

January 10, 1981



FUSION POWER ASSOCIATES

2 PROFESSIONAL DRIVE, SUITE 248 • GAITHERSBURG, MARYLAND 20760

(301) 258-0545

NEW MEMBERS AND AFFILIATE

Boeing Engineering and Construction Company (Seattle, WA), Hipotronics, Inc. (Brewster, NY), and W. J. Schafer Associates, Inc. (Wakefield, MA and Arlington, VA) have become the twenty-first, twenty-second, and twenty-third members of Fusion Power Associates. R. Bryan Cairns, Manager Advanced Technologies will represent Boeing. Earl Valiton, Engineer, will represent Hipotronics. Edward T. Gerry, President, will represent W. J. Schafer Associates.

The Texas Atomic Energy Research Foundation (TAERF) has become the tenth Affiliate of Fusion Power Associates. TAERF is a non-profit research foundation supported by ten electric utilities. The members of TAERF are Central Power and Light Company, Community Public Service Company, Dallas Power and Light Company, El Paso Electric Company, Gulf States Utilities Company, Houston Lighting and Power Company, Southwestern Public Service Company, Texas Electric Service Company, Texas Power and Light Company, and West Texas Utilities Company. Howard R. Drew, Executive Vice President and Secretary will represent TAERF.

We welcome our new members and affiliate to participation in Fusion Power Associates.

GOMBERG LEAVES KMS

Dr. Henry J. Gomberg has announced his resignation from KMS Industries and its subsidiaries. Gomberg had been President of RadSyn, Inc. and had previously served as President of KMS Industries and KMS Fusion. He has indicated his intention to start a new consulting and scientific organization in energy and synthetic materials based in the Ann Arbor, MI, area. In connection with his departure from KMS, Henry has also resigned his position as a member and Vice-Chairman of the Fusion Power Associates

Board of Directors. We are very much indebted to him for his support and advice during our formative year. We will miss him, and we wish him well in his endeavors.

AMERICAN ENERGY WEEK

A group of pro-energy development organizations are joining forces to organize American Energy Week, March 15-21, 1981. A national committee and advisory council have been formed. Members of the national committee include Sen. Howard Baker, Sen. Robert Byrd, Rep. Thomas O'Neill, Paul Greeley (President, American Chamber of Commerce Executives), Richard Hatch (President, U.S. Conference of Mayors), and many others. Fusion Power Associates' President Steve Dean has accepted an invitation to serve on the advisory council. An organizational dinner meeting is scheduled January 13 at the Dirksen Senate Office Bldg.

TRANSITION BUDGET

The DOE Transition Team, headed by Michael Halbouty, has recommended a FY 1982 budget for magnetic fusion of \$478M to OMB Director-designate Dave Stockman. This compares to President Carter's recommendation of \$506M. The FY 1981 budget is \$394M. The same group recommended a \$250M increase in the fission breeder program and "severe" reductions in fossil and solar programs.

AMERICAN VACUUM SOCIETY FORMS FUSION DIVISION

The American Vacuum Society has formed a Fusion Technology Division. Officers of the new division are Manfred Kaminsky (Argonne), Chairman; Don Mattox (Sandia), Vice-Chairman; Fred Dylla (Princeton), Secretary; and Angus Hunt (Livermore), Treasurer. Other members of the Executive Committee are: R. Jay Fries (Los Alamos), R. A. Langley (Oak Ridge),

Bernard Terreault (Inst. of Energy, Quebec), and Ken Wilson (Sandia). The Division has over 200 members, has formed 12 topical technical committees, and has established a 14-member International Advisory Committee. One activity planned by the Industrialization of Fusion Committee, chaired by M. Sabado (Ebasco), is a session at the 28th National Symposium of the AVS, Nov. 2-6, 1981, in Anaheim, CA. Invited speakers include John Clarke (DOE), John Gilleland (GA), Steve Dean (FPA), and Stanley Shaefer (President of Duquesne Light Company).

CONGRESSIONAL REPORT AVAILABLE

A report has recently been published entitled "Fusion Energy: An Overview of the Magnetic Confinement Approach, Its Objectives and Progress" prepared for the House Science and Technology Committee by the Science Policy Research Division of the Congressional Research Service. Persons interested in obtaining a copy of the 175 page report should contact Dr. Alan Mense (202) 225-3472.

MEETINGS OF INTEREST

- February 9-10 University of Texas at Austin, APS Fourth Topical Conference on RF Plasma Heating
- February 25-27 Louisiana State University, APS Third Topical Conference on Atomic Processes in High Temperature Plasmas
- March 9-10 Washington, D. C., Energy Technology Conference. Contact Tom Sullivan (301) 656-1090.
- March 12 Washington, D. C., Technical Concepts Forum, sponsored by the FED Technical Management Board, DOE. Contact Lenore Ledman (301) 353-3598.
- March 16-27 Erice, Sicily, Fifth Course on Fusion Reactor Technology: Unconventional Approaches to Fusion. Contact Prof. Bruno Brunelli (Frascati).
- March 23-27 Erice, Sicily, IAEA Technical Committee Meeting on Critical Analysis of Alternative Fusion Concepts
- April 8-10 University of Texas at Austin, Annual Sherwood Theory Meeting
- April 13-15 MIT Plasma Fusion Center, Meeting of Magnetic Fusion Power Coordinating Committee
- May 18-20 Santa Fe, New Mexico, IEEE International Conference on Plasma Science
- May 27-28 Princeton Plasma Physics Laboratory Information Meeting. Contact Earl Tanner (609) 683-3279
- June 10-12 Washington, D. C., Optical Society of America Conference on Lasers and Electro Optics (CLEO)

Fusion Power Associates Members: Aydin Energy Division; BDM Corporation; Burns and Roe, Inc.; Boeing Engineering Construction Co.; Ebasco Services; EDS Nuclear, Inc.; General Atomic Company; Gilbert/Commonwealth; Hipotronics; IL Technology; JAYCOR; KMS Fusion, Inc.; Mathematical Sciences Northwest; Maxwell Laboratories; McDonnell Douglas Astronautics Co.; Quadrex Corporation; Science Applications, Inc.; W. J. Schafer Associates, Inc. Stone and Webster Engineering Corp.; Thermo-Electron Corp.; TRW; Universal Voltronics; Westinghouse Fusion Power Systems Department. Affiliates: The Bendix Corporation, Dow Chemical Company, Institut de Recherche de l'Hydro Quebec, Long Island Lighting Company, Northeast Utilities, Northern States Power Co., Pennsylvania Power and Light Co., The Ralph M. Parsons Co., Texas Atomic Energy Research Foundation, Tri-City Nuclear Industrial Council, Inc.

MARCH 1, 1981



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NEW MEMBER AND AFFILIATE

Public Service Electric and Gas Research Corporation, Newark, NJ, has become the twenty-fourth member of Fusion Power Associates. PSE&G Vice President, Kenneth L. Matson, will represent the company.

Phillips Petroleum Company, Bartlesville, OK, has become our eleventh Affiliate. Dr. Starnes E. Walker will represent the company.

We welcome their participation in Fusion Power Associates.

