

# The INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, Inc.

Eastern Idaho Section

Lunch Speaker

- TOPIC:** ITER: Realizing Nuclear Fusion Power
- SPEAKER:** Phil Sharpe, Ph.D.  
INL Fusion Safety Program
- DATE:** Friday, August 10, 2007
- TIME:** 12:00 Noon
- PLACE:** JB's Restaurant, 850 Lindsay Blvd., Idaho Falls ID, (208) 522-4224
- MENU:** No host lunch, please order from the menu. The first 5 IEEE members who show their *current* membership card will have their lunch purchased by the Eastern Idaho Section.
- COST:** Approximately \$10, depending on menu selection.

## Abstract:

For the first time in the history of mankind, an opportunity exists to explore the realities of operating a fusion reactor- construction of the International Thermonuclear Experimental Reactor (ITER) is set to begin in the near future. ITER will be the first experiment to sustain a burning plasma with a net energy output at least 10 times greater than energy input, and produce thermal energy at the level of present electric power stations. Many science and engineering challenges are to be met with the robust design of ITER. Integration of novel and complex systems and substantial sources of stored energy within ITER have required extensive safety analyses to ensure negligible impact to the public. This presentation will provide an overview of ITER, discuss a few of the technical challenges to be met, and demonstrate the important role of fusion safety research and analysis.

## Speaker information:

Phil Sharpe (PhD Nuclear Eng, North Carolina State University, 2000) is a scientist in the Fusion Safety Program at the Idaho National Laboratory. His research interests include fusion energy system design and safety analysis, power systems technology, terrestrial and astrophysical plasma science, plasma applications, and aerosol science and technology. Current research activities include studying the impact of dust on the operational and safety characteristics of fusion reactors, plasma-surface interactions, materials studies with hydrogen isotopes, tritium handling and cleanup systems, thermochemical behavior of liquid coolants (molten salts and liquid metals), and experimental simulation of solar plasma and magnetosphere interaction dynamics.

\*\*\* VISITORS AND NON-MEMBERS ARE WELCOME \*\*\*