

MEMORANDUM SUBMITTED BY DEPARTMENT OF PETROLEUM RESOURCES (DPR) TO THE JOINT HOUSE COMMITTEE ON PUBLIC HEARING ON PETROLEUM INDUSTRY BILL (PIB) . A RESPONSE TO THE KENNEDY C. AMOS AND ASSOCIATES PETITION ON WEIGHTS AND MEASURES - DPR CONFLICT

KEY NOTE

Measurement is segmented according to error traceability. The first level of measurement is the most accurate measurement made using the gravimetric measure. This is undertaken by the World's Measurement body – The “International Standard Organisation (ISO)” The second level is the primary measurement undertaken by the National Laboratories like the National Institute of Standards and Technology (NIST) in USA or the NEMAS in the United Kingdom. The third level of measurement is the operational measurement carried out using reference measures certified by the National Laboratories. In Nigeria, the Weights & Measures would handle the second level of Measurement while the DPR handles the third level of measurement.

“Nigeria will be in a world of its own if she has a Department that handles all measurement issues above including actual measurements for all the industries.” This is not possible! Measurement is not limited to the Petroleum Industry alone. Other areas of measurement exist such as electricity, communication, nuclear energy, etc.

It is known that Weights & Measures is not involved in measuring the petroleum down-hole resource at 10000 feet depth, determining fluid and flow characteristics, proving of instruments that measure pressure and temperature that are essential in the computation of petroleum volumes, and development of tables that compensate for temperature and pressure effects.

SUBMISSIONS

The Department of Petroleum Resources (DPR) derives its statutory responsibilities to supervise and monitor operations of the industry from the various laws and regulations guiding the industry.

The following are the reference laws and regulations guiding the industry:

- (i) Petroleum Regulations 1967 CAP. P10 LFN 2004
- (ii) Petroleum Act 1969 CAP. P10 LFN 2004
- (iii) Petroleum (Drilling and Production) Regulations 1969 CAP. P10 LFN 2004

By virtue of the provisions of the above Act and the Regulations, the DPR has the mandate to ensure that all operations – seismic acquisitions, well drillings and completions, crude oil and natural gas production, measurements, transportations through pipelines, exports through the terminals and jetties, refining, products distribution and retails, etc – are carried out in accordance with Nigerian Laws and international standards. DPR is the only Agency of Government empowered to issue certificate of quality and quantity for all products leaving the export terminals where its staff supervise operations 24 hours everyday.

In line with the above mandate, the DPR has well trained professionals at all levels to monitor these operations to ensure unimpeded safe and acceptable operations.

DPR, though a one bus-stop for monitoring of the activities of the petroleum industry, did not shut its doors to activities the laws empowered Weights and Measures to perform.

However, in recent times, the Federal Ministry of Commerce through her Weights and Measure Division has taken actions that tend to duplicate activities of the DPR in the petroleum industry. This is causing a lot of confusion, as the different Agencies have tended to issue conflicting directives on the same issues to operators, with attendant feeling in the industry that there is nobody in charge. A few of the actions taken by the Weights and Measure Division are as follows:

(a) **CLOSURE OF PETROLEUM PRODUCTS RETAIL OUTLETS:**

The Weights and Measure Division (Division) has been going round the country closing down petroleum products retail outlets on the excuse that the pumps of the stations were under-dispensing products. These uncontrolled actions have tended to create artificial scarcity of the products.

The officers have based their actions on the provisions of the Weights and Measure Act CAP. W3LFN 2004, Sections 7, 14 and 30. These sections grant the power of **verification and certification of measuring instruments used for trade and other dealings in Nigeria** to the

Weights and Measures. This does not imply carrying on measurement in day to day activities of companies.

It is pertinent to note that Weight & Measures is like the National Bureau of Standards of USA or NEMAS of UK whose responsibility it is to verify and certify the accuracy of reference measures in the industry.

While conceding filling station meter verification responsibilities to the Division because we consider it as assistance to DPR, the provisions of the law do not empower the closure of retail outlets to Weights and Measures rather it allows sealing of mal-functioning meters and the regular verification of meters to ensure proper functioning. Where any mal-functioning meter is detected, the operators are directed to carry out maintenance repairs and invite the Division for re-certification and authorization to put the meter back to use. This was the understanding DPR had with Weights and Measures in the eighties to accommodate its operations since it would derive revenue from certification of the meters.

