

F. A. S. NEWSLETTER

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to provide information and to stimulate discussion. Not to be attributed as official FAS policy unless specifically so indicated.

Successful Launching and Operation of SNAP-10A

On April 3, from Vandenberg Air Base, the U. S. launched the first nuclear power reactor for space application—the SNAP-10A 500-watt nuclear reactor. After it had been successfully placed in orbit, the reactor was brought into operation by a signal transmitted to the nuclear power plant approximately 70 miles out in space. Action by the Joint Committee on Atomic Energy a year ago was responsible for the continuation of this project since the Executive Branch of the Government had cancelled the planned SNAP flight. The Joint Committee successfully convinced the Executive Branch to reinstate the flight test by authorizing the funding of the cost by the AEC instead of the Air Force. The primary objective of the flight test is to determine reactor power plant operating characteristics in the space environment. Secondary objectives include the testing of an ion space propulsion engine for the Air Force, the obtaining of mapping and surface triangulation data for the Army, and the obtaining of micrometeorite and atmospheric density data (*Joint Committee on Atomic Energy Release, 4/5/65*).

U. S. Urges International Reactor & Fuel Controls

The United States is urging its Western allies to join in a common front in insisting upon international controls over all foreign sales of atomic reactors and fuels.

Behind this diplomatic move is a concern that, in the developing competition to sell atomic power plants and fuel abroad, the Western nations may also spread the capability to produce atomic weapons.

The Administration's desire, therefore, is to achieve some agreement among the Western supplier nations that in all foreign sales they will require inspection by the International Atomic Energy Agency to assure that any reactors or atomic fuel sold abroad are not diverted to military purposes.

The desirability of international controls has been discussed periodically with the Western allies ever since the "Atoms for Peace" agency was established in 1958. But within some atomic energy and Congressional circles there has been criticism that the State Department has not been pushing aggressively enough to get the Western allies to accept the principle of international controls.

According to diplomats, a more aggressive effort on behalf of international controls has been undertaken in recent weeks, with overtures made in Britain, France, West Germany and other nations that are potential suppliers of reactors or uranium fuel.

This recent diplomatic campaign resulted from a realization that the need for international controls was no longer an academic question but an immediate problem. Within the last year or so, atomic power has advanced to the point

(Continued on Page 4)

AEC Will Check Radioactivity In Consumer Products

The Atomic Energy Commission is publishing criteria which it will use in considering applications to use radioactive materials in products intended for distribution to the general public. These applications are evaluated on a case-by-case basis.

There are now a number of consumer products containing small quantities of radioactive materials which have been approved by the Commission. These include long-standing uses of source material (uranium and thorium), most of which antedate the atomic energy program, such as the use of uranium to color glass and glazes for decorative purposes; the use of thorium in various alloys and products, such as gas mantles, tungsten wire, welding rods, and photographic lenses; and the use of uranium and thorium in photographic film and prints.

The Commission also has approved the use of tritium as a substitute for radium to provide luminosity on watch and clock dials and hands; the use of tritium in automobile lock illuminators; tritium in precision balances; uranium as shielding in shipping containers; and uranium in fire detection units.

In approving the use of radioisotopes and of uranium and thorium in consumer products, the Commission establishes limits on quantities or concentrations of radioactive materials and, if appropriate, on radiation emitted. In some cases, other limitations, such as quality control and testing, important to health and safety also are specified.

At the present time it appears unlikely that the total contribution to the exposure of the general public to radiation from the use of radioactive materials in consumer products will exceed a small fraction of the limits recommended for exposure to radiation from all sources. Information on the total quantities of radioactive materials being used in such products and the number of items being distributed will be obtained through record-keeping and reporting requirements. If radioactive materials are used in sufficient quantities in products reaching the public so as to raise any question that population exposure may become a significant fraction of recommended limits, the Commission, at that time, will reconsider its policy on the use of radioactive materials in consumer products. (*AEC Release, March 15, 1965*)

HUMANITIES FOUNDATION

President Johnson asked Congress early in March to establish a National Foundation on the Arts and Humanities, to stimulate drama, dance, painting, music, literature, history, and other cultural activities in the United States. The President's plan was to use the National Science Foundation as a parallel model. Arts are to include drama, creative writing, photography, designing, and motion pictures. Humanities was defined by the Bill as including language, literature, history and philosophy, archeology, criticism, and art theory. (*N. Y. Times, 3/11/65*.)

