

Accreditation



The Deutsche Akkreditierungsstelle attests with this **Accreditation Certificate** that

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

operates a testing laboratory that fulfills the requirements according to DIN EN ISO/IEC 17025:2018 for those conformity assessment activities specified in detail in the annexes listed below. This includes additional existing legal and normative requirements for the testing laboratory including those in relevant sectoral schemes, provided that these are explicitly confirmed in the annexes listed below.

D-PL-21039-04-01 Valid from: 05.09.2025
D-PL-21039-04-02 Valid from: 30.01.2025
D-PL-21039-04-03 Valid from: 30.01.2025
D-PL-21039-04-04 Valid from: 05.09.2025

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

This accreditation was issued in accordance with Art. 5 Para. 1 Sentence 2 of Regulation (EC) 765/2008, after an accreditation procedure was carried out in compliance with the minimum requirements of DIN EN ISO/IEC 17011 and on the basis of a review and decision of the appointed accreditation committees.

This accreditation certificate only applies in connection with the notice of Datum wählen. It consists of this cover sheet, the reverse side of the cover sheet and the corresponding annex

Registration number of the accreditation certificate: **D-PL-21039-04-00**

Berlin, 05.09.2025 Dr. Haiko Blumenthal | Head of Technical Unit

Translation issued: 10.12.2025

This accreditation certificate was issued by the Deutsche Akkreditierungsstelle GmbH (DAkkS). It is digital sealed and valid without signature. It reflects the status as indicated by the date of issue. The current status of any valid and surveyed accreditation can be found in the directory of accredited bodies maintained by Deutsche Akkreditierungsstelle GmbH (www.dakks.de).

This document is a translation. The definitive version is the original German accreditation certificate.

See notes overleaf

Deutsche Akkreditierungsstelle GmbH

Office Berlin
Spittelmarkt 10
10117 Berlin

The Deutsche Akkreditierungsstelle GmbH (DAkkS) is the entrusted national accreditation body of the Federal Republic of Germany according to § 8 section 1 AkkStelleG in conjunction with § 1 section 1 AkkStelleGBV. DAkkS is designated as the national accreditation authority by Germany according to Art. 4 Para. 4 of Regulation (EC) 765/2008 and clause 4.7 of DIN EN ISO/IEC 17000.

Pursuant to Art. 11 section 2 of Regulation (EC) 765/2008, the accreditation certificate shall be recognised as equivalent by the national authorities within the scope of this Regulation as well as by the WTO member states that have committed themselves in bilateral or multilateral mutual agreements to recognise the certificates of accreditation bodies that are members of ILAC or IAF as equivalent.

DAkkS is a signatory to the multilateral agreements for mutual recognition of the European co-operation for Accreditation (EA), International Accreditation Forum (IAF) and International Laboratory Accreditation Co-operation (ILAC).

The up-to-date state of membership can be retrieved from the following websites:

EA: www.european-accreditation.org

ILAC: www.ilac.org

IAF: www.iaf.nu

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-21039-04-01 according to DIN EN ISO/IEC 17025:2018

Valid from: 05.09.2025

Date of issue: 05.09.2025

This annex is part of the Accreditation Certificate D-PL-21039-04-00.

Holder of the Accreditation Certificate:

Framatome GmbH
Paul-Gossen-Straße 100, 91052 Erlangen

with the location

Framatome GmbH
“Radiochemical Analysis”, “Chemical Analysis”, “Incorporation Monitoring”
Paul-Gossen-Straße 100, 91052 Erlangen

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Testing in the following areas:

Radiochemical analysis within the framework of emission and immission monitoring, the analysis of operational and waste samples, of fluence detectors and of the testing of sorbents for filter systems (without sampling); incorporation measurements

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Abbreviations used: see last page

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Flexible Scope of Accreditation:

The testing laboratory is permitted to use the standardised or equivalent test methods listed here with different issue versions (flexibility according to category A) without having to inform and obtain prior approval from DAkkS.

The testing laboratory has an up-to-date list of all testing procedures in the flexible accreditation area. The list is publicly available on the testing laboratory's website.

