Torres, RobertoJ

From: Lars Farestvedt [lf@mpm-us.com]
Sent: Tuesday, February 23, 2010 12:33 PM
To: Torres, RobertoJ
Cc: Kolesar, Dan J; NSK Ind Hyg
Subject: RE: Question about MultiPhaseMeters
Attachments: Transport Case-7900-COC.pdf; RENT-I-GAM-019 - Gamma Certificates.pdf; Cs137 - Material Safety Data Sheet.pdf

Mr. Torres,

I have requested this information from MPM in Norway, as I do not have this readily available here.

I have enclosed what I do have available for your information – but believe this is not the certification you are looking for.

I will respond once I have the requested certificate for the source holder.

Regards,

Lars Farestvedt
General Manager
Multi Phase Meters, Inc.
P: +1-281-646-9991 | M: +1-281-513-3961 | IP: +47-51-22-02-60

Lars Farestvedt's BP MS150 Donation Link

From: NSK Ind Hyg [mailto:n1206@conocophillips.com]
Sent: Tuesday, February 23, 2010 11:11 AM
To: Lars Farestvedt
Cc: Kolesar, Dan J; 'Torres, RobertoJ'
Subject: FW: Question about MultiPhaseMeters
Importance: High

Lars:

Please forward a copy to Mr. Torres and copy me. Thank you.

Diane Kobayashi
ConocoPhillips Alaska
907.659.7812

From: Torres, RobertoJ [mailto:RobertoJ.Torres@nrc.gov]
Sent: Tuesday, February 23, 2010 7:11 AM
To: NSK Ind Hyg
Subject: Question about MultiPhaseMeters

Your letter dated February 18, 2010 request authorization for "MultiPhaseMeters AS, Model SH-7902 source holder….". I have not been able to find a sealed source and device registration (SSDR) certificate for this model number. Please provide copy of certificate registration or registration number so I can look it up in the SSDR database. Thanks.

S-TEC
Sensor Technology

To whom it concerns

CERTIFICATE OF COMPLIANCE

COC No: TC 7900-COC

Equipment applicable for this Certificate:

Transport Case TC-7900 for Radiometric Source Holder series SH-79XX

We hereby certify that the TC-7900 transport cases supplied by S-TEC for transport of the SH-79XX source holder series, are produced according to its design specification. The TC-7900 transport case has been 3'rd party evaluated and specimen tested by Institute For Energy Technology, Norway (IFE), according to the requirements specified in IAEA Safety series No. TS-R-1, "Regulations for the Safe Transport of Radioactive Material", 2005 edition. The TC-7900 is compliant with the requirements for Type A package.

This certificate is valid for transport of the SH-79XX-source holders, loaded with Cs-137 sources with activity < 18,5 GBq/ 500 mCi.

Date of Signature : 30.10.2009

Name : Per Vidar Wærnes

Position in Company : Man.Dir.

Signature :

SENSOR TECHNOLOGY AS
Postal address: P.O.box 179 1713 Grålum
Office address: Ringtunveien 2 1712 Grålum
Telefon/phone +47 48105555
Telefaks/fax +47 69140381
Mail@s-tec.no
Org. nr 987 622 326
Bankacc. nr 5122 05 14416
www.s-tec.no

pn: 127028

9/5-09

Sensor Technology

S-TEC Sensor Technology

Data Sheet

Final Check SH 7902 / TC7900 Incl. Check Lists

Doc. No. F-04-16-00
Issued by: PVW
Established 27.03.07
Replaces 16.5.08
Page 1(3)

REFERENCE INSTRUCTION

Instruction Final Check	Sensor Technology P-04-05

CUSTOMER DATA

Name:	Multi Phase Meters AS
Department/Factory:	
Delivery Address:	Fabrikkveien 21, Forus, 4033 STAVANGER
Deliverymark/Att/phone:	274/Henning Bø/40001150
S-Tec Order Number:	5439/535 (81205-01)
Customer Order Number:	274
NRPA Notice number:	

Description	Type	Serial no
Assembly serial number		*7902-08-07*
Source Holder	**SH-7902**	*7902-07*
Isotope Cs-137 (Source)	*CDCB13095*	*RO822*
Activity GBq/date	*1,85 GBq*	*8. December 2008*
Source manufacturer	*Nuclitec GmbH*	

EQUIPMENT TYPE AND SERIAL NUMBERS

Description	Type	Serial no
Radiation survey meter (calibrated)	*Automess*	*90478*
Surface contamination meter (for USA deliveries or if optional test is ordered)		
Weighing scale (calibrated) (if optional test is ordered)		

PRE-PACKING CHECKLIST (SOURCE HOLDER)

Description	[OK]
Sealed Radiactive Source Certificate (SRSC) enclosed.	✓
IFE Order Specification enclosed	
Source holder serial number marked on (SRSC)	✓

Source holder order number marked on (SRSC)	
Visual inspection – according to drawings	✓
Source holder warning attached permanently/by screws/by rivots	✓
Warning sign clearly visible	✓
Warning sign punched with isotope type	✓
Warning sign punched with isotope activity	✓
Warning sign punched with source holder serial number	✓
Warning sign punched with assembly date	✓
Source holder shutter in CLOSED position	✓
Source holder shutter secured in CLOSED position by padlock	✓
Highest radiation 5 cm from surface less than 500 uSv/h	✓
Highest radiation 1 m from surface less than 7,5 uSv/h	✓
Wipe test for USA deliveries or if optional test is ordered: **Surface contamination less than 10 Bq (wipe minimum 100 cm2)**	
Otional weight check (if ordered): **Weight of source holder including transport shield is more than xx,x [kg]**	

Description	Actual reading
Highest radiation on surface [uSv/h]	<7uSv/h
Highest radiation on surface [uSv/h]	—
Otional weight check (if ordered): **Weight of source holder [kg]**	

0.7 mrem/hr

S-TEC Sensor Technology

POST-PACKING CHECKLIST (TRANSPORT CONTAINER)

Description	[OK]
Packed according to Packing Instruction For The TC-7900	✓
Visual inspection – no sharp edges or corners (sticks, nails, screws, etc.)	✓
Protective tubing on lifting handles	✓
Two horizontal packing bands around box (steel or fibreband)	✓
Lead seals mounted diagonally on two bolts	✓
Transport warning labels on two opposite sides	✓
Transport warning labels marked with correct category	✓
Transport warning labels marked with correct content	✓
Transport warning labels marked with correct activity	✓
Transport warning labels marked with correct transport index	✓
Type A labels on two opposite sides	✓
All labels affixed with staples	✓
Highest radiation on surface less than 500 uSv/h	✓
Highest radiation 1 m from surface less than 7,5 uSv/h	✓

NOTES

PERSONELL

Check done by (name)	Date
IFE:	20.04.2009
Signature: Tormod Lønnaas	

nuclitec

13, Issue 1, 2008-11-17

nuclitec GmbH
Gieselweg 1
38110 Braunschweig
Postfach 11 37
38001 Braunschweig
Germany
Tel.: +49 5307 932-0
Fax: +49 5307 932-293
infonuclitec@nuclitec.de
www.nuclitec.de

17 December 2008

CERTIFICATE

No. 126621 – RO 808, ...

for Sealed Radioactive Source/s

S/N 7902-08-07

Source Type: Gamma Source/s

Product code	CDCB13095
Drawing	VZ-1856-001 (X.8)
Quantity	20 off
Source no/s.	RO 808, RO 809, RO 810, RO 811, RO 812, RO 813, RO 814, RO 815, RO 816, RO 817, RO 818, RO 819, RO 820, RO 821, RO 822, RO 823, RO 824, RO 825, RO 826, RO 827
Nuclide	Caesium-137

Technical Data

Nominal activity	each 1.85 GBq 50 mCi each
Reference date	8 December 2008
Traceability*	Defined on page 2

Leakage and Contamination Test/s

Test method/s*	III, II and I
Test/s passed on	9 December 2008

Additional Information

ISO classification*	C.66546
Special Form approval*	USA/0634/S
US model no.	CDC.800
Remark	---

* see page 2 for explanation

nuclitec GmbH

i.A. Tricke

Production Manager

Explanations for Certificates (Page 2 of Certificates)

Uncertainty

The reported uncertainty is based on standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95 %. (ISO Guide, 1995)

Traceability

This certificate documents the traceability of measurement results to national standards, standard measuring equipment and methods for the realisation of physical units of measurement according to the International System of Units (SI).
Traceability is defined as 'the property of a result of a measurement whereby it can be related to appropriate standards, generally international or national standards, through an unbroken chain of comparisons'.

nuclitec GmbH has been accredited as DKD (Deutscher Kalibrierdienst) calibration laboratory by the Physikalisch-Technische Bundesanstalt (PTB) and is authorized to issue reference sources which are traceable to national standards held at the PTB in Germany.
Because of the European co-operation for Accreditation (EA) mutual recognition agreement the certificates are also accepted by all EA-members (e. g. UKAS).

