**Scope of Accreditation for the Testing Laboratory (Center) / Medical Laboratory**

Testing Center of All-Russia Electrotechnical Institute −
the Branch of the Federal State Unitary Enterprise
"Russian Federal Nuclear Center – Zababakhin All-Russia Research Institute of Technical Physics"

*Testing laboratory (center) / medical laboratory name*

111250. Moscow, Krasnokazarmennaya Street 12, Blds. 3, 7, 8

*Buziness address*

for Compliance with GOST ISO/IEC 17025-2019

*Title and reference details of an international or national standard establishing general requirements for the competence of testing and calibration laboratories / individual requirements to the quality and competence of medical laboratories*

| §§ | Documents establishing rules and techniques of research (testing) and measurements | Equipment | OKPD[1] 2 code | TN VED EAEU[2] code | Defined parameter | Range |
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| **111250, Moscow, Krasnokazarmennaya Street 12, Blds. 3, 7** | | | | | | |
| 1 | GOST R 55191<br>Clauses 5, 8 | Electrical equipment and installations for alternating voltages greater than 1000 V | 27.11<br>27.12<br>27.32<br>27.90 | 8501<br>8504<br>8535 | Partial discharge | 1 pC to 10 nC |
| 2 | GOST R 55190<br>Subclause 8.3.1 | Metal-enclosed switchgear | 27.12 | 8535<br>8537 | Temperature rise and temperature at current flow across the main circuit<br>Test current | 0 °C to 300 °C<br><br>100 A to 12000 A |
| 3 | GOST R 55190 | | | | Contact resistance of the auxiliary circuits | exceeds/does not exceed |

[1] Russian Classification of Products by Economic Activity Type
[2] Eurasian Economic Union's Commodity Nomenclature of Foreign Economic Activity

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| | Subclauses 8.3.2.1, 8.3.2.2 | | | | | 1 μΩ to 1999.9 Ω<br>0.1 mA to 100 A |
| 4 | GOST R 55190<br>Subclause 8.3.2.3 | | | | Temperature-rise test of the auxiliary and control equipment | exceeds/does not exceed<br>0 °C to 300 °C<br>0 V to 500 V |
| 5 | GOST R 55190<br>Subclause 8.4.5.1 | | | | Switchgear closing and opening times | 0.1 ms to 10 c |
| 6 | GOST R 55190<br>Subclause 8.4.8 | | | | Operability of locking devices | passed/failed<br>0 kN to 1 kN<br>0 V to 500 V |
| 7 | GOST R 55190<br>Subclause 8.4.9 | | | | Operability of fixing devices | passed/failed<br>0 to 1 kN |
| 8 | GOST R 55190<br>Subclause 8.4.10 | | | | Pressure continuity of sliding earthing contacts | passed/failed<br>0.02 mm to 0.5 mm<br>1 μΩ to 1999.9 Ω<br>1 mA to 100 A |
| 9 | GOST R 55190<br>Subclauses 8.5.1 – 8.5.13 | | | | Insulation strength<br>Test power-frequency AC voltage<br>Test impulse voltage<br>Partial discharge measurement | passed/failed<br>0 to 300 kV<br>3 kV to 200 kV<br>1 pC to 10 nC |
| 10 | GOST R 55190<br>Subclause 8.6 | | | | Short-circuit dynamic and short-time thermal currents:<br>– dynamic current<br>– short-time thermal current<br>– short-time thermal current | passed/failed<br>0 kA to 200 kA (0 s to 0.5 s)<br>0 kA to 51 kA (0 s to 3.3 s)<br>0 kA to 100 kA (0 s to 1.1 s) |
| 11 | GOST R 55190<br>Subclause 8.7.4 | | | | Mechanical strength of air terminal elements | passed/failed<br>0 kN to 5 kN |
| 12 | GOST R 55190<br>Subclause 8.7.6 | | | | Corrosion resistance | passed/failed<br>20 °C to 40 °C<br>60% to 98 % |
| 13 | GOST R 55190<br>Subclause 8.9.1 | | | | Switching capacity | passed/failed<br>0 kA to 63 kA<br>0 kV to 35 kV |
| 14 | GOST R 55190<br>Subclause 8.9.2 | | | | Auxiliary transformer no-load current breaking capacity | passed/failed<br>0 A to 3 A |
| 15 | GOST R 55190<br>Subclause 8.11 | | | | Arc resistance at internal short-circuit | passed/failed<br>0 kA to 63 kA |

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| | | | | | | 0 kV to 35 kV |
| 16 | GOST R 52565<br>Subclauses 9.10.2.1, 9.10.2.2, 9.10.5 | Three-phase 50 Hz AC circuit-breakers of rated voltages 3 and up to and including 750 kV | 27.12.10.110 | 8535 | Resistance to the ambient temperature lower value | passed/failed<br>–70 °C to +150 °C |
| 17 | GOST R 52565<br>Subclauses 9.10.2.1, 9.10.2.3, 9.10.5 | | | | Resistance to the ambient temperature upper value | passed/failed<br>–70 to +150 °C |
| 18 | GOST R 52565<br>Subclause 9.7 | | | | Switching capacity at capacitance current breaking | passed/failed<br>0 A to 100 A<br>0 kV to 35 kV |
| 19 | GOST R 52565<br>Subclause 9.8 | | | | Switching capacity at shunt reactor current breaking | passed/failed<br>0 A to 100 A<br>0 kV to 35 kV |
| 20 | GOST R 55716<br>Subclause 6.4 | High-voltage switchgear | 27.12.10.110<br>27.12.10.120 | 8535 | DC resistance | 1 μΩ to 1999.9 Ω<br>0.1 mA to 100 A |
| 21 | GOST R 55716<br>Subclause 6.6 | | | | Short-circuit through current withstand:<br>– dynamic current<br>– short-time thermal current | <br>passed/failed<br>0 kA to 200 kA<br>passed/failed<br>0 kA to 100 kA |
| 22 | GOST 2213<br>Subclause 7.1 | AC fuses for voltages greater than 3 kV | 27.12.10.140 | 853610 | Geometrical dimensions<br>Mass<br>Protective coating condition<br>Surface condition of external insulation parts<br>Correctness of nameplates<br><br>Correctness of marking<br><br>Availability of operation indicator | 0 mm to 10000 mm<br>0.05 kg to 500 kg<br>normal/defective<br>(visual check)<br>normal/defective<br>(visual check)<br>correct/incorrect<br>(visual check)<br>correct/incorrect<br>(visual check) |
| | GOST 2213<br>Subclause 7.2 | | | | DC resistance | 1 μΩ to 1999.9 Ω<br>0.1 mA to 100 A |
| | GOST 2213<br>Subclause 7.5 | | | | Temperature rise and temperature in rated current-induced heating test | 0 °C to 300 °C<br>100 A to 12000 A |
| 23 | GOST 14694<br>Clause 3 | Metal-enclosed switchgear | 27.12 | 8535<br>8537 | Temperature<br>Test current | passed/failed<br>0 °C to 300 °C<br>50 A to 12000 A |