EDITORIAL CONDEMNS GAS IN VIETNAM NOW, RESERVES DECISION ON USE IN BIG WAR

The following editorial appeared in the *Washington Post* on March 24, two days after the use of non-toxic gas in Vietnam was announced. The FAS statement on this subject appeared in the *March Newsletter*, page 4.

It is difficult to find out how much damage napalm and gas are doing the enemy but it is not hard to find out how much damage they are doing us. Our own Defense Establishment, every time it employs or permits the South Vietnamese to employ these weapons, is doing an injury to the good name of this country.

If these weapons were being employed with decisive effect, perhaps their use might be condoned as one of the necessities of a hard and brutal war, but in this situation there is not even the satisfaction of knowing that they produced impressive results. They have been employed just enough to bring down upon this country the rebuke of the civilized world. They have been utilized just enough to hold our country up to reproach. They have been resorted to just often enough to impose upon the United States Information Agency an impossible propaganda disadvantage.

The argument that the nontoxic gas is more merciful than antipersonnel weapons has some merit, but not much. The trouble is that although the gas may not be poison, the word is, and all the propaganda resources in the world cannot explain away its employment as an act of Christian charity and humanitarian mercy. The use of napalm against gun emplacements is debatable, but its employment against villages is indefensible and the difficulty of confining it to combat installations so great as to dictate that it be not used at all.

We hope that President Johnson will order the Defense Department to forego the use of all gas and napalm in this war theater at once. The people of this country are prepared for and equal to the hard measures that war dictates, when those measures are clearly inescapable and unavoidable in the prosecution of a military purpose. They will not be reconciled to the use of such weapons where alternate means of defense exist. If the war in South Viet-Nam can only be won by losing our good name, Americans who have patiently supported the struggle will waver in their purpose. Mr. President, let us stop all use of napalm and gas in South Viet-Nam at once.

EDSALL NAMED TO NAS POST

John T. Edsall, newly elected Vice-Chairman of the Federation of American Scientists, was named Associate Editor of the *Proceedings* of the National Academy of Sciences and Vice-Chairman of the Editorial Board by the Council of the Academy. He is Professor of Biological Chemistry at Harvard.

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Chairman.....Dr. Peter G. Bergmann

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The FAS, founded in 1946, is a national organization of scientists and engineers concerned with the impact of science on national and world affairs.

Sources of information (given at the end of articles in parentheses) are for further reference. Items reprinted directly from other publications are designated as such in an introductory paragraph.

McNAMARA STRESSES FALLOUT SHELTERS BUT APATHY REMAINS

A national fallout shelter program for everyone in the U. S., costing about \$5 billion, might save 30 million lives in the event of an all-out nuclear attack, according to statistics which Secretary of Defense McNamara presented to Congress recently. An additional expenditure of \$20 billion for defense might save another 40 million lives but nothing foreseeable at present could reduce casualties much below 80 million lives in the event of an initial attack upon U. S. cities in a general nuclear war. These statistics were offered not only as an elaboration of the problem of defense in the nuclear age but also as an argument by Mr. McNamara for a fallout-shelter program. He has long insisted that a nationwide fallout shelter program must precede or accompany any development of an antiballistic missile system as part of what he calls a damage-limitation program. Congress, however, has been lukewarm, insofar as provision of funds is concerned, to the civil-defense aspects of damage limitation. In his presentation, Mr. McNamara stressed that a "complete" nationwide program for fallout shelters "would provide the greatest return, in terms of lives saved of any damage-limitation measures". He estimated the five-year cost for full fallout-shelter protection for the entire population at \$5 billion. Existing or planned structures can provide much of the space needed by the early 1970's and additional requirements would have to be met by providing "dual-purpose fallout-shelter areas in new construction" on a combined cost-sharing basis with Federal, state and local governments and nonprofit institutions. Legislation to permit this has been recommended for three years. Mr. McNamara pointed out, but Congress has not approved it. Instead of recommending such legislation for the next fiscal year, the Government proposes to "exploit fully all of the existing potential for fallout protection" and to determine additional requirements.

