

framatome

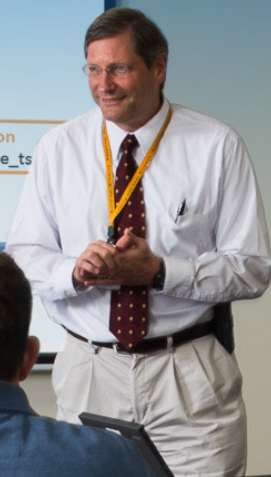
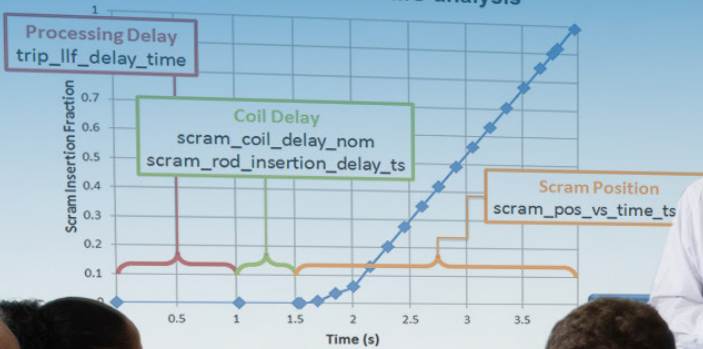


Fuels Integrated Training

INPUTS

Scram Uncertainty Parameter

► Used to model Scram in XCOBRA-IIIC analysis



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 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, fuel design or fuel performance

Training Features



Instructor-led PowerPoint presentations



Microsoft OneNote Companion Notebooks



Hands-on example problems




Interactive exercises

Course Offerings

Tier 1 Courses	Tier 3 Courses (cont.)
B&W Fuel Reload Licensing Process Overview	Statistical Setpoint Verification for Westinghouse Plants
Tier 2 Courses	Critical Heat Flux
TH Reload Process Overview for CE and Westinghouse Plants	Mixed Core Analysis with COBRA-FLX™
Form Loss Coefficients (FLC)	COBRA-FLX™ Thermal Hydraulic Subchannel Code Overview
POWERPLEX-XD Core Monitoring Software System	Zirconium Metallurgy
Tier 3 Courses	Framatome Fuel Integrity Fundamentals
XCOBRA-IIIC Model Development	APOLLO2-A/ARTEMIS BWR Methodology Overview and Input Preparation Training
Fuel Centerline Melt Limit and Limiting Axial Analysis	Fuel Rod Analysis with COPERNIC and Peripheral Codes
Departure from Nucleate Boiling and Fuel Centerline Melt Analysis	
Statistical Setpoint Verification for CE Plants	

Custom courses can be developed upon request.

Example Course Outline

B&W Fuel Reload Licensing Process Overview	
	
<p>General Description</p> <p>This five-day course provides an overview of the entire fuels reload analysis and licensing process for B&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 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>	
Course Number	2000
Course Dates	Jan. 18-19 May 16-17
Duration	36 hours
Tier	I
Applicable Plant	B&W
# Modules	15
<p>Course Outline</p> <ul style="list-style-type: none"> • Fuel Assembly/Control Component Mechanical Design and Performance • Fuel Rod Thermal Mechanical Performance • Fuel Assembly Structural Analyses • Core Design and Fuel Cycle Analyses • Nuclear Analyses • Fuel Assembly Hydraulics and Core Thermal-Hydraulic Performance • Non-LOCA Safety Analyses • ECCS Analyses • Radiation Analyses • Core Safety and Maneuvering Analyses • Core Monitoring and Operation • Water Chemistry • Crud Evaluation • Fuel Reliability <p>This training is intended as an introduction to Framatome's B&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 is an international leader in nuclear energy recognized for its innovative solutions and value added technologies for the global nuclear fleet. With worldwide expertise and a proven track record for reliability and performance, the company designs, services and installs components, fuel, and instrumentation and control systems for nuclear power plants.

Its more than 14,000 employees work every day to help Framatome's customers supply ever cleaner, safer and more economical low-carbon energy.

Framatome is owned by the EDF Group (75.5%), Mitsubishi Heavy Industries (MHI – 19.5%) and Assystem (5%).



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http://www.framatome.com/EN/us_platform-3536/framatome-inc-training.html

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