1 Emission and immission monitoring and analysis of operational and waste samples from nuclear facilities

| | |
|----------------------|---|
| MB 02-025 2019-02 | Determination of strontium-89 and strontium-90 on aerosol filters with gas flow proportional counter |
| MB 02-028 2020-11 | Nuclide-specific determination of alpha-emitting radionuclides on filter and wipe test samples by direct measurement with the grid ionisation chamber (GIK) |
| MB 02-029 2019-02 | Determination of Cl-36 in operational and waste samples after chemical separation by liquid scintillation measurement |
| MB 02-035 2019-02 | Determination of iodine-129 in operational and waste samples after chemical separation by gamma spectrometry |
| MB 02-044 2019-02 | Determination of Pu-241 by liquid scintillation after chemical separation in operational and waste samples and samples from environmental monitoring |
| MB 02-052 2020-12 | Determination of total gamma activity concentration in operational and waste samples using HPGe (High Purity Germanium) detector |
| MB 02-056 2019-02 | Determination of radionuclides in operational and waste samples and samples from environmental and incorporation monitoring by gamma spectrometry |
| MB 02-064 2019-02 | Determination of Fe-55, Ni-63 in operational and waste samples and samples from environmental monitoring after sample preparation by liquid scintillation measurement |
| MB 02-083 2019-02 | Determination of Sr-89/Sr-90 in operational and waste samples and samples from environmental and incorporation monitoring by liquid scintillation measurement |

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| | |
|----------------------|---|
| MB 02-084 2019-02 | Determination of tritium in operational and waste samples and in environmental and urine samples after sample preparation by liquid scintillation |
| MB 02-085 2019-02 | Determination of C-14 in operational and waste samples by liquid scintillation |
| MB 02-086 2019-02 | Nuclide-specific determination of alpha emitters in operational and waste samples and in samples from environmental monitoring by alpha spectrometry after sample preparation |
| MB 02-087 2019-02 | Determination of total alpha and total beta activity in operational and waste samples and soil and vegetation samples using gas flow proportional counter |
| MB 02-089 2019-04 | Determination of Ni-59 in operational and waste samples by gamma spectrometry |
| MB 02-091 2024-02 | Determination of the beta emitters Tc-99, Nb-93m, Zr-93, Se-79, Pm-147 and Pd-107 after chemical separation by liquid scintillation measurement |
| MB 02-092 2021-02 | Determination of the nuclides Mo-93, Nb-94 and Sn-121m by gamma measurement |
| MB 10-006 2019-07 | Preparation of sediment, soil and vegetation samples by drying and annealing |
| MB 10-010 2019-06 | Preparation and digestion of operational, waste and environmental samples, metals and nonmetals |
| MB 10-011 2019-04 | Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxides and ceramics |

2 Fluence detectors

| | |
|------------------------|--|
| DIN 25456-1 1999-10 | Neutron fluence measurement; fast-neutron fluence determination with activation and fission detectors (activity measurement only) |
| DIN 25456-2 1999-10 | Neutron fluence measurement; fast-neutron fluence determination with iron activation detectors (activity measurement [°] only) |

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| | |
|------------------------|---|
| DIN 25456-3 1999-10 | Neutron fluence measurement; fast-neutron fluence determination with nickel activation detectors (activity measurement ^o only) |
| DIN 25456-4 1999-10 | Neutron fluence measurement; fast-neutron fluence determination with niobium activation detectors (activity measurement ^o only) |
| DIN 25456-5 1999-10 | Neutron fluence measurement; fast-neutron fluence determination with copper activation detectors (activity measurement ^o only) |
| DIN 25456-6 1999-10 | Neutron fluence measurement; fast-neutron fluence determination with thorium activation detectors (activity measurement ^o only) |
| ASTM E 263 2018-12 | Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Iron (activity measurement only) |
| ASTM E 264 2019-04 | Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Nickel (activity measurement only) |
| ASTM E 481 2016-10 | Standard Test Method for Measuring Neutron Fluence Rates by Radioactivation of Cobalt and Silver (activity measurement only) |
| ASTM E 523 2016-12 | Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Copper (activity measurement only) |
| ASTM E 1297 2018-06 | Standard Test Method for Measuring Fast-Neutron Reaction Rates by Radioactivation of Niobium (activity measurement only) |