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| 24 | GOST 14694<br>Subclause 4.2 | | | | Travel and alignment of main-circuit detachable contacts | 0.1 mm to 1000 mm |
| 25 | GOST 14694<br>Clause 11 | | | | Quality of corrosion protection and painting | passed/failed<br>20 °C to 40 °C<br>60 % to 98 % |
| 26 | GOST 14694<br>Clause 12 | | | | Localization capacity | passed/failed<br>0 kA to 31.5 kA<br>0 kV to 35 kV |
| 27 | Operation guide “SMR-1 pressure force gauge”,<br>Subclause 5.2 | Metal-enclosed switchgear and AC disconnectors and earthing switches | 27.12 | 8535<br>8537<br>853530 | Pressure force for direct plug-in contacts | 50 N to 500 N |
| 28 | GOST 19264-82<br>Subclause 7.2 | Control electromagnets | 27.33.13.160 | 850590 | Completeness<br>Quality of assembly, finishing, and soldering<br>Protective coating condition<br>Reliability of fixtures<br>Correctness of marking<br>Proper arrangement of contact connections<br>Geometrical dimensions<br>Mass | compliant/noncompliant<br>passed/failed<br>normal/defective<br>passed/failed<br>correct/incorrect<br>correct/incorrect<br>0 mm to 10000 mm<br>0 kg to 5000 kg |
| | GOST 19264-82<br>Subclause 7.4 | | | | Insulation resistance | 3 kΩ to 1000 GΩ |
| | GOST 19264-82<br>Subclause 7.5 | | | | Insulation strength at power-frequency voltage | passed/failed<br>100 V to 6000 V |
| | GOST 19264-82<br>Subclause 7.6 | | | | DC resistance | 1 μΩ to 9.99 kΩ<br>0.1 mA to 100 A |
| | GOST 19264-82<br>Subclause 7.7 | | | | Electric current<br>consumed power | 0 A to 100 A<br>0 kW to 100 kW |
| | GOST 19264-82<br>Subclause 7.8 | | | | DC resistance<br>Ambient air temperature<br>Power supply voltage<br>Closing time | 1 μΩ to 1999.9 Ω<br>+5 °C to +40 °C<br>0 V to 6000 V<br>0.1 ms to 10 s |
| 29 | GOST 30630.1.2<br>Subclause 4.6 (method 102-4) | Machines; instruments; and all types of miscellaneous technical products | 25.11. 25.29.<br>25.40. 25.91.<br>25.92. 25.99.<br>26.11. 26.12.<br>26.20. 26.30.<br>26.40. 26.51.<br>26.80. 27.11. | 8501<br>8502<br>850300<br>8504<br>8505 | Resistance to sinusoidal frequency vibration<br><br><br><br><br>Resistance to wide-band random vibration | passed/failed<br>1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$<br>5 Hz to 600 Hz<br>maximum displacement 6 mm<br><br>passed/failed<br>1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$ |

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| | | | 27.12. 27.20. 27.31. 27.32. 27.33. 27.40. 27.90. 28.12. 28.13. 28.14. 28.15. 29.31. 29.32 | | | 5 Hz to 600 Hz<br>maximum displacement 6 mm |
| | GOST 30630.1.2<br>Subclause 5.10 (method 103-2.1) | | | | Vibration survival strength at fixed-frequency sinusoidal vibration | passed/failed<br><br>1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$<br>5 Hz to 600 Hz<br>maximum displacement 6 mm |
| 30 | GOST R IEC 60068-2-1<br>Clauses 4, 5, 6, 8 | Machines; instruments; and all types of miscellaneous technical products | 25.11. 25.29. 25.40. 25.91. 25.92. 25.99. 26.11. 26.12. 26.20. 26.30. 26.40. 26.51. 26.80. 27.11. 27.12. 27.20. 27.31. 27.32. 27.33. 27.40. 27.90. 28.12. 28.13. 28.14. 28.15. 29.10. 29.31. 29.32 | 8504<br>8535<br>8536<br>8546<br>8504<br>8535<br>8536<br>8546 | Resistance to the ambient temperature lower value in service<br><br>Resistance to the ambient temperature lower value in transportation and storage | passed/failed<br>–75 °C to +150 °C<br><br>passed/failed<br>–75 °C to +150 °C |
| 31 | GOST R IEC 60068-2-2<br>Clauses 4, 5, 6, 8 | Machines; instruments; and all types of miscellaneous technical products | 25.11. 25.29. 25.40. 25.91. 25.92. 25.99. 26.11. 26.12. 26.20. 26.30. 26.40. 26.51. 26.80. 27.11. 27.12. 27.20. 27.31. 27.32. 27.33. 27.40. 27.90. 28.12. 28.13. 28.14. 28.15. 29.10. 29.31. 29.32 | 8504<br>8535<br>8536<br>8546<br>8504<br>8535<br>8536<br>8546 | Resistance to the ambient temperature lower value in service<br><br>Resistance to the ambient temperature lower value in transportation and storage | passed/failed<br>от –75 °C to +150 °C<br><br>passed/failed<br>от –75 °C to +150 °C |
| 32 | GOST R IEC 60068-3-8<br>Clauses 4, 5, 6, 7, 8 | Machines; instruments; and all types of miscellaneous technical products | 25.11. 25.29. 25.40. 25.91. 25.92. 25.99. 26.11. 26.12. 26.20. 26.30. | 8504<br>8535<br>8536<br>8546<br>8504 | Resistance to vibration | passed/failed<br>1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$<br>5 Hz to 600 Hz<br>maximum displacement |

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| | | | 26.40. 26.51. 26.80. 27.11. 27.12. 27.20. 27.31. 27.32. 27.33. 27.40. 27.90. 28.12. 28.13. 28.14. 28.15. 29.31. 29.32 | 8535 8536 8546 | Vibration survival strength | 6 mm<br>passed/failed<br>1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$<br>5 Hz to 600 Hz<br>maximum displacement 6 mm |
| 33 | GOST 14254 Clause 13 | Machines; instruments; and all types of miscellaneous technical products | 25.11. 25.29. 25.40. 25.91. 25.92. 25.99. 26.11. 26.12. 26.20. 26.30. 26.40. 26.51. 26.80. 27.11. 27.12. 27.20. 27.31. 27.32. 27.33. 27.40. 27.90. 28.12. 28.13. 28.14. 28.15. 29.10. 29.31. 29.32 | 8504 8535 8536 8546 8504 8535 8536 8546 | Degrees of protection against external solid objects designated by the first characteristic digit | passed/failed<br>IP1X. IP2X. IP3X. IP4X |
| 34 | GOST 14254 Clause 15 | | | | Degrees of protection against access to hazardous parts (designated by an additional letter) | passed/failed<br>A. B. C. D |
| 35 | GOST 30630.0.0 Clauses 4, 7, Subclauses 8.1-8.9 | Machines; instruments; and all types of miscellaneous technical products | 25.11. 25.29. 25.40. 25.91. 25.92. 25.99. 26.11. 26.12. 26.20. 26.30. 26.40. 26.51. 26.80. 27.11. 27.12. 27.20. 27.31. 27.32. 27.33. 27.40. 27.90. 28.12. 28.13. 28.14. 28.15. 29.10. 29.31. 29.32 | 8504 8535 8536 8546 8504 8535 8536 8546 | Resistance to the ambient temperature lower value in service<br>Resistance to the ambient temperature lower value in transportation and storage<br>Resistance to the ambient temperature lower value in service<br>Resistance to the ambient temperature lower value in transportation and storage<br>Resistance to ambient temperature change<br>Resistance to long-term and accelerated exposure to air humidity or in dew-fall conditions<br>Resistance to short-term exposure to air humidity | passed/failed<br>–75 °C to +150 °C<br>passed/failed<br>–75 °C to +150 °C<br>passed/failed<br>–75 °C to +150 °C<br>passed/failed<br>passed/failed<br>60 % to 98 %<br>passed/failed<br>60 % to 98 % |
| 36 | GOST 30630.0.0 | | | | Resistance to vibration | passed/failed |

