

Schlesinger Versus Fusion: A Dossier

An inside report on the attempt to suppress the Princeton results

Would the U.S. energy secretary actively try to suppress and downgrade the biggest fusion breakthrough in the history of U.S. fusion research? The answer is yes, as this day-by-day chronology of the Princeton story demonstrates.

In results announced at an Aug. 14 Department of Energy press conference, it was made public that the Princeton Large Torus fusion device achieved a first — ignition of fusion at temperatures above 60 million degrees. The achievement is by all scientific standards, a world-historical event in fusion research. Yet, the Department of Energy fought behind the scenes to conceal and downplay the news.

The *Executive Intelligence Review* staff compiled the following dossier of DOE interference from interviews with scientists, journalists, and government officials, and from interviews with reporters of *Fusion* magazine, who followed the breakthrough story closely from the beginning. *Fusion* is the monthly magazine of the Fusion Energy Foundation, a leading authority in the fusion field.

The dossier shows clearly these startling facts:

(1) that President Carter was never informed by Secretary Schlesinger's office of the Princeton research results and their pending release and that he was not adequately briefed, even after the story broke throughout the U.S. and international press;

(2) that Secretary Schlesinger's staff attempted to prevent a press conference from taking place here in the U.S. prior to the presentation of the Princeton results to fusion scientists meeting in Innsbruck, Austria Aug. 23, and

(3) that Schlesinger's staff downgraded the research results prior to the official release of the results and without any competent scientific evaluation.

Some Background

Fusion reporters told the *Executive Intelligence Review* that although they greatly appreciate the work of the Department of Energy Office of Fusion, they have been consistently critical of the attitude of Energy Secretary James Schlesinger toward the crucial R&D areas necessary for a secure energy future. In the past, many supporters of the fusion effort in industry and the scientific community did not give credence to *Fusion* magazine's charges that the DOE's mishandling of advanced technology research came right from the top.

The events around the Aug. 14 release of the PLT research results, however, demonstrate in the clearest possible terms the reality of the situation. *Fusion* staffers said that although the details of the investigation of these events were information normally kept confidential, the nature of this situation required publication.

"In the light of the historic significance of the actions President Carter's Administration might have taken had the President been properly informed and advised on the actual implications of the PLT results and a series of other imminent breakthroughs in fusion research, we feel that it is urgent to make the facts of the case available to all concerned," a *Fusion* spokesman said.

A similar appreciation of these events is clearly shared by a number of other public observers.

The *Christian Science Monitor* Aug. 14, in fact, explicitly spelled out the immediate basis for Schlesinger's antipathy to publicity for any groundbreaking fusion research. *Monitor* writer Harry B. Ellis gave the following account:

"Caution is what senior U.S. energy officials express" about the just-announced nuclear fusion experimental advance, said a Department of Energy (DOE) source, stressing that "this particular kind of (fusion) reactor has many problems to be solved."

Estimates that America might have abundant cheap energy from nuclear fusion in 20 or 30 years "very well could be optimistic," the source said.

Nor did he see anything in the fusion development to invalidate Energy Secretary James R. Schlesinger's warning that the world faces an inevitable oil shortage sometime in the 1980s, if Americans in particular do not curb their appetite for oil . . .

Senior energy officials, said a spokesman for Dr. Schlesinger, see a gap between the decline of oil supplies and the advent of "21st century" technologies, including some kind of breeder reactor (based on nuclear fission), solar energy, and — hopefully — fusion.

Meanwhile, U.S. energy officials do not want a "wrong signal" sent to Americans by reports calling the Princeton work a "nuclear fusion breakthrough." Officials well recall the great expectations when Alaskan oil came onstream, expectations not fully realized . . .

These and numerous accounts of Secretary Schlesinger's displeasure at reports of advances toward limitless energy make clear the policy outlook of anti-industrial Malthusianism that motivates his actions (see box).

As this exclusive dossier confirms, the attempt to circumvent and encumber U.S. fusion research and the dramatic Princeton achievement was the conscious policy of the Energy Secretary dating far in advance of public knowledge of the recent Princeton breakthrough.

Chronology Of Events In The Fusion Breakthrough

JULY 24

Experimental Results Obtained with PLT. During the July 22-26 period, scientists at the Princeton University Plasma Physics Laboratory (PPPL) completed experiments in its tokamak device achieving plasma temperatures high enough for continuous thermonuclear fusion reactions. Based on information subsequently released by staff of the Plasma Physics Laboratory, it appears that the first results in the Princeton Large Torus (PLT) were obtained July 24, and that the high temperature of 60 million degrees centigrade was obtained on the same day.

