framatome

ARTEMIS

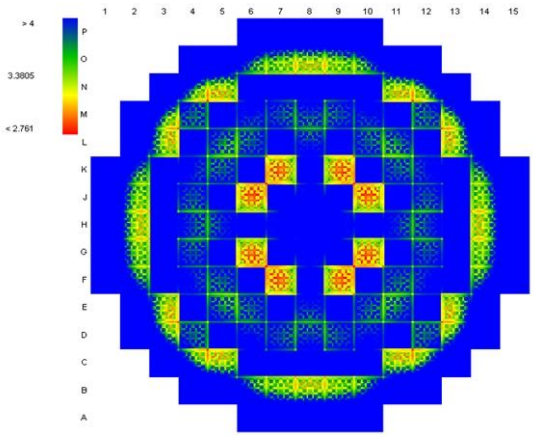
Powerful core simulator

Optimum plant utilization, margin gain, and extended operational flexibility through greater accuracy and reliability

Challenge

The evolution of fuel assembly and core designs is pushing current neutronic codes to their limit. Greater heterogeneity, higher enrichment and burnup, Gd-loading, MOX, low leakage, etc., are challenging codes and methods.

Thus, high performance codes are essential in assuring safe and economic operations.



ARCADIA Full Core Subchannel-by-Subchannel DNBR

Solution

ARTEMIS is the steady state, transient light water reactor (BWR, PWR) core simulator of Framatome's code system, ARCADIA.

It provides a 3D nodal core simulation with pin-power reconstitution and microscopic depletion. Full core pin-by-pin, neutronic thermal-hydraulic, thermal-mechanical analysis capabilities with an open channel thermal-hydraulic model that allows the minimization of unrealistic assumptions while maximizing accuracy. This results in more margin and greater flexibility for plant operation.

Reliable and consistent data is assured through Framatome's integrated code system. The modules in ARTEMIS are synchronized, preventing the heterogeneity of data when using a variety of specialized applications for each task. The industrial application of advanced methodologies is enabled when coupled with thermal-hydraulic system codes. S-RELAP5 and CATHARE-2 are two of the system codes supported by ARTEMIS.

Technical information

- Integrated LWR code system for consistent steady-state and transient evaluations
- Full core 3D pin-by-pin neutronic, thermal-hydraulic, and thermal-mechanical analyses
- Plant-specific code implementation and customer training
- 100+ Nuclides treated explicitly for better fuel description including in unconventional situations (e.g. extended outages, fuel reinsertion).
- Maximization of accuracy

Customer benefits

- Optimization of plant utilization, margin gains, and extended operational flexibility as a product of high accuracy and reliability
- Improved margin management due to the fully consistent description of steady state and transient application modes
- Fulfilling current and emerging safety requirements

Your performance

is our everyday commitment

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