

Republic of the Philippines  
**ENERGY REGULATORY COMMISSION**  
San Miguel Avenue, Pasig City



**16**  
Resolution No. \_\_\_\_, Series of 2017

**RULES GOVERNING THE TYPE APPROVAL OF SMART METERS TO  
BE USED IN ADVANCE METERING INFRASTRUCTURE (AMI)  
SYSTEM OF DISTRIBUTION UTILITIES AND ERC-AUTHORIZED  
ENTITIES**

**WHEREAS**, Section 16 (f) of the Commonwealth Act No. 146 (C.A. 146), as amended, mandates the Energy Regulatory Commission (ERC) to establish reasonable rules, regulations, instructions, specifications and standards to secure the accuracy of all meters;

**WHEREAS**, Section 2 of Commonwealth Act No. 349 (C.A. 349) authorizes the ERC to inspect, examine and approve periodically all meters used by all public services to ensure their accuracy;

**WHEREAS**, Section 43 (t) of Republic Act No. 9136 (R.A. 9136) empower the ERC to perform such other regulatory functions as are appropriate and necessary in order to ensure the successful restructuring and modernization of the electric power industry;

**WHEREAS**, on April 12, 2016, the ERC approved and promulgated the "Rules to Govern the Implementation of Advanced Metering Infrastructure (AMI) by Distribution Utilities and Other ERC-Authorized Entities", docketed as ERC Case No. 2015-001 RM;

**WHEREAS**, the said Rules aim to: a) promote demand side management and energy efficiency by providing tools/services that empower consumers to manage their consumption; b) enhance the operational efficiency of the distribution utility and the reliability of its network; c) provide guidance in the implementation of the AMI, its related features, services and functionalities; d) establish technical standards for an AMI project, smart meters and other devices, communication platforms, and software applications necessary to operationalize the system; e) establish rules for the AMI in addition to all other applicable existing customer protection rules; and f) support Retail Competition and Open Access (RCOA);

**WHEREAS**, in line with the aforesaid Rules, the ERC promulgated the proposed "Rules Governing the Type Approval of Smart Meters to be Used in Advanced Metering Infrastructure (AMI) System of Distribution Utilities and ERC-Authorized Entities", docketed as ERC Case No. 2016-008 RM;

**WHEREAS**, the said proposed Rules aim to ensure that all electric meters in service are tested at least once every two (2) years in accordance with the statistical sampling program approved by the ERC;

**WHEREAS**, the said proposed Rules were posted on the ERC website on December 19, 2016 and March 17, 2017 to solicit comments from interested stakeholders;

**WHEREAS**, the public consultations on the proposed Rules were held on February 16, 23 and 24, 2017 in ERC's offices in Pasig, Cebu City and Davao City, respectively;

**NOW THEREFORE**, after thorough and due deliberation, the Commission **RESOLVES**, as it is hereby **RESOLVED**, to **APPROVE** and **ADOPT** the "Rules Governing the Type Approval of Smart Meters to be Used in Advanced Metering Infrastructure (AMI) System of Distribution Utilities and ERC-Authorized Entities", hereto attached as Annex "A" and made an integral part of this Resolution.

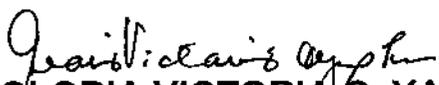
All Rules and Guidelines, or portion thereof, issued by the ERC, which are inconsistent with these Rules are hereby repealed or modified accordingly.

These Rules shall take effect fifteen (15) days after its publication in a newspaper of general circulation in the country.

Let copies of these Rules be furnished the University of the Philippines Law Center-Office of the National Administrative Register (UPLC-ONAR), Philippine Electric Power Operators Association, Inc. (PEPOA), the Philippine Electric Cooperatives Association, Inc. (PHILRECA) and all distribution utilities (DUs).

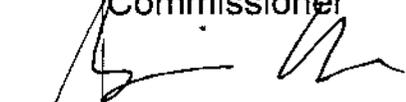
Pasig City, June 20, 2017.

