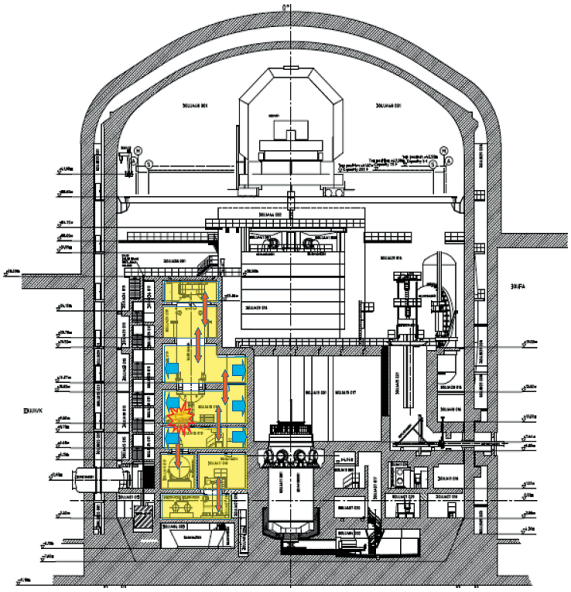
framatome

Safety related Calculations: Advanced Thermal Hydraulic Building Analyses

for Lifetime Extension, Power Uprate and New Builds

Utilize additional safety margins and elevate your Thermal Hydraulic (T/H) building analyses, generated with WAVCO or GOTHIC. Experience seamless automation for both, pre- and post-processing tasks, along with input deck generation.



Challenge

T/H building analyses provide evidence to safety authorities, that civil structures of nuclear island buildings are sufficiently designed to **withstand loads** due to mass- and energy release from **high energy pipe breaks**. Furthermore, pressure and temperature profiles for the qualification of safety related equipment are derived from T/H building analyses. In the context of **lifetime extensions** under **challenging climate conditions**, margins in existing designs are precious to be quantified and capitalized. The latest code augmentation now supports iterative design cycles and their demand for design configuration during execution.

Solution

Framatome performs T/H building analyses with the in-house code WAVCO or with the commercial code GOTHIC. The codes provide enhanced **interfaces to 3D models, support input deck generation** as well as pre- and post processing tools to **ease the update of input decks**. All enable our customers to follow-up the evolution of the design in various phases. Typical fields for application are:

- Pressure and temperature build-up for equipment qualification
- Maximum pressure loads on internal structures for civil design
- Design of pressure relief paths to limit pressure build-up
- Loss of spent fuel pool cooling studies
- Loss of HVAC studies
- Design of leakage monitoring systems
- Elevated temperature condition studies

Customer benefits

- Fast model generation / update to support agile project life cycles
- In-house code customizable to customer needs
- Codes and method internationally accepted by safety authorities
- Lumped parameter, 3D or hybrid modeling possible

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

Technical information

- Rapid model creation and update
- Support agile project life cycles
- Both codes are validated by post calculation of numerous experiments, e.g. BFMC, PHDR, CVTR
- Application for design of civil structures, equipment qualification, system sizing and margin capitalization
- Lumped parameter, 3D or hybrid modeling possible to match customer pricing scheme

Key figures

More than **40 years** of experience in T/H building analyses

Success in **14** countries with safety authorities, with **35** NPP and nuclear fuel processing facility customers.

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