

### 3.1 Weitergabe der Einheiten im gesetzlichen Messwesen

$U_r$  Relative erweiterte Messunsicherheit, die sich aus der Standardmessunsicherheit durch Multiplikation mit dem Erweiterungsfaktor  $k = 2$  ergibt. Sie wurde gemäß dem "Guide to the Expression of Uncertainty in Measurement" (ISO, 1995) ermittelt. Der Wert der Messgröße liegt im Regelfall mit einer Wahrscheinlichkeit von annähernd 95 % im zugeordneten Werteintervall.

Einträge in "The BIPM key comparison database (KCDB)", <http://www.bipm.org>

| Bezeichnung      | Calibration or Measurement Service |                                      |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions                |                                     | $U_r$ in % | Arbeitsanweisung<br>Work instruction | Zuständig<br>Responsible | Aufgabe<br>Task | Bemerkung<br>Remark             |
|------------------|------------------------------------|--------------------------------------|--|---|------------|--------------------|--|-------------------------------------|------------|--------------------------------------|--------------------------|-----------------|---------------------------------|
|                  | Service identification             | Messgröße<br>Quantity                | Instrument or Artifact   | Instrument Type or Method               | Min<br>Min | Max<br>Max         | Einheit<br>Unit  | Parameter<br>Parameter              |            |                                      |                          |                 |                                 |
| EUR-RAD-PTB-1001 | Absorbed dose rate to water        | Dosemeter                            | Conversion coefficient, PMMA phantom   | 2,0E-04                                 | 2,0E-02    | Gy s <sup>-1</sup> | X-rays<br>10 kV to 50 kV                                 | 10 kV to 40 kV<br>DIN 6809/4 1988   | 2,8        | AA-6200-001                          | 6.2                      | 09              | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1002 | Absorbed dose rate to water        | Dosemeter                            | Conversion coefficient, PMMA phantom   | 2,0E-04                                 | 2,0E-02    | Gy s <sup>-1</sup> | X-rays<br>50 kV to 420 kV                                | 50 kV to 100 kV<br>DIN 6809/4 1988  | 2,8        | AA-6200-001                          | 6.2                      | 09              | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1003 | Absorbed dose rate to water        | Dosemeter                            | Secondary standard in a water phantom  | 2,0E-04                                 | 2,0E-03    | Gy s <sup>-1</sup> | X-rays<br>50 kV to 420 kV                                | 100 kV to 300 kV<br>DIN 6809/5 1996 | 2,1        | AA-6200-001                          | 6.2                      | 09              | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1004 | Absorbed dose rate to water        | Dosemeter                            | Calibration in water phantom, reference field                                  | 2,0E-03                                 | 2,0E-02    | Gy s <sup>-1</sup> | Co-60  | DIN 6800/2 2008                     | 0,5        | AA-6200-010                          | 6.2                      | 08              | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1005 | Reference air kerma rate           | Ir-192 source (HDR, PDR, wire)       | Transfer chamber calibrated with primary cavity chamber                        | 1,0E-04                                 | 1,0E-01    | Gy h <sup>-1</sup> | air kerma free in air at 1 m                             | DIN 6800/2 2008                     | 1,8        | AA-6200-022                          | 6.2                      | 11, 12          | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1006 | Reference air kerma rate           | Well-type chamber ionization chamber | Ir-192 reference field   | 1,0E-04                                 | 1,0E-01    | Gy h <sup>-1</sup> | air kerma free in air                                    | DIN 6800/2 2008                     | 2,0        | AA-6200-022                          | 6.2                      | 11, 12          | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1007 | Reference air kerma rate           | Co-60 HDR-source                     | Transfer chamber calibrated with primary cavity chamber                        | 1,0E-04                                 | 1,0E-01    | Gy h <sup>-1</sup> | air kerma free in air                                    | DIN 6800/2 2008                     | 1,5        | AA-6200-022                          | 6.2                      | 11, 12          | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1008 | Reference air kerma rate           | Well-type chamber ionization chamber | Co-60 reference field  | 1,0E-04                                 | 1,0E-01    | Gy h <sup>-1</sup> | air kerma free in air                                    | DIN 6800/2 2008                     | 1,7        | AA-6200-022                          | 6.2                      | 11, 12          | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1009 | Reference air kerma rate           | I-125                                | Calibration using primary standard extrapolation chamber                       | 1,0E-06                                 | 1,0E-04    | Gy h <sup>-1</sup> | air kerma free in air                                    | AAPM TG43                           | 1,8        | AA-6200-025                          | 6.2                      | 11, 12          | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1010 | Reference air kerma rate           | Well-type chamber                    | I-125 reference field  | 1,0E-06                                 | 1,0E-04    | Gy h <sup>-1</sup> | air kerma free in air                                    | AAPM TG43                           | 2,0        | AA-6200-025                          | 6.2                      | 11, 12          | Approved on<br>15 November 2010 |
| EUR-RAD-PTB-1011 | Absorbed dose rate to water        | Sr-90/Y-90 line source               | Calibration using primary standard multi-electrode extrapolation chamber (MEC) | 1,0E-02                                 | 5,0E-01    | Gy h <sup>-1</sup> | Absorbed dose to water in 2 mm water equivalent material | ISO/DIS 21439                       | 7,5        | AA-6200-020                          | 6.2                      | 12              | Approved on<br>15 November 2010 |

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|---------------------|---|-------------------|-----------------|------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>1 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service |  |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions                |  | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                    |
|------------------|------------------------------------|--|--|---|------------|--------------------|--|--|---------------------|--------------------------------|------------------|-------------|------------------------------|
|                  | Service identification             | Messgröße<br>Quantity                      | Instrument or<br>Artifact  | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit  | Parameter<br>Parameter   |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                         |
| EUR-RAD-PTB-1012 | Absorbed dose rate to water        | Sr-90/Y-90 area source                     | Calibration using primary standard multi-electrode extrapolation chamber (MEC) | 1,0E-02                                 | 5,0E-01    | Gy s <sup>-1</sup> | Absorbed dose to water in 2 mm water equivalent material | ISO/DIS 21439  | 6                   | AA-6200-020                    | 6.2              | 12          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1013 | Absorbed dose rate to water        | Dosemeter (Scintillator) Radiochromic film | Reference field in water equivalent material                                   | 1,0E-03                                 | 5,0E-01    | Gy s <sup>-1</sup> | Sr-90/Y-90   | ISO/DIS 21439  | 7,5                 | AA-6200-017                    | 6.2              | 12          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1014 | Air kerma rate                     | Dosemeter                                  | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 1,0E-03    | Gy s <sup>-1</sup> | X-rays, 10 kV to 50 kV                                   | IEC 61267 RQR Series, 40 kV to 50 kV   | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1015 | Air kerma rate                     | Dosemeter                                  | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 1,0E-03    | Gy s <sup>-1</sup> | X-rays, 50 kV to 420 kV                                  | IEC 61267 RQR Series, 60 kV to 150 kV  | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1016 | Air kerma rate                     | Dosemeter                                  | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 3,0E-05    | Gy s <sup>-1</sup> | X-rays, 10 kV to 50 kV                                   | IEC 61267 RQA Series, 40 kV to 50 kV   | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1017 | Air kerma rate                     | Dosemeter                                  | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 3,0E-05    | Gy s <sup>-1</sup> | X-rays, 50 kV to 420 kV                                  | IEC 61267 RQA Series, 60 kV to 150 kV  | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1018 | Air kerma rate                     | Dosemeter                                  | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 1,0E-03    | Gy s <sup>-1</sup> | X-rays, 50 kV to 420 kV                                  | IEC 61267 RQT Series, 100 kV to 150 kV   | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1019 | Air kerma rate                     | Dosemeter                                  | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 5,0E-04    | Gy s <sup>-1</sup> | X-rays, 10 kV to 50 kV                                   | Mammography qualities (anode material + x mm of filter): Mo + 0,03 Mo, Mo + 0,025 Rh, Mo + 0,1 Al, W + 0,06 Mo, W + 0,05 Rh, W + 0,5 Al, W + 0,04 Pd, Rh + 0,025 Rh, Rh + 0,1 Al. All anode/filter combinations with and without additional 2 mm Al and for 20 kV to 50 kV | 1,0                 | AA-6200-003                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1020 | Air kerma length product           | Air kerma length product meter             | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 5,0E+01    | Gy cm              | X-rays, 50 kV to 420 kV                                  | IEC 61267 RQR Series, 60 kV to 150 kV  | 1,5                 | AA-6200-003<br>AA-6200-004     | 6.2              | 13          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1021 | Air kerma length product           | Air kerma length product meter             | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 5,0E+00    | Gy cm              | X-rays, 50 kV to 420 kV                                  | IEC 61267 RQA Series, 60 kV to 150 kV  | 1,5                 | AA-6200-003<br>AA-6200-004     | 6.2              | 13          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1022 | Air kerma area product             | Air kerma length product meter             | Calibration free in air against a free air chamber                             | 1,0E-06                                 | 1,0E+02    | Gy cm <sup>2</sup> | X-rays, 50 kV to 420 kV                                  | IEC 61267 RQR Series, 60 kV to 150 kV  | 1,5                 | AA-6200-003<br>AA-6200-004     | 6.2              | 13          | Approved on 15 November 2010 |

