NEUP Integrated Research Project Workshop 2:
FHR Benchmarking Efforts

Previous Workshop Summary and Review of Workshop Objectives

April 14, 2016

Per F. Peterson

Background

- In 2014 the DOE launched two new Integrated Research Projects (IRP-2's) to study Fluoride Salt Cooled, High Temperature Reactor (FHR) technology
  - University-led efforts to further develop the scientific and technical basis to design and license FHRs
  - Close collaboration with national laboratories, industry and senior experts in the field
  - Provides an opportunity for graduate students and postdocs to
    - » Work on the development of a new reactor technology (a common learning experience in the 1950's through 1970's)
    - » Understand reactor technology at a more fundamental level by contributing to more fundamental design analysis
    - » Unique characteristics of FHRs allow students to validate their understanding and models against experiments

The IRP Hosted its First FHR Benchmarking Workshop in March, 2015

- **Sought input from senior experts from national labs, industry, and academia**
  - **Goal was to understand the current state-of-art**
- **Graduate students and postdocs prepared white papers on benchmarking issues and best practices**

http://fhr.nuc.berkeley.edu/wp-content/uploads/2015/08/15-001-IRP-2-Workshop-1-Report-FINAL.pdf

1st FHR Benchmarking Workshop, Berkeley, April 2015

Goals of the Second FHR-2 Benchmarking Workshop

- **Provide substantial time for FHR Benchmarking Working Groups to meet**
  - **Thermal Hydraulics**
  - **Neutronics**
  - **Materials, Activation, Tritium and Transport**
- **Generate white papers on status and progress in evaluation model benchmarking and recommends specific FHR benchmarking exercises**

Structure of Workshop

- Day 1
  - Review of current status of FHR research and results from IRP-2 Research
  - Working Group Breakout Sessions
  - Lunch talk: SINAP TMSR Update
- Day 2
  - Working Group Breakout Sessions
  - Lunch talk: TerraPower--Innovation, TWRs, and Salt
  - Multi-Physics Discussion
  - Issues and Implications for Fluid Fuel Reactors
  - Proposed Path Forward

Output from workshop

- Students will take notes to record workshop discussion
  - Minutes will be available after the workshop, but their primary purpose is to record discussion so it can be integrated into workshop white papers
- Students will maintain an "actions" flip chart
  - Will list actions to be taken following the workshop
  - Primarily actions for workshop participants to provide additional citations or reference materials for inclusion in the revised draft white paper
- Students will maintain a "bucket" flip chart
  - Will list topics that merit further discussion/investigation if workshop discussion time runs short

Thank you, everyone, for taking the time to attend and contribute to this workshop