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METROLOGY FORUM AND
WORKING GROUP MEETINGS**
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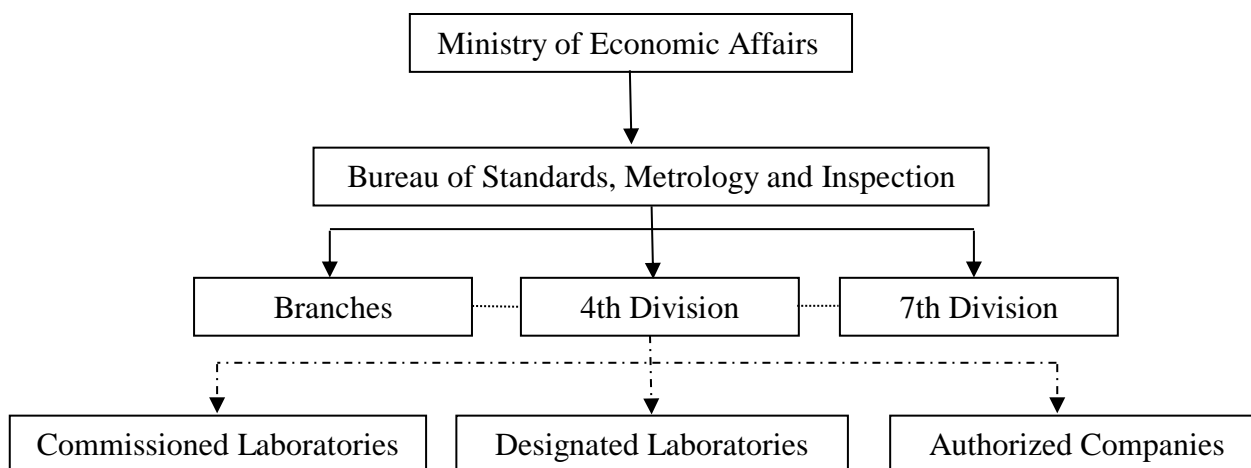
Economy Report

Chinese Taipei

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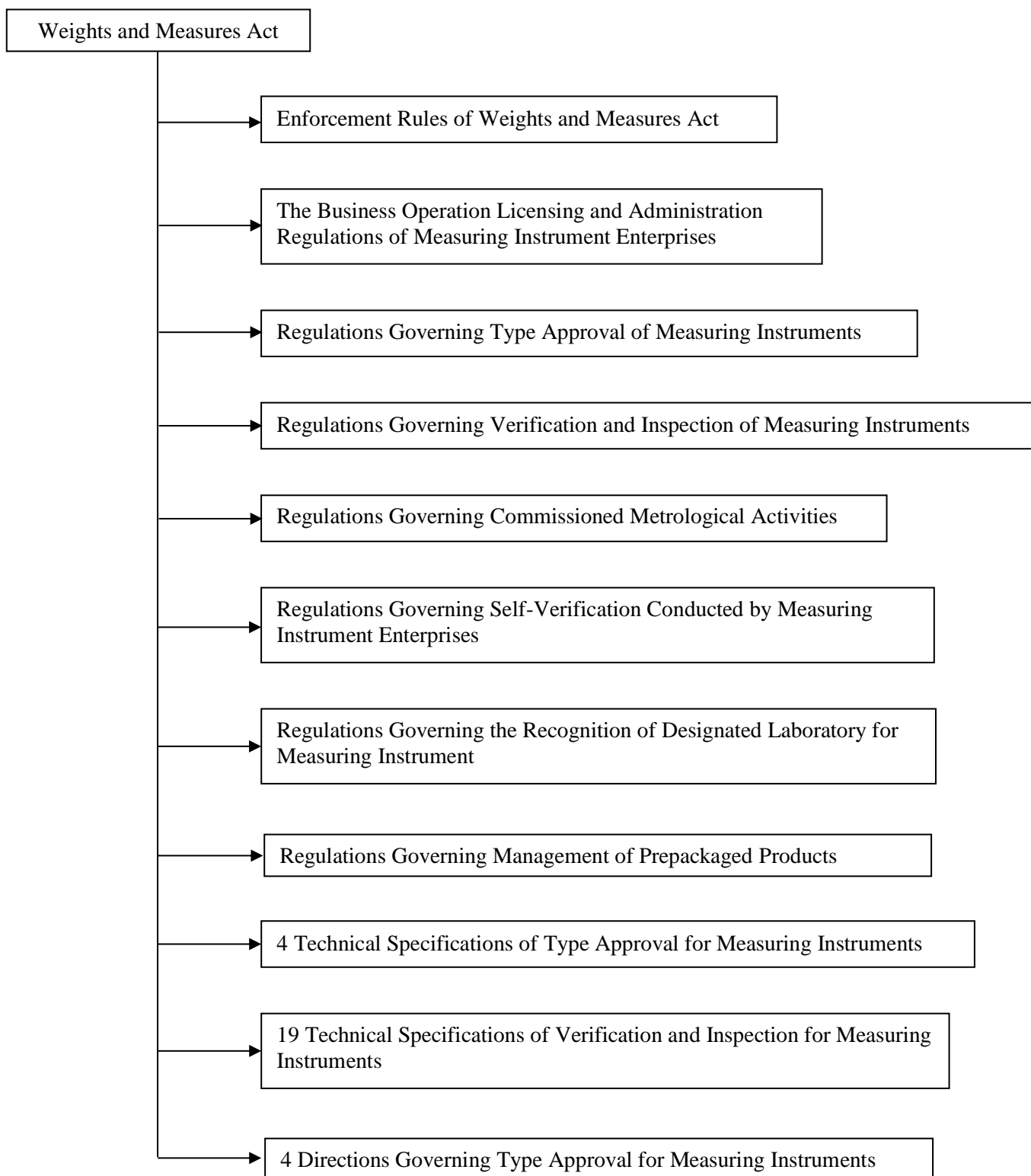
SECTION 1 – Organisation and structure for metrology

