**Examples of risks**

1. [Management system](#management)
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11. **Management system (MS):**

* strategic priorities are not determined
* context of company is not taken into account:
  + external issues
  + internal issues
* the requirements of all interested parties are not understood
* the scope of the MS is not determined
* a process map is not established
* a multidisciplinary approach is not implemented
* the process map is not updated
* too many processes (non-grouped activities)
* an adequate environment for the operation of processes is not provided
* top management does not assume responsibility for the performance of the MS
* top management does not keep their commitments
* regulation not complied with
* all significant environmental aspects and impacts are not identified
* prevention of pollution
* staff is not prepared and trained in emergencies
* staff not made aware on issues related to:
  + nuclear safety
  + quality
  + environment
  + hazards
  + risks
* no cooperation with all interested parties regarding the QSE policy
* QSE policy not adequate with strategic priorities
* risks are not determined
* risks are not analyzed and categorized
* actions are not applied to address identified risks
* improvement opportunities not seized
* any problem not considered as an opportunity for improvement
* no commitment to provide the necessary resources
* planned internal audits not carried out
* documented information:
  + not available
  + not identifiable
  + not approved
  + not protected
  + with uncontrolled changes
  + obsolete (old versions)
* the financial balance between resources and results is not found
* causes of internal malfunction are not eliminated quickly
* decisions made without relying on data analysis
* reliable measurement equipment not used
* measuring equipment with calibration date exceeded
* use of expired equipment
* nonconformities not identified
* root causes of nonconformities not researched and analyzed
* nonconformities not isolated
* the consequences of failures not taken into account
* preventive actions not adapted to the gravity of potential problems
* poor reception (physical or telephone)
* bad internal communication on the:
  + strategy
  + QSE policy
  + QSE objectives
  + QSE commitment of top management
  + responsibilities
  + contribution of everyone to global performance
  + cost of nonconformities
  + cost of waste
* feedback not taken into account
* QSE objectives are:
  + nonspecific
  + immeasurable
  + unachievable
  + unrealistic
* the regulatory nuclear safety and environmental requirements (national and European) are not applied
* lack of codes of good environmental behavior

1. **Company:**

* core meltdown/damage
* radiation release
* Acute Radiation Syndrome (ARS)
* increased cancer risk
* cardiovascular disease
* cataracts
* birth defects
* psychological impacts
* environmental contamination
* economic costs
* criticality accidents
* decay heat management
* equipment failure
* human error
* degraded image
* false advertising
* unfair competition
* cash shortage
* over indebtedness
* dependence on general resources:
  + electricity
  + gas
  + water
  + compressed air
* no maintenance program of general means
* no preventive maintenance of infrastructure and equipment
* no fire detection and automatic extinction system
* obsolete internal regulation
* pollution:
  + conviction
  + financial losses
  + degraded image
* environmental problems not taken into account
* loss of:
  + orders
  + know-how (no patents)
  + market
  + customers
* supply disruption (no double source)
* unavailability of:
  + qualified staff (no flexibility)
  + delivery
* social conflict (strike)
* work accident
* professional illnesses
* painfulness not taken into account
* dispute settlement of employment contracts (labor courts)
* theft and vandalism
* sabotage
* fraud
* corruption
* unpaid insurance premiums (building sinister, water damage)
* unsecured computer room:
  + against fire
  + against water
  + against lightning
  + without uninterruptible power supply
  + without automatic backup
* IT services not secured against:
  + data theft
  + external attack (hackers)
* computer network failure
* no video monitoring of buildings with recording system
* no differentiated access system for workshops
* lack of crisis management plan
* lack of emergency plan
* lack of business continuity plan
* legal situation:
  + new national or European text ignored
  + criminal and civil liability of the boss questioned
  + anti-competitive practice
  + breach of contract conflict:
    - shopping
    - outsourcing
  + dispute resolution
  + contractual breaches
  + non-compliance with regulations

1. **Stakeholders:**

* the customer wants (explicit and implicit needs) are misunderstood
* changing customer expectations are not anticipated
* customer reliability is not evaluated
* the customer is not satisfied for the intended and unforeseen use
* the environmental approach of the customer is not known
* the customer and user are not involved during the design and development
* environmental approach is not communicated to the customer
* customer constraints not taken into account, such as those related to :
  + quality
  + cost
  + deadline
  + regulations
  + delivery conditions
  + responsiveness of the guarantee and after guarantee service provided
  + to the environment:
    - life cycle
    - recycling
    - end of life (elimination)
    - transport conditions
* confidential information disclosed
* loss of intellectual property
* the customer's creditworthiness not checked
* the order not refused when a gap exists with the accepted quotation
* loss of confidence (claim or mismanaged litigation)
* financial losses of customer complaints
* poor communication of customer complaints
* the constraints of all interested parties are not taken into account
* not responding in a timely manner to any claim