This product complies with the requirements for traceability to NIST specified in the American National Standard "Traceability of Radioactive Sources to the NIST and Associated Instrument Quality Control (ANSI N42.22-1995)".
As a requirement for the ANSI N42.22-1995 nuclitec GmbH participates in the NEI/NIST Measurements Assurance Program of the Nuclear Power Industry.

Leakage and contamination tests

Stringent tests for leakage are an essential feature of radioactive sources production. They are based on ISO 9978. Some standard methods used for testing radiation sources are listed below.

Wipe test I

The source is wiped with a swab or tissue, moistened with ethanol or water, the activity removed is measured.
Limit: 200 Bq
(Limit USA: 5 nCi)

Immersion test II

The source is immersed in a suitable liquid at 50 °C for at least 4 hours and the activity removed is measured.
Limit: 200 Bq
(Limit USA: 5 nCi)

Bubble test III

The source is immersed in water or a suitable liquid and the pressure in the vessel reduced to 13 kPa (100 mm Hg). No bubbles must be observed.

ISO classification

The International Organization for Standardization (ISO) has proposed a system of classification of sealed radioactive sources based on safety requirements for typical uses (see ISO 2919 and ANSI N43.6-1997). This system provides a manufacturer of sealed radioactive sources with a set of tests to evaluate the safety of his products. It also assists a user of such sealed sources to select types which suit the application he has in mind. The tests to which specimen sources are subjected are listed in the following table.

Classification of sealed source performance standard according to ISO 2919 and ANSI N43.6-1997

	Class 1	2	3	4	5	6	X
Temperature	No test	- 40 °C (20 min) + 80 °C (1 h)	- 40 °C (20 min) + 180 °C (1 h)	- 40 °C (20 min) + 400 °C (1 h) and thermal shock 400 °C to 20 °C	- 40 °C (20 min) + 600 °C (1 h) and thermal shock 600 °C to 20 °C	- 40 °C (20 min) + 800 °C (1 h) and thermal shock 800 °C to 20 °C	Special test
External Pressure	No test	25 kPa absolute	25 kPa absolute to 2 MPa absolute	25 kPa absolute to 7 MPa absolute	25 kPa absolute to 70 MPa absolute	25 kPa absolute to 170 MPa absolute	
Impact	No test	50 g from 1 m	200 g from 1 m	2 kg from 1 m	5 kg from 1 m	20 kg from 1 m	
Vibration	No test	3 x 10 min 25 - 500 Hz at 5 g peak amplitude	3 x 10 min 25 - 50 Hz at 5 g peak amplitude and 50 - 90 Hz at 0.635 mm amplitude peak to peak and 90 - 500 Hz at 10 g peak amplitude	3 x 30 min 25 - 80 Hz at 1.5 mm amplitude peak to peak and 80 - 2000 Hz at 20 g peak amplitude			
Puncture	No test	1 g from 1 m	10 g from 1 m	50 g from 1 m	300 g from 1 m	1 kg from 1 m	

Special applications

No test programme can cover all possible combinations of environments to which a source may be exposed.
Users should therefore consult our experts before using sources in potentially adverse environments.

IAEA Special Form

'Special Form' is a test specification for sealed sources given in the IAEA transport regulations (IAEA TS-R-1).
It is used in determining the maximum acceptable activities for various types of transport containers.
If nothing else is stated, the reference date is identical with the date of manufacture.

Quality assurance System

The quality assurance system of nuclitec GmbH was certified by Lloyd's Register Quality Assurance (LRQA) ac-cording to ISO 9001:2000 and according to ISO 13485:2003 for medical devices. Isotrak products meet the requirements of 10CFR50 Appendix B.

NRC Advice

Radioactive Material - not for human use - introduction into foods, beverages, cosmetics, drugs, or medicinals, or into products manufactured for commercial distribution is prohibited - exempt quantities should not be combined

RE1, Issue 1, 2008-11-17

nuclitec

Radioactive Material Safety Data Sheet

This data sheet presents information on radioisotopes only. This document is not subject to WHMIS requirements.
For information on chemical compounds incorporating this radionuclide, see the relevant Material Safety Data Sheet.

Cesium-137

Part 1 – Radioactive Material Identification

Common Names: Cesium-137 **Chemical Symbol:** Cs-137 or ^{137}Cs

Atomic Number: 55 **Mass Number:** 137 (82 neutrons)

Chemical Form: Cesium chloride **Physical Form:** A pellet of cesium ceramic housed in a welded stainless steel capsule

Part 2 – Radiation Characteristics

Physical half-life: 30.22 years **Specific Activity (GBq/g):** 3,220

Principle Emissions	E_{Max} (keV)	E_{eff} (keV)	Dose Rate (µSv/h/GBq at 1m)	Shielding Required
Beta* (β)	511 (94.6%)	157	-	-
Gamma (γ) / X-Rays	662 (89.9%)	-	103[a]	HVL Lead: 0.65 cm
Alpha (α)	-	-	-	-
Neutron (n)	-	-	-	-

* Where Beta radiation is present, Bremsstrahlung radiation will be produced. Shielding may be required.
Note: Only emissions with abundance greater than 10% are shown.
[a] *The Health Physics and Radiological Health Handbook,* Scintra, Inc., Revised Edition, 1992

Progeny: Barium-137m (Ba-137m)

Part 3 – Detection and Measurement

Methods of detection (in order of preference)

1. A radiation survey meter equipped with an energy-compensated Geiger Mueller detector.
2. Ion chamber survey meter – tends to be less sensitive than a Geiger Mueller survey meter but is able to respond more precisely in higher radiation fields.
3. Gamma scintillation detector – very sensitive but is also energy dependent. Must be calibrated for Cs-137 before it can be used for dose assessment surveys.

Dosimetry

Whole Body ☑	Skin ☐	Extremity ☐	Neutron ☐

Internal:	Sealed sources pose no internal radiation hazard. However, in the event of loss of containment by the sealed source, all precautions should be taken to prevent inhalation or ingestion of the material.	
Critical Organ(s):	None known at this time.	
Annual dose limits:	*Non-nuclear energy workers:*	1mSv per year
	Nuclear energy workers:	a) 50 mSv in one year b) 100 mSv total over five years
	Pregnant nuclear energy workers:	4 mSv over the balance of the pregnancy

Part 4 – Preventive Measures

Always use the principles of time, distance and shielding to minimize dose

Engineering Controls:	Sealed radioactive sources used in industrial applications should always be within a protective source housing to minimize radiation dose and to protect the source capsule from damage.
Personal Protective Equipment *(for normal handling of unsealed sources only. Always wear disposable gloves, safety glasses, personal protective equipment and clothing as appropriate to the material handled).* No special PPE required.	
Special Storage Requirements:	None

Part 5 – Control Levels

Oral Ingestion	Inhalation	
ALI (kBq)	ALI (kBq)	DAC (Bq/ml)
3700	7400	2.2×10^{-3}
Exemption Quantity (EQ):	10,000 Bq	

Part 6 – Non-Radiological Hazards

No potential health effects are known regarding non-radiological hazards associated with cesium. However, large oral doses of the material may cause gastrointestinal disturbances. Chronic effects are not known at this time.
<u>*OSHA Permissible Exposure Limit (PEL):*</u>
15 mg/m3 total dust, 5 mg/m3 respirable fraction for nuisance dusts

Part 7 - Emergency Procedures

The following is a guide for first responders. The following actions, including remediation, should be carried out by qualified individuals. In cases where life-threatening injury has resulted, ***first*** *treat the injury,* ***second*** *deal with personal decontamination.*

Personal Decontamination Techniques

- Wash well with soap and water and monitor skin
- Do not abrade skin, only blot dry
- Decontamination of clothing and surfaces are covered under operating and emergency procedures

Spill and Leak Control

- Alert everyone in the area
- Confine the problem or emergency (includes the use of absorbent material)
- Clear area
- Summon Aid

Damage to Sealed Radioactive Source Holder

- Evacuate the immediate vicinity around the source holder
- Place a barrier at a safe distance from the source holder (min. 5 meters)
- Identify area as a radiation hazard
- Contact emergency number posted on local warning sign

Suggested Emergency Protective Equipment

- Gloves
- Footwear Covers
- Safety Glasses
- Outer layer or easily removed protective clothing (as situation requires)

Torres, RobertoJ

From: Torres, RobertoJ
Sent: Tuesday, February 23, 2010 1:48 PM
To: 'NSK Ind Hyg'
Subject: Tracerco 400 series
Attachments: NUREG1556v3r1.pdf

Ms. Kobayashi:

1. Your letter dated Feb. 19 requests to add a Tracerco 400 series fixed gauge, 2 mCi Cesium-137. I want to confirm that this is the activity (amount) that you want and that there is no typographical error in the letter.

