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

GUIDELINES FOR THE APPLICATION AND APPROVAL OF CAPS ON THE RECOVERABLE RATE OF DISTRIBUTION SYSTEM LOSSES

Pursuant to Section 43 of Republic Act No. 9136, Rule 15 Section 5 of its Implementing Rules and Regulations, and Article 3.4 of the Philippine Distribution Code (PDC), the Energy Regulatory Commission (ERC) hereby adopts and promulgates the following Guidelines for the Application and Approval of Caps on the Recoverable Rate of Distribution System Losses.

ARTICLE I

General Provisions

Section 1. These Guidelines shall have the following objectives:

(a) To promote transparency and accountability in all phases involving the services provided by Distribution Utilities;

(b) To promote a policy of full disclosure of all transactions involving public interest;

(c) To protect the public interest as it is affected by the rates and services of Distribution Utilities and other providers of electric Energy; and

(d) To establish a methodology for the segregation and calculation of Distribution System Losses.

Section 2. Guiding Principles. Section 43 of Republic Act No. 9136 and Rule 15 Section 5 of its Implementing Rules and Regulations provide that "the cap on the recoverable rate of system losses prescribed in Section 10 of Republic Act No. 7832, is hereby amended and shall be replaced by caps which shall be determined by the ERC based on load density, sales mix, cost of service, delivery voltage and other technical considerations it may promulgate."

Article 3.4 of the Philippine Distribution Code (PDC) classifies Distribution System Losses into three (3) categories, namely Technical Loss,

Non-Technical Loss and Administrative Loss. This article also provides that "the Distributor shall identify and report separately to the ERC the technical and non-technical losses in its Distribution System. The ERC shall, after due notice and hearing, prescribe the caps for the technical and non-technical losses that the Distributor can pass on to its End-Users."

Article 3.4 of the PDC provides further that "the Distributor shall submit to the ERC an application for the approval of its Administrative Loss. The allowance for Administrative Loss shall be approved by ERC, after due notice and hearing, based on connected essential Load."

Section 3. Scope. These Guidelines shall apply to all electric power Distribution Utilities, including but not limited to the following:

(a) Privately-owned Distribution Utilities;
(b) Electric Cooperatives;
(c) Local government unit owned-and-operated Distribution Utilities;
(d) Entities duly authorized to own, operate and maintain distribution facilities within the economic zones; and
(e) Other duly authorized entities engaged in the Distribution of Electricity.

Section 4. Definition of Terms. The following words and phrases shall have the meanings set forth below in these Guidelines:

(a) Administrative Loss. The component of Distribution System Losses that accounts for the electric Energy used by the Distribution Utility in the proper operation of the Distribution System, and any unbilled electric Energy, approved by the ERC, that is used for community-related activities.
(b) Burden. The electrical load of metering equipment including the instrument transformers and associated wirings
(c) Customer. Any person or entity supplied with electric service under a contract with a Distributor.
(d) Distribution of Electricity. The conveyance of electric Energy by a Distributor through its Distribution System.
(e) Distribution System. The system of wires and associated facilities belonging to a franchised Distribution Utility, extending between the delivery points on the Transmission System, sub-transmission System, or Generating Plant connection and the point of connection to the premises of the End-User.
(f) Distribution System Losses. The electric Energy input including those delivered to the Distribution System by the Transmission System, Embedded Generating Plants, other Distribution Systems, and User Systems with generating facilities minus the electric Energy output

(i.e., electric Energy delivered to the Users of the Distribution System) for a specified billing period.

(g) Distribution Utility. An Electric Cooperative, private corporation, government-owned utility, or existing local government unit, that has an exclusive franchise to operate a Distribution System.

(h) Distributor. Has the same meaning as Distribution Utility.

(i) Electric Cooperative. A cooperative or corporation authorized to provide electric services pursuant to Presidential Decree No. 269, as amended, and Republic Act No. 6938 within the framework of the national rural electrification plan.

(j) Embedded Generating Plant. A Generating Plant that is connected to a Distribution System or the System of any User and has no direct connection to the Transmission System.

(k) End-User. Any person or entity requiring the supply and delivery of electric Energy for its own use.

(l) Energy. The integral of power with respect to time, measured in Watt-hour (Wh) or multiples thereof.

(m)Energy Regulatory Commission (ERC). The independent, quasi-judicial regulatory body created pursuant to Republic Act No. 9136, which is mandated to promote competition, encourage market development, ensure customer choice, and penalize abuse of market power in the restructured electricity industry.

(n) Instrument Transformer. Refers to Potential Transformer and/or Current Transformer used as electrical transducer for metering and control.

(o) Load. An entity or electrical equipment that consumes electric Energy.

(p) Load Loss. The electrical loss due to the resistance of conductors that varies with the square of the electric current.