**JOSE VICENTE B. SALAZAR\***  
Chairman and CEO

  
**GLORIA VICTORIA C. YAP-TARUC**  
Commissioner

  
**JOSEFINA PATRICIA A. MAGPALE-ASIRIT**  
Commissioner

  
**ALFREDO J. NON**  
Commissioner

  
**GERONIMO D. STA. ANA**  
Commissioner

**Copy Furnished:**

1. All Distribution Utilities
2. All Accredited Meter Shops

Republic of the Philippines  
**ENERGY REGULATORY COMMISSION**  
San Miguel Avenue, Pasig City

**RULES GOVERNING THE TYPE APPROVAL OF SMART METERS  
TO BE USED IN ADVANCED METERING INFRASTRUCTURE (AMI)  
SYSTEM OF DISTRIBUTION UTILITIES AND ERC-AUTHORIZED  
ENTITIES**

Pursuant to the provisions of Section 16 (f) of the Commonwealth Act No. 146, as amended, Section 2 of the Commonwealth Act No. 349, and Section 43(t) of the Republic Act No. 9136, otherwise known as the Electric Power Industry Reform Act, the Energy Regulatory Commission hereby promulgates the Rules Governing the Type Approval of Smart Meters to be used in Advance Metering Infrastructure (AMI) System of Distribution Utilities and ERC-authorized Entities.

**ARTICLE I**

**GENERAL PROVISIONS**

**Section 1.1 Objectives**

- 1.1.1 To ensure that Smart Meters installed by Distribution Utilities and ERC-Authorized Entities conform with the standards and requirements adopted by the ERC.
- 1.1.2 To ensure that Smart Meters will properly function under normal working conditions; and
- 1.1.3 To protect the public interest since the watt-hour meter serves as the basis for customer billing.

**Section 1.2 Applicability**

- 1.2.1 These Rules shall apply to all type of Smart Meters intended as customer revenue meters by distribution utilities and ERC-Authorized Entities in their Advanced Metering Infrastructure (AMI) System.

**Section 1.3 Definitions of Terms**

“AMI” or “Advance Metering Infrastructure” refers to an integrated system that is typically comprised of smart meters and other related devices, communication platforms and/or a combination thereof,

and meter data collection and management systems. AMI is a component of a smart grid in which metering data is transported via wired or wireless means at a defined interval from the consumer smart meter to the distribution utility's AMI.

**“ANSI” or “American National Standards Institute”** refers to a private non-profit organization that oversees the creation, promulgation, and use of voluntary consensus standards for products, services, processes, systems, and personnel in the United States.

**“Communication Platform”** refers to a combination of network elements that enable two-way communication to and from the meter and the data center.

**“Customer”** refers to any person, natural or juridical, who is the registered customer of the DU or any person authorized by the registered customer to occupy the premises and enjoy electric service being supplied with electricity by the concerned DU or RES.

**“DU” or “Distribution Utility”** refers to any electric cooperative, private corporation, government-owned utility or existing local government unit which has exclusive franchise to operate a distribution system in accordance with its franchise and R.A. 9136.

**“HAN” or “Home Area Network”** refers to a voluntary program to provide customers with the ability to manage and control their connected loads through a system provided by the DU.

**“IEC” or “International Electrotechnical Commission”** refers to a worldwide organization for International Standards and Conformity Assessment for all electrical, electronic and related technologies also known collectively as electrotechnology.

**“ILAC” or “International Laboratory Accreditation Cooperation”** refers to an international cooperation of laboratory and inspection accreditation bodies formed to help remove technical barriers to trade.

**“Meter Type”** refers to the designation assigned to a meter by the manufacturer for the purpose of distinguishing its particular design and construction from other designs, models or patterns. Such type designation shall embrace only those ranges in ratings that are essentially similar in appearance.

An approved type of meter product whose construction has been changed, such that the accuracy and/or mechanical operation of the meter has been affected, shall be considered a new meter type and shall be subjected to a new type approval.

An approved meter type with improvements introduced, such as activation of certain features or additional reading parameters that were already present at the time of its type approval shall also be subjected to a new type approval.

**“PAO” or “Philippine Accreditation Office”** refers to the agency under the Department of Trade and Industry which operates a laboratory accreditation wherein laboratories are accredited for their testing and calibration competence.

**“Prescribed Standards”** refers to the minimum values of test levels recommended by IEC 62052 and IEC 62053 or ANSI C12 in relation to type approval that guarantees the proper functioning of a meter product.

