

# **INTRODUCTORY REMARKS ON WORKSHOP SCOPE, PROCEDURE**

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**International Workshop on Fusion Nuclear  
Technology Testing and Facilities,  
Held at UCLA, March 10-13, 1985**

# FUSION NUCLEAR TECHNOLOGY

- **Function**

- **Fuel Production and Processing**
- **Energy Extraction and Use**

- **Components**

- **Blanket**
- **PIC (First Wall, Limiter, etc.)**
- **Shield**
- **Tritium Processing**

# **FUSION NUCLEAR TECHNOLOGY**

## **Technical Disciplines**

**Nuclear Physics**

**Thermodynamics**

**Fluid Mechanics**

**Electromagnetics**

**Chemistry**

**Structural Mechanics**

**Material Applications**

**Nuclear, Mechanical, Chemical Engineering**

# CLARIFICATION OF THE USE OF THE WORD NUCLEAR

(e.g. Nuclear Experiments, Nuclear Technology)

- Nuclear is Used to Describe Any Function that Relates to Nuclear Components
- Does Not Always Refer to Neutrons
- Presence or Lack of Neutrons is Explicitly Indicated if Needed:  
e.g.  
    Neutron-Producing Facility  
    Non-Neutron Test Stand

# GENERAL OBJECTIVES OF THE WORKSHOP

- Provide an opportunity for key members of the International Fusion Community to discuss major issues, testing needs and required facilities for Fusion Nuclear Technology (FNT) Research and Development (R&D).
- Develop a better understanding of the status, approach and future directions of R&D activities for FNT in world major fusion programs.
- Serve as a starting point for future efforts to identify opportunities for international cooperation on FNT.

## **DISCUSSION TOPICS**

**The impressive assembly of world senior leaders provides an excellent opportunity to discuss many important topics. The workshop participants should select the discussion topics.**

- **Formulating a set of questions may help focus discussions.**
- **Examples of suggested questions follow.**

# SUGGESTED (EXAMPLES OF) QUESTIONS FOR WORKSHOP

## Topic 1

Is R&D for fusion nuclear technology important:

- a) in the near term (now to year 2000)?
- b) in the long term (after year 2000)?

(Can we articulate specific reasons?)

## Topic 2

- a) Are present activities in world programs sufficient to resolve all major FNT issues?
- b) Is more utilization of existing facilities needed?
- c) Is construction of new experimental facilities required?

# **SUGGESTED QUESTIONS FOR WORKSHOP**

## **(CONTINUED)**

### **Topic 3**

- a) **Will R&D planning be improved by input from a technical process to understand key issues, quantify test requirements and identify characteristics of major experimental facilities?**
- b) **Any observations on scope, approach, etc. to maximize the benefits of such a process?**

# **SUGGESTED QUESTIONS FOR WORKSHOP**

## **(CONTINUED)**

### **Topic 4**

- a) **Are there opportunities for international cooperation on fusion nuclear technology?**

**Are there:**

- b) **FNT design options of common interest?**
- c) **Experiment and experimental facility needs of common interest?**
- d) **Any particular features of R&D for FNT that make international cooperation easier or more difficult?**
- e) **What course of action is recommended to more clearly identify opportunities for international cooperation?**

# **WORKSHOP IS GUIDED BY TWO COMMITTEES:**

## **Executive Committee**

- **Review and Approve All Aspects of Workshop, Including Recommendations—If Any**
- **Prepare Brief Executive Summary of Workshop**

## **Technical Committee**

- **Keep an account of all technical discussions throughout workshop**
- **Prepare Brief Technical Summary of Workshop**

