



Lao People's Democratic Republic
Peace Independent Democracy Unity Prosperity

Ministry of Science and Technology

No. 0543/MOST
Vientiane Capital, date 16 May 2017

Decision of
The Minister, Ministry of Science and Technology on the
Management of Water meter in Lao PDR

- Refer to Metrology law (amendment) No.063 NA, dated 13 December 2013.
- Refer to The Prime Minister's Degree on the organization and operation of the Ministry of Science and Technology No. 309/PM, date 28 September 2011;
- Refer to the Department of Standardization and Metrology's proposal No. 003/ MOST-DOSM, Date 5 October 2016.

The Minister of Science and Technology
Decision:

Section 1
General Provision

Article 1. Purpose

This agreement determines the policies, principles, rules and measures regarding the management, traceability, calibration and registration and verification of water meter to produce, import, export, used and service in Lao PDR to be unified, on the basis of accuracy, Clearly in accordance with regional and international regulations, With the aim of promoting quality services and adapting to reality, contributing to the national socio-economic development.

Article 2. Water meter

Water meter is measure instrument to use to measure the volume of water continuously that shows and records the amount of flow that can be calculated. The Characteristics of water meter shall be use in all condition of the temperature and pressure as defined in Article 18 of this agreement.

Article 3. Explanation of Terms

Terms used in this Agreement shall have following meanings:

1. Real Volume means all volume of water flow through water meter without define timetable;
2. Value setting means the value combined in the pot water to use the result including the error value as define;
3. Flow rate (Q) means the result of calculate the amount of water and time flow though water meter;
4. Low Flow rate (Q_{min}) means the value of water flow though water meter that lower than usual when compare with the time;
5. Usual flow rate (Q_n) means the usual value of water flow though water meter;
6. Excessive flow rate (Q_{max}) means the the value of water flow though water meter that faster than usual when compare with the time;
7. Flow rate change (Q_t) means The fluctuating flow rates that occur between two different areas, such as normal flow rates and low flow rates, each area has not same the Error rate;
8. Error rate means The amount of water that the pot count is minus by the actual amount of water;
9. Measure the amount of measurement means The amount of water measured by water meter in actual quantity;
10. Maximum and Minimum of error means the maximum and lowest permissible error as defined in regulation;
11. Value of Dropping and Adding means the minimum of different that can identify;
12. Screen of display means the one component of water meter which displayed the measure of water flow though can be read;
13. Number of display means the value of water flow though water meter which displayed the number or read value of water volume;
14. The confirmation value means Standard values are approved.

Article 4. Scope of Application

This agreement application to individuals, legal entities or organizations operating businesses related to all kind of water meter in Lao PDR.

Article 5. Basic principle of Management

The water meter management are traceability, Calibration and Legislator and verification of accuracy of water meter to enhance the quality and efficiency of socio-economic management, service and consumer protection on the basis of principles as following:

1. To support the requirement and ensure for safety of health, environment and stability of water supply to consumer;
2. To ensure the openness, justice, equality and transparency Can be checked, avoiding discrimination against suppliers and consumer;

3. The water meter which import, export, using and service shall have traceability, Legislator, verification of accuracy from related agencies to comply with the principle of Management, National Standards, regional and international;
4. To ensure that comply with the regulation and reality of using water meter.

Section 2

Rights and Obligations

Article 6. Rights of business operators

The business operators has a right as following

1. Publish advertisements on standards, quality of all kind of water meter when get certificate of calibration;
2. If the verification is not unfair can be require to the relevant government agency;
3. Propose to the relevant government agency for verification if the quality of water meter are abnormal;
4. Perform other rights as defined in relevant laws and regulations.

Article 7. Right of Consumers

The Right of consumers as following:

1. Compliance to the relevant agency when the services are not unfair and not comply with the accuracy standard of water meter;
2. Propose to the service provider to checking or change out when the water meter braked or not accuracy;
3. Perform other rights as defined in the Laws.