GLASS TO HEAD KMS FUSION

Dr. Alexander J. Glass has been named as the new President of KMS Fusion, Inc., of Ann Arbor, MI. He had been Assistant Associate Director for Lasers at the Lawrence Livermore National Laboratory. Alex presented a talk at the Fusion Power Associates symposia on "The Role of Industry in Fusion Development" last November. He will become KMS' representative to our association. The announcement was made by Patrick B. Long, Chairman of KMS' Board of Directors.

MRS. BOUQUARD TO CHAIR CONGRESSIONAL SUBCOMMITTEE

Mrs. Marilyn Lloyd Bouquard (D-TN) has been named to head the Subcommittee on Energy Research and Production of the House Science and Technology Committee, formerly headed by Congressman Mike McCormack. Other members of the Subcommittee are: Robert A. Roe (D-NJ), Richard L. Ottinger, (D-NY), Robert A. Young (D-MO), Stanley N. Sundine (D-NY), Ronnie G. Flippo (D-AL), Harold L. Volkmer (D-MO), Howard Wolpe (D-MI), Manuel Lujan, Jr. (R-NM), Edwin B. Forsythe (R-NJ), Bill Lowery (R-CA),

Barry Goldwater, Jr. (R-CA), Harold C. Hollenbeck (R-NJ). Jack Dugan has been designated Staff Director for the Subcommittee.

TV COVERAGE

Steve Dean discussed fusion on three TV programs recently. On February 4, he was interviewed for 15 minutes on KBHK's "Good Morning" show in San Francisco. On February 9 he taped an interview for NBC affiliate KUTV's "Today in the West" in Salt Lake City. The interview will be aired in mid-March. On February 10, he participated at Aydin Energy Division, Palo Alto, in the taping of a show on the Commercialization of Fusion. The program, which will be produced by KQED (PBS) in San Francisco, will air several times in late February and early March. Aydin President Dave Dry also participated in the program.

OAK RIDGE CIVIC GROUP HOLDS CFE DISCUSSIONS

A civic group headed by Q. Donald Maxwell, President of the Bank of Oak Ridge, has invited over a dozen companies to participate in discussions on the "Organizational Requirements for the Center for Fusion Engineering". The meeting will take place March 3-4 in Oak Ridge, TN.

CONGRESSIONAL HEARINGS

The House Science and Technology Committee held a fusion hearing on February 25. Douglas Pewitt, Acting Director of the Office of Energy Research, presented the magnetic fusion program. After an excellent introduction in which he described the rapid progress which has been made and the consensus reached last year by several review committees that magnetic fusion was ready for engineering development, Pewitt concluded: "The Department cannot embark upon a program that is

predicted on an unbroken series of technical successes; we must plan prudently and incorporate into our planning the possibility for scientific or technical disappointments or setbacks. Before the nation undertakes such an expensive effort, it is essential that thorough analysis and assessment be undertaken". Pewitt did not acknowledge the passage of the Magnetic Fusion Energy Engineering Act of 1980. He also indicated intent to cancel certain unspecified projects stating "Each of the projects to be cancelled has been well planned and justified scientifically and would have produced useful technical input for the FED (Fusion Engineering Device) and subsequent developments. Lack of this information will increase somewhat the degree of technical risk in the overall program. However, none of these projects is absolutely essential to fusion development." To justify what amounts to a refusal to implement the recently-passed Magnetic Fusion Energy Engineering Act of 1980, Pewitt cited the need to give priority to the development of the fission fast breeder reactor.

EDWARDS' PRESS CONFERENCE

Secretary of Energy James Edwards held a press conference on February 26. In response to a question on fusion, Edwards was quoted by news sources as follows: "We should push fusion as fast as we can. If we can do it in 30 years, why can't we do it in 20 years. I'm an impatient man. We went to the moon in only 10 years. We want to maintain international leadership in fusion and not lose it the way we did in nuclear." On Tuesday, March 3, Mrs. Bouquards' Subcommittee will take fusion testimony from non-government witnesses. Fusion Power Associates has been invited to testify. Other witnesses include McDonnell Douglas Astronautics Company, the Atomic Industrial Forum, the University Fusion Association and Airco, Inc. Appropriations Committee Hearings for both magnetic and inertial fusion will take place March 3 and 4. The House Armed Services Committee will review inertial fusion on March 4.

DOE CANCELS MEETING ON FED

The "Technical Concepts Forum" scheduled to be held in March 12 to discuss the evolving design of the Fusion Engineering Device has been postponed. No new date has been set.

NEW ANS FUSION JOURNAL PUBLISHED

The American Nuclear Society has published the first issue of its new journal "Nuclear Technology/Fusion", dated January 1981. The Journal is scheduled to appear quarterly. The first issue includes a review article on magnetic fusion reactor concepts by Charles Baker of Argonne. Authors should submit manuscripts to Dr. George H. Miley, Fusion Studies Laboratory, 214 N.E.L., University of Illinois, Urbana, IL, 61801.

ENGINEERING SYMPOSIUM SET FOR OCT 26-29

The Ninth Symposium on the Engineering Problems of Fusion Research is scheduled for the Palmer House, Chicago, October 26-29. Abstracts are due May 15. Interested parties should contact George Miley at the University of Illinois.

HEAVY ION FUSION BIBLIOGRAPHY AVAILABLE

A bibliography of workshop proceedings of major articles on heavy ion fusion has been compiled and is available on request from Terry Godlove, Office of Inertial Fusion, U.S. DOE, Washington, D. C., 20545.

OTHER MEETINGS OF INTEREST

In addition to meetings listed in our January 10 newsletter, the following meetings are also of interest: April 6-10: Myrtle Beach, S.C. EPRI Annual Fusion Review. Contact Bob Scott (415) 855-2172. May 3-6: New York City, AIF Conference on Industry's Role in Fusion. Contact Frank Graham (202) 654-9260. May 11-12: Oak Ridge, Workshop on Ambipolar Potential Formation in EBT and Mirrors. Contact Nermin Uckan (615) 574-1354.

COPIES OF FUSION ACT AVAILABLE

Fusion Power Associates has published a report of Public Law 96-386, the Magnetic Fusion Energy Engineering Act of 1980. Copies are available free of charge on request.

April 1, 1981



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NEW AFFILIATE

The University of Illinois Fusion Studies Lab has become the twelfth Affiliate of Fusion Power Associates. Prof. George Miley will represent the University. The University of Illinois becomes our first university affiliate. We welcome their participation.

LUBIN MOVES TO SOHIO

Moshe Lubin, founder and director of the inertial fusion program at the University of Rochester has joined Standard Oil of Ohio as Vice President, Research and Development, Patents and Licensing. At Rochester, Lubin was instrumental in forming an industry/university/state/local partnership which has sustained the program since 1970. During the past year, the group was instrumental in pioneering frequency conversion of glass laser output so that studies of absorption efficiency as a function of laser wavelength could be efficiently studied using glass lasers. Lubin can now be reached at (216) 581-5950. Jay M. Eastman has been named Acting Director at Rochester.

ORNL REORGANIZES

John Sheffield has been named Associate Director of the Fusion Energy Division at ORNL, reporting to Division Director O.B. (Bill) Morgan. In his new position, Sheffield will assist Morgan in managing the Division. Both Morgan and Sheffield will assist Murray Rosenthal who, as an Associate Director of ORNL, retains responsibility for the overall fusion program activities across the laboratory. The Experimental Confinement Section, which Sheffield previously headed, has been divided into separate Tokamak and EBT sections. Michael J. Saltmarsh will lead the Tokamak Experimental Section and Lee A. Berry will lead the EBT Experimental Section.