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| | Clauses 4. 5.<br>Subclauses 6.1-6.16 | | | | Vibration survival strength | 1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$<br>5 Hz to 600 Hz<br>maximum displacement 6 mm<br>passed/failed<br>1.5 $m \cdot s^{-2}$ to 400 $m \cdot s^{-2}$<br>5 Hz to 600 Hz<br>maximum displacement 6 mm |
| 37 | GOST 11828-86<br>Clause 2, 3 | Rotating electrical machines | 27.11 | 8501 | DC resistance | 1 μΩ to 10 kΩ<br>0.1 mA to 100 A |
| | GOST 11828-86<br>Clause 2, 4 | | | | Ability to withstand elevated rotation speed | passed/failed<br>100 rpm to 30000 rpm |
| | GOST 11828-86<br>Clause 2, 6 | | | | Insulation resistance | 3 kΩ to 1000 GΩ<br>50 V to 5000 V |
| | GOST 11828-86<br>Clause 2, 7 | | | | Insulation strength at power-frequency voltage | passed/failed<br>0 kV to 150 kV |
| | GOST 11828-86<br>Clause 2, 8 | | | | Electrical strength of turn-to-turn insulation at power-frequency voltage | passed/failed<br>0 kV to 100 kV |
| | GOST 11828-86<br>Clause 2, 9 | | | | Temperature<br>DC resistance<br>Ambient air temperature | 0 °C to 300 °C<br>1 μΩ to 1999.9 Ω<br>-40 °C to +85 °C |
| | GOST 11828-86<br>Clause 2, 10 | | | | Temperature<br>Frequency<br>Shaft speed | 0 °C to 300 °C<br>3 Hz to 400 Hz<br>100 rpm to 30000 rpm |
| 38 | GOST IEC 61439-1<br>Subclause 10.2.7 | Low-voltage switchgear and controlgear | 27.12 | 8536<br>8537 | Marking | passed/failed<br>0 s to 60 s |
| | GOST IEC 61439-1<br>Subclause 10.9 | | | | Insulation strength at power-frequency voltage<br>Insulation strength at lightning impulse voltage | passed/failed<br>0 kV to 10 kV<br>passed/failed<br>0 kV to 20 kV |
| | GOST IEC 61439-1<br>Subclause 10.10 | | | | Temperature rise and temperature in rated current-induced heating test | 0 °C to 300 °C |
| | GOST IEC 61439-1<br>Subclause 10.11 | | | | Short-circuit current withstand | passed/failed<br>0 kA to 150 kA |
| | GOST IEC 61439-1<br>Subclause 10.13 | | | | Operability of mechanical parts | passed/failed<br>100 to 300 operation cycles |

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| | | | | | | 0 kN to 1 kN |
| 39 | GOST 17441<br>Subclause 2.6 | Electrical contact connections | 27.33.13 | 8504<br>8535<br>8536<br>8546<br>8504<br>8535<br>8536<br>8546 | DC resistance | 1 μΩ to 1000 μΩ<br>1 mA to 100 A |
| 40 | User manual “Multi-purpose scale GX-A and GF-A”<br>Subclause 5.1 | Electrotechnical products | 27.11<br>27.12<br>27.32<br>27.90 | 8504<br>8535<br>8536<br>8546<br>8504<br>8535<br>8536<br>8546 | Mass | 0.02 g to 122 g |
| 41 | Operation guide “Suspended crane scale VCK-A” Clause 3 | Electrotechnical products | 27.11<br>27.12<br>27.32<br>27.90 | 8504<br>8535<br>8536<br>8546<br>8504<br>8535<br>8536<br>8546 | Mass | 4 kg to 500 kg |
| 42 | Operation guide VP41.00.000RE “Conductometer MARK-603”<br>Subclause 2.4.1 | Water and water solutions | – | – | Specific conductance of water and water solutions | 0 μCm/mm to 2000 μCm/mm |
| 43 | GOST R 54827<br>Subclause 26.3 | General-purpose dry transformer, including autotransformers; auxiliary station transformers; and transformers for packaged transformer substations (PTS) of voltage classes up to and including 35 kV | 27.11.4 | 8504210000<br>8504221000<br>8504229000<br>850423000<br>850431<br>850432000<br>850433000<br>850434000 | Environmental resistance | passed/failed<br>water specific conductance<br>0.1 Cm/m to 1.5 Cm/m<br>relative humidity<br>85 % to 100%<br>temperature +5 °C to +70 °C |
| 44 | GOST R 54827<br>Subclause 27.3, 27.4 | | | | Thermal shock load | passed/failed<br>–60 °C to +70 °C |
| 45 | IEC 60076-11 ed. 2.0<br>Subclause 14.4.5 | | | | Environmental resistance:<br>– water specific conductance | passed/failed<br>0.1 Cm/m to 6 Cm/m |

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| | | | | | – relative humidity<br>– temperature | от 85 % to 100%<br>+5 °C to +70 °C |
| 46 | IEC 60076-11 ed. 2.0<br>Subclause 14.4.4 | | | | Thermal shock load | passed/failed<br>–60 °C to +70 °C |
| 47 | GOST R 52719<br>Subclause 10.1 | Power transformers (general-purpose and for special applications) and electrical reactors | 27.11.4 | 8504210000<br>8504221000<br>8504229000<br>850423000<br>850431<br>850432000<br>850433000<br>850434000 | Exterior<br>Correctness of nameplates<br>Correctness of marking and branding<br>Geometrical dimensions | compliant/noncompliant<br>compliant/noncompliant<br>compliant/noncompliant<br>0 m to 10000 m |
| 48 | GOST 52719<br>Subclause 10.5 | | | | Ability to withstand inrush current | passed/failed<br>0 kA to 200 kA<br>0 kA to 100 kA |
| 49 | GOST R 59239<br>Clause 5 | Power transformers (general-purpose and for special applications) and electrical reactors | 27.11.4 | 8504210000<br>8504221000<br>8504229000<br>850423000<br>850431<br>850432000<br>850433000<br>850434000 | Frequency response | 10 Hz to 10 MHz<br>0 dB to –130 dB |
| 50 | IEC 60076-18<br>Clause 4 | | | | | |
| 51 | GOST R ISO 3746<br>Annex A | Power transformers (general-purpose and for special applications) and electrical reactors | 27.11.4 | 8504210000<br>8504221000<br>8504229000<br>850423000<br>850431<br>850432000<br>850433000<br>850434000 | Geometrical dimensions | 0 m to 50 m |
| 52 | IEC 60076-1 ed. 3.0<br>Annex E | Power transformers (general-purpose and for special applications) and electrical reactors | 27.11.4 | 8504210000<br>8504221000<br>8504229000<br>850423000<br>850431<br>850432000<br>850433000<br>850434000 | DC resistance<br>Current<br>Temperature | 100 μΩ to 100 kΩ<br>0.1 mA to 100 A<br>0 °C to +300 °C |
| 53 | GOST 22756<br>Subclause 2.8 | Power transformers (auto-transformers); line regulating transformers; shunt, current- | 27.11.4 | 8504210000<br>8504221000<br>8504229000 | Insulation strength at lightning impulse voltage | passed/failed<br>0 kV to 2250 kV |
| 54 | GOST 22756 | | | | Insulation strength at switching impulse voltage | passed/failed |

