

2025.

Leon comments highlighted – Feb 2026 ver2

Reviewed Standards and Recommended for Adoption by ATC 8

Purple = APUA needs

	List of standards	Standard Title
1	IEC TS 63222-2	Power Quality management – Part 2: Power quality monitoring system
2	IEC TS 63222-101	Power Quality management-Part101: Power quality data application
3	IEC 60038:2023	Standard voltage values

3 IEC Standards

Reviewed Standards and Recommended for Adoption by ATC 13

	List of standards	Standard Title
1	IEC 62057-1:2023	Electrical energy meters - Test equipment, techniques and procedures - Part 1: Stationary meter test units (MTUs)
2	IEC 62056-8-12:2023	Electricity metering data exchange – The DLMS®/COSEM suite - Part 8-12: Communication profile for Low-Power Wide Area Networks (LPWANs)
3	IEC 62052-31:2024	Electricity metering equipment - General requirements, tests and test conditions - Part 31: Product safety requirements and tests
4	IEC 62057-3:2024	Electrical energy meters - Test equipment, techniques and procedures - Part 3: Automatic meter testing system (AMTS)
5	IEC 62052-21:2020	Electricity metering equipment (a.c.) - General requirements, tests and test conditions - Part 21: Tariff and load control equipment
6	IEC 62053-31:1998	Electricity metering equipment (a.c.) - Particular requirements - Part 31: Pulse output devices for electromechanical and electronic meters (two wires only)
7	IEC TS 62056-9-1:2016	Electricity metering data exchange - The DLMS/COSEM suite - Part 9-1: Communication profile using web-services to access a DLMS/COSEM server via a COSEM Access Service (CAS)

7 IEC Standards

Reviewed Standards and Recommended for Adoption by ATC 57

	List of standards	Standard Title
1	ISO/IEC 30144:2020	Internet of things (IoT) - Wireless sensor network system supporting elect power substation
2	ISO/IEC 30141:2024	Internet of things (IoT) - Reference architecture
3	ISO/IEC 30101:2014	Info. technology-Sensor networks: Sensor network and its interfaces for smart grid system
4	ISO/IEC 21823-1:2019	Internet of Things (IoT) - Interoperability for IoT systems - Part 1: Framework
5	ISO/IEC TS 8200:2024	Information technology - Artificial intelligence - Controllability of automated AI systems
6	ISO/IEC 5259-3:2024	AI - Data quality for analytics and machine learning (ML) - Part 3: Data quality management requirements and guidelines
7	ISO/IEC 5259-1:2024	AI - Data quality for analytics & machine learning (ML) - Part 1: Overview, terminology, and examples
8	ISO/IEC 5259-2:2024	AI - Data quality for analytics and machine learning (ML) - Part 2: Data quality measures

9	ISO/IEC 5259-4:2024	AI - Data quality for analytics and machine learning (ML) - Part 4: Data quality process framework
10	IEC 60870-5-101 Only the AMD version is listed in the SC5 list of standard's	Telecontrol equipment and systems - Part 5-101: Transmission protocols - Companion standard for basic telecontrol tasks
11	IEC 60870-5-104 Only the AMD version is listed in the SC5 list of standard's	Telecontrol equipment and systems – Part 5-104: Transmission protocols – Network access for IEC 60870-5-101 using standard transport profiles
12	IEC 60870-6-2:1995 not SC5 listed but now added	Telecontrol equipment and systems - Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations - Section 2: Use of basic standards (OSI layers 1-4)
13	IEC 61970-1:2025	Energy management system application program interface (EMS-API) – Part 1: Guidelines and general requirements
14	IEC 62443-1-1-2009 not SC5 listed but now added	Industrial communication networks - Network and system security - Part 1-1: Terminology, concepts and models
15	IEEE 1646-2004	Standard Communication Delivery Time Performance Requirements for Electric Power Substation Automation
16	IEEE 1686- 2022	Intelligent Electronic Devices Cybersecurity Capabilities
17	IEEE 1815-2012	Electric Power Systems Communications-Distributed Network Protocol (DNP3)

14 IEC Standards + 3 IEEE Standards

Reviewed Standards and Recommended for Adoption by ATC 64

	List of standards	Standard Title
1	IEEE 2030.10:2021	IEEE Standard for DC Microgrids for Rural and Remote Electricity Access Applications

1 IEEE Standards

Reviewed Standards and Recommended for Adoption by ATC 77

	List of standards	Standard Title
1	IEC 61000-3-12:2011/AMD1:2021	Electromagnetic compatibility (EMC) - Part 3-12: Limits - Limits for harmonic currents produced by equipment connected to public low-voltage system
2	IEC 61000-3-2:2018/AMD1:2020/AMD2:2024	Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
3	IEEE 1453-2022	Measurement and Limits of Voltage Fluctuations and Associated Light Flicker on AC Power Systems
4	IEEE 519-2022	Standard for Harmonic Control in Electric Power Systems.