JULY 26-JULY 30

Experimental Results Widely Disseminated Among Scientists. The results of the Princeton experiments were disseminated widely on a private basis throughout the fusion scientific community, major research and development centers and fusion-connected private industry. It was understood that a public announcement of the results was embargoed until Princeton formally released the information at a press conference planned for Aug. 23 at a meeting of the International Atomic Energy Agency's Controlled Fusion and Plasma Physics Conference in Innsbruck, Austria.

JULY 31

'Energy Daily' Breaks Story. The *Energy Daily* published a front-page article titled "Big Breakthrough in Fusion at Princeton." Written by Richard Myers, the article described "persistent reports of a major breakthrough in the U.S. program in magnetic fusion," and attributed its information to "industrial sources."

Memorandum from Robert Thorne, Assistant Secretary for Technology, Department of Energy, to James R. Schlesinger, Department of Energy Secretary. According to DOE sources, Robert Thorne sent a memo to Energy Secretary Schlesinger on the day the *Energy Daily* story broke saying that the major press would get hold of the story soon and therefore the DOE would hold a press conference Aug. 15, rather than waiting for the Aug. 23 Innsbruck announcement. In the memo Thorne said that the Princeton Large Torus experiments had reached 80 million degrees; that this was a most significant development and breakthrough; that it was unique to

the United States; that it assured that the Tokamak Fusion Test Reactor (TFTR) scheduled for completion in 1981 would reach, and possibly go beyond, breakeven; and that the scientific feasibility of fusion was virtually assured.

(Note: Secretary Schlesinger's staff has implied that he never personally received the memo. However, the existence of the memo has been acknowledged by many sources in the DOE.)

AUG. 9

Press Release Drafted. Dr. Stephen Dean, Assistant Director of the Office of Fusion, and Dr. Harold Furth, Director of Research at PPPL, drafted a press release announcing a press conference for Aug. 15. The release was sent to the proper DOE channels for approval, and after some modifications it was approved for release.

AUG. 10

Phone Call Between Dr. Morris Levitt, Director of Fusion Energy Foundation, and Dr. Melvin Gottlieb, Director of PPPL. Dr. Levitt called Dr. Gottlieb to obtain an update on research progress at Princeton. Dr. Gottlieb informed Dr. Levitt that a press conference was scheduled for 11 a.m., Aug. 15, at DOE headquarters in Washington.

Fusion Energy Foundation Notifies White House of PLT Results and Scheduled Press Conference. Marsha Freeman of *Fusion* magazine called Dr. Ben Huberman, International Affairs Advisor to the White House's Office of Science and Technology Policy and science and technology staffer for the National Security Council. She asked him if he knew about either the Princeton results or the press conference. He said he knew about neither, and he promised to inform Dr. Frank Press, director of the Office of Science and Technology.

Thorne's Office Says White House May Participate at Press Conference. Len Kojam, press officer for Robert Thorne, told Laura Chasen, White House correspondent for New Solidarity International Press Service that President Carter was considering participating in the announcement of the Princeton results at the Aug. 15 press conference.

AUG. 11, 9 AM

Further Confirmation of Press Conference. Charles Stevens, director of fusion engineering for the Fusion Energy Foundation talked to John Clarke, Assistant Director of the Office of Fusion, who confirmed that the press conference was on and as far as he knew, the DOE Press Office was handling it.

10 AM

EIR Contacts Fusion Energy Foundation. Ronald Kokinda, *Executive Intelligence Review* Washington correspondent, called the Fusion Energy Foundation after hearing rumors about the press conference. Kokinda was briefed by Dr. Levitt on the fact that,

according to Dr. Gottlieb, a press conference was scheduled for 11 a.m. Aug. 15. Kokinda indicated that he would confirm this with the DOE press office.

11 AM

DOE Says There Is No Press Conference. *Executive Intelligence Review* Washington correspondent Ronald Kokinda talked to DOE Director of Press Services Al Alibrando who denied that there was any scheduled press conference. He pressed Kokinda to reveal his sources, asking repeatedly: "Who told you that? Where did you get that? I really want to know where you got that."