Article 8. Obligation of Business Operator

The business operator for water meter has obligation as following:

1. Before import shall be take sample of water meter to Traceability for certify accuracy from relevant management agency to comply with the standards;
2. Keeping traceability measurement in international unit system though Department of Standardization and Metrology;
3. Testing, accuracy verification, install and maintain the water meter inspection unit that was approved by trust Agency;
4. The water meter was installed in building shall have seal symbol of calibrate Certification from relevant agencies;
5. Calibrate, Register and verify the accuracy of water meter;
6. To respond any damage caused from no quality water meter;
7. To respond any brake caused from installs;
8. To provide cooperate and facilitate to auditor every time;
9. Perform other rights as defined in the Laws.

Article 9. Obligation of Consumer

The obligation of consumer as following:

1. Using services as following of services provider;
2. To respond any damage caused from modification water meter;
3. Perform other rights as defined in the Laws.

Section 3

The Management and Certify Accuracy Authorities

Article 10. The management and certify accuracy Authorities of water meter

The management and accuracy certify Authorities of water meter are Department of Standardization and Metrology, Division of Science and Technology provincials, Vientiane capital as assigned by hierarchy management.

Article 11. Rights of the management, inspection and verification authorities

1. The management system of Traceability, Calibration and Register and accuracy of Verification of water meter shall be comply with National standards, Technical regulation including regional and international as defined;
2. Take samples water meter to traceability to comply with national, regional and international standards before import, export, using and services;
3. Issuing the traceability, calibration and verification certificate after inspection correctly according to the National, regional and international standards;
4. Unconformity to the national, regional and international standards after inspection shall be collaborate with related sectors to discontinue the import, export, manufacture and distribution of water meter to inform to the hierarchy management for consideration;

Article 12. Main duties of the management and certify accuracy authorities

1. To collaborate with relevant sectors for verification of water meter to comply with the national, regional and international standards;
2. Justice, transparency, equality and purity on their duties;
3. To give suggestion to manufacturers, importers, exporters and distributors on the process for applying registration of inspection and verification the water meter;
4. To maintain and provide information to the relevant sectors on inspection and verification of water meter management;
5. Only water meters that pass the inspection shall be issued the certification of traceability, calibration and verification;
6. To exercise other duties as prescribed by regulations and relevant law.

Section 4

Documentation system, Inspection

And accuracy verification of water meters

The Legislation and accuracy verification Documents of water meters as follow:

1. Application form for registration;
2. Copy of business operation document and other related document;
3. Copy of production permission document, import, export and service provider of water meter;
4. Quality certificate origin;
5. Other relevant documents (if necessary)

Article 14. Consideration and Approved Document

Consideration and approved documents as follow:

1. The consideration for traceability, calibration and verification document at least ten days of working day from the date of received;
2. When received all documents and the accuracy testing of water meter that comply with national standards shall be issue the accuracy result certificate at least not less than 5 working days.

Article 15. Issuing the result of traceability, calibration and verification Certificate

Individuals, legal entities domestic and international and organization to produce the water meter in Lao PDR, before import, export, user and service provider shall be traceability, calibration and legislation and accuracy verification from Department of Standardization and Metrology, provincial and capital Department of Science and Technology.

The issuing of traceability result certificate and water meter legislation are only one time no limited, for the duration of verification certify is defined in article 18.

Article 16. Registration fees and fine measure

Traceability, Calibration and Registration and verification of the water meter shall be charged, service fees and measured as followed:

1. The registration fees, traceability fees, calibration and verification of water meter are refer to the provision of president on Registration and service fees for metrology activities that had promulgate in periodically;
2. The fined is refer to Degree of prime minister on fined and Measure for violators base on Standards and Metrology Laws.