1. **Resources:**

* availability of means not ensured
* unreliable measurement means
* raw material:
  + poorly specified
  + out of specification
* staff:
  + not available
  + not competent enough
  + inability to recruit the necessary skills
  + uncommitted
  + neglecting
  + stressed (psychosocial risks)
  + not understanding what is expected of them
  + not respecting the nuclear safety instructions (nuclear accident)
  + high turnover
  + inadequate training budget (% of payroll)
  + high absenteeism
* acquire the necessary skills not planned
* missing skills not identified
* competent auditors not trained
* staff suggestions not treated fairly
* responsibilities for infrastructure maintenance not assigned

1. **Product and service:**

* requirements difficult to understand
* frequent requirement change
* ITNS items and activities not identified
* no graded approach to the application of quality requirements
* feasibility of the order not verified:
  + possibilities of realization (time)
  + in-house expertise (skills)
  + technical resources (means)
* unsuccessful quotations not analyzed
* root causes of lost customers not analyzed
* lack of environmental information of the product:
  + life cycle
  + transport conditions
  + recycling
  + end of life (elimination)
* quotations sent that:
  + do not correspond to customer needs and expectations
  + are unprepared:
    - unprofitable
    - unrealistic
    - disregard regulations
* no control on inspection of the finished product:
  + competence
  + means
* confidentiality of design and development uncontrolled

1. **Operation:**

* time not planned
* the risk approach is not integrated in internal processes
* frequent stops
* bottlenecks
* no traceability of:
  + raw materials
  + measurement equipment
  + batches in production
  + finished product
* erroneous measurements
* missing component for production
* spare parts not available
* inaccurate inventory
* failing to comply with operational procedures
* variation of production not controlled
* no preventive maintenance of machinery
* weak protection of know-how:
  + patents not registered
  + new model publicly available
  + non-competition agreement unsigned by staff
* bad work conditions:
  + insufficient lighting
  + lack of ventilation
  + high noise
  + polluted air
  + thermal environment
  + personal protective equipment not maintained
* no rotation procedure (repetitive work)
* night work disorders not taken into account
* no prevention on working conditions that could lead to significant environmental impacts
* lack of pollution prevention
* product with poor:
  + design:
    - hidden defects
    - outputs do not meet input requirements:
      * no verification of outputs
      * no validation of outputs
      * incomplete or incorrect documentation
    - no environmental impact study
    - non-existent recycling
    - unprepared industrialization:
      * inadequate realization process
      * no inspection requirements
      * poorly specified acceptance criteria
      * no incident prevention measures
  + realization
  + inspection (accepted batch containing an unacceptable level of nonconformities)
  + preserved
  + containing:
    - dangerous chemicals
    - prohibited substances
  + with high carbon footprint (high energy consumption)
* non-recycled waste
* lack of resources:
  + time
  + competence
  + means
  + raw material (component)
* all hazards including toxic (asbestos, lead) not identified
* hazards not communicate to interested parties
* actions not triggered to address identified hazards and risks
* no prevention on hazards:
  + work at height
  + slippery ground
  + fire
  + explosion
* poor ergonomics of workstations
* unsafe machinery
* misunderstood specifications
* incorrect data
* external requirements poorly translated into internal requirements
* outdated BOM
* inappropriate work instruction
* the deadline is not met (planning)
* objectives not achieved
* indicators not reviewed
* the current change request is not taken into account
* the risks of changes not analyzed
* changes not validated prior their implementation
* a change is applied without the customer's consent
* improper treatment of nonconformities
* waste not eliminated
* FIFO (first in, first out) not followed

1. **External providers:**

* interruption of supply of raw materials
* transportation problems
* communication problems
* confidentiality agreement:
  + unsigned
  + not respected
* no environmental commitment
* no alternatives considered (dual source of supply)
* external providers not evaluated and selected
* external providers not identifying ITNS products
* unrated reliability (including the carrier and the distributor)
* the performance of external providers not rigorously monitored
* child labor
* counterfeit or fraudulent component
* calamitous reputation
* outsourced process not controlled
* the acceptance criteria not communicated to the external provider
* non-compliance with nuclear safety and environmental rules of the workers in the company
* no qualification of interveners in the company
* lack of cultural compatibility
* lack of strategy
* poor understanding of the environment:
  + political
  + social
  + economic
* too much focus on cost reduction

1. **Release:**

* degraded product:
  + inadequate transportation
  + improper packaging
* delivery without accepted concession
* missed deadline
* wrong address
* exceptional transportation costs

1. **Market:**

* poor reputation
* not taken into account:
  + competition
  + technology
  + innovation
  + market developments
* new customer needs not detected

1. **Nature**

* natural disasters:
  + flood
  + avalanche
  + drought
  + fire
  + earthquake
  + lightning
  + volcanic eruption
  + storm
  + tornado
  + hurricane
* pandemics:
  + human flu
  + animal flu (swine, avian)