framatome

Probabilistic Safety Analyses

Safety Engineering Solutions

Framatome's Probabilistic Safety Analyses verify fulfillment of regulatory requirements based upon unique original equipment manufacturer (OEM) experience.

Challenge

Nuclear safety takes top priority in the operation of nuclear power plants. A high safety level generally goes hand in hand with improvements of plant availability and efficiency.

New safety and regulatory requirements, plant upgrades, long-term operation and lifetime extension measures present challenges to operators as they trigger the need for various safety analyses and assessments.

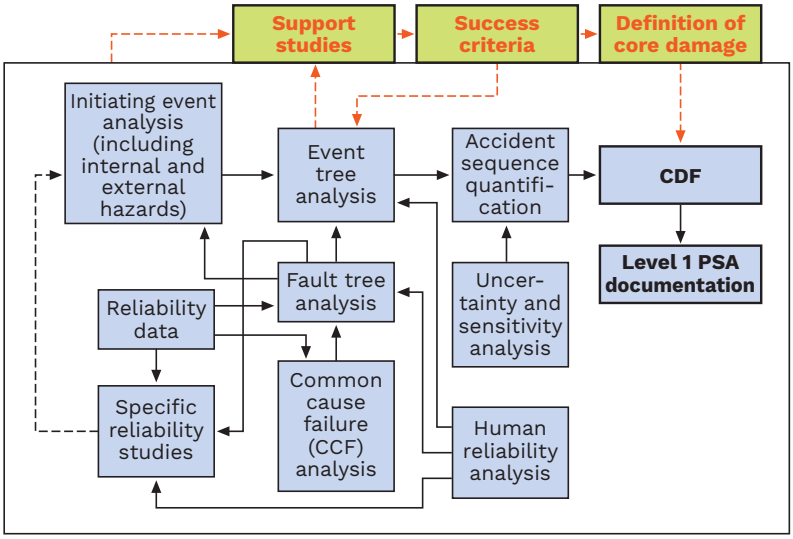
Solution

Our Probabilistic Safety Analyses verify fulfillment of regulatory requirements, reduce residual risk and re-assess existing safety margins.

As an OEM, we have a wealth of experience in conducting safety analyses which optimize accident management procedures, and provide information about safety improvement options and the effects of plant modifications.

Customer benefits

- Verify fulfillment of regulatory requirements
- Reduce residual risk and re-assess existing safety margins
- Optimize measures for prevention and management of accidents
- Provide information about possible safety improvements
- Determine effects of plant modifications
- Prevent plant shutdowns
- Reduce operating costs (risk-informed applications)



Analysis steps in level 1 probabilistic safety analysis (PSA)

Level 1 PSA → The assessment of plant failures leading to **core damage** and the determination of core damage frequency (CDF)

Level 2 PSA → The assessment of containment response leading, together with the results of level 1 analysis, to the determination of **release magnitudes and frequencies**

Level 3 PSA → The assessment of **offsite consequences** leading, together with the results of level 2 analysis, to estimates of risk to the public