On the other hand, Sections 4 (1) of the Petroleum Act empowers DPR to license Petroleum products retail outlets., while Section 8 (f) empowers DPR to **direct in writing the suspension of any operations where in his opinion the contravention of the Act or any Regulations made there-under** has been or may have been or is likely to be committed. **Section 8 (1) (a) of the Act gives the Director of Petroleum Resources general powers of supervision over all operations carried on under license and leases granted under the Act.**

Section 6 of the Act empowers the Minister of Petroleum Resources to publish an order in the Federal Gazette fixing prices at which petroleum

products may be sold in Nigeria. **There are also provisions in the Act for revocation of licences, powers of arrest and powers of the courts to impose penalty plus forfeiture of the products of the persons convicted for breach of the Petroleum Prices Order.** Selling a lesser volume or weight of the products than that prescribed in the Order at the fixed price would contravene Section 6 of the Petroleum Act. In this case the weight of the product can no longer be related to the fixed price.

The most practicable administrative machinery of implementing the DPR's powers under **section 8(f) of the Act (i.e. to direct in writing suspension of operations for breach of the prices Order)** is to display or place notice of "put out of use" on the faulty meter as warning to the public that the meter at the station is faulty and its use has been suspended. A written directive to this effect is communicated to the operator of the station. Faulty meters are detected by carrying out measurement test at the station by the DPR officers in order to relate the volume of the product sold to the price of the products.

DPR recognizes the role of Weights and Measures in certification of measures which is why the measuring cans used by DPR are certified by it. No fee is charged by DPR in the process. The power to arbitrate vested on the DPR makes necessary that it knows the efficiency of working meters to prevent cheating of the public. We state here that the measures (cans) certified by Weights and Measures for this exercise does not give real volume of product dispensed but gives indication that the meter is efficient as temperature correction is not effected. The result only aids arbitration role of DPR. If Weights and Measures has not shown competence in proving meters, DPR has companies accredited by it for the purpose. DPR is not competing with Weights and Measures in

certification of meters. DPR simply supervises the exercise to ensure that it is properly handled.

DPR, in course of meter verification at station can put a mal-functioning meter out of use. If the licensee rectifies the meter using Weights and Measures or other company accredited by DPR, DPR removes the put out of use sticker. The only conflict with Weights and Measures is that it wants to remove stickers on DPR identified Mal-functioning meters without informing DPR.

(b) CRUDE OIL MEASUREMENT AT CUSTODY TRANSFER POINTS:

The fiscalisation of crude oil, condensates, natural gas and the liquids, and petroleum products for export at the terminals and jetties is the sole responsibility of the DPR by virtue of the provisions of Sections 52 (1) (a) and (b), (2) and (3) of the Petroleum (Drilling and production) 1969 CAP. P10 LFN 2004, which empowers the Director of Petroleum Resources to approve the method or methods by which all crude oil won and saved, casinghead petroleum spirits recovered from lease areas and all natural gas sold are to be measured.

In addition, the DPR is granted the right to authorize its officers to be present whenever any such measurements or weighing takes place. It also authorized the DPR to appoint its officers to be present when an equipment or appliance for measuring or weighing crude oil or gas is being calibrated, tested, compared measured or weighed against a standard approved by the DPR and any such calibration shall be in accordance with accepted methods and procedures previously agreed to by the DPR. Other provisions of this Regulation as it relates fiscalisation

of crude oil and natural gas and calibration of equipments are in sections 52 (4)(a) and (b), (5) and (6). All these list the responsibilities of the DPR during the repairs, maintenance etc and on the regularity of calibration and tests of any measuring and weighing appliances.

Part 5 section 51 (2) of the Petroleum (Drilling & Production) Regulation 1969 CAP 350 says “The Director of Petroleum Resources or an officer authorized by him shall have the right to be present whenever such measurement or weighing takes place.”

