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Industrial-process control -- Safety of analyser houses

工业过程控制 分析小屋的安全

(English Translation)

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Foreword

All technical contents of this standard is mandatory.

This standard was drafted in accordance with rules GB/T 1.1-2009 given.

This standard uses translation method is equivalent to using IEC 61285:2004 "Safety of industrial process control analysis hut." for ease of use, this standard made the following editorial changes.

--- classification 5.5.4.4 and 5.5.4.5 as 5.5.4.4.1 and 5.5.4.4.2, 5.5.4.4 supplement for the title;

--- the original text of individual editorial errors were corrected.

The standard proposed by China Machinery Industry Federation.

The standard measurement and control of the instruments Standardization Technical Committee Technical Committee (SAC/TC124/by the National Industrial Process SC6) centralized.

Limited, Sichuan-Chongqing Analytical Instruments Co., Ltd., Shanghai Institute of Measurement and Testing Technology, Shanghai Electronics Co., scientific instruments, poly Micron Technology (Hangzhou) Co., Ltd., Nanjing Analytical Instrument Factory Co., Ltd., Beijing North sub-Mai Hake Analytical Instruments Co., Ltd., Beijing Analysis Institute instrument.

Introduction

Process for continuous analyzers and flow characteristics of the process medium is automatically measured, automatically sampling, unattended system design and dimension Care less.

This standard specifies the minimum safety requirements typical analyzer house (AH) to be met. A variety of situations that may arise, through more stringent the local grid, industry and enterprise standards requirements.

The measurement results transmitted continuously to the process controller, operating platform or recorded as a file. Process analyzer may be used.

- Environmental Analysis;
- personnel protection;
- protective equipment;
- quality measurement/control;
- control process (optimization means);
- saving.

In the simplest case, the sensor is directly mounted in the analyzer test substance, no sample extracted. Other cases are from the primary medium stream Sampling, then sent to an analyzer. The system may comprise a plurality of functions, for example.

- sample extraction;
- sample transfer;
- sample processing;
- emissions and/or recovering the sample stream;
- common auxiliary substances and feed;

- flow path switching;
- automatic or manual calibration and verification system;
- signal processing;
- performance monitoring and control.

GB/T 19768-2005 given process performance analyzer sample processing system FIG.

Analyzer respective units may be installed in combination may be separately disposed. And a combination of analyzer systems have many advantages, they are integrated in the One has more advantages. These advantages include.

- reduce the cost of utilities and install signal cables;
- protection of personnel and equipment and complex components in harsh environmental conditions;
- maintenance facilities;
- Safety.

Analyzer can refer to a variety of standard design, and some are flameproof, some of which are intrinsically safe, some suitable areas for 2, some only for non-hazardous Risk area, not all of the analyzer can meet every requirement.

Process devices typically include all areas. Area 0, Area 1, Area 2, and non-hazardous areas.

Analysis cabin location, the ventilation air source, and the analysis of the cabin area classification analyzer such as economic factors associated with the selection.

These factors include the distance the sampling point to the analysis region of the cabin, in which the cabin analysis, from the cabin air to a non-hazardous gas source Distance, and the cost of the analyzer adapted to analyze the classification of cabin area.

Industrial process control security analysis cabins

1 Scope

This standard specifies requirements for installation analysis cabin (AH) during the operation of the analyzer measurement system security, in order to take precautions against fire, explosion and the occurrence of health hazards. The standard IEC 60079-16 expanded content, including an analysis of the cabin area 2, and applies to toxic Qualitative damage (must follow the national standards related to toxic hazards).

This standard does not apply to the dust explosion-proof occasions.

Chapter 4 of the cabin and its location analysis in the process of connecting the device

region.

Chapter 5 of the analyzer house design, construction and layout, not involving measuring system analyzer portion installed in other places, for example, the sample processing chamber (SCR) or distribution chamber.

Chapter 6 provides for measures to reduce the risk of explosion cabin analysis, allowing the device is switched on and the case open in case of power supply service.

NOTE: For most liquid, the main limitation is harmful to the human body vapor concentration should be below the explosive (flammable) limit (LEL) (see Chapter 7).

With n-pentane for example, the LEL is 1.4% or 14000×10^{-6} , this concentration will immediately endanger human life and health. In 30min by any person without the escape of any symptoms of injury or irreversible health effects of the maximum concentration of only 0.5%, or 5000×10^{-6} .

The interior space is divided into Zone 1 means that the staff are not allowed to enter this area without wearing protective equipment such as respirators device area. If the district will analyze the hut placed close to 1 means no staff in this area without wearing protective equipment.

Chapter 7 of the protective measures analyzed cabin personnel from substances harmful to health hazards.

2 Normative references

The following documents for the application of this document is essential. For dated references, only applies to the version dated paper Pieces. For undated references, the latest edition (including any amendments) applies to this document.

IEC 60079-16:1990 Explosive Gas Atmospheres electrical equipment - Part 16. Analysis artificial ventilation hut

3 Terms and Definitions

The following terms and definitions apply to this document.

Analyzer cabinet analysercabinet Mounted analyzer single or multiple small closed cabinet. The door can be opened from the outside when the maintenance.

Analyzer shed analysershelter One or more sides of the open structure and air can flow unimpeded nature, can be mounted inside a single or multiple analyzer. Analyzer Dimension Repair is usually carried out under protection work shed.

Analysis hut analyserhouse; AH A closed portion of the building or the building, a single or multiple installation process analyzer and auxiliary equipment. By the qualified personnel