2 PM

DOE Again Denies That Press Conference Is Scheduled. Jim Bishop, head of DOE Press Office returned a call to Kokinda, the *Executive Intelligence Review* Washington correspondent. Kokinda told Bishop that Alibrando had informed him that no press conference was scheduled and had demanded that he reveal his sources. Bishop said that Alibrando should not have pressed Kokinda to reveal his sources, but he said, "no press conference was planned or contemplated." Bishop also stated the following: "There is a former ERDA official who is now with big industry who is spreading this story all over town."

NSIPS Learns of Doe's Denial on Press Conference. Charles Tate, a press representative of New Solidarity International Press Service, called Dr. Levitt and was briefed on the reports of the Princeton results and the press conference. Dr. Levitt suggested that Tate contact Kokinda to find out the results of his calls to the DOE. Tate later called back and informed Levitt that he learned from Kokinda that the DOE was denying a press conference was scheduled.

NSIPS Notifies National Press on DOE Reversal of Princeton Press Conference. Charles Tate from New Solidarity International Press Service notified a number of the leading press on the reports of the Princeton results, the Aug. 15 press conference, and DOE's denial of the Aug. 15 press conference. David Hess, reporter for the Knight-Ridder newspapers, began to make his own inquiries into the story after talking to Tate.

Iran Embassy Knew of Press Conference. A U.S. Labor Party representative called the Iranian embassy and learned that they were aware of the Aug. 15 press conference. (Earlier that month an Iranian newspaper had published an article highly favorable to fusion power.)

NOON

Swedish Reporter Calls FEF. A journalist from the Swedish newspaper *Dagens Industrie* called Dr. Levitt from Sweden saying that he had just been informed by the Swedish embassy that their inquiries to the DOE about the press conference had been met with a denial of any such conference.

Rep. Sikes Calls Schlesinger. Rep. Bob Sikes (D-

Fla.) called Energy Secretary Schlesinger's office after hearing about the press conference. He demanded to know why the story of the Princeton breakthroughs hadn't been released.

3:30 PM

Thorne's Press Officer Says Press Conference Still On. Len Kojam, press officer to Assistant Secretary Thorne, told the Fusion Energy Foundation that the press conference was now scheduled for either Aug. 15 or 16 and that it would be attended by Dr. Gottlieb, Edwin Kintner, Director of the DOE Fusion Office, and Eric Willis, assistant to Dr. Thorne. He said he did not know what the DOE press staff was up to.

4 PM

FEF Contacts White House. An aide to White House press officer Gregg Schneiders returned a call from Dr. Levitt acknowledging receipt of Levitt's memorandum urging consideration of White House participation in the press conference. The aide said the proposal was "under study."

Dr. Levitt also talked to Dr. Frank Press, head of

Schlesinger's Malthusian Philosophy

Economics is the science of choices in a world of limited resources.... The same dualism that underlies economics underlies the nature and condition of man. For anything you have missed, you have gained something else; and for anything you gain, you lose something....

We have gone around the world spreading the "gospel of plenty" raising the level of expectations.... In the nature of things, these rising expectations can never be satisfied.... Despite the modification of the original Malthusian dogma over the years, the danger remains that excessive growth of population will wipe out the gains of economic progress. Any economic revolution will be shortly wiped out by a Malthusian counter-revolution and the illusion of growth.... It is unwise to overstate the importance of economic growth per se....

We must in our strategic policy return to the days before the Industrial Revolution... prepare to fight limited wars.... Higher Soviet industrial development rates than attained in our production will have very little strategic significance....

The industrial mobilization base is only one of several gauges of power. A strategic menace may be based upon a rather modest economic structure.... We must build our military force on the exact opposite of the industrial potential notion.

James Schlesinger,
The Political Economy of National Security
(New York: Praeger Press, 1960)

White House Office of Science and Technology Policy, who said that he had just talked to DOE Director of Energy Research Dr. John Deutch. Deutch had downplayed the significance of the Princeton results, Press said. Because of this, Press said he did not think the PLT merited presidential attention.

AUG. 12

Story on Princeton Results Breaks in Press. The Knight-Ridder story broke in the morning edition of the Knight-owned *Miami Herald* and also was picked up in the *Chicago Tribune* and the *Baltimore Evening Sun*.

At the same time United Press International began looking into the story and CBS contacted Dr. Stephen Dean (Assistant Director of DOE's Fusion Office in charge of magnetic confinement systems). Dean decided that he should authoritatively break the story.