REAGAN TO NOMINATE DAVIS TO DOE

The White House has announced its intention to nominate W. Kenneth Davis to be Deputy Secretary of the Dept. of Energy. Davis has been a vice president of Bechtel since 1958. From 1954-1958 he was Director of Reactor Development at the Atomic Energy Commission. Davis has indicated that his R&D priority is to accelerate the Clinch River Breeder Reactor.

CLARKE TO HEAD MANPOWER STUDY

Magnetic fusion Deputy Director John Clarke has been assigned by DOE to conduct "a comprehensive review of the adequacy of the Nation's programs for the education and training of experts in the field of nuclear power." The review is expected to keep Clarke away from his fusion duties until July. In making the assignment, DOE stated that Clarke was picked "due to his extensive technical experience at the Oak Ridge National Laboratory, his leadership background as Deputy Associate Director for Fusion Energy, and his deep understanding of complex technologies."

INERTIAL FUSION MEETING SET AT NRL

The U.S. Naval Research Lab will host a topical conference on the "Symmetry Aspects of Inertial Fusion Implosions", May 27-28, 1981. Persons interested in submitting a paper or attending should contact Dr. Stephen Bodner at NRL. The deadline for the submissions of abstracts is May 4.

FUKUDA VISITS REAGAN

Former Japanese Premier Fukuda met recently with President Reagan in Washington. Fukuda indicated to Reagan Japan's great interest in continuing the very productive U.S.-Japanese cooperation in fusion.

CONGRESSIONAL HEARINGS

DOE Acting Director of Energy Research, N. Douglas Pewitt gave fusion a moral boost March 19 at a hearing of the Energy Research and Production Subcommittee of the House Science and Technology Committee, chaired by Rep. Marilyn Bouquard. Gone were the negative statements which characterized his testimony on February 25 (reported in our March 1 newsletter). This time, Pewitt emphasized the DOE's intention to support "a vigorous program which embarks on the engineering phase." Pewitt stated "The Department is enthusiastic about and committed to the program's engineering effort. The Secretary has repeatedly and publicly expressed his interest in and support for the magnetic fusion program." Concerning the Fusion Engineering Device (FED), Pewitt stated "Although the Department is not now prepared to commit to a definite date for operation of the FED, our proposed program for 1982 is not inconsistent with the intent of the Magnetic Fusion Energy Engineering Act." He stated that activities in 1982 "will enable us to design, build and successfully operate a FED in the future."

FUSION BUDGETS

The Reagan administration has submitted revised FY 81 and FY 82 budget requests to Congress. For magnetic fusion, Reagan is asking \$383M in FY 81 and \$460M in FY 82. This compares to the currently approved FY 81 figure of \$394M and the Carter request for \$506M. In proposing the reductions, the new administration requests Congress to rescind the approvals for two construction projects: FMIT at Hanford, WA, and ISX-C at Oak Ridge, TN. As of this writing, Congress does not seem to be disposed to accept the rescission requests but is likely to accept the reduced budgets. In inertial fusion, Reagan requested \$180M for FY 82 compared to Carter's request for \$219M. There was no change requested from the currently approved total of \$209.6M in FY 81. Although the NOVA construction and general equipment budgets were reduced as part of the FY 82 reductions, hardest hit will be the operating budgets at all sites: total operations was set at \$117M for FY 82 compared to \$140.5M in FY 81. The heavy ion fusion and advanced laser programs will be affected most.

EUROPEAN FUSION REVIEW

The European Community (EURATOM) is conducting a fusion review similar to that conducted in the U.S. last year by the DOE's ERAB panel. The European panel, made up of distinguished non-fusion scientists and executives, is headed by Prof. Dr. Karl Beckurts. Dr. Beckurts is a director of Siemens Corporation and is a former director of the major German nuclear research laboratory at Julich. Beckurts recently visited Princeton and also visited U.S. government officials in Washington. FPA President Steve Dean attended a dinner in Beckurts' honor on March 23. Beckurts indicated that his panel has had several meetings and had visited the major European fusion sites. He said he expected his panel to endorse an intense fusion effort with extensive international cooperation.

PLASMA PHYSICS MEETING CHANGE

The dates and place of the annual meeting of the APS Division of Plasma Physics has been changed. The Division will meet October 12-16 1981, in New York City at the Sheraton Center, 7th Avenue and 52nd St.

FUSION EXHIBIT OPENS

A new 2000 square foot travelling fusion exhibit was dedicated March 4 at the American Museum of Science and Energy at Oak Ridge, TN. There are 10 displays covering both inertial and magnetic fusion, including a walkthrough tokamak sector and a laser fusion game which allows the player to hit pellets with a simulated laser beam. There are now three major DOE fusion exhibits. The other two are the 3000 square foot exhibit at the Franklin Institute in Philadelphia and the 4800 square foot exhibit at the California Museum of Science and Industry in Los Angeles, CA. Lenore Ledman of the Office of Fusion Energy, DOE, represented the magnetic fusion program at the dedication. Samuel Barish, Office of Laser Fusion, represented inertial fusion.

ITALIANS TOP U.S. FUSION RECORD

Experiments on the Frascati Tokamak have surpassed the fusion record set by the Alcator A at MIT in 1976. The Italian experiment reached values of the density-confinement time product, $n\tau$, of $3.5 \times 10^{13} \text{cm}^{-3} \text{sec}$.



FUSION POWER ASSOCIATES

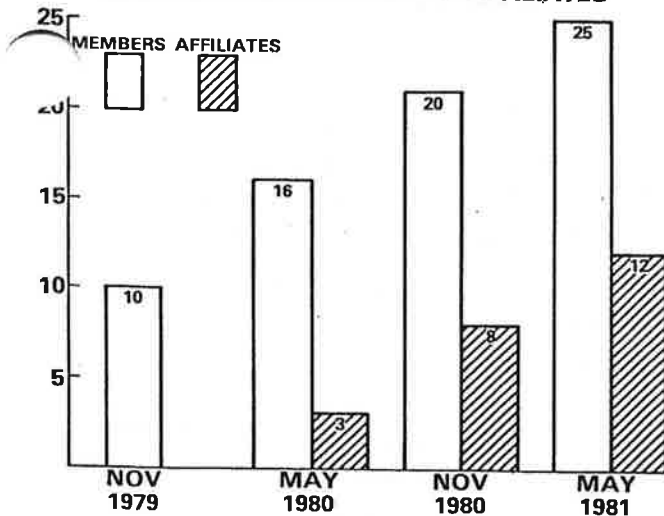
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NEW MEMBER

Exxon Nuclear Company of Bellevue, WA, has become the twenty-fifth member of Fusion Power Associates. Dr. Harold K. Forsen will represent the company. We welcome their participation. As shown below, the Fusion Power Associates has maintained a steady growth in members and affiliates since operation began eighteen months ago.

**FUSION POWER ASSOCIATES
GROWTH IN MEMBERS AND AFFILIATES**



FRIEMAN JOINS SAI

Dr. Edward A. Frieman, formerly Director of Energy Research of the Department of Energy, has joined Science Applications, Inc. as Executive Vice President. Prior to his DOE position, Ed was Deputy Director of the Princeton Plasma Physics Laboratory. He will be located at the SAI Corporate headquarters in La Jolla, CA.