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| | Subclause 2.9. 3.2 | limiting, and arc-suppression reactors | | 850423000<br>850431<br>850432000<br>850433000<br>850434000 | | 750 kV to 1600 kV |
| 55 | GOST 22756<br>Subclause 2.10, 3.3 | | | | Insulation strength at power-frequency voltage | passed/failed<br>0 kV to 900 kV |
| 56 | GOST 22756<br>Subclauses 1.5.3, 1.5.4, 2.7.2, 2.7.3, 2.7.7. | | | | Short-time induced alternating voltage | passed/failed<br>0 kV to 900 kV<br>45 Hz to 200 Hz |
| 57 | GOST 10390<br>Subclauses 4.2, 4.5 – 4.11, Clause 5 | Power transformers; current and voltage transformers; reactors; gears; capacitors; cable boxes; and porcelain, glass and polymer insulators and insulating structures | 27.11.4 | 8504<br>8535<br>8536<br>8546 | External insulation strength in polluted and humidity conditions<br><br>50% discharge voltage in conditions of contamination | passed/failed<br><br>1 kV to 500 kV |
| 58 | GOST R 55194<br>Subclauses 4.1, 4.4 | 50 Hz AC electrical equipment and installations and their parts of voltage class 1 to 750 kV | 27.11<br>27.12<br>27.32<br>27.90 | 8504<br>8535<br>8546 | Distance to foreign surrounding objects<br>Test lightning impulse voltage<br>Test switching impulse voltage<br>Test power-frequency AC voltage | 0 m to 50 m<br>0 kV to 2250 kV<br>750 kV to 1600 kV<br>0 kV to 950 kV |
| 59 | GOST 1983<br>Subclause 9.5 | Electromagnetic and capacitor voltage transformers | 27.11.42 | 850431<br>8504320002 | No-load current | 1 mA to 100 A |
| 60 | GOST 1983<br>Subclause 9.14 | | | | Quantitative gas leak of gas-filled transformers | passed/failed<br>0 to 1000 $ppm_v$ |
| 61 | GOST 20248<br>Clause 9 | Three-phase 50 Hz and 60 Hz packaged transformer substations (PTS) | 27.12.3 | 853720 | Insulation resistance | passed/failed<br>3 kΩ to 1000 GΩ<br>50 V to 5000 V |
| 62 | GOST R 52034<br>Subclause 7.4 | Ceramic post insulators for voltages greater than 1000 V | 23.43.10<br>27.90.12.110 | 8546200000 | Reliability:<br>– abrupt temperature drop<br>– slow temperature change<br>– mechanical bending load<br>– mechanical torsion load<br>– mechanical tensile load | passed/failed<br>50 °C to 80 °C<br>–70 °C to +130 °C<br>0 kN to 500 kN<br>0 kN·m to 50 kN·m<br>0 kN to 500 kN |
| 63 | GOST 6490<br>Subclause 7.3.4 | Line suspended cap-and-pin insulators | 23.19.25<br>23.43.10<br>27.90.12.110 | 8546100000<br>8546200000 | Zinc coating thickness | passed/failed<br>0 μm to 5000 μm |
| 64 | GOST 6490<br>Subclause 7.3.5 | | | | Axial and radial displacement | 0.01 mm to 10 mm |
| 65 | GOST 6490<br>Subclause 7.4.1 | | | | Resistance to continuous spark flow | passed/failed<br>0 min to 5 min<br>0 kV to 150 kV<br>15 mm to 30 mm |

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| 66 | GOST 6490<br>Subclause 7.5.2 | | | | Mechanical strength<br>Mechanical disruptive force | passed/failed<br>0 kN to 1000 kN |
| 67 | GOST R 52082<br>Subclause 8.1.12 | Outdoor polymer post insulators | 27.90.12.110<br>22.19.73 | 8546901000 | Partial discharge | passed/failed<br>1 pC to 10 nC |
| 68 | GOST R 52082<br>Subclauses 8.9.2, 8.9.4 | | | | Corrosion-protective coating quality and thickness<br><br>Protective enclosure surface quality | passed/failed<br>0 μm to 5000 μm<br>passed/failed |
| 69 | GOST R 52082<br>Subclause 8.9.3 | | | | Quality of connection between accessories and insulation part | passed/failed<br>0 mm to 10000 mm |
| 70 | РукоVодстVо по эксплуатации КБCSUBCLAUSE427634.051-1 РЭ «ТолщинΩер покрытий магнитный ТМ-МГ4»<br>Clause 2 | Suspended insulators; sets of insulators; post, pin, rod line, and wall tube insulators | 23.19.25<br>23.43.10<br>27.90.12.110 | 8546100000<br>8546200000 | Corrosion-protective coating thickness | 0 μm to 5000 μm |
| 71 | IEC 60060-1 ed. 3.0<br>Clauses 4, 6 | AC electrical equipment and installations for voltages greater than 3 kV | 27.11<br>27.12<br>27.32<br>27.90 | 8504<br>8535<br>8536<br>8546 | Insulation strength at power-frequency AC voltage<br>Test power-frequency AC voltage | passed/failed<br>0 kV to 950 kV |
| 72 | IEC 60060-1 ed. 3.0<br>Clauses 4, 7 | | | | Insulation strength at lightning impulse voltage<br>Test lightning impulse voltage | passed/failed<br>3 kV to 2250 kV |
| 73 | IEC 60060-1 ed. 3.0<br>Clauses 4, 8 | | | | Insulation strength at switching impulse voltage<br>Test switching impulse voltage | passed/failed<br>30 kV to 1600 kV |
| 74 | GOST 28779-90<br>Subclauses 9.1-9.4 | Polymer post and rod insulators | 27.90.12.110<br>22.19.73 | 8546100000<br>8546200000 | Material flammability class | FV 0. FV 1. FV 2 |
| 75 | GOST R 55189<br>Subclause 8.3 | Polymer suspended rod line insulators and interphase spacers | 27.90.12.110<br>22.19.73 | 8546901000 | Radio interference | passed/failed<br>10 dB to 100 dB |
| 76 | GOST R 55189<br>Subclause 8.5.5 | | | | Climatic resistance | –70 °C to +130 °C<br>0 kN to 20 kN |
| 77 | GOST 28856<br>Subclause 5.1.3.4 | | | | Radio interference | passed/failed<br>10 dB to 100 dB |
| 78 | GOST 34204<br>Subclause 7.10 | Nonlinear overvoltage suppressors for railway electric-traction network | 27.12 | 8535 | Explosion safety | passed/failed<br>0 kV to 12 kV<br>0 kA to 10 kA |
| 79 | GOST 34204<br>Subclause 7.15 | | | | Fire safety | passed/failed<br>0 kV to 12 kV<br>0 kA to 10 kA |
| 80 | GOST 17717<br>Subclause 7.7 | AC load interrupters for voltages 3 to 10 kV. Common | 27.12 | 8535 | Switching capacity | passed/failed<br>0 kV to 12 kV |

