

EA MLA Signatory
Český institut pro akreditaci, o.p.s.
Olšanská 54/3, 130 00 Praha 3

issues

according to section 16 of Act No. 22/1997 Coll., on technical requirements for products, as amended

CERTIFICATE OF ACCREDITATION

No. 190/2023

ORGREZ, a.s.
with registered office Hudcova 321/76, Medlánky, 612 00 Brno,
Company Registration No. 46900829

to the Testing Laboratory No. 1179.2
Testing Laboratory E01

Scope of accreditation:

Diagnostic measurement of electrical rotating machines (generators, motors), transformers, diagnostics of electrically insulating liquids, gases and the state of electrically insulating materials, chromatography of insulating liquids and determination of the content of PCB compounds to the extent as specified in the appendix to this Certificate.

This Certificate of Accreditation is a proof of Accreditation issued on the basis of assessment of fulfillment of the accreditation criteria in accordance with

ČSN EN ISO/IEC 17025:2018


In its activities performed within the scope and for the period of validity of this Certificate, the Body is entitled to refer to this Certificate, provided that the accreditation is not suspended and the Body meets the specified accreditation requirements in accordance with the relevant regulations applicable to the activity of an accredited Conformity Assessment Body.

This Certificate of Accreditation replaces, to the full extent, Certificate No.: 191/2022 of 20. 4. 2022, or any administrative acts building upon it.

The Certificate of Accreditation is valid until: **19. 4. 2028**

Prague: 19. 4. 2023




Jan Velíšek
Director of the Department
of Testing and Calibration Laboratories
Czech Accreditation Institute
Public Service Company

**The Appendix is an integral part of
Certificate of Accreditation No. 190/2023 of 19/04/2023**

Accredited entity according to ČSN EN ISO/IEC 17025:2018:

ORGREZ, a.s.

CAB number 1179.2, Testing Laboratory E01
Vítkova 17, 186 00 Praha 8 – Karlín

Detailed information on activities within the scope of accreditation (determined analytes) is given in the section „Specification of the scope of accreditation“

Tests:

| Ordinal number ¹ | Test procedure / method name | Test procedure / method identification ² | Subject of the test | Degrees of freedom ³ |
|-----------------------------|---|---|--|---------------------------------|
| 1* | Measurement of insulation resistance | SOP 1-01-20/72 (TSE_RIZ_02r06; TSE_RIZ_03r06; ČEZ_ME_0983r00, Annex B p. 3.4) | Rotating machine, power transformer, instrument transformer | - |
| 2* | Measurement of capacity and dissipation factor | SOP 1-02-21/72 (TSE_TGC_05r06; ČEZ_ME_0983r00, Annex B, C p. 1.4) | Rotating machine, power transformer, instrument transformer, bushing | - |
| 3* | Partial discharge measurement | SOP 1-04/72 (TSE_VYB_06r06) | Rotating machine | - |
| 4* | Test by applied voltage | SOP 1-06/72 (TSE_UZ_09r06; TSE_UZ_10r06; TSE_UZ_11r06) | Rotating machine | - |
| 5* | Measurement of winding resistance by dc current | SOP 1-22/72 (ČEZ_ME_0983r00, Annex B p. 2.4) | Power transformer | - |
| 6* | Determination of SF ₆ content by acoustic method | SOP 1-60/72 (ČSN EN IEC 60480; ČSN EN IEC 60376) | Insulating gas | - |
| 7* | Measurement of SF ₆ dew point by acoustic method | SOP 1-61/72 (ČSN EN IEC 60480; ČSN EN IEC 60376) | Insulating gas | - |
| 8 | Determination of water in insulating oil – by Karl Fischer automatic coulometric titration (Q _v) ⁺ | SOP 2-10/72 (ČSN EN 60814; ZM-03; MP 04-2012) | Insulating liquid | - |
| 9 | Determination of the breakdown voltage of liquid insulants ≤ 60 kV at power frequency (U _p) ⁺ | SOP 2-11/72 (ČSN EN 60156; ZM-04) | Insulating liquid | - |



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ORGREZ, a.s.