Part 5 Section 51 (3) of the above Regulations says “The Director of Petroleum Resources or any other officer authorized by him shall at all times be present when an equipment or appliance for measuring or weighing crude oil or gas is being calibrated, re-calibrated, tested, compared, measured or weighed against a standard approved by the Director of Petroleum Resources and any such calibration shall be in accordance with accepted methods and procedures previously agreed to by the Director of Petroleum Resources”

Part 5 Section 51 (5) says “The licensee or lessee shall not repair, maintain or make any alterations in the measuring or weighing equipment or appliances or in the method or methods of measurements or weighing approved by the Director of Petroleum Resources without first informing the Director of Petroleum Resources or his representative; and in every case, any such repairs, maintenance or alterations shall be carried out in the presence of the Director of Petroleum Resources or his representative”

Part 5 Section 51 (6) says “The Director of Petroleum Resources or his representatives shall have the right to specify the frequency at which all measuring and weighing instruments shall be calibrated or tested, and notwithstanding any such specifications may test or demonstrate the accuracy of any appliance or equipment at any time, with or without any notice to the licensee or lessee”

In order to professionally accomplish the above tasks, the DPR has well trained and experienced technical officers at all the crude oil, natural gas and petroleum products production and export locations to carry out these statutory responsibilities as and at when appropriate. In addition the operating companies have expended several millions of Dollars to install state of the art and internationally accepted measuring equipments at all the export terminals, which are used in accordance with the well-acclaimed “Procedural Guidelines for the Determination of the Quantity and Quality of Crude Oil and Petroleum Products at Custody Transfer Points” issued by the DPR. This Guide makes provisions to guide against any loss to the nation and crude oil buyers in the process of the measurement of the quantity and quality of crude oil, natural gas and products for export. There is therefore no reason to duplicate these facilities through the installation of another set of measuring equipments at the same locations to be run by another body.

Neither DPR nor Weights and Measures is supposed to carry out direct measurement at export points but DPR has the responsibility to monitor and supervise the measurement in accordance with the provisions of Petroleum Laws and Regulations.

On the issue of encroachment, a meeting was held in May 2005 between the ministry of petroleum resources, ministry of commerce, weights and measures division and the department of petroleum resources. The meeting agreed that Section 11 of Cap 467 LFN 1990 of Weights and Measures which allows Weights and Measures inspectors to carry out inspections and testing of any measuring instruments, including instruments being used in measuring petroleum products clashes with the provisions of the Petroleum Act Cap 350 of 1990 that equally confers corresponding powers and duties on the DPR. In this context of the two Acts, DPR cannot be said to be encroaching on the functions of the Weights and Measures Division. In fact DPR is backed by more Acts of the laws to claim that weights and measures division is encroaching on its functions going by Section 4 for read along with Section 8(h) of the Petroleum Act 1967, Sections 37 (r) and (w) of the Petroleum Regulations (Act 1967) and Section 10 (1) and (2) of interpretation Act cap 192 of LFN 1990.

The petitioner or Weights and Measures appears to have gotten a lot of issues wrong. DPR is only a technical regulator and has no commercial interest in all product sales. One wonders how the nation lost =N=555 Billion not accounted by DPR. DPR even derives no fee for its activities at the terminals.

The petitioner talked of non participation of Weights and Measures in measurement of crude oil and gas products in the past 8 years as if it ever participated before then. Measurement of product quantities at some terminals is not with meters but by physical dipping of tanks and use of specific parameters to compute volumes as in the procedure guides approved by DPR. If there are no meters, what would Weights and

Measures verify? The meters presently being introduced at the terminals, act as back-up.

Measurement is industry specific and technology driven. Meters in use differ from operation to operation. Companies in the industry are from different back-grounds and select meters to suit their operations with DPR approval. These meters involve high-tech designs and only providers dictate proving methods. It is surprising that Weights and Measures that solicit assistance of DPR in training its staff on industry meter activities now claims competencies in proving all meters in the industry. the truth of the matter is that the industry is dynamic and so are the operations. The technologies in use are not domicile in the country and serious training is required to catch-up. It either one knows it or one does not know it. Since DPR had advised Weights and Measures to start with training its staff at PTI to leverage it into basic petroleum industry measurement. Knowledge of the product is required in determination of volumes/quantities.

The petitioner talked of 2 pre-shipment companies brought in by the Late Gen. Abacha's administration that were paid millions of dollars without telling the world what value they added. The companies ended up collecting data from DPR and making away with the country's money. DPR is on top of its activities at the terminals as no product has been lost through the terminals. Crude loss from crude lines before it gets to the terminals a police issue as DPR does not monitor crude quantities in pipelines.