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|---------------------|---|-------------------|-----------------|------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>2 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                       |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |   | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                    |
|------------------|------------------------------------|-----------------------|--|---|------------|--------------------|---|---|---------------------|--------------------------------|------------------|-------------|------------------------------|
|                  | Service identification             | Messgröße<br>Quantity | Instrument or<br>Artifact                            | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter                          |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                         |
| EUR-RAD-PTB-1023 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 1,0E-03                                 | 1,0E-01    | Gy h <sup>-1</sup> | X-rays, 10 kV to 50 kV                    | ISO 4037 Narrow Series, 10 kV to 40 kV          | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1024 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 1,0E-03                                 | 1,0E-01    | Gy h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 Narrow Series, 60 kV to 300 kV         | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1025 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 1,0E-03                                 | 1,0E-01    | Gy h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | Narrow Series, 350 kV and 400 kV                | 0,8                 | AA-6200-004                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1026 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 1,0E-03                                 | 1,0E+00    | Gy h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 Wide Series, 60 kV to 300 kV           | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1027 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 1,0E-03                                 | 5,0E+00    | Gy h <sup>-1</sup> | X-rays, 10 kV to 50 kV                    | ISO 4037 High Air Kerma Series, 10 kV to 30 kV  | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1028 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 1,0E-03                                 | 5,0E+00    | Gy h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 High Air Kerma Series, 60 kV to 300 kV | 0,8                 | AA-6200-003<br>AA-6200-004     | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1029 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 1,0E-03                                 | 5,0E+00    | Gy h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | High Air Kerma Series 350 kV and 420 kV         | 0,8                 | AA-6200-004                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1030 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 5,0E-05                                 | 2,0E-04    | Gy s <sup>-1</sup> | Cs-137                                    | Therapy level                                   | 0,9                 | AA-6200-006                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1031 | Air kerma rate                     | Dosemeter             | Calibration free in air against a free air chamber   | 2,0E-3                                  | 2,0E-02    | Gy s <sup>-1</sup> | Co-60                                     | Therapy level                                   | 0,65                | AA-6200-006                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1032 | Air kerma rate                     | Dosemeter             | Calibration in a calibrated field free in air        | 1,0E-07                                 | 6,0E-01    | Gy h <sup>-1</sup> | Cs-137                                    | ISO 4037  | 1,2                 | AA-6200-006                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1033 | Air kerma rate                     | Dosemeter             | Calibration in a calibrated field free in air        | 1,0E-07                                 | 2,0E+00    | Gy h <sup>-1</sup> | Co-60                                     | ISO 4037  | 0,8                 | AA-6200-006                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1034 | Air kerma rate                     | Dosemeter             | Calibration against a cavity chamber in air          | 1,0E-06                                 | 1,0E-02    | Gy h <sup>-1</sup> | Photon, high energy                       | ISO 4037, 4 MeV - 7 MeV                         | 6                   | AA-6300-114                    | 6.3              |             | Approved on 15 November 2010 |
| EUR-RAD-PTB-1035 | X-ray tube voltage                 | Non-invasive HV-meter | Secondary Standard Voltage Divider                   | 4,0E+01                                 | 5,0E+01    | kV                 | X-rays, 10 kV to 50 kV                    | IEC 61267 RQR Series, 40 kV to 50 kV            | 1,5                 | AA-6200-005                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1036 | X-ray tube voltage                 | Non-invasive HV-meter | Secondary Standard Voltage Divider                   | 6,0E+01                                 | 1,5E+02    | kV                 | X-rays, 50 kV to 420 kV                   | IEC 61267 RQR Series, 60 kV to 150 kV           | 1,5                 | AA-6200-005                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1037 | X-ray tube voltage                 | Non-invasive HV-meter | Secondary Standard Voltage Divider                   | 2,0E+01                                 | 4,0E+01    | kV                 | X-rays, 10 kV to 50 kV                    | Mammography, IEC 61267                          | 2                   | AA-6200-005                    | 6.2              | 10          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1038 | Ambient dose equivalent rate       | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-04                                 | 1,0E-01    | Sv h <sup>-1</sup> | X-rays, 10 kV to 50 kV                    | ISO 4037 Narrow Series, 10 kV to 40 kV          | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |

|                     |   |                   |                 |                              |
|---------------------|---|-------------------|-----------------|------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>3 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                       |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |   | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                    |
|------------------|------------------------------------|-----------------------|--|---|------------|--------------------|---|---|---------------------|--------------------------------|------------------|-------------|------------------------------|
|                  | Service identification             | Messgröße<br>Quantity | Instrument or<br>Artifact                            | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter                          |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                         |
| EUR-RAD-PTB-1039 | Ambient dose equivalent rate       | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-04                                 | 1,0E-01    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 Narrow Series, 60 kV to 300 kV         | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1040 | Ambient dose equivalent rate       | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-04                                 | 1,0E-01    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | Narrow Series, 350 kV and 400 kV                | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1041 | Ambient dose equivalent rate       | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-03                                 | 1,0E+00    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 Wide Series, 60 kV to 300 kV           | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1042 | Ambient dose equivalent rate       | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-02                                 | 5,0E+01    | Sv h <sup>-1</sup> | X-rays, 10 kV to 50 kV                    | ISO 4037 High Air Kerma Series, 10 kV to 30 kV  | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1043 | Ambient dose equivalent rate       | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-02                                 | 5,0E+01    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 High Air Kerma Series, 60 kV to 300 kV | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1044 | Ambient dose equivalent rate       | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-02                                 | 5,0E+01    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | High Air Kerma Series, 350 kV and 400 kV        | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1045 | Ambient dose equivalent rate       | Dosemeter             | Calibration in a calibrated field free in air        | 1,0E-06                                 | 5,0E+01    | Sv h <sup>-1</sup> | Cs-137                                    | ISO 4037  | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1046 | Ambient dose equivalent rate       | Dosemeter             | Calibration in a calibrated field free in air        | 1,0E-06                                 | 5,0E+01    | Sv h <sup>-1</sup> | Co-60                                     | ISO 4037  | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1047 | Ambient dose equivalent rate       | Dosemeter             | Calibration in a calibrated field free in air        | 1,0E-06                                 | 5,0E-03    | Sv h <sup>-1</sup> | Photons, high energy                      | ISO 4037 4MeV - 7 MeV                           | 6,5                 | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1048 | Directional dose equivalent rate   | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-04                                 | 1,0E-01    | Sv h <sup>-1</sup> | X-rays, 10 kV to 50 kV                    | ISO 4037 Narrow Series, 10 kV to 40 kV          | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1049 | Directional dose equivalent rate   | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-04                                 | 1,0E-01    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 Narrow Series, 60 kV to 300 kV         | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1050 | Directional dose equivalent rate   | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-04                                 | 1,0E-01    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | Narrow Series 350 kV and 400 kV                 | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1051 | Directional dose equivalent rate   | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-03                                 | 1,0E+00    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 Wide Series, 60 kV to 300 kV           | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1052 | Directional dose equivalent rate   | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-02                                 | 5,0E+01    | Sv h <sup>-1</sup> | X-rays, 10 kV to 50 kV                    | ISO 4037 High Air Kerma Series, 10 kV to 30 kV  | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1053 | Directional dose equivalent rate   | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-02                                 | 5,0E+01    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | ISO 4037 High Air Kerma Series, 60 kV to 300 kV | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1054 | Directional dose equivalent rate   | Dosemeter             | Calibration against a calibrated monitor free in air | 1,0E-02                                 | 5,0E+01    | Sv h <sup>-1</sup> | X-rays, 50 kV to 420 kV                   | High Air Kerma Series, 350 kV and 400 kV        | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |

|                     |   |                   |                 |                              |
|---------------------|---|-------------------|-----------------|------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>4 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service      |                       |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |  | U, in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                    |
|------------------|---|-----------------------|--|---|------------|--------------------|---|--|---------|--------------------------------|------------------|-------------|------------------------------|
|                  | Service identification                  | Messgröße<br>Quantity | Instrument or<br>Artifact                                | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter                             |         | Spezifikation<br>Specification | Work instruction | Responsible | Task                         |
| EUR-RAD-PTB-1055 | Directional dose equivalent rate        | Dosemeter             | Calibration in a calibrated field free in air            | 1,0E-06                                 | 5,0E+01    | Sv h <sup>-1</sup> | Cs-137                                    | ISO 4037   | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1056 | Directional dose equivalent rate        | Dosemeter             | Calibration in a calibrated field free in air            | 1,0E-06                                 | 5,0E+01    | Sv h <sup>-1</sup> | Co-60                                     | ISO 4037   | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1057 | Directional dose equivalent rate        | Dosemeter             | Calibration in a calibrated field free in air            | 5,0E-04                                 | 1,0E-01    | Sv h <sup>-1</sup> | Beta radiation                            | ISO 6980, Pm-147, Kr-85, Sr-90/Y-90, Ru-106/Rh-106 | 3,6     | AA-6300-193                    | 6.3              | 14, 16      | Approved on 15 November 2010 |
| EUR-RAD-PTB-1058 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration against a calibrated monitor using a phantom | 1,0E-05                                 | 1,0E-02    | Sv                 | X-rays, 10 kV to 50 kV                    | ISO 4037 Narrow Series, 10 kV to 40 kV             | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1059 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration against a calibrated monitor using a phantom | 1,0E-05                                 | 1,0E-02    | Sv                 | X-rays, 50 kV to 420 kV                   | ISO 4037 Narrow Series, 60 kV to 300 kV            | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1060 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration against a calibrated monitor using a phantom | 1,0E-05                                 | 1,0E-02    | Sv                 | X-rays, 50 kV to 420 kV                   | Narrow Series 350 kV and 400 kV                    | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1061 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration against a calibrated monitor using a phantom | 1,0E-04                                 | 1,0E-01    | Sv                 | X-rays, 50 kV to 420 kV                   | ISO 4037 Wide Series, 60 kV to 300 kV              | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1062 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration against a calibrated monitor using a phantom | 1,0E-03                                 | 5,0E+00    | Sv                 | X-rays, 10 kV to 50 kV                    | ISO 4037 High Air Kerma Series, 10 kV to 30 kV     | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1063 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration against a calibrated monitor using a phantom | 1,0E-03                                 | 5,0E+00    | Sv                 | X-rays, 50 kV to 420 kV                   | ISO 4037 High Air Kerma Series, 60 kV to 300 kV    | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1064 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration against a calibrated monitor using a phantom | 1,0E-03                                 | 5,0E+00    | Sv                 | X-rays, 50 kV to 420 kV                   | High Air Kerma Series, 350 kV and 400 kV           | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1065 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration in a calibrated field using a phantom        | 1,0E-06                                 | 1,0E+01    | Sv                 | Cs-137                                    | ISO 4037   | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1066 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration in a calibrated field using a phantom        | 1,0E-06                                 | 1,0E+01    | Sv                 | Co-60                                     | ISO 4037   | 3       | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1067 | Personal dose equivalent in 10 mm depth | Dosemeter             | Calibration against a calibrated monitor using a phantom | 1,0E-06                                 | 5,0E-02    | Sv                 | Photon, high energy                       | ISO 4037 4 MeV - 7 MeV                             | 6,5     | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |

|                     |   |                   |                 |                              |
|---------------------|---|-------------------|-----------------|------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>5 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service        |                           |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |   | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                    |
|------------------|---|---------------------------|--|---|------------|--------------------|---|---|---------------------|--------------------------------|------------------|-------------|------------------------------|
|                  | Service identification                    | Messgröße<br>Quantity     | Instrument or<br>Artifact                                | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter  |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                         |
| EUR-RAD-PTB-1068 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration against a calibrated monitor using a phantom | 1,0E-05                                 | 1,0E-01    | Sv                 | X-rays, 10 kV to 50 kV                    | ISO 4037 Narrow Series, 10 kV to 40 kV                            | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1069 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration against a calibrated monitor using a phantom | 1,0E-05                                 | 1,0E-01    | Sv                 | X-rays, 10 kV to 50 kV                    | Narrow Series 350 kV and 400 kV                                   | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1070 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration against a calibrated monitor using a phantom | 1,0E-05                                 | 1,0E-01    | Sv                 | X-rays, 50 kV to 420 kV                   | ISO 4037 Narrow Series, 60 kV to 300 kV                           | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1071 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration against a calibrated monitor using a phantom | 1,0E-04                                 | 1,0E+00    | Sv                 | X-rays, 50 kV to 420 kV                   | ISO 4037 Wide Series, 60 kV to 300 kV                             | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1072 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration against a calibrated monitor using a phantom | 1,0E-03                                 | 5,0E+01    | Sv                 | X-rays, 10 kV to 50 kV                    | ISO 4037 High Air Kerma Series, 10 kV to 30 kV                    | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1073 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration against a calibrated monitor using a phantom | 1,0E-03                                 | 5,0E+01    | Sv                 | X-rays, 50 kV to 420 kV                   | ISO 4037 High Air Kerma Series, 60 kV to 300 kV                   | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1074 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration against a calibrated monitor using a phantom | 1,0E-03                                 | 5,0E+01    | Sv                 | X-rays, 50 kV to 420 kV                   | High Air Kerma Series, 350 kV and 400 kV                          | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1075 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration in a calibrated field using a phntom         | 1,0E-06                                 | 5,0E+01    | Sv                 | Cs-137                                    | ISO 4037  | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1076 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration in a calibrated field using a phntom         | 1,0E-06                                 | 5,0E+01    | Sv                 | Co-60                                     | ISO 4037  | 3                   | AA-6300-197<br>AA-6300-198     | 6.3              | 14, 15, 16  | Approved on 15 November 2010 |
| EUR-RAD-PTB-1077 | Personal dose equivalent in 0,07 mm depth | Dosemeter                 | Calibration in a calibrated field using a phntom         | 1,0E-04                                 | 1,0E+00    | Sv                 | Beta radiation                            | ISO 6980, Pm-147, Kr-85, Sr-90/Y-90, Ru-106/Rh-106                | 3,6                 | AA-6300-193                    | 6.3              | 14, 16      | Approved on 15 November 2010 |
| EUR-RAD-PTB-1078 | Absorbed dose rate in soft tissue         | Beta ray reference source | Calibration using primary standard extrapolation chamber | 5,0E-04                                 | 1,0E-01    | Gy h <sup>-1</sup> | Beta radiation                            | ISO 6980, Pm-147, Tl-204, Kr-85, Sr-90/Y-90, Ru-106/Rh-106        | 3,6                 | AA-6300-193                    | 6.3              | 14          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1079 | Air kerma rate                            | Dosemeter                 | Calibration in a calibrated field free in air            | 1,0E-08                                 | 2,0E-07    | Gy h <sup>-1</sup> | Cs-137                                    | collimated field, source-detector, distance 2 m, field size 0,8 m | 3                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |

|                     |   |                   |                 |                              |
|---------------------|---|-------------------|-----------------|------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>6 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                         |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |   | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                    |
|------------------|------------------------------------|-------------------------|--|---|------------|--------------------|---|---|---------------------|--------------------------------|------------------|-------------|------------------------------|
|                  | Service identification             | Messgröße<br>Quantity   | Instrument or<br>Artifact                                | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter  |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                         |
| EUR-RAD-PTB-1080 | Air kerma rate                     | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 2,0E-07    | Gy h <sup>-1</sup> | Co-60                                     | collimated field, source-detector, distance 2 m, field size 0,8 m | 3                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1081 | Air kerma rate                     | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 2,0E-07    | Gy h <sup>-1</sup> | Co-57                                     | collimated field, source-detector, distance 2 m, field size 0,8 m | 3                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1082 | Air kerma rate                     | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 2,0E-07    | Gy h <sup>-1</sup> | Am-241                                    | collimated field, source-detector, distance 2 m, field size 0,8 m | 4                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1083 | Air kerma rate                     | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 2,0E-07    | Gy h <sup>-1</sup> | Ra-226                                    | collimated field, source-detector, distance 2 m, field size 0,8 m | 3                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1084 | Ambient dose equivalent rate       | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 3,0E-06    | Sv h <sup>-1</sup> | Cs-137                                    | collimated field, source-detector, distance 2 m, field size 0,8 m | 3                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1085 | Ambient dose equivalent rate       | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 3,0E-06    | Sv h <sup>-1</sup> | Co-60                                     | collimated field, source-detector, distance 2 m, field size 0,8 m | 3                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1086 | Ambient dose equivalent rate       | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 3,0E-06    | Sv h <sup>-1</sup> | Co-57                                     | collimated field, source-detector, distance 2 m, field size 0,8 m | 3                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1087 | Ambient dose equivalent rate       | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 3,0E-06    | Sv h <sup>-1</sup> | Am-241                                    | collimated field, source-detector, distance 2 m, field size 0,8 m | 4                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-1088 | Ambient dose equivalent rate       | Dosemeter               | Calibration in a calibrated field free in air            | 1,0E-08                                 | 3,0E-06    | Sv h <sup>-1</sup> | Ra-226                                    | collimated field, source-detector, distance 2 m, field size 0,8 m | 3                   | AA-6300-202<br>AA-6300-203     | 6.3              | 17          | Approved on 15 November 2010 |
| EUR-RAD-PTB-2001 | Activity divided by mass           | Single nuclide solution | Secondary standard liquid scintillation counter, balance | 1E+03                                   | 5E+04      | Bq g <sup>-1</sup> | H-3                                       | Tritiated water in glass ampoule                                  | 1,7                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010  |
| EUR-RAD-PTB-2002 | Activity divided by mass           | Single nuclide solution | Secondary standard liquid scintillation counter, balance | 5E+04                                   | 5E+07      | Bq g <sup>-1</sup> | H-3                                       | Tritiated water in glass ampoule                                  | 1,4                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010  |
| EUR-RAD-PTB-2003 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 2E+05                                   | 2E+07      | Bq g <sup>-1</sup> | Be-7                                      | glass ampoule   | 2                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010  |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>7 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                         |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |                        | U, in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|-------------------------|--|---|------------|--------------------|---|------------------------|---------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity   | Instrument or<br>Artifact                      | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter |         | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2004 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 1E+03                                   | 1E+07      | Bq g <sup>-1</sup> | C-14                                      | glass ampoule          | 3,0     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2005 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 5E+07      | Bq g <sup>-1</sup> | F-18                                      | glass ampoule          | 1,0     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2006 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 1E+07      | Bq g <sup>-1</sup> | Na-22                                     | glass ampoule          | 0,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2007 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 1E+07      | Bq g <sup>-1</sup> | Na-24                                     | glass ampoule          | 0,7     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2008 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 2E+03                                   | 2E+08      | Bq g <sup>-1</sup> | P-32                                      | glass ampoule          | 1,0     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2009 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 5E+02                                   | 2E+08      | Bq g <sup>-1</sup> | P-33                                      | glass ampoule          | 1,5     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2010 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 2E+03                                   | 2E+08      | Bq g <sup>-1</sup> | S-35                                      | glass ampoule          | 1,5     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2011 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 2E+03                                   | 2E+06      | Bq g <sup>-1</sup> | Cl-36                                     | glass ampoule          | 1,5     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2012 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 2E+05      | Bq g <sup>-1</sup> | Cr-51                                     | glass ampoule          | 0,7     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2013 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+05                                   | 2E+07      | Bq g <sup>-1</sup> | Cr-51                                     | glass ampoule          | 0,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2014 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Mn-54                                     | glass ampoule          | 0,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2015 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 2E+03                                   | 2E+06      | Bq g <sup>-1</sup> | Fe-55                                     | glass ampoule          | 2,5     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2016 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+03                                   | 2E+07      | Bq g <sup>-1</sup> | Co-56                                     | glass ampoule          | 1       | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2017 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 2E+05      | Bq g <sup>-1</sup> | Co-57                                     | glass ampoule          | 1,4     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2018 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+05                                   | 2E+07      | Bq g <sup>-1</sup> | Co-57                                     | glass ampoule          | 1       | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2019 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Co-58                                     | glass ampoule          | 1,0     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>8 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                         |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |                        | U, in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|-------------------------|--|---|------------|--------------------|---|------------------------|---------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity   | Instrument or<br>Artifact                      | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter |         | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2020 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+03                                   | 2E+07      | Bq g <sup>-1</sup> | Fe-59                                     | glass ampoule          | 0,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2021 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+03                                   | 2E+07      | Bq g <sup>-1</sup> | Co-60                                     | glass ampoule          | 0,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2022 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 1E+03                                   | 1E+06      | Bq g <sup>-1</sup> | Ni-63                                     | glass ampoule          | 1,7     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2023 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Zn-65                                     | glass ampoule          | 1,4     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2024 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 5E+02                                   | 2E+07      | Bq g <sup>-1</sup> | Cu-64                                     | glass ampoule          | 2       | AA-6100-107                    | 6.1              | 02,03       | Approved on 18 January 2010 |
| EUR-RAD-PTB-2025 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 5E+07      | Bq g <sup>-1</sup> | Ga-67                                     | glass ampoule          | 2,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2026 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 5E+07      | Bq g <sup>-1</sup> | Ge-68/Ga-68                               | glass ampoule          | 1       | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2027 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 5E+07      | Bq g <sup>-1</sup> | Se-75                                     | glass ampoule          | 1,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2028 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 2E+08      | Bq g <sup>-1</sup> | Br-82                                     | glass ampoule          | 2       | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2029 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Sr-85                                     | glass ampoule          | 0,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2030 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Y-88                                      | glass ampoule          | 0,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2031 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 2E+03                                   | 2E+05      | Bq g <sup>-1</sup> | Sr-89                                     | glass ampoule          | 1,5     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2032 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+05                                   | 2E+07      | Bq g <sup>-1</sup> | Sr-89                                     | glass ampoule          | 1,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2033 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 4E+02                                   | 4E+04      | Bq g <sup>-1</sup> | Sr-90/Y-90                                | glass ampoule          | 1,2     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2034 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 4E+07      | Bq g <sup>-1</sup> | Sr-90/Y-90                                | glass ampoule          | 1,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2035 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 2E+03                                   | 2E+06      | Bq g <sup>-1</sup> | Y-90                                      | glass ampoule          | 1       | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