# **WORKSHOP EXECUTIVE COMMITTEE**

**Canada: Minns**

**Europe: Hennies, Malein, Schwartz**

**Japan: Hasiguti, Obata**

**U.S.: Abdou, Haas**

# **WORKSHOP TECHNICAL COMMITTEE**

**Canada: Gierszewski\*, Dautovich**

**Europe: Casini, Carré, Komarek**

**Japan: Miya, Nakamura, Sumita**

**U.S.: Berwald, Grover, Morgan\*, Tillack**

**\* Responsible for initial coordination**

# **SESSION CHAIRMEN**

**Names Indicated on Agenda**

# **PANEL MEMBERS**

**Session G: International Cooperation**

**Session H: Conclusions/Recommendations**

**Names Indicated on Agenda**

# **PUBLICATION FROM WORKSHOP**

**A document will be mailed to workshop participants within a short time after the workshop. It will include:**

- **Copies of Presentations**
- **Summary of Session G (International Cooperation) Discussions**
- **Summary of Session H (Conclusions) Discussions**
- **Brief Summary from Technical Committee and Session H Discussion**
- **Brief Summary from Executive Committee**

## PROCEDURAL NOTES

- **The Session Chairmen will guide the conduct of each session.**
- **Schedule is full; time is limited. Speakers are urged to stay within the allotted time.**
- **Session Chairmen may decide to ask audience to hold their questions until the end of each presentation.**
- **Speakers: Please give your 35 mm slides to projectionist before the beginning of the session.**
- **Transparencies can be handed over before each talk.**

## **NEED HELP?**

- **An administrative/secretarial office for the workshop is available in the Faculty Center (near the conference room)**

**Help with typing, xeroxing, travel arrangements, etc.**

**Workshop Administrator: Marilyn Pagnusat**

- **Other workshop-related matters**

**Please feel free to contact appropriate person. The following are responsible for workshop arrangements:**

**Paul Gierszewski**

**Dave Morgan**

**Kaveh Taghavi**

**Mark Tillack**

## SCHEDULED COMMITTEE MEETINGS

(Committees may select to change schedule  
or hold additional meetings)

### Planning Committee

Sunday, March 10, 3:00 - 5:00 p.m.  
UCLA Faculty Center, Hacienda Room

### Executive Committee

- Tuesday, March 12, 3:45 - 5:30 p.m.  
Ackerman Union, Room 3517
  
- Wednesday, March 13
  - Afternoon, 4:00 - 6:00 p.m.  
UCLA Faculty Center, Playa Room
  - Evening Dinner, 7:30 - 9:00 p.m.  
Hungry Tiger Restaurant, 936 Westwood Blvd.

### Technical Committee

- Monday, March 11, Evening Dinner, 7:30 - 9:30 p.m.  
Hungry Tiger Restaurant, 936 Westwood Blvd.
  
- Wednesday, March 13, 4:00 - 6:00 p.m.  
UCLA Faculty Center, Redwood Rooms 4&5
  
- Thursday, March 14, Morning (If Needed)  
UCLA Faculty Center, Playa Room

Agenda

INTERNATIONAL WORKSHOP ON  
FUSION NUCLEAR TECHNOLOGY TESTING AND FACILITIES

March 10-13, 1985  
UCLA Campus, Westwood, Los Angeles

(Revised 3/4/85)

Monday, March 11  
UCLA Faculty Center, Hacienda Room

8:30 - 8:45      UCLA Welcome/Introduction

Session A: National Fusion Nuclear Technology Program

Session Co-Chairmen: Haas, Obata

8:45 - 9:00	U.S. DOE/OFE Welcome/Remarks	Roberts
9:00 - 9:30	Workshop Scope and Issues	Abdou
9:30 - 9:40	Discussion	
9:40 - 10:00	U.S. Fusion Nuclear Technology Overview	Haas
10:00 - 10:20	Coffee Break	
10:20 - 11:20	U.S. Fusion Nuclear Technology Overview Materials (15 min.) Blanket Technology (15 min.) In-Vessel Components (15 min.) Tritium (15 min.)	Reuther Baker McGrath Anderson/Bartlit
11:20 - 11:30	Discussions	
11:30 - 11:55	Overview of EC Program and Discussion	Malein
11:55 - 1:15	Lunch (Hosted by UCLA, Sequoia Rooms 1,2 & 3)	