CBS News interviewed Dean, who called the Princeton experiment "the biggest thing that has ever happened in fusion research." "The question of whether fusion is feasible from a scientific point of view has now been answered," Dean said.

Dean's interview with CBS was the lead story on the 6:30 p.m. televised news and was repeated throughout the evening as the lead story on the CBS radio news.

Bishop Says "Heads Will Roll"; Schlesinger Charges Fusion Office Conspiracy with FEF. Highly placed sources informed the FEF that Schlesinger's personal press secretary, Jim Bishop, had warned leading officials connected with the DOE fusion office that "heads would roll." Energy Secretary Schlesinger also accused high-ranking officials of being in a conspiracy with the FEF.

Deutch Downplays Princeton Results. DOE Assistant Secretary for Research John Deutch told Dr. Levitt that these results may be good for Princeton but are not a breakthrough. When asked if he had assessed the results in light of the Japanese and Soviet offers for a joint fusion program, or obtained an evaluation of Princeton results from these nations, Deutch said "no."

2 PM

DOE Press Office Says No Need to Hold Press Conference. A representative of the DOE's press office speaking for Al Alibrando told *Fusion* magazine energy news editor William Engdahl that there had been no announcement of a press conference. Further, he said, since the story had already broken in the press there was probably no need to hold a press conference. The DOE spokesman made these comments before Stephen Dean's statements were made public.

AUG. 13

Press Breaks Story Internationally. Following the Knight and UPI wire stories and the CBS telecast, large numbers of newspapers published the story,

generally on the first page and often as the lead. These newspapers included:

The Washington Post: "U.S. Makes Major Advance in Nuclear Fusion" (this was a banner headline lead article by Bill Peterson.)

The Sunday Star-Ledger, Newark, N.J.: "Princeton Reports Breakthrough in Creating Cheap, Clean Energy" (This front-page article by Tim O'Brien interviews Dr. Morris Levitt, executive director of the FEF, and Dr. Steven Bardwell, director of plasma physics for the FEF.)

In addition, the Armed Forces Network in Europe, the entire spectrum of the Mexican press, and media throughout America and Europe were leading with the story.

Princeton Scientists Put Under Pressure. Reporters calling PPPL were told that Princeton would not make any comments on the results until the Innsbruck meeting. Sources indicated that the DOE told Princeton officials to tell press (1) that there was no press conference and (2) that they should not talk to anyone about the results or about the cancellation of the press conference.

Schlesinger Out to Repudiate Results. A knowledgeable DOE source told a *Fusion* magazine reporter that Schlesinger was trying to find scientists who were willing to repudiate the Princeton test results. The DOE press office still denied to callers that any press conference was planned.

6 PM

CBS Continues Coverage: Interviews Sawhill. A CBS TV national news report with Morton Dean interviewed former Federal Energy Agency official John Sawhill, now president of New York University. Sawhill praised the Princeton results but said that commercialized fusion would not be possible until well into the 21st century. Sawhill, it should be noted, has recently called for cutting off all scientific exchanges with the Soviets, and backs Schlesinger's no-growth energy policy.

Morton Dean also interviewed an unnamed high-ranking DOE official who indicated that Princeton had publicized the results because it's "budget time." An informed source told FEF that this DOE spokesman was probably John Deutch, DOE Director of Energy Research.

Princeton University President Warns Schlesinger. Princeton University president Bowen reportedly notified Energy Secretary Schlesinger that one press conference would be held in the coming week. Bowen said in essence: "Either you hold one or we will hold one."

AUG. 14

DOE Announces Press Conference for Same Day. Monday morning Aug. 14, the DOE announced it would hold a press conference that afternoon, at 3:30 p.m., at DOE headquarters in Washington. According to informed sources, the press conference was

announced following a meeting between Schlesinger and high-ranking officials in the DOE's fusion office.

The DOE press office said that DOE Assistant Secretary Deutch would be the DOE's only spokesman at the press conference. One source close to Secretary Schlesinger privately admitted that the press conference was called because "the situation had gotten out of hand."

Press Coverage Continues. By Monday a grid of the press showed that almost every major newspaper in the world had covered the Princeton breakthroughs. Articles quoting high DOE officials, including DOE press chief Jim Bishop, who downplayed the results, appeared in both U.S. and foreign press. A front-page article in the *Christian Science Monitor* linked Schlesinger's concern over the wide publicity which the fusion test results received to his fear that the results would undermine his policy of cutting back on oil imports and consumption. A number of articles in the Italian press erroneously said that the temperatures reached in the PLT experiments were really in the low 20-30 million degree range, rather than 60 million degrees.