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| | | specifications | | | | 0 kA to 100 kA |
| 81 | GOST 2933<br>Clause 8 | Low-voltage electric gears. Testing methods | 27.12 | 8536 | Switching capacity | passed/failed<br>0 V to 700 V<br>0 kA to 100 kA |
| 82 | GOST IEC 60898-1<br>Subclause 9.3 | Small-size electrical gears. Circuit-breakers for over-current protection for house-hold and similar purposes | 27.12.10.110 | 8535 | Marking permanence | passed/failed |
| 83 | GOST IEC 60898-1<br>Subclause 9.4 | | | | Reliability of screws, current-conducting parts, and connections | passed/failed<br>0 N·m to 100 N·m<br>0 N to 500 N |
| 84 | GOST IEC 60898-1<br>Subclause 9.5 | | | | Reliability of threaded terminals for external copper conductors | passed/failed<br>0 N·m to 100 N·m<br>0 N to 500 N |
| 85 | GOST IEC 60898-1<br>Subclause 9.6 | | | | Mechanical insulation strength in terms of protection against mechanical access to hazardous parts of equip-ment | passed/failed<br>40 V to 100 V<br>0 N to 100 N |
| 86 | GOST IEC 60898-1<br>Subclause 9.7 | | | | Water proofness<br>Main circuit insulation resistance<br>Main circuit insulation strength at AC voltage<br>Insulation resistance and electrical strength of auxiliary circuits<br>Main circuit insulation strength at lightning impulse voltage<br>Leakage current across open contacts | passed/failed<br>0.1 Ω to 300 GΩ<br>passed/failed<br>100 V to 6000 V<br>passed/failed<br>100 V to 6000 V<br>passed/failed<br>0.33kV to 20 kV<br>passed/failed |
| 87 | GOST IEC 60898-1<br>Subclause 9.8 | | | | Temperature of parts under current flow<br>Ambient air temperature<br>Temperature measured by the thermometer<br>Temperature measured by the thermocouple<br>Current<br>Voltage | –40 °C to 300 °C<br>1 A to 10000 A<br>–40 °C to +85 °C<br>–40 °C to +100 °C<br>0 °C to +300 °C<br>1 A to 10000 A<br>0.1 mV to 1000 V |
| 88 | GOST IEC 60898-1<br>Subclause 9.9 | | | | Resistance to testing cycles:<br>– under rated burden<br>– in release condition | passed/failed<br>0 to 30 cycles<br>0 h to 21 h |
| 89 | GOST IEC 60898-1<br>Subclause 9.10 | | | | Time interval<br>Current | 0.1 ms to 1000 s<br>1 A to 10000 A |

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| 90 | GOST IEC 60898-1<br>Subclause 9.11 | | | | Mechanical and switching wear-resistance | passed/failed<br>0 kA to 100 kA<br>0 kV to 1 kV |
| 91 | GOST IEC 60898-1<br>Subclause 9.12 | | | | Short-circuit current withstand<br><br>Switching capacity | passed/failed<br>0 kA to 250 kA<br>passed/failed<br>0 kA to 50 kA |
| 92 | GOST IEC 60898-1<br>Subclause 9.14 | | | | Resistance to the ambient temperature upper value | passed/failed<br>+40 °C to +150 °C |
| 93 | IEC 62271-1 ed. 2.1 Subclause 7.6 | High-voltage switchgear and controlgear. Part 1 – Common specifications for alternating current switchgear and controlgear | 27.12 | 8537 | Short-circuit current withstand | passed/failed<br>0 kV to 100 kV<br>0 kA to 50 kA |
| 94 | IEC 62271-100 ed. 2.1<br>Subclauses 7.102, 7.103, 7.104, 7.105, 7.106, 7.107, 7.108, 7.109, 7.110, 7.111 | | | | Switching capacity | passed/failed<br>0 kA to 100 kA<br>0 kV to 1 kV |
| 95 | IEC/IEEE 62271-37-013 ed. 2.0<br>Subclause 7.6 | High-voltage switchgear and controlgear. Part 37-013: Alternating current generator circuit-breakers | 27.12 | 8537 | Short-circuit current withstand | passed/failed<br>0 kV to 100 kV<br>0 kA to 50 kA |
| 96 | IEC/IEEE 62271-37-013 ed. 2.0<br>Subclauses 7.103, 7.104, 7.105 | | | | Switching capacity | passed/failed<br>0 kV to 100 kV<br>0 kA to 50 kA |
| 97 | IEC 60214-1 ed. 2.0 Subclause 7.2.3 | Tap switching devices. Part 1 – Requirements to operating characteristics and testing methods | 27.12 | 8535 | Short-circuit current withstand | passed/failed<br>0 kA to 250 kA |
| 98 | IEC 62271-101 ed. 3.0<br>Subclauses 7.102, 7.104, 7.107, 7.108.2, 7.109, 7.110, 7.111 | High-voltage switchgear. Synthetic testing | 27.12 | 8537 | Switching capacity | passed/failed<br>0 kV to 220 kV<br>0 kA to 50 kA |
| 99 | GOST 7746<br>Subclause 9.7 | Electromagnetic current transformers for rated voltages 0.66 to 750 kV | 27.11.4 | 8504 31<br>8504 32 | Quantitative gas leak in gas-filled transformers | passed/failed<br>0 $mln^{-1}$ to 1000 $mln^{-1}$ |
| 100 | GOST 7746<br>Subclause 9.2.7 | | | | Insulation strength at power-frequency AC voltage | passed/failed<br>0 kV to 950 kV |
| 101 | GOST R 54828<br>Subclause 8.6 | Indoor and outdoor sulphur hexafluoride-insulated metal- | 27.12 | 8537 | Short-circuit current withstand | passed/failed<br>0 kA to 250 kA |