3 Testing of sorption materials

Determination of iodine retention using I-131 traced methyl iodide

| | |
|------------------------|--|
| ASTM D 2854 2019-09 | Standard Test Method for Apparent Density of Activated Carbon |
| DIN 66165-2 2016-08 | Particle size analysis - Sieving analysis - Part 2 : Procedure |

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Annex to the Accreditation Certificate D-PL-21039-04-01

MB 09-019
2018-11

Laboratory testing of iodine sorption on sorption media with I-131-doped methyl iodide

4 Incorporation measurements

Inspection type: In-vivo method

| Standard / Issue date in-house method / Version | Analyte - Title of the standard Information on sample pretreatment / testing technique | Item under examination |
|--|--|-----------------------------------|
| RiPhyko, Part 2 2007-01-12 | „Guideline of Physical Radiation Protection Control for determining the body dose, Part 2: Determination of the body dose in the case of internal radiation exposure (incorporation monitoring) (Sections 40, 41 and 42 of StrlSchV (Radiation Protection Ordinance))“ | Person (Body dose) |
| MB 08-001 2021-03 | Gamma spectrometric in-vivo determination of whole body and thyroid radioactivity within the human body | Person (whole or partial body) |

Inspection type: In-vitro method

| Standard / Issue date in-house method / Version | Analyte - Title of the standard Information on sample pretreatment / testing technique | Item under examination |
|--|--|-----------------------------------|
| RiPhyko, Part 2 2007-01-12 | “Guideline of Physical Radiation Protection Control for determining the body dose, Part 2: Determination of the body dose in the case of internal radiation exposure (incorporation monitoring) (Sections 40, 41 and 42 of StrlSchV (Radiation Protection Ordinance))“ | Person (Body dose) |
| DIN EN ISO 17294-2 2024-12 | Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (uranium only as specific activity) | Urine |
| MB 02-084 2019-02 | Determination of tritium in operational and waste samples and environmental and urine samples after sample preparation by liquid scintillation | Urine |

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Annex to the Accreditation Certificate D-PL-21039-04-01

Abbreviations used

| | |
|------|---|
| ASTM | American Society for Testing and Materials |
| DIN | Deutsches Institut für Normung (German Institute for Standardisation) |
| EN | European Standard |
| IEC | International Electrotechnical Commission |
| ISO | International Organisation for Standardisation |
| MB | Framatome GmbH in-house procedure (method description) |

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Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-21039-04-02 according to DIN EN ISO/IEC 17025:2018

Valid from: **30.01.2025**

Date of issue: 05.09.2025

This annex is part of the Accreditation Certificate D-PL-21039-04-00.

Holder of the Accreditation Certificate:

Framatome GmbH
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with the location

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Paul-Gossen-Straße 100, 91052 Erlangen

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Testing in the following areas:

Physical, physical-chemical and chemical analyses of water (wastewater, process water, raw water, water from treatment plants, ultrapure water)

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Abbreviations used: see last page

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Flexible accreditation area:

The testing laboratory is permitted to use the standardised or equivalent test methods listed here with different issue versions (flexibility according to category A) without having to inform and obtain prior approval from DAkkS.

The testing laboratory has an up-to-date list of all testing methods in the flexible accreditation area. The list is publicly available on the testing laboratory's website.

Analyses of water (wastewater, process water, raw water, water from treatment plants, ultrapure water)

1 Sample preparation

| | |
|----------------------|---|
| MB 10-009 2019-02 | High-temperature digestion for the determination of Br, Cl, F and S in solid and liquid samples |
| MB 10-011 2019-04 | Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxide and ceramics |

2 Physical and physical-chemical parameters

| | |
|-----------------------------------|--|
| DIN EN ISO 10523 (C 5) 2012-04 | Water quality - Determination of pH value |
| DIN EN 27888 (C 8) 1993-11 | Water quality - Determination of electrical conductivity |

3 Anions

| | |
|--------------------------------------|---|
| DIN EN ISO 10304-1 (D 20) 2009-07 | Water quality - Determination of dissolved anions using liquid ion chromatography - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulfate |
| DIN 38405-D 21 1990-10 | Determination of dissolved silicate by spectrometry |
| DIN 38405-D 24 1987-05 | Photometric determination of chromium(VI) using 1,5-diphenylcarbonohydrazide |

