

# Nuclear Fuel Training Services

## Background

In today's competitive environment, utility employees must maintain high safety standards while achieving economic efficiency. It is imperative that utilities reduce plant operating and maintenance costs, minimize fuel costs and achieve the greatest return on advanced technology investments, while maintaining safety. To achieve this difficult balance, utility engineers must have a thorough understanding of nuclear fuel design methods and plant operating requirements. Westinghouse Nuclear Fuel Training Services can help utility personnel meet these needs by offering catalog courses and developing special customized courses.

## Description

Westinghouse uses a systematic approach to training derived from the Institute of Nuclear Power Operations guidelines in course development. Westinghouse training specialists are subject-matter experts with experience in the various aspects of the specialty that they teach. In addition to having a solid technical background, Westinghouse specialists are trained to use best-practice classroom instructional skills and teaching methods. Whether dealing with catalog or custom courses, instructors are chosen with the intent that all Westinghouse customers receive an optimal training experience.

Each specialized training course is developed with the customer in mind. The need for training is influenced by the evolving customer environment as impacted by technological advances and regulatory requirements. Class material is reviewed and updated on a continual basis so that trainees are taught using up-to-date data and information. A pre-determined class schedule for catalog courses is available on a yearly basis via the Nuclear Fuel Training Web Catalog, but utility-specific customized courses are also available by request. Some suggestions for customized course topics are also available on the Westinghouse training website ([www.training.westinghousenuclear.com](http://www.training.westinghousenuclear.com)).

Courses are taught to personnel around the world both at utility sites and at major Westinghouse locations in a variety of different teaching contexts, from classroom training to hands-on workshops, or one-on-one training to achieve a maximum return on this training experience for the student.



A variety of course topics and instructional formats are offered to meet training needs

Available course topics include the following:

### **Thermal-hydraulic Design**

- Thermal-hydraulic Design Overview
- Thermal-hydraulic Design Methods
- Fuel Rod Design
- Fuel Rod Design Overview
- Fuel Rod Design Methods

### **Fuel Fabrication and Performance**

- Introduction to Fuel Assembly Mechanical Design
- Fuel Fabrication Oversight Training
- Crud-induced Power Shift (CIPS)/Crud-induced Localized Corrosion (CILC) Risk Assessment Training

### **Advanced VIPRE® Antivirus Software Training for CIPS Risk Assessment**

### **Core Monitoring and Surveillance BEACON™ Core Monitoring System**

- BEACON System
- BEACON Model Generation
- Special BEACON Topics
- Peaking Factor Surveillance using Flux Maps
- Reactivity Management using BEACON System
- BEACON Calibration
- Load Follow Practicum
- Flux Map Analysis Practicum
- Estimated Critical Condition (ECC) Practicum
- BEACON Uncertainty Evaluation
- BEACON Power Distribution Surveillance

### **Nuclear Core Design**

- Reload Safety Analysis Checklist (RSAC)
- Nuclear Design Report (NDR)
- Cross-section Development
- Preliminary Model Generation
- Nuclear Design Safety Evaluation Models
- Nuclear Design Safety Evaluation Calculations

### **Software Engineering**

- Basic Turnkey System Administration on Westinghouse-utilized Computer Platforms

### **Coolant Activity Analysis**

- Fuel and Chemistry Interactions Training
- Intro to Coolant Activity Analysis
- Advanced Coolant Activity Analysis

### **Benefits**

- Full curriculum of technical training courses supporting Westinghouse products and technology
- Courses taught by subject-matter experts and advanced technology “power” users
- Up-to-date training reflecting technological advances and evolving regulatory requirements
- Utility-specific courses tailored to unique needs available upon request
- Courses delivered on-site at utilities or at Westinghouse locations worldwide

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