

**EDWARD E. PILAT, Ph.D.**  
**Research Scientist**  
**MIT Center for Advanced Nuclear Energy Systems**  
**pilat@mit.edu**

Dr. Pilat has 50 years of experience in the nuclear electric power industry, focusing on engineering and economic issues related to the reactor core. He co-authored the American Nuclear Society Monograph, "The Linear Reactivity Model for Nuclear Fuel Management." He advises graduate students at MIT, co-taught the course "Systems Analysis of the Nuclear Fuel Cycle", is involved in redesign of the MIT reactor to replace its high-enrichment core with low-enriched fuel, and serves on the it's Safeguards Committee.

As Reactor Physics Manager and as Fuel Economics Manager at Yankee Atomic Electric Company (YAEC), he worked on all four Yankee plants, PWR and BWR, directing a group of engineers performing reactor physics calculations for use in reload core design, licensing, core follow and spent fuel criticality. He was responsible for controlling the interaction of technical and economic factors in reload core design to assure that clients received fuel management plans which best met their needs. Such plans typically included some combination of minimum fuel and production costs, predetermined refueling outage dates, maximum margins to limits, minimum licensing exposure and minimum spent fuel pit throughput. As part of this program he developed methods for analyzing the economics of operational variants such as coastdown and increased cycle length.

He previously spent time with the consulting organizations NUS and ERG, where he gained exposure to other U.S. and foreign nuclear plants. In addition, Dr. Pilat has taught fuel management courses at the MIT/INPO Reactor Technology Program for Utility Executives, at RPI summer programs, at the undergraduate college level and in industry.

He participated in several New England Power Pool (NEPOOL) committees, serving as general liaison mediating between the pool operators and the nuclear plant operators on issues of mutual importance. Most notably, these have included consideration of the timing of refueling outages relative to the projected security and economic needs of the grid.

Dr. Pilat has provided testimony on Seabrook and Vermont Yankee fuel costs before state public utilities commissions and has reviewed papers for the journal **Nuclear Technology**.

#### RESEARCH INTERESTS

Systematics of core design  
Interaction of technical and economic factors in core design  
Accident-resistant fuels  
Non-proliferation

#### EDUCATION/TRAINING

PhD, Nuclear Engineering, Massachusetts Institute of Technology (MIT), 1967  
MS, Nuclear Engineering, MIT, 1964  
BS, Engineering Physics, Cornell University, 1960