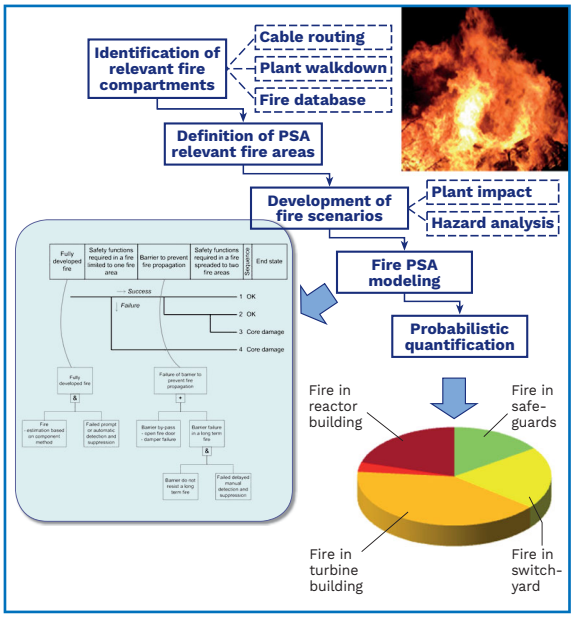
PSA risk levels

Your performance
is **our** everyday **commitment**

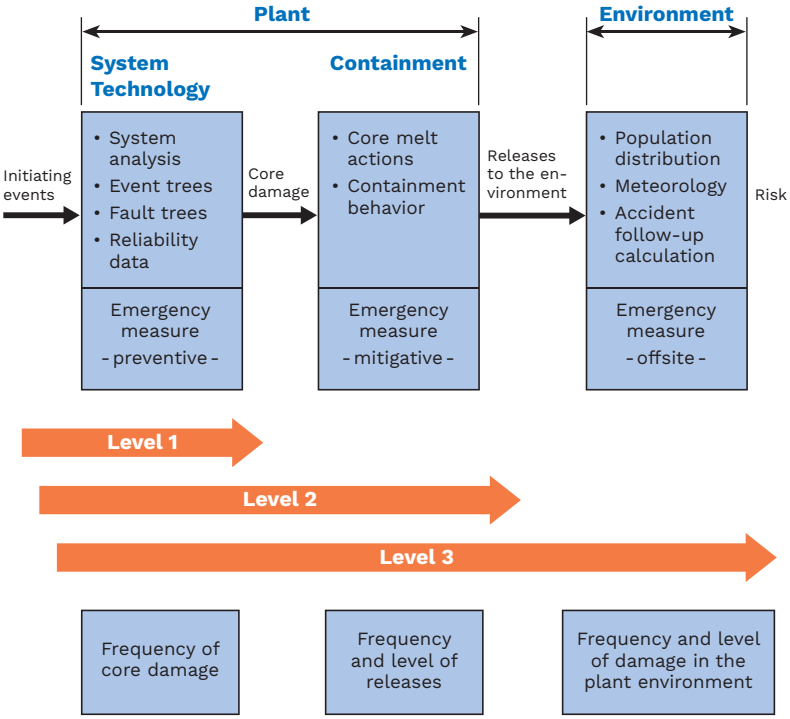
Technical information

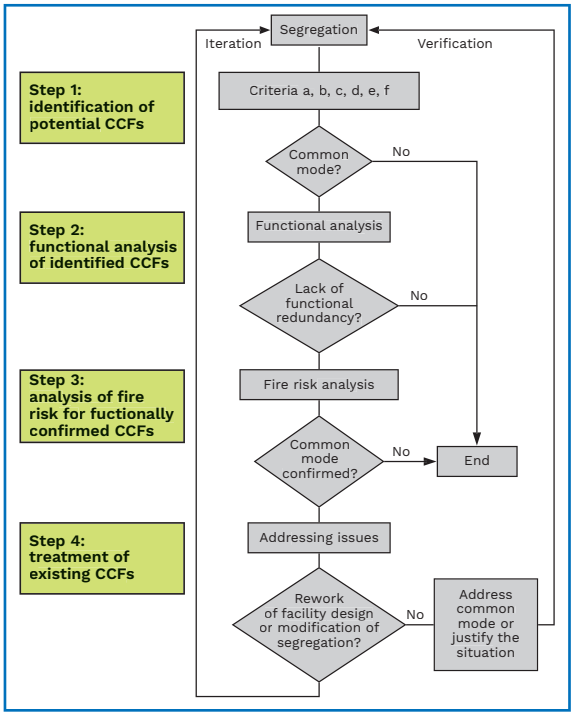
We offer a wide range of probabilistic engineering capabilities:

- Level 1, 2, 3 PSA for power and shutdown states
  - Fire PSA
  - Seismic PSA
  - PSA for other external hazards
  - Seismic re-assessment of buildings, structures, equipment, core
  - Seismic margin assessment
  - Reliability analysis for instrumentation and control systems



Fire PSA





Fire vulnerability analysis

References

Worldwide: Argentina, Brazil, Bulgaria, China, Finland, France, Germany, Netherlands, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Ukraine, United Kingdom, United States

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