CENTER FOR FUSION ENGINEERING

The Magnetic Fusion Energy Engineering Act of 1980 states: "The Secretary (of Energy) shall develop a plan for the creation of a national magnetic fusion engineering center for the purpose of accelerating fusion technology via the concentration and coordination of major magnetic fusion engineering devices and associated activities at such a center." The Act states that "The Secretary shall submit not later than July 1, 1981, a report . . . characterizing the plan and setting forth the steps necessary for implementation of the plan"

At meetings of the Fusion Power Coordinating Committee April 16, and of the Atomic Industrial Forum May 5, Dr. N. Douglas Pewitt, Acting Director of Energy Research, DOE, summarized the status of preparations for the Center. He stated that the report would be submitted in July and would be about ten pages in length. No final decision had yet been made as to the plan's contents. He favors a step-wise evolutionary approach to the creation of the center. The first step of such a phased approach would be to select a systems engineering support contractor to assist DOE to lay out in more detail the engineering development needs for fusion. This first phase would most likely consist of coordinated engineering development activities at many sites. The timing for the establishment of a central site and construction of a Fusion Engineering Device would be left open for later consideration.

DOUBLET III

At General Atomic Company, installation of the 7 MW neutral beam system is proceeding. Operation is expected to begin in July with full power operation scheduled for the fall.

ENGINEERS ISSUE FUSION STATEMENT

In March 1980, the American Association of Engineering Societies issued a National Energy statement, noting that "its members recognized that the government has failed to establish an energy policy capable of providing a comprehensive energy source mix which can meet our requirements for the last portion of this century and the greater portion of the next." They stated that selected portions of their statement "would receive amplification as the need is perceived," and they have now (March 1981) issued a Statement on Nuclear Fusion Energy.

The fusion position paper states "It seems technically feasible to develop fusion energy to the commercial stage within the first quarter of the next century." The paper recommends that "a commitment should be made to build a tokamak engineering test reactor to operate in the early 1990's. An organization should be created to manage this undertaking and to coordinate the directly supporting research and development." Copies of the complete statement and the National Energy Statement can be obtained from Fusion Power Associates or by writing directly to Walter B. Moen, Coordinating Committee on Energy, 345 East 47th Street, New York, NY 10017.

CONGRESSIONAL DIRECTORY

Since the U.S. government acknowledges its responsibility to develop fusion and to provide the bulk of the funding, it is essential that members of Congress be aware of the nature and status of fusion research. Several committees of Congress have primary responsibility for oversight of the fusion program. They are the House Committee on Science and Technology (Don Fuqua, D-FL, Chairman), the Senate Committee on Energy and Natural Resources (James A. McClure, R-ID, Chairman), the House Armed Services Committee (Melvin Price, D-IL, Chairman), the Senate Armed Services Committee (John Tower, R-TX, Chairman), the House Committee on Appropriations (Tom Bevill, D-AL, subcommittee chairman) and the Senate Committee on Appropriations (Mark Hatfield, R-OR, subcommittee chairman). A directory listing the names of subcommittee members and key staff is available from Fusion Power Associates.

MIRROR FUSION NEWSLETTER

Carl D. Henning, head of the Mirror Program office at LLNL is issuing a newsletter to keep

the technical community apprised of mirror progress. He reports that the Phaedrus mirror experiment at the University of Wisconsin has injected 150 kW of neutral beams, 50 kW of ICRH, and 30 kW at twice the ICR frequency. Ion temperatures up to 2 keV in the plug and 400 eV in the solenoid have been achieved. Persons interested in receiving the newsletter regularly should contact Carl at LLNL, L-644, P.O. Box 5511, Livermore, CA, 94550 or (415) 422-0235.

EBT

Direct ion heating of the EBT-S plasma was achieved for the first time at ORNL with the assistance of McDonnell Douglas personnel. Ion cyclotron resonance heating was used in a plasma consisting of 98% deuterium and 2% hydrogen. The resulting 1 keV temperature of the minority hydrogen species exceeded theoretical expectations.

A dedication of the McDonnell Douglas EBT-P site in Oak Ridge was held April 27. Speakers on the occasion included Ed Kintner (DOE), Marilyn Bouquard (D-TN), Harold L. Volker (D-MO), Robert A. Young (D-MO), and Erwin F. Branahl, Vice President of McDonnell Douglas.

PDX

PDX has overcome earlier difficulties and has now been successful in raising the ion temperature to over 5 keV using 6 MW of neutral beams. The temperature is increasing linearly with power. Earlier experiments had observed a saturation effect as power was increased.

ANS ELECTIONS

The Fusion Energy Division of the American Nuclear Society has elected Kenneth R. Schultz of General Atomic Company to be Vice Chairman/Chairman Elect. He will automatically succeed Chairman Charles C. Baker of Argonne one year hence. The Division also elected three members to the Executive Committee. They are Robert W. Conn of UCLA, Stephen O. Dean of Fusion Power Associates and Science Applications, Inc., and Charles A. Flanagan of Westinghouse.

HISTORICAL NOTE

Men with negative minds tried to convince Thomas Edison that he could not build a machine that would record and reproduce the human voice "because," they said, "no one had ever produced such a machine."



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NEW AFFILIATES

Kansas City Power and Light Company of Kansas City, MO, and Baltimore Gas and Electric Company of Baltimore, MD, have become the thirteenth and fourteenth affiliates of Fusion Power Associates. Mr. J. Robert Miller, Vice President-Administration, will represent Kansas City Power and Light. Mr. John T. King, III, Executive Assistant to the Chairman of the Board will represent Baltimore Gas and Electric Company. We welcome their participation.

WHITE HOUSE NOMINATES TRIVELPIECE

President Regan has announced his intention to nominate Dr. Alvin W. Trivelpiece to be Director, Office of Energy Research, U.S. Department of Energy. Al is Corporate Vice President of Science Applications, Inc. and is a founder and current member of the Board of Directors of Fusion Power Associates. After confirmation to his new position by the Senate, Al will be responsible for the national magnetic fusion program as well as for basic energy sciences, high energy physics, and several other DOE research offices. Ed Kintner is expected to continue as Associate Director for Magnetic Fusion, Office of Energy Research, reporting to Trivelpiece.

HOUSE PANEL TO RECONVENE

The Fusion Advisory Panel to the Energy Research and Production Subcommittee of the House Committee on Science and Technology reconvened in Room 2325, Rayburn Building at 12:30 P.M. on June 29. Leonard F. Reichle, Executive Vice President of Ebasco Services, and a member of the Fusion Power Associates Board of Directors is chairing the Panel this year. Last year,

the Advisory Panel, under the chairmanship of Bob Hirsch of Exxon Corp. was instrumental in laying the groundwork for the Magnetic Fusion Energy Engineering Act of 1980, Chairperson of the House Subcommittee this year is Mrs. Marilyn Bouquard of Tennessee. She replaced Congressman Mike McCormack.

The panel meeting on June 29 focused on the general subject area of the Center for Fusion Engineering. In a June 18 letter to Congressman Tom Bevill of the House Appropriations Committee, Mrs. Bouquard stated "I am concerned that the DOE may not be committed to the timely implementation of the spirit of the Act. DOE should now be establishing the industrially-run Center which has both technical and management control over the fusion technology and engineering programs."