DISSATISFACTION WITH PROGRAM

Such a program of survey is not likely to satisfy Congress any more than preceding ones having done. Some experts have pointed out that surveys of potential shelter facilities have been made again and again. Even more important, the emphasis on shelters leaves unanswered other questions such as the value of shelters in the event that major urban areas are hit by megaton nuclear weapons, as it seems likely that they would be. Moreover, problems of care and transportation of people after they emerged from shelters have never been satisfactorily dealt with in the various civil defense programs presented to Congress. Thus, as the experts see it, the weakness of the civil defense program is that it has been presented in too much of a piecemeal, technical fashion, and that well-rounded comprehensive arguments—transcending the shelter program alone—that would show how millions might survive a nuclear war have not been presented to Congress or the public (*N. Y. Times*, 3/23).

IRIB ISSUES REPORT

The Institute for Research on International Behavior, a unit of San Francisco State College, has issued its 1964 Annual Report, describing its progress over the past year in studies of arms control theories and political behavior. The Institute has been working on these problems since its establishment in 1958, and has developed descriptive theories and some mathematical-like models.

OF INTEREST . . .

The March 1965 issue of *Looking Ahead*, the newsletter of the National Planning Association, has as its lead article "The Role of Planning in the Atomic Energy Program." The issue includes another article of interest to FAS members, "The Federal Stake in Research," and a review of the book, "Financing the United Nations System," by John G. Stoessinger.

The Alaskan Baby Tooth survey is getting under way in College, Alaska, to collect the teeth of children (especially Eskimos) in that area for examination to determine the strontium 90 content. Similar programs and comparative studies are being made on teeth in Indiana, Michigan, California, New York, and Gulf Coast areas. Women's organizations have collected a total of more than 8000 baby teeth for analysis. Citizens in Japan and Canada have received help from the St. Louis project in setting up such surveys. (*CNI Newsletter, Committee for Nuclear Information, March 1965*)

The Atlas Aircraft Corp. of South Africa has been established for the purpose of manufacturing military jet planes. Situated near Johannesburg, the new corporation is expected to produce its first jets for the South African Air Force next year. (*South African Scope, April 1965*)

The National Science Foundation has published a booklet "Financing a College Science Education" which can be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, for 15 cents. The publication is directed toward students who will need financial assistance, and takes the view that finances should be considered last in a student's choice of school, course of study, and program.

The Laboratory of Quantitative Biology at Cold Spring Harbor, Long Island, which was opened in 1894 is confronted with a crisis in funds which may cause it to close down operations, according to its director, Dr. John Cairns. Rules governing the expenditure of Federal funds for scientific research do not allow this money to be used for such indirect costs as maintenance of building. The Cold Spring Harbor laboratory is not endowed, and has few funds except those for research. As a result, 22 of its 30 buildings have fallen into dangerous disrepair. A number of them, including the Wawepex Laboratory, have been abandoned because they are "death traps" according to Dr. Cairns. A recent visiting Russian scientist put down his suitcase, and part of the floor collapsed under it. Dr. Cairns estimated that the laboratory needs \$50,000 per year for maintenance above what it is already spending. (*N.Y. Times, April 18, 1965*)

BACK ISSUES RECEIVED

In response to a call for back issues, two members sent their collections of Newsletters to the FAS national office: R. S. Brown, and Jerome J. Harris. The office now has a complete file back to the summer of 1953, which will be kept current in the future.

EXECUTIVE COUNCIL MEETING

The FAS Executive Council will meet on Sunday and Monday, April 25 and 26, in the Madison Room of the Sheraton-Park Hotel in Washington, at 7:30 PM both nights. The Executive Committee will meet in Dan Singer's home on Sunday afternoon preceding the first Executive Council Meeting.

