



Department of Petroleum Resources

ADDENDUM
To
PROCEDURE GUIDE FOR THE DETERMINATION OF THE QUANTITY AND
QUALITY OF PETROLEUM AND PETROLEUM PRODUCTS IN NIGERIA
("ADDENDUM")
BY
DEPARTMENT OF PETROLEUM RESOURCES
(Hereinafter: The Publisher and Regulatory Agency)

SPECIAL NOTE:

1. This Addendum necessarily addresses statutory concerns for clarity of purpose with respect to omissions, methodologies of computations of production adjustment as a result of errors, shrinkage, evaporation, etc., to ensure accuracy, openness and transparency.
2. The Department hereby undertakes for consistency and clarity in statutory compliance that this Addendum is supplementary to the existing provisions of the 2016 Guidelines and shall in every case where there is a conflict between them prevail and subsequent amendments remain the same as statute pursuant to the Petroleum Act Cap 350 LFN.
3. This Guideline adopts global best practices and international standards specifically tailored for Nigerian Oil & Gas application and may be used by any foreign person desiring to do so.
4. No provision of this Addendum and /or the Guidelines shall be subject to any waiver

5. The Department reserves the right to change any provisions of this Addendum and/or the Guideline.

Now therefore, the following provisions of this Addendum shall supplement the Guidelines:

Section 3.1: 3 - Quality Parameters for Fiscal Measurement.

New Sections 3.1.3.1 and 3.1.3.2 under part 1 of this Guideline are hereby inserted immediately after the existing section 3.1.3

Section 3.1.3.1

The Base Sediment & Water (BS&W) in percentage (%) obtained from automatic sampler as composite samples shall not exceed 0.50% for all export crude oil cargo.

However, when the prescribed parameter of 0.50% BS&W is exceeded consecutively more than three times, outturn verification shall be mandatory and company shall ensure that the Department witnesses the exercise.

Section 3.1.3.2

If the cause of frequent off-specification cargo of high BS&W% is a characteristic nature of the petroleum and should the abnormal source of the above challenge remain the same, the Department may issue directives as applicable in this regard for compliance by the operator of the terminal.

Supplement to Section 2.4.6

Sub-section: 2.4.6.1 – DETERMINATION OF PRODUCTION BS&W FOR CALCULATION OF CRUDE OIL RECEIPT INTO TERMINAL

Section 2.4.6.1 (a): There shall be installation of an automatic sampler or any suitable device with mixer connected before the inlet of sampler and which shall be fixed downstream of the production manifold and flow conditioner installed before the inlet into flow meter in appropriate position approved by the Department for daily sample taking, laboratory analysis of crude oil BS&W% and measurement for all production receipts into any Terminal. The flow pacing device and probe shall be calibrated to ensure grabbing rate of sample over a period of 24 hours (0800am – 0800am) basis. The result of analysis of samples obtained in an approved laboratory shall be compared with that result obtained using method under Part 1 Sections 2.4.3.1 – 2.4.3.4 of the

approved guideline. The manual sampling method as stated in Section 2.4.3.1 shall be every 24 hours basis immediately after production for a given storage tank and prior to drainage of water. The laboratory result using the auto-sampler as the primary method shall be recorded and signed jointly by Operator, NNPC and DPR and as the official production BSSW% which shall be used to compute the daily production receipt into the terminal, while the manual method of sampling remains the secondary technique.

Section 2.4.6.1 (b): For the purposes of crude oil quality determination, all crude oil equal or less than 0.5% BSSW is acceptable export grade crude oil or dry crude oil and others greater than the specified limit mentioned above shall be classified as Wet Crude Oil and as such characterized as off-specification.

Sub-section 2.4.6.3: - DETERMINATION OF PRODUCTION/TERMINAL ADJUSTMENT (ERRORS)
Definition: Terminal adjustment is referred to as volumes which represent the difference in production obtained from material balance and that derived from production receipt into terminal. $\text{Production/Terminal Adjustment (Errors)} = \text{Total Production (Obtained by Material/Mass Balance)} - \text{Total Cumulative Production (Obtained by Summation of Total Receipt into Terminal)}$.