2. Regarding the Multi Phase Meters it appears that there is no sealed source and device registration certificate for Model SH-7902, therefore I cannot authorize its normal use on the NRC license. However there is an exception, if there is no SSDR certificate I can ONLY authorize the use of Model SH-7902 under "research and development" for a limited period of time provided that the conditions stated in section 5.1.2 of the attached document are met and the information is provided in an amendment request letter (see pages 5-2 and 5-3 of the attached document NUREG-1556, Volume 3, revision 1). The "research and development" authorization allows the use of registered sealed sources (like QSA Model CDC.800) to be used in an unregistered device (MultiPhase Meter Model SH-7902 which appears not to have a sealed source and device certificate) to allow the manufacturer/distributor of the device to gather operational data. The ultimate goal of the manufacturer/distributor is to register the device and sealed sources so that the device will no longer be considered for use under "research and development".

Roberto J. Torres
Senior Health Physicist
U.S. Nuclear Regulatory Commission - Region IV
Division of Nuclear Materials Safety
Nuclear Materials Safety Branch B
612 East Lamar Boulevard, Suite 400
Arlington, Texas 76011-4125
Telephone 817-860-8189
Facsimile 817-860-8263
robertoj.torres@nrc.gov

Torres, RobertoJ

From: Lars Farestvedt [lf@mpm-us.com]
Sent: Tuesday, February 23, 2010 2:49 PM
To: Lars Farestvedt; Torres, RobertoJ
Cc: Kolesar, Dan J; NSK Ind Hyg
Subject: RE: Question about MultiPhaseMeters
Attachments: MPM-Meter - Topside - Technical Description.pdf

Mr. Torres,

To give you a bit better of an idea of what this meter is and does, please find enclosed a technical description of the metering technology. You will there see the various components that go into the meter, and how they work together to measure the amount of oil, gas and water in the flow line.

I should have some additional gamma source holder specific information back from our group in Norway by tomorrow morning. FYI, the office here in Houston is a sales and service office only. The design, engineering and manufacturing of the meters take place in Stavanger, Norway.

Please let me know if any additional information is needed.

Regards,

Lars Farestvedt
General Manager
Multi Phase Meters, Inc.
P: +1-281-646-9991 | M: +1-281-513-3961 | IP: +47-51-22-02-60

Lars Farestvedt's BP MS150 Donation Link

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Lars Farestvedt

General Manager
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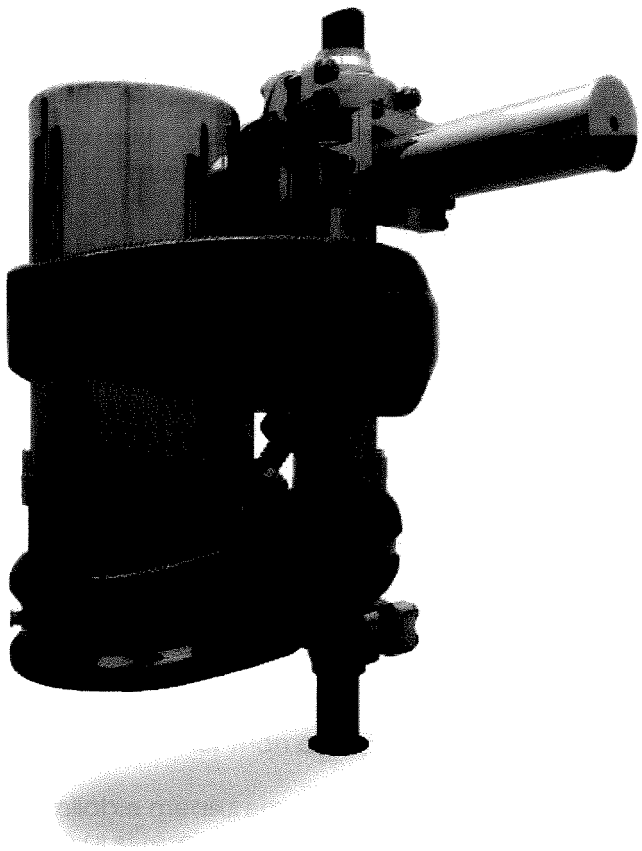
HighPerformanceFlowmeters

Topside - Technical Description



Combined Wetgas and Multiphase meter

Unparalleled accuracy

Water salinity measurement

Self diagnostics functionality

Remote access and operation

In-Situ verification

The MPM High Performance Flowmeter was developed and qualified in a Joint Industry Project supported by major Oil Companies:

ConocoPhillips Eni HYDRO STATOIL TOTAL

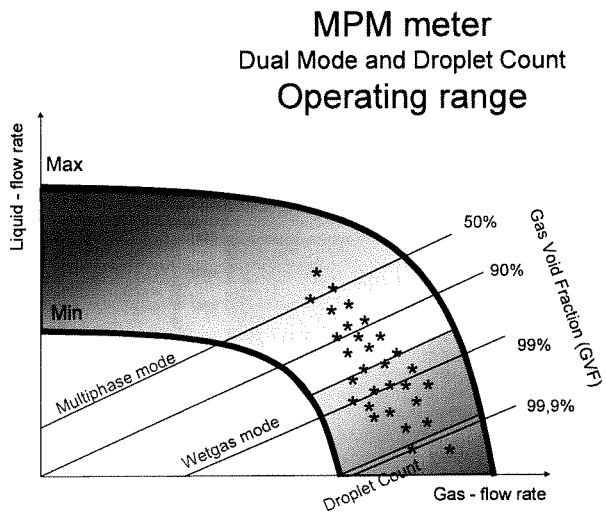
MPM meter – Offering Enhanced Functionality

Dual Mode Operation

The MPM meter is designed to achieve accurate flow rate measurements for all types of wells, throughout their entire life. The MPM meter can address both multiphase and wetgas applications; at oil-, gas- and water continuous flow regimes.

For GVF's up to 90-95% GVF, the Meter's *Multiphase* mode is used. For higher GVF's the *Wetgas* mode is used. The meter will automatically switch between wetgas and multiphase mode (as is required for slug flow), or it can be manually set at one of the modes.

For very high GVF's, typically in the range from 99-100%, the *Droplet Count* mode is used to provide extremely accurate measurements of the water fraction and fluid properties.



The MPM meter automatically switches between modes in a fraction of a second.

Covers FULL operating range, and all flow cases

Unparalleled accuracy

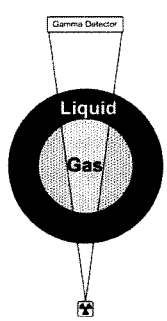
Why is MPM Meter more accurate and sensitive than conventional meters?

- Tomography and 3D measurements eliminate the error effect of gas concentration in pipe cross section
- Dielectric properties measured by EM are extremely sensitivity to water
- Automatic adjustment for changes in water conductivity eliminates large watercut errors
- Captures slugs with rapid measurements and instantly switching from wetgas to multiphase mode as appropriate

Conventional meter problem:

EXAMPLE	GVF
Actual :	36 %
Conventional:	55 %

Traditional gamma technology measures too high gas fraction (more ave. gas under beam than in pipe)



- MPM Meter electronics is extremely fast and sensitive
- MPM Meter Technology is robust to variations in config. parameters

MPM

Accurate in real field applications

Water Salinity and Density Measurement, Self-Configuration

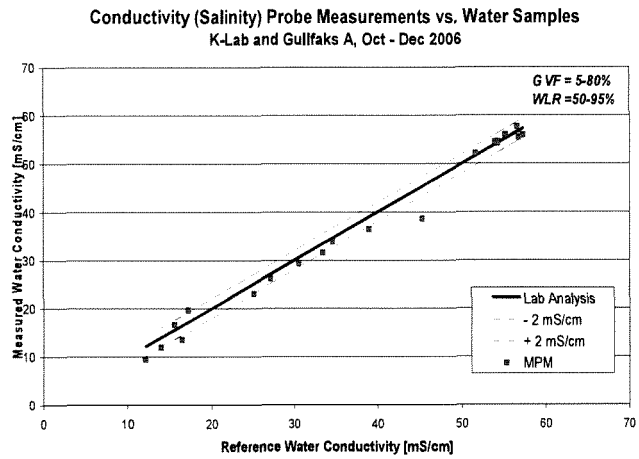
Multiphase - The MPM meter measures the conductivity of the water in water continuous flow, utilizing the MPM salinity probe.

Wetgas - The MPM meter measures the salinity of the produced water, even when the amounts of water are very small (fractions of a percent).

The measured water properties are used to automatically re-configure the meter, should the PVT properties change.

Also, the water properties are used to determine which type of water is produced, and at what quantity. In particular, they are used to detect formation water break-through in the well.

The measured water conductivity is converted to 25 °C and used to calculate the measured water salinity and water density.



Installation and Operation

The MPM Meter must be installed vertically, downstream a blinded tee. Flow can be vertically up, or vertically down through the Meter. The piping in between the tee and the MPM Meter must have the same inner diameter as the Meter. MPM can supply the blind tee and piping if requested.

