The SSDL Network
The IAEA/WHO Network of Secondary Standards Dosimetry Laboratories

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International measurement system

CIPM and CCRI (Comité international des poids et mesures and Consultative Committee for Ionizing Radiation)

Primary Standards Dosimetry Laboratories, PSDLs

End-users
End-users of dosimetry quantities

- Radiation therapy
  \[ D_{PTV} = 2 \text{ Gy} \times 25 = 50 \text{ Gy} \]
  \[ \text{Gy / day} \]

- Diagnostic radiology
  \[ DRL = 10 \text{ mGy} \]
  \[ \text{mGy / day} \]

- Radiation protection
  \[ E = 20 \text{ mSv/year} \]
  \[ \mu\text{Sv / day} \]

Recommended dose levels and limits (RP) are based on national and international studies. We should comply with them.

* Need for accurate and comparable dose measurements.
* Need for calibrations with them.
International measurement system

PSDLs
- PSDL
- PSDL
- BIPM
- PSDL

Secondary Standards Dosimetry Laboratories, SSDLs
(USA: Accredited Dosimetry Calibration Laboratory, ADCL)

End-users

~ millions of end-users
Role of an SSDL

• **Link** between PSDLs and end-users
• **Provide** calibration and audit **services** with appropriate uncertainties.
• Implement internationally recommended **dosimetry practices**.
• Provide **dosimetry expertise** and training to end-users.
International measurement system

PSDLs

SSDLs

End-users

~ millions of end-users

~20 PSDLs

~100 SSDLs
International measurement system

Key and supplementary comparisons

PSDLs

SSDLs

End-users

~ millions of end-users

~20 PSDLs

~100 SSDLs

IAEA/WHO

SSDL Network

Regional Metrology Organization (RMO)

BIPM

PSDLs
IAEA/WHO SSDL network

- 86 SSDLs
- 16 PSDLs
- 73 countries
- 5 International organizations

SSDL Network members:
- >50% traceable through IAEA
- >100,000 calibrations provided yearly.

IAEA acts as central laboratory
Objectives of the Network

- Accuracy
- Traceability
- Consistency
- Cooperation

Join us in Facebook: Dosimetry Network

https://ssdl.iaea.org/
Metrological status of the IAEA Dosimetry Laboratory (DOL)

• Provides calibrations for SSDLs (reference standards)
• IAEA signed the CIPM MRA in 1999
• CMCs were published in the KCDB in 1999
• QMS was reviewed by all RMOs and approved by JCRB
• participates in comparisons of all regions (RMOs).

CIPM = International Committee for Weights and Measures
MRA = Mutual Recognition Arrangement
CMC = Calibration and Measurement Capabilities
KCDB = Key Comparison Data Base
QMS = Quality Management System
RMO = Regional Metrology Organizations
JCRB = Joint Committee of RMOs and BIPM
DOL services: calibrations

~100 calibration certificates/year (RT, RP, DR, BT)

RT = Radiation therapy, RP = Radiation protection, DR = Diagnostic radiology, BT = Brachytherapy
DOL services: comparisons and audits

~20 comparison reports /year (RT, RP, DR)
~50 audit reports /year (RT, RP)

RT= Radiation therapy, RP= Radiation protection, DR= Diagnostic radiology
Training
Publications

- Dosimetry Codes of Practices
- Guidelines for Radiation Measurements
- SSDL Newsletters

All publications are freely available from our website: https://www.iaea.org/publications

Check also IAEA Human Health Campus: humanhealth.iaea.org
DOLNET: provides information about the calibration services available for the end-users
IAEA/WHO SSDL network

https://ssdl.iaea.org/
Thank you!