'Nigerian factor' cited as DPR interest in carrying out its functions at terminals is not there as DPR does not interact with crude oil or product buyers since the business is by letter of credit.

PIC or NPI relating to DPR simply aims at repositioning DPR to function effectively and efficiently.

If not for petro-dollar, the Division might have left petroleum industry as it is not bothering PHCN, communication industry, industries in radiation measurement, etc. Electricity and air-time meters would have kept the Division really busy as they affect more people if the Division's concern is genuine.

To verify meters at the stations may be 'lucrative' to Weights and Measures which generate revenue in doing so and not to DPR since DPR does not charge any fee for the exercise.

PRE-SHIPMENT INSPECTION OF EXPORT ACT OF 1996

Contrary to the claim of the petitioner, Barrister Kennedy C. Amos (Snr), the Pre-shipment Inspection of Export Act Of 1996 did not exclude DPR from measurement of crude oil at the Terminal. Rather the law further reconfirm the role played by the DPR by preserving its functions in Section16 (1) which provides that DPR, the Quarantine Division of Federal Ministry of Agriculture, Standard Organisation of Nigeria and NAFDAC shall continue to carry out their specific pre-shipment inspection functions which had hitherto been carried out prior to the

coming into force of the Decree. Weights and Measure Division was not at all recognized by the Decree.

The distinguished members of this Honourable Committee are invited to note the followings:

- **DPR has arbitration role to play in seller-consumer activities at petrol stations and it is ideal for DPR to be sure of dispensed volume to relate it to price, which is why DPR officers randomly verify dispensed volumes in relation to price displayed.**
- **Weights and Measures Division has no business with prices of products. The meter may be accurate without the volume tallying with the approved price.**
- **Mechanical systems can mal-function at anytime. When Weights and Measures Division discovers a mal-functioning meter/pump, it has right to seal it but not to seal the entire station. This is just the area of conflict as the interest of Weights and Measures is to seal a station when a mal-function pump is discovered**
- **The station as licensed by DPR can still sell products through other efficient meters/pumps.**
- **Even when all the pumps are sealed for mal-functioning, the stations can still sell lube oils and run its motor servicing business.**
- **DPR, in course of spot checks on meter/pumps, puts mal-functioning meter/pump out-of-use to alert the public.**
- **DPR removes its seal if Weights and Measures certify the meter/pump after repairs by accredited company or confirms the lapse has been rectified.**

- Another area of conflict with Weights and Measures is that it would want to remove DPR seal when meter/pump sealed by DPR is repaired and the department is called to certify it.
- **DPR accounts for its seals and the proper thing to do is for the dealer of the station to alert DPR that meter/pump has been rectified and certified by Weights and Measures Division. With such notice DPR reconfirms and removes its seal and update its records.**
- **Metering is not all that is done at the station and one wonders why Weights and Measures Division would claim sole responsibility at station's operations when it did not license it.**
- **Only DPR that licensed the station can seal it for violation of fundamentals that made the licensing possible.**
- **Even when weight and measures do its job well, DPR will still need to confirm measurements at stations from time to time to ensure that the volume/price measurement tally, to be confident in its arbitration function.**
- **As said earlier, DPR uses measures certified by Weights and Measures for confirmation of pump discharges at filling stations.**
- **DPR does not charge any fee when it randomly checks meter accuracy.**
- **Only DPR is authorized by law to enforce prices in the stations using the power to revoke operating licenses.**
- **During price changes and in normal of petroleum products selling operation, need to confirm volumes arise.**
- **Weights and Measures deal with certification of reference weights and measures and do not engage in actual weighing and measurement of products in companies' day to day activities.**

- **There is serious doubt if the Division can even weigh or measure values in some science, communication and engineering fields.**
- **Radioactive emissions, air-times in communications, protons, electrons, neutrons, charges, electricity, multi-phase fluids flows etc. are measured in different fields.**
- **Fluids can be measured by flow-rates in relation to diameter of pipelines without recourse to meters knowing the type of flow, temperature and pressure.**
- **No law could have targeted a department to specialize in all fields' measurements. That is why Weights and measures Division is not seen in meter certification in power and communication sector measurements. Otherwise, GLO, MTN, ZAIN, etc would depend on weights + measures for determination of air-time for tariff measurement.**
- **Also measures for blood and laboratory analysis are not handled by weights and measures,**
- **Measurement activities will slow down if one department is depended upon.**
- **DPR is only interested in accuracy of measurement to ensure consumers are not over charged and uses standard measures certified by Weights and Measures for volume verifications.**
- **These measures from Weights and Measures only give volume of petroleum products at without compensating for temperature effect as volume changes with temperature.**
- **The certified measures of Weights and Measures only give idea of volume dispensed. The measure used cannot give the actual volume since the effect temperature is not compensated. To get the**

actual volume, API table is used to standardize the volume at 30 °C.