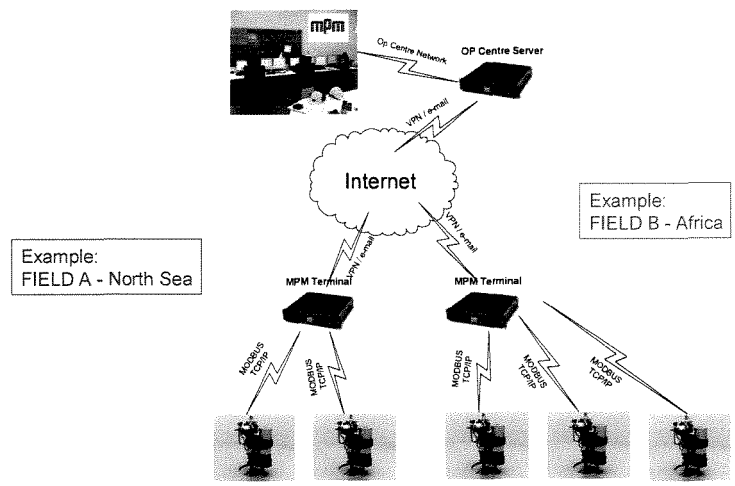
Signal Interfacing

The MPM Meter's communication protocol is MODBUS v1.1a.

There are two RS-485 serial ports and one Ethernet port for interfacing to the MPM Meter.

The RS-ports are configured as MODBUS slaves, with configurable addresses. They are high-speed, configurable for data rates between 1200 bps and 921.6 Kbps.

Modbus over TCP/IP can be used on the Ethernet connection to the Meter. The database on the MPM terminal can be accessed externally (ODBC).



The MPM terminal is typically a rack mounted PC (typical 1-2U) located in a safe area. It hosts the MPM Meter's Graphical User's Interface (GUI). The MPM terminal stores historical data and contains a web service that can be used to access the meter locally or remotely across the Internet/Intranet. Any PC connected to the same network as the MPM terminal can run the GUI for the MPM Meter (.NET).

Field Configuration

The MPM Meter is fully factory calibrated. Only an easy-to-do field configuration is required to adapt the meter to the specific conditions at the actual site. The field configuration consists of:

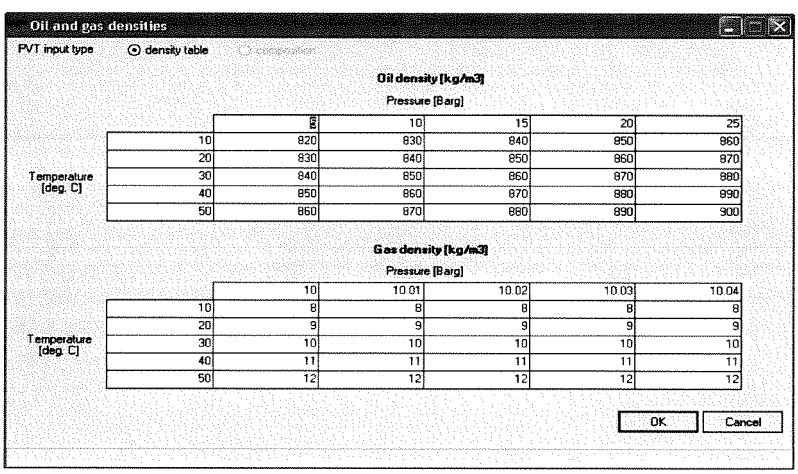
- Providing representative PVT data as input to the meter
- For topside units – a one point empty pipe calibration (air) of the gamma detector after installation of the gamma source (since the source is shipped separately according to international regulations for transportation of gamma sources)

Field configuration can be done at site using a service PC. Alternatively, if fluid compositional data are submitted to MPM, the field configuration can be implemented prior to delivery.

The PVT data includes information about the fluid properties, such as the oil, gas and water densities. It also comprises information about the water conductivity, which can be entered manually by the operator or be measured and calculated by the meter.

Two methods are available for providing PVT data to the MPM meter:

1. **Input of density tables**, where oil and gas densities are provided at given pressures and temperatures. To find the correct densities for given P and T, the MPM meter will do a linear interpolation between values in the tables. MPM offer services to generate the required tables based on compositional analysis of the hydrocarbons, provided by the operator.


Oil and gas densities

PVT input type: density table

Oil density [kg/m3]

Temperature [deg. C]	Pressure [Barg]				
	[illegible]	10	15	20	25
10	820	830	840	850	860
20	830	840	850	860	870
30	840	850	860	870	880
40	850	860	870	880	890
50	860	870	880	890	900

Gas density [kg/m3]

Temperature [deg. C]	Pressure [Barg]				
	10	10.01	10.02	10.03	10.04
10	8	8	8	8	8
20	9	9	9	9	9
30	10	10	10	10	10
40	11	11	11	11	11
50	12	12	12	12	12

OK Cancel

2. **Continuous input of density values** from SCADA system. Configuration data is then written into specified modbus registers in the MPM meter.

Other Configuration Parameters:

The MPM meter can measure the conductivity and the density of the produced water (self configuration), or the values can be specified by the operator. For low watercuts (oil continuous flow) a potential erroneous value for the water conductivity has little influence on the accuracy of the measurements. At water cuts of 30-50% and above, where the flow can be water continuous, specifying a correct value for the conductivity of the water is of more importance.

Furthermore, the viscosity and surface tension of the oil and gas needs to be specified. These can be derived from compositional analysis of the hydrocarbons.

MPM Meter – General Description

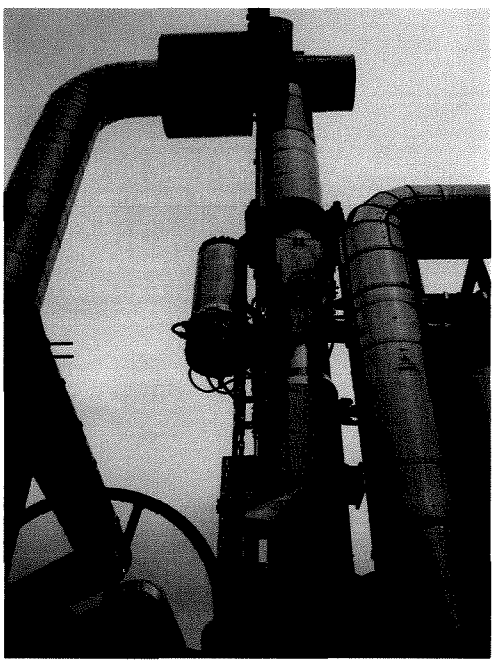
The MPM meter is intended for production monitoring, well testing and allocation metering purposes, and is tailored for use in WetGas and MultiPhase flow applications.

Focus during the development phase was to design a High Performance Meter, characterized by:

- High operational stability
- Unique sensitivity and reproducibility
- Unparalleled accuracy
- Easy field configuration and use

The MPM meter is an in-line and full bore meter, based on conventional multiphase metering equipment in combination with the patented (7 patents/applications) 3D BroadBand™ technology.

The MPM meter performs measurements over the full 0 to 100% Gas Volume Fraction (GVF) range.



10" MPM meter installed in a wetgas line

For all GVF's, the meter covers the full 0 to 100% watercut range. One of the meters really unique properties is the ability to measure the watercut equally well at high watercut (water continuous flow) and lower watercut (oil continuous). As a consequence, the MPM meter achieves accurate and reliable oil flow rate measurements even at high watercut and high GVF. The users have until now perceived this a weakness of conventional multiphase meters on the market.

The meter is built with all parts in one unit, with minimum need for assembly on site. The electronics is designed and built to survive severe and violent conditions, and the transmitters are fixed to the sensor body.

Other key words for the meter are:

- Compact design
- Simple field configuration
- Water salinity measurement
- Design pressure of up to 1000 bar (15.000 psi) at up to 250°C (480°F)
- Full redundancy available for all primary measurements
- Self diagnostics and in-situ verification

When the MPM meter is located in the field, it is only connected to power and signal cables.

The MPM meter does all measurements and calculations locally, and transmits these to a SCADA system and/or an MPM terminal.

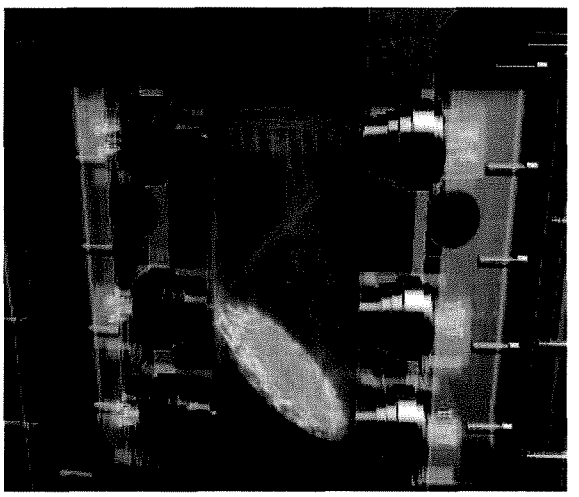
MPM Meter Measurement Principles

The MPM meter encompasses several sensors for different measurements, which are combined in a multi-modal tomographic measurement system.

The flow first passes through a Venturi, which is used to measure the total mass flow rate. MPM has developed special Venturi models in close co-operation and on license from its partners.

