

# L15e Validation of external personal monitoring

using active (electronic) personal dosimeters



**IAEA**

International Atomic Energy Agency

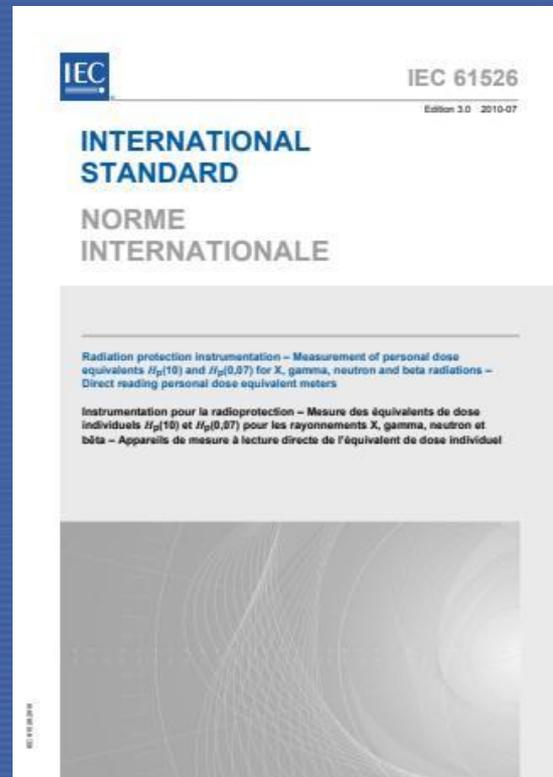
# Validation planning

Validation of external monitoring, using active (electronic) personal dosimeter devices can be done by:

- Calibration of the dosimeters by irradiating at a Primary or Secondary Standard Dosimetry Laboratory
- Laboratory intercomparison exercises
- Performance Testing

# Performance criteria

- The performance criteria are recommended by ISO/IEC 61526:2010 “Radiation protection instrumentation - Measurement of personal dose equivalents  $H_p(10)$  and  $H_p(0,07)$  for X, gamma, neutron and beta radiations - Direct reading personal dose equivalent meters”



# Type testing criteria

IEC 61526 Performance Requirements:

General Characteristics  
Mechanical Characteristics

Radiation Performance  
Electrical Performance

Electromagnetic Compatibility  
Environmental Characteristics

# Validation

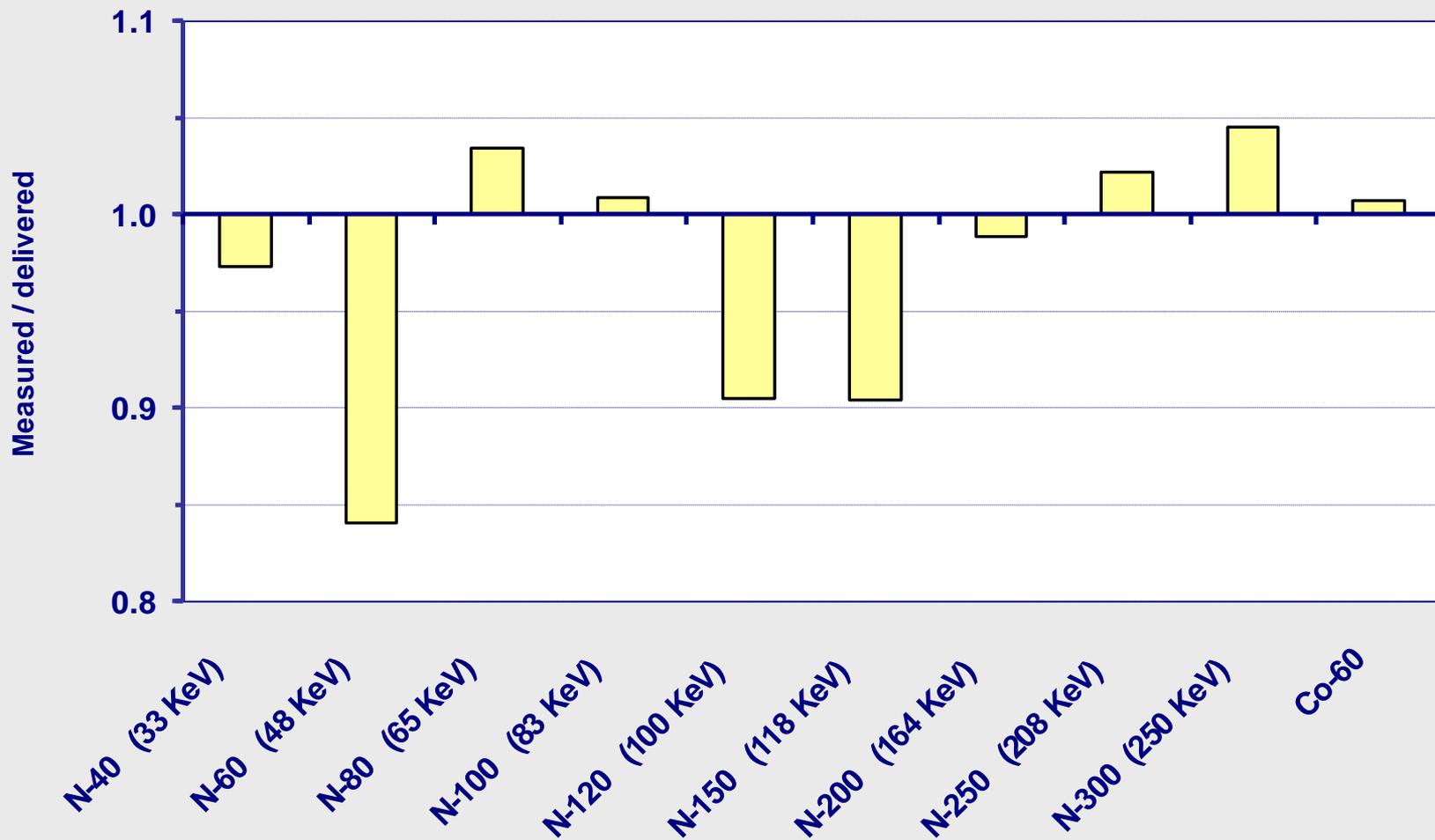
Components of the validation action are:

- Type test performed by the supplier.
- Verification of the performance for all APD used in the services.
- Results of an international intercomparison organized by IAEA for APD suppliers.

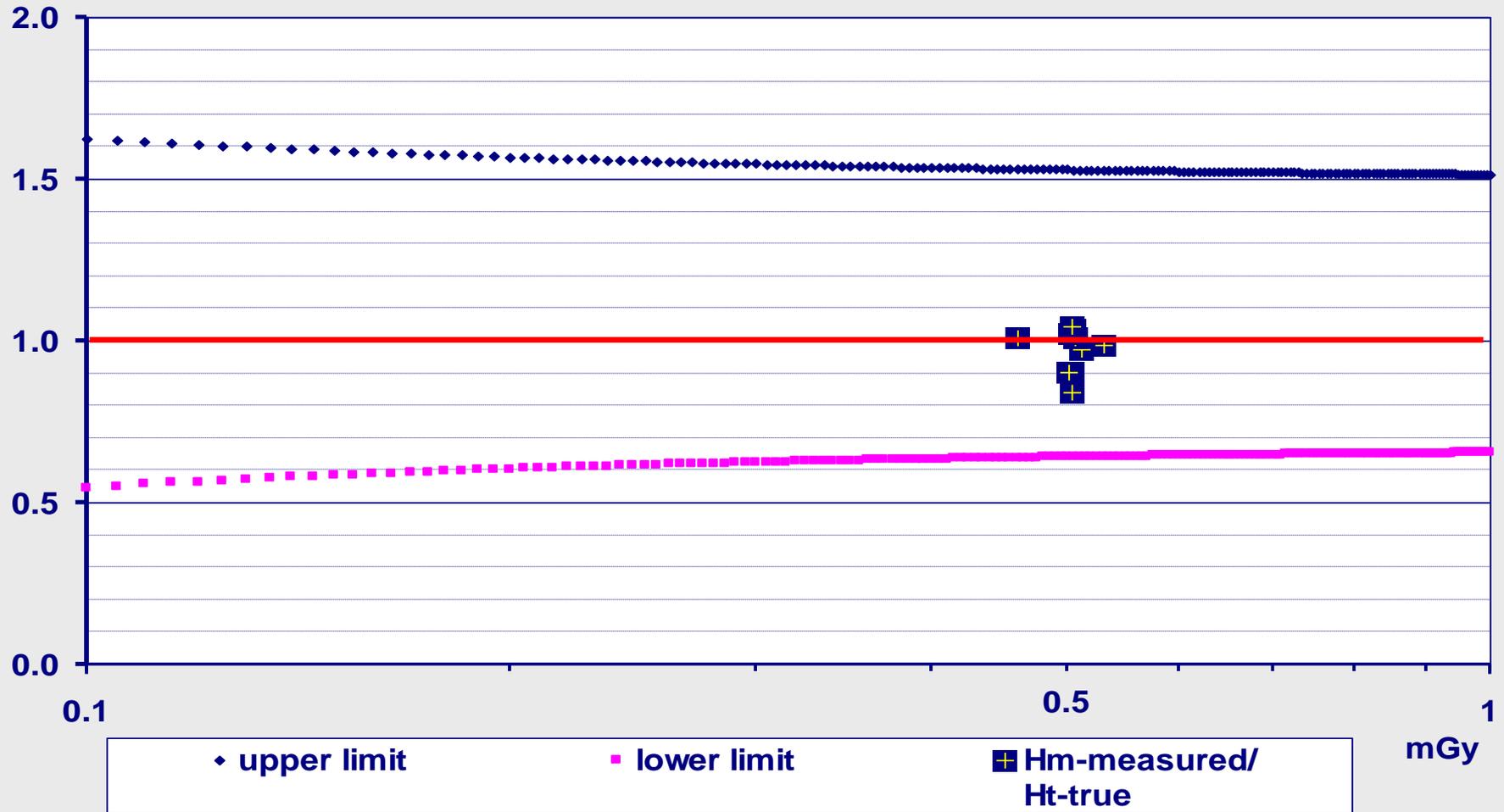
# Validation planning

- Start with method selection
- Define acceptable performance criteria
- Plan irradiations to cover the performance criteria