3:30 PM

Press Conference Draws Nearly 75 Reporters. Close to 75 reporters from the major media throughout the world — including the Soviet Union's Tass and the Japanese press — attended the DOE press conference where Dr. Gottlieb and Dr. Deutch formally announced the Princeton results.

Gottlieb described the test results saying, "It took us seven years to go from several million degrees to 26 million in December 1977, and then just six months to go another 35 million." He also said that no instabilities or excessive leakage from the plasma occurred in this high-temperature "collisionless" regime. There was little doubt, he said, that the larger TFTR, now under construction, would achieve better than energy-breakeven conditions when it begins operation in the early 1980s.

Dr. John Deutch, acting as the DOE spokesman, said in his introductory remarks that the Princeton results confirm the current DOE framework and timetable for the fusion program. In general he played down the results as important but not a breakthrough.

A number of government officials and scientists attending the press conference were concerned that Edwin Kintner, Director of the DOE Fusion Office, was excluded from participating in the press conference. Attendees at the press conference were also upset with the actions of some DOE officials who removed background material on the PLT and the TFTR.

4 PM

More DOE Misinformation. A reporter from the University of Michigan's student press called the DOE after the press conference to ask why the *Washington Post* had covered the results so favorably and the

Washington Star had downplayed them. She wanted the DOE to tell her the real story. The DOE spokesman told her that she shouldn't believe the *Washington Post* story.

Top Scientists Hail Fusion Breakthrough. Top U.S. scientists contacted by the FEF expressed their opinion that the Princeton test results were important and were a breakthrough for the fusion program. These scientists were uniformly dismayed by the attitude and actions taken by Energy Secretary Schlesinger and his top aides.

AUG. 15

Press Reports on Press Conference. Early press reports were evenly divided between coverage of Gottlieb's presentation and coverage of Deutch's downplaying of the results and attempts to justify the DOE's slow pace for developing fusion.

CBS Reporter Demands White House Response. At a White House morning press briefing led by Rex Granum, CBS correspondent Bob Schiefer asked if the President had been briefed on the Princeton results. Granum said that he could not say. Schiefer was so dissatisfied with the answer that he repeated the question three times, receiving the same "I don't know" answer three times.

Schiefer then told Granum that the Princeton results may be the most exciting development in science and he couldn't understand why spokesmen in the DOE were making statements on behalf of the Administration playing down the results. Why doesn't someone at a staff meeting say "Hey, Mr. President, didn't you see the papers on the extraordinary breakthrough in fusion?" Schiefer suggested. "Can you ask the President that?" he challenged Mr. Granum.

Granum said the White House would have a written reply the following day.

AUG. 16

Favorable Press Coverage. A number of editorials in the U.S. press evaluated the Princeton experiments favorably, including:

The Baltimore Sun: "Fusion's Unlimited Promise." This editorial said that since "the promise is for unlimited energy," instead of cutting the fusion budget, "it is time for the administration to review its attitudes toward the fusion energy budget."

The Star Ledger (Newark, N.J.): "Energy Breakthrough." This editorial noted that the Princeton research "has resolved the nagging question of whether fusion is feasible from a scientific perspective," and then called for a Manhattan Project-level effort.

The Washington Post: "The Fusion Experiments." Although it cautioned against overoptimism, this editorial used the tokamak results to argue for declassification and internationalization of laser fusion research in order to match the tokamak experience and for "the government to be generous in

its support of a variety of research programs aimed at the development of a source of clean and unlimited power."

AUG. 18

Schlesinger Says Press "Overplaying" Princeton. At a special White House press conference on the natural gas bill Secretary Schlesinger characterized the Princeton fusion breakthrough as "great," but then told the press that journalists had "overplayed the Princeton results. They are a step toward feasibility, but they don't demonstrate feasibility."

AUG. 20

Schlesinger Says He Didn't Want to "Hype Up" the Princeton Results. CBS News Reporter Nelson Benton asked Secretary Schlesinger on the CBS "Face the Nation" television and radio show why "there was such apparent confusion at your Department last week when information became available that there had been a significant advance in thermonuclear fusion experiments at Princeton University?" "There

seemed to be some indecision as to how the department itself was going to evaluate something that occurred last month," Benton said.