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| 102 | GOST R 54828<br>Subclause 8.8.1 | enclosed switchgear | | | Hermeticity | passed/failed<br>0 $mln^{-1}$ to 1000 $mln^{-1}$ |
| 103 | GOST R 54828<br>Subclause 8.9.1 | | | | Radio interference | passed/failed<br>10 dB to 100 dB |
| 104 | GOST R 54828<br>Subclause 8.10.3 | | | | Electrical continuity of earthed metal parts | passed/failed<br>0 A to 100 A |
| 105 | GOST R 54828<br>Subclause 8.12 | | | | Switchgear making and breaking capacity | passed/failed<br>0 kV to 100 kV<br>0 kA to 50 kA |
| 106 | GOST R 52725<br>Subclause 8.11 | Nonlinear overvoltage suppressors with metal-oxide nonlinear resistors | 27.12.10 | 853540 | Partial discharge | passed/failed<br>1 pC to 10 nC |
| 107 | GOST R 52725<br>Subclause 8.12 | | | | Leakage path length | passed/failed<br>0 mm to 100000 mm |
| 108 | GOST 34205 Subclause 7.11 | Section insulators for railway overhead | 27.90.12.110 | 853590 | Resistance to water penetration: control testing with steep leading-edge impulse voltage | passed/failed<br>500 kV/μs to 3000 kV/μs |
| 109 | GOST R 52287<br>Subclause 6.4.9 | Electrical bushings in reactor protective enclosure | 27.90.12.1 | 853590 | Short-time rated overcurrent | 50 A to 12000 A |
| 110 | GOST R 55187 Subclause 9.17 | 15 to 60 Hz AC bushings for rated voltages greater than 1000 V/ Insulated bushings for rated alternating voltages greater than 1000 V | 27.90.12.110 | 8535 90 | Temperature rise in rated current-induced heating test<br>Temperature<br>Test current | passed/failed<br>0 °C to 300 °C<br>0 °C to 300 °C<br>50 A to 12000 A |
| 111 | GOST IEC 60044-1<br>Subclause 7.2 | Current transformers | 27.11.42 | 8504 31<br>8504 32 | Heating in continuous operation regime<br>Test current<br>Temperature | passed/failed<br>50 A to 12000 A<br>0 °C to 300 °C |
| 112 | IEC 60137 ed.7 Subclause 8.8 | Insulated bushings for rated alternating voltages greater than 1000 V | 23.43.10<br>27.90.12.110<br>22.19.73 | 8546200000<br>8546901000 | Temperature in temperature-rise test<br>Test current | 0 °C to 300 °C<br>50 to 12000 A |
| 113 | IEC 61869-2 ed.1 Subclause 7.2.2 | Electromagnetic current transformers | 27.11.4 | 850431<br>8504320002 | Temperature in temperature-rise test<br>Test current | 0 °C to 300 °C<br>50 A to 12000 A |
| 114 | IEC 62271-1 ed.2.1<br>Subclauses 7.2.1-7.2.9, 7.2.12 | Circuit-breakers; disconnectors; earthing devices; switchgear; and controlgear | 27.12 | 8504<br>8535<br>8536<br>8546 | Insulation strength<br>Test power-frequency AC voltage<br>Test impulse voltage | passed/failed<br>1 kV to 950 kV<br>3 kV to 2250 kV |
| 115 | IEC 62271-1 ed.2.1<br>Subclause 7.4.3 | | | | Earthing circuit continuity check | 0.1 mA to 100 A |

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| 116 | IEC 62271-1 ed.2.1<br>Subclause 7.4.4. | | | | Measurement of DC resistance main circuit | 1 μΩ to 1999.9 Ω<br>0.1 mA to 100 A |
| 117 | IEC 62271-1 ed.2.1<br>Subclause 7.5 | | | | Temperature of parts under current flow | 0 °C to 300 °C<br>100 A to 12000 A |
| 118 | IEC 62271-1 ed.2.1<br>Subclause 7.9.1.1 | | | | Radio interference measurement<br><br>Test power-frequency AC voltage | passed/failed<br>10 dB to 100 dB<br>20 kV to 400 kV |
| 119 | IEC 62271-1 ed.2.1<br>Subclause 7.10.5 | | | | Insulation strength of auxiliary and control circuits | passed/failed<br>100 V to 6000 V |
| 120 | GOST 34839<br>Subclause 9.3.7 | Box joints and detachable connectors for power cables with impregnated paper and plastic insulation for rated voltages up to and including 35 kV | 27.33.14 | 8535 90 | Short-circuit current withstand:<br>– dynamic current<br>– short-time thermal current | passed/failed<br>0 kA to 200 kA<br>0 kA to 100 kA |
| 121 | GOST 34839<br>Subclauses 9.3.1, 9.3.2, 9.3.3, 9.3.4, 9.3.5 | | | | Insulation strength:<br>Test power-frequency AC voltage<br>Partial discharge measurement<br>Test DC voltage<br>Test lightning impulse voltage | passed/failed<br>0 kV to 500 kV<br>0 kV to 300 kV<br>0 kV to 70 kV<br>30 kV to 2250 kV |
| 122 | GOST 34839<br>Subclause 9.3.8 | | | | Tracking resistance<br>Test power-frequency AC voltage | passed/failed<br>0 kV to 80 kV |
| 123 | GOST 3484.1<br>Clause 8 | Power transformers (auto-transformers); line regulating transformers; and shunt, current-limiting, and arc-suppression reactors | 27.11.4 | 8504 2<br>8504 3 | Harmonic composition of no-load current | 0 % to 100% |
| 124 | GOST 3484.2. Annex 3.<br>Clause 2 | Power transformers (auto-transformers); line regulating transformers; and shunt, current-limiting, and arc-suppression reactors | 27.11.4 | 8504 2<br>8504 3 | Winding resistance in transformer temperature-rise test | 1 μΩ to 100 kΩ<br>0.1 mA to 100 A |
| 125 | GOST R 56738<br>Subclause 11.1. 11.2 | Power transformers (auto-transformers); line regulating transformers; and shunt, current-limiting, and arc-suppression reactors | 27.11.4 | 8504 2<br>8504 3 | Short-time induced alternating voltage | passed/failed<br>0 kV to 900 kV<br>45 Hz to 200 Hz |
| 126 | GOST R 56738<br>Subclause 11.3 | | | | Partial discharge | 1 pC to 10 nC |
| | | | | | Long-time induced alternating voltage | passed/failed<br>0 kV to 900 kV<br>45 Hz to 200 Hz |

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| 127 | GOST R 56738<br>Clause 12 | Power transformers (auto-transformers); line regulating transformers; and shunt, current-limiting, and arc-suppression reactors | 27.11.4 | 8504 2<br>8504 3 | Linear terminal testing under short-time alternating voltage | passed/failed<br>0 kV to 900 kV |
| 128 | GOST R 54827<br>Clause 20 | Power transformers (auto-transformers); line regulating transformers; and shunt, current-limiting, and arc-suppression reactors | 27.11.4 | 8504 2<br>8504 3 | Short-time induced alternating voltage | passed/failed<br>0 kV to 900 kV<br>45 Hz to 200 Hz |
| 129 | GOST R 54827<br>Clause 21 | Power transformers (auto-transformers); line regulating transformers; and shunt, current-limiting, and arc-suppression reactors | 27.11.4 | 8504 2<br>8504 3 | Insulation strength at lightning impulse voltage | passed/failed<br>0 kV to 2250 kV |
| 130 | GOST R 54827<br>Clause 22 | Power transformers (auto-transformers); line regulating transformers; and shunt, current-limiting, and arc-suppression reactors | 27.11.4 | 8504 2<br>8504 3 | Partial discharge | 1 pC to 10 nC |
| 131 | IEC 60076-3 ed. 3.1<br>Clause 11 | Power transformers (auto-transformers); line regulating transformers; and shunt, current-limiting, and arc-suppression reactors | 27.11.4 | 8504 2<br>8504 3 | Partial discharge<br>Long-time induced alternating voltage | 1 pC to 10 nC<br>passed/failed<br>0 kV to 900 kV<br>45 Hz to 200 Hz |
| 132 | GOST R 55195<br>Subclause 4.10.2 | 50 Hz AC electrical equipment and installations and their parts for voltage class 1 to 750 kV | 27 | 8504<br>8535<br>8546 | Test power-frequency AC voltage in partial discharge measurement test<br><br>Partial discharge | 1 to 350 kV<br><br>1 pC to 10 nC |
| **111250, Moscow, Krasnokazarmennaya Str., 12, bld. 8** | | | | | | |
| 133 | GOST 16962.1-89<br>Clause 2 | High-voltage electrotechnical products with open broken contacts | 27.11<br>27.12<br>27.32<br>27.90 | 8535<br>8546 | Operability when exposed to glaze-ice | passed/failed<br>–20 °C to –7 °C<br>10 mm to 20 mm |
| 134 | GOST 30630.2.1 | Machines; instruments; and | 25.11. 25.29. | 8504 | Resistance to the ambient temperature upper value in | passed/failed |