- Do the irradiations
- Evaluate the dosimeters
- Assess the performance criteria
- Issue validation statement

# APD response

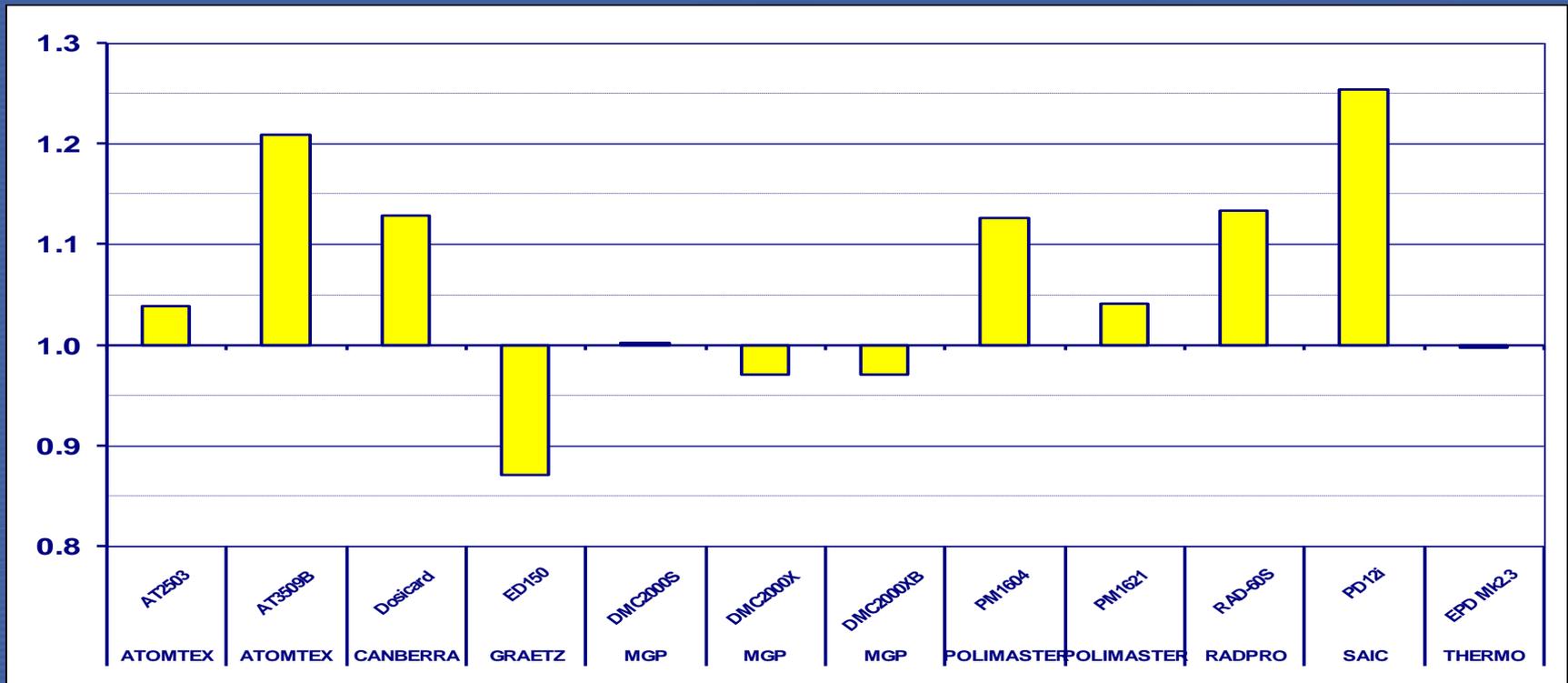


# APD response in trumpet



# IAEA / EURADOS intercomparison for APD (2004-2006)

Mixed field: 200 $\mu$ Sv Cs137 + 150 $\mu$ Sv N-80



# Validation statement

Issue validation statement accordingly