|                     |   |                   |                 |                              |
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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>9 von 40 |
|---------------------|---|-------------------|-----------------|------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                         |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |                        | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|-------------------------|--|---|------------|--------------------|---|------------------------|---------------------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity   | Instrument or<br>Artifact                      | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2036 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 1E+03                                   | 2E+07      | Bq g <sup>-1</sup> | Nb-93m                                    | glass ampoule          | 1                   | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2037 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 2E+03                                   | 2E+06      | Bq g <sup>-1</sup> | Nb-94                                     | glass ampoule          | 1,5                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2038 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 1E+08      | Bq g <sup>-1</sup> | Mo-99                                     | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2039 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 2E+03                                   | 2E+06      | Bq g <sup>-1</sup> | Tc-99                                     | glass ampoule          | 2                   | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2040 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 1E+08      | Bq g <sup>-1</sup> | Tc-99m                                    | glass ampoule          | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2041 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 5E+07      | Bq g <sup>-1</sup> | Ru-103                                    | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2042 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 2E+04                                   | 5E+07      | Bq g <sup>-1</sup> | Ru-106                                    | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2043 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 1E+03                                   | 5E+05      | Bq g <sup>-1</sup> | Cd-109                                    | glass ampoule          | 1,2                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2044 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 5E+05                                   | 1E+07      | Bq g <sup>-1</sup> | Cd-109                                    | glass ampoule          | 1,2                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2045 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Ag-110m                                   | glass ampoule          | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2046 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 5E+07      | Bq g <sup>-1</sup> | In-111                                    | glass ampoule          | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2047 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 5E+07      | Bq g <sup>-1</sup> | Sn-113                                    | glass ampoule          | 2                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2048 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 5E+07      | Bq g <sup>-1</sup> | I-123                                     | glass ampoule          | 2,2                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2049 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 5E+07      | Bq g <sup>-1</sup> | Sb-124                                    | glass ampoule          | 1,4                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2050 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 5E+07      | Bq g <sup>-1</sup> | I-124                                     | glass ampoule          | 2                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2051 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 1E+04                                   | 1E+05      | Bq g <sup>-1</sup> | Sb-125                                    | glass ampoule          | 1,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>10 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                         |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |                        | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|-------------------------|--|---|------------|--------------------|---|------------------------|---------------------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity   | Instrument or<br>Artifact                                | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2052 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 1E+05                                   | 5E+07      | Bq g <sup>-1</sup> | Sb-125                                    | glass ampoule          | 1,4                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2053 | Activity divided by mass           | Single nuclide solution | Secondary standard liquid scintillation counter, balance | 1E+03                                   | 1E+05      | Bq g <sup>-1</sup> | I-125                                     | glass ampoule          | 1,7                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2054 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 1E+05                                   | 2E+07      | Bq g <sup>-1</sup> | I-125                                     | glass ampoule          | 1,4                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2055 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance                    | 1E+03                                   | 1E+05      | Bq g <sup>-1</sup> | I-129                                     | glass ampoule          | 3,0                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2056 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 1E+03                                   | 1E+05      | Bq g <sup>-1</sup> | I-131                                     | glass ampoule          | 1                   | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2057 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 1E+05                                   | 1E+08      | Bq g <sup>-1</sup> | I-131                                     | glass ampoule          | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2058 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 4E+02                                   | 4E+04      | Bq g <sup>-1</sup> | Ba-133                                    | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2059 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Ba-133                                    | glass ampoule          | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2060 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 1E+03                                   | 1E+05      | Bq g <sup>-1</sup> | Cs-134                                    | glass ampoule          | 1                   | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2061 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 1E+05                                   | 2E+07      | Bq g <sup>-1</sup> | Cs-134                                    | glass ampoule          | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2062 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 4E+02                                   | 4E+04      | Bq g <sup>-1</sup> | Cs-137                                    | glass ampoule          | 1,4                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2063 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Cs-137                                    | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2064 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 4E+02                                   | 2E+07      | Bq g <sup>-1</sup> | Ce-139                                    | glass ampoule          | 0,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2065 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 1E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Ce-141                                    | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2066 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance           | 4E+02                                   | 2E+07      | Bq g <sup>-1</sup> | Ce-144/Pr-144                             | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2067 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance                    | 4E+02                                   | 4E+05      | Bq g <sup>-1</sup> | Pm-147                                    | glass ampoule          | 1,5                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>11 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                         |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |                        | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|-------------------------|--|---|------------|--------------------|---|------------------------|---------------------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity   | Instrument or<br>Artifact                      | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2068 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+04      | Bq g <sup>-1</sup> | Eu-152                                    | glass ampoule          | 1,4                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2069 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Eu-152                                    | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2070 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Sm-153                                    | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2071 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Gd-153                                    | glass ampoule          | 2                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2072 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Er-169                                    | glass ampoule          | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2073 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Yb-169                                    | glass ampoule          | 0,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2074 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Lu-177                                    | glass ampoule          | 1,2                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2075 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Ta-182                                    | glass ampoule          | 2                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2076 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Re-186                                    | glass ampoule          | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2077 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Re-188                                    | glass ampoule          | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2078 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Ir-192                                    | glass ampoule          | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2079 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Au-198                                    | glass ampoule          | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2080 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Tl-201                                    | glass ampoule          | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2081 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Hg-203                                    | glass ampoule          | 1,0                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2082 | Activity divided by mass           | Single nuclide solution | Liquid scintillation counter, balance          | 1E+03                                   | 5E+05      | Bq g <sup>-1</sup> | Tl-204                                    | glass ampoule          | 1,4                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2083 | Activity divided by mass           | Single nuclide solution | Secondary standard ionization chamber, balance | 5E+05                                   | 2E+07      | Bq g <sup>-1</sup> | Tl-204                                    | glass ampoule          | 1,0                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>12 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service |   |  | Messbereich<br>Measurand level or range |            |                    | Messbedingungen<br>Measurement conditions |                          | U, in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|---|--|---|------------|--------------------|---|--------------------------|---------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity                         | Instrument or<br>Artifact                      | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max         | Einheit<br>Unit                           | Parameter<br>Parameter   |         | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2084 | Activity divided by mass           | Single nuclide solution                       | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Bi-207                                    | glass ampoule            | 1,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2085 | Activity divided by mass           | Single nuclide solution                       | Secondary standard ionization chamber, balance | 1E+03                                   | 1E+05      | Bq g <sup>-1</sup> | Pb-210                                    | glass ampoule            | 2       | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2086 | Activity divided by mass           | Single nuclide solution                       | Secondary standard ionization chamber, balance | 1E+05                                   | 2E+07      | Bq g <sup>-1</sup> | Pb-210                                    | glass ampoule            | 1,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2087 | Activity divided by mass           | Single nuclide solution                       | Defined solid angle alpha counting, balance    | 1E+03                                   | 4E+04      | Bq g <sup>-1</sup> | Th-232                                    | glass ampoule            | 2       | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2088 | Activity divided by mass           | Single nuclide solution                       | Defined solid angle alpha counting, balance    | 1E+03                                   | 4E+04      | Bq g <sup>-1</sup> | U-233                                     | glass ampoule            | 2       | AA-6100-105                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2089 | Activity divided by mass           | Single nuclide solution                       | Secondary standard ionization chamber, balance | 1E+02                                   | 5E+03      | Bq g <sup>-1</sup> | Ra-226                                    | glass ampoule            | 1,4     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2090 | Activity divided by mass           | Single nuclide solution                       | Secondary standard ionization chamber, balance | 1E+04                                   | 1E+06      | Bq g <sup>-1</sup> | Np-237                                    | glass ampoule            | 1       | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2091 | Activity divided by mass           | Single nuclide solution                       | Secondary standard ionization chamber, balance | 1E+03                                   | 4E+04      | Bq g <sup>-1</sup> | Pu-238                                    | glass ampoule            | 1,0     | AA-6100-105                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2092 | Activity divided by mass           | Single nuclide solution                       | Liquid scintillation counter, balance          | 2E+03                                   | 2E+06      | Bq g <sup>-1</sup> | Pu-241                                    | glass ampoule            | 2       | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2093 | Activity divided by mass           | Single nuclide solution                       | Secondary standard ionization chamber, balance | 1E+03                                   | 4E+04      | Bq g <sup>-1</sup> | Am-241                                    | glass ampoule            | 0,7     | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2094 | Activity divided by mass           | Single nuclide solution                       | Secondary standard ionization chamber, balance | 4E+04                                   | 2E+07      | Bq g <sup>-1</sup> | Am-241                                    | glass ampoule            | 0,5     | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2095 | Activity                           | Single nuclide, gas ampoule                   | Secondary standard ionization chamber          | 1E+06                                   | 1E+08      | Bq                 | Kr-85                                     | glass ampoule            | 3       | AA-6100-107                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2096 | Activity                           | Single nuclide, gas ampoule                   | Secondary standard ionization chamber          | 1E+08                                   | 5E+08      | Bq                 | Kr-85                                     | glass ampoule            | 2       | AA-6100-107                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2097 | Activity                           | Single nuclide, gas ampoule                   | Secondary standard ionization chamber          | 1E+07                                   | 5E+08      | Bq                 | Xe-133                                    | glass ampoule            | 2,5     | AA-6100-107                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2098 | Activity                           | Single nuclide, gas ampoule                   | Calibrated NaI(Tl) detector                    | 1E+05                                   | 2E+06      | Bq                 | Rn-222                                    | stainless steel cylinder | 2       | AA-6100-105                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2099 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                 | Be-7                                      | active area < 5 mm       | 2       | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>13 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service |   |  | Messbereich<br>Measurand level or range |            |                                  | Messbedingungen<br>Measurement conditions |                        | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|---|--|---|------------|----------------------------------|---|------------------------|---------------------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity                         | Instrument or Artifact                         | Instrument Type or Method               | Min<br>Min | Max<br>Max                       | Einheit<br>Unit                           | Parameter<br>Parameter |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2100 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Na-22                                     | active area < 5 mm     | 0,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2101 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Na-24                                     | active area < 5 mm     | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2102 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Cr-51                                     | active area < 5 mm     | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2103 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Mn-54                                     | active area < 5 mm     | 0,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2104 | Emission Rate per Unit Solid Angle | Single nuclide, solid source (X-ray emitting) | X-ray spectrometry, balance                    | 4E+03                                   | 4E+05      | s <sup>-1</sup> sr <sup>-1</sup> | Fe-55                                     | active area < 5 mm     | 2,5                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2105 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Co-56                                     | active area < 5 mm     | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2106 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Co-57                                     | active area < 5 mm     | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2107 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Co-58                                     | active area < 5 mm     | 1,2                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2108 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Fe-59                                     | active area < 5 mm     | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2109 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Co-60                                     | active area < 5 mm     | 0,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2110 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Zn-65                                     | active area < 5 mm     | 1,4                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2111 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq                               | Ga-67                                     | active area < 5 mm     | 2,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>14 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service |   |  | Messbereich<br>Measurand level or range |            |            | Messbedingungen<br>Measurement conditions |                        | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|---|--|---|------------|------------|---|------------------------|---------------------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity                         | Instrument or Artifact                         | Instrument Type or Method               | Min<br>Min | Max<br>Max | Einheit<br>Unit                           | Parameter<br>Parameter |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2112 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Ge-68/Ga-68                               | active area < 5 mm     | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2113 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Se-75                                     | active area < 5 mm     | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2114 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Sr-85                                     | active area < 5 mm     | 0,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2115 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Y-88                                      | active area < 5 mm     | 0,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2116 | Activity                           | Single nuclide, solid source (gamma emitting) | X-ray spectrometry, balance                    | 2E+03                                   | 2E+04      | Bq         | Nb-93m                                    | active area < 5 mm     | 1,2                 | AA-6100-108                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2117 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Ru-103                                    | active area < 5 mm     | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2118 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Ru-106                                    | active area < 5 mm     | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2119 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Cd-109                                    | active area < 5 mm     | 1,2                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2120 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Ag-110m                                   | active area < 5 mm     | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2121 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Sn-113                                    | active area < 5 mm     | 2                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2122 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Sb-124                                    | active area < 5 mm     | 1,4                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2123 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Sb-125                                    | active area < 5 mm     | 1,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>15 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service |   |  | Messbereich<br>Measurand level or range |            |            | Messbedingungen<br>Measurement conditions |                        | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|---|--|---|------------|------------|---|------------------------|---------------------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity                         | Instrument or Artifact                         | Instrument Type or Method               | Min<br>Min | Max<br>Max | Einheit<br>Unit                           | Parameter<br>Parameter |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2124 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Ba-133                                    | active area < 5 mm     | 1,0                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2125 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Cs-134                                    | active area < 5 mm     | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2126 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Cs-137                                    | active area < 5 mm     | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2127 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Ce-139                                    | active area < 5 mm     | 0,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2128 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Ce-141                                    | active area < 5 mm     | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2129 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Ce-1447Pr-144                             | active area < 5 mm     | 1,0                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2130 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Eu-152                                    | active area < 5 mm     | 1,2                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2131 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Au-198                                    | active area < 5 mm     | 0,7                 | AA-6100-106                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2132 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Hg-203                                    | active area < 5 mm     | 1,0                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2133 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Tl-204                                    | active area < 5 mm     | 1,0                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2134 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Bi-207                                    | active area < 5 mm     | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2135 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 4E+03                                   | 4E+05      | Bq         | Pb-210                                    | active area < 5 mm     | 1,5                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>16 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service |   |  | Messbereich<br>Measurand level or range |            |            | Messbedingungen<br>Measurement conditions |                           | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|------------------------------------|---|--|---|------------|------------|---|---------------------------|---------------------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification             | Messgröße<br>Quantity                         | Instrument or<br>Artifact                      | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max | Einheit<br>Unit                           | Parameter<br>Parameter    |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2136 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 1E+02                                   | 1E+04      | Bq         | Ra-226                                    | active area < 5 mm        | 2                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2137 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 5E+02                                   | 1E+03      | Bq         | Am-241                                    | active area < 5 mm        | 1                   | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2138 | Activity                           | Single nuclide, solid source (gamma emitting) | Secondary standard ionization chamber, balance | 1E+03                                   | 4E+05      | Bq         | Am-241                                    | active area < 5 mm        | 0,7                 | AA-6100-107                    | 6.1              | 02, 03      | Approved on 18 January 2010 |
| EUR-RAD-PTB-2139 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Po-210                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2140 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Th-228                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2141 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Th-230                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2142 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Th-232                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2143 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | U-233                                     | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2144 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | U-234                                     | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2145 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | U-235                                     | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2146 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Np-237                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2147 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Pu-238                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2148 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Pu-239                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2149 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Pu-240                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2150 | Activity                           | Single nuclide extended area source           | Defined solid angle alpha counting             | 1E+01                                   | 1E+04      | Bq         | Am-241                                    | no further specifications | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>17 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service       |                                     |  | Messbereich<br>Measurand level or range |            |                                  | Messbedingungen<br>Measurement conditions       |  | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung                   |
|------------------|--|-------------------------------------|--|---|------------|----------------------------------|---|--|---------------------|--------------------------------|------------------|-------------|-----------------------------|
|                  | Service identification                   | Messgröße<br>Quantity               | Instrument or<br>Artifact  | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max                       | Einheit<br>Unit                                 | Parameter<br>Parameter   |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                        |
| EUR-RAD-PTB-2151 | Activity                                 | Single nuclide extended area source | Defined solid angle alpha counting                                     | 1E+01                                   | 1E+04      | Bq                               | Cm-242  | no further specifications  | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2152 | Activity                                 | Single nuclide extended area source | Defined solid angle alpha counting                                     | 1E+01                                   | 1E+04      | Bq                               | Am-243  | no further specifications  | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2153 | Activity                                 | Single nuclide extended area source | Defined solid angle alpha counting                                     | 1E+01                                   | 1E+04      | Bq                               | Cm-243  | no further specifications  | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2154 | Activity                                 | Single nuclide extended area source | Defined solid angle alpha counting                                     | 1E+01                                   | 1E+04      | Bq                               | Cm-244  | no further specifications  | 1,5                 | AA-6100-105                    | 6.1              | 02          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2155 | Surface emission rate of alpha particles | Single nuclide extended area source | 4π-proportional counter of a 4π $\alpha$ - $\gamma$ coincidence system | 2,5E+02                                 | 5E+02      | s <sup>-1</sup>                  | Am-241  | no further specifications  | 1,5                 | AA-6100-106                    | 6.1              |             | Approved on 18 January 2010 |
| EUR-RAD-PTB-2156 | Surface emission rate of alpha particles | Single nuclide extended area source | 4π-proportional counter of a 4π $\alpha$ - $\gamma$ coincidence system | 5E+02                                   | 1E+04      | s <sup>-1</sup>                  | Am-241  | no further specifications  | 1                   | AA-6100-106                    | 6.1              |             | Approved on 18 January 2010 |
| EUR-RAD-PTB-2157 | Activity divided by volume               | Radon detectors                     | Radon reference chamber  | 1E+03                                   | 1E+05      | Bq m <sup>-3</sup>               | Rn-222  | Rn-222 in air  | 2,5                 | AA-6100-301<br>AA-6100-302     | 6.1              | 07          | Approved on 18 January 2010 |
| EUR-RAD-PTB-2158 | Activity divided by volume               | Radon detectors                     | Radon reference chamber  | 1E+02                                   | 1E+05      | Bq m <sup>-3</sup>               | Rn-222 progeny                                  | Rn-222 progeny in air, Equilibrium Factor 0,1 to 1,0 Unattached Fraction 0,01 to 0,9 | 5,0                 | AA-6100-302<br>AA-6100-304     | 6.1              | 07          | Approved on 18 January 2010 |
| EUR-RAD-PTB-3001 | fluence rate                             | Neutron sensitive device            | Calibration relative to calibrated long counter monitor                | 5,0E-02                                 | 5E+00      | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source) | 24 keV Sc-45 (p,n) ISO 8529-1  | 11                  | AA-6400-001                    | 6.4              | 18          | Approved on 09 May 2005     |
| EUR-RAD-PTB-3002 | fluence rate                             | Neutron sensitive device            | Calibration relative to calibrated long counter monitor                | 5,0E-01                                 | 5,0E+01    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source) | 24 keV Li-7 (p,n)  | 5                   | AA-6400-001                    | 6.4              | 18          | Approved on 09 May 2005     |
| EUR-RAD-PTB-3003 | fluence rate                             | Neutron sensitive device            | Calibration relative to calibrated long counter monitor                | 8E+00                                   | 8,0E+02    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source) | 144 keV Li-7 (p,n) ISO 8529-1  | 4,2                 | AA-6400-001                    | 6.4              | 18          | Approved on 09 May 2005     |
| EUR-RAD-PTB-3004 | fluence rate                             | Neutron sensitive device            | Calibration relative to calibrated long counter monitor                | 5E+00                                   | 5,0E+02    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source) | 250 keV Li-7 (p,n) ISO 8529-1  | 3,9                 | AA-6400-001                    | 6.4              | 18          | Approved on 09 May 2005     |
| EUR-RAD-PTB-3005 | fluence rate                             | Neutron sensitive device            | Calibration relative to calibrated long counter monitor                | 2,0E+01                                 | 2,0E+03    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source) | 565 keV Li-7 (p,n) ISO 8529-1  | 3,8                 | AA-6400-001                    | 6.4              | 18          | Approved on 09 May 2005     |
| EUR-RAD-PTB-3006 | fluence rate                             | Neutron sensitive device            | Calibration relative to calibrated long counter monitor                | 3,0E+01                                 | 3,0E+03    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source) | 1.2 MeV H-3 (p,n) ISO 8529-1   | 4,0                 | AA-6400-001                    | 6.4              | 18          | Approved on 09 May 2005     |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>18 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung      | Calibration or Measurement Service |                            |   | Messbereich<br>Measurand level or range |            |                                  | Messbedingungen<br>Measurement conditions                                       |  | U <sub>i</sub> in % | Arbeitsanweisung               | Zuständig        | Aufgabe     | Bemerkung               |
|------------------|------------------------------------|----------------------------|---|---|------------|----------------------------------|---|--|---------------------|--------------------------------|------------------|-------------|-------------------------|
|                  | Service identification             | Messgröße<br>Quantity      | Instrument or<br>Artifact                               | Instrument Type<br>or Method            | Min<br>Min | Max<br>Max                       | Einheit<br>Unit   | Parameter<br>Parameter                                 |                     | Spezifikation<br>Specification | Work instruction | Responsible | Task                    |
| EUR-RAD-PTB-3007 | fluence rate                       | Neutron sensitive device   | Calibration relative to calibrated long counter monitor | 7,0E+01                                 | 7,0E+03    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source)                                 | 2.5 MeV H-3 (p,n) ISO 8529-1                           | 3,1                 | AA-6400-002                    | 6.4              | 18          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3008 | fluence rate                       | Neutron sensitive device   | Calibration relative to calibrated long counter monitor | 8,0E+01                                 | 8,0E+03    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source)                                 | 5.0 MeV H-2 (d,n) ISO 8529-1                           | 3,4                 | AA-6400-002                    | 6.4              | 18          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3009 | fluence rate                       | Neutron sensitive device   | Calibration relative to calibrated long counter monitor | 1,2E+02                                 | 1,2E+04    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source)                                 | 8.0 MeV H-2 (d,n)                                      | 3,5                 | AA-6400-002                    | 6.4              | 18          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3010 | fluence rate                       | Neutron sensitive device   | Calibration relative to calibrated long counter monitor | 8,0E+01                                 | 8,0E+03    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source)                                 | 14.8 MeV H-3 (d,n) ISO 8529-1                          | 5,0                 | AA-6400-002                    | 6.4              | 18          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3011 | fluence rate                       | Neutron sensitive device   | Calibration relative to calibrated long counter monitor | 1,2E+01                                 | 1,2E+03    | cm <sup>-2</sup> s <sup>-1</sup> | Mono-energetic reaction (at 1m from the source)                                 | 19.0 MeV H-3 (d,n) ISO 8529-1                          | 5,1                 | AA-6400-002                    | 6.4              | 18          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3018 | fluence rate                       | Neutron sensitive device   | Irradiation with calibrated neutron sources             | 1,5E+01                                 | 2,2E+03    | cm <sup>-2</sup> s <sup>-1</sup> | Neutron spectrum (at 1m from the source)  | bare Cf-252 ISO 8529-1                                 | 3 – 1,3             | AA-6500-001                    | 6.5              | 19          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3019 | fluence rate                       | Neutron sensitive device   | Irradiation with calibrated neutron sources             | 1,8E+03                                 | 1,8E+03    | cm <sup>-2</sup> s <sup>-1</sup> | Neutron spectrum (at 1m from the source)  | D <sub>2</sub> O-mod.Cf-252 ISO 8529-1 PTB-N-34 (1998) | 4,4                 | AA-6500-001                    | 6.5              | 19          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3020 | fluence rate                       | Neutron sensitive device   | Irradiation with calibrated neutron sources             | 2,5E+01                                 | 2,5E+01    | cm <sup>-2</sup> s <sup>-1</sup> | Neutron spectrum (at 1m from the source)  | Am-241 / Be-9 ISO 8529-1                               | 4,6                 | AA-6500-001                    | 6.5              | 19          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3021 | ambient dose equivalent rate       | Neutron dose-meter         | Irradiation with calibrated neutron sources             | 2,0E-05                                 | 3,0E-03    | Sv h <sup>-1</sup>               | Neutron spectrum (at 1m from the source)  | bare Cf-252 ISO 8529-3                                 | 3,6 – 2,4           | AA-6500-001                    | 6.5              | 19          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3022 | ambient dose equivalent rate       | Neutron dose-meter         | Irradiation with calibrated neutron sources             | 7,2E-04                                 | 7,2E-04    | Sv h <sup>-1</sup>               | Neutron spectrum (at 1m from the source)  | D <sub>2</sub> O-mod.Cf-252 ISO 8529-3 PTB-N-34 (1998) | 7,4                 | AA-6500-001                    | 6.5              | 19          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3023 | ambient dose equivalent rate       | Neutron dose-meter         | Irradiation with calibrated neutron sources             | 3,4E-05                                 | 3,4E-05    | Sv h <sup>-1</sup>               | Neutron spectrum (at 1m from the source)  | Am-241 / Be-9 ISO 8529-3                               | 5                   | AA-6500-002                    | 6.5              | 19          | Approved on 09 May 2005 |
| EUR-RAD-PTB-3024 | personal dose equivalent rate      | Neutron personal dosemeter | Irradiation with calibrated neutron sources             | 2,0E-05                                 | 3,0E-03    | Sv h <sup>-1</sup>               | Neutron spectrum (at 1m from the source and for an angle of incidence of 0 deg) | bare Cf-252 ISO 8529-3                                 | 3,6 – 2,4           | AA-6500-002                    | 6.5              | 19, 20      | Approved on 09 May 2005 |
| EUR-RAD-PTB-3025 | personal dose equivalent rate      | Neutron personal dosemeter | Irradiation with calibrated neutron sources             | 7,2E-04                                 | 7,2E-04    | Sv h <sup>-1</sup>               | Neutron spectrum (at 1m from the source and for an angle of incidence of 0 deg) | D <sub>2</sub> O-mod.Cf-252 ISO 8529-3 PTB-N-34 (1998) | 7,4                 | AA-6500-002                    | 6.5              | 19, 20      | Approved on 09 May 2005 |
| EUR-RAD-PTB-3026 | personal dose equivalent rate      | Neutron personal dosemeter | Irradiation with calibrated neutron sources             | 3,4E-05                                 | 3,4E-05    | Sv h <sup>-1</sup>               | Neutron spectrum (at 1m from the source and for an angle of incidence of 0 deg) | Am-241 / Be-9 ISO 8529-3                               | 5                   | AA-6500-002                    | 6.5              | 19, 20      | Approved on 09 May 2005 |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>19 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