**“Re-validation”** refers to the process of determining whether or not a meter product that was already issued a Certificate of Approval (CA) is still in compliance with the Prescribed Standards in relation to type approval and with the specifications as contained in the Applicant's submitted Specimen. Re-validation shall entail the conduct of evaluation tests on the new sample of the approved product to determine conformance with the Prescribed Standards.

**“Smart Meter” or “Advance Meter”** refers to an advanced technology electric meter capable of two-way communication that can measure, record, and transmit time-varying energy usage data and its components, derivatives, and events/logs. It includes a communications module for remote access function (e.g., remote disconnection, remote reconnection) and may also serve as a gateway between the utility, customer site, and customer's Home Area Networking devices and/or load controllers.

**“Specimen”** refers to a sample of a meter product being applied for type approval which shall be sealed by the ERC after issuance of the CA, shall be kept by the Applicant as a proof of certification, and shall be made available during the Re-validation.

## ARTICLE II

### APPROVAL REQUIREMENTS FOR SMART METERS

#### Section 2.1 Meter Type Approval Application

2.1.1 A manufacturer or its authorized dealer, before it can offer to a distribution utility or an ERC-authorized entity a new type of meter to be used as customer revenue meter, shall file a verified application with the ERC for the approval of the new type of meter.

The application shall include the following information:

- 2.1.1.1 Name and address of the applicant;
- 2.1.1.2 Three (3) sample meters for approval;
- 2.1.1.3 Name and address of the meter manufacturer or its authorized dealer;
- 2.1.1.4 Meter brand, type, voltage, ampere, and frequency rating, wiring form, mounting arrangement, and a brief description of the general and physical characteristics of the meter;
- 2.1.1.5 Proof of Meter Type Approval granted by the regulatory body of the country where the product was manufactured, if available;
- 2.1.1.6 Meter Type Approval Certificate obtained from a testing laboratory affiliated with the Philippine Accreditation Office (PAO) or a Regional Cooperation Body which is a signatory to the ILAC arrangement, dated and signed by the laboratory head or his authorized representative, or any officer authorized by the said laboratory to sign certifications issued by it, certifying that the meter under consideration complies with all standards of IEC 62052, IEC 62053, or ANSI C12.

The certification shall include the following:

- a. Statement that the test equipment employed in these tests conforms with the applicable requirements of IEC or ANSI standards;
- b. For ANSI meters, certificate of calibration of reference standard traceable to the National Standards and Technology (NIST) or its equivalent;
- c. For IEC meters, Accreditation Certificate of the certifying laboratory issued by the Regional Accreditation Body duly certified by the Philippine Consulate of the country where the Accreditation Certificate was issued; and
- d. Test Report showing the required and complete performance testing, test results, appropriate charts, graphs, data recording during testing and all other relevant information performed during the testing.

- 2.1.1.7 Written descriptions of the type and features of communication platforms to be used;
  - 2.1.1.8 Certification issued by National Telecommunication Commission (NTC) that the Smart Meter can operate at NTC-authorized open and unprotected radio frequency specifically 915MHz to 918 MHz, as may be applicable; and
  - 2.1.1.9 Meter Type approval application processing fee of Ten Thousand Pesos (PhP10,000.00), which is non-refundable.
- 2.1.2 Prior to application for type approval, three (3) sample meters shall be evaluated inside the ERC Laboratory. The said sample meters should pass the tests listed below. An evaluation fee equivalent to Five Thousand Pesos (PhP5,000.00) shall be paid by the applicant before the evaluation process.

#### **Test Descriptions**

- 1. Stability of Performance
- 2. No Load Test
- 3. Starting Load Test
- 4. Load Performance
- 5. Effect of Variation of Power Factor
- 6. Effect of Variation of Voltage
- 7. Effect of Variation of Frequency
- 8. Effect of Current Circuits

- 2.1.3 The applicant shall be required to demonstrate to the Commission, the following functions and capabilities of the subject meter:
- 2.1.3.1 The two-way communication capabilities of the smart meter subject of the type approval;
  - 2.1.3.2 The capability of the disconnecting device of the subject smart meter to perform remote connection, remote disconnection and remote reconnection; and
  - 2.1.3.3 The ability of the meter to interface with a Home Area Network (HAN) when the DU or RES opted to provide such program.

