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ACTIVITIES OF STANDARDS ORGANISATION OF NIGERIA

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Abstract – Standards Organisation of Nigeria (SON) was established by Decree No. 56 of 1971, and with three amendments in 1976, 1984 and 1990, the body corporate, has the sole responsibility for National Policy on Metrology, Standards, Testing and Quality Control (MSTQ).

SON is the custodian of all product, process and metrology Standards in Nigeria.

The Organisation is governed by Standards Council but the day – to – day running of the Organisation rests on the Director General/Chief Executive

The following Directorates exist in SON

1. Standards
2. Quality Assurance
3. Laboratory
4. Metrology
5. Technical Services
6. Human Resources
7. Finance and Supplies
8. Legal

The Organisation is an active member of African Regional Organisation for Standardisation (ARSO), member of the Codex Alimentarius Commission, which is the Food Standardisation Organ of the United Nations Food and Agriculture Organisation (FAO) and is also a member of the International Organisation for Standardisation (ISO).

SON is also an intending member of the World Standards Services Network (WSSN) and International Electro – technical Commission (IEC).

The Organisation participates fully in the programmes and activities of international bodies and appropriate UN agencies, in particular, UNIDO and UNICEF, in the interest of Nigeria.

SON is an intending member of Southern African Development Co-operation in Measurement Traceability and Legal Metrology (SADCMET and SADC MEL).

SON is putting every thing in place to establish an instrumentation centre to ensure the maintenance of measuring and test equipment in all SON laboratories and outside customers.

The centre is intended to serve the entire West African region where no such centre exist presently.

An inventory of measuring and test equipment in Nigeria has been established in SON which is regularly updated.

The compilation of this inventory had revealed that a lot of equipment are unserviceable, hence the need for this centre.

This centre is highly necessary due to the increasing use of new sophisticated technologies in production which calls for traceable measurements with known uncertainties, more so, in this WTO era of free trade policies.

Calibration (traceable to known standards) of measuring and test instruments gives assurance that measured values are reliable.

In ensuring the provision of adequate calibration services to the Nigerian nation, SON is in the process of acquiring a mobile calibration laboratory to ensure traceable measurements. This is prior to the metrology lab proposed for Abuja in Nigeria.

The instrumentation centre will render a big support service to the metrology laboratories.

The establishment of this centre is being assisted by UNIDO which engaged technical experts from Hungary to fashion out adequate strategies and methods and give the required technical support.

Personnel requirements for the centre have been identified and implemented.

Three electronic engineers have been recruited for the take – off of this centre.

One electronic engineer will maintain the electronic database of all equipment available in Nigeria.

There will be two (2) repair engineers for the centre for the initial take – off.

The specifications for hand tools and instruments required in the centre have been given to SON by the technical expert and these items have been purchased.

Preliminary training on use of hand tools and instruments had been given to some engineers in SON by the technical expert who came to Nigeria for the initial assessment of facilities.

Adequate rooms have been designated in the Engineering Laboratory Building of SON for the centre.

1. BASIC INFORMATION

The Nigerian Standards Council

Standards Organisation of Nigeria (SON) was established by Decree No 56 of 1971 and charged with the responsibility of developing and enforcing product and process standards. The Organisation has remained the fulcrum of Metrology, Standardization, Testing and Quality Control (MSTQ) activities at the national and international levels in our national interest. SON is the custodian of international and national standards in Nigeria.

Decree No 20 of 1976 which amended the previous one conferred on the Honourable Minister of Industry the power to declare mandatory Industrial Standards in respect of products or processes recommended by the Nigerian Standards Council.

Decree No 32 of 1987 changed the name of the Organisation to Standards Organisation of Nigeria (SON) from Nigerian Standards Organisation (NSO) to eliminate conflicting identity with the then Nigerian Security Organisation.

Finally, the Decree No 18 of 1990 conferred on SON partial autonomy from the Ministry of Industry. With this amendment, SON became a body corporate with a common seal and may sue or be sued in its corporate name.

The high points of the amendments are;

There is strict enforcement of powers of seizure, confiscation and destruction of sub-standard products, including powers to seal up premises where defective products are manufactured or stored.

Severe penalties for offending manufacturers, importers and sellers of Sub-standard products were also provided for in the Decree. The elevation of the Chief Executive from Director to Director General.

(c) The appointment of the Chief Executive is done by the President and Commander – In – Chief of the Armed forces of the Federal Republic of Nigeria on the recommendation of the Honourable Minister of Industry.

The Nigerian Standards Council is the governing body of Standards Organisation of Nigeria (SON) established by section 3, subsection 1, of Decree 56 of 1971.

The function of the Nigerian Standards Council, amongst other things is to advise the Federal Government generally on the national policy on standards, Standards Specification, Quality Control and Metrology.

The statutory functions of SON amongst other things are to establish and compile Nigerian Industrial Standards and to ensure reference standards for calibration and verification of measures and measuring equipment. The certification of Quality and Environmental Systems is the responsibility of SON in Nigeria.