Election Results

Chairman—W. A. Higinbotham

Vice-Chairman—John T. Edsall

Delegates-at-Large—1965-67 Term

James Arnold	Donald Michael
Judith Bregman	Gardner Murphy
Donald G. Brennan	Richard Preston
Lyle Borst	John Rasmussen
Richard Falk	Tom Stonier
Martin Kamen	Lawrence Wilets

Continuing Delegates-at-Large—Term expires 1966

Owen Chamberlain	Charles E. Osgood
William Davidon	Arthur H. Rosenfeld
Bernard T. Feld	Cameron Satterthwaite
Hans Morgenthau	Walter Selove
Jay Orear	Louis B. Sohn
Louis Osborne (<i>vice Edsall, 1 yr. term</i>)	John S. Toll

REACTOR AND FUEL CONTROLS

(Continued from Page 1)

of economic attractiveness. It seems likely that there will soon be growing international sales of atomic reactors and fuel.

As they have viewed this potential "traffic" in atomic equipment, officials have become increasingly concerned about the gap that now exists in international controls over the peaceful uses of atomic energy.

In its dealings with the Western nations, the United States has insisted upon bilateral controls, and more recently international controls. Within the six-nation European Atomic Energy Community (Euratom), controls over atomic power plants are also set up.

There is however, no requirement for bilateral control, much less international controls over any atomic equipment or fuel that the Euratom nations or other Western countries may sell abroad. At present the international control system is only mandatory in the cases of atomic reactors or fuels sold through the international agency.

The United States recently adopted a firm policy of requiring international agency controls over all reactors sold abroad.

In principle, most of the Western nations have expressed a willingness to go along with policy. But there is a concern that without a specific agreement, some of the Western nations, in the commercial competition to win a reactor contract, will be tempted to relax the control requirements. These requirements have been viewed by many underdeveloped nations as a discriminatory affront to their prestige and sovereignty.

Among the Western nations, France is viewed as the one nation likely to resist a common front on international controls. France traditionally has been somewhat cool and skeptical toward the international agency. Furthermore, there is a concern within France that the Administration has an ulterior purpose of ending the special relationship between the United States and Euratom and of shifting the present Euratom control function to the international agency.

A test case of France's attitude, as well as of Canada, another potential supplier of reactors and fuels, will be presented by two foreign sales now under negotiation. One is the sale of a French atomic power plant to Spain; the other is the sale of about \$700 million worth of Canadian uranium ore to France. (*N. Y. Times*, 4/18/65.)

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ISRAEL PERMITS U. S. TO INSPECT ATOMIC REACTOR

Israel, in an attempt to reassure the U. S. of her peaceful intentions towards the use of atomic energy, has quietly allowed American engineers to inspect the heavily guarded Dimona reactor, situated near Beersheba in the Negev. On the basis of the inspection, U. S. officials have come to the tentative conclusion that Israel is not now using the relatively large research reactor for the production of plutonium for atomic weapons. Only two inspections by reactor engineers of the AEC have been permitted—one a year ago and the second about a month ago. At the insistence of the Israeli Government, strict secrecy has been imposed on the fact that American engineers have been permitted to visit the reactor site. The inspections apparently were permitted because of repeated expressions of concern by U. S. officials about the purpose of the reactor and to insure continued U. S. cooperation in nuclear research such as the development of a nuclear desalting plant.

—INTERNATIONAL INSPECTION REFUSED—

Informally, the U. S. has pointed out to Israel the desirability of placing the Dimona reactor under inspection by the International Atomic Energy Agency, which has adopted a safeguard system for assuring that atomic power plants are not being used for military purposes. The overtures have been resisted by Israel and the Israelis have continued to impose considerable secrecy about the reactor, which, according to American officials, recently went into operation. Israel has raised two basic objections to international inspection. One—a familiar objection raised by the nonnuclear powers—is that she should not be forced to place her national development under agency inspection until international inspection is accepted generally by all powers, including the nuclear powers. The other is Israel's contention that the IAEA has discriminated against her in favor of the Arab states in the membership of its board of governors and the location of research centers. Among American and British atomic energy specialists, however, there is a widespread belief that there is still another, unstated reason for Israel's objection to international control—that she is "keeping the option open" to develop an atomic deterrent against the Arab nations. (*N. Y. Times*, 3/14).

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