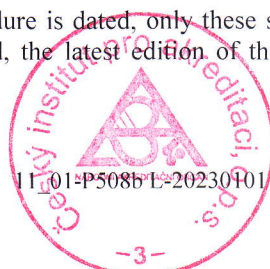
CAB number 1179.2, Testing Laboratory E01

Vítkova 17, 186 00 Praha 8 – Karlín

| Ordinal number ¹ | Test procedure / method name | Test procedure / method identification ² | Subject of the test | Degrees of freedom ³ |
|-----------------------------|---|---|--|---------------------------------|
| 10 | Determination of dissipation factor ($\text{tg } \delta$) ⁺ , relative permittivity (ϵ_r) ⁺ and d.c. resistivity (ρ) ⁺ | SOP 2-12/72 (ČSN EN 60247; ZM-13) | Insulating liquid | - |
| 11 | Determination of acid value of insulating liquids by automatic potentiometric titration (ČK) ⁺ | SOP 2-14/72 (ČSN EN 62021-1; ZM-12) | Insulating liquid | - |
| 12 | Determination of PCB content by gas chromatography (GC/ECD - congeners 28, 52, 101, 138, 153, 180) and the sum of PCB congeners by calculation from measured values | SOP 2-19/72 (ČSN EN 61619) | Insulating liquid | - |
| 13 | Determination of the content of free and dissolved gases from oil-filled electrical equipment by gas chromatography (GC/TCD + FID) | SOP 2-23/72 (ČSN EN 60567, except chap. 4, 5) | Insulating liquid | - |
| 14 | Determination of the content of dibenzyl disulfide (DBDS) by gas chromatography method (GC/ ECD) | SOP 2-26/72 (ČSN EN 62697-1) | Insulating liquid | - |
| 15 | Determination of average viscometric degree of polymerization (PPS) ⁺ of paper insulation | SOP 2-30/72 (ČSN EN 60450) | Cellulosic electrically insulating materials | - |
| 16 | Determination of the content of furan derivatives by high-performance liquid chromatography (HPLC/UV) | SOP 2-34/72 (ČSN EN 61198) | Insulating liquid | - |

¹ asterisk at the ordinal number identifies the tests, which the laboratory is qualified to carry out outside the permanent laboratory premises

² if the document identifying the test procedure is dated, only these specific procedures are used. If the document identifying the test procedure is not dated, the latest edition of the specified procedure is used (including any changes)



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³ the laboratory does not apply a flexible approach to the scope of accreditation

Specification of the scope of accreditation:

| Ordinal test number | Detailed information on activities within the scope of accreditation (determined analytes) |
|---------------------|---|
| 13 | Hydrogen, methane, ethane, ethylene, acetylene, carbon monoxide, carbon dioxide, oxygen, nitrogen and their sum calculated from measured values (Qp) |
| 16 | 5-hydroxymethyl-2-furfural (5HMF), 2-furfuryl alcohol (2FOL), 2-furfural (2FAL), 2-acetylfuran (ACF), 5-methyl-2-furfural (5MEF) and their sum calculated from measured values. |

Sampling:

| Ordinal number | Sampling procedure name | Sampling procedure identification ¹ | Subject of sampling |
|----------------|--|---|---------------------|
| 1 | Sampling of insulating liquids (manual sampling) | SOP 2-02/72, (ČSN EN 60567 ed. 3 chap. 45; ČSN EN IEC 60475 ed. 2; ZM-02; MP 03-2012) | Insulating liquid |

¹ if the document identifying the sampling procedure is dated, only these specific procedures are used. If the document identifying the sampling procedure is not dated, the latest edition of the specified procedure is used (including any changes)

Explanations:

- SOP Standard Operating Procedure
- ZM Test method of the Czech Association of High-Voltage Laboratories (AZVN)
- MP Guideline of the Czech Association of High-Voltage Laboratories (AZVN)
- TSE Rotating electrical machines – Technological procedure of ČEZ a. s.
- ČEZ_ME ČEZ a. s. method
- (...)⁺ The data in parentheses at the test procedure name are abbreviations of the individual tests and they are stated in reports.