Article 17. The principle of traceability, calibration and verification

The operation principle of traceability, calibration and verification for water meter as follow:

1. Verification operation each time, authority officers shall inform the ID cards issued by Department of Standardization and Metrology, Division of Science and Technology Provinces, Vientiane Capital and Cabinet of Science and Technology, districts as assigned;

2. Sent the sample of water meter for 10% of produce in domestic and import to Department of Standardization and Metrology, ministry of science and technology;
3. The verification of water meter had install will be random 3% but certify 100%;
4. When result of checking are comply with national standard, the authority officer shall issue the result to certify accuracy of water meter;
5. Incase of traceability result, verification not comply with National and regional standard the authority officer shall make note and discontinue the import, export, produce and give services to inform to the hierarchy management;

Article 18. Types and time flame for verification of water meter

Types and time flame for verification of water meter include 03 type as followed:

1. All water meter shall be verified before use and service including water meter produced in Laos and import from aboard;
2. Annual verification shall be implemented once per 2 years;
3. Emergency verification shall be verified without informing in advance.

Section 5

Types and Attributes of water meter

Article 19. Types of water meter

Types of water meter using in Laos include as followed:

1. Water meter type 1 (level C) are measure the volume in the flow of water;
2. Water meter type 2 (level B) are measure by Magnetic systems and propeller.

Article 20. Materials for producing water meter

The materials for producing water meter shall be followed:

1. Hardness and durability;
2. Resistant to water discharge;
3. There is no chemical reaction when there is a flow of water (non-toxic, contaminated);
4. It is resistant to oxidation and Do not deteriorate both inside and outside;
5. The display must be protected from the panel and The panels shall be used in the appropriate format;
6. The panels shall be not easy to attach steam material

Article 21. Permissible errors for each type of water meter:

Permissible errors for each type of water meter as followed:

- A. Permissible errors in Laboratory

Calibration, traceability of water meter in laboratory has determined the permissible errors as follows:

1. The water meter of permissible errors type 1 (level C) that import or before install:
 - 1.1 the maximum permissible from Q to Q_t is $\pm 3\%$
 - 1.2 the maximum permissible from Q_t to Q_{max} is $\pm 1\%$ in temperature 0.3°C to 30°C and $\pm 3\%$ in temperature higher than 30°C
 - 1.3 For the water meter level 1 shall have accuracy permissible use only water meter with a flow rate of more than or equal 100 cubic meters per hour ($Q_n \geq 100\text{m}^3/\text{h}$).
2. Accuracy permissible of water meter type 2 (level B) are measure by Magnetic systems and propeller
 - 2.1 maximum permissible from Q_{min} to Q_t are $\pm 5\%$
 - 2.2 maximum permissible from Q_t to Q_{max} are $\pm 2\%$ (in temperature 0.3°C only)
 - 2.3 Shall apply the water meter with a flow rate of less than or equal 100 m^3 per hour ($Q_n \leq 100\text{m}^3/\text{h}$) and some time apply for water meter with a flow rate of bigger than or equal 100 cubic meters per hour ($Q_n \geq 100\text{m}^3/\text{h}$).
3. For water meter of both level after 2 years of installation, the permissible error is doubled.

B. The permissible errors of verification at outside

The verification out of laboratory, place of user determined permissible errors as follow:

1. Permissible of water meter type 1 (level C) that import or before install:
 - 1.1 maximum permissible from Q to Q_t is $\pm 6\%$;
 - 1.2 maximum permissible from Q_t to Q_{max} is $\pm 2\%$ shall less than in temperature 40°C ;
 - 1.3 For the water meter level 1 shall have accuracy permissible use only water meter with a flow rate of more than or equal 100 cubic meters per hour ($Q_n \geq 100\text{m}^3/\text{h}$).
2. The permissible errors of water meter type 2 (level B) Are measure by Magnetic systems and propeller
 - 2.1 Maximum permissible from Q_{min} to Q_t is $\pm 10\%$;
 - 2.2 Maximum permissible from Q_t to Q_{max} is $\pm 4\%$ (shall less than in temperature 40°C);
 - 2.3 Shall apply the water meter with a flow rate of less than or equal 100 m^3 per hour ($Q_n \leq 100\text{m}^3/\text{h}$) and some time apply for water meter with a flow rate of bigger than or equal 100 cubic meters per hour ($Q_n \geq 100\text{m}^3/\text{h}$).

