



# Safeti™

Managing your plant throughout its life cycle

DNV Software

# Process industry challenges

Moving beyond regulatory compliance



## Manage your asset's risks

Risk management has an impact on all areas of your operations; from compliance with legislation and managing the integrity of your assets, through to optimising your overall business performance. Using modern risk technology to ensure best possible performance across all aspects of your operations will help you ensure best risk management practice in a life cycle context. Complying with legislative requirements while operating profitably and safely is an ongoing challenge. The goal is to ensure best possible safety performance with lowest levels of risk.

## Moving beyond regulatory compliance

With a wide variation in cultural, regulatory, and corporate philosophies, consolidation of work processes can deliver better business performance. A growing culture of Corporate Social Responsibility and Triple Bottom Line reporting means that you need to know exactly where to focus effort for continuous improvement.

## Sharing important data

Enterprise-wide data sharing adds enormously to the value of your organisation's knowledge. Safeti will help you ensure quality management of your data assets.

## Optimise business performance

Optimised risk management strategies can help you on a number of levels. The questions you wish to answer may include:

- What is the best way to maximise production?
- How can I extend the life of my assets?
- How can I minimise the impact of interruption to my business?
- Am I complying with necessary safety regulations?
- What is the best emergency response plan in the event of an accident?
- What is the most efficient inspection and maintenance strategy?
- How can I manage my contract risks?
- What are my key operational risks and how can I manage these?

*"In 25 years Safeti has developed from an idea, considered by many to be impossible to realise, into the benchmark for QRA software and the Official Standard Method of the Netherlands government for support of siting and zoning decisions. A major scientific, technical, and IT achievement!"*

Prof. Dr. Ben Ale, Director of Research,

Netherlands Institute for Fire Service and Disaster Management

# Best engineering practice

Helping you to manage your risks and improve business performance



## How Safeti can help you

In addressing today's process industry challenges, the Safeti framework helps you make informed decisions. Whether dealing with emergencies, planning maintenance and inspection activities, or ensuring fitness for service, we can put together a package to assist you in your daily work.

## Understand your processes

DNV Software has many years of experience in providing appropriate packages to help achieve cost-efficient compliance with legislation through risk management strategies. By analysing and understanding your processes, you are in a better position to react to results and report on performance. High-quality knowledge management and seamless integration with other systems is a prerequisite to effectively manage risks.

## Assess consequences – manage risks

As well as risk to life, Safeti allows you to assess the broader business risks associated with your operations. Our financial risk analysis capabilities, combined with cost-benefit analysis, helps you minimise losses and reduce costs. We can help you assess the consequences of undesired events, manage risks, and maximise up-time and production.

## Rising to the challenge

During planning and design, Safeti enables you to evaluate your risk exposure ensuring appropriate levels of safety without compromising on building time and construction costs. Our technology helps you manage the risks inherent in the operation of your asset throughout its life cycle. In the operational phase, we can assist in reducing contract risks by lowering the costs of business interruption, and improve both your business continuity and supply chain management.

## Applications working together

In order to succeed when refining information into knowledge, it is critical to consider all aspects related to data integrity, consistency, and distribution. DNV Software solves this using Brix Foundation, enabling diverse applications to merge into one single work process template – without the need for costly and comprehensive integration projects.

## All information in one place

Being able to work from a single active process template enables you to benchmark your business performance by capturing and measuring your company's way of working.

These results can be used to improve your best practices – to make them the very best!

# Integrate risk into your plant life cycle

Managing risk from conception to operation



## Design for process hazards

Safeti provides a user-friendly system for carrying out QRA of process plants. By understanding the consequences of different scenarios, you can take steps to reduce the effects of a hazardous event, mitigate the consequences, and plan for emergencies.

## Prepared for chemical risks

Safeti contains many well-validated models for discharge, dispersion, flammable, explosive, and toxic effects. With a library of more than 1,600 chemicals, you can model the release of a wide range of pure components and mixtures. Discharge models are available for leaks and ruptures from vessels and pipes, relief valves, disk ruptures, and other equipment.

## Model a wide variety of scenarios

The world renowned Unified Dispersion Model is able to take account of liquid rainout, pool formation, spreading, and re-evaporation into the dispersing cloud. Individual effects models are available for a variety of scenarios; including pool fires, jet fires, and a range of explosions.

*"I have always been impressed with the effort DNV Software puts into communicating with Safeti users, and in listening to our needs for ongoing development of the software."*

Martin Dennehy, Manager, Process Safety Europe, Air Products PLC

## Understand your risks

Mitigation measures should focus on the activities that contribute to the highest risks. The Safeti framework allows you to quickly identify those major contributors. From the standpoint of safe operation and compliance with legislation, we have comprehensive built-in reporting compatible with standard office applications. You can easily share data across systems.

## From design to operation

By assessing your risks at the design stage, you are better placed to manage these in the operational phase, including the ability to assess the financial risks associated with your operation. By providing financial data about surrounding assets, metrics can be reported which provide an overview of financial risks throughout the asset's life.

## Key benefits:

- Traceability and consistency in calculations
- Creation of individual and societal risk indicators for comparison with acceptance criteria
- Integration of QRA into your asset life cycle management activities
- Risk ranking and risk reduction strategies

# Manage your assets

Ensuring the integrity of your plant



## Manage your operational risks

By using our range of software solutions throughout the asset plant life cycle, you can integrate risk more closely in your operational management activities. Good safety means good business. Assessing the financial impact of your decisions allows you to adopt a holistic approach for managing the broader business risks to which your operation is exposed.

## Optimising the way you want to

You can adopt risk-based techniques to optimise your inspection plans. These can be tuned to either minimise inspection costs, whilst maintaining safety and business performance, or improve safety whilst maintaining existing levels of investment in inspection – or a combination of cost reduction and improved safety.

## Overall reduction in costs

Optimised inspection plans lead to increased safety performance, reduced risk, and improved reliability. In addition, inspection programmes can be optimised to maximise cost benefits, through:

- reduced turnaround time,
- lower inspection frequency, or
- reduced number of items to be inspected.

This can give you an overall reduction in the associated maintenance costs.

## Improve asset integrity

Using the Risk Based Inspection and asset integrity management capabilities provided by the Safeti framework, you can improve the cost-benefit ratio of your resources, evaluate and justify inspection and maintenance activities, and demonstrate return on investment in terms of inspection effectiveness.

### Key benefits:

- Improved safety and reliability
- Reduced inspection costs
- Flexible assessment of asset risks using quantitative and qualitative analyses
- Identification of critical contributors to risk
- Optimisation of inspection intervals and methods
- Accurate consequence analysis results provided by the Unified Dispersion Model
- Effective management of inspection data

## Your tailor-made package

Using the Safeti framework, you can effectively manage your inspection and maintenance information.

**Whether for refineries, plants, pipelines, or other process industry assets, we can put together a package to meet your asset integrity management needs.**

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