Organisation Structures



Organization	Bureau of Standards, Metrology and Inspection			
Director General	Dr. Ming-Jong Liou			
In Charge of	Scientific and Legal Metrology			
Specialty	Scientific Metrology			Legal Metrology
Organization	Center for Measurement Standards	Institute of Nuclear Energy Research	Chunghwa Telecom Laboratories	Bureau of Standards, Metrology and Inspection
Field	Physical and chemistry metrology	Ionizing radiation metrology	Time and frequency metrology	legal metrology policy and legal metrology affairs
Director	Dr. Tzeng-Yow Lin	Dr. Jin-Fu Lin	Dr. Wen-Hau Yang	Dr. Ming-Jong Liou
Location	Hsin Chu	Tao Yuan	Tao Yuan	Taipei

Legislative Frameworks



SECTION 2 – Key activities of 2017/18

Working with industry

Legislation Affairs

Regulations Governing Verification and Inspection of Measuring Instruments was amended and promulgated in May 2018. First major purpose of the amendment was to meet the practical needs of on-site verification operations such as allowing the dedicated weights and measures authority to utilize working standards prepared by private metrological firms while enforcing verification. The second one was to adjust the scope of oil meters subject to verification from “oil meters” to “oil meters provided for trading petroleum products” so that the new defined scope would be more specific for verification officials to follow.

Two technical specifications had been revised. The first one was the technical specifications of verification and inspection for electricity meters. New edition prolongs the validity duration of verification of static electricity meters from eight years to ten years, according to the result of a long term research program on electricity meters. The second one was the technical specifications of type approval for diaphragm gas meters. As the requirements of new edition, diaphragm gas meters shall bear the produced year so that the inspectors could easily realize when the meters shall be removed from service.

Examinations for Metrological Technical Personnel

Six examinations have been held in 2018, including two for Class A metrological technical personnel and four for Class B metrological technical personnel. Up to the date, 2,664 examinees passed the examination since the program was launched in 2010. And according to the weights and measures related regulations, verification technicians and their technical supervisors of

manufacturers or importers who are allowed to self-verify their own weighing and measuring instruments shall pass the examinations and get the certificates of metrological technical personnel issued by the BSMI. The same requirements are also applicable to those technicians and technical supervisors working in the commissioned organizations enforcing verification for the BSMI.

License

According to the Weights and Measures Act, enterprises engaging in operating the business of manufacturing, repairing or importing legal controlled measuring instruments shall acquire a license issued by the Bureau of Standards, Metrology and Inspection. While applying for a business license, the importers only have to submit basic documents, like application forms and company register documents. However manufacturers or repairers have to show the BSMI they are equipped with necessary reference standards and file related technical documents in addition to importers in terms of the law. And then the staffs of the BSMI will review their technical documents such as calibration reports prepared by the applicants and carry out on-site evaluation before a license being approved. Up to the end of August 2018, there are 1212 licenses having been issued, including 254 for manufacturers, 229 for repairers and 729 for importers.

The necessity of this measures is to be reviewed in future.

Self-Verification Scheme

One more category of legal controlled measuring instruments is authorized to be verified by private companies. By the end of March, 2018, only four categories of legal controlled measuring instruments are authorized to be verified by private companies, i.e. taxi meters, water meters and diaphragm gas meters.

Electricity will be the fifth category of measuring instruments that allowed to be verified by private companies from 2019. Every year the BSMI has spent US \$4,000,000 to do the verification job on electricity meters. But every year the staffs of the BSMI have trouble to get enough budget to pay expense for the verification. With the new measures, the BSMI would save near US \$1,000,000 every year. Meanwhile, the measures will also benefit private companies because they only need to pay one fifth ordinary verification fee and they have more flexibility in produce. On the other hand, in order to ensure the accuracy of the measuring meters verified by private companies, the BSMI implements a follow-up audit mechanism. Every year, the BSMI's staffs visit the private companies periodically.

In 2018, the BSMI have sent staff to private companies authorized to implement self-verification more than 24 times to do follow-up audit and sample verified meters for re-test.