FUNCTIONS OF SON

The statutory functions of SON include;

- (a) To establish and compile Nigerian Industrial Standards.
- (b) To compile an inventory of products requiring standards
- (c) To ensure reference standards for calibration and verification of measures and measuring equipment.
- (d) To undertake investigations as necessary into the quality of facilities, materials and products in Nigeria, and establish a quality assurance system including certification of factories, products and laboratories
- (e) To organise test and do everything necessary to ensure compliance with standards designated and approved by the Council.
- (f) To develop methods for testing of materials, supplies and equipment including items purchased for use by departments of Government of the Federation or state and private establishments.
- (g) To register and regulate standard marks and specifications
- (h) To compile and publish general scientific or other data.
- (i) To undertake preparation and distribution of standard samples.
- (j) To undertake Quality and Environmental Management System Certification.
- (k) To provide awareness training on Quality Assurance activities in Nigeria.
- (l) To ensure that all products manufactured in Nigeria or imported from abroad conform to the relevant standard specifications.
- (m) To co-operate with corresponding national and international Organisations with respect to MSTQ and harmonization of standards.
- (n) To undertake inter-comparison of metrological results with other countries as a way of encouraging free trade.

In order to discharge its duties adequately and effectively, SON has been structured into various directorates, departments and units.

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The Directorates are:
Standards, Quality Assurance, Laboratory Services, Special Services

The Departments are:

Standards

Engineering, Science, Metrology, International Co-operation Collaboration,
Library Services

Quality Assurance

Science, Engineering, Metrology, Quality Activities in the zones

(c) Laboratory Services

Engineering Laboratory, Metrology Laboratory, Textile Laboratory, Science

(d) Special Services

Product Registration, Ports/Borders Operation, Training, Customer Complaints/Collaboration, Quality System Certification/Accreditation, Internal Training, Vehicle Maintenance Services, Communication, Publicity and Marketing, LPG Vessels Certification

The Support Directorates include:

Human Resources, Finance and Supplies, Legal

1.1 METROLOGICAL FACILITIES AND CALIBRATION

Metrological facilities are being gradually developed in SON under the UNIDO integrated Programme. This programme commenced with skeletal training of personnel on some fields of measurements in various parts of Europe. The project document for the laboratory, which is to be located in the capital city, Abuja has been written by the UNIDO Consultant and approved by UNIDO.

The setting up of the laboratory infrastructure is the responsibility of the government of Nigeria but yet to commence. While the establishment of the laboratory in Abuja is being awaited, SON carries out skeletal calibration services from the operational headquarters in Lagos and the engineering laboratory in Enugu with low accuracy standards. These are in the fields of mass, volume, temperature and pressure.

The calibrations are carried out using the following metrological standards being maintained;

- (a) Standard weights: 1gm to 20kg of class m1
- (b) Standard flasks made of glass 0.5 litres to 5 litres.
- (c) Precision digital thermometer
- (d) Standard pressure gauges

The metrological development in SON is quite low and slow. This is mainly due to non provision of funds by the government. This has made it almost impossible to carry out metrological measurements in the numerous industries, laboratories, universities, research institutes and other numerous Organisations where they are required. In order to render calibration services to the industry as well as carry out the legal metrology activities in the remote areas of Nigeria, which is not included in the UNIDO Integrated Programme, SON considered it advantageous to procure a vehicle with built – in calibration equipment and operate it

as Mobile Calibration Service. The process of acquiring the mobile calibration facilities is going on now.

The vehicle has been designed to have the following features; Minimum power output of 90kw; Minimum load carrying capacity of 7.5 tons; Sleeping cabin for 2 people; Air conditioning system for laboratory area and sleeping cabin; Rigid work tables firmly installed; Power supply stabilizer 220 V, 50 Hz, 10 k VA; Tool set

The modules proposed for the Mobile Calibration Service include;

Mass measurement

Volume/Flow measurement

Dimension measurement

Pressure measurement

Force measurement

Temperature measurement

Electrical measurement

Viscosity measurement

The project will be completed in 2003.

1.2 REGIONAL CO-OPERATION IN METROLOGY

It is the resolve of SON to establish and maintain a strong co-operation in metrology with other regions of Africa. This is to harmonise and rationalize our policies and strategies with other regions of Africa and the world for sustainable development. This has been manifested in our determination to become an associate member of Southern African Development Community Cooperation in Measurement Traceability (SADCMET) and Southern African Development Community Cooperation in Legal Metrology (SADCMEL).

It implies that SON will have co-operation with Angola, Botswana, Democratic Republic of Congo, Lesotho, Malawi, Mauritius Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, and Zimbabwe in the area of metrology when admitted. Other associate members, which will also co-operate with SON are Egypt, Kenya, Ethiopia and Uganda. SON has also participated in metrological activities of Kenya Bureau of Standards, PTB, especially in the training programmes.