Geplante Einträge in „The BIPM key comparison database (KCDB)“

| Bezeichnung                   | Messgröße                              | Messbereich<br><i>Measurand level or range</i> |                |                      | Messbedingungen<br><i>Measurement conditions</i> |   | <i>U, in %</i> | Arbeitsanweisung           | Zuständig          | Aufgabe     | Bemerkung     |
|-------------------------------|--|--|----------------|----------------------|--|---|----------------|----------------------------|--------------------|-------------|---------------|
| <i>Service identification</i> | <i>Quantity</i>                        | <i>Min Min</i>                                 | <i>Max Max</i> | <i>Einheit Unit</i>  | <i>Parameter Parameter</i>                       | <i>Spezifikation Specification</i>  |                | <i>Work instruction</i>    | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |
| 1200                          | Personal dose equivalent in 3 mm depth | 1,0E-04  | 1,0E+00        | Sv                   | Beta radiation                                   | ISO 6980, + J. Instrum. 6 (2011) P11007 Sr-90/Y-90, Ru-106/Rh-106                       | 3,7            | AA-6300-193                | 6.3                | 14, 16      |               |
| 2159                          | Activity divided by volume             | 1E+03  | 1E+04          | Bq m <sup>-3</sup>   | Rn-220   | Rn-220 in air   | 2,5            | AA-6100-302                | 6.1                | 07          |               |
| 2160                          | Activity divided by volume             | 1E+02  | 1E+04          | Bq m <sup>-3</sup>   | Rn-220 progeny                                   | Equilibrium equivalent activity concentration; activity concentration of Pb-212, Bi-212 | 2,0            | AA-6100-302<br>AA-6100-304 | 6.1                | 07          |               |
| 2161                          | Activity hour per unit volume          | 2E+03  | 7E+07          | Bq h m <sup>-3</sup> | Rn-222   | Rn-222 in air   | 2,5            | AA-6100-303                | 6.1                | 07          |               |
| 2162                          | Activity hour per unit volume          | 2E+03  | 2E+06          | Bq h m <sup>-3</sup> | Rn-220   | Rn-220 in air   | 2,5            | AA-6100-303                | 6.1                | 07          |               |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>20 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