Annex to the Accreditation Certificate D-PL-21039-04-02

4 Cations

| | |
|--------------------------------------|---|
| DIN EN ISO 11885 (E 22) 2009-09 | Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectrometry (ICP-OES) (Modification: <i>additionally Nb, Ti</i>) |
| DIN EN ISO 17294-2 (E 29) 2024-12 | Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification: <i>additionally Eu, I, Nb, Np, S, Si, Ta, Tc, Ti</i>) |
| DIN EN ISO 14911 (E 34) 1999-12 | Water quality - Determination of dissolved Li^+ , Na^+ , NH_4^+ , K^+ , Mn^{2+} , Ca^{2+} , Mg^{2+} , Sr^{2+} and Ba^{2+} using ion chromatography - Method for water and wastewater |

5 Summary Effect and Material Characteristics

| | |
|-------------------------------------|---|
| DIN 38409-H 1 1987-01 | Determination of total dry residue, filtrate dry residue and residue on ignition |
| DIN 38409-H 2 1987-03 | Determination of filterable matter and the residue on ignition |
| DIN EN 1484 (H 3) 2019-04 | Water analysis – Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC) |
| DIN EN ISO 9377-2 (H 53) 2001-07 | Water quality - Determination of the hydrocarbon index - Part 2: Method using solvent extraction and gas chromatography |

6 Individual components

| | |
|----------------------|--|
| MB 01-005 2019-02 | Determination of boron in aqueous solutions by volumetric analysis |
| MB 02-068 2019-02 | Isotope ratio determination in aqueous solutions by ICP-MS |

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Abbreviations used:

| | |
|-----------|--|
| DIN | Deutsches Institut für Normung e. V. (German Institute for Standardisation) |
| EN | European Standard |
| IEC | International Electrotechnical Commission |
| ISO | International Organisation for Standardisation |
| MB XX-XXX | In-house procedure of the KBS Department for Radiochemistry, Chemistry of Framatome GmbH |

Deutsche Akkreditierungsstelle

Annex to the Accreditation Certificate D-PL-21039-04-03 according to DIN EN ISO/IEC 17025:2018

Valid from: 30.01.2025

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This annex is part of the Accreditation Certificate D-PL-21039-04-00.

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Paul-Gossen-Straße 100, 91052 Erlangen

with the location

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Paul-Gossen-Straße 100, 91052 Erlangen

The testing laboratory meets the requirements of DIN EN ISO/IEC 17025:2018 to carry out the conformity assessment activities listed in this annex. The testing laboratory meets additional legal and normative requirements, if applicable, including those in relevant sectoral schemes, provided that these are explicitly confirmed below.

The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Testing in the following areas:

Physical, physico-chemical and chemical analyses of waste from nuclear facilities

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Abbreviations used: see last page

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Flexible Scope of Accreditation:

The testing laboratory is permitted to use standardised or equivalent test methods listed here with different issue dates without being required to prior inform and obtain approval from DAkkS (flexibilization according to category A).

The testing laboratory has an up-to-date list of all test methods within the flexible scope of accreditation. The list is publicly available on the website of the testing laboratory.

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1 Sample preparation of waste from nuclear facilities

| | |
|----------------------|---|
| MB 10-009 2019-02 | High-temperature digestion for the determination of Br, Cl, F and S in solid and liquid samples |
| MB 10-010 2019-06 | Preparation and digestion of operational, waste and environmental samples, metals and non-metals |
| MB 10-011 2019-04 | Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxide and ceramics |

2 Anions, cations in waste from nuclear facilities

| | |
|-------------------------------|--|
| DIN EN ISO 10304-1 2009-07 | Water quality - Determination of dissolved anions using liquid ion chromatography - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulphate (Modification: <i>here for waste</i>) |
| DIN EN ISO 11885 2009-09 | Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectrometry (ICP-OES) (Modification: <i>here for waste; additionally: Nb, Tl</i>) |

Annex to the Accreditation Certificate D-PL-21039-04-03

DIN EN ISO 17294-2 Application of inductively coupled plasma mass spectrometry (ICP-MS)
2024-12 - Part 2: Determination of selected elements including uranium
isotopes
(Modification: *additionally: Eu, I, Nb, Np, S, Si, Ta, Tc, Ti*)