TEN COMPANIES TESTIFY TO HOUSE PANEL

Ten companies were selected to testify to the Fusion Advisory Panel at its meeting June 29. They were Panel 1: Fusion Power Associates and the Atomic Industrial Forum; Panel 2: General Atomic Co., Boeing Engineering and Construction Company; McDonnell Douglas Astronautics Co. and Ebasco Services Co.; Panel 3: TRW, General Electric Co., MITRE Corp. and Grumman Corp. General Atomic, Boeing, McDonnell Douglas, Ebasco and TRW are members of Fusion Power Associates. Copies of the testimony are available.

DOE SHOWS SIGNS OF ENTHUSIASM

Reports emanating from within DOE indicate that top management at DOE is showing signs of enthusiastic support for the fusion program. DOE fusion program managers made presentations recently to Secretary Edwards, Deputy Secretary Ken Davis and Acting Undersecretary Ray Romatowski. This was the first time since

the formation of DOE in 1976 that a Secretary of Energy had requested and received a briefing from fusion program managers. All three men reportedly indicated their satisfaction with technical progress and expressed empathy and support for the fusion program goals.

GA, PHILLIPS PETROLEUM SUPPORT OHTE

General Atomic Company and Phillips Petroleum Company have announced that they have signed a joint research and development agreement for work on a new magnetic fusion concept called OHTE (Ohmic Heating Toroidal Experiment). Phillips is contributing \$10 million to support experiments on the OHTE device which was constructed by General Atomic Company. The companies hope to learn how to develop fusion reactors, based on this concept, which will have features, such as modest capital cost, attractive to electric utilities. Phillips Petroleum is an Affiliate of Fusion Power Associates.

LOS ALAMOS REPORTS ZT-40 RESULTS

A device called ZT-40 in some ways similar to GA's OHTE, has achieved encouraging scientific results at Los Alamos National Laboratory. The ZT-40 is a reversed field pinch and the LANL scientists successfully extended the duration of the reversed field condition from 3 to 8 milliseconds. The plasma remains stable and quiescent throughout the duration of the experiment.

DAVIDSON BRIEFS BUSINESS EXECUTIVES

FPA Board Member Ron Davidson, Director of the MIT Plasma Fusion Center presented a fusion briefing to a group of business executives at a dinner meeting in New York on May 28. The dinner and presentation was sponsored by Alfred Brittain III, Chairman of the Board of Bankers Trust Company.

MCCORMACK JOINS UVC BOARD

Former Congressman Mike McCormack has been named to the Board of Directors of Universal Voltronics Company of Mt. Kisco, NY. UVC a major supplier of power supplies for Doublet III and other fusion projects in the U.S. and Japan. McCormack is working as a Washington-based consultant to Fusion Power Associates and to other industries and organizations.

TSONGAS LOOKING TOWARDS REELECTION

Senator Paul Tsongas, principal Senate sponsor of the Magnetic Fusion Energy Engineering Act of 1980, is beginning to prepare for his 1982 re-election bid. Tsongas, a Democrat, has, in his first term, been both pro-business and for social benefit programs.

NSF STUDY COMPLETED

Under contract to the National Science Foundation, Fusion Power Associates recently completed a study entitled "An Analysis of Potential Benefits to the U.S. from International Cooperation in Fusion Energy Development." The report, authored by Peter J. Kortman and Stephen O. Dean was presented at an NSF workshop to discuss the topic. Copies of the report are available on request.

FUSION BOOK TO BE PUBLISHED

Pergamon Press is publishing a book entitled "Prospects for Fusion Power" this summer. The book, edited by Fusion Power Associates President Steve Dean, contains a Preface by Mike McCormack and an Introduction by former congressman Craig Hosmer. There are 13 chapters by leaders in the field covering both magnetic and inertial fusion.

MEETINGS

FPA President Steve Dean will make a presentation on August 3 to a conference of the American Society of Civil Engineers in Vail, CO, and on August 11 he will give a plenary lecture at the Cryogenic Materials conference in San Diego, CA.

FUSION POWER ASSOCIATES MEMBERS: Aydin Energy Division, BDM Corporation, Boeing Engineering and Construction Co., Burns and Roe, Inc., Ebasco Services, EDS Nuclear, Inc., Exxon Nuclear Co., Inc., General Atomic Company, Gilbert/Commonwealth Engineers and Consultants, Hipotronics, ILC Technology, JAYCOR, KMS Fusion, Inc., Mathematical Sciences Northwest, Maxwell Laboratories, McDonnell Douglas Astronautics Co., PSE&G Research Corp., Quadrex Corp., W. J. Schafer Associates, Science Applications, Inc., Stone and Webster Engineering Corp., Metals Division-Thermo Electric Corp., TRW, Inc., Universal Voltronics Corp., Westinghouse Electric Corp.
AFFILIATES: Baltimore Gas and Electric Co., Bendix Corporation, Dow Chemical Corp., Institut de Recherche de l'hydro Quebec, Kansas City Power and Light Co., Long Island Lighting Co., Northeast Utilities, Northern States Power Co., Pennsylvania Power and Light Co., Phillips Petroleum Company, Ralph M. Parsons Co., Texas Atomic Energy Research Foundation, Tri-City Nuclear Industrial Council, University of Illinois.



FUSION POWER ASSOCIATES

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NEW MEMBER AND AFFILIATES

Fusion Energy Corporation of Princeton, NJ, has become the twenty-sixth member of Fusion Power Associates. Frederick R. Kellogg will represent the Corporation.

Three new affiliates have joined Fusion Power Associates: Nuclear Assurance Corp. of Atlanta, GA; Florida Power and Light Co. of Miami, FL; and Southern Company Services, Inc. Southern Company Services consists of four southern electric utility companies: Alabama Power Company, Georgia Power Company, Gulf Power Company and Mississippi Power Company.

Math B. Kite will represent Nuclear Assurance Corporation; David G. Jopling will represent Florida Power and Light Co., and Richard H. Chastain will represent Southern Company Services.

We welcome these companies to participation in Fusion Power Associates.

CENTER FOR FUSION ENGINEERING

On July 7, Secretary of Energy James Edwards transmitted, as required by law, his recommendations on the establishment of a magnetic fusion Center for Fusion Engineering (CFE). Edwards stated: "We have determined that it is premature to establish fully the national magnetic fusion engineering center at this time. Instead we are taking the next evolutionary step beyond the smoothly working ad hoc mechanisms set up over the past year and are preparing to establish an Engineering Feasibility Preparations Project (EFPP) that fulfills the program's engineering needs now and for the next few years." The report states that the DOE "expects to establish EFPP at an existing strong engineering

laboratory" The report was prepared by Office of Fusion Energy staffer Mike Roberts under the direction of Office of Energy Research Acting Director Doug Pewitt.

CONGRESSIONAL RESPONSE

In letters dated July 30 and 31, respectively, House Science and Technology Committee chairman Don Fuqua and Energy Research and Production Subcommittee chairperson Marilyn Bouquard scored the Secretary for his report. Said Fuqua: "I would ask that you reconsider your present intention to establish an EFPP and instead move forward, within your FY 1982 budget, with formally soliciting proposals from all interested parties on establishing a CFE management scheme and operating team. This action is clearly delineated in House report 97-94 which accompanies H.R. 3146, the FY 1982 DOE Authorization Bill. I share your concerns for a balanced program within a balanced budget. I contend however that the Department must not shy away from a real commitment to industrial involvement in fusion at this time."