For water meter of both level are verify every 2years

Article 22. Permissible Measurement:

The permissible for actual water volume measurement shall be determined three flow rate as follows:

1. between Q_{\min} and $1,1 Q_{\min}$;
2. between Q_t and $1,1 Q_t$;
3. between $0.9 Q_n$ and Q_n .

the water meter with same size and shape are used same verification method, The pressure of each unit must not be less than 0.03 Mpa, verification period the temperature of water shall be in $20\text{ }^{\circ}\text{C} \pm 10\text{ }^{\circ}\text{C}$.

Article 23. Labelling and Marking

Each section of water meter shall be at least labeling and Mark on indicating clearly and permanently the labeling information shall be in Lao, in case foreign language is used the meaning shall correspond to that of Lao specified bellow:

1. Name or trademark of the manufacturer;
2. Name and address of the producer, factory, dealer;
3. Type of Water meter;
4. The measure level of water meter;
5. The Usual flow rate determine cubic meter per hour (m^3/h), pressure;
6. A reading point indicating the amount of water that meter can measure;
7. Code of water meter;
8. Year of produce;
9. The use instruction, Arrows point to the flow of water;
10. Storage instruction;
11. The accuracy marking of water meter;
12. The maximum pressure in pipe (bigger than 10times of pipe)

(The quantitative determination must be in accordance with the required units measurement of the Lao PDR)

Section 6 Restrictions

Article 24. Restrictions for Business Operations

Restrictions for Business Operations consist of:

1. To forge and adjust any instruments and equipment relevant to water meter;
2. To occupy, install the water meter that is not registered and verified by Metrology management authority;
3. To interrupt the performances of metrology verification and inspection authorities; To bribe and consort with inspection authorities;
4. To duplicate the certified document related to fuel dispensers;
5. To perform other duties that comply with regulations and laws

Article 25. Restrictions for officers and authority officers

Restrictions for officers and authority officer include as followed:

1. Authority officers are not allowed to perform their duties without assignment;
2. Authority officers shall perform their duties strictly;
3. To perform injustice and prejudice against individuals or organizations;
4. To bribe and use their duties for personal, family and relative benefit;
5. To forge, hold back and delay the documents of verification;
6. To perform other duties that comply with regulations and laws.

Article 26. Restrictions for Individuals and other Organizations

Restrictions for individuals and other organizations consist of:

1. To use the duty to interrupt and interfere the performance inspection authorities;
2. To advertise and promote the water meter that are not inspected correctly;
3. To make pollution to the environment and social;
4. To assist and protect the violators of this Decision;
5. To conceal and hide the violation that concerns to the regulations and laws;
6. To perform other duties that comply with regulations and laws.

Section 7

**Policies Towards Persons with
Outstanding Performance and Measures Against Violators**

Article 27. Policies towards persons with outstanding performance

Individuals and organizations with outstanding performance in cooperation, implementation the regulation and law related to metrology management or this Decision will receive the rewards or other policies as assigned by regulation and law.

Article 28. Other measures against violators

Any Individuals and organizations that violate this Decision shall be warned and subject to educational or disciplinary, fines, penal measures, compensations or punishment as any cases by regulations and laws.

Section 8

Final Provisions

Article 29. Implementation

Department of Standardization and Metrology, related departments and equivalent organizations are assigned to organize strictly and realistically implement this decision.

Article 30. Effectiveness

This Decision comes into effect on the date of its signing and after posting on Lao Official Gazette for 15 days. All registrations that are incompliant with this Decision must be cancelled.

Minister

Ministry of Science and Technology

Borviengkham Vongdala