

Laboratory Accreditation & Scope of Accreditation – What does this mean?

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Accreditation defined for the ADCL's

- The action or process of officially recognizing a laboratory as having a particular status or being qualified to perform a particular (Calibration) activity.





Primary Governing Documents

- **AAPM Criteria:** AAPM Guidance Document regarding the accreditation of an ADCL.
- **ISO/IEC 17025:2017(E):** A Standards Document from which the AAPM Criteria is developed.





AAPM Criteria:

Describes the accreditation process

- General requirements – criteria for accreditation
- Traceability requirements
- Uncertainties of measurements
- ADCL management requirements
- Quality assurance programs
- Proficiency Testing
- Technical requirements
- Calibration results reporting





AAPM Criteria: Specific Criteria

- Air Kerma calibrations for ion chambers and electrometers
- LDR Brachytherapy source and well-type chambers.
- Air Kerma calibration for diagnostic x-ray systems.
- Absorbed dose to water calibrations for ion chambers.
- HDR Brachytherapy well-type chambers.
- Electrometer calibrations.
- Intravascular Brachytherapy well-type chambers.





AAPM Governance

Calibration Laboratory Assessment (CLA) committee:

- Subcommittee of the Therapy committee
- Charged with management and oversight of the ADCL's





AAPM Governance via CLA

Accreditation Maintenance and Assessment:

- Accreditation reissued every four (4) years
 - Document Review
 - Compliance to the AAPM criteria evaluated
 - Onsite inspection by CLA members

- Surveillance Review in the intervening two (2) years
 - Document Review
 - Compliance to the AAPM criteria evaluated
 - Onsite inspection by CLA members





What is an ADCL?

- The AAPM Criteria states,

“The only type of laboratory accredited by the AAPM is a secondary standard laboratory with the capability of providing **direct traceability** to the National Institute of Standards and Technology (NIST). Such a laboratory is referred to as an **Accredited Dosimetry Calibration Laboratory (ADCL)**.”



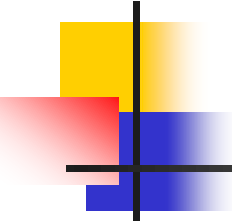


AAPM Criteria:

Functions of an AAPM accredited ADCL

- Provides traceable instrument/isotope calibrations
- Serve as non-voting member of the CLA
- Secondary Standard Calibration Laboratory
- A technical resource for AAPM members





How does one know what types of accredited calibrations an ADCL can provide?

Scope of Accreditation

A list of specific tests and calibrations for which an ADCL has been found competent by a recognized accrediting agency.





Scope of Accreditation - Contents

Air Kerma Calibration for Ionization Chambers for Radiation Therapy

Parameter/Equipment	Range	Best Uncertainty	Comments
Ionization Chambers Therapy Class			Reference and Field Class Chambers
Co ⁶⁰ Air Kerma	Up to 44 cGy/min	1.2%	
Cs ¹³⁷ Air Kerma	Up to 13 cGy/min	1.2%	
X-rays	20 – 250 kVp M Series 30 – 100 kVp L Series 40 – 250 kVp ISO Narrow- spectrum Series	1.2% 1.2% 1.2%	





What if I have equipment/isotopes not listed in an ADCL AAPM Scope of Accreditation?

- Diodes
- Ion chambers/solid state devices use for Mammography systems using W/Al, W/Ag, or W/Rh target filter combinations
- Light meters
- Voltage dividers/dynalyzers
- TLD's/Nano dots
- Isotopes and Isotope applications
- Digital Multimeters





American Association of Laboratory Accreditation (A2LA)

- Nationally and Internationally recognized accrediting organization.
- With an A2LA accreditation, an ADCL can provide accredited/traceable calibrations, tests or measurements on items not listed in the AAPM Criteria.
- Check with your ADCL about A2LA accreditation.
- Review the ADCL's A2LA Scope of Accreditation





Value of AAPM ADCL Accreditation

- Synonymous with both quality and competence of an organization, based on international standard(s).
- The most appropriate way to ensure an organization's competence to perform a specified task.
- Refers to recognition given to an organization by an authoritative body such as AAPM.