Section 2.4.6.3(a): Terminal adjustment or losses should be determined and the report on Reconciled Monthly Stock Inventory Production Mass Balance shall be signed-off jointly by the operator, NNPC and DPR Representatives in the approved format shown below in Appendix 1.

Section 2.5.3.7 under part II now reads:

2.5.3.7. A minimum of three (3) flow rates at minimum of 25% interval shall be used during prover loop certifications. The volumes so derived from each flow rates shall check within 0.020% repeatability.

A new section 2.5.4.6 under part III is inserted as follows:

For conduct of linearity test after a prover loop certification exercise, a newly generated BPV shall be used and immediately replaced with the old approved BPV pending the approval of the new BPV by the Department.

Section 2.5.9. General Practices: Calibration of Storage Tanks. (Page 110)

Section 2.5.9.1 Optical Reference Line Method (ORLM)

Other methods for calibration of storage tanks include: Optical Reference Line Method (ORLM): This method employs a mobile magnet trolley or similar device which carries the measuring rule, up and down the tank height. Applicable standards: API 2.2B, ISO 7507-2 or any of its recent revisions.

Section 2.5.9.2 Optical Triangulation Method:

This type accomplishes calibration through optical methods and the tank profile is established by triangulation. Applicable standards: API Chapter 2.2C or ISO 7570-3 or its latest revisions.

A new section 2.5.10 under part III is inserted as follows:

Section 2.5.10: **General Consideration**

Section 2.5.10.1 No false-bottom, capillary, inflatable devices, unapproved deadwoods or similar design is allowed in storage tanks.

Section 2.5.10.2: For all tank farms, all back-loading lines connected to storage tanks or metering systems and/or stations shall be flanged off and locked via one-way valve, the key of the padlock shall be kept in custody of Officer In charge (herein referred to as the Officer of the Department).

Section 2.5.10.3: Conversely, all petroleum inter-tank transfers, circulation, recirculation, redistribution, diversion or any similar movement of petroleum or petroleum products shall be with prior written approval of the Department's Representative or Officer In-Charge at the facility. However, for activities that will affect the Non-resettable totalizer, an approval shall be granted by the Director Petroleum Resources.

2.6.5 Rules Governing Meter Proving

During the certification of Master meters, repeatability shall check to 0.020%.

2.6.5.5(a): During export meter proving, the repeatability of each set of five (5) proving runs shall check within 0.040% repeatability while for production, allocation and custody transfer meters, repeatability shall be 0.050%.

New sections 2.6.6.1 and 2.6.6.2 under 2.6.6 of part III are hereby inserted as follows:

Section 2.6.6.1: Every tank after calibration and approval of usage shall display conspicuously on the surface: "Tank number", "Tank Service", "Date of Calibration" and "Due date for next Calibration". Frequency of storage tank inspection and calibration shall be every 5 years.

Section 2.6.6.2: For all new and repaired or rehabilitated aboveground floating roof storage tanks, there shall be lightning protection for unintended upsurge in static electricity and lightning arrestors as safeguard against possible rain storm or thunder installed within approved specifications in line with API Recommended Practice 545 or NFPA 780 (Lightning Protection Code) or any other approved international standards or recommended practice.

6.4. Procedure for Reporting and Allocating Crude Oil Loss/Theft Volume.

New section 6.4.3 under 6.4 of part I is hereby inserted as follows:

6.4.3. The DPR Methodology for Determination and Allocation of Crude Oil Production and losses (as revised from time to time) shall be used by terminal operators and Injectors for computation.

New section 6.1.4 under 6.1 of part I is hereby inserted as follows:

6.1.4. The National Production Monitoring System (NPMS) platform shall be complied with by all Operators for submission of daily production, stock and export volumes.

The word Penalties under part IV has been substituted with Fines

Item 6 in table of penalties for non-compliance under part IV now reads:

Offence Description	Amount	
Failure to Recertify Meter(s) when due (statutory meter proving)	Per meter	\$20,000 per proving frequency in addition to any other sanction by the Department.

