



国家质量监督检验检疫总局

General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China



APLMF 21st Meeting

Report from Working Group on Metrological Control System (MCS)

**Presented by
Yang Youtao
P.R. China**



Outlines

- **1 2 Guide lines for APLMF**
- **Guide lines of “Ionizing radiation metrology for human health and security in medicine on legal metrology system” (No.1-2013)**
- **The complementary controls of medical devices on metrological and medical supervision (No.2 -2013)**
- **2 New Guide line**
- **Guide to the application of pressure metrology in industry safety under legal metrological system**



Guide No.2-2013

WG on Medical Measurements

- **The APLMF Guide to**
- **The complementary controls of medical devices on metrological and medical supervision**

- **drafted by the WG on Medical Measurements & Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI).**



New Guide line

- **Guide to the application of pressure metrology in industry safety under legal metrological system**
- **10-2014 Email to APLMF member for comments.**



The concept and application background of the pressure metrology

Nowadays, lots of pressure instruments are installed for industrial process. Some of them measure the pressure in pipes, carry out controlling movement, alarm while the pressure is abnormal. Others are applied to simulating a pressure environment in the test equipments. They are also the main units of an important leakage detected test which named “negative pressure test”. The performance of these pressure instruments relate strongly to the industry safety, meanwhile, as a component in production process the broken gauges themselves would be dangerous as a leaking resource. The implement of “Pressure metrology” is an efficient way of ensuring these pressure instruments working well and the indications are reliable and accurate by means of a series of technical tests and scientific managements. Being lack of “Pressure metrology” means slack managements in industry safety and leads to a “disaster”.



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- **The “Bhopal disaster”, also referred to as the “Bhopal gas tragedy”, is the saddest lesson of the slack such as this. It is the world's worst industrial disaster in 20th century. It occurred on the night of 2–3 December 1984 at the Union Carbide India Limited (UCIL) pesticide plant in Bhopal, Madhya Pradesh. Over 500,000 people were exposed to methyl isocyanate (MIC) gas and other chemicals. The official immediate death toll was 2,259. The government of Madhya Pradesh confirmed a total of 3,787 deaths related to the gas release. Others estimate 8,000 died within two weeks and another 8,000 or more have since died from gas-related diseases. A government affidavit in 2006 stated the leak caused 558,125 injuries including 38,478 temporary partial injuries and approximately 3,900 severely and permanently disabling injuries.**



- **the industry technology has been gotten a great achievement, but “Pressure metrology” is still the necessary safeguard of industry safety. The BP “Deepwater Horizon oil spill” is the best example.**



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Significant of the guide



- **This guide recommends that complete a scientific and systemic “Pressure metrology” in industry sites under legal metrological system for reducing the risk of production process, strength the industry safety management, detecting and preventing the accident in time.**



- **Contents**
- **Foreword**
 - Introduction and scope
 - Function of this guide
 - Terminology and concept



Pressure metrological traceability

1. Technical foundation

1. The technical foundation of pressure gauges metrological traceability

2. pressure transmitters metrological traceability

3. pressure controller metrological traceability

2. Reference condition

1. The reference condition of pressure gauges metrological traceability

2. pressure transmitters metrological traceability

3. pressure controllers metrological traceability



Pressure metrological traceability

1. Reference equipment

1. The Reference equipment of pressure gauges metrological traceability

2. pressure transmitters metrological traceability

3. pressure controllers metrological traceability

2. Laboratory requirements

3. Metrologic traceability diagram



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Thank you for your Attention!





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**Proposed 2015 Work Plan
WG on Metrological Control System
(draft)**

Yang Youtao

P.R. China



2015 Work Plan

- 1 Associate with other WG to draft the guide lines.



2. Plan to hold a workshop of the Metrological Control System

It would be better for Working Group on Metrological Control System to hold a workshop about the Metrological Control System. Still planning a Seminar of Metrological Control System in 2015.



- 3. Plan to hold a Workshop On Software Controlled Measuring Instrument.**
- 4. Think about some new guidelines for APLMF in the Metrological Control System.**



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The end