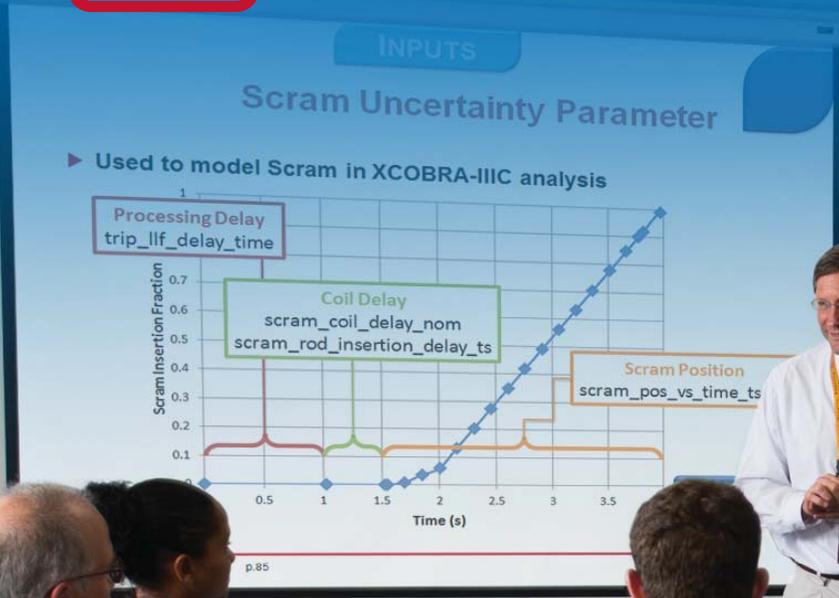


# framatome



## Fuels Integrated Training



# Framatome Fuels Integrated Training Program

Framatome is now offering a curriculum of engineering training courses covering all disciplines relevant to fuel design and operation. The courses are tailored to the major plant designs Framatome supports with fuel. The curriculum spans all engineering fields from mechanical fuel design, core nuclear design, and safety analysis and licensing to operational areas where fuel plays a major role (e.g. Crud Risk Analysis).

Courses are segregated into three technical levels to allow customers to get the appropriate level of focus in any fuel-related area. Additionally, all courses follow industry-accepted training practices so that they may be used to satisfy training requirements for many external programs. Framatome's Fuels Integrated Training program provides the industry with the products and tools necessary to understand and ensure they can most efficiently utilize the nuclear fuel that drives their plants.

## Three Tiers



High-level overview of the entire reload licensing process



Mid-level, discipline or process specific overview



Detailed, analyst-level training on focused engineering topics related to licensing or fuel design or performance

## Training Features



Instructor-led PowerPoint Presentations



Microsoft OneNote Companion Notebooks



Hands-on Example Problems



Interactive Exercises

# Course Offerings

<b>Tier 1 Courses</b>	<b>Tier 3 Courses (cont.)</b>
B&W Fuel Reload Licensing Process Overview	Departure from Nucleate Boiling and Fuel Centerline Melt Analysis
<b>Tier 2 Courses</b>	Statistical Setpoint Verification for CE Plants
TH Reload Process Overview for CE and Westinghouse Plants	Statistical Setpoint Verification for Westinghouse Plants
COBRA-FLX™ Thermal Hydraulic Subchannel Code Overview	Critical Heat Flux
Form Loss Coefficients (FLC)	Mixed Core Analysis with COBRA FLX™
<b>Tier 3 Courses</b>	
XCOBRA-IIIC Model Development	
Fuel Centerline Melt Limit and Limiting Axial Analysis	

Custom courses can be developed upon request.

## Example Course Outline

<b>B&amp;W Fuel Reload Licensing Process Overview</b>	
	
<p><b>General Description</b></p> <p>This five-day course provides an overview of the entire fuels reload analysis and licensing process for B&amp;W plants (BAW-10179 Methodology). Included is a description of the mechanical fuel design methodology and all elements of the supporting reload licensing analyses spanning neutronics, thermal-hydraulics, thermo-mechanical, and safety analyses.</p> <p>The course follows the FIT training style of maximizing student engagement through the use of visually impactful training presentations. The training is packaged within an electronic OneNote companion notebook, which contains all training materials facilitating the interactive training experience.</p>	
<b>Course Number</b>	2000
<b>Course Dates</b>	Jan. 18-19, 2018 May 16-17, 2018
<b>Duration</b>	36 hours
<b>Tier</b>	I
<b>Applicable Plant</b>	B&W
<b># Modules</b>	15
<p><b>Course Outline</b></p> <ul style="list-style-type: none"> <li>• Fuel Assembly/Control Component Mechanical Design and Performance</li> <li>• Fuel Rod Thermal Mechanical Performance</li> <li>• Fuel Assembly Structural Analyses</li> <li>• Core Design and Fuel Cycle Analyses</li> <li>• Nuclear Analyses</li> <li>• Fuel Assembly Hydraulics and Core Thermal-Hydraulic Performance</li> <li>• Non-LOCA Safety Analyses</li> <li>• ECCS Analyses</li> <li>• Radiation Analyses</li> <li>• Core Safety and Maneuvering Analyses</li> <li>• Core Monitoring and Operation</li> <li>• Water Chemistry</li> <li>• Crud Evaluation</li> <li>• Fuel Reliability</li> </ul> <p>This training is intended as an introduction to Framatome's B&amp;W Plant Reload Licensing process and provides a high-level overview of all the interdisciplinary analyses that support reload licensing for a given plant cycle.</p>	

 [Register for classes and see additional course outlines](#)

Framatome, previously known as New NP (former subsidiary of AREVA NP), is a major international player in the nuclear energy market focused on designing, building, maintaining and advancing the global nuclear fleet. In North America, Framatome Inc. combines U.S. and Canadian leadership to deliver innovative solutions and value-added technologies to support the operation of the commercial nuclear fleet and prepare for the next generation of nuclear power plants. Leveraging the expertise of its 2,300 North American employees, Framatome Inc. is helping its customers improve the safety and performance of their nuclear plants and achieve their economic and societal goals.

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To register for training or get more information, contact:

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Photos by Warren Wright.

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