Item 8 in table of penalties for non-compliance under part IV now reads:

Offence Description	Amount
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Non-compliance to five (5) yearly inspection and calibration of storage tanks	Per tank	\$150,000 per Annum from the 6 th year.
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Addendum – FINES & FEES

S/N	OFFENCE DESCRIPTION	UNIT	TOTAL
1.	Employment / engagement of non-accredited DPR Contractors for fabrication, construction, calibration, testing etc. of any critical equipment or facility.	Per each facility	\$5,000. (Five Thousand USD) In addition to suspension of not less than 3 months
2.	Using unapproved tank for storage or changing tank product/ pipeline product service without approval.	Per tank/per pipe line 10-meter length	\$5,000. (Five Thousand USD)
3.	Measuring Petroleum or Petroleum Products with faulty (kinked) measuring equipment or Ullage Transmitting Instrument (UTI) – static measurement method.	Per tape or steel measure or UTI	Outright confiscation of faulty measuring instrument and payment of fine of \$10,000. (Ten Thousand USD)
4.	Conducting inspection FAT/SAT of any critical equipment without approval and without witnessing by Representative of the Department.	Per equipment	\$50,000. (Fifty Thousand USD)
5.	Processing fee for Export Permit Application.	Per application and Export form/ Permit	\$1,000. (One Thousand USD)
6.	Modification, Alteration, upgrade, etc. of LACT Metering System (Export) without approval.	Per LACT System	\$250,000. (Two Hundred and Fifty Thousand USD)
7.	Modification, Alteration, upgrade, etc. of LACT Metering System at operator/Third Party Custody Transfer Point (TPCTP)/ Third-Party Injection Points (TPIs).	Per LACT System	\$150,000. (One Hundred and Fifty Thousand USD)
8.	Modification, Repair, Alteration of surface or underground storage tanks without approval. Introduction of dead woods, capillary Tube or false-bottom, etc. attract the same fine.	Per storage greater than or equal to 500 barrels.	\$25,000. (Twenty-Five Thousand USD) for crude oil tanks
9.	Non-compliance in ensuring DPR Representatives witness out turn verification at the port of discharge.	Per loaded Vessel or shipment	\$50,000. (Fifty Thousand USD)
10.	Tampering or Breaking of Export sea line valve key, Bye-pass pipeline, back-loading line (depots), lines for export at terminal or discharge at Jetties/Depots, etc. without approval.	Per loading or shipment	\$200,000. (Two Hundred Thousand USD)
11.	Exporting/Importing Petroleum or Petroleum Products without approval.	Per loading or shipment	Outright forfeiture and payment of total cost in USD to DPR
12.	For any Petroleum or Petroleum Product handling facility, the set-back shall not be less than 25km from any border country	Per facility	Forfeiture of petroleum product

	and lack of adherence or the construction of the facility by operator or owner without approval by DPR, shall attract sanctions, thus:		and DPR shall report to Security Agency, Town Planning Authority for outright demolition.
13.	Failure to apply the DPR Methodology for Determination and Allocation of crude Oil Losses.	Per facility	Monetary equivalent of 30% of the total loss volume allocated at the prevailing oil price in USD
14.	Failure to jointly complete the monthly signed off Reconciled Stock Inventory Production Mass Balance Report. Refer Section 2.4.6.3(a).	Per Month	\$100,000 (One Hundred Thousand USD) in addition to sanction.
15.	National Production Monitoring System (NPMS) non-compliance by operating company.	Per Week Per Month Per Quarter	\$10,000. (Ten Thousand USD) \$30,000. (Thirty Thousand USD) \$100,000. (One Hundred Thousand USD)
16.	Late submission of export permit application. Deadline Definition: Tenth (10th) day of the second month of the previous quarter of the same year.	Per quarter	\$1,000. (One Thousand USD)
17.	Non-compliance with applying approved new base volume and meter factor from proving.	Per loading	\$250,000. (Two Hundred and Fifty Thousand USD)
18.	Non-compliance with installation/tampering with DPR Locking Device (sea line Valves) on export pipeline.	Per Terminal	\$1,000,000. (One Million USD)
19.	Tampering with Metering Systems or its ancillary equipment without approval.	Per Meter	\$100,000. (One Hundred Thousand USD)
20.	Commissioning any critical equipment or facility e.g. valve, compressor, pump, sampler, etc. without approval.	Per equipment	\$50,000. (Fifty Thousand USD)
21.	Lack of displaying on operational tank in service of "Tank Service", "Date of Calibration" and "Next Due Date of Calibration.	Per tank in service or operation	\$100,000. (One Hundred Thousand USD) Per Tank
22.	Installation of LACT System at Export terminals or Custody transfer point without approval.	Per month	\$750,000. (seven Hundred and Fifty Thousand USD)
23.	Non-compliance to five (5) yearly inspection and calibration of storage tanks at export terminals,	Per year For Crude Oil:	\$150,000. (One Hundred and Fifty Thousand USD)
24.	Non-installation of Lightning Arrestor for Aboveground Storage Tanks for protection against thunderstorms or static electricity.	Per Storage tank under approved timelines.	\$100,000 (One Hundred Thousand USD)
25.	Shutting down of operators/third party production facility without DPR approval. Exception: For emergency situations, the nearest DPR office shall be notified within 24hrs and a formal	Shut-down operation per day	\$500,000. (Five Hundred Thousand USD) and in addition

