




**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Institute of Standards and Technology**  
Gaithersburg, Maryland 20899-0001  
OFFICE OF THE DIRECTOR

October 1, 2004

MEMORANDUM FOR Lisa Karam, Acting Chief  
Ionizing Radiation Division

From: Richard Kayser, Chair   
Measurement Services Advisory Group

Subject: Declaration of Ionizing Radiation Calibration Services in Conformity  
with the NIST Quality System for Measurement Services

Based upon a review of the intermediate and final results of the NIST Quality System assessment process and the positive recommendation of the NIST Quality System Assessment Review Board (see Section 4.6.1 of the NIST-level Quality Manual and references therein), the Measurement Services Advisory Group (MSAG) declares the following calibration services offered by the Ionizing Radiation Division to be in conformity with the NIST Quality System for Measurement Services. Please extend the MSAG's congratulations to your quality system management team and to all staff members involved in providing these calibration services for this major accomplishment.

- 43010C      Gamma-Ray-Emitting Radionuclides in Solution (Half Lives Greater than 15 days)
- 43020C      Gamma-Ray-Emitting Radionuclides in Solution (Half Lives Less than 15 days)
- 43030C      Alpha-Particle-Emitting Solid Sources, NIST  $2\pi$  alpha Proportional Counter
- 43040C      Alpha-Particle-Emitting Solid Sources, NIST  $0.8\pi$  alpha Defined-Solid-Angle Counter
- 43050C      Alpha-Particle-Emitting Solid Sources, Using Both Counting Systems
- 46010C      Radiation Detectors – Calibration/Correction Factor, One Beam Quality
- 46011C      Each Additional Beam Quality or Condition
- 46020C      Passive Dosimeters – Irradiation of Up to Six, One Beam Quality at One Set-Up
- 46021C      Up to Six Additional dosimeters at Same Setup and Beam Quality
- 46110C      Radiation Detectors Calibration/Correction Factor (Absorbed-Dose-To-Water Calibrations for Ionization Chambers)

- 47010C Gamma-Ray Sources Similar to NIST Standards —  $^{60}\text{Co}$  or  $^{137}\text{Cs}$ , Having Air-Kerma Strengths  $10\ \mu\text{Gy m}^2/\text{h}$  to  $1500\ \mu\text{Gy m}^2/\text{h}$ ; and  $^{192}\text{Ir}$  Sources of the Same Type Used to Calibrate Reentrant Chamber Having Air-Kerma Strengths  $0.1\ \mu\text{Gy m}^2/\text{h}$  to  $30\ \mu\text{Gy m}^2/\text{h}$  (Gamma-Ray Sources, Co-60, Cs-137, Ir-192)
- 47011C Each Additional Gamma-Ray source of Same Radionuclide
- 47020C  $^{125}\text{I}$  or  $^{103}\text{Pd}$  Sources: Seeds Having Air-Kerma Strengths  $0.5\ \mu\text{Gy m}^2/\text{h}$  to  $100\ \mu\text{Gy m}^2/\text{h}$  (Low-energy Photon Brachytherapy Seeds, I-125, Pd-103)
- 47021C Each Additional  $^{125}\text{I}$  or  $^{103}\text{Pd}$  Source of Same Radionuclide/Design Submitted with Above
- 47030C Beta-Particle Sources Calibrated for Surface Dose Rate
- 47035C Beta-Particle Sources Calibrated for Radiation Protection
- 47036C Ionization Chambers Calibrated with Beta-Particle Sources for Radiation Protection
- 49010C Calibration Irradiations of Customer Supplied Dosimeters with  $^{60}\text{Co}$  Gamma-Rays
- 49020C Dose Interpretation of NIST Transfer Dosimeter Irradiated by Customer, Three Dosimeters Plus Control(s)
- 49030C Dose Interpretation of Each NIST Transfer Dosimeter Package in Addition to Those Supplied Under 49020C
- 44010C Radioactive Neutron Sources Emission Rates ( $10^5/\text{s}$  to  $10^8/\text{s}$ )
- 44020C Radioactive Neutron Sources Emission Rates ( $10^8/\text{s}$  to  $10^{10}/\text{s}$ )
- 44060C Personnel Protection Instrumentation, Californium Source Bare and Moderated

cc: Katherine Gebbie, Director, Physics Laboratory  
William Ott, Deputy Director, Physics Laboratory  
Warren Merkel, Chair, NIST Quality System Assessment Review Board  
Members, Measurement Services Advisory Group