It is hoped that inter-comparison of measurements with other National metrology institutes will be given adequate priority when we fully commence the mobile calibration service. SON signed a Memorandum Of Understanding (MOU) with the National Metrology Laboratory (CSIR) of South Africa in August, 2002. The areas of agreement include, training, provision of equipment, exchange of expertise, exchange of standards, inter – comparison of measurements, etc.

1.3 INTERNATIONAL CO-OPERATION AND RECOGNITION OF MEASUREMENTS AND CALIBRATIONS

SON is an active member of the International Organisation for Standardisation (ISO) and African Regional Organisation for Standardisation (ARSO).

The Organisation is also a member of the Codex Alimentarius Commission, which is the Food Standardisation Organ of the United Nations Food and Agriculture Organisation (FAO).

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The measurement standards procured for all the modules of the mobile calibration service are traceable to the National Metrology Laboratory (NML) South Africa, which is internationally recognized. The procedures for calibration in SON are standard and tested procedures which are internationally used in National Metrology institutes, like PTB, NML, KBS, NPL, etc.

Metrologists in SON are competent in terms of training, skill, experience and expertise. All metrological activities in SON are in line with requirements of international standards.

2. MEASUREMENT SUPPORT SERVICES: TRAINING, MAINTENANCE, REPAIR, AND CALIBRATION

Measurement is the act of measuring, which is the way of discovering exact size, amount and characteristics of things encountered in all fields of human endeavour. Measurements are encountered in the fields of medicine, engineering, physical sciences, arts, culture, music, commerce, agriculture, education, communication, etc.

The safe operation and effectiveness of measuring instruments need support services. These support services are essential to ensure that reliable measured values are obtained. The basic support services needed for adequate and effective use of measuring instruments are training, maintenance, repair and calibration.

2.1 TRAINING

Training is generally given a high priority in SON. Training is carried out in areas of Quality Assurance, Testing, Standards development and Metrology. The Organisation has trained engineers in various fields of measurements which afforded them the skill and expertise in selection of appropriate measuring methods and correct use of measuring equipment. It cannot be expected from even the most prominent experts working in various fields of

profession to solve every diversified new measuring tasks that may arise in their fields of activity in an expert – like manner. In view of this, training and retraining are given in different specific areas of measurements in SON to satisfy the metrological needs in Nigeria and keep experts abreast of technological developments.

Metrologists in SON were trained in PTB, Germany; KBS, Kenya; NML, South Africa; NWML, United Kingdom; NMI, Holland and OIML, France.

2.2 MAINTENANCE AND REPAIR

One major problem facing SON and Nigeria in general is the absence of an adequate Instrumentation Support Service Center in the country. Measuring and test instruments must be maintained for optimum performance. The best quality instruments and equipment at the most professional operation can get faulty. That is why their operation demands regular maintenance and repair. The absence of an adequate Instrumentation Support Service Centre in Nigeria has rendered hundreds of analytical equipment unserviceable. The compilation of an Inventory for measuring and test equipment available in Nigeria has shown this.

Such equipment which are unserviceable are; Spectrometers, Universal Testing Machines, Refractometers, pH meters, Spectrophotometers, electronic loading balances, viscometers, weighbridges, gas chromatographs, etc. In view of the above listed problems, SON has commenced the establishment of an Instrumentation Support Service (ISSC) Centre with the assistance of UNIDO. This project was kicked off with the visits of technical experts, Mr. A. Menyhard and Mr. J. Lakinger from Hungary.

Requirements for the establishment of the ISSC were stipulated by the experts.

These include;

- (i) The provision of rooms, furniture and facilities, which have been completed.
- (ii) One electronic engineer for the Instrument Registry; already done.
- (iii) Establishment of an Instrument Registry. SON is awaiting the second visit of the experts to give training on the establishment of the Instrument Registry.
- (v) The tools, measuring instruments and consumables required were also listed. They include 41 different types of hand tools ranging from allen key sets, adjustable wrench, bended tweezers etc; measuring instruments like; oscilloscope, millimetres, logic checkers, etc and various consumables. Most of the tools and instruments have been purchased by SON.

Preliminary training on use of tools was given to SON engineers by Mr. J. Lakinger during his first visit. A comprehensive training programme has been arranged during the second visit of the technical expert.

It is the resolve of SON to commission this centre in 2003 which will serve as a regional ISSC for the West African Region. To ensure effective National Calibration

Scheme by SON, adequate training programme and highly efficient Instrumentation Support Service Centre must be in place.

3. CONCLUSION

Metrological infrastructure in SON have not fully developed as expected of a big country like Nigeria. This is due to inadequate resources.

The management of SON is doing everything possible to harness the available resources and improve the metrological infrastructure in Nigeria to further improve confidence on the technical assessment of the various

products in Nigeria and for export products in particular, in order to ensure satisfaction for the Nigerian and external consumers.

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