	report shall be submitted to the Director, Petroleum Resources within 48hours.		to sanction as may be directed by Director, Petroleum Resources.
26.	Evacuation and discharging of petroleum or petroleum product or gas without approval from Director, Petroleum Resources.	Per operation	Payment of monetary equivalent of the total cargo at the prevailing market price in USD to the DPR in addition to sanction as may be approved by Director, Petroleum Resources.
27.	Misleading report submission by any company on quantity and/or quality of petroleum or petroleum products.	Per Operation	Payment of monetary equivalent of the total cargo at the prevailing market price in USD to the DPR
28.	Lack of proper accounting, reporting, intentional/wrongful allocation of losses to any injector, equity holder or stakeholder.	Per barrel	Refund of allocated volume to rightful owner and payment of equivalent of 30% of total volume involved to the DPR at prevailing prices in USD.
29	Introduction of hydrocarbon, Comingling/Spiking without approval from the Director, Petroleum Resources.,	Operation or for every violation	\$100,000. (One Hundred Thousand USD)
30	Decommissioning of facility without approval from the Director, Petroleum Resources.	Operation or for every violation	\$500,000. (Five Hundred Thousand USD)
31.	Processing Fee for LACT System Calibration / Recertification at Export Terminal / Injection Points.	Per LACT Unit	\$1,000 (One Thousand Dollars)
32.	Processing Fee for Calibration / Recertification of Storage Tank Land / Offshore Terminal.	Per Tank	\$1,000 (Land Tanks) / \$500 (Offshore FPSO or FSO)
33.	Processing Fee for Approvals of Barging and Trucking of Crude Oil.	Per Approval	\$1,000 (One Thousand USD) for Barging. \$500 (Five Hundred USD) for Trucking
34.	Obstruction, restriction, prevention or refusal of DPR Accredited Representatives access to any facility handling petroleum by operator or company for the purpose of carrying out inspection or other statutory function is an offense.	Per Action	\$50,000 (Fifty Thousand USD)
35.	All "Agreement" between companies, operators, and injectors in any form shall be carried out in line with the Petroleum Acts and a copy submitted to the Department.	Per Company	Appropriate Sanction may be imposed by Director, as may be applicable.

36.	Tampering or breakage of security seal on flow meters used for custody transfer without approval.	Per Flow Meter	\$5,000 (Five Thousand USD)
37.	Processing fee for Approval of Terminals Establishment Order	Per Terminal (Land/FPSO/FSD)	\$50,000 (Fifty Thousand USD)
38.	Annual License Fee to operate a crude oil Terminal /Renewal to operate an export Terminal.	Per Terminal (Land/FPSO/FSD)	\$100,000 (One Hundred Thousand USD)
39.	Non- Compliance with frequency of calibration of measurement dipping tape, UTI, Temperature/Pressure Gauges & Transmitters.	Per Equipment	\$5,000 (Five Thousand USD)
40.	Collection of crude oil samples without DPR approval.	Per Litre	\$500 (Five Hundred USD)
41.	For all DPR approved flow meters, flow rate shall be maintained at specified station flow rates.	Per Failure of station to inform DPR of changes in station flow rates	\$10,000 (Ten Thousand USD)
42.	Falsification of Proving System Calibration/Meter Proving reports.	Per Prover/Meter	\$30,000 (Thirty Thousand USD)