Schlesinger replied: "There was no confusion on that. We regarded it as a substantial step forward, one that we welcomed; it was consistent with the program that ERDA, AEC before it, the Department of Energy, has pushed in the fusion area. It was a major step forward, but it is not yet a demonstration of scientific feasibility, which means you get more energy out of the process than you put in, and consequently, while we wanted to take note of this achievement in an orderly way, we did not want to hype it up in such a way that — that the public got the impression that the problem of developing fusion energy was solved."

AUG. 22

DOE Still Downgrades Princeton Results. A reporter for the *Wall Street Journal* said that when he called the DOE press office for comment last week he was told that the DOE's Fusion Office was playing the Princeton results just like the Department of Defense at budget time when it claims sighting of Russian submarines just off the U.S. coast.

The Press on Schlesinger's Sabotage

Since the Department of Energy's official announcement of the historic Princeton fusion breakthrough Aug. 14, press coverage of the Princeton results and their significance has become increasingly polarized between those commentaries supporting the Schlesinger position and those that hail the results as signaling the way to a near-term solution to the world's energy problems. Significantly, the fact of Energy Secretary Schlesinger's bitter opposition to the scientific achievement and of his efforts to keep the news out of the hands of the public and the President, has also begun to appear in several major daily newspapers.

Here is a sample of the continuing press coverage:

"Schlesinger Sizzles"

WASHINGTON POST, "Taming Fusion's Fury," by Thomas O'Toole, Aug. 20:

... An enduring irony of the Princeton achievement of last month is that it does nothing to speed up the U.S. program to develop fusion as an energy source...

The politics that followed the Princeton achievement are curious and deserve at least a mention. When the Department of Energy was notified of the 60-million-degree milestone, a mixed reaction ensued. The fusion people were ecstatic, drafting what the federal government calls an "early warning memorandum" for cabinet and agency heads to explain what had happened. Curiously, the memo

never reached the White House, presumably the place such memos are aimed at.

There was discussion inside the Energy Department about whether to hold a press conference to announce the achievement. Top management did not want a press conference. They worried that Congress might demand an increase in the fusion budget request, anathema in this year of a forecast balanced budget.

There's another reason Energy Department sources say top management looked askance at the fusion achievement. Energy Secretary James R. Schlesinger believes in the "economics of scarcity," meaning he preaches energy economy because all our fuels are in scarce supply.

Fusion? All fusion does is tell the world that we have all the energy we'll ever need.

STAR LEDGER (Newark), Aug. 20:

... If all goes as planned, in a relatively short time the world will have an unlimited, clean, cheap source of energy, and there will be no energy crises...

(The head of the Princeton program, Dr. Melvin Gottlieb, said in an interview:) "This is not the end of the energy crisis. Anyone who says that is irresponsible...." Gottlieb, 61, praised the DOE for "not overemphasizing" the 60 million degree milestone. "Breakthrough is not a scientific term," he said.

Others at Princeton, though, expressed disappointment at how the announcement was

handled. "It was a major, worldwide development and the DOE certainly went out of its way to play it down," said one Princeton official:

Simultaneous press conferences in Princeton and Washington were planned for last Wednesday, but following a leak of the story in the capital last weekend, the DOE hastily called a Monday press briefing.

One group, the New York-based Fusion Energy Foundation, went so far as to accuse U.S. Energy Secretary James Schlesinger of "sabotaging" the fusion research effort by deliberately ordering a low-key approach to the announcement....

PITTSBURGH PRESS, Aug. 20:

Energy Secretary James R. Schlesinger sizzles over handling of Princeton University research team's giant step in nuclear fusion. They achieved temperature of 60 million degrees centigrade in an experiment funded by Schlesinger's shop. But they announced it on their own.

If good energy news is to be announced, Schlesinger let them know, it will be announced by the Carter Administration—with Schlesinger having the key role in telling the public.

O GLOBO (Brazil), Aug. 20:

Nuclear programs like those of Brazil "are now more than justified" in virtue of the recent advances in nuclear fusion technology, said Dr. Charles Stevens, researcher of the Fusion Energy Foundation...

The entire Brazilian effort — economic as well as political — to establish a nuclear energy sector will thus be justified, and the objections of economic and strategic orders which have been presented against it will be wiped out....