The Venturi is also used to create radial symmetrical flow conditions in the 3D Broadband™ section downstream the Venturi. The MPM Meter contains a special gamma densitometer solution, as well as temperature and pressure transmitters.
An optional probe can be included for measurement of the water conductivity, density and salinity.

3D BroadBand™



The symmetrical flow conditions created by the Venturi are ideal for high speed tomographic reconstruction techniques.

The 3D Broadband™ system developed by MPM is a high-speed radio- frequency (RF) based technique for measuring the watercut, the composition and the liquid/gas distribution within the pipe cross section.

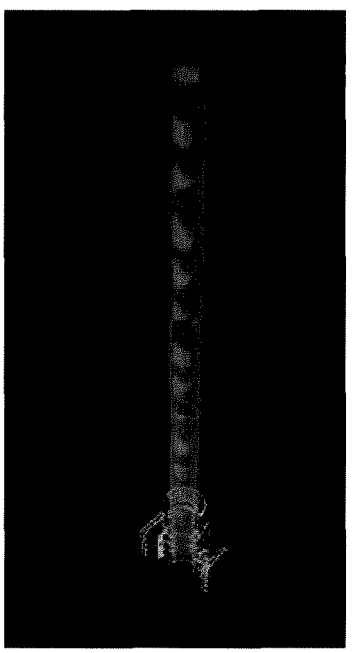
By combining this information with the measurement from the Venturi, accurate flow rates of oil, water and gas can be determined.

The MPM meter is extremely fast. Averaging of measured data is avoided, to prevent errors due to non-linearities in the flow.

Capturing rapid fluctuations in the flow rate

The MPM meter performs RF measurements in many different dimensions or planes. For each plane, measurements are made at many frequencies over a broad frequency range, and combined with gamma ray mass absorption measurements. Each measurement frequency in each direction forms a unique and independent equation resulting in several thousand equations per second for accurate determination of the multiphase cross sectional composition and distribution.

Flow changes in the longitudinal axis are captured precisely through a large number of complete measurement cycles every second, also enabling flow characteristics like slug intervals & lengths to be monitored.



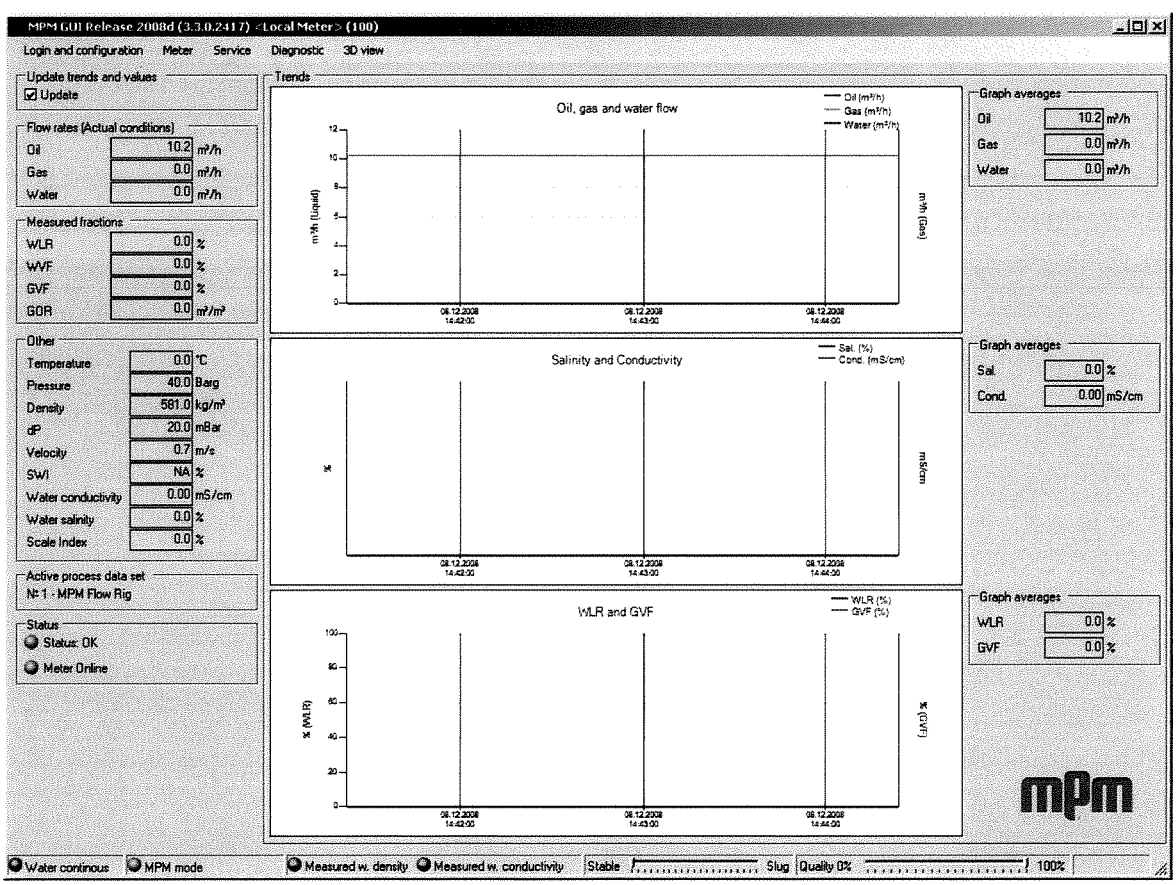
Meter User Interface (GUI)[1]

The Main Page of the user interface consists of a standard MS Windows GUI, divided into three parts; a menu bar at the top of the window, an information area on the left hand side, and a graphics area in the middle. In addition, the status bar at the bottom is used to give additional information about the meter and Meter operation mode.

The Main Page serves several purposes:

- Provides a trend of flow rates, fluid properties and flow condition – as a function of time
- Shows numerical, instantaneous values of flow rates, fluid properties and flow condition
- Displays information of the meter state (diagnostics and meter mode)
- The menu gives access to meter configuration, adding or removing MPM Meters, selecting different trends, and looking at diagnostics information (in order to alter meter configuration and adding or removing MPM meters, the user must have Administrator privileges)

User Interface with Menu, Information area, Graphics area, and status bar



[1] Further details are found in the MPM meter User Manual

Technical Specifications – MPM Topside Meter

Mechanical

Design pressure (max)	1000 bar	(15 000 psi)
Design temperature (process)	-50°C to +250°C	(-58°F to +480°F)

The MPM meter is delivered in different sizes and materials, depending on the application requirements. The meter sizes have been selected to ensure consistent and optimal overlap from one size to the other. The size to be used for a particular application will be selected based upon expected flow rates. The type of mechanical connections and their size will be selected to satisfy the user requirements.

Pipe size	MPM Sensor	ID (mm)
2 – 3"	2"	50
3 - 4"	3"	74
5 - 6"	5"	110
7 - 8"	7"	155
10-12"	10"	220
14-16"	14"	306

F53:	ASTM A182 F53 (Super Duplex steel) UNS S32750 UNS S32760
F51:	ASTM A182 F51 (Duplex Steel)
F44:	ASTM A182 F44 (6Mo Stainless steel)
316:	ASTM A182 316L (Standard Stainless)

Electrical

- 24 VDC; variations within 20-30 VDC are accepted
- Nominal power consumption is 70 watts (topside)

The electronics system is a ruggedized design, consisting of high quality components only. The complete assembly is tested and qualified according to subsea standards (ISO 13628-4). This includes testing at severe temperature, vibration and shock loads, as well as ESS tests.

Communication

- Modbus RS 485 or Modbus over TCP/IP
- Option for fiber connection directly to meter
- Bandwidth requirements are flexible. However, a capacity of 1 Mbit/sec will enable full remote operations and in-situ verifications features

Temperature Range

- Ambient operating temperature: -40°C to +55°C (-40°F to +130°F)

Hazardous Area Certification

- ATEX certified Eexdeia IIB T5
- EMC certified

Measurement Uncertainty Specifications

- The MPM meter performed with very small measurement uncertainties over the full range of GVFs and WLRs during qualification testing. The tests covered a large variety of operating conditions with pressures up to 120 bar. All tests were supervised and witnessed by independent parties, including the JIP Oil Companies.
- During the qualification testing the MPM meter measured flow rates of oil, water and gas within 1,5% of the reference instrumentation on a cumulated basis.
- For well testing and short measurement periods (instantaneous measurements), uncertainties are slightly higher.
- MPM offers a specific Application Evaluation to be performed to evaluate the suitability of the MPM meter for a particular application, which includes measurement uncertainty specifications.
- Further details and uncertainty specifications can be found in White paper No 1 – Measurement Uncertainty

MPM Flow Laboratory

MPM offers Factory Acceptance Test (FAT), training of field personnel and operators, and other studies to be carried out in the MPM Flow Laboratory. The Laboratory is designed to enable developing and testing of meters at field alike conditions. It offers a large variety in flow rates and flow regimes, and has highly accurate reference instrumentation.

A comprehensive test and qualification program was completed to qualify the MPM Meter for use in topside and subsea field applications.