2 IEC Standards + 2 IEEE Standards

Reviewed Standards and Recommended for Adoption by ATC 82

	List of Standards	Standard Title
2	IEC TR 63149	Land Usage of Photovoltaic (Pv) Farms - Mathematical Models and Calculation Examples
4	IEC 62891:2020	Maximum Power Point Tracking Efficiency of Grid Connected Photovoltaic Inverters
5	IEEE 1020	Guide for Control of Small (100 kVA to 5 MVA) Hydroelectric Power Plants

2 IEC Standards + 1 IEEE Standard

Reviewed Standards and Recommended for Adoption by AJWGI
for Developing the RE Integration with the Grids Guide:

In the guide 13

	List of Standards	Standard Title
1	IEC 61000-3-3	Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤16 A per phase and not subject to conditional connection
2	IEC 62109-1	Safety of power converters for use in photovoltaic power systems - Part 1: General requirements
3	IEC 62109-2:2011	Safety of power converters for use in photovoltaic power systems - Part 2: Particular requirements for inverters
4	IEC 62116	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures
5	IEC 60870-5-101	Telecontrol equipment and systems - Part 5-101: Transmission protocols - Companion standard for basic telecontrol tasks
6	IEC 60870-5-104	Telecontrol equipment and systems - Part 5-104: Transmission protocols - Network access for IEC 60870-5-101 using standard transport profiles
7	IEC 60870-6-502	Telecontrol equipment and systems - Part 6: Telecontrol protocols compatible with ISO standards and ITU-T recommendations - Section 502: TASE.1 Protocol definitions
8	IEC TS 62933-1	Electrical energy storage (EES) systems - Part 1: Vocabulary
9	IEC TS 62933-3-1	Electrical energy storage (EES) systems - Part 3-1: Planning and performance assessment of electrical energy storage systems - General specification
10	IEC TS 62933-3-2	Electrical energy storage (EES) systems - Part 3-2: Planning and performance assessment of electrical energy storage systems - Additional requirements for power intensive and renewable energy sources integration related applications
11	IEC 61400-21-1	Wind energy generation systems - Part 21-1: Measurement and assessment of electrical characteristics - Wind turbines
12	IEC 61000-4-15	Electromagnetic compatibility (EMC) - Part 4-15: Testing and measurement techniques - Flickermeter - Functional and design specifications
13	IEC TR 63401-1	Dynamic characteristics of inverter-based resources in bulk power systems - Part 1: Interconnecting inverter-based resources to low short circuit ratio AC networks
14	IEC TR 63401-2	Dynamic characteristics of inverter-based resources in bulk power systems - Part 2: Sub- and Super-synchronous control Interactions
15	IEC TR 63401-3	Dynamic characteristics of inverter-based resources in bulk power systems - Part 3: Fast frequency response and frequency ride-through from inverter-based resources during severe frequency disturbances
16	IEC TR 63401-4	Dynamic characteristics of inverter-based resources in bulk power systems - Part 4: Behaviour of inverter-based resources in response to bulk grid faults
17	IEC TS 63102	Grid code compliance assessment methods for grid connection of wind and PV power plants
18	IEC TS 62910	Utility-interconnected photovoltaic inverters - Test procedure for under voltage ride-through measurements
19	IEC TS 63217	Utility-interconnected photovoltaic inverters - Test procedure for over voltage ride-through measurements
20	IEC TS 62786-1	Distributed energy resources connection with the grid - Part 1: General requirements
21	IEC TS 63060	Electric energy supply networks - General aspects and methods for the maintenance of installations and equipment
22	IEC TS 63222-1	Power quality management - Part 1: General guidelines
23	IEC 60227-1:2024	Polyvinyl Chloride Insulated Cables
24	IEC 62934:2021	Grid integration of renewable energy generation - Terms and definitions
25	IEC 62619:2022	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries, for use in industrial applications