(q) Load Model. The representation of electrical load in Load Flow simulations for the purpose of calculating Technical Losses.

(r) Metering Equipment. The electrical measurement devices including instrument transformers, wiring, communications, and other auxillary devices associated with metering.

(s) Network Model. The equivalent electrical circuit that mathematically represent an electrical system (e.g., Distribution System) for purposes of calculating electrical parameters or simulating its behavior or performance. It consists of resistances and reactances of the electrical equipment, devices and conductors.

(t) No-Load Loss. The fixed loss incurred in electrical equipment regardless of the loading level. This includes the fixed loss dissipated in transformers, voltage regulators, capacitors, inductors and other electrical equipment.

(u) Non-Technical Loss. The component of Distribution System Losses that is not related to the physical characteristics and functions of the electrical System, and is caused primarily by human error, whether intentional or not. Non-Technical Loss includes the electric Energy lost due to pilferage, tampering of meters, and erroneous meter reading.

(v) Philippine Distribution Code (PDC). The set of rules, requirements, procedures, and standards governing Distribution Utilities and Users in the operation, maintenance, and development of their Distribution Systems. It also defines and establishes the relationship of the Distribution Systems with the facilities or installations of the parties connected thereto.

(w) Rate of Distribution System Losses. The Distribution System Losses expressed as a percentage of the total electric Energy input to the Distribution System.

(x) Republic Act No. 9136. The *"Electric Power Industry Reform Act of 2001."*

(y) Responsible Person. The person authorized by virtue of his official designation, Board Resolution, or any other basis of authorization to certify and be held responsible for the accuracy and validity of the submitted data.

(z) System. A group of components connected or associated in a fixed configuration to perform a specified function.

(aa) Technical Loss. The component of Distribution System Losses that is inherent in the electrical equipment, devices and conductors used in the physical delivery of electric Energy.

(bb) Three-Phase Load Flow. The analytical tool that simulates the power flows in an unbalanced three-phase Distribution System.

(cc) Transmission System. The high voltage backbone System of interconnected transmission lines, substations, and related facilities for the conveyance of bulk power. The Transmission system is also known as the Grid.

(dd) User. A person or entity that uses the Distribution System and related Distribution facilities.

(ee) User System. A System owned or operated by a User of the Distribution System.

ARTICLE II

Distribution System Losses

Section 1. Components of Distribution System Losses. Distribution System Losses shall be segregated into the following components as specified in Article 3.4 of the Philippine Distribution Code:

(a) Technical Loss;
(b) Non-Technical Loss; and
(c) Administrative Loss.

The Technical Loss is the component of Distribution System Losses that is inherent in the electrical equipment, devices and conductors used in the physical delivery of electric Energy. It includes the Load and No-Load (or Fixed) Losses in the following:

a) Sub-transmission Lines;
b) Substation Power Transformers;
c) Primary Distribution Lines;
d) Distribution Transformers;
e) Secondary Distribution Lines;
f) Service Drops;
g) Voltage Regulators;
h) Capacitors;
i) Reactors; and
j) All other electrical equipment necessary for the operation of the Distribution System.

The Non-Technical Loss is the component of Distribution System Losses that is not related to the physical characteristics and functions of the electrical System, and is caused primarily by human error, whether intentional or not. Non-Technical Loss includes the electric Energy lost due to pilferage, tampering of meters, and erroneous meter reading. For purposes of these Guidelines, errors that are attributable to inaccuracies of the Metering Equipment, including the electrical Burdens of Instrument Transformers, shall be assumed included in the Non-Technical Loss.

The Administrative Loss is the component of Distribution System Losses that accounts for the electric Energy used by the Distribution Utility in the proper operation of the Distribution System, and any unbilled electric Energy that is used for community-related activities. Administrative Loss includes the electric

Energy consumption of connected essential electrical Loads in the following facilities and activities, subject to the approval of the ERC:

a) Distribution Substations;
b) Offices of the Distribution Utility;
c) Warehouses and Workshops of the Distribution Utility;
d) Community activities; and
e) Other essential electrical Loads of the Distribution Utility.

Section 2. Calculation of the Total Distribution System Losses. The Total Distribution System Losses shall be computed as the net of all electric Energy input (i.e., electric Energy delivered to the Distribution System by the Transmission System, Embedded Generating Plants, other Distribution Systems, and User Systems with generating facilities) and of all electric Energy output (i.e., electric Energy delivered to the Users of the Distribution System) for a specified billing period.

Distribution System Losses shall be calculated monthly and shall coincide with the billing cycle adopted by the Distribution Utility. The Distribution Utility shall report the total number of days, number of hours and the inclusive dates covered by the billing cycle, which was used as the period for the calculation of the Distribution System Losses.