Mrs. Bouquard was even more emphatic. In her letter she states: "As to the DOE's position on CFE, I am puzzled and dismayed, and I wish to express my dissatisfaction to you in the most emphatic terms. It has been both the Subcommittee's and the full Science and Technology Committee's commitment to have fusion move into the engineering and technology development phase in as rapid a manner as is fiscally manageable. The Committee has an equally strong interest in involving American industry in a meaningful way with some certainty of a sustaining role." She further states, "Let me say again, I am far from satisfied with the DOE's proposal to establish an Engineering Feasibility Preparations Project. The proposal smacks of trying to undermine the Congressional idea of

CFE while adding yet another laboratory as a player in a complex institutional program. Congress has clearly told you they want appropriate responsibility shifted to industry."

Copies of the DOE report and the Congressional response letters are available from Fusion Power Associates on request. Also available are copies of FPA President Steve Dean's June 29 testimony to Congress on the CFE.

FPA RESEARCH

Fusion Power Associates has received a \$150,000 contract from the Federal Republic of Germany Nuclear Research Center at Karlsruhe (KfK) to perform a "Study of Heavy Ion Beam Fusion Reactor Design." FPA will carry out the studies primarily through the use of consultants under the technical direction of Dr. Gerald Kulcinski of the University of Wisconsin. FPA hopes that these studies will help fill the gap caused by the reluctance of the U.S. government to fund research on the civilian applications of inertial confinement fusion. The work will be performed during the period July 1-December 31, 1981.

TRIVELPIECE SWORN IN

Former FPA Board of Directors member Alvin W. Trivelpiece has been sworn in as Director of Energy Research at the Department of Energy after being nominated by the President and receiving unanimous confirmation by the Senate. In his first week on the job, Al was faced with a series of difficult meetings involving preparation of the DOE FY 1983 budget submission which is due at OMB in September.

IFRC VISITS US

On August 3, members of the International Fusion Research Council (IFRC), a group consisting of the heads of the leading fusion programs from all over the world, and sponsored by the International Atomic Energy Agency, began two weeks of meetings and tours of U.S. fusion facilities on August 3. Fusion Power Associates hosted a reception in their honor in Washington on August 7.

FUSION ENERGY EDUCATIONAL DEVELOPMENT SEMINAR

Fusion Power Associates is sponsoring a "Fusion Energy Educational Development Seminar" at Alamos National Laboratory and Sandia Laboratory, October 27-29, 1981. The seminar is primarily for administrative and secretarial personnel from government, national laboratories, universities and industry working in fusion. The seminar will consist of lay briefings on the status of both magnetic and inertial fusion programs, and will center specifically on the LANL and Sandia fusion programs. Tours of the magnetic and inertial fusion facilities at LANL and the inertial fusion facility at Sandia will be included. An afternoon session on the "Changing Office Environment" will also be offered and will include information on Word Processing, Stress in the Office, and Time Management. The organizing committee consists of Ruth Watkins, FPA; LaVaughn Lundgaard, LANL; Jane O'Neal, LANL; Jean Andrews, LANL; Terry Holobka, Sandia; Zee Buchanon, ORNL; Joyce Cooper, MIT; Olga Jones, LLNL; and Carol Phillips, PPPL. Further information on the seminar can be obtained from Ruth Watkins (301) 258-0545.

REPICI TO LEAVE OMB

Veteran fusion budget examiner Dom Repici announced his intention to leave OMB to join INESCO. INESCO, headed by former DOE fusion Assistant Director for Development and Technology Bob Bussard, is pursuing the development of high power density fusion devices. The firm is based in San Diego, CA. Bussard and Repici, however, will open a Washington, D.C. office of the firm. INESCO also hired former DOE scientist Locke Bogart and numerous other fusion scientists and engineers.

PENTHOUSE BACKS FUSION PROJECT

In the July 5 Dallas Times Herald, reporter Glenda Blair quotes Penthouse publisher Bob Guccione as saying he is supporting the work of Robert Bussard at INESCO and that "he is convinced that the project will hit pay dirt within five years for the modest price of \$100 million." Guccione is quoted as saying, "The real payoff for me would be to own the world's largest corporation. ITT and Exxon together would not make up the economic potential of the company that owned the world's first fusion prototype."



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NEW REPRESENTATIVES

During the past year, several of our members and affiliates have changed the individuals responsible for representing their organizations to Fusion Power Associates. Dave McAlees now represents Exxon Nuclear, Inc. He replaces Harold Forsen who has recently joined the Bechtel Group in San Francisco. Edward A. Straker, Senior Vice President of SAI, has replaced Alvin W. Trivelpiece, who now is Director of the Office of Energy Research at DOE. Alexander J. Glass, President of KMS Fusion, Inc., has replaced Henry J. Gomberg, who now has a consulting practice in Ann Arbor. Charles A. Powell, Corporate Director for Research Activities, replaced John T. King III as Baltimore and Electric Company's representative and Allen K. Prince, Project Director, Innovation Development, has replaced Bill Sauber as the representative of Dow Chemical Corp.

NEW DIRECTORS ELECTED

The member representatives of Fusion Power Associates have elected four new members to the FPA Board of Directors. Two of these positions are to replace vacancies caused

by the resignations of board members Henry Gomberg and Al Trivelpiece. The new Directors, who will serve three-year terms beginning September 25, are: Edward T. Gerry, President, W. J. Schafer Associates; Alexander J. Glass, President, KMS Fusion; John W. Landis, Senior Vice President, Stone and Webster Engineering Corp; and Kenneth L. Matson, Vice President, Public Service Electric and Gas Research Corp. of Newark, New Jersey.

DEAN MEETS VICE-PRESIDENT BUSH

FPA President Steve Dean, in his capacity as a member of the Advisory Council for American Energy Week, met with Vice President George Bush at the White House September 11. The purpose of the meeting was to present Bush with a "Declaration of Energy Independence" signed by 200,000 persons. The Declaration is a petition calling on the nation to reduce its excessive dependence on foreign oil imports in favor of conservation measures and accelerated development of domestic energy resources and technologies.

Senate Majority Leader Howard Baker and Senate Minority Leader Robert Byrd were among the 200,000 persons who signed the "Declaration of Energy Independence." Looking on as Byrd signs are (left to right) Jean Tufts, President, National School Boards Association; Senator Baker; Dr. Benjamin Hooks, Executive Director of the NAACP; and Alexander Trowbridge, President of the National Association of Manufacturers.



President Jimmy Carter recently visited Princeton to view the TFTR facility. In discussions with Paul Rutherford (l.) and Harold Furth (r.) Carter commented that he wished he had authorized acceleration of the fusion program earlier in his administration.



SECOND ANNUAL MEETING SET

The second annual meeting of FPA members and affiliate representatives is set to take place on the afternoon of December 9 at the Fairmont Hotel in San Francisco. In conjunction with the annual meeting, FPA will sponsor a public symposium December 10, also at the Fairmont, on "Status of the World Effort in Inertial Confinement Fusion." Leaders of the world effort will present survey papers. The speakers include: N. G. Basov (USSR), C. Yamanaka (Japan), R. Dautray (France), and R. Mason (U.K.). The U.S. program will be presented by R. Schreiver (DOE), John Emmett (LLNL), Steve Rockwood (LANL), and Gerold Yonas (Sandia). Steve Dean (FPA) will present an introductory lecture. The symposium will be chaired by FPA board member Glenn Sorenson (ILC Technology). On December 11, attendees will receive tours of the inertial and magnetic fusion facilities at Livermore. Further information may be obtained from Ruth A. Watkins at Fusion Power Associates. Dianne Olvera (LLNL) is also a member of the organizing committee.