CHICAGO TRIBUNE, Aug. 20:

... "This worked as our theories predicted," (Director of the federal government's fusion energy office Edwin) Kintner said, "and we achieved a temperature in the range necessary to produce energy from fusion. The Princeton experiment demonstrated we can get the heat needed...."

"We're very confident that the TFTR will demonstrate the scientific feasibility of fusion," said Edward Frieman, deputy director of the Princeton project. "Our experiments have worked so well, they have caused excitement all over the world."

PRAVDA (Soviet Union), Aug. 20:

... It would be incorrect to think that the advocates of "cold war" were taking the upper hand everywhere. News of an entirely different type is also being reported these days: ... Scientists at Princeton University have achieved a major success in the area of thermonuclear fusion. They succeeded in obtaining a temperature of 60 million degrees C in an

experimental "Tokamak" reactor. This was accomplished thanks to cooperation with Soviet scientists....

Our party and the Soviet government, realistically evaluating the international situation in all its complexity, consistently follow the policy of detente, which does not depend on any conjunctural fluctuations. Comrade L.I. Brezhnev has said, "The vital interests of workers of all countries require that everything good accomplished internationally not be permitted to be erased, and that there be forward movement towards truly firm peace for all peoples."

"It Is Not A 'Breakthrough' "

NEWSDAY, (New York), "Fusion: Hope for Energy Freedom," Aug. 20:

The benefits of such a discovery and its application would be staggering:

* The dollar overnight would become once again the strongest currency on earth.

* The forces of inflation—which today draws much of its strength from steadily rising energy prices—would be dealt a mortal blow....

* Oil would cease to be one of the principal sources of international tension, environmental pollution and excessive profit. It would henceforth be used to make such things as chemicals, fertilizers and even animal feeds....

Unfortunately, the fusion people are not at the point where they can go ahead right now. The temperatures achieved at Princeton are only one step....

There can be no question, therefore, of simply switching all the funds we now have tied up in other forms of energy research and development and putting them into fusion.

Fusion ultimately may solve the world's energy problems for the next several thousand years. That won't matter much, however, if between now and the year 2000 we have energy shortages that bring on worldwide economic depression, political upheaval, and international tensions so severe that we blow ourselves up fighting over what little oil is left. (This scenario of global disaster brought on by energy shortages is precisely that often presented by Energy Secretary Schlesinger—ed.)

CHRISTIAN SCIENCE MONITOR, "DOE: Fusion power still decades off," Aug. 16:

Scientists at Princeton University who are working toward harnessing nuclear fusion to make electric power have indeed had a noteworthy laboratory success. But it is not the "breakthrough" or "major milestone" that was reported over the weekend.

Public affairs officers for the U.S. Department of Energy, which supports that research, says the DOE was both puzzled and embarrassed at what it considers an unauthorized and overblown announcement of the Princeton work....

(DOE public affairs director Jim) Bishop

emphasized that, while the Princeton work is a major scientific achievement, it probably won't shorten the time scale or the cost of fusion power development.

ATLANTA JOURNAL, "The Energy Squeeze: Back to the drawing board—nuclear fusion is still far away," Aug. 20:

The excitement that the newspaper articles generated among readers last week indicates the public's hunger for something that will get the so-called energy crisis off their backs. But it also demonstrates the confusion that reigns among the public, the government, and energy scientists themselves when it comes to figuring out exactly where we stand when it comes to energy matters....

Whoever said what scientists were saying last week was very naive or downright stupid....

THE ECONOMIST (London), Aug. 19-25:

The Americans have emulated the sun.... But don't boil over with excitement. Despite fusion's attractions, energy from it is not imminent....

The case for expensive fusion (in something over 20

years' time?) rests on the alleged abundance and safety of fusion energy.

THE TIMES (London), "Fusion for the Future," editorial, Aug. 15:

Although the Princeton experiment has raised the level of temperatures achieved so far, the other factors still appear not to be satisfied. The fusion process took place for only a fraction of a second.... In a practical power station using a fusion reactor, the fuels would be a mixture of deuterium and tritium (isotopes of hydrogen) the first being separated from sea water and the other as a gaseous extract from conventional nuclear reactors. The production of both these fuels would be an expensive item if done on a large scale....

The latest developments give an ounce of encouragement to that view (that fusion will obviate the fast-breeder reactor—ed.). But the technical problems still to be tackled are too great, and the economics of fusion generators too uncertain, to permit the fast breeder option to be closed now or in the near future.