted to ISO for progression as a FDIS (Matthieu DULUC – FR)
- Prepared a preliminary draft for an NWIP ISO standard on *Nuclear criticality safety dimensions*
- Prepared a preliminary draft for an NWIP ISO standard on *Nuclear criticality safety – waste* (Duncan ELLIS – UK)
- A draft purpose and scope statement was developed for the initiation of a NWIP ISO standard on *Nuclear criticality safety- Soluble boron credit for PWR fuels* (Hae Seuk WOO – KR)
- Further drafting of a WG8 nuclear criticality safety guidance for WG8 drafting consistency.

Work In Progress at the Georgia Tech, Atlanta 11 – 12 June 2013 Meeting

- National standards having potential value to ISO standards development were reviewed (Sylvie TARLE – FR, Duncan ELLIS – UK, Calvin HOPPER - US)
- Briefly reviewed the status of ISO FDIS 16117 which is to close August 2013 (Matthieu DULUC)
- Reviewed preliminary draft for an NWIP ISO standard on *Nuclear criticality safety dimensions* (Sylvie TARLE, BARDELAY, NÉRON DE SURGY – FR)
- Reviewed and concurred with the development of a preliminary NWIP for process operator nuclear criticality safety training
- Review and discussions regarding ISO/WD4 12749-4 *Nuclear energy – Vocabulary – Part 3: Nuclear fuel cycle* (Calvin HOPPER – US)

Work In Progress at the Georgia Tech, Atlanta 11 – 12 June 2013 Meeting (cont.)

- Reviewed, discussed and suggested content changes to be considered in the third preliminary draft of a NWIP for ISO 1709 revision
- Developed and approved a scope statement for the work of ISO TC85/SC5/ WG8
- WG8 concurred that ISO 1709 should remain an active ISO standard until otherwise revised as the result of WG8 development of a draft preliminary NWIP submittal.
- WG8 systematic review of ISO 14943; 2004 concurs that the standard should remain.

Work In Progress at the Georgia Tech, Atlanta 11 – 12 June 2013 Meeting (cont.)

- Reviewed the use of ISO LiveLink tools for WG8 work.
- Discussed organizing WG8 into topical areas for standards development.
- Identification of potentially needed ISO standards including:
 - Nuclear criticality risk assessment methodology (e.g., accident frequencies and credible initiating event thresholds)
 - Nuclear criticality safety- Soluble boron credit for PWR fuel pools

Difficulties Met

- **Identifying ISO LiveLink**
 - Transition for WG8
 - Problems requiring resolution (discussed with ISO TC85/SC5 Secretary)
- **Disappointment for no OECD or IAEA liaison representation at meeting**

Resolutions

- 1. Neil HARRIS (UK) is to initiate a New Work Item Proposal (ISO Form 4) for the revision of ISO 1709 provided August 2013.**
- 2. Duncan ELLIS (UK) is to progress the preliminary draft for a New Work Item Proposal for an ISO standard on Nuclear criticality safety – Waste, provided to WG8 for review by October 2013.**
- 3. Sylvie TARLE (FR) is to draft, and Calvin HOPPER (US) is to assist, in the development of a proposal for organizing WG8 into standard topical areas identified in ISO 1709 by December 2013.**
- 4. Susan JOHNSTON (CA) and Lon Paulson (US) is to draft a proposal scope for the initiation of a standard on nuclear criticality risk assessment methodology (e.g., accident frequencies and credible initiating event thresholds) by December 2013.**

Resolutions (cont.)

- 5. Matthieu DULUC (FR) will provide the name(s) of OECD spent fuel pool criticality safety task force members to HaeSeuk WOO (KR) and WG8 for consideration in the development of a preliminary draft NWIP on PWR fuel pool storage by June 2013.**
- 6. HaeSeuk WOO will develop a draft NWIP proposal for Nuclear criticality safety of soluble boron credit for PWR fuel pools by the next ISO TC85 joint meeting in Moscow, RU.**
- 7. Lon PAULSON is (US) to share the OECD single unit critical study with Neil HARRIS (UK) and WG8 for consideration for inclusion in ISO 1709.**
- 8. WG8 is to review the “two column guidance” for completeness (e.g., relationships and accuracy of translations) by December 2013.**

Resolutions (cont.)

- 9. WG8 is to provide comments on Version 2 of current draft NWIP proposal for criticality safety dimensions to Aurelie BARDELAY (FR) by October 2013 and to judge the readiness of the draft for NWIP submittal.**
- 10. The UK (Neil HARRIS/Duncan ELLIS) will produce a rough preliminary draft of a NWIP for process operator nuclear criticality safety training.**
- 11. ISO TC85/SC5/WG8 offers thanks to ANSI and the Georgia Institute of Technology W. Woodruff School of Nuclear & Radiological Engineering/Medical Physics Programs for hosting the 2013 ISO TC85/SC5 meeting.**

Current WG8 Standards

ISO 11311:2011 (Ed. 1)	Nuclear criticality safety -- Critical values for homogeneous plutonium-uranium oxide fuel mixtures outside of reactors	ISO/TC 85/SC 5/WG 8
ISO 11320:2011 (Ed. 1)	Nuclear criticality safety -- Emergency preparedness and response	ISO/TC 85/SC 5/WG 8
ISO 14943:2004 (Ed. 1)	Nuclear fuel technology -- Administrative criteria related to nuclear criticality safety	ISO/TC 85/SC 5/WG 8
ISO 1709:1995 (Ed. 2)	Nuclear energy -- Fissile materials -- Principles of criticality safety in storing, handling and processing	ISO/TC 85/SC 5/WG 8
ISO 27467:2009 (Ed. 1)	Nuclear criticality safety -- Analysis of a postulated criticality accident	ISO/TC 85/SC 5/WG 8
ISO 27468:2011 (Ed. 1)	Nuclear criticality safety -- Evaluation of systems containing PWR UOX fuels -- Bounding burnup credit approach	ISO/TC 85/SC 5/WG 8
ISO 7753:1987 (Ed. 1)	Nuclear energy -- Performance and testing requirements for criticality detection and alarm systems	ISO/TC 85/SC 5/WG 8