CFE PROGRESS

Sources indicate that Secretary of Energy James Edwards is reconsidering his recommendations to Congress, which would have delayed industrial responsibility for a Center for Fusion Engineering (CFE). These sources suggest that Edwards believes that inadequate staff work within DOE resulted in his July 7 report on CFE which drew fire from Representatives Fuqua and Bouquard (see our August 10 newsletter). Edwards and DOE Deputy Secretary Ken Davis are now said to be working closely and creatively with recently confirmed Director of Energy Research Al Trivelpiece and Office of Fusion Energy Director Ed Kintner to suggest a more appropriate course of action on CFE.

DEAN, WILLIAMS VISIT KEYWORTH

Steve Dean and Jim Williams, a member of FPA's Board of Directors, met with Presidential Science Advisor George Keyworth on Sept. 3. The primary topics of discussion were the establishment of the CFE, international cooperation in fusion and the forthcoming FPA symposium on "Status of the World Effort in Inertial Confinement Fusion."

MEETINGS

The Magnetic Fusion Power Coordinating Committee (FPCC) will meet at Los Alamos National Laboratory in New Mexico on September 23-25. The first two days of the meeting are open to the public.

The American Physical Society Division of Plasma Physics will meet October 12-16 at the Sheraton Center in New York City.

FPA will sponsor the fourth in a series of bi-annual Fusion Energy Educational Development Seminars for senior secretaries and administrative personnel working in fusion. The meeting will be held October 27-29 at Los Alamos and will include tours of the Los Alamos fusion facilities and those at Sandia Laboratories in Albuquerque. Speakers will include: James Williams, LANL; Harry Dreicer, LANL; Steve Rockwood, LANL; A. Narath, Sandia; J. Scott, Sandia; Gerold Yonas, Sandia; and Stephen Dean, President, FPA. We hope all laboratories, universities and industrial groups working in magnetic or inertial fusion will send representatives. Contact Ruth Watkins at FPA for details.

ERAB MEETING

The DOE's Energy Advisory Board spent two hours discussing fusion at its meeting September 2-3. Ed Kintner and John Clarke presented the status of the magnetic fusion program with emphasis on how DOE had responded to last year's ERAB recommendations. ERAB members seemed generally pleased with the progress as presented.

Lou Roddis, formerly of Consolidated Edison, is chairman of ERAB this year, replacing Sol Buchsbaum. Buchsbaum, who remains an ERAB member, was presented with a Distinguished Service Award by Secretary Edwards. (Buchsbaum received one of Fusion Power Associates' Leadership Awards in 1980). There are 7 new members on the 22 member ERAB this year. These are: Hans Landsberg (Resources for the Future), William Lee (Duke Power Co.), John Simpson (Westinghouse, retired), Herman Branson (President of Lincoln University), Melvin Calvin (University of California at Berkeley), Martin Elliott (Texas Eastern Transmission Corp., retired), and Philip Handler (former President of the National Academy of Science). Returning members of ERAB are: Louis Roddis (Chairman), Ivan Bennett (Vice Chairman), James Fletcher, Solomon Buchsbaum, Leon Clewell, Thomas Cochran, John Foster, Norman Hackerman, Charles Hitch, William McCormick, David Pimental, Eric Reichl, Roland Schmitt, Grant Thompson, Victoria Tschenkel.



Steve Dean (l.) with Lev Golubchikov, head of the fusion program for the USSR State Committee for the Utilization of Atomic Energy, at the IAEA reception for the IFRC.



Some of the members of the International Fusion Research Council (IFRC) (l. to r.) A. Kakihana (Japan), D. Palumbo (Euratom), R. S. Pease (U.K.), B. Kadomtsev (USSR), and E. Kintner (U.S.)

MENSE TO JOIN MDAC

Dr. Alan Mense, science consultant to the House Science and Technology Subcommittee on Energy Research and Production will join the McDonnell Douglas Astronautics Company in St. Louis, MO. Mense has been an influential congressional staff assistant to former Congressman Mike McCormack and Representative Marilyn Bouquard. His presence on Capitol Hill will be surely missed by the fusion community, but we wish him well in his new endeavor.

FPA BOOK

A book entitled Prospects for Fusion Power, edited by Steve Dean, will be published by Pergamon Press in October. Special rates on multiple-copy orders can be obtained by contacting Ms. Nan Hudes, Special Sales, Pergamon Press, Maxwell House, Fairview Park, Elmsford, NY, 10523 (914) 592-7700. In addition to a Preface by Mike McCormack and an Introduction by Craig Hosmer, the book contains review articles on both magnetic and inertial fusion. Authors of the magnetic fusion articles are N. Anne Davies, William R. Ellis, James F. Decker, John F. Clarke, Murray W. Rosenthal, and Tihro Ohkawa. Authors of the inertial fusion articles are Gregory Canavan, Sheldon L. Kahalas, Terry F. Godlove, Alexander Glass and Patrick B. Long.

FED

The Technical Management Board (TMB) chaired by John Clarke, has completed a year-long review of the design basis for a Fusion Engineering Device (FED). A six volume report on their deliberations is scheduled for distribution in October.

INDIVIDUAL AFFILIATES

The Fusion Power Associates Board of Directors recently established a category of participation in FPA called "Individual Affiliate," i.e., persons who share the goals of the Associates. The following persons have become the first Individual Affiliates of Fusion Power Associates

Judith Abbadessa
Walter P. Allaire
H. G. Ahlstrom
Donald J. Anthony
Charles C. Baker
Steven M. Bauer
James F. Baur
Frank M. Berg
Ray Beuligmann
Thomas J. Buckholtz
Francis F. Chen
N. Anne Davies
R. T. Dean
Donald Dobrott
Richard N. Drevo
Kenneth Ehlers
LCDR Thomas Elliott
William R. Ellis
Thomas G. Finn
T. Kenneth Fowler
James W. French
Bryan P. Fusini
Kenneth Gentle
John E. Glancy
Henry J. Gomberg
Hans R. Griem
Robert A. Gross
Laurence S. Hall

H. Ward Harris
Willard E. Hobbs, Jr.
Daniel L. Hollis
Jay Hyman
Terry Kammash
Philip C. Kautt
Edward R. Kessler
Edward H. Klevans
Thomas A. Leonard
Roger G. Little
Yen-Mow Lynn
Robert W. Mason
John B. McBride
Mike McCormack
Edgar A. McLean
Dean McKinnis
J. Rand McNally
S. S. Medley
John Metzler
John J. Moriarty
G. R. Morrow
R. F. Murray
John Nuckolls
P. A. Phelps
James A. Phillips
W. L. Pickles
Carl W. Pierce
M. L. Pool

