

AbstractID: 9217 Title: New IAEA document on Acceptance Testing, Quality Assurance and Quality Control for PET and PET/CT Systems.

Purpose:

The increased role played by PET and PET combined with computed tomography (PET/CT) in oncology as well as cardiology and neurology associated with increasing reimbursement of multiple PET indications has prompted the need for updated guidelines specific to PET and PET/CT in terms of acceptance testing as well as quality assurance and quality control. These new IAEA guidelines are intended to provide standard testing procedures for use by end users and manufacturers.

Method and Materials:

The document address more recent developments in PET technology, such as the addition of the CT component, the need to ensure proper registration of the PET and CT data, mobile PET/CT units, time-of-flight systems, and the significant natural radioactivity present in some detector materials.

Results and Conclusion:

The new IAEA document is a reference technical document that provides guidance about the specifications and prerequisites required for acceptance testing of PET and PET/CT scanners, including professionals to be involved, definition of applications, minimal required configurations and corresponding performances parameters as well as ancillary equipment.

The document also provides guidelines for routine quality control of PET and PET/CT scanners and a framework for setting reference values, tolerances and action levels. Following these guidelines would ensure operation of the scanner under optimal conditions that yield the best performance in routine clinical tasks that involve lesion detection as well as quantification of radioactivity concentration.