



# FOOD AND BEVERAGE

**THE PRODUCTION AND HANDLING OF FOOD AND BEVERAGE** HAVE THE POTENTIAL TO CAUSE UNDESIRABLE INCIDENTS LEAVING FATALITIES, DAMAGE, CONSUMER'S ILLNESS, AND LOSSES. THE PRACTICE OF SAFETY DESIGN IS CONTINUOUSLY EVOLVING IN THE INDUSTRY, MOVING FROM A PRESCRIPTIVE APPROACH TO MORE EFFECTIVE RISK-BASED TECHNIQUES THAT **MINIMIZE THE RISKS** OF THESE UNWANTED EVENTS. SURETY CONSULTANTS CAN SUPPORT THE FOOD & BEVERAGE INDUSTRY IN THE APPLICATION OF A **RISK-BASED APPROACH** TO PROCESS SAFETY, FOOD SAFETY, AND RISK MANAGEMENT.



## RISK MANAGEMENT

Risk Management is the use of science and engineering concepts to identify, assess, and prioritize risks followed by a coordinated and economical application of resources to minimize, monitor, and control the probability and impact of unfortunate (undesired) events.

Surety Consultants can support risk management efforts, including:

- ◆ Hazard Identifications & Risk Analysis
  - ◇ HAZID
  - ◇ Process Hazard Analysis (PHA)
  - ◇ Dust Hazard Analysis (DHA)
  - ◇ Failure Mode and Effect Analysis (FMEA)
  - ◇ Consequence Modeling
  - ◇ Fire Hazard Analysis (FHA)
- ◆ Qualitative Risk Assessment
- ◆ Quantitative Risk Analysis (QRA)
- ◆ Layer of Protection Analysis (LOPA)
- ◆ Bowtie Analysis
- ◆ Failure Tree Analysis (FTA)
- ◆ Event Tree Analysis (ETA)
- ◆ Risk-Based decision-making support
- ◆ Safeguards and barriers management
- ◆ Manage Risk
  - ◇ Management of Change (MOC)
  - ◇ Asset Integrity & Reliability
  - ◇ Safe work Practices (e.g., permit to Work system)
  - ◇ Standard Operating Procedures (SOP)
  - ◇ Contractor Management
  - ◇ Emergency Management



## SAFETY MANAGEMENT SYSTEM (SMS)

SMS are organized and structured elements to manage areas of potential losses, to prevent or mitigate these potential losses. Surety Consultants can support the food and beverage industry in defining, implementing, and evaluating SMS in concordance with a standard SMS (e.g., ISO 450001) or any pre-defined corporate framework.



## LEARN FROM EXPERIENCE

This element involves constant monitoring and acting on internal and external sources of information to improve safety efforts. This risk management element recognized diverse deficiencies allowing continual improvement. Surety Consultants can support the learn from experience efforts, including:

- ◆ Audits
- ◆ Incident Investigation & Root Cause Analysis (RCA)
- ◆ Measurement and metrics (e.g., KPI)
- ◆ Management Review



## FOOD SAFETY

This scientific discipline covers all scopes of the supply chain from raw materials on the farm to the final consumer. Risk management in food safety aims to protect consumers from health hazards by applying a systematic preventive approach to reduce the risk to a safe level. Surety Consultant can support the development and improvement of:

- ◆ Hazardous Analysis and Critical Control Point (HACCP)
- ◆ Good Manufacturing Practices
- ◆ Global Food Safety Initiative
- ◆ Root Cause Analysis



## FIRE PROTECTION ENGINEERING

Fire Protection Engineering is the application of science and engineering principles to protect people and their environment from a destructive fire. Surety Consultants can support fire protection efforts, including:

- ◆ Fire hazard identification and analysis
- ◆ Performance-based design
- ◆ Fire safety strategy (e.g., limitation of fire damage by proper design)
- ◆ Fire protection systems (e.g., detection & suppression systems)
- ◆ Post-fire investigation and root cause analysis (RCA)
- ◆ Fire dynamic and modeling



## EMERGENCY MANAGEMENT

Emergency Response aims to reduce the potential outcome of an undesired event when this takes place. Effective emergency response requires a pre-planning effort to determine the best actions to take on different scenarios. Surety Consultants can support emergency response planning in diverse ways, including but not limited to:

- ◆ Define emergency response strategies and Emergency Response Plans (ERP).
- ◆ Drills, exercises, and training.
- ◆ Consequence analysis as input to response strategies.
- ◆ Gap assessments with good practices
- ◆ Emergency Management Audits and program review.

## GET IN TOUCH

We are here to help you achieve operational excellence.



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