- To be accurate, measures certified by Weights and Measures Division should indicate volumes at temperatures of different times of the day since volumes of products vary with temperature.
- DPR has never prevented Weights and Measures from checking accuracy of meters at stations as the Division would generate revenue from the process.
- There is no law mandating Weights and Measures to certify volumes of tanks or carry out actual measurement.
- Meters may not be needed at co-mingling points in pipelines carrying multi-phase fluids.
- Diameter of pipes, flow rates, densities and types of products and sensors are in place for the type of measurements required.
- Meters for fiscal measurements are selected during project designs not participated by weights and measures.
- Calibration laboratory for such meters do not exist in Africa; hence the competence is not in-country.
- The different operations demand use of specific meters.
- LNG would not need on-shore measurement due to temperature difference and boil-offs.
- Terminal operations presently require no meters as fiscalization is by dipping.
- To read off volumes by dipping require knowledge of tank contour and calibration methods are required.
- Product measurement starts by knowing the configuration of the tank, the type of product, quality of products, generation of composite samples which are analyzed in laboratory to determine

the basic sediment and water content as basic sediment and water affect the final volume leaving the on-shore tanks.

- At the end of discharges, volumes are corrected using API standards which have to do with temperature, specific gravity.
- DPR by laws issues certificates of qualities and quantities used in generation of bills of Laden for export products.
- It is surprising that the learned gentleman that petitioned was talking of Weights and Measures doing the actual measurement at the terminals.
- On-line meters are for comparison purposes.
- Ship figures are determined by physical dipping and use of tank tables.
- Certificates of qualities and quantities are prepared with the shore figures except for LNG exports.
- Only DPR keeps the sea line valve keys kept under lock and key.
- Weights and measures are however not involved in measurement except only where the need arises e.g. proving of the mechanical meter.
- Meters in the petroleum industry are generally specialized and change with technology weights and measures may not have access to.
- Each time weights and measures come up with participation in meter proving in industry operation; it is advised to start with relevant training.
- PTI affords that for the industry up to ascertain limit. DPR advised weights and measures to start from there.

- That is not to say that issues of using multi-phase and other specialized meters in proving of certain meters and in the same case loops can be handled by PTL.
- Gas meters are even more complex as institutions outside the industry cannot jump into gas measurements. Only few companies into the business use Smith meters.
- Calibration of meters involves use of standard gauges, pressure, temperature + volume. Weights and measures only discuss volumes.
- History of flow meters is used to monitor meter efficiency. Weights and Measures is not exposed to this experience and data.
- Arbitration role of DPR demand that DPR knows by volume and price issues in stations and unitized operations.
- The bottom line is that weights and measures is not authorized to monitor measurements other than ensuring meters function efficiently.
- How then would it operate at terminals and other custody and transfer points?
- What will be the role of Weights and Measures Division on product transfers?
- All meters are not proved. Only meters for fiscal measurements require proving.

CONCLUSION AND RECOMMENDATIONS

- 1 In view of the apparent confusion that may inflict the industry, it is hereby recommended that each government agency should be made to concentrate on the statutory function granted her by

the laws under which they are set up to operate. The petroleum industry is too important a sector to be run without standard procedures.

- 2 The Petroleum Laws and Regulation recognize the DPR as the monitoring and supervisory agency of the Petroleum Industry. Other agencies of Government should be made to revert to DPR if there is any information required on the industry
- 3 Weights and Measures Division should be advised to have regular consultations with the DPR offices nationwide in respect of retail outlet pump calibration exercises and to desist from arbitrary closure of station.
- 4 In the same vein, the Division should be advised restrict her activities to the area of certification of weights and measures.
- 5 All laws that tend to lead to the duplication of statutory functions of Government Departments should be expunged from our Law books to streamline operations in the industry