Note: 1- All fees in USD shall be paid to DPR in Naira equivalent based on the CBN prevailing rate at the time of infraction/application.

2- Payment of above mentioned fines/fees shall be in addition to other necessary directives by the Director, DPR.

NUMENCLATURES AND DEFINITIONS

- Petroleum and Petroleum Products means Petroleum, Petroleum products, natural gas liquid, condensate, hydrocarbon liquid, renewable hydrocarbon liquid/sources and all their derivatives.
- Losses of Petroleum in plant installations, pipelines or installations may be caused or the result of corrosion, aged equipment, sabotage, wilful damage or acts of nature, crisis, crimes or war etc.
- Licensee or lessee or operator – owner of facility or Oil Mining Lease (OML)
- DPR – Department of Petroleum Resources
- EGASPIN – Environmental Guideline and Standards for Petroleum Industries in Nigeria
- NNPC – Nigerian National Petroleum Corporation
- USD – United States Dollar
- FGN – Federal Government of Nigeria
- CBN – Central Bank of Nigeria
- MOSR – Mineral Oil (Safety) Regulations
- NPMS – National Production Monitoring System
- NSCDC – Nigerian Security and Civil Defence Corp
- NERC – Nigerian Electricity Regulatory Commission

- TPA – Town Planning Authority
- API – MPMS American Petroleum Institute – Manual for Petroleum Measurement Standards
- FAT – Factory Acceptance Test. Test of critical equipment at manufacturer’s premises or workshop.
- SAT – Site Acceptance Test. Test of critical equipment at locations of installation, normally in country.
- LACT – Lease Automatic Custody Transfer.
- OTM – Optical Triangulation Method for tank calibration.
- ORLM – Optical Reference Line Method.
- EODRM – Electro-Optical Distance Ranging Method
- NFPA – National Fire Protection Association
- LFN – Laws of the Federation of Nigeria
- BPV - Base Prover Volume
- UTI- Ullage, Temperature and Interface
- INJECTOR – Any producer of crude oil/condensate that pumps into a trunk pipeline/terminal (Both operators and the third party)
- PRODUCTION METERS – Any DPR approved meters used for the purpose of production accounting.
- ALLOCATION METER – Any DPR approved meter used for the purpose of accounting for the volume pumped into a trunk pipeline/terminal.
- CUSTODY TRASFER METER – Any DPR approved meter that is used for the transfer of handling/safe keeping before export.

Commencement date: September 2018

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Department of Petroleum Resources

DPR

RECONCILED MONTHLY STOCK / PRODUCTION (INVENTORY) MASS BALANCE REPORT

MONTH / YEAR:

NAME OF OPERATING COMPANY:

NAME OF TERMINAL:

AVERAGE API AT 60°F:

S/NO:	DESCRIPTION (ALL UNITS @ 60°F)	GROSS BARRELS	US	NETT US BARRELS
A	CLOSING STOCK			
B	LIFTING (EXPORT + REFINERY)			
C	OPENING STOCK			
D	PRODUCTION BY MATERIAL BALANCE (A + B - C)			
E	PRODUCTION RECEIPT INTO TERMINAL			
F	TERMINAL ADJUSTMENT/LOSSES (D - E)			

PARTICIPANTS (NAMES IN FULL)

DPR REPRESENTATIVE:	SIGN:	DATE:
NNPC REPRESENTATIVE:	SIGN:	DATE:
OPERATING COMPANY:	SIGN:	DATE:

REMARK(S): The above are reconciled figures and accepted by all the parties. Refinery Supply may be applied for terminals that are linked with refineries or similar approved plant installations.