

**Research Needs Workshop (ReNeW)
 Harnessing Fusion Power (Theme IV) Agenda
 Faculty Center, UCLA
 March 2-4, 2009**

Monday AM, March 2

8:30 AM Registration and Coffee

9:00 AM	Time	Session 1: Overview of the Fusion Power Theme (Chair: Rene Raffray)	
1.1	15	Wayne Meier, LLNL	Welcome, Introduction
1.2	30	Scott Willms, LANL	Fuel Cycle Issues, Gaps and Research Needs
1.3	30	Neil Morley, UCLA	Power Extraction Issues, Gaps and Research Needs
	15	Coffee Break	
1.4	30	Rick Kurtz, PNNL	Materials Issues, Gaps and Research Needs
1.5	30	Wayne Reiersen, PPPL	An Expanded View of RAMI Issues
1.6	30	Phil Sharpe, INL	Safety Issues, Gaps and Research Needs

12:00 PM Lunch Break Hosted at Faculty Center

1:00 PM	Time	Session 2: Fuel Cycle Presentations and Thrusts (Chair: Phil Sharpe)	
2.1	30	Scott Willms, LANL	Addition Detailed Information on Gaps
2.2	20	Scott Willms, LANL	Recap Thrusts from Greenwald report. Describe initial draft thrusts from panel work.
2.3	25	Laila El Guebaly, UW	Need for Online Adjustment/Control of Tritium Bred in Blanket
2.4	25	Clement Wong, GA	Closing the Fusion Fuel Cycle (Main Blankets)
2.5	20	TBD, ORNL	Fuel cycle issues and thrust
	30	Additional Q&A, Discussion	

3:30 PM Coffee Break

Monday PM, March 2 (Continued)

4:00 PM	Time	Session 3: Safety and Environment Presentations and Thrusts (Chair: Scott Willms)	
3.1	20	Phil Sharpe, INL	Recap Thrusts from Greenwald report. Describe initial draft thrusts from panel work.
3.2	25	Phil Sharpe, INL	Safety Standards and Integration with other Themes
3.3	25	Laila El-Guebaly, UW	Establishing Integrated Management Strategy for Activated Materials
3.4	20	TBD, ORNL	Example Safety Issues and Thrust
	30		Additional Q&A, Discussion

6:00 PM Adjourn

Tuesday AM, March 3

8:30 AM Registration and Coffee

8:45 AM	Time	Session 4: Power Extraction Presentations and Thrusts (Chair: Rick Kurtz)	
4.1	20	Neil Morley, UCLA	Recap Thrusts from Greenwald report. Describe initial draft thrusts from panel work.
4.2	20	Alice Ying, UCLA	Integrated Multi-physics Simulation of Nuclear Components as an Essential Element in Developing Predictive Capabilities for DEMO
4.3	20	Ron Stambaugh, GA	Addressing Fusion Power Issues
4.4	15	Clement Wong, GA	Test Blanket Module Research Program
	15	Coffee Break	
4.5	15	Sergey Smolentsev, UCLA	Identification of key MHD thermofluid issues and associated R&D for the next generation liquid blankets
4.6	15	Neil Morley, UCLA	Why US Participation in the ITER TBM is essential for Fusion Nuclear Science and Technology
4.7	15	Grady Yoder, ORNL	Power extraction issues and thrust
4.8	15	Clement Wong, GA	US Fusion DEMO Assessment
4.9	15	Rob Goldston, PPPL	Requirements for a Confinement Device with a Goal to Develop Tritium Breeding Blanket Modules, Based on FESAC Fusion Development Path Plan
	30	Additional Q&A, Discussion	