Robert V. Pyle
Tom Richards
Corwin L. Rickard
Ronald Roberts
M. W. Rosenthal
M. J. Ross
J. Reece Roth
John F. Santarius
Martin M. Scholl
Marian Dean Schwenkbeck
Vincent G. Scotti
J. L. Shoet
Thomas C. Simonen
John W. Simpson
A. E. Stevenson
Larry Stewart
P. S. Swartz
Earl C. Tanner
Richard J. Temkin
L. Edward Temple, Jr.
Alan Ware
F. W. Wiffen
John Wilgen
Herbert Yoshikawa
Burt Zien
Klaus Zwilsky

Fusion Power Associates Members:

Aydin Energy Division, BDM Corporation, Boeing Engineering and Construction Co., Burns and Roe, Inc., Ebasco Services, EDS Nuclear, Inc., Exxon Nuclear Co., Inc., Fusion Energy Corporation, General Atomic Company, Gilbert/Commonwealth Engineers and Consultants, Hipotronics, ILC Technology, JAYCOR, KMS Fusion, Inc., Mathematical Sciences Northwest, Inc., Maxwell Laboratories, McDonnell Douglas Astronautics Co., PSE&G Research Corp., Quadrex Corporation, W. J. Schafer Associates, Inc., Science Applications, Inc., Stone and Webster Engineering Corp., Thermo-Electron Corp., TRW, Universal Voltronics, Westinghouse Corp.
Affiliates: *Baltimore Gas and Electric Co., The Bendix Corporation, Dow Chemical Company, Florida Power and Light Co., Institut de recherche d'Hydro-Quebec, Kansas City Power and Light Co., Northeast Utilities, Northern States Power Co., Nuclear Assurance Corp., Pennsylvania Power and Light Co., Phillips Petroleum Company, Southern Company Services, Texas Atomic Energy Research Foundation, Tri-City Nuclear Industrial Council, University of Illinois.*



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NEW MEMBERS AND AFFILIATES

United Engineers and Constructors, Inc. of Philadelphia, PA, has become the twenty-seventh member of Fusion Power Associates. G. E. Sarsten, Vice-President/Power will represent the company.

Phillips Petroleum Company of Bartlesville, OK, has upgraded their participation from affiliate, to become the twenty-eighth member of Fusion Power Associates. Dr. Starnes E. Walker will represent the company.

The University of Rochester has become our fifteenth affiliate and second university affiliate. Dr. Jay M. Eastman, Director, Laboratory for Laser Energetics, will represent the university.

Wisconsin Power and Light Company has become the sixteenth affiliate of Fusion Power Associates. Theodore J. Iltis will represent the company.

We welcome the participation of our new members and affiliates.

OFFICERS ELECTED

The FPA Board of Directors has elected the following officers of the corporation to two year terms: Stephen O. Dean, President and Chief Executive Officer; Nicholas A. Krall, Chairman of the Board; Leonard F. C. Reichle, Vice Chairman of the Board; Donald L. Kummer, Secretary; Bernard J. Eastlund, Treasurer; Ruth A. Watkins, Ass't. Secretary-Treasurer.

CENTER FOR FUSION ENGINEERING (CFE)

Secretary of Energy James Edwards, Deputy Secretary Ken Davis, Director of Energy Research Al Trivelpiece and Office of Fusion Energy Director Ed Kintner had reached agreement to proceed with a competitive procurement to industry for the Fusion Engineering Device design and the Center for Fusion Engineering when the second round of Reagan budget cuts for 1982 hit the agency. The plans are now on an indefinite hold. Sources indicate that Trivelpiece and Kintner have decided "to protect the physics component of the program" in the absence of budget growth and to postpone engineering activities while the budget remains threatened. Thus, Edwards still has not replied to the critical letters he received from Representatives Bouquard and Fuqua in July (see our August 10 newsletter).



DOE Director of Energy Research Al Trivelpiece discusses his new position with Bas Pease, Chairman of the International Fusion Research Council (IFRC) and Donato Palumbo, Director of the Euratom fusion program.

1982 BUDGETS

There is still no congressional appropriation for Fiscal Year 1982, which began October 1, 1981. An exercise is in process to trim government expenditures an additional 12%. Secretary Edwards mandated that Al Trivelpiece cut the magnetic fusion budget by 12% (from \$460M to \$405M). Inertial Fusion was largely protected from the round of cuts as part of the defense program. The OMB has expressed its displeasure to DOE that the agency showed no programmatic judgment in distributing the cuts. In reducing the magnetic fusion budget, DOE indicated its intention to terminate the EBT-P, FMIT and ISX-C projects, to postpone indefinitely the CFE/FED program, and to stop construction of the large superconducting magnet being built at Westinghouse. It seems unlikely that all of these proposed radical actions will come to pass, but it would be several months before an appropriations bill is signed into law.

FPA INDIVIDUAL AFFILIATES

Since our last newsletter, the following have enrolled as Individual Affiliates in FPA:

E. Adam	C. C. Damm
M. Bachynski	W. C. Davis
J. D. Bradley	T. Dolan
D. C. Baxter	T. S. Drolet
C. Celata	D. Eames
A. Christiansen	W. Felanchak
M. Clark	J. H. Fink
W. S. Cooper	K. W. Fong
D. Correll	H. K. Forsen
H. S. Cullingford	J. Fortna
K. Given	M. Lotker
E. Gregory	L. Lynn
D. P. Grubb	B. McNamara
G. Haas	K. Molvig
R. L. Hirsch	J. G. Murray
R. F. Hubbard	D. E. Post
A. L. Hunt	J. C. Rose
R. A. Huse	P. H. Sager
W. C. Jennings	B. L. Scott
K. Katsonis	J. W. Shearer
D. M. Leppke	G. L. Taylor
I. Lindermuth	C. Van Atta
R. K. Linford	A. Yang
W. Linlor	W. E. Zisch
H. E. Lokay	E. Pforte

NUCKOLLS RECEIVES MAXWELL PRIZE

Inertial fusion pioneer John Nuckolls of LLNL was awarded the 1981 James Clerk Maxwell Prize in Plasma Physics by the American Physical Society. Nuckolls was cited "for his contributions to the genesis and progress of inertial confinement fusion." The award stated that "his insight into the fundamental physics issues has served to guide and inspire the technical evolution of the field." In his acceptance address, Nuckolls called for a national commitment to accelerate progress in both inertial and magnetic fusion. Nuckolls is an individual affiliate of Fusion Power Associates. The prize is sponsored by Maxwell Laboratories, Inc. of San Diego, one of FPA's member organizations.

AAAS MEETING SCHEDULED FOR JANUARY 1982

The next meeting of the AAAS is scheduled for January 3-8, 1982, in Washington, D. C. A highlight of the meeting will be the session entitled "Fusion Energy Science and Policy" which starts at 9:00 A.M. on January 7. Speakers during that session will be Harold Furth, Gerold Yonas, Ed Kintner, and Mike McCormack. Further details can be obtained from Dr. Rolf M. Sinclair, Secretary of the AAAS.

ORNL ANNUAL INFORMATION MEETING PLANNED

The Oak Ridge National Laboratory has confirmed April 5-7, 1982, for the next Fusion Energy Division Annual Information Meeting. Further details on this meeting can be obtained through Dr. O. B. Morgan, Director of the Fusion Energy Division, ORNL.



Steve Dean talks with Ann Davies, Director of the Tokamak Systems Division, DOE, and Manning Muntzing, president-elect of the American Nuclear Society, at the FPA reception for the IFRC.