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| | Clause 4,<br>GOST 30630.0.0<br>Clauses 4. 7, Subclauses 8.1-8.9,<br>GOST R IEC60068-2-2<br>Clauses 4, 5, 6, 8 | all types of miscellaneous technical products | 25.40. 25.91.<br>25.92. 25.99.<br>26.11. 26.12.<br>26.20. 26.30.<br>26.40. 26.51.<br>26.80. 27.11.<br>27.12. 27.20.<br>27.31. 27.32.<br>27.33. 27.40.<br>27.90. 28.12.<br>28.13. 28.14.<br>28.15. 29.10.<br>29.31. 29.32 | 8535<br>8536<br>8546<br>8504<br>8535<br>8536<br>8546 | service | –75 °C to +130 °C |
| 135 | GOST 30630.2.1<br>Clause 5,<br>GOST 30630.0.0<br>Clauses 4. 7, Subclauses 8.1-8.9,<br>GOST R IEC 60068-2-2<br>Clauses 4, 5, 6, 8 | | | | Resistance to the ambient temperature upper value in transportation and storage | passed/failed<br>–75 °C to +130 °C |
| 136 | GOST 30630.2.1<br>Clause 6,<br>GOST 30630.0.0<br>Clauses 4. 7, Subclauses 8.1-8.9,<br>GOST R IEC 60068-2-1<br>Clauses 4, 5, 6, 8 | | | | Resistance to the ambient temperature lower value in service | passed/failed<br>–75 °C to +130 °C |
| 137 | GOST 30630.2.1<br>Clause 7,<br>GOST 30630.0.0<br>Clauses 4. 7, Subclauses 8.1-8.9,<br>GOST R IEC 60068-2-1<br>Clauses 4, 5, 6, 8 | | | | Resistance to the ambient temperature lower value in transportation and storage | passed/failed<br>от -75 °C to +130 °C |
| 138 | GOST 30630.2.1<br>Clause 8,<br>GOST 30630.0.0<br>Clauses 4, 7, Subclauses 8.1-8.9 | | | | Resistance to ambient temperature change | passed/failed<br>–75 °C to +130 °C |
| 139 | GOST R 51369<br>Clause 4 | Machines; instruments; and all types of miscellaneous technical products | 25.11. 25.29.<br>25.40. 25.91.<br>25.92. 25.99.<br>26.11. 26.12.<br>26.20. 26.30.<br>26.40. 26.51. | 8504<br>8535<br>8536<br>8546<br>8504<br>8535 | Resistance to long-term and accelerated exposure to air humidity or in dew-fall conditions | passed/failed<br>0 % to 100% |
| 140 | GOST R 51369<br>Clause 5 | | | | Resistance to short-term exposure to air humidity | passed/failed<br>60 % to 100% |
| 141 | GOST R 51369<br>Clause 7 | | | | Resistance to frost with its subsequent melting | passed/failed<br>–30 °C to –20 °C |

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| | | | 26.80. 27.11. 27.12. 27.20. 27.31. 27.32. 27.33. 27.40. 27.90. 28.12. 28.13. 28.14. 28.15. 29.10. 29.31. 29.32 | 8536 8546 | | 0.1 kV to 100 kV |
| 142 | GOST R 51369 Clause 8 | | | | Operability when exposed to glaze-ice | passed/failed<br>–20 °C to –7 °C<br>10 mm to 20 mm |
| 143 | GOST 1516.2 Subclauses 4.1, 4.2, 4.4, 4.5, 7.1-7.5, 7.7 | AC electrical equipment and installations for voltages greater than 3 kV | 27.11<br>27.12<br>27.32<br>27.90 | 8504<br>8535<br>8536<br>8546 | Insulation strength<br>Test power-frequency AC voltage | passed/failed<br>0.1 kV to 100 kV |
| 144 | GOST R 55194 Subclause 4.1, 4.4, Clause 7 | AC electrical equipment and installations for voltages greater than 3 kV | 27.11<br>27.12<br>27.32<br>27.90 | 8504<br>8535<br>8536<br>8546 | Insulation strength<br>Test power-frequency AC voltage | passed/failed<br>0.1 kV to 100 kV |
| 145 | GOST R 52565 Subclause 9.1 | Three-phase 50 Hz AC circuit-breakers of rated voltages 3 up to and including 750 kV | 27.12.10.110 | 8535 | Geometrical dimensions<br>Mass<br>Protective coating condition<br>Surface condition of external insulation parts<br>Correctness of nameplates<br>Correctness of marking and branding | 0 mm to 15000 mm<br>0 kg to 5000 kg<br>normal/defective<br>normal/defective<br>correct/incorrect<br>correct/incorrect |
| 146 | GOST R 52565 Subclauses 9.2.2 – 9.2.6 | | | | Mechanical operability<br>Closing and opening times<br>Contact pressure<br>Control circuit voltage<br>Resistance<br>Test current<br>Useful current of control electromagnets | passed/failed<br>0.2 ms to 6.5 s<br>0 kN to 5 kN<br>0 V to 1000 V<br>1 μΩ to 1000 μΩ<br>0.1 mA to 100 A<br>0 A to 100 A |
| 147 | GOST R 52565 Subclauses 9.10.2.1, 9.10.2.2, 9.10.5 | | | | Resistance to the ambient temperature lower value<br>Resistance to the ambient temperature upper value | passed/failed<br>-75 °C to +130 °C<br>passed/failed<br>-75 °C to +130 °C |
| 148 | GOST 14254 Clause 12 | Machines; instruments; and all types of miscellaneous technical products | 25.11. 25.29. 25.40. 25.91. 25.92. 25.99. 26.11. 26.12. 26.20. 26.30. 26.40. 26.51. | 8504 8535 8536 8546 8504 8535 | Degrees of protection against access to hazardous parts of equipment designated by the first characteristic digit | passed/failed<br>IP1X. IP2X. IP3X. IP4X |
| 149 | GOST 14254 Clause 13 | | | | Degrees of protection against external solid objects designated by the first characteristic digit | passed/failed<br>IP1X. IP2X. IP3X. IP4X |
| 150 | GOST 14254 Clause 14 | | | | Degrees of water protection designated by the second characteristic digit | IPX3. IPX4. IPX5 |