Session B: National Fusion Nuclear Technology (FNT) Programs

Session Co-Chairmen: Grieger, Sumita

1:15 - 1:55	FNT at KFK for EC Overview Facilities	Hennies Vetter
1:55 - 2:45	Overview of FNT in France	Schwartz
2:45 - 3:10	Overview of FNT at JRC (Ispra)	Casini
3:10 - 3:30	Coffee Break	
3:30 - 5:15	FNT in Japan Overview of FNT at JAERI (45 min.) Overview of FNT in Universities (45 min.) Discussions (15 min.)	Obata Hasiguti, et al
5:15 - 5:45	Overview of FNT in Canada	Minns/Dautovich
5:45 - 6:00	Discussion on National Programs	

Tuesday, March 12

Morning: UCLA Faculty Center, California Room

Session C: Fusion Nuclear Issues and Development Problems

Session Co-Chairmen: Komarek, Baker

8:30 - 8:35	Announcements	
8:35 - 9:30	Overview of FINESSE	Abdou
9:30 - 9:40	Discussion	
9:40 - 9:55	Generic Blanket Options	Morgan
9:55 - 10:15	Coffee Break	
10:15 - 10:55	Liquid Metal Blankets Issues, Phenomena and Testing Needs	Tillack
10:55 - 11:30	Solid Breeder Blanket Issues, Phenomena and Testing Needs	Gierszewski
11:30 - 11:40	Discussions	
11:40 - 12:10	EC Blanket Study Issues	Carre
12:10 - 1:30	Lunch (and move to Ackerman Union)	

Afternoon: Ackerman Union, Second Floor Lounge

Session D: Role of Non-Fusion Facilities

Session Co-Chairmen: Schwartz, Bloom

1:30 - 2:00	Non-Neutron Test Stands for Blankets	Sze
2:00 - 2:10	Discussion	
2:10 - 2:40	Role of Point Neutron Sources and Fission Reactors	Grover
2:40 - 3:00	Fission Reactors For Blanket Testing	Kuechle
3:00 - 3:15	Discussion	
3:15 - 3:45	Coffee Break	

Session E: Discussion on Issues, Facilities

Session Co-Chairmen: Carre, Kulcinski, Morgan

3:45 - 5:30	Discussion Session Format Suggested Focus: Develop understanding of how issues, nuclear component options, development approach and facilities compare among various countries.	
3:45 - 5:30	Executive Committee Meeting (Room 3517 Ackerman Union)	

Evening, Tuesday, March 12

UCLA Faculty Center, Sequoia Rooms 1, 2 & 3

You are cordially invited to  
join us for cocktails and a banquet  
hosted by UCLA and TRW

6:30 p.m. Cocktails

7:30 p.m. Banquet

9:00 p.m. After-Dinner Cocktails and Coffee

Wednesday, March 13  
UCLA Faculty Center, California Room

Session F: Role of Fusion Devices

Session Co-Chairmen: Miya, Gordon

8:30 - 9:00	Quantifying Test Requirements for Fusion Facilities	Gierszewski
9:00 - 9:50	Role of Fusion Devices	Berwald
9:50 - 10:10	Corriander Study	Komarek
10:10 - 10:30	Discussion	
10:30 - 11:00	Coffee Break	

Session G: Opportunities For International Cooperation

11:00 - 12:15 Semi-Formal Remarks by Panel Members (Followed by Discussion)

Panel Members:

Canada: Minns  
Europe: Grieger  
Japan: Obata  
U.S.: Conn

12:15 - 1:30 Lunch (Hosted by Grumman and McDonnell Douglas)

Session H: Conclusions/Recommendations/Where Do We Go From Here?

Session Chairman: Hennies

1:30 - 3:30 Discussions (Led by a Panel)

Panel Members

Canada: Dautovich  
Europe: Hennies, Schwartz  
Japan: Obata, Hasiguti  
U.S.: Abdou, Yoshikawa

3:30 Meeting Adjourned

3:30 - 4:00 Coffee

4:00 - 6:00 Executive Committee Meeting (Playa Room)

4:00 - 6:00 Technical Committee Meeting (Redwood Rooms 4 & 5)  
(To finalize writing of technical conclusions)