

ABSTRACTS

History of Hanford Site Operations

Michelle Gerber

The Hanford Site in southeastern Washington State is the first and oldest plutonium production site in the world. Hanford's history is rich with lessons, both in terms of technical developments and in terms of secrecy, openness and information management. The presentation describes the founding and basic operating history of the Hanford Site, postwar expansions, and production and the wastes of concern throughout various periods in Site history. The slide show and talk also discusses principal themes and issues raised by a study of Hanford's history and assesses Hanford's place within the broad context of American and world history.

FFTF History and Accomplishments

Al Farabee

FFTF Project Director

US Department of Energy

The FFTF was originally designed as a precursor to larger LMFBR's to be built in the US. It operated successfully for 10 years to test advanced fuels, provide scaleup data for unique components, and develop operating protocols. The LMFBR offered the US a vehicle to close the fuel cycle and improve thermodynamic efficiency for generating plants by ~10%. The FFTF was initially shut down as a result of a policy decision to halt nuclear fuel reprocessing in the US. It was placed in standby for several years to look for other viable missions, but none were found that would be cost effective.

Hanford, Current and Future Considerations

Pamela Brown

Hanford Liaison for the City of Richland

I plan to discuss the current cleanup challenges at the Hanford Site including: transferring 2100 metric tons of spent nuclear fuel from wet to dry storage; removal of sludges from the fuel basins; cleanup of the plutonium finishing plant; cocooning Hanford's nuclear reactors; preservation of the B Reactor; cleanup strategy for the central plateau. I will also discuss the political challenges of cleanup driven by DOE Headquarters and the resulting lawsuits filed by the State of Washington in the last year.

In my look into the future I will discuss the continuing mission of the Pacific Northwest National Laboratory. I will also talk about the community's desire to become a national center for nuclear medicine research clinical trials, pharmaceutical production and cancer treatment.

Undergraduate Research at Pacific northwest National Laboratory

David M. Laman

Department of Physics, Central Washington University

The Environmental Molecular Sciences Laboratory (EMSL) at Pacific Northwest National Laboratory in Richland, WA is a national user facility open to use by college/university faculty with a need for specialized research equipment or facilities. In summer 2003, two Central Washington University physics majors and myself visited EMSL for five weeks to collect data on the triplet decay photophysics of the electrically conductive polymer poly(3-octylthiophene). This unique undergraduate research experience in chemical physics leading to the collection of peer-review quality data is described.

Middle School Physical Science and their Treatment of Certain Physics Topics

John L. Hubisz

Physics Department, North Carolina State University

The teachers are not prepared, the textbooks are poor and not much help, and standards are being pushed in such a way that it scares them. Examples will be presented illustrating where the textbooks go wrong and why it is not simply the errors that cause concern. Also, the problems did not start with physical science; they are everywhere as will be made clear.

A Simple Computer Simulation Lab on Entropy

Eric Kincanon

Physics Department, Gonzaga University

Presented is a lab on entropy concepts that uses free spreadsheet software. The focus of the lab is on learning the connection between microscopic and macroscopic states. The lab handout used will also be available.

Why My Students Must Learn about Nuclear Energy: The Alternatives are Deadly

John L. Hubisz

Physics Department, North Carolina State University

Starting in the earliest grades, students are flooded with anti-nuclear propaganda. They see it on television, they hear it in their music, and even if their textbooks do not promote it, their teachers, out of ignorance, do. Facts make impressions. I will present a host of facts that can serve as starting points for discussions on what we can expect in our energy future.

The Yucca Mountain Nuclear Repository

John Hartley

BSC Senior Science Communications Specialist

Mr. Hartley will present an overview of the Yucca Mountain Project. His presentation covers numerous aspects of the Project including but not limited to Project background, the science of Yucca Mountain, transportation update, status of the license application process, Project funding, and public outreach programs.