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| | | | 26.80. 27.11. 27.12. 27.20. 27.31. 27.32. 27.33. 27.40. 27.90. 28.12. 28.13. 28.14. 28.15. 29.10. 29.31. 29.32 | 8536 8546 | | |
| 151 | GOST 14254 Clause 15 | | | | Degrees of protection against access to hazardous parts designated by an additional letter | passed/failed A. B. C. D |
| 152 | GOST R 52726 Subclause 8.1 | AC disconnectors and earthing switches for 50 Hz power-frequency voltages greater than 1 kV and for their actuators | 27.12.10.120 | 853530 | Geometrical dimensions<br>Mass<br>Protective insulation coating<br>Surface condition of external insulation parts<br>Correctness of nameplates<br>Correctness of marking and branding | 0 mm to 15000 mm<br>0 kg to 5000 kg<br>normal/defective<br>normal/defective<br>correct/incorrect<br>correct/incorrect |
| 153 | GOST R 52726 Subclause 8.3 | | | | Resistance<br>Test current | 1 μΩ to 199.9 Ω<br>0.1 mA to 100 A |
| 154 | GOST R 52726 Subclause 8.5 | | | | Mechanical characteristics | passed/failed<br>0 kN to 5 kN<br>0.1 s to 100 s<br>1 μΩ to 1999.9 Ω |
| 155 | GOST R 52726 Subclause 8.6 | | | | Operability of locking devices | passed/failed<br>от 0 to 1 kN |
| 156 | GOST R 52726 Subclause 8.7 | | | | Operability in ice formation conditions | passed/failed<br>–25 °C to +5 °C<br>0 mm to 10000 mm<br>0 l/h to 100 l/h |
| 157 | GOST R 52726 Subclause 8.19 | | | | Earthing circuit resistance<br>Test current | 1 μΩ to 1999.9 Ω<br>0.1 mA to 100 A |
| 158 | GOST 7746 Subclause 9.1 | Electromagnetic current transformers for rated voltages 0.66 to 750 kV | 27.11.4 | 850431 8504320002 | Geometrical dimensions<br>Mass<br>Protective coating condition<br>Surface condition of external insulation parts<br>Correctness of nameplates<br>Correctness of marking and branding<br>Completeness | 0 mm to 15000 mm<br>0 kg to 5000 kg<br>normal/defective<br>normal/defective<br>correct/incorrect<br>correct/incorrect<br>compliant/noncompliant |
| 159 | GOST 7746 Subclause 9.3, | | | | Winding insulation resistance | passed/failed<br>3 kΩ to 1000 GΩ |

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| | GOST 8.217<br>Subclause 9.2 | | | | | |
| 160 | GOST 7746<br>Subclause 9.5,<br>GOST 8.217<br>Subclauses 9.3, 9.4, 9.5 | | | | Winding polarity, current and angle error<br>Measured error range<br>Test current | compliant/noncompliant<br>0.01 % to 100 %<br>0 A to 5000 A |
| 161 | GOST 1983<br>Subclause 9.1 | Electromagnetic and capacitor voltage transformers | 27.11.42 | 850431<br>8504320002 | Geometrical dimensions<br>Mass<br>Protective coating condition<br>Surface condition of external insulation parts<br>Correctness of nameplates<br>Correctness of marking and branding<br>Completeness | 0 mm to 15000 mm<br>0 kg to 5000 kg<br>normal/defective<br>normal/defective<br>correct/incorrect<br>correct/incorrect<br>compliant/noncompliant |
| 162 | GOST 1983<br>Subclause 9.3 | | | | Winding insulation resistance | 0 GΩ to 1000 GΩ |
| 163 | GOST 1983<br>Subclause 9.13 | | | | Resistance to climatic and mechanical ambient factors<br>Test parameters:<br>– ambient air temperature<br>– ambient air humidity<br>– force applied | passed/failed<br><br>–60 °C to +150 °C<br>10 % to 98 %<br>0 kN to 10 kN |
| 164 | GOST 14694<br>Subclause 1.1 | Metal-enclosed switchgear | 27.12.3 | 853720 | Geometrical dimensions<br>Mass<br>Correctness of nameplates<br>Correctness of marking and branding<br>Exterior | 0 mm to 15000 mm<br>0 kg to 5000 kg<br>correct/incorrect<br>correct/incorrect<br>compliant/noncompliant |
| 165 | GOST 14694<br>Subclauses 1.1, 1.5 | | | | Compliance with the design drawings and availability of technical documentation package | compliant/noncompliant<br>0 mm to 10000 mm |
| 166 | GOST 14694<br>Subclause 4.3 | | | | Operation of cabinet and withdrawable parts mechanisms | passed/failed<br>0 kN to 1 kN |
| 167 | GOST 14694<br>Subclause 4.4 | | | | Making and breaking operation of the main circuit switchgear | passed/failed<br>0 V to 690 V |
| 168 | GOST 14694<br>Subclause 4.5 | | | | Characteristics of switchgear and actuators | passed/failed<br>0.1 ms to 10 s |
| 169 | GOST 14694<br>Subclause 4.6 | | | | Mechanical strength of switchgear structural elements in multiple operations | passed/failed<br>up to 10000 CO cycles |
| 170 | GOST 14694<br>Subclause 4.7 | | | | Operability of instruments, gears, and diagrams of auxiliary circuits | passed/failed<br>1000 CO cycles |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| 171 | GOST 14694<br>Subclause 4.8 | | | | Operability of locking devices | passed/failed<br>0 kN to 1 kN |
| 172 | GOST 14694<br>Subclause 4.9 | | | | Operability of fixing devices | passed/failed<br>0 kN to 1 kN |
| 173 | GOST 14694<br>Subclause 4.10 | | | | Operability of earthing switches | passed/failed<br>0.02 mm to 0.5 mm<br>1 μΩ to 1999.9 Ω<br>0.1 mA to 100 A |
| 174 | GOST 14694<br>Subclauses 5.1, 5.2 | | | | Insulation strength<br>Test power-frequency AC voltage | passed/failed<br>0.1 kV to 100 kV |
| 175 | GOST 20248<br>Clause 1 | Three-phase 50 Hz and 60 Hz AC packaged transformer substations (PTS) | 27.12.3 | 853720 | Geometrical dimensions<br>Mass<br>Correctness of nameplates<br>Correctness of marking and branding<br>Exterior | 0 mm to 15000 mm<br>0 kg to 5000 kg<br>correct/incorrect<br>correct/incorrect<br>compliant/noncompliant |
| 176 | GOST 20248<br>Clause 4 | | | | Proper arrangement of operative control, protection, automatic, and alarm circuits | passed/failed |
| 177 | GOST 20248<br>Clause 5 | | | | Operation of switchgear and main circuit actuators | passed/failed<br>0.1 ms to 10 s |
| 178 | GOST 20248<br>Clause 6 | | | | Operability of mechanical and electrical locking devices | passed/failed<br>0 kN to 1 kN |
| 179 | GOST 20248<br>Clause 7 | | | | Mechanical strength of PTS structural elements in multiple operations | passed/failed<br>0 kN to 10 kN |
| 180 | GOST 20248<br>Subclause 8.4 | | | | PTS insulation strength in dew-fall conditions | passed/failed<br>3 kΩ to 1000 GΩ<br>50 V to 5000 V<br>0 °C to 50 °C<br>40 % to 98 % |
| 181 | GOST 20248<br>Clause 13 | | | | Check assembly, compatibility of identic withdrawable parts | passed/failed<br>operates/does not operate<br>0 kN to 1 kN<br>0 mm to 10000 mm |
| 182 | GOST IEC 61439-1<br>Subclause 10.2.7 | Low-voltage switchgear and controlgear | 27.12 | 8536<br>8537 | Marking | passed/failed<br>0 s to 60 s |
| | GOST IEC 61439-1<br>Subclause 10.9 | | | | Insulation strength at power-frequency voltage<br>Insulation strength at lightning impulse voltage | passed/failed<br>0 kV to 10 kV<br>passed/failed |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| | | | | | | 0 kV to 20 kV |
| | GOST IEC 61439-1<br>Subclause 10.13 | | | | Operability of mechanical parts | passed/failed<br>0 kN to 1 kN |

Director _____ M. E. Zheleznov