Test reports are available on request

For further information, please see www.mpm-no.com
or contact us at:

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4066 Stavanger
Norway

e-mail: post@mpm-no.com
Phone: +(47) 51 22 02 00

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e.mail: info@mpm-us.com
Phone: +1 281 646 9991

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e-mail: info@mpm.ae
Phone: + 971 4 368 9890

ConocoPhillips Alaska **HSE** a Premier HSE Organization

Health, Safety, Environment, Training, Medical and Emergency Services

FAX

TO: Roberto Torres FAX NUMBER: 817/860-8263

COMPANY: ConocoPhillips Alaska TOTAL PAGES: 1 + 2

FROM: Diane Kobayashi PHONE NUMBER: 907.659.7812

SUBJECT: NRC Amendment #6 DATE: 2/24/10

Notes:

RECEIVED
FEB 24 2010
DNMS

ConocoPhillips
Alaska, Inc

Diane K. Kobayashi
Industrial Hygienist
Kuparuk River Unit
Health, Safety, Environment

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Anchorage, AK 99519-6105
phone 907.659.7812
N1206@conocophillips.com

ConocoPhillips

February 24, 2010

Mr. Roberto J. Torres
Senior Health Physicist
U.S. Nuclear Regulatory Commission - Region IV
Division of Nuclear Materials Safety
Nuclear Materials Safety Branch B
612 East Lamar Boulevard, Suite 400
Arlington, Texas 76011-4125

Reference: APPLICATION FOR AMENDMENT
RADIOACTIVE MATERIALS LICENSE NO. 50-27783-01
Docket Number: 030-36627

Dear Mr. Torres:

ConocoPhillips Alaska, Inc. has requested an amendment to our specific license referenced above. Specifically, one request is the addition of a MultiPhaseMeters AS, Model SH-7902 source holder (7902-08-07), containing Nuclitec GmbH 50 mCi Cs-137 source, source type CDCB13095 (RO822), Model CDC.800 (QSA) in the Alpine field. However, this gauge is not registered in the United States, and we are requesting licensing of this gauge to be used for research and development (Section 5.1 of NUREG 1556, Volume 3, Rev.1).

ConocoPhillips Alaska plans to field test the gauge for a period of approximately six (6) weeks and intends to return the gauge to the vendor shortly thereafter. Shipment will commence after approval has been received; testing will be completed before the end of April, 2010. Removal from Alpine is expected no later than one year from initial installation, approximately March, 2011. Field testing will allow ConocoPhillips Alaska to evaluate the measurement accuracy and decide if this gauge will be installed in future drillsites. The installation of such a gauge is intended to reduce our footprint.

MPM

The gauge will be installed and commissioned by a MultiPhaseMeters engineer. The gauge will not require any routine servicing. Our Instrument Technicians, however, will be instructed on the general principles of the gauge, safe handling practices, and performing a leak test. In addition, Operators who routinely access the installation area will be advised of the gauge and the potential effects of Cs-137.

MultiPhaseMeters AS has provided a procedure, "Handling of Radioactive Source MPM Meter", which has general guidelines for handling and transporting the gauge.

It appears MPM is not licensed by the State of Tx or an Agreement State or NRC to do these services. I have notified in writing Diane that Conoco's NRC license does not allow an unlicensed entity to do service. RJT 2-25-10

RECEIVED
FEB 24 2010
DNMS

If you require additional information, please do not hesitate to call me. Thank you for your assistance in this matter.

Sincerely,

Diane K. Kobayashi

Diane K. Kobayashi
Industrial Hygienist

Enclosure: 1

RECEIVED

FEB 24 2010

DNMS

Torres, RobertoJ

From: NSK Ind Hyg [n1206@conocophillips.com]
Sent: Wednesday, February 24, 2010 3:07 PM
To: Torres, RobertoJ
Cc: Kolesar, Dan J; 'Lars Farestvedt'
Subject: RE: Multi Phase Meter AS, Model SH-7902
Attachments: Ltr to NRC Amendment #6.1 (5-24-09).doc; RENT-I-HRS-015-Rev01 - Handling of Radioactive Source.pdf

Importance: High

Roberto:

Enclosed is our request to add the subject meter to our license at our Alpine field along with MPM's safe handling procedure. I will fax you a signed copy.

I am getting to leave in about two hours so if there is anything else, please advise ASAP. Thank you.

Diane Kobayashi

From: Torres, RobertoJ [mailto:RobertoJ.Torres@nrc.gov]
Sent: Wednesday, February 24, 2010 6:29 AM
To: NSK Ind Hyg
Subject: Multi Phase Meter AS, Model SH-7902

I have reviewed the technical information for the Multi Phase Meter and there is no information regarding radiation safety. Therefore when applying for "research and development" authorization you should provide operating and emergency procedures for this meter. The procedure should explain how the workers are going to protected from radiation coming out of this gauge. If this gauge has a shutter that opens and closes (to allow the radiation beam to come out), then you need to address that.

RECEIVED

FEB 24 2010

DNMS

Diane K. Kobayashi
Industrial Hygienist
Kuparuk River Unit
Health, Safety, Environment

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ConocoPhillips

February 24, 2010

Mr. Roberto J. Torres
Senior Health Physicist
U.S. Nuclear Regulatory Commission - Region IV
Division of Nuclear Materials Safety
Nuclear Materials Safety Branch B
612 East Lamar Boulevard, Suite 400
Arlington, Texas 76011-4125

RECEIVED
FEB 24 2010
DNMS

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RADIOACTIVE MATERIALS LICENSE NO. 50-27783-01
Docket Number: 030-36627

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If you require additional information, please do not hesitate to call me. Thank you for your assistance in this matter.

Sincerely,

Diane K. Kobayashi

Diane K. Kobayashi
Industrial Hygienist

Enclosure: 1

Rev./- Status	Revision Date	Reason for Issue	Supplier By	Supplier Checked	Supplier Approval	Client Approval
01	22.09.09	ISSUED FOR CLIENT COMMENT/ APPROVAL/ -AS BUILT	ST	HN	SR	

Purchase Order /- Package Description (3 lines available) :

Multiphase meter 3" with 4" Techlok hubs

Purchase Order No.:

Package No.:

N/A

Supplier Name /- Logo :

MULTI PHASE METERS AS

Supplier PO Ref.:

4116

Supplier Responsible /- Contact :

Sten Torstensen

Supplier Document Identity /- Reference No.:

QP-009

Installation :

Rental Meter

Area :

System :

Tag Numbers :

Cover :

Attachment :

Pages :

1 of 10

Project :

Review /- Status Codes

Acceptance of suppliers' documentation does not release the supplier from compliance with PO requirements

- ☐ 1 ACCEPTED
- ☐ 2 ACCEPTED - with comments incorporated
- ☐ 3 NOT ACCEPTED - revise & re-submit
- ☐ 4 ACCEPTED - for information only

Date :	/ /
Name :	
Signature :	

Document Type and Descriptive Title (3 lines available) :

HANDLING OF RADIOACTIVE SOURCE

SDAG	Shtokman Development AG	
	Project Document Number	Rev. /- Status
	RENT-I-HRS-015	01

Multi Phase Meters AS

Quality Procedure

Handling of Radioactive Source MPM Meter

Document No.	QP-009
Document Name	Handling of Radioactive Source
Classification	PROJECT CONFIDENTIAL

Version	Date	Purpose	Written By	Accepted By	Approved By
01	19.12.06	First release	HB	ST	SR
02	02.07.08	Update for subsea	ST	HMA	BS
03	16.10.08	Updated sign	ST	HN	SR

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1 INTRODUCTION

1.1 Purpose

The purpose of this document is to provide information regarding safe handling of a radioactive source throughout its life time. The document is based on information from the International Atomic Energy Agency (IAEA); for more information about sealed radioactive sources in general, local regulatory authorities should be contacted. Additional information is also available on the IAEA website http://www.iaea.org.

1.2 Abbreviations

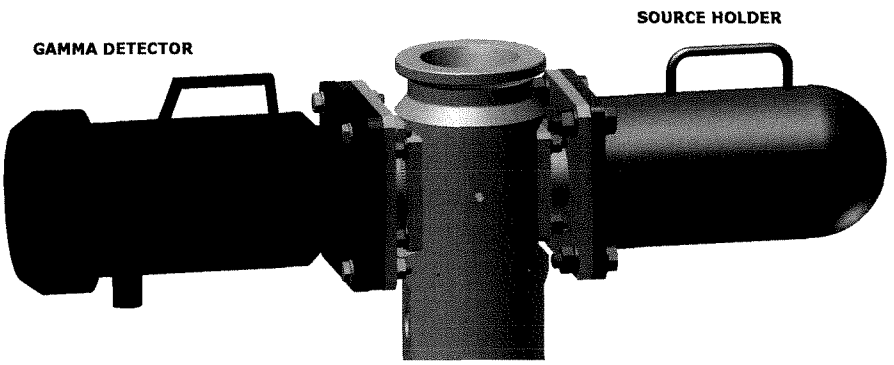
MPM	-	Multi Phase Meters AS
IAEA	-	International Atomic Energy Agency

1.3 Referenced Documents

Ref.	Document title	Revision	Origin
N/A			

2 INSTALLATION OF DENSITOMETER TOPSIDE

The source holder shall always be locked and closed with a padlock. It shall remain closed until the densitometer (both detector and source) is properly installed.



