ABS Group

Addressing Mechanical Integrity in Oil, Gas and Chemical Facilities

Facility owners and operators must work continuously to improve the effectiveness of mechanical integrity programs to promote safer, more reliable operations, as well as reduce the likelihood of process safety incidents. Bridging the gap between industry and government regulators, we help clients design custom mechanical integrity (MI) programs based on our 40+ years of experience managing safety, integrity and risk in asset-intensive process industries.

Our MI engineers and technical advisors can help you plan a course of action that is based on risk-informed decision making for all asset and facility types. We consider the diverse factors that can take an asset offline or threaten operations to help your organization manage these risks and avoid potential incidents.

Risk Based Approach

As experts in the areas of risk management, mechanical integrity and reliability, our engineers have contributed to and have served as the lead author for many of the process safety texts used by industry today. These recommendations establish a risk based framework that builds on industry collaboration and decades of practical experience addressing a range of mechanical integrity issues.

Our approach begins with identifying the equipment vulnerable to mechanical integrity issues, understanding the potential damage and failure mechanisms and developing effective inspection and test strategies required to detect and prevent potential equipment failures. In addition, we help clients develop and implement the management systems needed to sustain their MI program activities.

Risk Based Inspection and Maintenance Strategies

Inspection plans should be dynamic, taking into account evolving process and operating conditions as well as the latest regulatory requirements. Such programs should also be designed to proactively detect and quantify the risk of damage.

As independent, third-party inspectors, we will work closely with your MI team to objectively evaluate your specific mechanical integrity needs – from assessing damage mechanisms to managing the risk of corrosion. Recommended actions may include risk based inspection (RBI), reliability based maintenance and asset integrity management (AIM) strategies to mitigate the risk of loss of containment or unplanned outages.

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Improving Asset Integrity

To improve public and worker safety in oil, gas and chemical facilities, regulators have proposed updates to existing process safety management (PSM) standards and industry practices.

ABS Group has been at the forefront of these changes, developing courses and implementation tools to help refiners understand how to effectively perform MI activities such as damage mechanism review (DMR).

In addition, our personnel have provided insights and technical content to the American Petroleum Institute and the American Society for Nondestructive Testing for various industry guidelines issued by the organizations' code and standard committees.

Resources are also available in the Knowledge Center on ABS-Group.com that provide guidance as to how to improve facility safety culture, how to implement a process safety culture assessment, how to perform a DMR and how to understand facility siting requirements as part of process hazard analysis.

Guidance for Implementing Mechanical Integrity Programs

Our MI experts have written and contributed to many of the industry-leading guidelines published by the Center for Chemical Process Safety (CCPS), including *Guidelines for Mechanical Integrity Systems, Guidelines for Risk Based Process Safety* and, most recently, *Guidelines for Implementing Process Safety Management, 2nd Edition*.

Additional CCPS publications include:

- *A Practical Approach to Hazard Identification for Operations and Maintenance Workers*
- *Evaluating Process Safety in the Chemical Industry*
- *Guidelines for Evaluating Process Plant Buildings for External Explosions, Fires, and Toxic Releases*
- *Guidelines for Hazard Evaluation Procedures*
- *Guidelines for Initiating Events and Independent Protection Layers in Layer of Protection Analysis*
- *Guidelines for Preventing Human Error in Process Safety*

Our Value

ABS Group has helped hundreds of process facilities develop and implement cost-effective and compliant mechanical integrity programs so that facility owners/operators can confirm asset integrity, maximize return on investments through improved reliability and performance, and maintain their licenses to operate.

With a proven track record of more than 40 years providing both objective and risk-informed insights to the Oil, Gas and Chemical sector, ABS Group has the knowledge and capabilities to help your organization manage MI issues and improve processes, safety culture and performance.

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