From Compliance to Excellence: Leveraging *DEKRA Global Expertise* to Navigate China's AQ/T 3034 Code

Authors: Sam Zeng. General Manager, Process Safety & Organization Reliability. DEKRA (Shanghai) Ltd.
Arturo Trujillo. Vice-President. Global Service Group Manager – Process Safety. DEKRA SE

This article provides comprehensive analysis of China's new AQ/T 3034-2022 Process Safety Management Code, highlighting key differences compared to the previous code. We explore the vital role of DEKRA in supporting both domestic and international clients in reviewing compliance with the new code and implementing tailored solutions. Leveraging our extensive experience in assisting clients worldwide with similar systems such as the Seveso Directive and OSHA's PSM, DEKRA is well-positioned to ensure a seamless transition towards process safety excellence.

The Chinese Transformation

Process Safety Management (PSM) is a critical aspect of industrial operations, ensuring the safety of personnel, protecting the environment and safeguarding valuable assets. In China, the regulatory landscape governing process safety has recently undergone a significant transformation with the introduction of the new AQ/T 3034-2022 Process Safety Management Code. We delve into the distinctive elements of this code and highlight how DEKRA, with its global expertise, can support clients in achieving compliance with AQ/T 3034-2022.

Overview of AQ/T 3034-2022

AQ/T 3034-2022 is the updated process safety management code issued by Chinese regulatory authorities. This code not only builds upon the previous regulations but also introduces several key elements designed to elevate safety standards in industrial processes.

The previous version of the code (AQ/T 2024-2010) included the following elements:

1. Process safety information
2. Process hazard analysis
3. Operation procedures
4. Training
5. Contractor management
6. Pre-startup safety review
7. Mechanical integrity
8. Permit to work
9. Management of change
10. Emergency management
11. Process incident management
12. Conformity audit

The revision (AQ/T 3034-2022) has introduced eight new elements aimed at enhancing process safety standards. These elements reflect the evolving understanding of process safety management and the need for comprehensive measures to prevent accidents and protect lives, the environment, and assets. Let's dive into each of these new elements:

1. **Safety Leadership:**
   AQ/T 3034-2022 emphasizes the importance of strong safety leadership within organizations. It recognizes that leadership commitment and engagement are essential for establishing and maintaining a robust process safety culture. Effective safety leadership sets the tone, drives accountability and ensures the allocation of necessary resources for achieving and sustaining high process safety standards.

New elements of AQ/T 3034-2022

2. **Safe Production Responsibility:**
   The revised code highlights the need for clear and defined responsibilities related to safe production. It emphasizes that every individual involved in process operations, from top management to frontline workers, has a shared responsibility for ensuring safety. This element promotes a culture of accountability and ownership for process safety throughout the organization.

3. **Safe Production Compliance Management:**
   AQ/T 3034-2022 emphasizes the importance of compliance with safety regulations and standards. It requires companies to establish robust systems and processes to monitor, track and ensure compliance with all relevant safety requirements. This element ensures that companies are aware of and meet the necessary safety obligations and take appropriate actions to rectify any deviations.

4. **Facilities Safety Planning and Design:**
   The new code highlights the significance of safety considerations during the planning and design phases of facilities. It emphasizes the need to incorporate process safety principles and best practices from the early stages of facility design. This element ensures that safety is an integral part of the facility's infrastructure, minimizing potential hazards and risks.

5. **Safety Instrument Management:**
   AQ/T 3034-2022 focuses on the proper management of **safety instruments** and systems. It emphasizes the need for effective inspection, testing and maintenance of safety instruments to ensure their reliability and functionality. This element aims to enhance the effectiveness of safety instrumented systems in preventing and mitigating process-related incidents.

6. **Safety Management of Major Hazard Installations:**
   The revised code introduces specific requirements for managing major hazard installations. It emphasizes comprehensive risk assessments, emergency planning and additional safety measures for facilities that pose significant risks. This element ensures that facilities with higher levels of hazards receive specialized attention and additional safety precautions to prevent accidents.

7. **Inherently Safer Concept:**
   AQ/T 3034-2022 promotes the concept of inherently safer design and operations. It encourages companies to consider alternative technologies, materials and processes that inherently minimize or eliminate hazards. This element emphasizes the proactive pursuit of safer alternatives during the design and operation phases to reduce risks associated with process activities.