## **Section 2.2 Conditions for the Issuance of a Certificate of Approval (CA) and Revalidation of Approved Types of Smart Meters**

2.2.1 The approved meter type shall be subject to re-validation every five (5) years to determine if it continues to conform with the prescribed standards in relation to type approval.

2.2.2 Submission of a meter type for re-validation should be made at least sixty (60) days prior to the end of the five-year period from the issuance of the CA.

2.2.3 The specifications of the approved meter type should remain the same with that of the specimen kept by the Applicant and specified in the CA issued by the ERC. The approved type of meter product that may have been modified such that the accuracy and/or mechanical operation of the meter has been affected, shall be considered a new meter type and shall be subject to a new type approval.

Likewise, any improvements introduced to the approved meter type such as, but not limited to activation of certain features or additional reading parameters that were already present but not disclosed in the application at the time of its type approval shall also be considered and be subjected to a new type approval.

2.2.4 The Applicant shall secure the ERC sealed Specimen of the approved type of meter. The sealed specimen together with a newly produced meter of the same type, shall be made available to the ERC upon submission of the application for re-validation.

## **Section 2.3 Undertaking**

Upon the approval of the application but prior to the issuance of the Certificate of Authority, the applicant shall execute an Undertaking stating the following: a) the applicant shall maintain in its custody the Specimen Meter, duly sealed by the ERC, intended for presentation at the time of re-validation; and b) the ERC-sealed specimen shall not be, in any way, altered or tampered with by the applicant and/or its representatives. Any alteration or tampering found in the subject meter shall be a ground for the rejection of the meter type re-validation application and the imposition of fines and penalties.

## ARTICLE III

### FINAL PROVISIONS

#### **Section 3.1 Assistance from Other Government Agencies**

To achieve the objectives of these Rules, the ERC may consult and coordinate with the other government agencies, including but not limited to the National Telecommunication Commission (NTC), Department of Trade and Industry (DTI) and Bureau of Customs (BOC), for technical assistance.

#### **Section 3.2 Imposition of Fines and Penalties**

Violation of any of these Rules shall be subject to the imposition of fines and penalties in accordance to the "Rules to Govern the Imposition of Administrative Sanctions in the Form of Fines and Penalties Pursuant to Section 46 of Republic Act No. 9136, As Amended."

#### **Section 3.3 Cancellation or Revocation of CA**

A Certificate of Approval (CA) may be cancelled or revoked by the ERC on any of the following grounds:

- 3.3.1 The approved type of meter product has been modified such that the accuracy and/or mechanical operation of the meter has been affected;
- 3.3.2 Violation of any of the terms and conditions set forth in the CA; or
- 3.3.3 The Applicant failed to submit the specimen of the approved meter type upon its re-validation.

#### **Section 3.4 Exception Clause**

Where good reason appears, the ERC may allow an exception from any provision of these Rules, if such exception is found to be in the public interest and is not contrary to law or any other pertinent rules and regulations.

#### **Section 3.5 Separability Clause**

If any of the foregoing part or section of these Rules is declared unconstitutional or invalid, the other provisions which are not affected thereby shall remain in force and effect, unless such declaration would render the whole rules unenforceable or non-implementable.

### Section 3.6 Repealing Clause

All Rules and Guidelines, or portion thereof, issued by the ERC, which are inconsistent with these Rules are hereby repealed or modified accordingly.

### Section 3.7 Effectivity

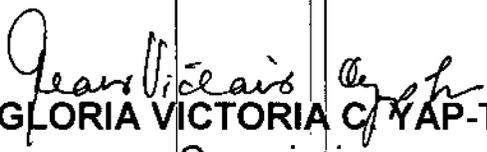
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Pasig City, June 20, 2017.

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**GERONIMO D. STA. ANA**  
Commissioner

 6/3 Smart Meters Type Approval

\*On preventive suspension as per Order of the Office of the President (OP-DC Case No. 17-D-094) dated May 2, 2017.

Let copies of these Rules be furnished the University of the Philippines Law Center - Office of the National Administrative Register (UPLC-ONAR), Philippine Electric Power Operators Association, Inc. (PEPOA), the Philippine Electric Cooperative Association, Inc. (PHILRECA), all distribution utilities and concerned agencies.

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*Rules to Govern In Service Testing*

*\*On preventive suspension as per Order of the Office of the President (OP-DC Case No. 17-D-094) dated May 2, 2017*