Einträge in „Sonstige“

| Bezeichnung                   | Messgröße             | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | U, in %                 | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|-----------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                       | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>       |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 001                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | C-14   | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 002                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Na-22  | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 003                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | P-32   | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 004                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | S-35   | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 005                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Cl-36  | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 006                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Co-60  | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 007                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Ni-63  | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 008                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Sr-89  | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 009                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Sr-90/Y-90                                       | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 010                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Y-90   | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 011                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Tc-99  | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 012                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Ru-106   | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 013                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Cs-137   | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 014                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Pm-147   | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 015                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Tl-204   | Electrically conductive backing       | 1,5                     | AA-6100-102        | 6.1         | 02            |           |
| 016                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Po-210   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>21 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße             | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | $U_r$ in %              | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|-----------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                       | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>       |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 017                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Th-228   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 018                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Th-230   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 019                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Th-232   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 020                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | U-234  | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 021                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | U-235  | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 022                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Np-237   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 023                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Pu-238   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 024                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Pu-239   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 025                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Pu-240   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 026                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Am-241   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 027                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Cm-242   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 028                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Am-243   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 029                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Cm-243   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 030                           | Surface Emission Rate | 1E+01  | 1E+04             | s <sup>-1</sup>        | Cm-244   | Electrically conductive backing       | 1,0                     | AA-6100-105        | 6.1         | 02            |           |
| 031                           | Activity              | 1E+01  | 1E+04             | Bq                     | C-14   |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 032                           | Activity              | 1E+01  | 1E+04             | Bq                     | Na-22  |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 033                           | Activity              | 1E+01  | 1E+04             | Bq                     | P-32   |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>22 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße            | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | U <sub>r</sub> in %     | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                      | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>      |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 034                           | Activity             | 1E+01  | 1E+04             | Bq                     | S-35   |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 035                           | Activity             | 1E+01  | 1E+04             | Bq                     | Cl-36  |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 036                           | Activity             | 1E+01  | 1E+04             | Bq                     | Co-60  |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 037                           | Activity             | 1E+01  | 1E+04             | Bq                     | Ni-63  |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 038                           | Activity             | 1E+01  | 1E+04             | Bq                     | Sr-89  |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 039                           | Activity             | 1E+01  | 1E+04             | Bq                     | Sr-90/Y-90                                       |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 040                           | Activity             | 1E+01  | 1E+04             | Bq                     | Y-90   |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 041                           | Activity             | 1E+01  | 1E+04             | Bq                     | Tc-99  |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 042                           | Activity             | 1E+01  | 1E+04             | Bq                     | Ru-106   |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 043                           | Activity             | 1E+01  | 1E+04             | Bq                     | Cs-137   |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 044                           | Activity             | 1E+01  | 1E+04             | Bq                     | Pm-147   |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 045                           | Activity             | 1E+01  | 1E+04             | Bq                     | Tl-204   |                                       | 2,5                     | AA-6100-102        | 6.1         | 02            |           |
| 046                           | Photon Emission Rate | 1E+03  | 1E+05             | s <sup>-1</sup>        |  | 5 - 10 keV                            | 6,0                     |                    | 6.1         | 02, 03        |           |
| 047                           | Photon Emission Rate | 1E+03  | 1E+05             | s <sup>-1</sup>        |  | 10 - 80 keV                           | 2,5                     |                    | 6.1         | 02, 03        |           |
| 048                           | Photon Emission Rate | 1E+03  | 2E+05             | s <sup>-1</sup>        |  | 10 - 30 keV                           | 10                      |                    | 6.1         | 02, 03        |           |
| 049                           | Photon Emission Rate | 1E+03  | 2E+05             | s <sup>-1</sup>        |  | 30 - 100 keV                          | 2,5                     |                    | 6.1         | 02, 03        |           |
| 050                           | Photon Emission Rate | 1E+03  | 2E+05             | s <sup>-1</sup>        |  | 100 - 1900 keV                        | 1,5                     |                    | 6.1         | 02, 03        |           |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>23 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße            | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | $U_r$ in %              | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                      | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>      |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 051                           | Photon Emission Rate | 1E+03  | 2E+05             | s <sup>-1</sup>        |  | 20 - 50 keV<br>2 mL                   | 5                       |                    | 6.1         | 02, 03        |           |
| 052                           | Photon Emission Rate | 1E+03  | 2E+05             | s <sup>-1</sup>        |  | 50 - 100 keV<br>2 mL                  | 2,5                     |                    | 6.1         | 02, 03        |           |
| 053                           | Photon Emission Rate | 1E+03  | 2E+05             | s <sup>-1</sup>        |  | 100 - 1900 keV<br>2 mL                | 1,5                     |                    | 6.1         | 02, 03        |           |
| 054                           | Activity             | 1E-03  | 5E-02             | Bq                     | Pu-238   | Environmental samples                 | 15,0                    | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 5E-02  | 1E+03             | Bq                     | Pu-238   | Environmental samples                 | 5,0                     | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 1E-03  | 5E-02             | Bq                     | Pu-239 + Pu-240                                  | Environmental samples                 | 15,0                    | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 5E-02  | 1E+03             | Bq                     | Pu-239 + Pu-240                                  | Environmental samples                 | 5,0                     | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 1E-03  | 5E-02             | Bq                     | U-234  | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 5E-02  | 1E+03             | Bq                     | U-234  | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 1E-03  | 5E-02             | Bq                     | U-235  | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 5E-02  | 1E+03             | Bq                     | U-235  | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 1E-03  | 5E-02             | Bq                     | U-238  | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 5E-02  | 1E+03             | Bq                     | U-238  | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 1E-03  | 5E-02             | Bq                     | Th-228   | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 5E-02  | 1E+03             | Bq                     | Th-228   | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 1E-03  | 5E-02             | Bq                     | Th-230   | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity             | 5E-02  | 1E+03             | Bq                     | Th-230   | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>24 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | U <sub>r</sub> in %     | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|--------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                          | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>          |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 054                           | Activity                 | 1E-03  | 5E-02             | Bq                     | Th-232   | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity                 | 5E-02  | 1E+03             | Bq                     | Th-232   | Environmental samples                 | 5,0<br>15,0             |                    | 6.1         | 04, 05, 06    |           |
| 054                           | Activity                 | 1E-01  | 1E+03             | Bq                     | Sr-89  | Environmental samples                 | 20                      | AA-6100-209        | 6.1         | 04, 05, 06    |           |
| 054                           | Activity                 | 1E-02  | 1E+03             | Bq                     | Sr-90/Y-90                                       | Environmental samples                 | 10                      | AA-6100-209        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Be-7   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Be-7   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Na-22  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Na-22  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Al-26  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Al-26  | Environmental samples                 | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | K-40   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | K-40   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Cr-51  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Cr-51  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Mn-54  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Mn-54  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Co-56  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>25 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | U <sub>r</sub> in %     | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|--------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                          | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>          |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 055                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Co-56  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Co-57  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Co-57  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 055                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Co-58  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Co-58  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Fe-59  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Fe-59  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Co-60  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Co-60  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Zn-65  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Zn-65  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Se-75  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Se-75  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Sr-85  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Sr-85  | Environmental samples                 | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Y-88   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Y-88   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>26 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung<br><i>Service identification</i> | Messgröße<br><i>Quantity</i> | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | $U_i$ in % | Arbeitsanweisung<br><i>Work instruction</i> | Zuständig<br><i>Responsible</i> | Aufgabe<br><i>Task</i> | Bemerkung<br><i>Remark</i> |
|--|------------------------------|--|-------------------|------------------------|--|---------------------------------------|------------|---|---------------------------------|------------------------|----------------------------|
|  |                              | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |            |   |                                 |                        |                            |
| 057  | Activity divided by mass     | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Zr-95/Nb-95m                                     | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Zr-95/Nb-95m                                     | Environmental samples                 | 5,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Mo-99/Tc-99m                                     | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Mo-99/Tc-99m                                     | Environmental samples                 | 5,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ru-103   | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ru-103   | Environmental samples                 | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ru-106   | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ru-106   | Environmental samples                 | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ag-108m  | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ag-108m  | Environmental samples                 | 5,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Cd-109   | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Cd-109   | Environmental samples                 | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ag-110m  | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ag-110m  | Environmental samples                 | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Sn-113   | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Sn-113   | Environmental samples                 | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 057  | Activity divided by mass     | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Sb-124   | Environmental samples                 | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |

|                     |   |                   |                 |                               |
|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>27 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | U <sub>r</sub> in %     | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|--------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                          | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>          |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Sb-124   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Sb-125   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Sb-125   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | I-131  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | I-131  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ba-133   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ba-133   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Cs-134   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Cs-134   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Cs-137   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Cs-137   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ce-139   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ce-139   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ba-140   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ba-140   | Environmental samples                 | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | La-140   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | La-140   | Environmental samples                 | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>28 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i>       |                                       | $U_i$ in %              | Arbeitsanweisung           | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|--------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|----------------------------|-------------|---------------|-----------|
|                               |                          | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                          | Spezifikation<br><i>Specification</i> |                         |                            |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>          |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i>         | <i>Task</i> | <i>Remark</i> |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ce-141   | Environmental samples                 | 10,0                    | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ce-141   | Environmental samples                 | 3,0                     | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ce-144   | Environmental samples                 | 10,0                    | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ce-144   | Environmental samples                 | 3,0                     | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Eu-152   | Environmental samples                 | 10,0                    | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Eu-152   | Environmental samples                 | 3,0                     | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Eu-154   | Environmental samples                 | 10,0                    | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Eu-154   | Environmental samples                 | 5,0                     | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Lu-176   | Environmental samples                 | 10,0                    | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Lu-176   | Environmental samples                 | 5,0                     | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Au-198   | Environmental samples                 | 10,0                    | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Au-198   | Environmental samples                 | 3,0                     | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Hg-203   | Environmental samples                 | 10,0                    | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Hg-203   | Environmental samples                 | 3,0                     | AA-6100-204                | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-03  | 5E-02             | Bq g <sup>-1</sup>     | Pb-210/Bi-210  | Environmental samples                 | 10,0                    | AA-6100-201<br>AA-6100-204 | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Pb-210/Bi-210  | Environmental samples                 | 5,0                     | AA-6100-202<br>AA-6100-204 | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ra-226 and gamma-ray emitting progenies in equilibrium | Environmental samples                 | 10,0                    | AA-6100-204                | 6.1         | 04, 05, 06    |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>29 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i>       |                                       | $U_i$ in %              | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|--------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                          | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                          | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>          |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ra-226 and gamma-ray emitting progenies in equilibrium | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ac-227 and gamma-ray emitting progenies in equilibrium | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ac-227 and gamma-ray emitting progenies in equilibrium | Environmental samples                 | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Ra-228/Ac-228  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Ra-228/Ac-228  | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Th-228 and gamma-ray emitting progenies in equilibrium | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Th-228 and gamma-ray emitting progenies in equilibrium | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | U-235  | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | U-238 in equilibrium with Th234 and Pa-134m            | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-04  | 5E-02             | Bq g <sup>-1</sup>     | Am-241   | Environmental samples                 | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Am-241   | Environmental samples                 | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Pu-238   | Environmental samples                 | 15,0                    | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Pu-238   | Environmental samples                 | 5,0                     | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Pu-239 + Pu-240  | Environmental samples                 | 15,0                    | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Pu-239 + Pu-240  | Environmental samples                 | 5,0                     | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | U-234  | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | U-234  | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>30 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                  | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | U <sub>r</sub> in %     | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                            | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>            |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 057                           | Activity divided by mass   | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | U-235  | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | U-235  | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | U-238  | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | U-238  | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Th-228   | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Th-228   | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Th-230   | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Th-230   | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 1E-04  | 5E-02             | Bq g <sup>-1</sup>     | Th-232   | Environmental samples                 | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 5E-02  | 1E+03             | Bq g <sup>-1</sup>     | Th-232   | Environmental samples                 | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 1E-03  | 1E+03             | Bq g <sup>-1</sup>     | Sr-89  | Environmental samples                 | 20                      | AA-6100-209        | 6.1         | 04, 05, 06    |           |
| 057                           | Activity divided by mass   | 1E-04  | 1E+03             | Bq g <sup>-1</sup>     | Sr-90/Y-90                                       | Environmental samples                 | 10                      | AA-6100-209        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Be-7   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Be-7   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Na-22  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Na-22  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Al-26  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>31 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                  | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | $U_r$ in %              | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                            | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>            |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Al-26  | liquid samples                        | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | K-40   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | K-40   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Cr-51  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Cr-51  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Mn-54  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Mn-54  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Co-56  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Co-56  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Co-57  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Co-57  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Co-58  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Co-58  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Fe-59  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Fe-59  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Co-60  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Co-60  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>32 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                  | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | $U_i$ in %              | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                            | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>            |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Zn-65  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Zn-65  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Se-75  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Se-75  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Sr-85  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Sr-85  | liquid samples                        | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Y-88   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Y-88   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Zr-95/Nb-95m                                     | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Zr-95/Nb-95m                                     | liquid samples                        | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Mo-99/Tc-99m                                     | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Mo-99/Tc-99m                                     | liquid samples                        | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ru-103   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ru-103   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ru-106   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ru-106   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ag-108m  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>33 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                  | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | $U_r$ in %              | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                            | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>            |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ag-108m  | liquid samples                        | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Cd-109   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Cd-109   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ag-110m  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ag-110m  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Sn-113   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Sn-113   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Sb-124   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Sb-124   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Sb-125   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Sb-125   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | I-131  | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | I-131  | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ba-133   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ba-133   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Cs-134   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Cs-134   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |

|                     |   |                   |                 |                               |
|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>34 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                  | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | U <sub>r</sub> in %     | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                            | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>            |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Cs-137   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Cs-137   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ce-139   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ce-139   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ba-140   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ba-140   | liquid samples                        | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | La-140   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | La-140   | liquid samples                        | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ce-141   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ce-141   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ce-144   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ce-144   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Eu-152   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Eu-152   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Eu-154   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Eu-154   | liquid samples                        | 5,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Lu-176   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>35 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung<br><i>Service identification</i> | Messgröße<br><i>Quantity</i> | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i>       |                                       | $U_r$ in % | Arbeitsanweisung<br><i>Work instruction</i> | Zuständig<br><i>Responsible</i> | Aufgabe<br><i>Task</i> | Bemerkung<br><i>Remark</i> |
|--|------------------------------|--|-------------------|------------------------|--|---------------------------------------|------------|---|---------------------------------|------------------------|----------------------------|
|  |                              | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                          | Spezifikation<br><i>Specification</i> |            |   |                                 |                        |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Lu-176   | liquid samples                        | 5,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Au-198   | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Au-198   | liquid samples                        | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Hg-203   | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Hg-203   | liquid samples                        | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 1E-03  | 5E-02             | Bq ml <sup>-1</sup>    | Pb-210   | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Pb-210   | liquid samples                        | 5,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ra-226 and gamma-ray emitting progenies in equilibrium | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ra-226 and gamma-ray emitting progenies in equilibrium | liquid samples                        | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ac-227 and gamma-ray emitting progenies in equilibrium | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ac-227 and gamma-ray emitting progenies in equilibrium | liquid samples                        | 5,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Ra-228/Ac-228  | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Ra-228/Ac-228  | liquid samples                        | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Th-228 and gamma-ray emitting progenies in equilibrium | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Th-228 and gamma-ray emitting progenies in equilibrium | liquid samples                        | 3,0        | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | U-235  | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |
| 058  | Activity divided by volume   | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | U-238 in equilibrium with Th234 and Pa-134m            | liquid samples                        | 10,0       | AA-6100-204                                 | 6.1                             | 04, 05, 06             |                            |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>36 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                  | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | $U_r$ in %              | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                            | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>            |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 058                           | Activity divided by volume | 5E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Am-241   | liquid samples                        | 10,0                    | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Am-241   | liquid samples                        | 3,0                     | AA-6100-204        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Pu-238   | liquid samples                        | 15,0                    | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Pu-238   | liquid samples                        | 5,0                     | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Pu-239 + Pu-240                                  | liquid samples                        | 15,0                    | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Pu-239 + Pu-240                                  | liquid samples                        | 5,0                     | AA-6100-210        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | U-234  | liquid samples                        | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | U-234  | liquid samples                        | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | U-235  | liquid samples                        | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | U-235  | liquid samples                        | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | U-238  | liquid samples                        | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided volume    | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | U-238  | liquid samples                        | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Th-228   | liquid samples                        | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Th-228   | liquid samples                        | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Th-230   | liquid samples                        | 15,0                    |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Th-230   | liquid samples                        | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 5E-02             | Bq ml <sup>-1</sup>    | Th-232   | liquid samples                        | 15,0                    |                    | 6.1         | 04, 05, 06    |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>37 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Bezeichnung                   | Messgröße                  | Messbereich<br><i>Measurand level or range</i> |                   |                        | Messbedingungen<br><i>Measurement conditions</i> |                                       | $U_r$ in %              | Arbeitsanweisung   | Zuständig   | Aufgabe       | Bemerkung |
|-------------------------------|----------------------------|--|-------------------|------------------------|--|---------------------------------------|-------------------------|--------------------|-------------|---------------|-----------|
|                               |                            | Min<br><i>Min</i>                              | Max<br><i>Max</i> | Einheit<br><i>Unit</i> | Parameter<br><i>Parameter</i>                    | Spezifikation<br><i>Specification</i> |                         |                    |             |               |           |
| <i>Service identification</i> | <i>Quantity</i>            |  |                   |                        |  |                                       | <i>Work instruction</i> | <i>Responsible</i> | <i>Task</i> | <i>Remark</i> |           |
| 058                           | Activity divided by volume | 5E-02  | 1E+03             | Bq ml <sup>-1</sup>    | Th-232   | liquid samples                        | 5,0                     |                    | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-03  | 1E+03             | Bq ml <sup>-1</sup>    | Sr-89  | liquid samples                        | 20                      | AA-6100-209        | 6.1         | 04, 05, 06    |           |
| 058                           | Activity divided by volume | 1E-04  | 1E+03             | Bq ml <sup>-1</sup>    | Sr-90/Y-90                                       | liquid samples                        | 10                      | AA-6100-209        | 6.1         | 04, 05, 06    |           |

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|---------------------|---|-------------------|-----------------|-------------------------------|
| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>38 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

**Zuordnung der Prüfungen und Kalibrierungen zum Geschäftsverteilungsplan**

| Aufgabe<br>Kap. 3.1    | Bezeichnung der Aufgabe im Geschäftsverteilungsplan                                      |
|------------------------|--|
| <b>Fachbereich 6.1</b> |  |
| <b>01</b>              | Kalibrierung von Aktivitätsmessgeräten   |
| <b>02</b>              | Kalibrierung radioaktiver Quellen  |
| <b>03</b>              | Herstellung und Abgabe von Aktivitätsnormalen  |
| <b>04</b>              | Radionuklidanalysen an Umweltproben, Industrieprodukten und -abfällen                    |
| <b>05</b>              | Spurenanalyse gemäß Strahlenschutzvorsorgegesetz   |
| <b>06</b>              | Zertifizierung von Referenzmaterialien gemäß StrVG                                       |
| <b>07</b>              | Kalibrierung von Radon- und Radonfolgeprodukt-Messgeräten                                |
| <b>Fachbereich 6.2</b> |  |
| <b>08</b>              | Kalibrierung von Normalen für die Wasser-Energiedosis für Co-60 Gammastrahlung           |
| <b>09</b>              | Kalibrierung von Normalen für die Wasser-Energiedosis für Röntgenstrahlung bis 400 kV    |
| <b>10</b>              | Kalibrierung von Normalen für die Luftkerma  |
| <b>11</b>              | Kalibrierung von Normalen in Einheiten der „reference air kerma rate“                    |
| <b>12</b>              | Kalibrierung von Normalen für die Wasser-Energiedosis für die Brachytherapie             |
| <b>13</b>              | Kalibrierung in den Messgrößen Luftkermalängen- und –flächen-Produkt                     |
| <b>Fachbereich 6.3</b> |  |
| <b>14</b>              | Kalibrierungen von Normalen und Strahlenschutzdosimetern mit Photonen- und Betastrahlung |
| <b>15</b>              | Bauartzulassung und Prüfung von Orts- und Personendosimetern für Photonenstrahlung       |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>39 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|

| Aufgabe<br>Kap. 3.1    | Bezeichnung der Aufgabe im Geschäftsverteilungsplan                             |
|------------------------|---|
| 16                     | Vergleichsmessungen für Photonen- und Betastrahlung gemäß gesetzlicher Vorgaben |
| 17                     | Kalibrierung von Strahlenschutzdosimetern bei niedrigen Dosisleistungen         |
| <b>Fachbereich 6.4</b> |   |
| 18                     | Kalibrierungen in den Neutronen-Referenzstrahlungsfeldern                       |
| <b>Fachbereich 6.5</b> |   |
| 19                     | Kalibrierung von Neutronendetektoren und –dosimetern mit Neutronenquellen       |
| 20                     | Vergleichsbestrahlungen von Personendosimetern der amtlichen Messstellen        |

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| Ausgabe-Nr. :<br>15 | erstellt durch:<br>Abteilung 6<br>QMV 6 | am:<br>02.04.2012 | Kapitel:<br>3.1 | Seite von Seiten<br>40 von 40 |
|---------------------|---|-------------------|-----------------|-------------------------------|