2.1 Install detector

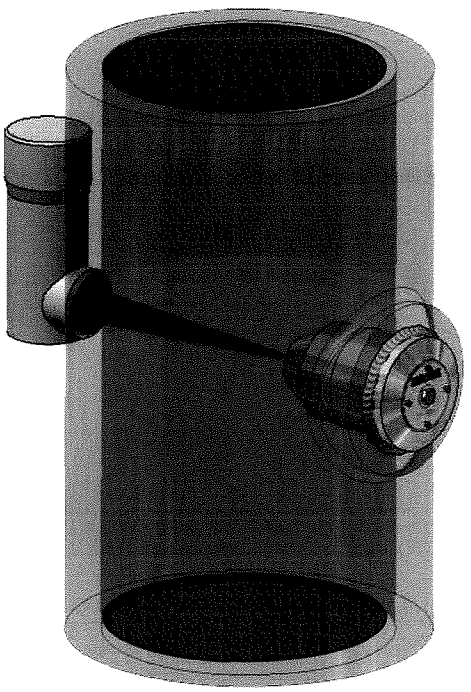
1. Make sure o-ring between bracket and detector is present, and lubricated.
2. Install the detector with the handle pointing upwards, and fasten with 4off supplied M12 bolts.

2.2 Install source

1. Make sure the source holder is **shut** and **locked**.
2. Make sure o-ring between bracket and source holder is present, and lubricated.

3. Install the source holder with the carrying handle pointing **upwards**, and fasten with 4off supplied M16 bolts.
4. **Before** opening the shutter padlock, make sure that both the detector and the source holder are properly installed on the multi phase meter.
5. Apply warning signs according to local regulations.

3 HANDLING OF SUBSEA METER WITH RADIOACTIVE SOURCE



The figure shows how the radioactive source is installed into the subsea meter. There will be some radioactive radiation out of the top and bottom of an open canister. There should under no circumstances be any body parts in the red marked area.

Prevent any access by hands to the radiation beam before the meter is connected to the process pipe

Under transportation and storage there should be protective shielding on both pipe-endings.

3.1 Testing with water or nitrogen

During testing with water or nitrogen there is no contamination of the process substance, so need for special precautions.

3.2 Radioactive officer

The source data sheet should always follow the meter. The radioactive officer in the storage facility or the test site should always in advance be informed about the shipment or storage of the source. The customer will have to register the source with the countries national radioactive agency.

3.3 Transportation index

The transportation index is 7 for the subsea radioactive source. Always use official certified transportation company for transportation on land, sea or in the air.

4 HANDLING OF RADIOACTIVE SOURCES

Users shall make sure that the radioactive source is kept secure at all times. If no longer in use, it shall be stored in a safe locked compartment with radioactive decals on. When it no longer has a useful purpose, it shall be properly disposed of at a licensed radioactive waste facility or returned to MPM. Please see the attached certificate for more details

4.1 Transportation

The International Atomic Energy Agency (IAEA) publishes its own regulations for the safe transport of radioactive materials. These regulations form the basis for national and international regulations for such transport operations. Separate but consistent regulations exist for all the different modes (road, rail, sea and air) used to transport radioactive materials.

To inform people of the presence of radiation, radioactive sources have special labels. The trefoil is the international symbol that appears on all containers, materials, or devices that have a radioactive component. The word "radioactive" and the number I, II, or III may also appear on the packaging used to transport radiation sources.

4.1.1 Transport Container

The source holder shall be shipped in a special container, marked according to international standards and with standard label stating type of isotope and activity. The transport container shall be approved for class-A. The source holder shall be shut closed and locked during transport, storage and installation. Please store the transportation box, it is an approved category A box, made for transportation of radioactive materials

4.1.2 Package Labels

All packages must be labelled, with at least two labels on opposite sides of package. All packages must be marked with the United Nations number assigned to the material. Road vehicles transporting packages should have placards on either side and at the rear of the vehicle carrying the trefoil and the UN class number 7, denoting that the conveyance is carrying radioactive material.

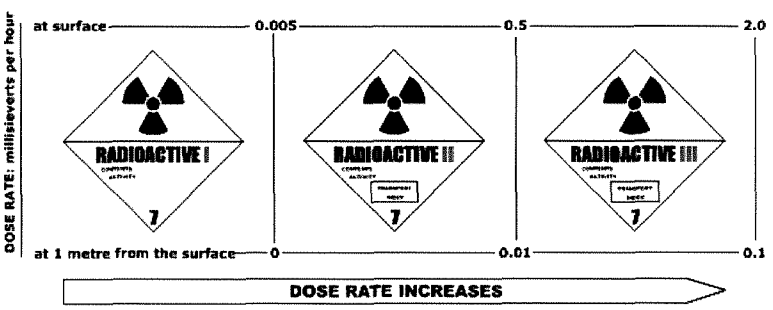


Figure 1 "Radioactive categories"

Transport index
This is a number related to the dose rate from the package and the degree of hazard of the content. It is used to decide how many packages can go into a conveyance and how far they should be stowed away from occupied areas.

Critical safety index
A number used to provide control over the accumulation of packages containing fissile material.

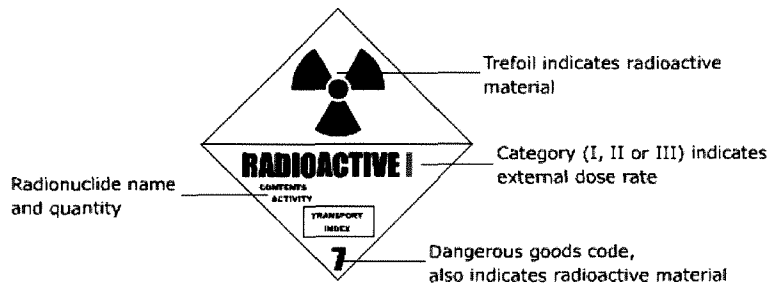


Figure 2 "Detailed description of transportation placards"

4.2 Storage

Radioactive sources which are temporarily decommissioned, sources which are temporarily stored, as well as radioactive waste in the form of sources which have been in use, should be in proper safekeeping.

- The storage room/closet should be locked and access restricted.
- The door should have a standard ionising-radiation warning sign and explanatory text.
- The radiation level outside the storage room should not exceed 7.5 µSv/h.
- Radioactive sources should not be stored together with explosives or highly flammable substances.
- An inventory of stored radioactive sources should be present in the storage room.

4.3 Treatment and final disposal of radioactive waste

Radioactive waste shall be dealt with in such a way as to cause the least possible damage and inconvenience. The waste treatment shall:

- generate minimal waste,
- be carried out using the best available technology. To minimise waste problems, a basis shall be taken in technology which, based on an overall assessment of current and future use of the environment and of economic factors, gives the best results.

Undertakings which procure sealed radioactive sources should make certain that a return scheme exist so that radiation sources can be returned after use.

Radioactive sources which are permanently decommissioned shall be returned to MPM (see Section 0) or an approved and licensed facility[1] for disposal.

[1] Facility should be approved by a local radiation protection authority.

4.4 Secure area

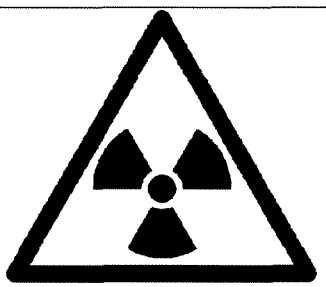
Radioactive sources in an unrestricted area must be secured at all times against unauthorized removal. An unrestricted area is defined as any area to which access is not controlled by the user for purposes of protection of individuals from exposure to radiation and radioactive material. Licensed materials in an unrestricted area and not in secure storage shall be tended under constant surveillance and immediate control of the user.

The current method of securing radioactive material at any location should be by use of automatic cipher locks on access doors to laboratories test sites. Cipher locks may be used alone or in conjunction with normal key locks in place on most doors. If the facility is to be left unmanned for an extended period of time, then all shall be secured by lock and key, and entry alarm.

Offshore and onshore oil and gas facilities are not considered an unrestricted area.

4.5 Work area

The general work area where there is a radioactive source should be marked on the outside and inside with hazard signs, informing the visitor about the radiation. This must be done, to inform the public/service/third parties in case of fire, pregnancy, because there should in these cases be taken extra precautions. The sign should also contain the name of the Radiation Protection Officer. See example of sign below.



LOW LEVEL RADIOACTIVE AREA

PERSON RESPONSIBLE: _____
INTERNAL TEL: _____
EXTERNAL TEL: _____
RADIOACTIVE OFFICER: _____
INTERNAL TEL: _____
EXTERNAL TEL: _____

MPM CERTIFICATE, RETURN OF DECOMMISIONED RADIOACTIVE SOURCE

MultiPhaseMeters

MultiPhaseMeters

TO WHOM IT MAY CONCERN

CERTIFICATE

Return of radioactive sources.

