Briefing to
Dr. Walter E. Massey
Provost and Senior Vice President
Academic Affairs
University of California

September 17, 1993
Mohamed A. Abdou
Professor, Mechanical, Aerospace and Nuclear Engineering Department
School of Engineering and Applied Science
University of California, Los Angeles

• Joined UCLA in 1983

• Established Academic and Research Program on Fusion Nuclear Technology (FNT)

FNT:

Energy Conversion, Tritium Fuel Cycle, High Heat Flux Components, First Wall/Blanket

Technical Disciplines:

Heat Transfer, Fluid Mechanics, Materials, Structural Mechanics, Neutronics, Mechanical Engineering

Research Elements:

Modeling, Analysis, Experiments, Design

• Extramural Support: ~ $2M/yr.

• Manpower: 12 Graduate Students
             10 Research Staff
• International:

Visiting Scientists, Collaborative Programs with Japan, Europe, Russia and China

• Recognition:

Premier University Program in the World (Academic Program and Research); Several Prestigious Awards -- ANS Outstanding Achievement Award, DOE Distinguished Associate Award, Japanese Atomic Energy Society Distinguished Professor --

• Responsibility:

- Responsible for US DOE Program Direction and International Interactions on Fusion Nuclear Technology
- Member of US Steering Committee for ITER
- Lead US Person for VNS, Blanket, Neutronics
- IEA Chairperson for VNS
- Chairperson, International Standing Committee on FNT
World Fusion Program Highlights

- Key Element is ITER
  International Thermonuclear Experimental Reactor

- ITER is an International Project Among EC, Japan, USA, Russia

- Present Phase of ITER:
  - Engineering Design Activity (EDA)
  - $800M of R&D Over 5 Year Period
  - 3 Design Centers (San Diego, Naka, Garching)

- ITER Capital Cost: ~ $7B

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- UCLA Study (FINESSE) Shows a Need for Another Fusion Facility for Engineering Development; Called VNS (Volumetric Neutron Source)

- VNS is Now Accepted Worldwide in Terms of Technical Need

- Near Term Effort: Start International Study on VNS (UCLA Will Play a Major Role)

- Abdou Named by US DOE as the Lead US Person
California Interests

- Major Initiative for Siting ITER or VNS in California (e.g. George Airforce Base)

- California Aerospace Industry is Particularly Interested in Siting VNS in California
  - Effort to Secure Non-DOE Funds
  - Nunn-Logan Defense Conversion Funds
  - State Competitiveness Funds (Through Department of Commerce)
  - November Conference on Technology in California: Fusion and VNS
Local Fusion Program and Issues at UCLA

- IPFR was Established Several Years Ago (Total Extramural Funding $\sim 10$M/yr.)

- Construction of a New Building on the "West Campus" has Been Approved
  - About $40$M
  - Uses Overhead Money

- Issues:
  - Interaction Between the ORU (IPFR) and Academic Units (Departments)
  - Two Senior Faculty are Leaving UCLA; a Third Faculty Member is Retiring
  - Is There a Commitment to Fusion at UCLA? (Hiring New Faculty, Resources, etc.)