DIN 38405-24 Photometric determination of chromium (VI) using
1987-05 1,5-diphenylcarbazide
(Modification: *here for waste*)

MB 02-068 Isotope ratio determination in aqueous solutions by ICP-MS
2019-02
(Modification: *here for waste*)

3 Summary effect and material characteristics of waste from nuclear facilities

DIN EN 15936 Soil, waste, treated biowaste and sludge - Determination of total
2012-11 organic carbon (TOC) by dry combustion

DIN 38409-1 Determination of total dry residue, filtrate dry residue and
1987-01 ignition residue
(Modification: *here for waste*)

DIN 38409-2 Determination of filterable substances and residue on ignition
1987-03
(Modification: *here for waste*)

Abbreviations used:

| | |
|-----|--|
| DIN | Deutsches Institut für Normung e.V. – German institute for standardization |
| EN | Europäische Norm – European Standard |
| IEC | International Electrotechnical Commission |
| ISO | International Organization for Standardisation |
| MB | In house procedure of Framatome GmbH |

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Deutsche Akkreditierungsstelle

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The management system requirements of DIN EN ISO/IEC 17025 are written in the language relevant to the operations of testing laboratories and they conform to the principles of DIN EN ISO 9001.

Testing in the following areas:

Analysis of metals, metal alloys and metal oxides from nuclear facilities; Analysis of equipment for nuclear facilities

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The testing laboratory is permitted to use the standardized or equivalent test methods listed here with different issue versions (flexibility according to category A) without having to inform and obtain prior approval from DAkkS.

The testing laboratory has an up-to-date list of all testing methods in the flexible accreditation area. The list is publicly available on the testing laboratory's website.

1 Analysis of metals, metal alloys and metal oxides from nuclear facilities

1.1 Sample preparation

| | |
|----------------------|--|
| MB 10-009 2019-02 | High-temperature digestion for the determination of Br, Cl, F and S in solid and liquid samples |
| MB 10-010 2019-06 | Preparation and digestion of operational, waste and environmental samples, metals and non-metals |
| MB 10-011 2019-04 | Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxides and ceramics |

1.2 Elements

| | |
|-------------------------------|--|
| DIN EN ISO 10304-1 2009-07 | Water quality - Determination of dissolved anions using liquid ion chromatography - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulphate (Modification: <i>Determination in metals, metal alloys and metal oxides</i>) |
| DIN EN ISO 11885 2009-09 | Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectrometry (ICP-OES) (Modification: <i>Determination of Nb, Tl in metals, metal alloys and metal oxides</i>) |
| DIN EN ISO 15350 2010-08 | Steel and iron - Determination of total carbon and sulfur content - Infrared absorption method after combustion in an induction furnace (routine method) |
| DIN EN ISO 15351 2010-08 | Steel and iron - Determination of nitrogen content - Thermal conductimetric method after fusion in a current of inert gas (Routine method) |

Annex to the Accreditation Certificate D-PL-21039-04-04

| | |
|-------------------------------|--|
| DIN EN ISO 17294-2 2024-12 | Water quality - Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification: <i>Determination of Eu, I, Nb, Np, S, Si, Ta, Tc, Ti in metals, metal alloys and metal oxides</i>) |
| DIN EN 10276-2 2003-10 | Chemical analysis of ferrous materials - Determination of oxygen content in steel and iron - Part 2: Infrared method after fusion under inert gas (Modification: <i>Determination in metals, metal alloys and metal oxides</i>) |
| MB 02-068 2019-02 | Isotope ratio determination in aqueous solutions by ICP-MS (Modification: <i>Determination in metals, metal alloys and metal oxides</i>) |
| ASTM E 415 2021-10 | Standard Test Method for Analysis of Carbon and Low-Alloy Steel by Spark Atomic Emission Spectrometry (Modification: <i>Addition of W</i>) |
| ASTM E 1086 2022-08 | Standard Test Method for Analysis of Austenitic Stainless Steel by Spark Atomic Emission Spectrometry (Modification: <i>Addition of Al, Co, Nb, Ti, V, W, B, N, O, Sn, Ta, Sb, Pb, As</i>) |
| ASTM E 1251 2017-10 | Standard Test Method for Analysis of Aluminium and Aluminium Alloys by Spark Atomic Emission Spectrometry |
| ASTM E 3047 2022-12 | Standard Test Method for Analysis of Nickel Alloys by Spark Atomic Emission Spectrometry |
| MB 03-031 2019-07 | Determination of hydrogen in metals and metal oxides by hot extraction |

