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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 16655-2008

Replacing GB 16655-1996

**Safety of machinery -- Integrated manufacturing systems --
Basic requirements**

机械安全 集成制造系统 基本要求

(English Translation)

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Foreword

The standard Chapter 4 ~ Chapter 10 is mandatory, the rest are recommended.

This standard is equivalent to international standard ISO 11161:2007 "Safety of machinery - Integrated manufacturing systems basic requirements" (in English).

The structure and content of the standard ISO 11161:2007 is consistent, but according to our standard writing rules to international standards made editorial repair Change, and ISO 11161:2007 There are different compared to the following.

--- Use the "standard" instead of "this International Standard";

--- Canceled international standards foreword, again in accordance with our national standards drafted foreword;

--- Revised Chapter 2 Lead normative references, and relevant international standards and regional standards referenced in Chapter 2 has been converted into China's national standard, and are a direct reference to the corresponding national standards;

--- International standards This standard has been appearing in other chapters into national standards, it was renumbered national standard number, and the phase International standards should be the version number in parenthesis after the number of national standards, ease of use and access, unconverted international standards Reservations.

This standard replaces GB 16655-1996 "industrial automation systems integration manufacturing system security basic requirements." this standard GB 16655-1996 amended as follows.

- Standard attributes to the full text of the mandatory provisions mandatory;
- Update the normative references;
- Removed "barriers, warning barrier, a controlled shutdown grip operation control device, limit device, lock, shut down operations, suspended operations Boxes, task program, the trip device and uncontrolled shutdown "of 11 terms and their definitions;
- Added "detection zone, stop, injury, integrators, operators, protection, control, suppliers, the mission area, the user" a total of 10 terms;
- The term "enable device" with "causing means";
- The Chapter 4, "Security measures" into Chapter 4, "risk assessment and risk mitigation strategies," Chapter 5, "Risk Assessment" and Chapter 6 "Reduced risk" chapters;
- Increased Chapter 7, "mission area" content;
- The Chapter 5, "safety control system design requirements," Chapter 6, "System design and safety," Chapter 7, "training, security Installation, commissioning and delivery of functional tests "and Chapter 8," Use and Care "integrated into Chapter 8," Security and control " Chapter 9, "Using Information" and Chapter 10, "design to be done to confirm";
- Increase the informative Appendix B, Appendix C and Appendix D.

The Standard Appendix A, Appendix B, Appendix C and Appendix D is an informative annex.

The standard proposed by China Machinery Industry Federation.

This standard by the National Industrial automation systems and integration Standardization Technical Committee (SAC/TC159) centralized.

Introduction

Machinery safety standard is structured as follows.

- a) A Class standard (basic safety standards), provides the basic concepts apply to all machinery, design principles and general characteristics.
- b) Class B standards (generic safety standards), it provides a mechanical safety features or use of a wide range of safety class Measures.
- BI --- class, specific security features (e.g., safety distance, surface temperature, noise) standard;

--- B2 class, security devices (such as hands controls, interlocking devices, pressure sensitive devices, guards).

c) C class standards (machine safety standards), provides detailed safety requirements for a particular machine or unit.

According to GB/T 15706.1 of the regulations, the standards are B1 class common safety standards.

Integrated Manufacturing Systems (IMS, see 3.1) are very different in size and complexity, and can involve a variety of specialized skills and knowledge Knowledge of different technologies together.

The integrated manufacturing system should be seen as a new machine, rather than a simple combination of the various components. Integrators (see 3.10) and those required Only familiar with the system components sectoral cooperation. IMS components require frequent manual adjustment of the occasion, such as. inspection, repair, set, stop the entire IMS system is impractical and unnecessary. This standard gives the task to ensure the implementation of these security personnel requirements. These tasks Security involved and the "mission area" concept and use of.

The purpose of this standard is to illustrate how to apply GB/T 15706.1-2007, GB/T 15706.2-2007 and GB/T 16856.1-2008 requirements.

Figure 1 shows the general structure of the integrated manufacturing system.

Appendix A gives some examples of integrated manufacturing system.

GB 16655-2008/ISO 11161:2007 Explanation.

- 1 --- controller; 6 --- danger zone B;
- 2 --- manual control box; 7 --- danger zone C;
- 8 --- consumables and waste streams; 3 --- security area;
- 4 --- local controller;. 9 --- raw material stream;
- 5 --- Hazardous Area A; 10 --- Finished.

Integrated manufacturing system architecture in Figure 1 GB 16655-2008/ISO 11161:2007
Safety of machinery - Integrated manufacturing systems Basic requirements

1 Scope

This standard specifies the Integrated Manufacturing System (IMS) safety requirements, these systems will interconnect two or more machines are integrated, in real Now specific applications, such as. machining of parts or assembly. This standard gives the kind of IMS (IMS basic structure shown in Figure 1) safety design, Safety and usage information

requirements and recommendations.

Note 1: In this standard, "system" refers to integrated manufacturing systems.

Note 2: In this standard, the "machine" refers to the composition of machines and associated equipment integrated manufacturing system.

This standard does not include the safety requirements for single machines and equipment, these requirements may be given in specific standards of these machines and devices. this Standard relates only to the contents of the vital interconnection of machines and safety components of. Integrated manufacturing system machinery and equipment separate or independent workers for the occasion, when the security guards to the protective effect of mode of production is suppressed or suspended, you can use these machines and related safety equipment Full standards.

2 Normative references

The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 8196-2003 mechanical safety devices fixed and movable guards design and manufacture of general requirements (ISO 14120:2002, MOD) GB/T 15706.1-2007 Safety of machinery - Basic concepts, general principles for design - Part 1. Basic terminology, methodology (ISO 12100-1:2003, IDT) GB/T 15706.2-2007 Safety of machinery - Basic concepts, general principles for design - Part 2. Technical principles (ISO 12100-2.

2003, IDT)

GB 16754-2008 Safety of machinery - Emergency stop design principles (ISO 13850:2006, IDT) GB/T 16855.1-2008 Safety of machinery - Safety-related control system components - Part 1. General principles for design (ISO 13849-1.

2006, IDT)

GB/T 16855.2-2007 Safety of machinery - Safety-related control system components - Part 2. Confirm (ISO 13849-2:2003, IDT) GB/T 16856.1-2008 Safety of machinery - Risk assessment - Part 1. Principles (ISO 14121-1:2007, IDT) GB 17888.1-2008 Safety of machinery stationary facilities - Part 1. enter a fixed means of access between two levels Selection (ISO 14122-1:2001, IDT) GB 17888.2-2008 Safety of machinery stationary facilities - Part 2. Working platforms and channels (ISO 14122-2.

2001, IDT)

GB 17888.3-2008 Safety of machinery stationary facilities - Part 3. Stairs, steps and