Section 3. Calculation of the Administrative Loss. The Administrative Loss shall be the sum of the actual (i.e., metered) electric Energy consumption of the essential Loads used by the facilities of the Distribution Utility and the unbilled community activities that are approved by the ERC during the billing period.

Section 4. Calculation of the Technical Loss. The Technical Loss for the billing period shall be the sum of the hourly Load Loss and No-Load (or Fixed) Loss in all distribution equipment, devices and conductors for a specified billing period. It shall be calculated through Three-Phase Load Flow simulations of the Distribution System using the appropriate Network and Load Models. The Load Flow simulations must capture all Technical Losses from the incoming and outgoing delivery points of the unbalanced three-phase Distribution System (i.e., from Sub-transmission lines to the service drops of the Distribution System Customers). For the purpose of calculating the Technical Loss, the delivery points of the Distribution System shall be the Metering Points (i.e., the location of the metering devices).

The prescribed methodology for segregating and calculating the components of Distribution System Losses is appended in Annex A and is hereby made an integral part of these Guidelines.

Section 5. Calculation of the Non-Technical Loss. The Non-technical loss shall be the residual after subtracting the Administrative Loss and Technical Loss from the Total Distribution System Losses. Losses recovered from anti-pilferage activities shall also be subtracted from the Total Distribution System Losses.

ARTICLE III

Filing Requirements and Procedures

Section 1. Filing Requirements for Distribution System Loss Caps. All Distribution Utilities shall file their respective petitions for the approval of caps on the recoverable rate of Distribution System Losses. The petition shall contain the following information using the templates shown in Annex B:

a) ERC-DSL-01 Administrative Load Data;
b) ERC-DSL-02 Customer Data;
c) ERC-DSL-03 Meter Reading Data;
d) ERC-DSL-04 Load Curve Data;
e) ERC-DSL-05 Bus Data;
f) ERC-DSL-06 Sub-transmission Line Data;
g) ERC-DSL-07 Substation Power Transformer Data;
h) ERC-DSL-08 Primary Distribution Line Data;
i) ERC-DSL-09 Voltage Regulator Data;
j) ERC-DSL-10 Shunt Capacitor Data;
k) ERC-DSL-11 Shunt Inductor Data;
l) ERC-DSL-12 Series Inductor Data;
m) ERC-DSL-13 Distribution Transformer Data;
n) ERC-DSL-14 Secondary Distribution Line Data;
o) ERC-DSL-15 Service Drop Data;
p) ERC-DSL-16 Energy Sales Data; and
q) ERC-DSL-17 Other Technical Data.

In addition, Distribution Utilities are required to submit to the ERC their Distribution System maps and diagrams showing the unique Identification (ID) of all connection points, electrical equipment and line segments. The Distribution System maps and diagrams must be consistent with the data submitted using the above templates.

All data submission shall consist of one (1) original and five (5) conformed copies duly signed by the Responsible Person of the Distribution Utility. In addition, the data shall be submitted in electronic format either as Text File or Microsoft Excel File in CD-ROM.

Section 2. Procedures for Filing and Approval. The provisions of the "Rules Governing Hearings Before the Energy Regulatory Board" shall be applied to all petitions for approval of caps on the recoverable rate of Distribution System Losses.

ARTICLE IV

Reportorial Requirements and Monitoring

The ERC, upon its approval of the caps on the recoverable rate of Distribution System Losses, shall require the Distribution Utility to submit monthly reports on actual values of Technical Loss, Non-Technical Loss and Administrative Loss in its Distribution System. The frequency of submission of the said reports shall be determined by the ERC.

The ERC shall monitor the compliance of the Distribution Utility with the approved caps for the recoverable Rate of Distribution System Losses.

ARTICLE V

Administrative Sanctions

A penalty shall be imposed upon any person who has been found to have committed a violation of any of the provisions of these Guidelines pursuant to the "Guidelines to Govern the Imposition of Administrative Sanctions in the Form of Fines and Penalties pursuant to Section 46 of Republic Act No. 9136".

ARTICLE VI

Repeal and Separability

Section 1. Repeal. All existing Guidelines or any part thereof which are inconsistent with these Guidelines are hereby repealed, amended or modified accordingly.

Section 2. Separability. If for any reason, any provision of these Guidelines is declared unconstitutional or invalid by final judgment of a competent court, the other parts or provisions hereof which were not affected thereby shall continue to be in full force and effect.

ARTICLE VII

Effectivity

These Guidelines shall take effect immediately upon publication in a newspaper of general circulation in the country.

Pasig City, December 17, 2003.

MANUEL R. SANCHEZ
Chairman

LETICIA V. IBAY
Commissioner

OLIVER B. BUTALID
Commissioner

CARLOS R. ALINDADA
Commissioner

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