1.3 Organic Parameters

| | |
|-------------------------|---|
| DIN EN 14039 2005-01 | Characterization of waste - Determination of hydrocarbon content in the range of C10 to C40 by gas chromatography (Modification: <i>Determination in metals, metal alloys and metal oxides</i>) |
|-------------------------|---|

Valid from: 05.09.2025
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2 Inspection of operating equipment for nuclear facilities

2.1 Sample preparation

| | |
|----------------------|--|
| MB 10-009 2019-02 | High-temperature digestion for the determination of Br, Cl, F and S in solid and liquid samples |
| MB 10-010 2019-06 | Preparation and digestion of operational, waste and environmental samples, metals and non-metals |
| MB 10-011 2019-04 | Microwave sample digestion of operational and waste samples, samples from environmental monitoring as well as urine, metals, metal oxides and ceramics |

2.2 Physical-chemical parameters

| | |
|-----------------------------|---|
| DIN 38409-1 1987-01 | Determination of total dry residue, filtrate dry residue and Residue on ignition (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |
| DIN 38409-2 1987-03 | Determination of filterable matter and the residue on ignition (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |
| DIN EN ISO 10523 2012-04 | Water quality - Determination of pH value (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |

2.3 Elements

| | |
|-------------------------------|---|
| DIN EN ISO 10304-1 2009-07 | Water quality - Determination of dissolved anions using liquid ion chromatography - Part 1: Determination of bromide, chloride, fluoride, nitrate, nitrite, phosphate and sulphate (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |
| DIN EN ISO 11885 2009-09 | Water quality - Determination of selected elements by inductively coupled plasma atomic emission spectrometry (ICP-OES) (Modification: <i>Determination of Nb, Tl in equipment for nuclear facilities</i>) |

Annex to the Accreditation Certificate D-PL-21039-04-04

| | |
|-------------------------------|---|
| DIN EN ISO 17294-2 2024-12 | Application of inductively coupled plasma mass spectrometry (ICP-MS) - Part 2: Determination of selected elements including uranium isotopes (Modification: <i>Determination of Eu, I, Nb, Np, S, Si, Ta, Tc, Ti in equipment for nuclear facilities</i>) |
| DIN 38405-21 1990-10 | Determination of dissolved silicate by spectrometry (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |
| DIN 38405-24 1987-05 | Photometric determination of chromium (VI) using 1,5-diphenylcarbonohydrazide (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |
| MB 01-005 2019-02 | Determination of boron in aqueous solutions by volumetric analysis (Modification: <i>in power plant solutions and simulations</i>) |
| MB 02-068 2019-02 | Isotope ratio determination in aqueous solutions by ICP-MS (Modification: <i>in power plant solutions and simulations</i>) |

2.4 Organic Parameters

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| DIN EN 1484 2019-04 | Water analysis - Guidelines for the determination of total organic carbon (TOC) and dissolved organic carbon (DOC). (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |
| DIN EN 14039 2005-01 | Characterization of waste - Determination of hydrocarbon content in the range of C10 to C40 by gas chromatography (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |
| DIN EN 15936 2022-09 | Soil, waste, treated biowaste and sludge - Determination of total organic carbon (TOC) by dry combustion (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |
| DIN EN ISO 9377-2 2001-07 | Water quality - Determination of hydrocarbon oil index - Part 2: Method using solvent extraction and gas chromatography (Modification: <i>Determination for use in equipment for nuclear facilities</i>) |

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This document is a translation. The definitive version is the original German annex to the accreditation certificate.

Abbreviations used:

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| ASTM | American Society for Testing and Materials |
| DIN | Deutsches Institut für Normung e.V. – German institute for standardization |
| EN | Europäische Norm – European Standard |
| IEC | International Electrotechnical Commission |
| ISO | International Organization for Standardisation |
| MB | Framatome GmbH in-house procedure (method description) |