12:00 PM Lunch Break

Tuesday PM, March 3

1:00 PM	Time	Session 5: Materials Presentations and Thrusts (Chair: Wayne Reiersen)	
5.1	20	Rick Kurtz, PNNL	Recap Thrusts from Greenwald report. Describe initial draft thrusts from panel work.
5.2	20	Rick Kurtz, PNNL, G. Odette, UCSB	Major Materials Issues for DEMO
5.3	15	Shahram Sharafat, UCLA	Interfacing Materials Development and Design: A "No-Choice" Pathway
5.4	15	Roger Stoller, ORNL	Integration of Modeling, Theory and Experiments
5.5	15	M. Demkowicz (MIT)	Atomic-Scale Design of Structural Materials for Fusion Environments
5.6	15	Eric Pitcher, Stuart Maloy, LANL	Irradiating Fusion Materials in the Proposed LANL Materials Test Station
5.7	15	John Slough, MSNW LLC	Development of a high fluence fusion neutron source and component test facility based on the magneto-kinetic compression of FRCs
5.8	15	Tom Simonen, retired	A Materials Evaluation D-T Neutron Source
	30		Additional Q&A, Discussion

3:40 PM Coffee Break

4:00 PM	Time	Session 6: RAMI Presentations and Thrusts (Chair: Neil Morley)	
6.1	20	Wayne Reiersen, PPPL	DEMO RAMI Requirements, Gaps, and Thrusts
6.2	20	Les Waganer, Boeing	Why is RAMI important to the fusion?
6.3	20	Tom Burgess, ORNL	RAMI issues and thrust
6.4	20	John Sheffield, UT	The Need for Fusion Test Facilities
6.5	20	Lee Cadwallader, INL	Developing a RAMI Database for DEMO
	20		Additional Q&A, Discussion

6:00 PM Adjourn

Wednesday AM, March 4

8:30 AM Registration and Coffee

9:00 AM	Time	Session 7: Cross-Cutting Presentations and Thrusts (Chair: Richard Nygren)	
7.1	20	Mark Tillack, UCSD	Technology Readiness Levels for Fusion
7.2	20	Ron Stambaugh, GA	Overview of the Fusion Development Facility
7.3	20	Martin Peng, ORNL	Fusion Nuclear Science Research Thrust Using a Full Fusion Nuclear Environment
	20		Additional Q&A, Discussion
	20	Coffee Break	
7.4	20	Rob Goldston, PPPL	Plasma Facing Component Development on NHTX
7.5	20	Dennis Whyte, MIT	An Energy Sustainment Mission
7.6	20	Dennis Youchison, SNL	Plasma Facing Component Development Needs
	20		Additional Q&A, Discussion

12:00 PM Lunch Break Hosted at Faculty Center

Wednesday PM, March 4

1:00 PM	Time	Sessions 8.1-8.5: Panel Summary and Integration Meetings (parallel sessions, Eng Bldg)	
	120	Panel Leaders	Discuss all thrusts related to the panel (new and previous) and begin integration at the panel level

3:00 PM Break

3:30 PM	Time	Session 9: Fusion Power Theme - Thrust Integration and Work Plan	
	150	Rene Raffray	Discuss all thrusts and begin to integrate at the Fusion Power Theme level

Topics for Session 9

Recap of thrusts.

Develop logical and temporal relationships among the thrusts.

Discuss how thrusts could be combined into consistent, integrated thrusts.

How would completion make progress toward MFE?

What other scientific benefits would be gained?

Do we have a range of thrust sizes?

Assignments, work plan to finalized selection of FP thrust to be presented to Renew Executive Committee (early May).

6:00 PM Adjourn

6:00-7:30 PM Reception at Faculty Center

Since our report must address the following, to the extend possible, speakers should address these points in proposing thrusts:

Introduction

Scientific importance, opportunities, and urgency related to this thrust.

What important and/or exciting scientific questions will this thrust try to answer?

What opportunities does it realize? (new understanding, technical innovation, capabilities and partnerships)

Scientific and Technical Research

Description of each element of thrust, with sufficient detail to allow rough schedule and cost estimate

(is it a decade long activity or a 3 year task?). Description of how elements combine into consistent, integrated thrust.

Benefits for Magnetic Fusion Energy

How would this campaign make progress toward magnetic fusion energy?

What is relation to other thrusts? (if known)

What other scientific benefits (outside of fusion?) would be gained?

Questions to help integrate/select thrusts

What would be impact if funded at less than estimated need? (delay results or not feasible to complete?)

Does success depend on other thrusts being successfully completed (e.g., development of particular material capability)?

Does thrust have broad applicability or is it focused on a particular concept/configuration?