26	IEC 63056	Secondary cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for secondary lithium cells and batteries for use in electrical energy storage systems
27	IEC 62933-2-1	Electrical energy storage (EES) systems – Part 2-1: Unit parameters and testing methods – General specification
28	IEC 62933-4-2	Electric energy storage (EES) systems – Part 4-2: Guidance on environmental issues – Assessment of the environmental impact of battery failure in an electrochemical based storage system
29	IEC 62933-4-3	Electrical energy storage (EES) systems – Part 4-3: Protection
30	IEC 61400-12-1:2022	Wind energy generation systems - Part 12-1: Power performance measurements of electricity producing wind turbines
31	IEC 60041	Field acceptance tests to determine the hydraulic performance of hydraulic turbines, storage pumps and pump-turbines
32	IEC 61215-1	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements
33	IEC 61730-1	Terrestrial photovoltaic (PV) modules - Design qualification and type approval - Part 1: Test requirements
34	IEC 61730-2	Photovoltaic (PV) module safety qualification - Part 2: Requirements for testing
35	IEC 62548:2023	Photovoltaic (PV) arrays – Design requirements
36	IEC 60909-0	Short-circuit currents in three-phase a.c. systems - Part 0: Calculation of currents
37	IEC 61936-1	Power Installations exceeding 1kV AC and 1.5kV DC Part 1: AC
38	IEEE 1547.1:2020	Interconnection and Interoperability of Distributed Energy Resources

Standards referenced in the Guide13 not included above and reviewed by AJWG1

39	IEC 61557	Electrical safety in low-voltage distribution systems up to 1,000 V AC / 1,500 V DC – Equipment for testing, measuring or monitoring protection
40	IEC 61010	Safety requirements for electrical equipment for measurement, control, and laboratory use
41	IEC 60255-1	Measuring relays and protection equipment – Part 1: Common requirements
42	IEC 60255-121	Measuring relays and protection equipment – Part 121: Functional requirements for distance protection
43	IEC 60255-127	Part 127: Functional requirements for overcurrent protection
44	IEC 60255-181	Part 181: Functional requirements for frequency protection
45	IEC 60255-187	Part 187: Functional requirements for differential protection
46	IEC TS 62898-1	Microgrids – Part 1: Guidelines for microgrid projects planning and specification
47	IEC TS 62898-2	Microgrids – Part 2: Guidelines for operation
48	IEC TS 62898-3-1	Microgrids – Part 3-1: Technical Requirements – Protection and Dynamic Control
49	IEC 60050	International Electrotechnical Vocabulary
50	IEC 60050-151	International Electrotechnical Vocabulary (IEV) - Part 151: Electrical and magnetic devices
51	IEC 60050-601	Amendment 2 - International Electrotechnical Vocabulary (IEV) - Part 601: Generation, transmission and distribution of electricity - General
52	IEC 60050-704	Amendment 4 - International Electrotechnical Vocabulary (IEV) - Part 704: Transmission
53	IEC 60059-603	International Electrotechnical Vocabulary (IEV) - Part 603: Generation, transmission and distribution of electricity - Power systems planning and management
54	IEC TR 63282	LVDC systems - Assessment of standard voltages and power quality requirements
55	IEEE C37.94	IEEE Standard for N times 64kps Optical Fibre Interfaces between Teleprotection and Multiplexer

53 IEC Standards + 2 IEEE Standard

Reviewed Standards and Recommended for Adoption by ATC-EV

	List of Standards	Standard Title
1	IEC 61851-1:2017	Electric vehicle conductive charging system - Part 1: General requirements
2	IEC 61851-21:2001	Electric vehicle conductive charging system - Part 21: Electric vehicle requirements for conductive connection to an a.c./d.c. supply
3	IEC 61851-22:2001	Electric vehicle conductive charging system - Part 22: AC electric vehicle charging station
4	IEC 62196-1:2022	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 1: General requirements
5	IEC 62196-2:2022	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 2: Dimensional compatibility requirements for AC pin and contact-tube accessories
6	IEC 62196-3:2022	Plugs, socket-outlets, vehicle connectors and vehicle inlets - Conductive charging of electric vehicles - Part 3: Dimensional compatibility requirements for DC and AC/DC pin and contact-tube vehicle couplers
7	IEC 62752:2024	In-cable control and protection device (IC-CPD) for mode 2 charging of electric road vehicles
8	IEC 62909-1:2017	Bi-directional grid connected power converters - Part 1: General requirements
9	IEC 62909-2:2019	Bi-directional grid-connected power converters - Part 2: Interface of GCPC and distributed energy resources
10	IEC 61439-7:2023	Low-voltage switchgear and controlgear assemblies - Part 7: Assemblies for specific applications such as marinas, camping sites, market squares, electric vehicle charging stations
11	IEC 63584:2024	Open Charge Point Protocol (OCPP)
12	IEEE 2030.5-2023	Smart Energy Profile Application Protocol

11 IEC Standards + 1 IEEE Standard

**92 IEC Standards + 10 IEEE Standard
Total of 102 Standards (IEC+IEEE)**