8. **Safety Culture:**
   The new code recognizes the crucial role of a strong safety culture in achieving process safety excellence. It emphasizes the need for companies to foster a culture that prioritizes safety, encourages employee engagement and promotes continuous improvement. This element underscores the importance of shared values, attitudes and behaviors that support safe practices and decision-making throughout the organization.

The inclusion of these eight new elements in the revised code reflects China's commitment to strengthening process safety management across industries. By addressing key aspects such as safety leadership, safe production responsibility, compliance management, facilities planning and design, instrument management, major hazard installations, inherently safer concepts and safety culture, the code provides a comprehensive framework to enhance process safety practices and mitigate risks effectively.

DEKRA's Support for Compliance and Solutions

As a renowned process safety management evaluation firm with a global footprint, DEKRA is adept at supporting clients in both domestic and international markets. With a wealth of experience in ensuring compliance with similar systems such as the Seveso Directive and OSHA's PSM, DEKRA offers a comprehensive range of services tailored to meet the unique needs of each client:

a) Compliance Review:

DEKRA conducts in-depth assessments of clients' existing process safety management systems to gauge their compliance with AQ/T 3034-2022. This thorough **review** identifies any gaps or non-compliance issues and provides detailed recommendations for achieving full compliance. Leveraging its vast knowledge of Chinese regulatory standards and international best practices, DEKRA delivers accurate and comprehensive evaluations ensuring clients meet and exceed the requirements of AQ/T 3034-2022.

b) Gap Analysis and Tailored Solutions Implementation:

Collaborating closely with clients, DEKRA develops customized solutions to address identified gaps in their process safety management systems. These solutions encompass updating safety policies and procedures, implementing effective programs to cultivate a strong safety culture, adopting suitable risk assessment methodologies and establishing robust Management of Change (MOC) processes. DEKRA's team of experts guides clients through the implementation phase, ensuring seamless integration and a smooth transition towards compliance with AQ/T 3034-2022.

Leveraging Global Expertise

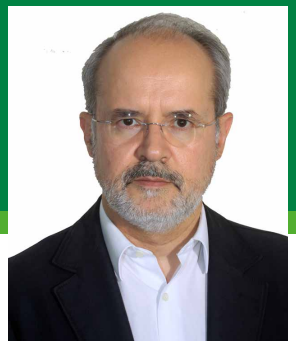
DEKRA's extensive experience in supporting clients worldwide provides a unique advantage in assisting Chinese companies in achieving process safety excellence. Having successfully guided clients through compliance with systems such as the Seveso Directive and OSHA's PSM, DEKRA brings a global perspective and deep understanding of industry best practices to the table. This wealth of knowledge enables the company to effectively tailor solutions to the specific needs of clients, ensuring seamless compliance with AQ/T 3034-2022 and other regulatory frameworks. China's new Process Safety Management Code (AQ/T 3034-2022) represents a significant step forward in enhancing process safety standards within the country.

DEKRA, with its global expertise and proven track record in supporting clients worldwide, is well-positioned to assist both domestic and international companies in achieving compliance with AQ/T 3034-2022. Through comprehensive compliance reviews, tailored solutions implementation and leveraging its experience with similar aforementioned systems, DEKRA empowers organizations to attain process safety excellence, safeguarding their personnel, the environment and their valuable assets.

Do you want to learn more about the AQ/T 3034 Code? Contact our experts today!

Sam Zeng

Sam Zeng is a Process Safety Engineer and holds the position of General Manager for Process Safety & Organizational Reliability in the DEKRA APAC region. With an extensive career spanning over 30 years in the process industry, Sam has garnered more than 17 years of dedicated experience as a process safety specialist. His expertise lies in the domain of process safety risk analysis and management.



Dr. Arturo Trujillo

Dr. Arturo Trujillo is Global Director of Process Safety. His main areas of expertise are diverse types of process hazard analysis (HAZOP, What-if, HAZID), consequence analysis and quantitative risk analysis. He has been involved in many projects over the last 35 years, especially in the oil & gas, energy, chemicals and pharmaceutical industries.