Fee-Charging Standards for Measuring Instruments

National Metrology Institutes, including National Measurement Laboratory, National Radiation Standard Laboratory and National Time and Frequency Standard Laboratory, provide necessary and essential calibration services to domestic industries and even foreign industries. The calibration services do not only underpin applied metrology but also secure traceability and identify global conformity at the same time. When providing these calibration services National Metrology Institutes collect fees from these industries. And the BSMI annually reviews the cost structure of these fees and amends it when necessary in order to help industries ease their operating cost. In 2018, the BSMI has adjusted fees of calibration services on calibration system of Two Pressure Humidity Generator Measurement System, Vacuum Gauge Comparative

Calibration System, Total Luminous Flux System, Radiation Thermometer Measurement System, etc.

Protecting consumers

Voluntary Self-Management Measures on Gas Stations, Traditional Markets and Post Office

According to the Weights and Measures Act, the BSMI shall implement inspection against measuring instruments used for trade. However, during a specific period of time only a small portion of in-service measuring instruments used for trade has been actually inspected due to the limitation of sampling schedule and verification technicians workload. Therefore, the BSMI launched a program, named Voluntary self-management measures on gas stations, traditional markets and post offices, to encourage the owners or the operators of gas stations, vendors in traditional markets and post offices' employees to voluntarily do calibration and maintenance for their own measuring instruments so that accuracy of these instruments in these places could be kept even without being inspected by the legal metrology officials. When the candidate of the program meets the specific requirements requested by the BSMI, the BSMI will issue a certificate to the candidate. This self-management program is expected to enhance consumers' confidence when they buy gas or trade goods at these places. By the end of August, 1,505 gas stations and 256 traditional markets and post offices are granted by the BSMI and obtain the certificates.

Measurement standards that need to be equipped by private sectors that manufacture or repair legal controlled measurement instruments

To ensure the accuracy of legal controlled measuring instruments, the BSMI sets a criterion for manufacturers and repairs to equip necessary measurement

standards. A review program on the criterion had been proceeded by end of August , 2018. The program aimed to meet the change of technology innovation.

Major projects - What we did and what we learned

Training

By the end of August, 2018, four sessions of training programs on different topics were held by the BSMI. These training programs were mainly focusing on strengthening verification skills for those in need. These training courses were not only opened to verification officials from the BSMI but also to metrological technicians and supervisors from industries who had have passed the aforementioned examinations of metrological technical personnel.

World Metrology Day

The definition of the base unit of mass (kilogram), electric current (ampere), temperature (kelvin) and amount of substance (mole) under the International System of Units (SI) will undergo a drastic revision in the near future! Under this backdrop and the celebration of the World Metrology Day, the Bureau of Standards, Metrology & Inspection (BSMI) held a symposium “2018 World Metrology Day—International Trend of Metrology” on May 21, 2018.

SECTION 3 – Future focus

New initiatives planned (next 1-2 years)

Harmonization measuring instruments subject to license required and subject to verification

According to the Weights and Measures Act, enterprises engaging in operating the business of manufacturing, repairing or importing legal controlled measuring instruments shall acquire a license issued by the Bureau of Standards, Metrology and Inspection. Currently, there are 18 categories of measuring instruments subject to legal controlled which defined in the Enforcement Rules of Weights and Measures Act. On the other hand, there are 19 types of measuring instruments subject to verification which defined in the Regulations Governing Verification and Inspection of Measuring Instruments. The scopes defined in two statutes are quite different. For example, pressure gauges belong to legal controlled measuring instruments. But among pressure gauge, only blood pressure gauges are subject to verification.

In order to tackle the situation mentioned above, the BSMI amended Article 2, of the Enforcement Rules of the Weights and Measures Act. This new provision focus on the process of harmonization the difference between Enforcement Rules of Weights and Measures Act and Regulations Governing Verification and Inspection of Measuring Instruments more easily for the BSMI in the future and make the following amendment in the future .

Now the BSMI is announcing the proposed categories and scopes of weighing instruments and volumeters, basically the same as the ones defined in the Regulations Governing Verification and Inspection of Measuring Instruments, at the first stage on August 2, 2018. And the BSMI will gradually harmonize the scopes and categories of other legal measuring instruments defined in these two regulations.

Review on Regulations Governing Type Approval of Measuring Instruments

As the new requirement on the lead content on cold potable water, laboratories that conduct the test on the material used for the housing of water

meters will be encouraged to be accredited by third party so that the test reports issued by those laboratories will be accepted by the BSMI for applying for type approval for water meters. Moreover, the requirements for prolong the validity of the certificate of type approval also amended, a specific time frame was set for the owners of the certificate of type approval to apply for prolong the validity.

Rotary type gas meters subject to verification

There are several types of gas meters available for measurement but only diaphragm gas meters are subject to verification. The issue taking legal measures on rotary type gas meters has been emerged lately. The new measures will be focus on verification. Type approval on rotary type gas meters could be implemented in coming future.