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GB/T 44692.3-2026

Equipment integrity of hazardous chemical enterprises - Part 3: Method for setting and calculating performance indicators

危险化学品企业设备完整性 第3部分 绩效指标设置与计算方法

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part

1.Structure and Drafting Rules of Standardization Documents". Drafting. This document is Part 3 of GB/T 44692 "Integrity of Equipment in Hazardous Chemical Enterprises". The following sections of "Device Integrity" have been published.

1.Management System Requirements;

2.Technical Implementation Guidelines;

3.Performance Indicator Setting and Calculation Methods;

4.Information Technology Specifications. Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents. This document was proposed and is under the jurisdiction of the National Technical Committee on Standardization of Hazardous Chemicals Management (SAC/TC251). This document was drafted by: Sinopec Safety Engineering Research Institute Co., Ltd., Chemical Registration Center of the Ministry of Emergency Management, and Sinopec-Korea (Wuhan) Petroleum. Chemical Co., Ltd., Sinopec (Guangdong) Refining & Chemical Co., Ltd., China Academy of Safety Science and Technology, Shandong Jingbo Logistics Co., Ltd., China Shengli Oilfield Branch of PetroChina Co., Ltd., China Special Equipment Inspection and Research Institute, Qinghai Huixin Asset Management Co., Ltd. Shaanxi Coal Group Yulin Chemical Co., Ltd., Beijing University of Chemical Technology, China University of Petroleum (Beijing), Shaanxi Yanchang Petroleum (Group) Co., Ltd. The company, Hebei Chengxin Group Co., Ltd., Zhejiang Jinhua New Materials Co., Ltd., and Henan Xinlianxin Chemical Industry Group Co., Ltd. The main drafters of this document are. Dang Wenyi, Qu Dingrong, Xu Shujian, Wei Dong, Qiu Hongbin, Ren Gang, Sun Xinwen, Xu Xing, Li Yuntao, Lü Wei, and Yang Wenxue. Liu Xin, Qiu Zhigang, Wu Wenbin, Chen Sining, Duan Binghong, Chang Xibin, Zhang Yuefeng, He Jianbin, Zhou Jinqiao, Ai Hui, Liu Xize, Xu Ke, Xu Wenlong Bai Anlin, Yang Feng, Xing Meng, Zheng Xianwei, Zhu Zhe, Liu Guoshuai, Zhou Hao, Fang Zimi, Lei Zhao, Shi Lei, Dai Cheng, Guo Baohong, Han Wenbao, Zeng Tao, Qin Mengqun Hao Wenpeng, Du Xinxuan, Huang Yan, Wang Qingfeng, Hu Ting, Zhang Jiedong, Wang Ting, Niu Luna, Ning Zhikang, Qiu Feng, Li Jianxiang, Sun Deqing, Tang Zheng, Shao Huajin Liu Xiaojin, Wang Xin, Zhou Qiang, Xu Huihui, Wang Jianke.

Equipment is the material foundation for safe production in enterprises. Hazardous chemical enterprises deal with flammable, explosive, toxic, and harmful materials and products, involving the use of... The processes of use, storage, manufacturing, handling, or transportation are characterized by severe equipment corrosion, frequent malfunctions, and difficulty in identifying potential risks, especially when... With the development of my country's chemical industry, the number of equipment and facilities exceeding their design lifespan is increasing, and the management of aging equipment has attracted widespread attention. Strengthening... Equipment integrity management is a crucial aspect of process safety management, a global trend in equipment management, and a key aspect of improving equipment quality in hazardous chemical enterprises. Advanced control methods for improving equipment management, controlling equipment risks, eliminating equipment hazards, and preventing equipment accidents. GB/T 44692 "Equipment Integrity in Hazardous Chemical Enterprises" aims to guide hazardous chemical enterprises in establishing and implementing equipment integrity management. The goal is to continuously maintain the equipment in a physically and functionally intact, safe, reliable, and controlled state, ensuring it meets its expected functions throughout its lifecycle. This ensures the safety of equipment by preventing safety accidents or environmental pollution

incidents such as hazardous chemical leaks, poisoning, fires, and explosions. Long-term operation lays the foundation for implementing process safety management of hazardous chemicals. The implementation of GB/T 44692 "Integrity of Equipment in Hazardous Chemical Enterprises" is based on management systems, supported by technological applications, and driven by performance. Using performance indicators as evaluation criteria and information systems as the carrier, we jointly achieve the establishment, implementation, maintenance, and continuous management of equipment integrity in hazardous chemical enterprises. Improvements. GB/T 44692 "Integrity of Equipment in Hazardous Chemical Enterprises" is proposed to consist of four parts.

1.Management System Requirements. The purpose is to define the organizational environment, leadership role, planning, support, operation, performance evaluation, and improvement. The basic elements of the equipment integrity management system.

2.Technical Implementation Guidelines. The purpose is to provide guidance on equipment classification, risk assessment, defect classification, reliability evaluation, and lifespan assessment. Guidance on key supporting technologies for equipment integrity management, such as life prediction, corrosion monitoring and risk assessment, and dynamic equipment monitoring and diagnosis.

3.Performance Indicator Setting and Calculation Methods. The purpose is to establish the principles for setting performance indicators for equipment integrity management, and to develop various methods for calculating these indicators. Technical requirements for industry indicator setting and calculation, indicator decomposition and implementation, indicator statistics and analysis, etc.

4.Information Technology Specifications. The purpose is to define the system architecture, technical architecture, and application specifications for the equipment integrity management information system. Technical specifications for architecture, functional design, smart terminal design, system configuration, etc. Equipment integrity of hazardous chemical enterprises Part

1 Scope

GB/T 44692.3-2026 is the Chinese national standard covering measuring whether an integrity programme is working - the leading indicators such as inspections completed on time and overdue actions, and the lagging ones such as leaks and unplanned shutdowns, with the formulae for each. Part 3 of the series, first edition, 20,000 words, in force since 1 June 2026. It was issued on 27 February 2026 and has been in force since 1 June 2026, as a first edition. The document is under the responsibility of the Standardization Administration of China. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document establishes the principles for setting performance indicators for equipment integrity management in hazardous chemical enterprises, and stipulates the setting and calculation of performance indicators. Performance indicator decomposition and implementation, and performance indicator statistics and analysis. This document applies to the performance management of equipment integrity in hazardous chemical enterprises.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are listed below. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 44692.1 Equipment Integrity of Hazardous Chemical Enterprises - Part

3.1 Terms and Definitions The terms and definitions defined in

GB/T 44692.1 and the following terms and definitions apply to this document.

3.1.1 The objectives of equipment integrity management are broken down layer by layer, resulting in actionable measures that can be used to measure the effectiveness of equipment integrity management activities. Performance indicators for implementation effectiveness.

3.1.2 The rule of DMAIC The operational methodology of Six Sigma management includes Define, Measure, Analyze, Improve, and The five stages of control.

3.2 Abbreviations The following abbreviations apply to this document.

4.1 General Principles

4.1.1 Hazardous chemical enterprises (hereinafter referred to as "enterprises") shall establish management procedures for equipment integrity management performance in accordance with

GB/T 44692.1, and ensure... Establish principles for setting performance indicators, set performance indicators for each level and specialty, decompose and implement performance indicators, and set monthly and annual targets.