ISO 7195
“Packagings for the transport of uranium hexafluoride ($\text{UF}_6$)”

Pierre MALESYS
IAEA / TRANSSC 34
13 July 2017
What is ISO?

- Non-governmental organization
- Established in 1947
- World-wide federation of 163 national standards bodies (one per country)
- Central Secretariat in Geneva (Switzerland)
- ISO in figures for the year 2016
  - 21478 International Standards and standards-type documents published
  - 1381 deliverables
What is an international standard?

▶ A standard is a documented agreement containing technical specification which - when implemented - ensures that materials and services fit for their purpose

▶ An international standard is achieved through consensus agreement between:
  - all stakeholders in each country: suppliers, users, regulators, consumers... (all of you are welcome!)
  - national delegations (need for 66.66% or 75% positive votes, according to the stage in the process)
Who develops the ISO standards?

163 members

General Assembly (AG)

Council

Technical Management Board (TMB)

Political level

TC 85 = “Nuclear energy, nuclear technologies, and radiological protection”

SC 5 = “Nuclear installations, processes and technologies”

WG 4 = “Transport of radioactive material”

Programming level

Development of standards

TC

SC

WG

TC

SC

WG

TC

SC

WG

TC

SC

WG
Who participates to SC5 activities?

- 20 Participating Countries (P-Members)
- 9 Observing Countries (O-Members)
- Liaisons with International Organizations (including the IAEA)
What is ISO 7195?

“Packaging of uranium hexafluoride (UF₆) for transport” (ISO 7195)

- was last revised in 2005,
- has to be complied with as a requirement of IAEA “Regulations for the Safe Transport of Radioactive Material” and all the modal regulations based on,
- has been developed from and is based on ANSI N14.1.

ANSI N14.1 has been used internationally as an accepted procedure for packaging UF₆. The standard cylinders included in ANSI N14.1 has been used widely as accepted designs for international transport of UF₆.

ANSI N14.1-2012 has been approved on 3 December 2012 with new title “Uranium Hexafluoride – Packagings for Transport”.
Why is ISO 7195 being revised?

ISO 7195 is being revised in the framework of the periodic review / revision of ISO Standards

- ISO 7195:2005 “Packaging of uranium hexafluoride (UF₆) for transport”
- ISO 7195:201X “Packagings for the transport of uranium hexafluoride (UF₆)”

Revised scope of the standard includes

- To provide for compatibility of packagings for the transport of uranium hexafluoride (UF₆) among different users within the nuclear industry
- To describe their design basis
- To provide the requirements for the procurement and fabrication of new packaging
- To define the requirements for inspections, cleanliness, and maintenance of packagings in service
ISO 7195 – What is new?

- **New title means to focus on the packagings**
  - Requirements regarding transport operations are out of the scope of the standard

- **Alignment with ANSI N14.1 is improved (while maintaining and enhancing the international aspect of the Standard)**
  - Vice versa, the upcoming revision of ANSI N14.1 should take into account the revision of ISO 7195

- **Overlaps with the Regulations and the Advisory Material are removed**
  - The table with the accelerations to be considered for tie-down is removed
  - The draft standard avoids repeating or rewording the Regulations (international, regional, or national)

- **Roles and qualifications of inspectors are clarified**
  - Authorized Inspector vs. Competent Inspector

- **Option for substituting the periodic hydrotest by doing alternative inspections during manufacturing and during the 5-year inspection is now available**
  - Existing provisions for 30C cylinders are now an option for 30B and 48Y cylinders
DIS 7195 was approved

- DIS ballot took place from 22 October 2015 to 22 January 2016
  - P-Members voting: 13 in favour out of 14 = 93 % (requirement >= 66.66%)
  - Member bodies voting: 1 negative vote out of 14 = 7 % (requirement <= 25%)
    (Negative vote with the following comment: “Acceptance of specified technical modifications will change our vote to approval”)

- Many editorial and technical comments were received
  - Almost 300 comments from 7 countries (the draft was deeply scrutinized!)
ISO 7195 – Where are we?

Paris meeting from 29 to 31 March 2016
- 16 participants from 6 countries and 1 organization (liaison)
- A consensus was reached and allowed to resolve all the comments

Resolution by correspondence of a few additional issues from December 2016 to February 2017

General agreement to finalize the draft on the basis of the consensus which were reached (Paris meeting and the subsequent exchanges by correspondence)

West Conshohocken final meeting from 15 to 17 May 2017
- No identified pending issue

Draft transmitted to ISO / TC 85 / SC 5 Secretariat (and then to ISO Central Secretariat)
ISO 7195 – What is next?

- **FDIS ballot to take place during 8 weeks** (starting “soon”)
  - FDIS ballot is almost a “Yes or No” vote (only editorial comments will be taken into account if there is a “Yes” consensus)

- **Publication after the FDIS ballot** (and the subsequent editorial changes following the FDIS ballot)

- **Reference to the new edition of ISO 7195** in the IAEA Regulations (SSR-6), UN Model Regulations, and modal regulations

ISO 12807 "Safe transport of radioactive material - Leakage testing on packages"

- ISO 12807 was published in 1996.
- ISO 12807 describes a method for relating permissible activity release rates of the radioactive contents carried within a containment system to equivalent gas leakage rates under specified test conditions. It pertains specifically to Type B packages for which the regulatory containment requirements are specified explicitly.

- ISO 12807 is being revised
  - DIS ballot from 15 November 2016 to 6 February 2017
ISO 12807 "Safe transport of radioactive material - Leakage testing on packages"

- P-Members voting: 15 in favour out of 15 = 100% (requirement >= 66.66%)
- About 80 comments from 5 countries
- West Conshohocken meeting from 15 to 17 May 2017
- Resolution of the comments during the meeting and distribution of the table with the resolution of the comments to all the members of the Working Group

Next steps

- Integration of the resolution of the comments in a new draft and final review by the members of the Working Group
- Organization of the FDIS ballot
ISO 10276 “Trunnions for packages used to transport radioactive material”

- ISO 10276 was published in 2010
- ISO 10276 is being revised
  - Collecting the comments with the topics to be included in the revision
- Meeting in West Conshohocken: comprehensive review of the existing standard and identification of the issues
- Next step: to establish a drafting group