We hereby confirm that Multi Phase Meters AS will take back spent sources originally supplied by Multi Phase Meters AS, provided the sources are in the original source-holder, and documented by the serial number and source activity printed on the nameplate of the source holder, before shipment.

Returns of sources are at customer costs with respect to packaging and freight, in addition to a handling charge. The current handling charge is EUR 1000,00 per individual source. This guarantee is based on the present legal situation as well as the licenses of the source manufacturer.

Norway 2006-12-19
Multi Phase Meters AS

Hans Olav Hide
Man. Dir.

Multi Phase Meters AS
Fabrikkveien 21
P.O box 279
4066 Stavanger

www.mpm-no.com
Phone: +47 40001150
Fax: +47 40001151
Ent nr: 986085548

Torres, RobertoJ

From: Torres, RobertoJ
Sent: Wednesday, February 24, 2010 4:57 PM
To: 'NSK Ind Hyg'
Cc: Kolesar, Dan J; 'Lars Farestvedt'
Subject: RE: Multi Phase Meter AS, Model SH-7902

I have started the review of your letter dated 2/24/2010 and will let you know if I have any questions. Please ensure that MultiPhaseMeters are authorized by an NRC or Agreement State license (Texas License) to perform installation, removal, servicing of gauges. Your NRC license restrict these activities to individuals licensed by NRC or an Agreement State to perform these services.

From: NSK Ind Hyg [mailto:n1206@conocophillips.com]
Sent: Wednesday, February 24, 2010 3:07 PM
To: Torres, RobertoJ
Cc: Kolesar, Dan J; 'Lars Farestvedt'
Subject: RE: Multi Phase Meter AS, Model SH-7902
Importance: High

Roberto:

Enclosed is our request to add the subject meter to our license at our Alpine field along with MPM's safe handling procedure. I will fax you a signed copy.

I am getting to leave in about two hours so if there is anything else, please advise ASAP. Thank you.

Diane Kobayashi

From: Torres, RobertoJ [mailto:RobertoJ.Torres@nrc.gov]
Sent: Wednesday, February 24, 2010 6:29 AM
To: NSK Ind Hyg
Subject: Multi Phase Meter AS, Model SH-7902

I have reviewed the technical information for the Multi Phase Meter and there is no information regarding radiation safety. Therefore when applying for "research and development" authorization you should provide operating and emergency procedures for this meter. The procedure should explain how the workers are going to protected from radiation coming out of this gauge. If this gauge has a shutter that opens and closes (to allow the radiation beam to come out), then you need to address that.

Torres, RobertoJ

From: Torres, RobertoJ
Sent: Wednesday, February 24, 2010 4:53 PM
To: 'richard.ratliff@dshs.state.tx.us'
Cc: McLean, Linda; Erickson, Randy
Subject: FW: Question about MultiPhaseMeters
Attachments: Transport Case-7900-COC.pdf; RENT-I-GAM-019 - Gamma Certificates.pdf; Cs137 - Material Safety Data Sheet.pdf; RENT-I-HRS-015-Rev01 - Handling of Radioactive Source.pdf

Mr. Ratliff:

MultiPhaseMeters based in Houston, Texas (see contact information below), will be providing services (fixed gauge installation and removal of a Multi Phase Meter AS Model SH-7902) to an NRC licensee (Conoco Phillips) in Alaska (NRC jurisidiction). This device appears not to have an SSD and the NRC licensee wants to use this device (conduct field test) for about 2 months then the device will be removed from NRC jurisdiction. I can authorize the use of this device in the NRC license under "research and development" (use of a SSD registered sealed source in an unregistered device, NUREG-1556, Volume 3, Section 5.1.2). The NRC licensee is telling me that a MultiPhaseMeters engineer will be performing the services. Two questions.

1. Is MultiPhaseMeters a State of Texas licensee authorized to provide service (installation, removal, etc.) to fixed gauges?

2. Has MultiPhaseMeters submitted or is planning on submitting an SSD application for Model SH-7902?

Your staff help in this matter will be appreciated. Thank you.

Roberto J. Torres
Senior Health Physicist
U.S. Nuclear Regulatory Commission - Region IV
Division of Nuclear Materials Safety
Nuclear Materials Safety Branch B
612 East Lamar Boulevard, Suite 400
Arlington, Texas 76011-4125
Telephone 817-860-8189
Facsimile 817-860-8263
robertoj.torres@nrc.gov

did not receive response because email bounced back as undelivered. Tried other State of TX emails and had the same result. RJT 2-25-10

From: Lars Farestvedt [mailto:lf@mpm-us.com]
Sent: Tuesday, February 23, 2010 12:33 PM
To: Torres, RobertoJ
Cc: Kolesar, Dan J; NSK Ind Hyg
Subject: RE: Question about MultiPhaseMeters

Mr. Torres,

I have requested this information from MPM in Norway, as I do not have this readily available here.

I have enclosed what I do have available for your information – but believe this is not the certification you are looking for.

I will respond once I have the requested certificate for the source holder.

Regards,

Lars Farestvedt
General Manager
Multi Phase Meters, Inc.
P: +1-281-646-9991 | M: +1-281-513-3961 | IP: +47-51-22-02-60

Lars Farestvedt's BP MS150 Donation Link

From: NSK Ind Hyg [mailto:n1206@conocophillips.com]
Sent: Tuesday, February 23, 2010 11:11 AM
To: Lars Farestvedt
Cc: Kolesar, Dan J; 'Torres, RobertoJ'
Subject: FW: Question about MultiPhaseMeters
Importance: High

Lars:

Please forward a copy to Mr. Torres and copy me. Thank you.

Diane Kobayashi
ConocoPhillips Alaska
907.659.7812

From: Torres, RobertoJ [mailto:RobertoJ.Torres@nrc.gov]
Sent: Tuesday, February 23, 2010 7:11 AM
To: NSK Ind Hyg
Subject: Question about MultiPhaseMeters

Your letter dated February 18, 2010 request authorization for "MultiPhaseMeters AS, Model SH-7902 source holder....". I have not been able to find a sealed source and device registration (SSDR) certificate for this model number. Please provide copy of certificate registration or registration number so I can look it up in the SSDR database. Thanks.

Conoco Phillips Alaska

Torres, RobertoJ

From: Torres, RobertoJ
Sent: Thursday, February 25, 2010 12:32 PM
To: 'Kolesar, Dan J'; NSK Ind Hyg
Cc: 'Lars Farestvedt'; Minyon, Kathy
Subject: Use of service provider

Conoco Phillips Alaska RSO, Diane Kobayashi

Multi Phase Meters, Houston, TX

Mr. Kolesar, Ms. Kobayashi:

MultiPhaseMeters appears not to have an Agreement State license or NRC license to perform installation, commissioning, decommissioning and servicing of fixed gauges. License condition number 17 of ConocoPhillips Alaska license issued by the U.S. Nuclear Regulatory Commission only allows licensed entities to perform such services at Conoco's facility. If ConocoPhillips proceeds to use a non-licensed entity to perform these services, contrary to the NRC license, ConocoPhillips will commit a violation that will be considered for escalated enforcement involving civil (monetary) penalties because of its willfulness nature.

I have notified our inspection branch to pursue this matter during the next inspection.

Roberto J. Torres
Senior Health Physicist
U.S. Nuclear Regulatory Commission - Region IV
Division of Nuclear Materials Safety
Nuclear Materials Safety Branch B
612 East Lamar Boulevard, Suite 400
Arlington, Texas 76011-4125
Telephone 817-860-8189
Facsimile 817-860-8263
robertoj.torres@nrc.gov

Torres, RobertoJ

From: NSK Ind Hyg [n1206@conocophillips.com]
Sent: Thursday, February 25, 2010 12:21 PM
To: Torres, RobertoJ
Cc: Kolesar, Dan J
Subject: RE: Multi Phase Meter AS, Model SH-7902

Thank you, Roberto.

Dan Kolesar can be reached at 907.263.4039 if you need additional information. If you cannot reach him, please do not hesitate to call me on my cell phone at 907.947.2934. I am now off shift but will check my e-mail to make sure that we provide you with the information you require. (I now have to do some snow blowing - it is coming down hard here in Anchorage.)

Diane

From: Torres, RobertoJ [mailto:RobertoJ.Torres@nrc.gov]
Sent: Wednesday, February 24, 2010 1:57 PM
To: NSK Ind Hyg
Cc: Kolesar, Dan J; 'Lars Farestvedt'
Subject: RE: Multi Phase Meter AS, Model SH-7902

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Sent: Wednesday, February 24, 2010 3:07 PM
To: Torres, RobertoJ
Cc: Kolesar, Dan J; 'Lars Farestvedt'
Subject: RE: Multi Phase Meter AS, Model SH-7902
Importance: High

Roberto:

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Diane Kobayashi

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Sent: Wednesday, February 24, 2010 6:29 AM
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Subject: Multi Phase Meter AS, Model SH-7902

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